CONTRA COSTA HEALTH

INDUSTRIAL SAFETY ORDINANCE ANNUAL PERFORMANCEREVIEW AND EVALUATION REPORT

April 2023

By Contra Costa Health Hazardous Materials Programs

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Executive Summary

Contra Costa County's Industrial Safety Ordinance (ISO), adopted in 1998 by the Board of Supervisors, requires regulated facilities in the county to implement comprehensive safety programs to prevent chemical accidents. The ISO's requirements are some of the most stringent in the United States, if not the world. The goal is for facilities to implement comprehensive safety programs, instill a safety culture at the workplace and create management systems that prevent incidents that could have detrimental impacts to surrounding communities. The ISO also mandates outreach and participation from industries, agencies, elected officials and the public.

Two major oil refineries and two chemical facilities are required to comply with ISO requirements. Two facilities (one refinery and one chemical plant) within the City of Richmond are required to comply with the Richmond Industrial Safety Ordinance (RISO), which mandates the same requirements from a separate municipal authority. Both ordinances are administered by Contra Costa County's Health Hazardous Materials Programs (CCHHMP), a division of Contra Costa Health. Per ISO Section 450-8.030, CCHHMP annually evaluates and reports on ISO performance to the Board of Supervisors.

CCHHMP's Accidental Release Prevention (ARP) Program engineers oversee the ISO and RISO programs and work with other agencies such as the U.S. Environmental Protection Agency (EPA), the California Occupational Safety and Health Administration (Cal-OSHA), US Chemical Safety and Hazardous Investigation Board and other local program agencies. This interagency collaboration includes sharing of incident and inspection results, discussion of regulatory interpretations and joint training.

Public Participation

CCHHMP has an established public outreach process and is continually looking for ways to improve it. Due to COVID 19 restrictions CCHHMP conducted limited community-engagement activities in 2022:

- Virtual webinar on March 31, 2022 to review audit findings, Safety Plan, and Risk Management Plan reviews associated with Chevron Refinery, Phillips 66 Refinery, Marathon Refinery, PBF Martinez Refining Company, Chemtrade West, and Air Liquide Large Industries
- Continued to work with an Oversight Committee that includes community representatives associated with the February 9, 2021 Chevron Wharf Oil Spill
- Presented at a joint Community Advisory Panel (CAP) meeting at Eco Services and PBF Martinez Refining Company (MRC) for the MRC Safety Audit on September 19, 2022
- Shared Air Liquide Large Industry's Safety Audit and outreach information at a booth at the Rodeo-Hercules Fire District Open House on October 15, 2022

The Board of Supervisors also requested that staff provide copies of the annual report to communities through the Community Advisory Panels (CAP). This 2022 Annual Report is available on our website and will be sent to CAP representatives for distribution.

Audits*

Audits of regulated businesses are required at least once every three years to ensure that the facilities are implementing required programs. We completed two ISO and one RISO audits in 2022:
Air Liquide Large Industries – January 2022
Phillips 66 Refinery – November 2022
Chevron Richmond Refinery (RISO) – May 2022

* Audits were conducted with limited on-site inspections due to COVID-19 health order precautions.

Major Chemical Accidents or Releases

There were no MCAR events for any ISO-regulated facility during the reportable period of this report, which is from July 1, 2021 through June 30, 2022.

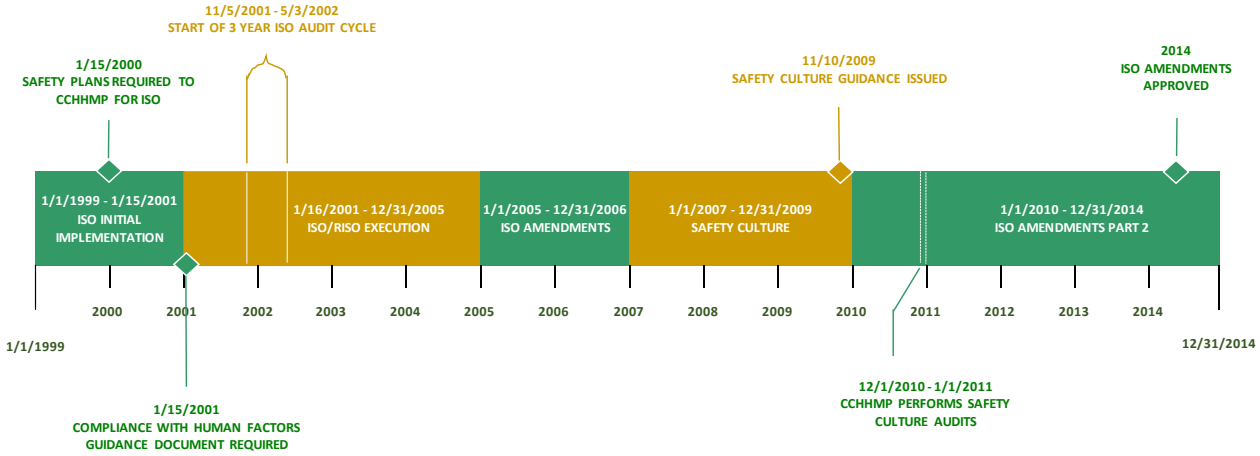
Conclusion

The severity of MCAR events in Contra Costa County has declined since the implementation of the ISO, with a few minor irregularities in the trend. The ISO has improved regulated facilities' safety programs and operations.

CCHHMP has sought assistance from stakeholders, including regulated facilities, workers, and community members, to include the CSB-recommended improvements to the ordinance that the Board of Supervisors adopted in 2014. These further reduce likelihood of chemical accidents at these industrial facilities.

Introduction

The Board of Supervisors adopted the ISO due to significant accidents that occurred at oil refineries and chemical plants in the county in the 1990s. The effective date of the ISO was January 15, 1999. The ordinance applies to oil refineries and chemical plants with specified North American Industry Classification System (NAICS) codes that were required to submit a Risk Management Plan to the U.S. EPA and are Program Level 3 Stationary Sources as defined by the U.S. EPA Risk Management Program. The timeline below shows the requirements of the ordinance and various changes to date:



RESPONSIBILTIES	CCHHMP	• May perform individual Root Cause Analysis after an MCAR • Develop and Maintain Safety Plan Guidance Document • Review submitted Safety Plans • Audit every three years after initial ISO/RISO audits • Create Safety Culture Guidance and update as needed
	STATIONARY SOURCES	• Perform Root Cause Analysis after an MCAR • Consider Inherently Safer Systems for new and existing processes, expanded (2014 amendments) to include reviewing during major changes that could result in MCAR occur • Submit Safety Plan every 3 years • Perform Safeguard Protection Analysis [SPA] (2014 Amendments) • Include Maintenance in the Human Factors and Management of Organizational Change Programs (2006 Amendments) • Perform Security Vulnerability Assessments and Safety Culture Assessments (2006 Amendments) • Develop and Track Performance Indicators (2014 Amendments)

City of Richmond Industrial Safety Ordinance

The Richmond City Council passed its version of the ISO on December 18, 2001. Richmond's Industrial Safety Ordinance (RISO) mirrors the ISO, covering two stationary sources: Chevron Richmond Refinery (Chevron) and Chemtrade West Richmond Works (formerly General Chemical Richmond). CCHHMP administers the RISO for the city. In 2021-2022 Chemtrade West Richmond Works modified their processes such that they are no longer subject to the RISO.

There was one RISO audit conducted in this reporting period at Chevron. CCHHMP receives annual performance updates from Chevron and Chemtrade each June. CCHHMP worked with U.S. EPA, Cal OSHA, BAAQMD and CSB in CSB's independent investigation of the August 6, 2012 incident. CCHHMP is currently working with an oversight committee regarding the incident investigation of the Chevron February 9, 2021, incident.

Regulated Stationary Sources Listing

There are a total of four stationary sources covered by the ISO and two stationary sources covered by RISO:

- Air Liquide Large Industries Rodeo Hydrogen Plant at Phillips 66
- Air Products at MRC (formerly Shell Martinez Refinery)
- Martinez Refining Company – MRC (formerly Shell Martinez Refinery)
- Phillips 66 Rodeo Refinery
- Chevron Richmond Refinery (RISO)
- Chemtrade West Richmond Works (formerly General Chemical Richmond)** (RISO)

** Chemtrade is no longer subject to the RISO

Status of Safety Plans and Programs

Stationary sources were required to initially submit safety plans in 2000 (ISO) and 2003 (RISO) and resubmit every 3 years. Audits have also been completed on the same schedule. The most recent status of each of the regulated stationary sources is given in Tables I and II and includes:

- When the latest updated safety plans were submitted
- Status of safety plans (complete/incomplete)
- When audits were last completed
- When public meetings were held on preliminary audit findings in last 3 years

A full summary of all Safety Plan Updates and audits is maintained via database at CCHHMP's office.

Table I
Industrial Safety Ordinance (ISO) Stationary Source Status
(Most Recent)

NAME	Safety Plan (SP) Received	Safety Plan Complete	Audit/ Inspection	Audit Public Meeting
Air Liquide Large Industries Rodeo	1/10/2023	No	1/5/2022	10/15/2022
Air Products – MRC	10/10/2020	No	10/26/2020	Not yet
PBF Martinez Refining Company (MRC)	10/31/2022	Yes	1/25/2021	3/31/2022
Phillips 66 Rodeo Refinery	8/6/2021	Yes	10/24/2022	Not yet

Table II
Richmond Industrial Safety Ordinance (RISO) Stationary Source Status
(Most Recent)

NAME	Safety Plan (SP) Received	Safety Plan Complete	Audit/ Inspection	Audit Public Meeting
Chemtrade West Richmond Works	11/21//2018	Yes	6/15/2020	3/21/2022
Chevron Richmond Refinery	7/22/2021	Yes	4/25/2022	Not yet

Locations of the Regulated Stationary Sources Safety Plans

Regulated stationary sources are required to update their safety plans at least once every three years. These plans are available for public review at the Hazardous Materials Programs office, 4585 Pacheco Blvd., Suite 100, Martinez. When CCHHMP determines that a safety plan update is complete, prior to the required 45-day public comment period, staff places the updated plan in the Contra Costa Library branch or branches closest to the regulated stationary source, so it is easily accessible for public review. Table III lists each safety plan location.

Table III
Location of Safety Plans – Libraries

Regulated Stationary Source	Location 1	Location 2	Location 3
Air Liquide Large Industries Rodeo	Hazardous Materials Programs Office	Rodeo Public Library	Crockett Public Library
Air Products – MRC	Hazardous Materials Programs Office	Martinez Public Library	
PBF Martinez Refining Company (MRC)	Hazardous Materials Programs Office	Martinez Public Library	
Phillips 66 Rodeo Refinery	Hazardous Materials Programs Office	Rodeo Public Library	Crockett Public Library
Chemtrade West Richmond Works (RISO)	Hazardous Materials Programs Office	Point Richmond Public Library	Main Richmond Public Library
Chevron Richmond Refinery (RISO)	Hazardous Materials Programs Office	Point Richmond Public Library	Main Richmond Public Library

Effectiveness of Implementation of the Industrial Safety Ordinance

Contra Costa Health Hazardous Materials Programs has developed policies, procedures, protocols, and questionnaires to implement the California Accidental Release Prevention (CalARP) Program and the Industrial Safety Ordinance. The policies, procedures, protocols, & questionnaires for these programs are listed below:

- Audits/Inspections Policy
- Conducting the Risk Management Plan/Safety Plan Completeness Review Protocol
- Risk Management Plan Completeness Review Questionnaires
- Safety Plan Completeness Review Questionnaires
- Conducting Audits/Inspections Protocol
- Safe Work Practices Questionnaires
- CalARP Program Audit Questionnaires
- Safety Program Audit Questionnaires
- Conducting Employee Interviews Protocol
- Employee Interview Questionnaires
- Field Verification Protocols
- Covered Process Modification Policy
- Public Participation Policy
- Dispute Resolution Policy
- Reclassification Policy
- CalARP Internal Performance Audit Policy
- Conducting the Internal Performance Audit
- CalARP Internal Audit Performance Audit Submission
- Fee Policy
- Notification Policy
- Unannounced Inspection Policy
- Risk Management Plan Public Review Policy

Hazardous Materials Programs also developed the Contra Costa County CalARP Program Guidance Document and the Contra Costa County Safety Program Guidance Document, which was updated and reissued to regulated facilities on July 22, 2011. All policies, procedures, protocols and questionnaires are available through the Hazardous Materials Programs office, and the guidance documents are available electronically at:
https://cchealth.org/hazmat/calarp/guidance-document.php and
https://cchealth.org/hazmat/iso/guidance.php

CCHHMP staff is working with regulated facilities and labor representatives to revise the Safety Program Guidance Document based on audit results and set expectations for compliance with the ordinance.

Effectiveness of the Procedures for Records Management

CCHHMP has digital files for each stationary source. The files include:

1. Annual status reports
2. Audits & inspections
3. Communications
4. Completeness review
5. Emergency response
6. Incident investigation
7. Trade secret information

Digital copies of the files are stored on the Hazardous Materials Programs network and are accessible to the Accidental Release Prevention (ARP) engineers, supervisor, and the Hazardous Materials Program Director. Portable document format (PDF) versions of these files are also available for public viewing at the CCHHMP office. The Accidental Release Prevention Program files contain regulations, policies, information from the U.S. EPA, Cal EPA, CSB, and other information pertinent to the engineers. The risk management and safety plans are received in hard copy, scanned, and kept at the CCHHMP office.

Number and Type of Audits and Inspections Conducted

Beginning in the fall of 2020, CCHHMP began its next round of required audits at each of the ISO and RISO facilities. This is the eighth round of audits since 2000. When the Health Order was issued on March 16, 2020, in response to the COVID-19 pandemic, CCHHMP adjusted the audit protocol to perform audits remotely through file sharing records review, web conference and interviews with Subject Matter Experts and select employee and employee representatives and “live” navigation and query of selected databases. Procedure review was part of the audit but in-person procedure walkdowns were not performed.

When CCHHMP ARP engineers review a safety plan, a notice of deficiencies is issued documenting any changes the stationary source must make before the plan is determined to be complete. The stationary source has up to 90 days to respond. Assigned ARP engineers will work with the stationary source until the plan contains the required changes. When the plan is complete, the ARP engineer will open a public comment period and make the plan available in a public meeting or venue as well as at the public library branch closest to the stationary source. The ARP engineer will respond to all written comments in writing and, when appropriate, use the comments in upcoming audit/inspections of the regulated stationary source.

An ARP engineer will issue a Preliminary Audit Findings report after each stationary source audit/inspection. The stationary source will have 90 days to respond, and the ARP engineer will review the response. The stationary source must submit an action plan to correct any uncovered ISO compliance issues, which the ARP engineer will review. If the ARP engineer agrees with the action plan, CCHHMP will issue the Preliminary Audit Findings for public comment and make them available in a public meeting or venue and at the public library branch closest to the stationary source. The ARP engineer will consider comments received during the public comment period and may revise the Preliminary Audit Findings report. When the public review process is complete, the ARP engineer will issue the Final Audit Findings report and respond in writing to any written public comments received. Table I lists the status of each stationary source's safety plan, audit and inspections of their safety programs, and public meetings.

Root Cause Analyses and/or Incident Investigations Conducted by CCHHMP

CCHHMP performed no root cause analyses or incident investigations in the past year. It should be noted that a consultant was hired in 2021 to conduct an independent evaluation of an MCAR at the Chevron Richmond Refinery for their February 9, 2021 Wharf Oil Spill. This independent evaluation continued through 2022 and the consultant's report is expected in 2023.

A historical listing of MCAR events starting in 1992 is available at:
https://cchealth.org/hazmat/accident-history.php

This list also includes major accidents that occurred prior to the adoption of the ISO.

CCHHMP's Process for Public Participation

CCHHMP continues the practice of sharing results of safety plans and preliminary audit findings and receiving public comment about them at community events, as recommended by community members in 2005. Based on a 2012 recommendation from the Board of Supervisors, CCHHMP also shares ISO annual reports and makes presentations to Community Advisory Panels.

Effectiveness of the Public Information Bank

The Hazardous Materials Programs section of the Contra Costa Health Services website (http://cchealth.org/hazmat) includes:

Programs	Incident Response and Follow-up	Resources
ISO and RISO	HazMat Incident Response Team Page	Links to Refinery Fenceline Monitoring
Land Use Permitting Assistance	List of recent incidents	HazMat Interagency Task Force
CalARP (Including P4)	MCAR Accident History	Chemical Safety Board Incident Search
Underground Storage Tanks	Incident Search Database	CCHHMP Guidance Documents
Green Business Program	Incident Notification Policy	CalARP/ISO/RISO Regulations
Business Plan	72-hour and 30-day Reports	

Effectiveness of the Hazardous Materials Ombudsperson

The Hazardous Materials Ombudsperson is a conduit for the public to express their concerns about how CCHHMP personnel are performing their duties. Attachment A is a report from the Hazardous Materials Ombudsperson on the effectiveness of the position for this reporting period.

Other Program Elements Necessary to Implement and Manage the ISO

The CalARP Program is administered in Contra Costa County by CCHHMP. Stationary sources are required to submit risk management plans similar and in addition to ISO safety plans. An ARP engineer reviews the risk management plans and performs CalARP Program audits simultaneously with ISO audits.

Annual Accident History Report and Inherently Safer Systems Implemented as Submitted by the Regulated Stationary Sources

The ISO requires stationary sources to update their accident history in their safety plans and include how they have used inherently safer processes within the last physical year. Tables IV and V summarize Inherently Safer Systems that have been implemented during this reporting period. Attachment B includes individual reports from the stationary sources that also include the required reporting of four common process safety performance indicators.

Table IV
Inherently Safer Systems Contra Costa County ISO Stationary Sources
(July 2021 – June 2022)

Regulated Stationary Source	Inherently Safer System Implemented	Risk Reduction Level	Strategy
Air Liquide Large Industries Rodeo	No new inherently safer systems have been implemented	N/A	N/A
Air Products – MRC	New control logic installed to assist with equipment bypass and shutdown	Active	Simplify
PBF Martinez Refining Company (MRC)	Reduce a process line pressure handling flammables from 1000 PSIG to 140 PSIG or less	Inherent	Moderate
	Install monitoring sensors on select equipment with automatic shutdown (2 times)	Active	Moderate
	Install alarms on select equipment combined with operator response (12 times)	Active	Moderate
	Require select valves be maintained open to prevent pump deadheading	Procedural	Moderate
Phillips 66 Rodeo Refinery	Emptied and placed piping and equipment out of service (5 times)	Inherent	Substitute
	Pump seal upgrades to dual seals (3 times) and seal less mag drive (1 time)	Passive	Moderate
	Upgraded equipment and piping metallurgy to minimize corrosion (2 times)	Passive	Moderate
	Upgraded controls to include automated shutdown on select equipment (2 times)	Active	Simplify
	Added new and modified existing procedures to address alarm	Procedural	Simplify/Moderate

Regulated Stationary Source	Inherently Safer System Implemented	Risk Reduction Level	Strategy
	conditions, sampling, and routine conditions (10 times)		

Table V
Inherently Safer Systems Richmond ISO Stationary Sources
(July 2021 – June 2022)

Regulated Stationary Source	Inherently Safer System Implemented	Risk Reduction Level	Strategy
Chemtrade West Richmond Works ** (RISO)	No new inherently safer systems have been implemented	N/A	N/A
Chevron Richmond Refinery (RISO)	Upgraded piping metallurgy to minimize corrosion (2 times)	Inherent	Simplify
	Upgraded control systems on furnaces to assist with equipment shutdown (2 times)	Active	Moderate
	Resized pressure relief devices and piping on an ammonia system	Active	Moderate

** Chemtrade is no longer subject to the RISO

Status of the Incident Investigations, including the Root Cause Analyses Conducted by the Regulated Stationary Sources

The ISO requires regulated stationary sources to conduct an incident investigation including a root cause analysis (RCA) after each MCAR incident. MCAR incidents meet the definition of a Level 3 or Level 2 incident in the Community Warning System incident level classification system defined in the Hazardous Materials Incident Notification Policy, as determined by Contra Costa Health; or result in the release of a regulated substance and meet one or more of the following criteria:

- Results in one or more fatalities
- Results in at least 24 hours of hospital treatment of three or more persons
- Causes on- and/or off-site property damage (including cleanup and restoration activities) initially estimated at $500,000 or more. On-site estimates shall be performed by the regulated stationary source. Off-site estimates shall be performed by appropriate agencies and compiled by the department.
- Results in a vapor cloud of flammables and/or combustibles that is more than 5,000 pounds.

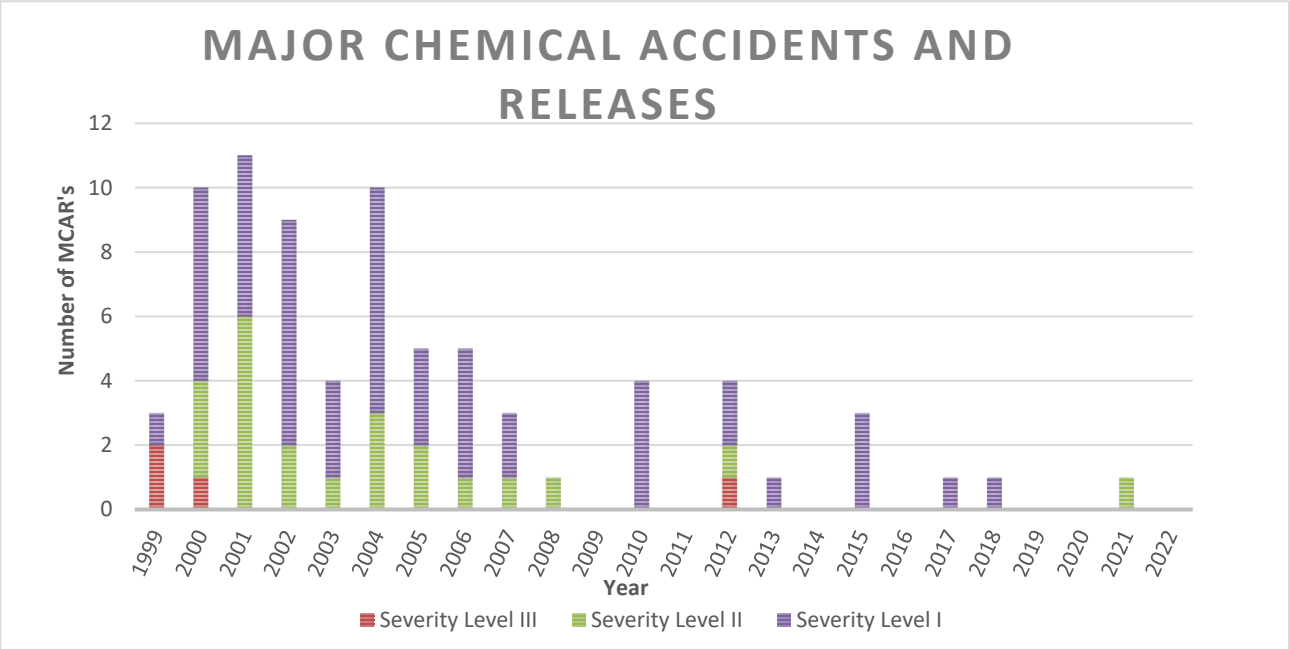
The regulated stationary source is required to submit a report to CCHHMP 30 days after the root cause analysis is complete. There were no MCAR incidents that occurred within this reporting period in Contra Costa County at an ISO facility.

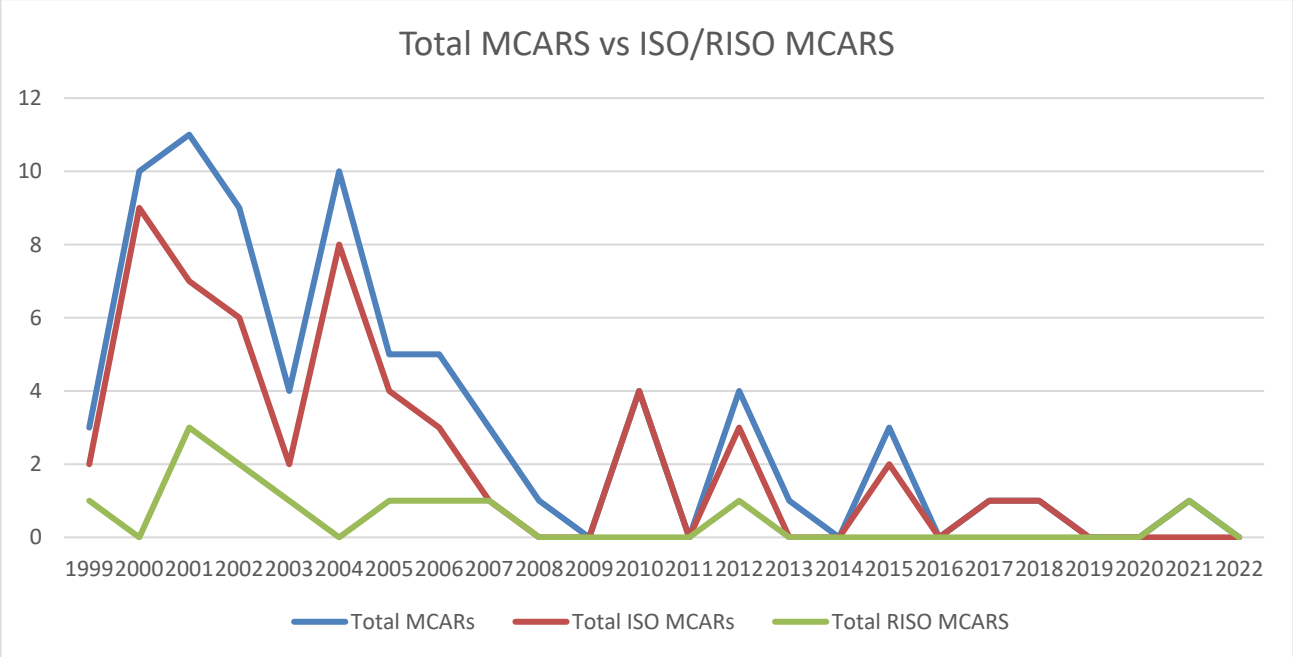
Major Chemical Accidents or Releases

CCHHMP analyzed the number and severity of MCARs that occurred since the implementation of the ISO:

- Severity Level III — Resulted in a fatality, serious injuries or major on-site and/or off-site damage.
- Severity Level II — Resulted in an impact to the community or could easily have become a Level III incident if the situation was slightly different, or it is a recurring type of incident at that facility.
- Severity Level I — Resulted in no or minor injuries, no or slight impact to the community, and no or minor on-site damage.

These charts show MCARs from 1999 through June 30, 2022, for all stationary sources in Contra Costa County. The charts include MCARs at stationary sources only, none that occurred during transportation.





Legal Enforcement Actions Initiated by Contra Costa Health Hazardous Materials Programs

As part of the enforcement of the ISO and CalARP Program, CCHHMP staff may issue notices of deficiency on the safety and risk management plans of ISO-regulated facilities and may issue audit findings detailing what a stationary source is required to change to come into compliance with the regulations. CCHHMP has taken no legal enforcement actions on the ISO facilities during this reporting period.

Penalties Assessed as a Result of Enforcement

No penalties have been assessed in this period for noncompliance with the ISO.

Total Fees, Service Charges and Other Assessments Collected Specifically for the ISO

Fees charged for the ISO cover the time ARP engineers use to enforce the ordinance, the position of the Hazardous Materials Ombudsperson, outreach material and to cover a portion of the overhead for CCHHMP. Fees charged for administering this ordinance for fiscal year 2021–2022 total $ 628,490.

Total Personnel and Personnel Years Used by Hazardous Materials Program to Implement the Industrial Safety Ordinance

ARP engineers review resubmitted Safety Plans, prepare and present information for public meetings, perform audits of stationary sources for compliance with both the CalARP Program and ISO and do follow-up work after MCARs. During the current reporting period:

Approximately 3210 hours total of CCHHMP personnel time was spent on the ISO during the current reporting period. This includes hours spent performing on-site audit activities, reviewing and updating information for the website, performing safety plan reviews, follow-up of deficiencies from audits or plan reviews, preparing materials for presentations and/or public meetings, working with oversight committees, and participating in investigations (including Root Cause Analysis). The total does not include Ombudsperson time spent preparing for public meetings, working with engineers on questions arising from the ISO, and answering questions from the public on the ISO.

Comments from Interested Parties Regarding the Effectiveness of the Industrial Safety Ordinance

No comments were received by CCHHMP regarding ISO or RISO during current reporting period.

The Impact of the ISO on Improving Industrial Safety

The ISO is one of four programs that work together to reduce the risk of accidental release from a regulated stationary source that could impact communities in Contra Costa County. Those programs are:

- The Process Safety Management Program administered by Cal/OSHA
- The federal Accidental Release Prevention Program administered by the U.S. EPA
- The California Accidental Release Prevention Program administered by CCHHMP
- The Industrial Safety Ordinance, also administered by CCHHMP.

Each of the programs is very similar in requirements. On October 1, 2017, California petroleum refineries are required to comply with requirements of CalARP Program 4 and OSHA PSM for refineries. Both are based on the ISO.

CalARP Program 3 differs from the Federal Accidental Release Prevention Program in the following ways:

- The number of chemicals regulated
- The threshold quantity of these chemicals
- An external events analysis, including seismic and security and vulnerability analysis, is required
- Additional information in the Risk Management Plan
- CCHHMP is required to audit and inspect stationary sources at least once every three years
- The interaction required between the stationary source and CCHHMP.

The ISO differs from CalARP Program 3, which the chemical facilities are required to follow, in the following ways:

- Stationary sources are required to include a root cause analysis with the incident investigations for Major Chemical Accidents or Releases

- The stationary sources are required to consider inherently safer systems for existing processes, in the development and analysis of recommended action items identified in a process hazard analysis, as part of a management of change review, as part of incident investigation or root cause analysis development of recommendation, and during the design of new processes, process units and facilities.
- All of the processes at the regulated stationary sources are covered.
- The implementation of a Human Factors Program evaluation of latent conditions in existing units, operating and maintenance procedures and in root cause analysis
- Managing changes in the organization for operations, maintenance and emergency response
- A requirement that the stationary sources perform a Security and Vulnerability Analysis and test the effectiveness of the changes made as a result of the Security and Vulnerability Analysis
- The stationary sources perform Safety Culture Assessments
- Conduct, document, and complete safeguard protection analysis associated with process hazard analysis to reduce catastrophic releases.
- Use and report of process safety performance indicators in the annual performance review and evaluation report.

Major Program difference of ISO from CalARP Program 4 and PSM for Refineries is that the Program 4 requirements include:

- Mechanical Integrity must include assessment of Damage Mechanism Review based on operating history and industry experience.
- Process Hazard Analysis must include review of Damage Mechanism Review report compiled as part of process safety information.
- Contractor and any subcontractors use a skilled and trained workforce pursuant to Health and Safety Code Section 25536.7
- Require a management system with specific requirements for managing and communicating recommendations from the prevention program elements.
- Require a Stop Work procedure and an anonymous hazard reporting system.

The Safety Culture Assessment guidance chapter was finalized in November 2009. The Industrial Safety Ordinance Guidance Document was updated to reflect all the updates in September 2010. The Accidental Release Prevention Engineers have participated with the Center for Chemical Process Safety on developing the second edition of Inherently Safer Chemical Processes, a book that is referenced in the ordinance and with the Center for Chemical Process Safety on developing process safety metrics for leading and lagging indicators. CCHHMP also participated in developing the third edition of CCPS: Inherently Safer Chemical Processes to further clarify and promote the practice and consideration of Inherently Safer System.

The success of Contra Costa's programs at reducing MCARs and improving facility safety practices have been frequently cited as exemplary or model policies within the regulatory community:

- Contra Costa County was recognized as an alternative model for doing process-safety inspections by the CSB in its report on a 2005 refinery accident in Texas City, TX. The board also mentioned Contra Costa in its DVD, "Anatomy of a Disaster: Explosion at BP Texas City Refinery," as a model resource.
- CSB Chair Carolyn W. Merritt also recognized Contra Costa County in testimony to the House of Representatives Committee on Education and Labor.
- Senator Barbara Boxer, during a 2007 hearing to consider John Bresland's nomination to chair of the CSB Board, asked Mr. Bresland about the Contra Costa County program for process safety audits of refineries and chemical companies.
- In its final investigation report of a 2008 incident at the Bayer Crop Science Institute in West Virginia, the CSB recommended that regulatory agencies in the area audit their chemical facilities using Contra Costa County's process. CCHHMP staff and a representative from the local United

Steelworkers Union were part of a panel when the CSB presented this report to the Kanawha Valley community.

- CCHHMP was asked to give testimony at a June 2010 hearing on “Workplace Safety and Worker Protections in the Gas and Oil Industry” before the U.S. Senate Committee on Health, Education, Labor, and Pensions Subcommittee on Employment and Workplace Safety regarding the success of Accidental Release Prevention Programs in place in Contra Costa County.
- In September 2012, CCHMP was asked to present at the “Expert Forum on the Use of Performance-based Regulatory Models in the U.S. Oil and Gas Industry: Offshore and Onshore” in Texas City, Texas to share the regulatory experience at Contra Costa County and give testimony on how local, state and federal agencies can work together and have an unprecedented alignment on regulations that is required for the same facilities. This meeting was spearheaded by Federal Occupational Safety and Health Administration and attended by Bureau of Safety and Environmental Enforcement, U.S. Coast Guard, U.S. EPA, Pipeline and Hazardous Materials Safety Administration, United Steelworkers, American Petroleum Institute, academia and industry representatives.
- CCHHMP staff also testified at a June 2013 hearing on “Oversight of Federal Risk Management and Emergency Planning Programs to Prevent and Address Chemical Threats, Including the Events Leading up to the Explosions in West, TX and Geismar, LA” before the U.S. Senate’s Committee on Environment and Public Works.

CONTRA COSTA HEALTH

ATTACHMENT A
HAZARDOUS MATERIALS OMBUDSMAN EVALUATION
January 1, 2022 – November 30, 2022

Introduction

On July 15, 1997 the Contra Costa County Board of Supervisors authorized creation of an Ombudsman position for the County's Hazardous Materials Programs. The first Hazardous Materials Ombudsman began work on May 1, 1998. The Contra Costa County Board of Supervisors adopted an Industrial Safety Ordinance on December 15, 1998. Section 450-8.022 of the Industrial Safety Ordinance requires the Health Services Department to continue to employ an Ombudsman for the Hazardous Materials Programs. Section 450-8.030(B)(vii) of the Industrial Safety Ordinance requires an annual evaluation of the effectiveness of the Hazardous Materials Ombudsman, with the first evaluation to be completed on or before October 31, 2000.

The goals of section 450-8.022 of the Industrial Safety Ordinance for the Hazardous Materials Ombudsman are:

1. To serve as a single point of contact for people who live or work in Contra Costa County regarding environmental health concerns, and questions and complaints about the Hazardous Materials Programs.

2. To investigate concerns and complaints, facilitate their resolution, and assist people in gathering information about programs, procedures, or issues.

3. To provide technical assistance to the public.

The Hazardous Materials Ombudsman currently accomplishes these goals through the following program elements:

1. Continuing an outreach strategy so that the people who live and work in Contra Costa County can know about and utilize the program.

2. Investigating and responding to questions and complaints, and assisting people in gathering information about programs, procedures, or issues.

3. Participating in a network of environmental programs for the purpose of providing technical assistance.

This evaluation covers the period from January 1, 2022 through November 30, 2022.
for the Hazardous Materials Ombudsman program. The effectiveness of the program shall be demonstrated by showing that the activities of the Hazardous Materials Ombudsman meet the goals established in the Industrial Safety Ordinance. Due to the COVID-19 pandemic, 2022 as an unusual year. For the entire year the Ombudsman worked from home and conducted all business by phone or via virtual meetings. For these reasons, many of the activities of the Ombudsman were reduced this in year relation to previous years.

Program Elements

1. Continuing an Outreach Strategy

   This period efforts were focused on maintaining the outreach tools currently available. The web page was maintained for the program as part of Contra Costa Health Services web site. This page contains information about the program, links to other related web sites, and information about upcoming meetings and events. A toll-free phone number is published in all three Contra Costa County phone books in the Government section.

2. Investigating and Responding to Questions and Complaints, and Assisting in Information Gathering

   During this period, the Hazardous Materials Ombudsman received 80 information requests. Over 95 percent of these requests occurred via the telephone and have mainly been requests for information about environmental issues. Requests via e-mail are slowly increasing, mainly through referrals from Health Services main web page. Most of these requests concern problems around the home such as asbestos removal, household hazardous waste disposal, pesticide misuse, mold and lead contamination.

   Information requests about environmental issues received via the telephone were generally responded to within one business day of being received. Many of the information requests were answered during the initial call. Some requests required the collection of information or written materials that often took several days to compile. Telephone requests were responded to by telephone unless written materials needed to be sent as part of the response.

   The Ombudsman responded to complaints by residents near the Blair Landfill in Richmond that homeless people might be camping on the site, which is a DTSC Hazardous Waste site. The Ombudsman worked closely with staff from DTSC and the County's Homeless program to evaluate the potential threat and establish routes of communication between the two programs.

   The Ombudsman provided assistance to a group of residents concerned about a DTSC cleanup of a contaminated site in North Richmond and participated in a tour of the area by the Environmental Safety Board by providing an Environmental Justice historical perspective on North Richmond.

   The Ombudsman participated in an agency workgroup responding to the Hydrogen Sulfide release in Crockett from the wastewater treatment plant.

   The Ombudsman conducted informational interviews with two college students

3. Participating in a Network of Environmental Programs for the Purpose of Providing Technical Assistance.

   Technical assistance means helping the public understand the regulatory, scientific, political, and legal aspects of issues. It also means helping them understand how to effectively communicate their concerns within these different arenas. This year, the Ombudsman continued to staff a number of County programs and participate in other programs to be able to provide technical assistance to the participants and the public. All of these programs were virtual this year due to the COVID-19 pandemic.

- **CAER (Community Awareness and Emergency Response)**-This non-profit organization addresses industrial accident prevention, response and communication. The Ombudsman participated in the Emergency Notification subcommittee of CAER.
- **Hazardous Materials Commission –** In 2001, the Ombudsman took over as staff for the Commission. As staff to the Commission, the Ombudsman conducts research, prepared reports, drafts letters and provides support for 3 monthly Commission meetings. This year, the Commission provided input to the Alamo Improvement Association on their pipeline website survey, made recommendations to the Transportation, Water and Infrastructure Committee of the Board of Supervisors concerning Business Perceptions of sea level rise, made recommendations to the Public Works Department on treated wood and PFAS policies for the update to the County's Environmentally Preferable Purchasing policy, made recommendations to the Board of Supervisors concerning the update to the County's General Plan, sponsored one student intern for the 2021/2022 school year and seated two student interns for the 2022/2023 school year, and recommended candidates to the Board of Supervisors for the General Public seat and alternate seat, and the Environmental Justice alternate seat.
- **Integrated Pest Management Advisory Committee –** During this period the Ombudsman represented the Health Department on the County Integrated Pest Management Advisory Committee. This Committee brings Department representatives and members of the public together to help implement the County's Integrated Pest Management policy.
- **Asthma Program** – The Ombudsman participated in the Public Health Department's Asthma Program as a resource on environmental health issues. The Ombudsman served on the Technical Advisory Board for RAMP, the Regional Asthma Management Prevention program, and supported the Public Health Department's participation in the AB 617 Community Air Quality program in Richmond. The Ombudsman also participated in presentations on the Asthma Mitigation Program to the CDPH Lead Poisoning Prevention Program, the California Healthy Homes Collaborative and the Annual Air and Waste Management Association.

  The Ombudsman continued to facilitate the implementation of two grants to provide asthma trigger mitigations and energy efficiency improvements to Contra Costa Health Plan Medi-Cal clients with poorly controlled asthma. The Ombudsman partnered with staff from MCE, AEA, the Department of Conservation and Development and the Contra Costa Health Plan to implement this program. One grant was for three years and $528,000 from the Sierra Health Foundation and the other was for one year and $100,000 from the Bay Area Air Quality Management District. The Ombudsman also continued to manage a two-year EPA grant for $200,000 to provide two community health clinics, Lifelong and La Clinica, funding to provide asthma trigger education and mitigations to their clients. The Ombudsman also worked with the Bay Area Air Quality Management District to successfully apply for another asthma grant for 2 years and $240,000 which he is facilitating that will provide asthma trigger mitigations and energy efficiency improvements to Contra Costa Health Plan Medi-Cal clients with poorly controlled asthma near mobile sources of pollution. The Ombudsman also submitted an application to the Bay Area Air Quality Management District to receive $30,000 worth of portable home air purifiers and replacement filters for Contra Costa Medi-Cal patients with asthma.

In the second half of the year, the Ombudsman began to participate in the California Healthy Homes Collaborative workgroups on Habitability and Indoor Air Quality.

- **Climate Change Program –** During this period the Ombudsman provided technical assistance to the Public Health Department on a variety of climate change issues. The Ombudsman participated in a Public Health workgroup to update the Climate Action Plan and the General Plan.
- **Health Careers Pathways –** The Ombudsman served as a mentor to a High School Student as part of the Health Careers Pathways summer internship program. This year, the intern from El Cerrito High School focused on the impacts of Climate Change and heat on her community.

The Hazardous Materials Ombudsman also attended workshops, presentations, meetings and trainings on a variety of environmental issues to be better able to provide technical assistance to the public. Topics included Environmental Justice, Air Quality, water quality, toxic chemicals, and asthma.

Program management

The Hazardous Material Ombudsman continued to report to the Climate and Health Officer. The Ombudsman was also a member of Health Services Emergency Management Team (EMT) and participated on its CoCo Cool management team.

Goals for the 2022-2023 period

In this period, the Ombudsman will provide essentially the same services to Contra Costa residents as was provided in the last period. The Ombudsman will continue to respond to questions and complaints about the actions of the Hazardous Materials Programs; answer general questions that come from the public and assist them in understanding regulatory programs; staff the Hazardous Materials Commission; represent the Public Health Department on the Integrated Pest Management Advisory Committee; and participate in the CAER Emergency Notification committee. The Ombudsman will continue to be part of the Health Department's Co Co Cool team and the Emergency Management Team.

During this period the Ombudsman will continue to support the Climate and Health Officer on Climate Change issues. The Ombudsman will continue to work with collaboratives at the local, regional and state level. The Ombudsman with continue to coordinate the implementation of the five grants that have been received by CCHS to provide asthma supportive services to Contra Costa residents.

CONTRA COSTA HEALTH

ATTACHMENT B
HAZARDOUS MATERIALS
COUNTY REGULATED SOURCES
ANNUAL PERFORMANCE
July 1, 2021 – June 30, 2022

Annual Performance Review and Evaluation Submittal
June 30, 2022

*Attach additional pages as necessary

1. Name and address of Stationary Source: **Air Liquide Rodeo Hydrogen Plant, 1391 San Pablo Ave, Rodeo, CA 94572**
2. Contact name and telephone number (should CCHMP have questions): Nidhi Jacob (281) 917-3895
3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): This facility utilizes the programs and procedures identified in the ISO Safety Program/Plan. Additionally, the site is in regular communication with the county regarding action items, and any other updates in general.
4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): Several Safety documents have been updated – Rodeo Hydrogen Production Facility Risk Management Plan updated with MI program details in Nov 2021, Rodeo SMR Emergency action Plan updated with new employee information and emergency gates information in Sept 2021
5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; (Martinez) Library (libraries closest to the stationary source).
6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)): There were no major chemical accidents or releases in the past 12 months.
7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): There were no major chemical accidents or releases in the past 12 months.
8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): There were no major chemical accidents or releases in the past 12 months
9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): Reviewed MOCs following ISS evaluation and change methodology.
10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): There were no enforcement actions during this period.
11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalities have been assessed against this facility.
12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the *ISO* (450-8.030(B)(4)): The total CalARP Program fees for the six facilities subject to the Industrial Safety Ordinance was $758,387. The total Industrial Safety Ordinance program fees for these six facilities was - $601,809. (NOTE: These fees include those for the County and City of Richmond ISO facilities)
13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 2668 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)): None.

15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): This chapter reinforces the need to maintain, follow and continuously improve our structured safety program to help ensure the safety of our employees and the communities in which we operate.
16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases LCC procedures reviews and Procedural PHAs were conducted in December 2021. PHA revalidation for the facility was completed in August 2021.
17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: Tabletop Emergency Action Plan Drill was conducted in October 2021 with Rodeo-Hercules Fire Dept, P66 Emergency Response, CCHS, Air Liquide HSE and Operational team
18. Date the last Safety Culture Assessment was completed: October – November 2019
19. Date the results of the Safety Culture Assessment were reported to the workforce and management: December 2019
20. Answer the following regarding the Safety Culture Evaluation Previous to the one listed in 18:
21. Survey method: 34 Question Survey with contractors & operations personnel
22. Areas of improvements being addressed: None based on the survey results. Following safe work culture is strongly exhibited at the Rodeo SMR.
23. Action Plan made Progress on the identified areas of improvement? (Yes or No) N/A
24. If yes, did the improvements meet the goals and if not, was the action plan amended to address what is being done to meet the goals? N/A
25. If no, has a new action plan been developed to address the identified areas of improvement? (Yes or No) N/A
26. Have milestones and metrics been developed to determine how the Safety Culture Assessment actions are being implemented? Yes, or if not, why not? N/A. Looking into developing metrics this year.
27. Describe the process in place that includes employees and their representatives that will determine if the action items effectively changed the expected culture items: The processes include CCHS ISO & Safety Plan audits, the inclusion of LCC & ISS within the ISO program, and organizations PSM efforts internal to Air Liquide
28. Date of the mid-cycle progress evaluation: N/A
29. Did the action plan (for no 18) make progress on the identified areas of improvement? Yes, or if not, has a new action pan been developed? (Yes or No) N/A
30. If a mid-cycle progress evaluation was performed during this reporting year, describe the process that included participation of employees or their representatives that determined whether the action items effectively changed the expected culture items: N/A

31. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	11	11	11	11	11	11	11	11	11	11	11	11	11
Repeat	11	11	11	11	11	11	11	11	11	11	11	11	11

Total number of circuits: 187 piping circuits & 36 vessels
Total number of annual planned circuit inspection: 11 water circuits deferred until July 2023 due to Low consequence of failure based on RBI study. Deferral letter attached

Past due PHA recommended actions, includes seismic and LCC recommended actions:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	2	2	2	2	2	2	2	1	1	1	1	1	1
Repeat	2	2	2	2	2	2	2	1	1	1	1	1	1

Past due Investigation recommended actions for API/ACC Tier1 and Tier 2 incidents:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

API/ACC Tier 1 and Tier 2 Incidents and rates starting 2011:

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. Tier 1 LOPC	0	0	0	0	0	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0	0	0	0	0	0
Refinery or Industry	0	0	0	0	0	0	0	0	0	0	0
Refinery or Industry	0	0	0	0	0	0	0	0	0	0	0
Tier 2 LOPC	0	0	0	0	0	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0	0	0	0	0	0
Refinery Rate [1]	0	0	0	0	0	0	0	0	0	0	0
Refinery Mean [2]	0	0	0	0	0	0	0	0	0	0	0

[1]Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1
[2]Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

32. Process Safety Performance Indicators for refineries only:
   I. Number of Major Incidents in 2021: None
   II. The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total*	0	0	0	0	0	0	0	0	0	0	0	0	0
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

*The total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems.

Annual Performance Review and Evaluation Submittal
June 30, 2022

*Attach additional pages as necessary

1. Name and address of Stationary Source: **Martinez Refining Company, 3485 Pacheco Blvd., Martinez, CA 94553**
2. Contact name and telephone number (should CCHMP have questions): Ken Axe: (925) 313-5371
3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): the 2019 RMP submitted under Shell has been updated to incorporate modifications resulting from the change of ownership to PBF Energy, resubmitted as a 2020 RMP update. MRC received a Notice of Deficiencies identifying one item that needs to be corrected. This will be corrected prior to August 20, 2022. The conducted program is being implemented in accordance with the plan, taking into account improvements and corrections identified in the triennial ISO/CalARP audit by CCHS in the first quarter of 2021.
4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): Safety Plan updates continue to be made in response to the 2021 CCHS audit. These updates will be complete before yearend 2022.
5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library (libraries closest to the stationary source).
6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450- 8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)):There have been no MCARs at MRC in the 12-month period Beginning July 1, 2021.
7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): There have been no RCAs for MCARs or potential MCARs in the 12-month period beginning July 1, 2021.
8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): 60 actions resulted from the ISO/CalARP audit conducted by CCHS between January 25 and March 3, 2021, including 28 Ensures and 32 Considers. 52 actions have already been completed. 3 Ensures and 5 considers remain. The last of the remaining actions is expected to be completed by 9/30/2022.
9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): See Attachment 1.
10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): There were no enforcement actions during this period.
11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against this facility.
12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): The total CalARP Program fees for the six facilities subject to the Industrial Safety Ordinance was $758,387 The total Industrial Safety Ordinance program fees for these six facilities was-$601,809. (NOTE: These fees include those for the County and City of Richmond ISO facilities)

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 2668 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)): None received.
15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): MRC has integrated requirements of the Industrial Safety Ordinance into our Process Safety Management System; in the context of our Process Safety Management System, the ISO requirements drive continual improvement in our HSE performance.
16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases. All process units are now covered under CalARP Program 4. Examples of changes made to the stationary source during the reporting year are summarized in Attachment 1 (see question 9).
17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There were no MCARs at the stationary source during the reporting year.
18. Date the last Safety Culture Assessment was completed: 3/31/2019.
19. Date the results of the Safety Culture Assessment were reported to the workforce and management: 4/10-22/2019.
20. Answer the following regarding the Safety Culture Evaluation Previous to the one listed in 18:
    - Survey method: Anonymous computer-based and paper-based survey.
    - Areas of improvements being addressed: Incident reporting and learnings from incidents, and rewards and recognition.
    - Action Plan made Progress on the identified areas of improvement? (Yes or No)
        - If Yes, did the improvements meet the goals and if not was the action plan amended to address what is being done to meet the goals? Goals for working off backlog of investigations, timely investigation completion, and timely communication of results have been achieved.
        - If No, has a new action plan been developed to address the identified areas of improvement? (Yes or No)
21. Have milestones and metrics been developed to determine how the Safety Culture Assessment actions are being implemented? Yes or if not, Why not? Yes, established as a result of mid-cycle assessment.
22. Describe the process in place that includes employees and their representatives that will determine if the action items effectively changed the expected culture items: Assessment team includes employee representatives.
23. Date of the mid-cycle progress evaluation: February 9, 2021
        - Did the action plan (for no 18) make progress on the identified areas of improvement? Yes or if not, has a new action pan been developed? (Yes or No)
24. If a mid-cycle progress evaluation was performed during this reporting year, describe the process that included participation of employees or their representatives that determined whether the action items effectively changed the expected culture items: Mid-cycle review predates this reporting year.

25. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of circuits: 11,498. Total number of annual planned circuit inspection: 796

Past due PHA recommended actions, includes seismic and LCC recommended actions

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Past due Investigation recommended actions for API/ACC Tier1 and Tier 2 incidents.

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

API/ACC Tier 1 and Tier 2 Incidents and rates starting 2011:

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. Tier 1 LOPC	1	1	1	0	1	0	2	1	2	0	1
Incident rate for Tier 1	0.07	0.07	0.08	0	0.07	0	0.11	0.06	0.12	0	0.10
Refinery or Industry Rate1	0.15	0.09	0.09	0.09	0.10	0.06	0.08	0.06	0.06	0.06	0.08
Refinery or Industry Mean 2	*	1.49	1.30	1.41	1.53	1.00	1.11	0.92	1.03	0.84	1.00
Tier 2 LOPC	2	0	5	2	5	1	2	2	5	1	0
Incident rate for Tier 2	0.14	0	0.41	0.11	0.42	0.06	0.11	0.11	0.31	0.11	0
Refinery Rate 1	*	0.24	0.25	0.24	0.21	0.17	0.19	0.17	0.16	0.13	0.18
Refinery Mean 2	*	*	*	3.59	3.07	2.75	2.75	2.79	2.67	1.80	2.28

1Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

2Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

26. Process Safety Performance Indicators for refineries only:

I. Number of Major Incidents in 2021: 0

II. The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total*	91	92	95	97	98	99	99	99	99	99	100	103	---
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

*The total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems.

Attachment 1: 2021 PHA Recommendations for 2022 ISO Annual Report

Count	ISS Category/Approach	Description
1	Active	Designate the check valves on the wash water makeup to Desalter #3 and #4 as "Class I (Critical) Check Valves" to address reference 14.1.4.2.1. This will increase the reliability of the check valves through increased inspection frequency to prevent back flow of Crude oil back through the wash water tank, Tk-1100, and help in in managing risk of hydrocarbon release, fire, and personnel injury.
2	Procedural	Create a new procedure to address the blocked-in discharge case for reference number 30.2.3.3.1. This will add a new operational procedure for the annual overspeed trip test when placing P2030 back into service and adding a critical step to ensure the suction and discharge block valves are open prior to starting up the pump. This will mitigate the risk of a condition potentially leading to a seal failure in managing risk of hydrocarbon release, fire, and personnel injury. (Operator Response)
3	Active/Moderate	P-13476/77 Seal pot high level in-house alarm and operator response In-house high-level seal pot alarm indicates pump malfunction or seal leak. (This alarm will minimize the impact of release of hazardous material or energy).
4	Active/Moderate	P-13478/79 Seal pot high-level in-house alarm and operator response In-house high-level seal pot alarm indicates pump malfunction or seal leak. (This alarm will minimize the impact of release of hazardous material or energy).
5	Active	Install vibration monitoring on P-15249 Stabilizer Tops to TK-1140 or CRU with shutdown (an alarm to TDC). Associated ESP limit with Operator response to trip pump on high vibration.
6	Active	Install vibration monitoring on P-16192 Jet Product Pump (Stabilizer Side Draw) with an alarm to TDC. Associated ESP limit with Operator response to trip pump on high vibration.
7	Active	Install vibration monitoring on P-15109 and P-2947 (Stabilizer Bottoms Pumps) with shutdown.
8	Active/Procedural	Configure alarm in ACM on 21PI477 with operator response.
9	Active	Upgrade 14ES005-01 SIF/IPF to SIL2 on the low air flow mitigation. This reduces the likelihood of occurrence by a factor of 10.
10	Active/Moderate	Add new language to existing ACM alarm to address the scenario with appropriate operator response for low flow alarm 46FC113.
11	Second Order/Moderate	Substitute either 100 PSIG nitrogen or 140 PSIG natural gas for the 1000 PSIG hydrogen
12	Active	Add high pressure alarm (PT1002) with operator response to prevent liquid overfill in Vent Gas Treater (C14490) if level control valve malfunction close.
13	Active	Update the Operator action in ACM for 16LC479 to address pump deadhead due to FV476 failing closed.
14	Active	Update the Operator action in ACM for 16LI109 to address pump deadhead due to HV1030 failing closed (when bypassing DSHT).
15	Active	Create an entry in ACM for 16L1011 to address overfilling the sump while draining spent caustic from V-1141.
16	Active	Designate the P-2586 discharge check valve a Class I check valve to prevent sump overfill due to reverse flow scenario.
17	Active	Create an entry in ACM for alarm 16L143 to address pump deadhead due to LC-144 loop failure.
18	Active	Create an entry in ACM for 1FC172 to address pump deadhead due to XV-152A/X or XV-904 failing closed.
19	Procedural	Car seal open the P-5274/5275 minimum flow bypass valve to prevent pump deadhead scenario.
20	Passive	Install the missing brace member on E-1271 support structure. (Seismic recommendation)

Annual Performance Review and Evaluation Submittal
July 29, 2022

*Attach additional pages as necessary

1. Name and address of Stationary Source: **Air Products PBF/MRC Martinez Refinery, 110 Waterfront Road, Martinez, CA 94553**
2. Contact name and telephone number (should CCHMP have questions): Joe Cremona, 925-270-9691
3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): The stationary source's safety plan was submitted to CCHS in October 2020. CCHS audited the site in Q4 2020, and the audit was finalized in 2022.
4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): The October 2020 Safety Plan submission included routine updates to sections describing Process Safety Programs and changes required from previous audit items. There were no MCARS so no additions to that section in the Safety Plan. As a result of the most recent CCCHS audit, there will be updates to added as prescribed by the findings. These updates have yet to be finalized.
5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library (libraries closest to the stationary source).
6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)): There have been no incidents (MCARs) in the last 12 months
7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): No Root Cause Analysis were required in the last calendar year and there are no outstanding action items from previous root cause investigations.
8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): Recommendations from the 3-year CCCHS audit have been finalized with the county. 2 of the 16 ensure items have been completed and site operations are progressing through the remainder of the ensures and considers.
9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): No new inherently safer systems were implemented in 202: New logic implementations for PSA bypass and PG Fuel cut (simplification)
10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): There were no enforcement actions during this period.
11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against this facility.
12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): The total CalARP Program fees for the six facilities subject to the Industrial Safety Ordinance was $758,387. The total Industrial Safety Ordinance program fees for these six facilities was - $601,809. (NOTE: These fees include those for the County and City of Richmond ISO facilities)

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 2668 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)): None were received.
15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): Air Products is committed to the safer operation of our facilities and has implemented applicable requirements outlined in the ISO and CalARP regulations. Both the ISO and Human Factors programs are an integral part of our five-year Operating Hazard Review revalidations and ongoing management of change process. The most recent OPHR (PHA) was conducted in February 2020. There have been no incidents resulting in an offsite impact. The Chapter has helped reinforce the need to maintain and follow a structured safety program to help ensure the safety of our employees and the communities in which we operate. The site conducted its Safety Culture assessment in August and September 2019.
16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases: None in 2021
17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: None.
18. Date the last Safety Culture Assessment was completed: August 2019
19. Date the results of the Safety Culture Assessment were reported to the workforce and management: 9/16-18, 2019.
20. Answer the following regarding the Safety Culture Evaluation Previous to the one listed in 18:
21. Survey method: Electronic Anonymous survey
22. Areas of improvements being addressed: Actions focus on improving Accident Prevention Techniques (APTs), safety suggestions and near miss reporting. BSPs (Monthly Safety Meetings) used as the forum for communication.
23. Action Plan made Progress on the identified areas of improvement? (Yes or No)
24. If yes, did the improvements meet the goals and if not, was the action plan amended to address what is being done to meet the goals? N/A
25. If no, has a new action plan been developed to address the identified areas of improvement? (Yes or No)
26. Have milestones and metrics been developed to determine how the Safety Culture Assessment actions are being implemented? Yes, or if not, why not? N/A – only Program 4 requires this.
27. Describe the process in place that includes employees and their representatives that will determine if the action items effectively changed the expected culture items: The next survey results will show whether actions were effective.
28. Date of the mid-cycle progress evaluation: N/A – Program 4 only
29. Did the action plan (for no 18) make progress on the identified areas of improvement? Yes, or if not, has a new action pan been developed? (Yes or No) N/A
30. If a mid-cycle progress evaluation was performed during this reporting year, describe the process that included participation of employees or their representatives that determined whether the action items effectively changed the expected culture items: N/A Program 4 only.

31. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of circuits: 102 Circuits Inspected in FY21
Total number of annual planned circuit inspection: 105 Circuits Planned for Inspection in FY22

Past due PHA recommended actions, includes seismic and LCC recommended actions:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Past due Investigation recommended actions for API/ACC Tier1 and Tier 2 incidents:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

API/ACC Tier 1 and Tier 2 Incidents and rates starting 2011:

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. Tier 1 LOPC	0	0	0	0	0	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0	0	0	0	0	0
Refinery or Industry Rate[1]	.155	.099	.094	.092	.103	.062	.070	.053	.067		
Refinery or Industry Mean [2]											
Tier 2 LOPC	0	0	0	0	0	0	0	0	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0	0	0	0	0	0
Refinery Rate [1]	.24	.253	.238	.206	.172	.179	.172	.170			
Refinery Mean [2]											

[1]Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1
[2]Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

32. Process Safety Performance Indicators for refineries only:
   I. Number of Major Incidents in 2020:
   II. The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total*													
Overdue													
Repeat													

*The total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems.

Annual Performance Review and Evaluation Submittal
June 30, 2022

*Attach additional pages as necessary

1. Name and address of Stationary Source: **Phillips 66 Rodeo Refinery, 1380 San Pablo Avenue, Rodeo, CA 94572**
2. Contact name and telephone number (should CCHMP have questions): Morgan Walker 510-245-4665
3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): The Safety Plan was last updated in August of 2021. The Phillips 66 Refinery was audited by the county's Hazardous Materials Program in January 2020.
4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): The last submittal of the Safety Plan was August 6, 2021. P66 was informed that the safety plan was final on June 1, 2022, after the county completed a public notice process.
5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Crockett and Rodeo Libraries (libraries closest to the stationary source).
6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450- 8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450- 8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)): There were no major chemical accidents or releases at the Rodeo Refinery in the June 1, 2021 to May 31, 2022 reporting time period.
7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): There were no root cause analysis of major chemical accidents or releases at the Rodeo Refinery in this reporting time period.
8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): There are 20 Ensure and 34 Consider recommendations from the 2020 county ISO-CalARP audit. Phillips 66 responded to the Administrative Draft Audit Report on December 18, 2020. There were no other audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department. The remaining 3 ensure items are schedule for completion before December 15th, 2022. Three of the four remaining consider items are scheduled for completion in June 2022. The final consider item, an RMP update is scheduled for September 2024.
9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): See ATTACHMENT 1 for the listing of Inherently Safer Systems Improvements that were implemented.
10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): There were no enforcement actions during this period.
11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against this facility.
12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): The total CalARP Program fees for the six facilities subject to the Industrial Safety Ordinance was $758,387 The total Industrial Safety Ordinance program fees for these six facilities was - $601,809. (NOTE: These fees include those for the County and City of Richmond ISO facilities)
13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 2668 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.

14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)): No comments were received.
15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): In addition to the Phillips 66 Corporate Health Safety Environment Management Systems, the ISO provides another tool for the improvement of process safety performance and industrial safety.
16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases. Units that were not covered by RMP, CalARP, and PSM are covered under the ISO and PHAs are scheduled and performed on all these units. Recommendations from the PHAs are implemented at an accelerated rate. A list of inherently safer system improvements, required by the ISO for PHA recommendations and projects, are listed in ATTACHMENT 1.
17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There were no major chemical accidents or releases at the Rodeo Refinery in this reporting time period.
18. Date the last Safety Culture Assessment was completed: 4/15/2016. The 2020 SCA was delayed due to COVID-19 restrictions. A 2022 PSCA/SCA is nearing completion.
19. Date the results of the Safety Culture Assessment were reported to the workforce and management: Workforce 6/24/2016 Management 4/15/16.
20. Answer the following regarding the Safety Culture Evaluation Previous to the one listed in 18:
    - Survey method: written survey
    - Areas of improvements being addressed: as previously reported:
        - No areas were identified as scoring significantly below normal values.
            - Improvements require too many reviews/approvals.
            - Employees are reluctant to reveal problems or errors.
            - Having enough qualified people to do the work in their area.
    - Action Plan made Progress on the identified areas of improvement? YES
        - If Yes, did the improvements meet the goals and if not was the action plan amended to address what is being done to meet the goals? Yes, progress was made, and improvements observed in the subsequent SCA. Improvement opportunities were identified in the most recent SCA and recommendations identified.
        - If No, has a new action plan been developed to address the identified areas of improvement? (N/A)
21. Have milestones and metrics been developed to determine how the Safety Culture Assessment actions are being implemented? Yes or if not, Why not? YES. Specific improvements were identified by a management & union team and implemented.
22. Describe the process in place that includes employees and their representatives that will determine if the action items effectively changed the expected culture items: A midcycle team review was done to evaluate the effects of the actions on the safety culture. The evaluation team included management and union representatives per policy.
23. Date of the mid-cycle progress evaluation: November 1, 2019
        - Did the action plan (for no 18) make progress on the identified areas of improvement? Yes or if not, has a new action pan been developed? (Yes or No) YES
24. If a mid-cycle progress evaluation was performed during this reporting year, describe the process that included participation of employees or their representatives that determined whether the action items effectively changed the expected culture items: No midcycle evaluation performed this year.

25. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	1	0	0	0	0	0	0	0	0	0	0	1
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of circuits: 31,383 Total number of annual planned circuit inspection: 1897

Past due PHA recommended actions, includes seismic and LCC recommended actions:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Past due Investigation recommended actions for API/ACC Tier1 and Tier 2 incidents:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

API/ACC Tier 1 and Tier 2 Incidents and rates starting 2011:

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. Tier 1 LOPC	2	3	0	0	2	0	0	0	0	0	0
Incident rate for Tier 1	0.17	0.29	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Refinery or Industry Rate1	0.15	0.09	0.09	0.09	0.10	0.06	0.07	0.06	0.06	0.06	0.08
Refinery or Industry Mean 2	*	1.49	1.30	1.38	1.55	1.01	1.13	0.92	1.03	0.84	1.00
Tier 2 LOPC	5	3	0	1	2	2	2	0	2	2	1
Incident rate for Tier 2	0.43	0.29	0.00	0.10	0.21	0.17	0.22	0.00	0.16	0.21	0.10
Refinery Rate 1	*	0.24	0.25	0.23	0.20	0.17	0.18	0.17	0.16	0.13	0.18
Refinery Mean 2	*	*	*	*	3.08	2.78	2.73	2.79	2.67	1.80	2.30

1Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification.
Chemical plants to report publicly available mean only for ACC Tier 1

2Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification.
Chemical plants to report publicly available mean only for ACC Tier 1

* AFPM Refinery Tier 1 and 2 Rates and Means are not available for these time periods.

26. Process Safety Performance Indicators for refineries only:

I. Number of Major Incidents in 2021: 0

II. The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total*	38	36	36	36	42	44	45	45	45	45	55	57	57
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

*The total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems.

ATTACHMENT 1

June 2021- June 2022 ISS improvements			
Reference	ISS Category	ISS Approach	MOC Description
M20183998-001	Procedural	Simplify	Install D-801 and D-802 Reflux Sample Stations as a monitor of ammonia content to prevent failure of carbon steel components.
M20184117-001	Procedural	Moderate	Independent High-Level Alarms for Atm Storage Tanks (MTC – 2 Tanks)
M20193185-009	Passive	Moderate	U200 Pump Seal Upgrades for G-62B-2 (replacing lube oil pumps with a magnetic drive style of pump to eliminate mechanical seal).
M20196480-005	Passive	Moderate	Replacement of Transformer N-TR-1067 to stainless steel for corrosion protection
M20201691-001	Passive	Simplify	A permanent pump discharge system was installed to remove rising petroleum-contaminated groundwater to the Bay that accumulates when the automated primary pumping system is non-operational.
M20201921-001	Active	Simplify	U200 Upgrade G-60A/B/C Shutdowns to SIL 1
M20202574-001	Procedural	Simplify	Update Emergency U-76 Isolation procedure
M20205240-001	Passive	Moderate	Upgrade Sulfur Plant Cooling Tower Bleach Injection piping from PVC to CPVC
M20206174-001	Passive	Moderate	Dual seal upgrades on 3 pumps in U233
M20206663-001	Active	Simplify	Altering the set point on the U-110 PSA low product pressure shutdown and adding automatic reset of trip.
M20211147-001	Procedural	Simplify	Groundwater Barrier Remediation System SCADA/PLC Upgrade
M20212077-001	Procedural	Simplify	ROL Revalidation/review using new WGLL Tables
M20212153-001	Procedural	Simplify	Spalling Procedure Update & ROL Table Update
M20212215-003	Procedural	Simplify	Catalyst Chemical Injection Procedure for U250
M20213126-001	Passive	Moderate	Upgrading double jacketed gasket with Kamprofile style gasket for heat exchanger E-505.
M20213190-001	Procedural	Simplify	Update RD-U200-NOP-0900-5 Decoking Procedure
M20213447-001	Procedural	Simplify	Cleaning procedure for U267 based on its idled condition.
M20213743-001	Procedural	Simplify	Update NOP-208T-SPP, "GTG Startup (Triconex)"
M20213878-001	Inherent	Substitute	TK 288 Piping and PSV-U-566, 568, 576, and 578 Out of Service
M20216568-001	Procedural	Moderate	Implement New Medium ROLs Based on DMR
M2021882-001	Passive	Moderate	U250 Pump Safeguarding Requirements with added pressure transmitters
M2021977-001	Procedural	Moderate	New Alarms on SPP Individual COEN Firing Rate EOLs

CONTRA COSTA HEALTH

ATTACHMENT C
HAZARDOUS MATERIALS
RICHMOND REGULATED SOURCES
ANNUAL PERFORMANCE
July 1, 2021 – June 30, 2022

Annual Performance Review and Evaluation Submittal
07/29/2022

*Attach additional pages as necessary

1. Name and address of Stationary Source**: Chemtrade Logistics West US, LLC. 525 Castro Street, Richmond, CA 94801**
2. Contact name and telephone number (should CCHMP have questions): Paola Soto- EHS Manager (510) 954-1384
3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): Site's ERP has been updated to reflect changes in personnel and annual revision of the Emergency Response Procedure program was performed. The site's safety plan is up to date in accordance with Chemtrade's Safety Manual. No major findings were discovered during this period.
4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): Safety training continues to be performed online. Safety inspections (including housekeeping) are done monthly.
5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Richmond Library (libraries closest to the stationary source).
6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450-8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)): No major spills or releases have occurred during the reporting period.
7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): No major spills or releases have occurred during the reporting period.
8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)) CCHSHMP identified 9 deficiencies and 41 partial deficiencies in existing programs. CCHSHMP also generated 33 corrective actions to improve upon programs that already comply. with the requirements of the CalARP Program Regulations and ISO/RISO.
9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): Chemtrade works with their workforce to ensure only the minimum amount of hazardous waste is generated as part of the hazardous waste minimization efforts. Source has eliminated the production of oleum as of December 2020.
10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): There were no enforcement actions during this period.
11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against this facility.
12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): The total CalARP Program fees for the six facilities subject to the Industrial Safety Ordinance 8was $758,387. The total Industrial Safety Ordinance program fees for these six facilities was $601,809. Note: this includes the Richmond ISO facilities.
13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 2668 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues(450-8.030(B)(6)): No additional comments have been received by the source.

15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): The ISO ordinance helps the site to continually improve its implementation of new policies and changes to processes by encouraging more thorough system reviews, executing a more inclusive Human Factors program, and continually promoting Inherently Safer Systems.
16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases. Site has made significant improvements to its MOC, PHA and ISS programs due to the Industrial Safety Ordinance. See question 7 for list of findings, corrective actions taken and status of the corrective actions. We updated the pressure control scheme on the Deaerator to better control steam addition to the vessel.
17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: No major chemical accidents or releases since last report.
18. Date the last Safety Culture Assessment was completed: April 2021
19. Date the results of the Safety Culture Assessment were reported to the workforce and management: April 2022
20. Answer the following regarding the Safety Culture Evaluation Previous to the one listed in 18:
    - Survey method: Online confidential survey, provided by Glint.
    - Areas of improvements being addressed: Equal Opportunity, Purpose, Inclusion, Growth, Leadership and Culture.
    - Action Plan made Progress on the identified areas of improvement? (Yes or No)
        - If Yes, did the improvements meet the goals and if not was the action plan amended to address what is being done to meet the goals? In progress
          The results were received in 2022 and are still being evaluated so that an action plan can be prepared.
        - If No, has a new action plan been developed to address the identified areas of improvement? (Yes or No) Work in progress.
21. Have milestones and metrics been developed to determine how the Safety Culture Assessment actions are being implemented? Yes or if not, Why not? Metrics and milestones include areas such as purpose, feedback, team, inclusion. The safety culture survey was received, and it is currently being evaluated by the corporate department at a global lever to include an execution of any plan developed across all sites.
22. Describe the process in place that includes employees and their representatives that will determine if the action items effectively changed the expected culture items: Will be determined once the safety culture results are completely evaluated and addressed., A new action plan will be developed post safety culture assessment conducted in 2022.
23. Date of the mid-cycle progress evaluation:
    - Did the action plan (for no 18) make progress on the identified areas of improvement? Yes or if not, has a new action pan been developed? (Yes or No)
24. If a mid-cycle progress evaluation was performed during this reporting year, describe the process that included participation of employees or their representatives that determined whether the action items effectively changed the expected culture items:

25. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits: No overdue inspections at this moment:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of circuits: 382 Total number of annual planned circuit inspection: 382

Past due PHA recommended actions, includes seismic and LCC recommended actions:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

A new seismic survey has been completed on 7/22/2022 and that data is currently being reviewed.

Past due Investigation recommended actions for API/ACC Tier1 and Tier 2 incidents:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0							
Repeat	0	0	0	0	0	0							

API/ACC Tier 1 and Tier 2 Incidents and rates starting 2011:

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. Tier 1 LOPC	0	0	0	0	0	0	0	0	0	0	0
Incident rate for Tier 1	0	0	0	0	0	0	0	0	0	0	0
Refinery or Industry Rate1	0	0	0	0	0	0	0	0	0	0	0
Refinery or Industry Mean 2	0	0	0	0	0	0	0	0	0	0	0
Tier 2 LOPC	0	0	0	0	0	0	0	1	0	0	0
Incident rate for Tier 2	0	0	0	0	0	0	0	1.8	0	0	0
Refinery Rate 1											
Refinery Mean 2											

1Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

2Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

26. Process Safety Performance Indicators for refineries only:
   I. Number of Major Incidents in 2020: N/A
   II. The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total*													
Overdue													
Repeat													

*the total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems

Annual Performance Review and Evaluation Submittal
June 30, 2022

*Attach additional pages as necessary

1. Name and address of Stationary Source: **Chevron U.S.A. Inc. (CUSA), Richmond Refinery, 841 Chevron Way, Richmond, California 94801**
2. Contact name and telephone number (should CCHMP have questions): Maggie Botka, 510-242-3361
3. Summarize the status of the Stationary Source's Safety Plan and Program (450-8.030(B)(2)(i)): The CUSA Richmond Refinery (Refinery) initial Site Safety Plan (SSP) was completed in 2003, and the most recent revision is dated July 24, 2021. The SSP was prepared in accordance with the City of Richmond Industrial safety Ordinance (RISO), which was adopted by the Richmond City Council on January 17, 2002.
4. Summarize Safety Plan updates (i.e., brief explanation of update and corresponding date) (450-8.030(B)(2)(ii)): The SSP was updated in 2021. The next revision will be shared in 3Q2024.
5. List of locations where Safety Plans are/will be available for review, including contact telephone numbers if the source will provide individuals with copies of the document (450-8.030(B)(2)(ii)): CCHMP Office at 4585 Pacheco Boulevard, Suite 100, Martinez; Martinez Library; Richmond Public Library at 325 Civic Center Plaza Richmond, CA 94804; and Point Richmond Public Library at 135 Washington Ave., Richmond, CA 94801.
6. Provide any additions to the annual accident history reports (i.e. updates) submitted pursuant to Section 450- 8.016(E)(2) of County Ordinance 98-48 (450-8.030(B)(2)(iii)) (i.e., provide information identified in Section 450-8.016(E)(1) for all major chemical accidents or releases occurring between the last annual performance review report and the current annual performance review and evaluation submittal (12-month history)): There were no major chemical accidents or releases ("MCAR") as defined in Section 450-8.014(h) between June 1, 2021, and June 1, 2022.
7. Summary of each Root Cause Analysis (Section 450-8.016(C)) including the status of the analysis and the status of implementation of recommendations formulated during the analysis (450-8.030(B)(2)(iv)): There were no MCAR events between June 1, 2021, and June 1, 2022.
8. Summary of the status of implementation of recommendations formulated during audits, inspections, Root Cause Analyses, or Incident Investigations conducted by the Department (450-8.030(B)(2)(v)): The 2011 Cal APR/ISO Audit had 73 ensure and consider recommendations, from which 85 total action items were created, and 85 of those action items are complete. The final report and action plans from the 2013 Cal ARP/Richmond ISO audit were accepted by the County and Richmond Refinery in 2015. The 2013 Cal ARP/ISO audit had 163 ensure and consider recommendations, from which 177 total action items were created, and 177 of those action items are complete. The report and action plans from the 2016 Cal ARP/Richmond ISO audit had 74 ensure and consider recommendations, from which 80 total action items were created, and 80 of those action items are complete. The ensure and consider items for the 2016 audit were finalized on November 6, 2017. The 2019 Cal ARP/ISO audit closing meeting was held on June 28th, 2019. There were 97 ensure and consider recommendations, from which 110 total action items were created, and 110 of those action items are complete. The ensure and consider items for the 2019 audit were finalized on January 30, 2020.
9. Summary of inherently safer systems implemented by the source including but not limited to inventory reduction (i.e., intensification) and substitution (450-8.030(B)(2)(vi)): See Attachment 1 on page 5.
10. Summarize the enforcement actions (including Notice of Deficiencies, Audit Reports, and any actions turned over to the Contra Costa County District Attorney's Office) taken with the Stationary Source pursuant to Section 450-8.028 of County Ordinance 98-48 (450-8.030(B)(2)(vii)): There were no enforcement actions during this period.
11. Summarize total penalties assessed as a result of enforcement of this Chapter (450-8.030(3)): No penalties have been assessed against this facility.
12. Summarize the total fees, service charges, and other assessments collected specifically for the support of the ISO (450-8.030(B)(4)): The total CalARP Program fees for the six facilities subject to the Industrial Safety Ordinance was $758,387 The total Industrial Safety Ordinance program fees for

these six facilities was - $601,809. (NOTE: These fees include those for the County and City of Richmond ISO facilities).

13. Summarize total personnel and personnel years utilized by the jurisdiction to directly implement or administer this Chapter (450-8.030(B)(5)): 2668 hours were used to audit/inspect and issue reports on the Risk Management Chapter of the Industrial Safety Ordinance.
14. Copies of any comments received by the source (that may not have been received by the Department) regarding the effectiveness of the local program that raise public safety issues (450-8.030(B)(6)): No comments were received during this period regarding the effectiveness of the local program that raise public safety issues.
15. Summarize how this Chapter improves industrial safety at your stationary source (450-8.030(B)(7)): Operating safely is one of CUSA's core values and underpins our commitment to enhancing our process safety programs. The RISO assists CUSA in improving our process safety performance. We have worked closely with CCHMP in its implementation of the RISO and its oversight of our operations, including during its periodic reviews of our operations. Consistent with this commitment, and as part of the company's efforts to continually improve its process safety performance, CUSA will continue to confer with the CCHMP as it refines and implements these actions.
16. List examples of changes made at your stationary source due to implementation of the Industrial Safety Ordinance (e.g., recommendations from PHA's, Compliance Audits, and Incident Investigations in units not subject to CalARP regulations; recommendations from RCA's) that significantly decrease the severity or likelihood of accidental releases: In addition to the Inherently Safer Systems implemented in Question 9, CUSA has also made other changes to the facility pursuant to the RISO and beyond to decrease the severity or likelihood of accidental releases. A few examples include the following:
    - Changes implemented in these categories between June 2021 to June 2022.
        - Enhanced LOTO field engagements from leaders.
        - Enhanced the start of shift agenda to focus on discussing high risk activities and the identification of safeguards between maintenance and operations
        - Updated operator rounds to verify proper function of existing seal system for high consequence pumps all over the yard.
        - Updated sour water processing plant procedure to reduce potential for corrosion.
        - Richmond has developed a comprehensive Centrifugal Pump Seal Upgrade (CPSU) program. Centrifugal pump seal upgrades are inherently safer solutions. Seal upgrades will either reduce or eliminate the hazard associated with seal failure.
        - Continued effort to conduct procedural PHAs across refinery units to identify and mitigate potential human factors that may lead to loss of containment, with a focus on emergency, startup, and shutdown procedures.
        - Implemented asset strategies for applicable instruments and equipment from PHA-SPA checklists.
        - Continued implementation and assessment of overfill protection and backflow prevention systems during PHA-SPAs.
17. Summarize the emergency response activities conducted at the source (e.g., CWS or TEN activation) in response to major chemical accidents or releases: There were no level two or three CWS or TENS activations between June 1, 2021, and June 1, 2022.
18. Date the last Safety Culture Assessment was completed: Data collected October 2020 and reported to the workforce on July 2021.
19. Date the results of the Safety Culture Assessment were reported to the workforce and management: July 2021.
20. Answer the following regarding the Safety Culture Evaluation Previous to the one listed in 18:
    - Survey method: Online survey
    - Areas of improvements being addressed: Training, resource planning, staffing / succession planning.
    - Action Plan made Progress on the identified areas of improvement? (Yes or No) Yes

- If Yes, did the improvements meet the goals and if not was the action plan amended to address what is being done to meet the goals? Yes, action plan and metrics developed. In the process of being monitored.
- If No, has a new action plan been developed to address the identified areas of improvement? (Yes or No) N/A

21. Have milestones and metrics been developed to determine how the Safety Culture Assessment actions are being implemented? Yes, or if not, Why not? Yes, milestones and metrics are tracked in Chevron systems of record.
22. Describe the process in place that includes employees and their representatives that will determine if the action items effectively changed the expected culture items: Employees and their representatives were involved in the review of data, development of the improvement suggestions as well as the development of the final action items. Through the process of meeting with the representatives we came to agreement on what data needed an action and what action would solve the milestones.
23. Date of the mid-cycle progress evaluation: Not required until 2023 from the RI-333. The PSCA team (with Union Representatives) shall conduct a written Interim Assessment of the implementation and effectiveness of each PSCA corrective action within three (3) years following the completion of a PSCA report. If a corrective action is found to be ineffective, the employer shall implement changes necessary to ensure effectiveness in a timely manner not to exceed six (6) months.
    - Did the action plan (for no 18) make progress on the identified areas of improvement? Yes or if not, has a new action pan been developed? (Yes or No) N/A
24. If a mid-cycle progress evaluation was performed during this reporting year, describe the process that included participation of employees or their representatives that determined whether the action items effectively changed the expected culture items: N/A.

25. Common Process Safety Performance Indicators:

Overdue inspection for piping and pressure vessels based on total number of circuits:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Total number of circuits: 7,226* Total number of annual planned circuit inspection: 1,605*

*An ongoing project is re-evaluating piping circuit designations to align each circuit with the anticipated damage mechanisms. As the project progresses, the total number of piping circuits and subsequently, the number inspected, will change to accommodate the long-term strategy for inspections and reliability.

Past due PHA recommended actions, includes seismic and LCC recommended actions:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

Past due Investigation recommended actions for API/ACC Tier1 and Tier 2 incidents:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

API/ACC Tier 1 and Tier 2 Incidents and rates starting 2011:

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
No. Tier 1 LOPC	4	3	0	1	2	1	1	1	0	0	1
Incident rate for Tier 1	0.14	0.11	0.00	0.02	0.05	0.02	0.02	0.01	0.00	0.00	0.04
Refinery or Industry Rate1	0.1553	0.0995	0.0947	0.0925	0.1038	0.0627	0.0761	0.0570	0.0608	0.0612	TBD
Refinery or Industry Mean 2	**	1.49	1.30	1.38	1.55	1.01	1.13	0.92	1.03	0.84	TBD
Tier 2 LOPC	5	8	6	3	1	3	5	4	0	1	2
Incident rate for Tier 2	0.18	0.29	0.19	0.07	0.02	0.07	0.10	0.06	0.00	0.031	0.079
Refinery Rate 1	**	0.2405	0.2531	0.2380	0.2063	0.1726	0.1843	0.1728	0.1574	0.1311	TBD
Refinery Mean 2	**	**	**	**	3.08	2.78	2.73	2.79	2.67	1.80	TBD

1Petroleum refineries to report publicly available refinery rate for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

2Petroleum refineries to report publicly available refinery mean for API Tier 1 and Tier 2 classification. Chemical plants to report publicly available mean only for ACC Tier 1

26. Process Safety Performance Indicators for refineries only:
   I. Number of Major Incidents in 2021: 0
   II. The number of temporary piping and equipment repairs that are installed on hydrocarbon and high energy utility systems that are past their date of replacement with a permanent repair:

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Total*	67	38	39	39	41	41	42	47	49	49	49	50	50
Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0
Repeat	0	0	0	0	0	0	0	0	0	0	0	0	0

*The total number of temporary piping and equipment repairs installed on hydrocarbon and high energy utility systems.

Attachment 1 – Question 9

Risk Reduction Category	ISS Approach	Description
Inherent	Simplify	Upgrade plant piping per damage mechanism review to reduce risk of ammonium bisulfide corrosion.
Active	Safeguard	Eliminated known relief deficiencies on a plant ammonia system. Scope included upsizing multiple PRDs and their respective inlet piping, adding drainage capabilities, as well as adding a new PRD to a seal flush cooler.
Inherent	Simplify	Upgraded a part of a sulfur recovery unit's piping to stainless steel to eliminate the risk of corrosion in case of acid backflow.
Active	Safeguard	Implemented multiple safety instrumented functions on furnace air chopper valves to properly mitigate scenarios that could result in major incidents from loss of containment.
Active	Safeguard	Upgraded a sulfur recovery unit's furnace shutdown safety instrumented functions such that they meet their required level of protection for that system.

CONTRA COSTA
HEALTH

HAZARDOUS MATERIALS PROGRAMS
A Division of Contra Costa Health