



Process Based Inspections

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United States Environmental Protection Agency

Hazardous Waste and Chemical Section

Enforcement and Compliance Assurance Division

Code W-M2

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**26th California Unified Program
Annual Training Conference
February 26-29, 2024**



Process Based Inspections

Rick Sakow, Enforcement Manager, EPA Region 9
February 28, 2024

A large white industrial tank with a spiral staircase. Three workers in orange safety gear and white hard hats are climbing the stairs. The number '103' is visible on the tank's surface.

103

- Learn when a Process Based Inspection (PBI) are helpful
- Understand components of a PBI
- Resources Available
- Recon and Preparation



Disclaimers

- This training describes existing statutory and regulatory requirements and current U.S. Environmental Protection Agency's policy as of the date of issuance. The information in this training cannot be relied upon to create any rights enforceable by any party.
- Each inspection is unique, and this training does not cover all aspects of RCRA inspection or findings found therein.
- Certain states may have more stringent requirements than the Federal regulations.



What is RCRA?

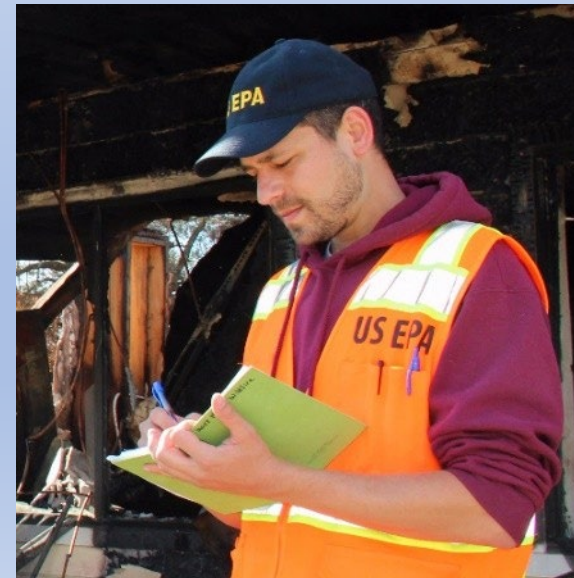


- The Resource Conservation and Recovery Act was passed in 1976 and gives EPA the authority to control hazardous waste from “cradle to grave.”
- RCRA encompasses all aspects of hazardous waste including generation, transportation, treatment, storage, and disposal.
- The 1984 amendments focused on waste minimization and phasing out land disposal of hazardous waste.
- Increased enforcement authority for EPA.



Wood Products Inc

UN waste code	Waste description	Packing group	Quantity	Quantity unit	EPA waste code
005	HAZARDOUS WASTE ALKALI METAL DISPERSIONS, A.S. PG I				
005	HAZARDOUS WASTE ALKALI METAL DISPERSIONS, A.S. PG I				



Routine Regulatory Inspections

- Inspect hazardous waste central accumulation area. Evaluate container management, labeling.
- Inspect satellite generation areas.
- Review Training Records, Contingency Plan, other docs.



Routine inspections reveal common RCRA violations:

Container Violations:

- Storage over 90 days,
- Open containers,
- Leaking containers,
- Unlabeled / undated containers,
- Aisle space,
- Incompatible storage,
- Satellite Accumulation Area violations.

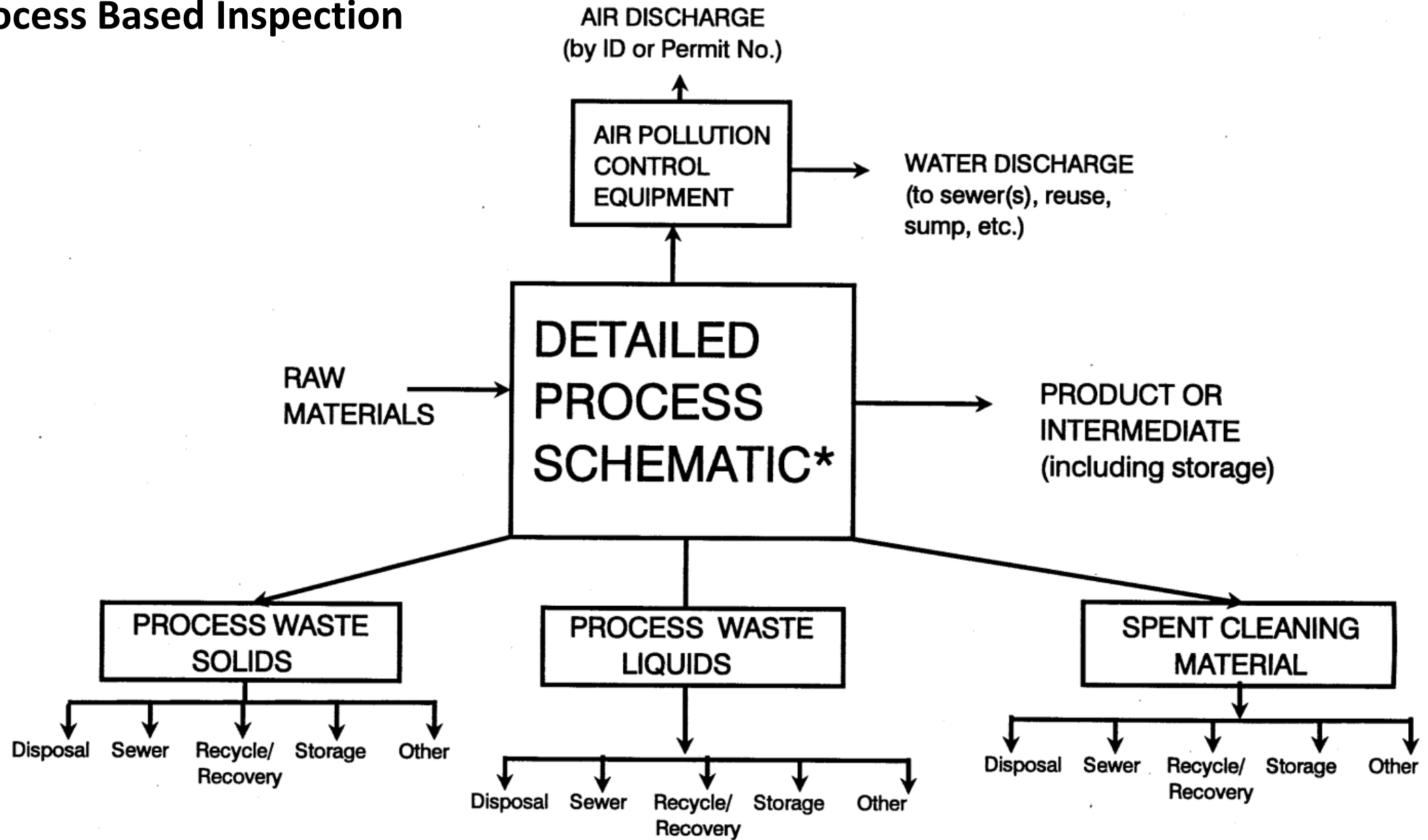
Other Violations:

- Inadequate Training,
- Inadequate Contingency Plan,
- Manifest violations.

What is a Process-Based Investigation?



Process Based Inspection



Process Based

- Tracks raw materials through the operation
- Identifies inputs and outputs for each processing unit
- Identifies by-products, co-products, and products
- Identifies wastes generated, and how these wastes are managed
- Can identify mismanaged waste streams, improperly applied exemptions, illegal treatment.
- Can take a whole week or longer.

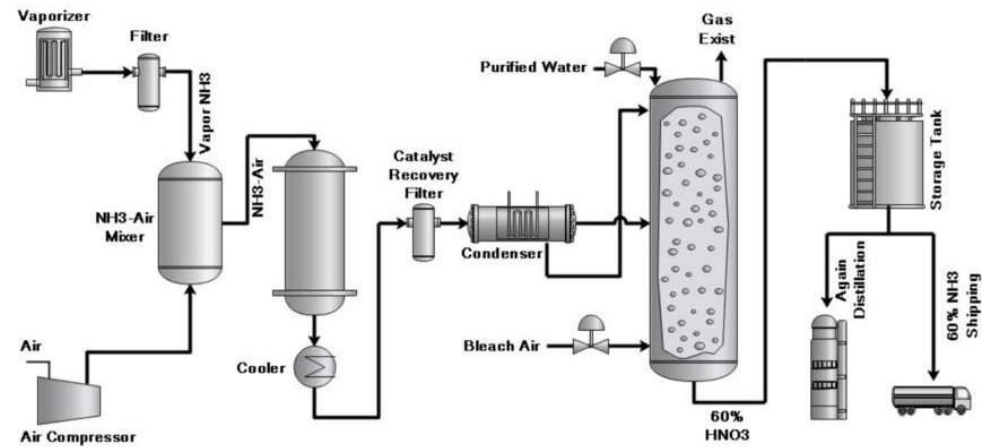
Regulatory

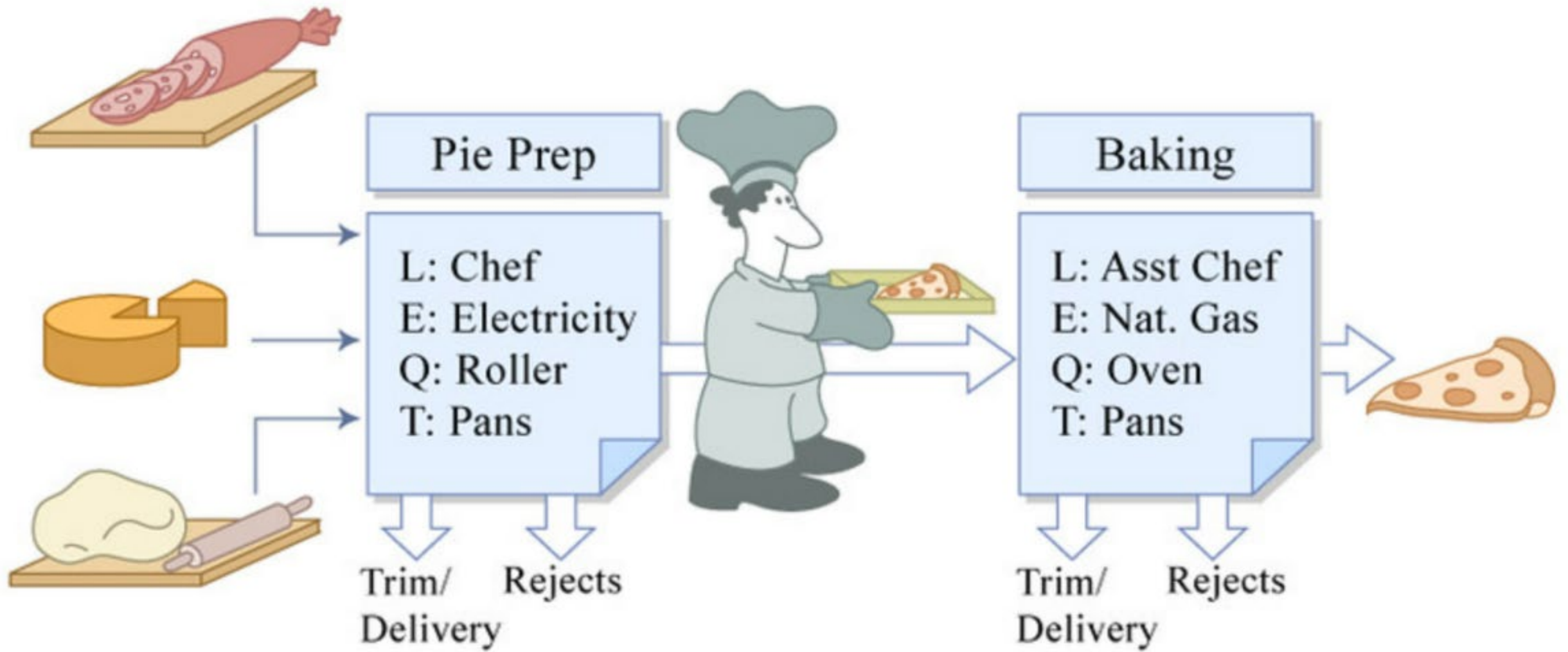
- **Audit for existing permit conditions**

RCRA TSD permit and/or generator Requirements

- **Reviewing required records**

Waste determinations, RCRA manifests, biennial reports, inspection records





Process Based Inspections appropriate for more complex facilities and are usually conducted by multi-person teams.

The principles can be applied to simpler facilities and performed by a smaller team or a single technical expert.



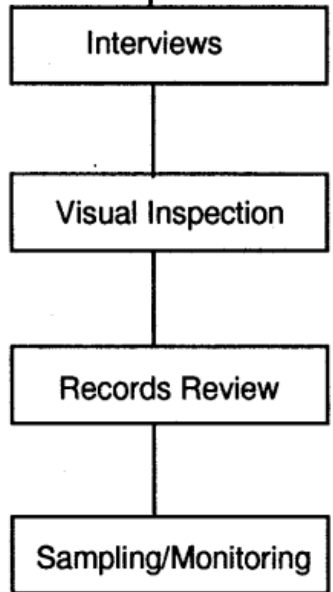
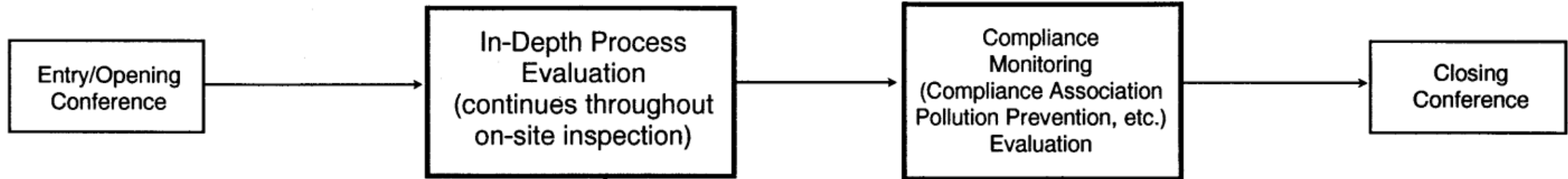
Chemical Manufacturing



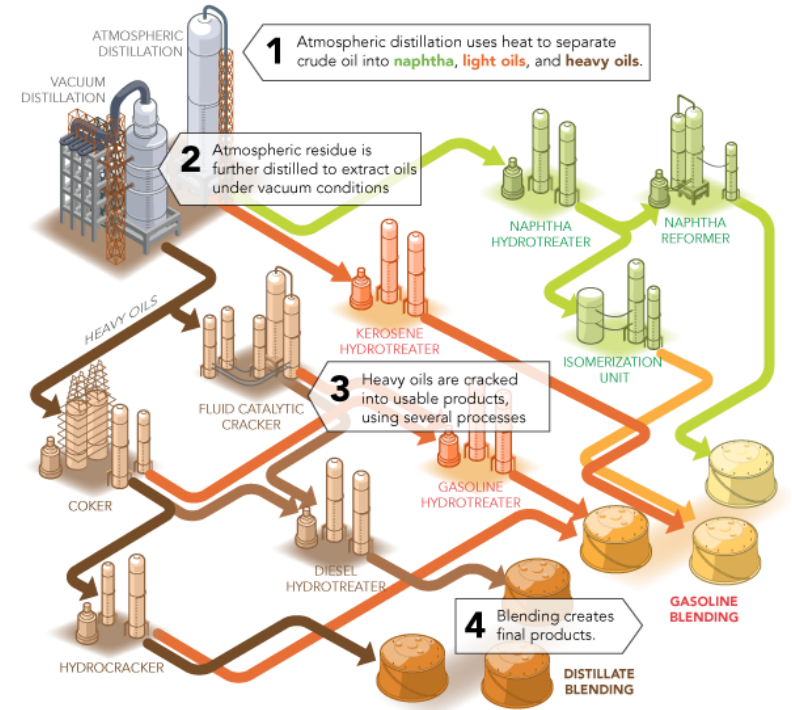
Petroleum Refining



Metal Plating



Crude Oil Refining



* Activities can be combined or undertaken separately throughout inspection.

Identify Inspection Team

- Inspection Team Roles & Responsibilities
 - Lead Inspector
 - Contractors
 - Case Teams
 - Division of Labor on site & off site
- Communication
 - Communication is critical to all aspects of the inspection
 - Establish meetings & timeline of events

Where to start?



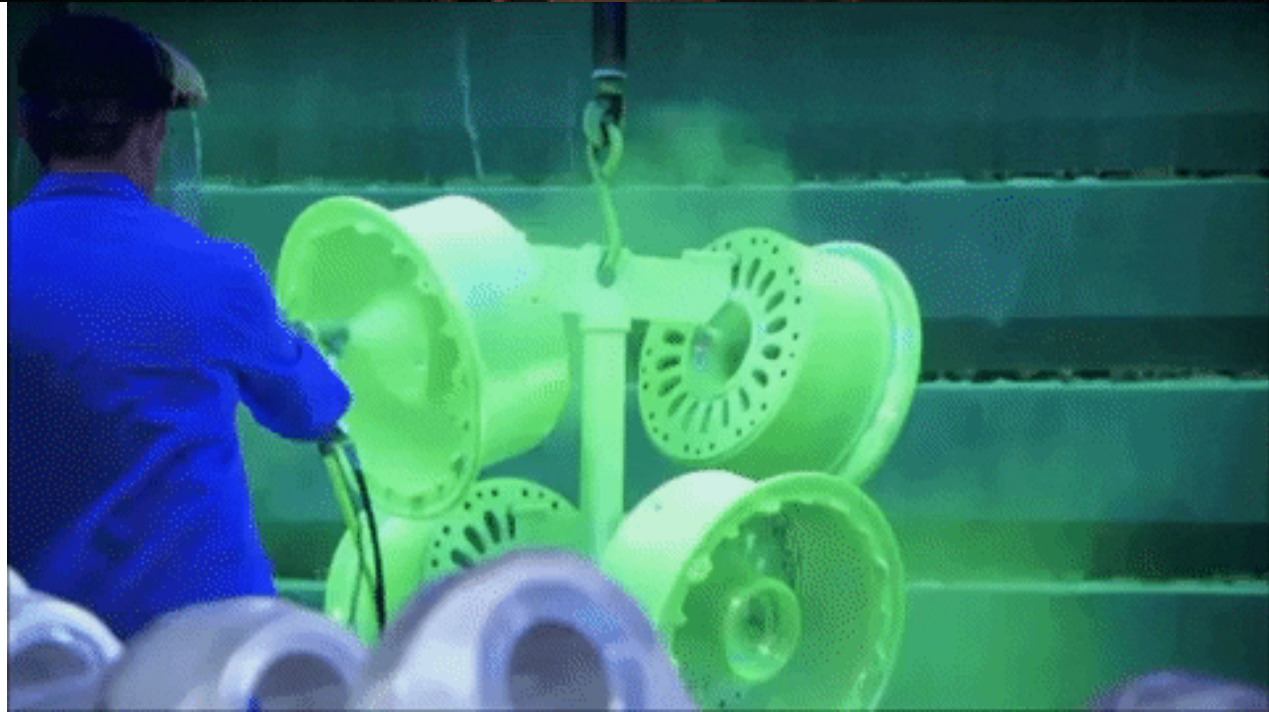
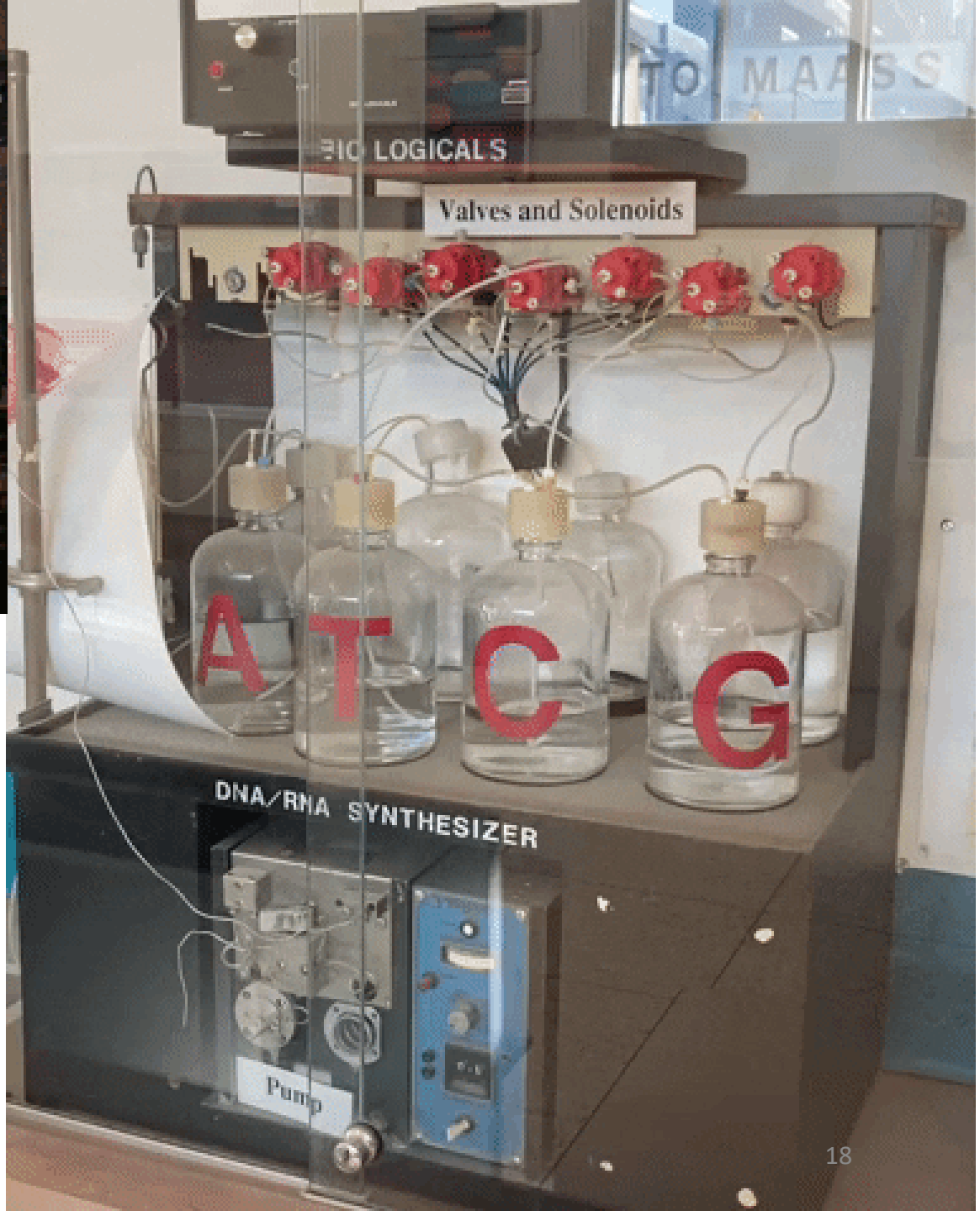
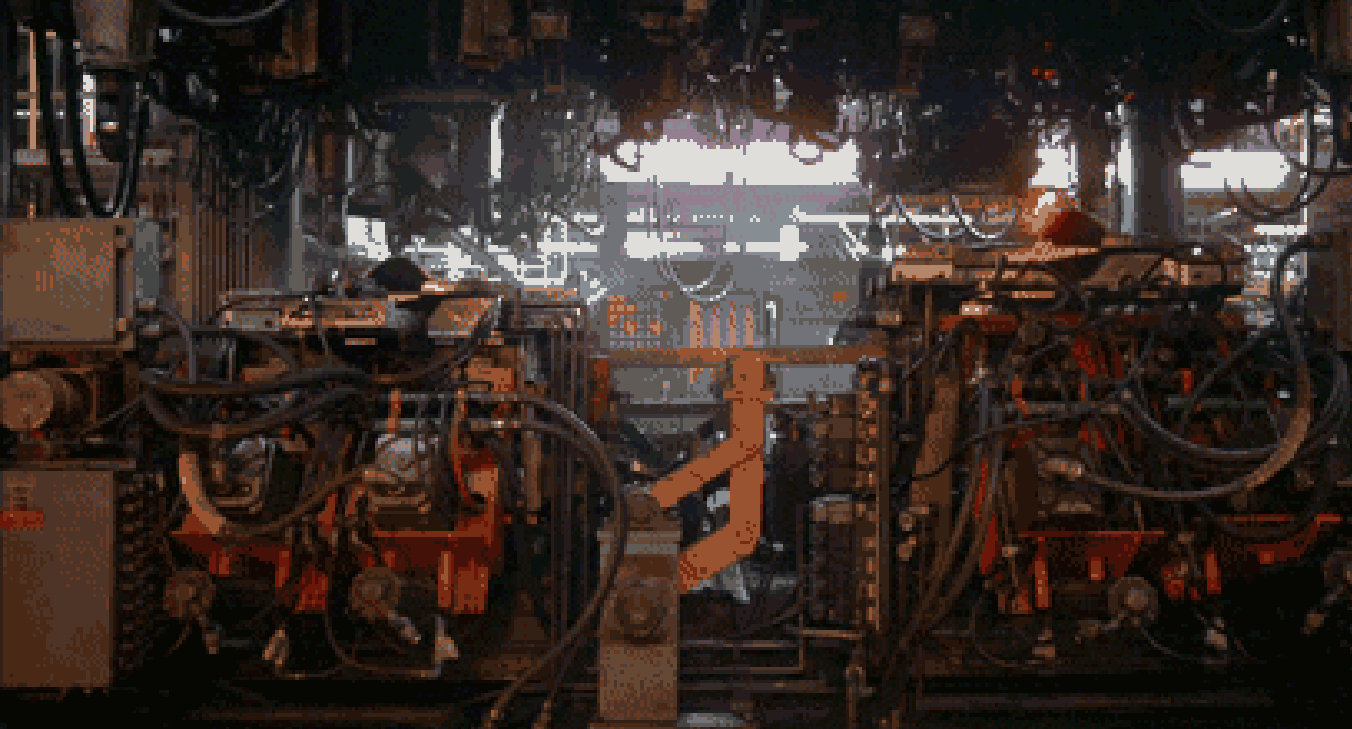
Preparation is crucial for Process-Based Inspection

Gain a general understanding of the operation or process and their waste streams and listed hazardous wastes.

Read or watch online videos to understand the fundamentals of the process:

- Chrome Plating,
- Electrostatic Painting,
- Fractional Distillation,
- Hazardous Waste Treatment,
- Microchip Manufacturing,
- Petroleum Refining,
- Solvent Recycling,
- Wastewater Treatment Operations.



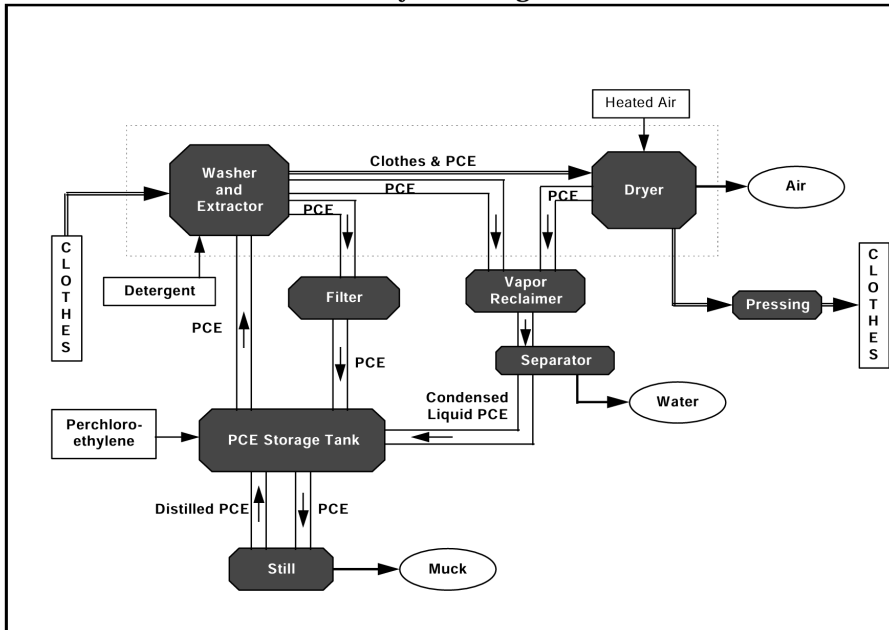


EPA Sector Notebooks for 37 industries

Sector Notebook Project

Dry Cleaning

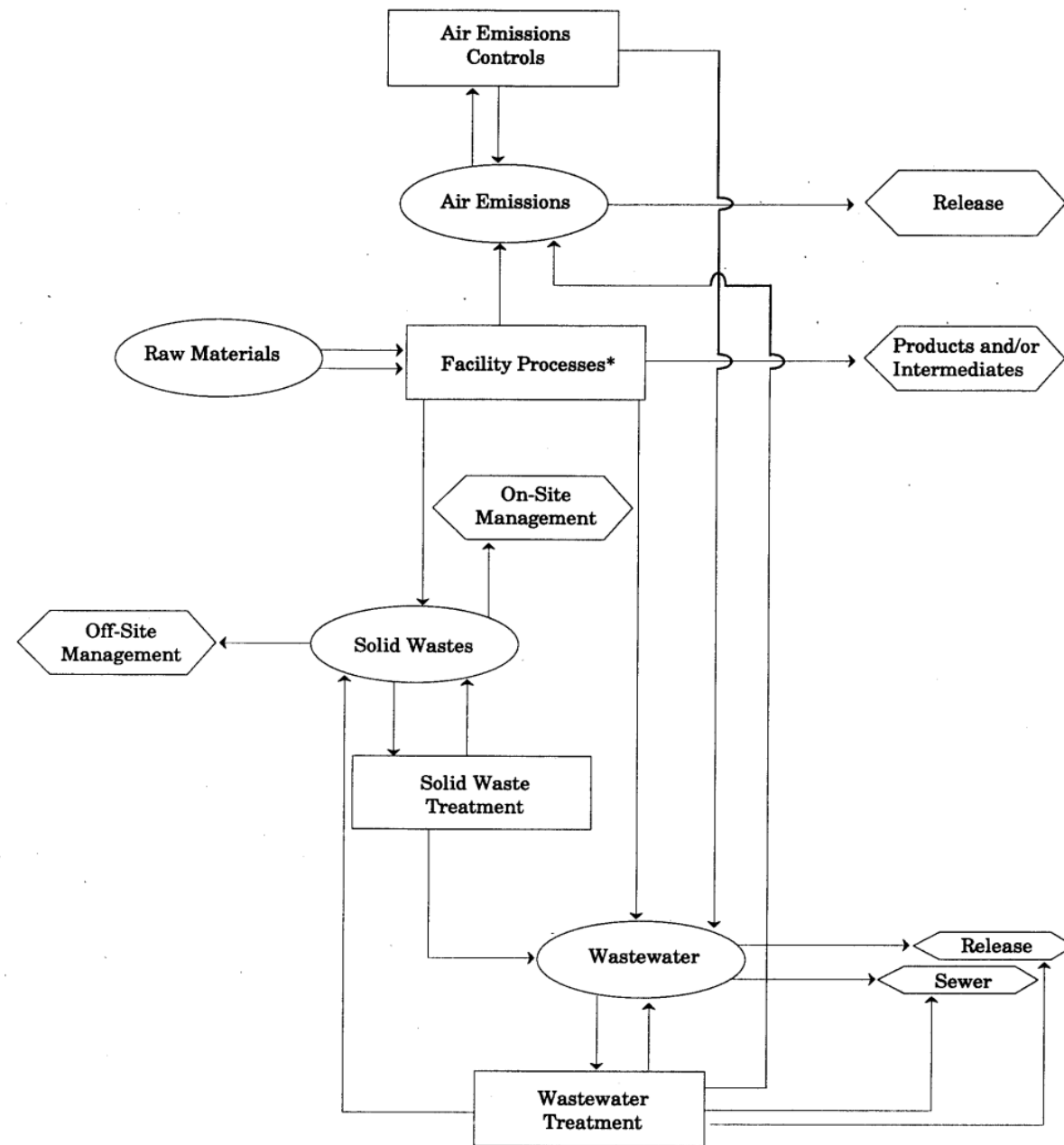
Exhibit 8: Process Flow Diagram for Perchloroethylene Solvent Transfer Dry Cleaning Machines



Sector Notebooks describe listed wastes generated by particular industries. For example, it describes how dry cleaners generate perchloroethylene / tetrachloroethylene hazardous waste (D039) and explains which regulations these facilities are subject to.

- [Profile of the Agricultural Chemical, Pesticide and Fertilizer Industry \(PDF\)](#). (199 pp, 1.5MB, September 2000)
- [Profile of the Agricultural Crop Production Industry \(PDF\)](#). (183 pp, 1.5MB, September 2000)
- [Profile of the Agricultural Livestock Production Industry \(PDF\)](#). (166 pp, 2.7MB, September 2000)
- [Profile of the Aerospace Industry \(PDF\)](#). (131 pp, 1.4MB, November 1998)
- [Profile of the Air Transportation Industry \(PDF\)](#). (101 pp, 1.6MB, February 1998)
- [Profile of the Dry Cleaning Industry \(PDF\)](#). (95 pp, 824K, September 1995)
- [Profile of the Electronics and Computer Industry \(PDF\)](#). (151 pp, 1.2MB, September 1995)
- [Profile of the Electronics and Computer Industry - Spanish Version \(PDF\)](#). (137 pp, 1.2MB, September 1995)
- [Profile of the Fossil Fuel Electric Power Generation Industry \(PDF\)](#). (164 pp, 1.7MB, September 1997)
- [Profile of the Ground Transportation Industry \(PDF\)](#). (134 pp, 1.4MB, September 1997)
- [Profile of the Healthcare Industry \(PDF\)](#). (155 pp, 1.4MB, February 2005)
- [Profile of the Inorganic Chemical Industry \(PDF\)](#). (131 pp, 903K, September 1995)
- [Profile of the Inorganic Chemical Industry - Spanish Version \(PDF\)](#). (124 pp, 904K, September 1995)
- [Profile of the Iron and Steel Industry \(PDF\)](#). (114 pp, 946K, September 1995)
- [Profile of the Lumber and Wood Products Industry \(PDF\)](#). (126 pp, 1MB, September 1995)
- [Profile of the Metal Casting Industry \(PDF\)](#). (159 pp, 1.6MB, September 1997)
- [Profile of the Metal Fabrication Industry \(PDF\)](#). (156 pp, 1.4MB, September 1995)
- [Profile of the Metal Fabrication Industry - Spanish Version \(PDF\)](#). (140 pp, 1.4MB, September 1995)
- [Profile of the Metal Mining Industry \(PDF\)](#). (137 pp, 1.1MB, September 1995)
- [Profile of the Motor Vehicle Assembly Industry \(PDF\)](#). (144 pp, 1.2MB, September 1995)
- [Profile of the Nonferrous Metals Industry \(PDF\)](#). (137 pp, 1.1MB, September 1995)
- [Profile of the Non-Fuel, Non-Metal Mining Industry \(PDF\)](#). (95 pp, 764K, September 1995)
- [Profile of the Oil and Gas Extraction Industry \(PDF\)](#). (165 pp, 1.5MB, October 2000)
- [Profile of the Organic Chemical Industry \(PDF\)](#). (152 pp, 1.4MB, November 2002)
- [Profile of the Organic Chemical Industry - Spanish Version \(PDF\)](#). (148 pp, 1.2MB, September 1995)
- [Profile of the Petroleum Refining Industry \(PDF\)](#). (146 pp, 1.7MB, September 1995)
- [Profile of the Pharmaceutical Industry \(PDF\)](#). (157 pp, 1.4MB, September 1997)
- [Profile of the Plastic Resins and Man-made Fibers Industry \(PDF\)](#). (190 pp, 1.9MB, September 1997)
- [Profile of the Printing Industry \(PDF\)](#). (111 pp, 631K, September 1995)
- [Profile of the Pulp and Paper Industry \(PDF\)](#). (135 pp, 1.5MB, November 2002)
- [Profile of the Rubber and Plastics Industry \(PDF\)](#). (158 pp, 3.7MB, February 2005)
- [Profile of the Shipbuilding and Repair Industry \(PDF\)](#). (135 pp, 1.4MB, November 1997)
- [Profile of the Stone, Clay, Glass and Concrete Industry \(PDF\)](#). (111 pp, 940K, September 1995)
- [Profile of the Textiles Industry \(PDF\)](#). (149 pp, 5.3MB, September 1997)
- [Profile of the Transportation Equipment Cleaning Industry \(PDF\)](#). (74 pp, 609K, September 1995)
- [Profile of the Water Transportation Industry \(PDF\)](#). (95 pp, 814K, September 1997)
- [Profile of the Wood Furniture and Fixtures Industry \(PDF\)](#). (124 pp, 1MB, September 1995)

Define the scope and objective of the investigation



** Includes all facility operations, including maintenance, laboratories and utilities*

Preparation

- Define the purpose and process(es) to evaluate.
- Gain understanding of the process before the inspection.
- Prepare Sampling Plan.
- Prepare a roadmap for the inspection.



EPA usually notifies the facility one or two months before a Process Based Inspection to ensure appropriate personnel are available.

EPA typically sends an extensive documents request before the inspection.

PART 1 - Please have copies of these documents available on February 7, 2017

1. Provide list of all process areas and what each produces (4 copies).
2. Site map of the facility (4 copies).
3. Management organization chart (including environmental department) (1 copy).
4. RCRA Part B permit (most recent version) and permit applications, including any attachments and modifications (1 electronic copy).
5. Most recent Title V operating permit (1 electronic copy).
6. List of units, and supporting documentation, that are subject to Subpart BB. This applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight. (1 electronic copy).
7. List of units, and supporting documentation that are subject to Subpart CC. This applies to tanks, containers, and surface impoundments that treat, store, or dispose of hazardous waste that contain a volatile organic concentration of more than 500 ppmw (1 electronic copy).
8. The percent of valves found leaking during each monitoring period, for valves that contain or contact hazardous wastes with organic concentration of at least 10 percent by weight in gas/vapor service or in light liquid service (last 3 years, 1 electronic copy).
9. Tank identification number and/or name for any tanks subject to Subpart CC air emission control requirements (1 electronic copy).
10. Current Contingency Plan including summary reports and documentation of incidents that required implementation of the contingency plan (1 copy, past 3 years).
11. Most recent Notice of Registration sent to Texas Commission on Environmental Quality (1 copy).

PART 2- Documents likely to be requested by NEIC inspectors (Schedule to be determined)

1. Any enforcement actions currently in effect or issued in the last 5 years (including Notices of Violation (NOVs), consent decrees, orders, and agreements), and all related correspondence.
2. Documentation of any spills and/or releases of hazardous substances at the facility for the last 3 years.
3. A list of solid/hazardous waste generated on-site by process area, equipment that generates it, how it is handled, and associated hazardous waste codes.
4. All permits and/variances for emission sources and any related correspondence.
5. Annual and/or biennial hazardous waste reports for the past 3 years.

6. Financial Assurance document estimate for closure and post-closure costs

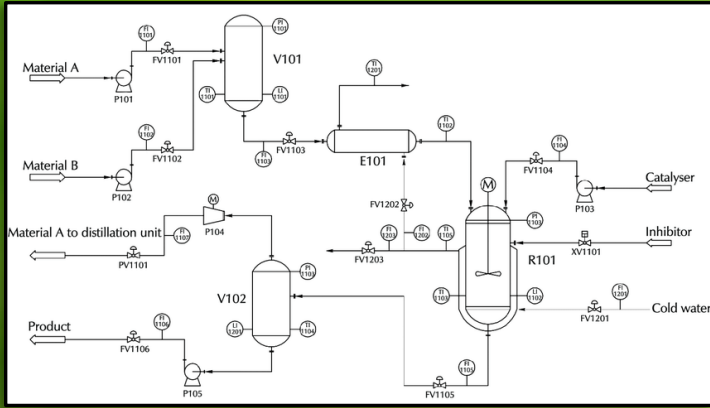
RCRA Subpart BB:

1. Describe procedures used with organic concentration monitoring.
2. Inspection and monitoring activities subject to Subpart BB.
3. Performance test plan that shows the organic concentration achieved by a control device associated with equipment that contains or contacts hazardous wastes with organic concentration of at least 10 percent by weight.
4. A list of valves, that contain or contact hazardous wastes with organic concentration of at least 10 percent by weight that are designated as unsafe or difficult to monitor, including an explanation of why and a plan for monitoring.

RCRA Subpart CC:

5. Inspection and monitoring schedules, logs/summaries for any waste management in tanks or containers subject to Subpart CC air emission control requirements.
6. For tanks using Level 1 controls: each determination of hazardous waste maximum organic vapor pressure.

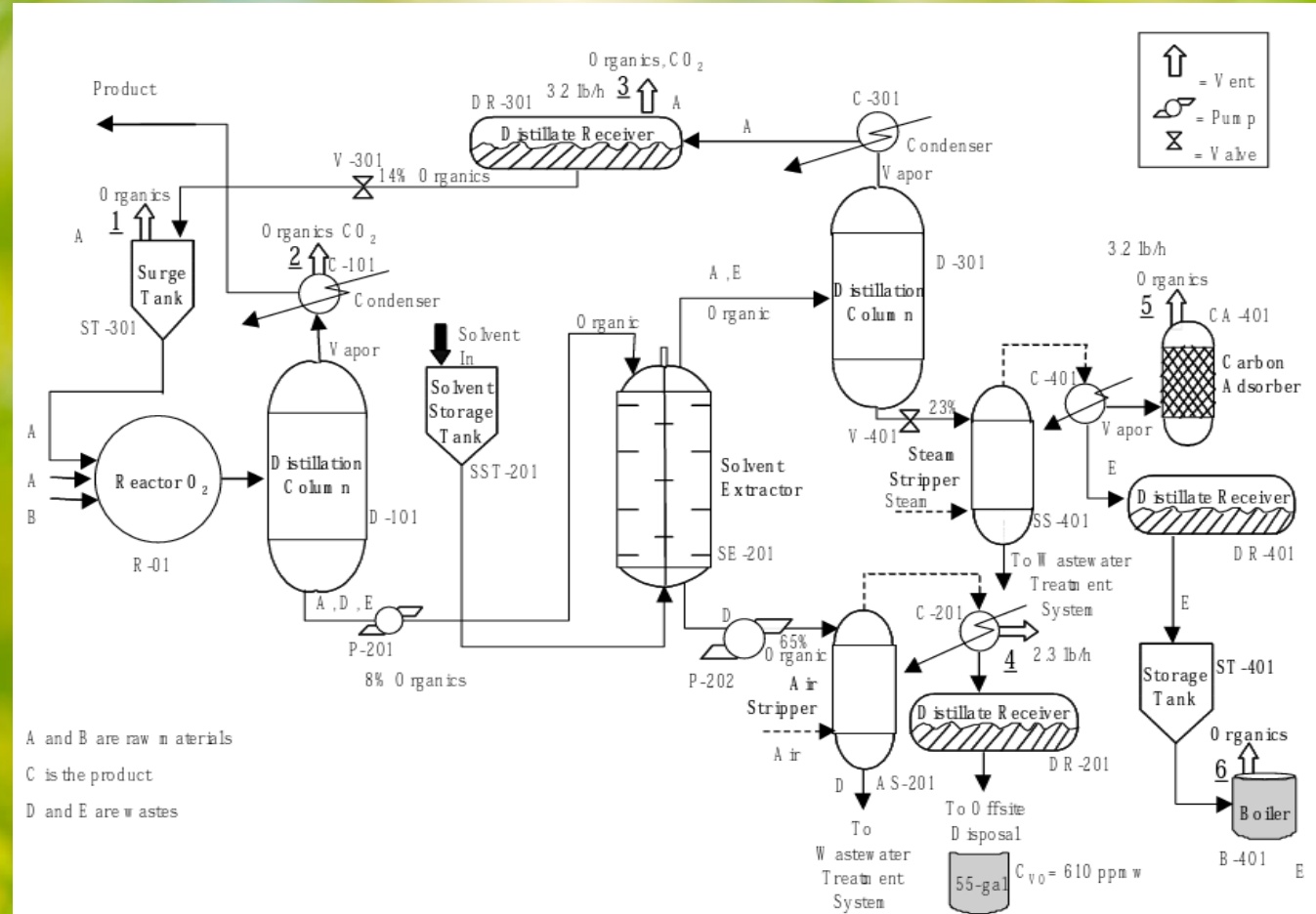
P&IDs an important part of the process. These are reviewed during Risk Management Program and CalARP inspections and RCRA inspections. Finding inconsistencies from P&IDs versus the actual existing infrastructure can identify many potential violations, such as mismanaged secondary hazardous streams, unpermitted hazardous waste tanks and unpermitted treatment.



Physically follow the process described in the P&ID during the walk-through.

Regulators control the pace of the inspection. Get comfortable being meticulous or returning to a previous area if you have additional questions.

When we spot discrepancies between P&IDs and the actual equipment, we look further and document the observations.





Home > Facilities > Facility Search – Enforcement and Compliance Data > Facility Search Results

Facility Search Results

Michigan, Missouri, Nebraska, North Carolina, Pennsylvania, Vermont, Washington, West Virginia, and Wisconsin are working with EPA to fix problems with their Clean Water Act violation data. [Read More...](#)

Map Legend | Basemap Options | EJScreen Add EJ Summary Map | Supplemental Indexes (US) | Zoom To:

Customize Columns | Download Data | Quick CSV Download | | |

Facility Name	Mapped	Street Address	City	State	FRS ID	Reports	Count of Supplemental Indexes At or Above 80th Percentile (US - Block Group)	Compliance Monitoring Activity (5 years)	Significant Violations	Quarters with Noncompliance (3 years)	Formal Enforcement Actions (5 years)
CWMJ, KHJ (MSW LANDELL B-19)	<input type="checkbox"/>	35251 OLD SKYLINE RD.	KETTLEMAN CITY	CA	110000481443		5	12	No	2	26 3

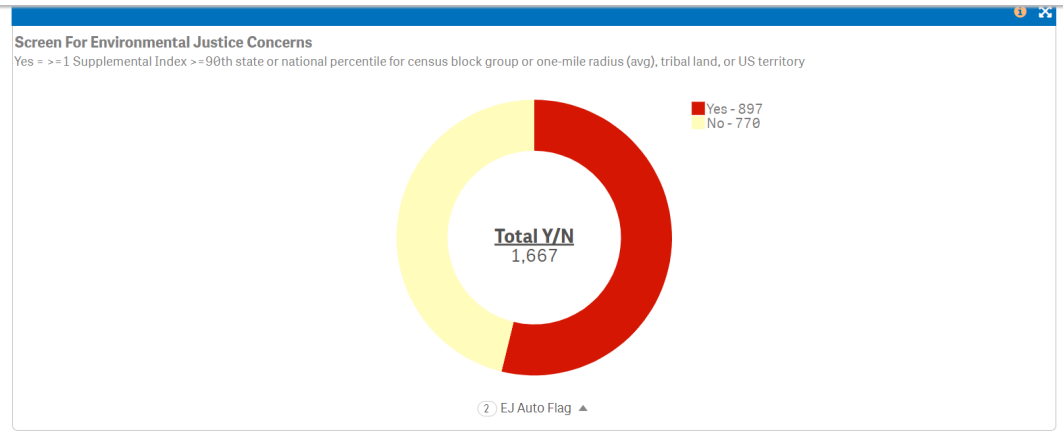
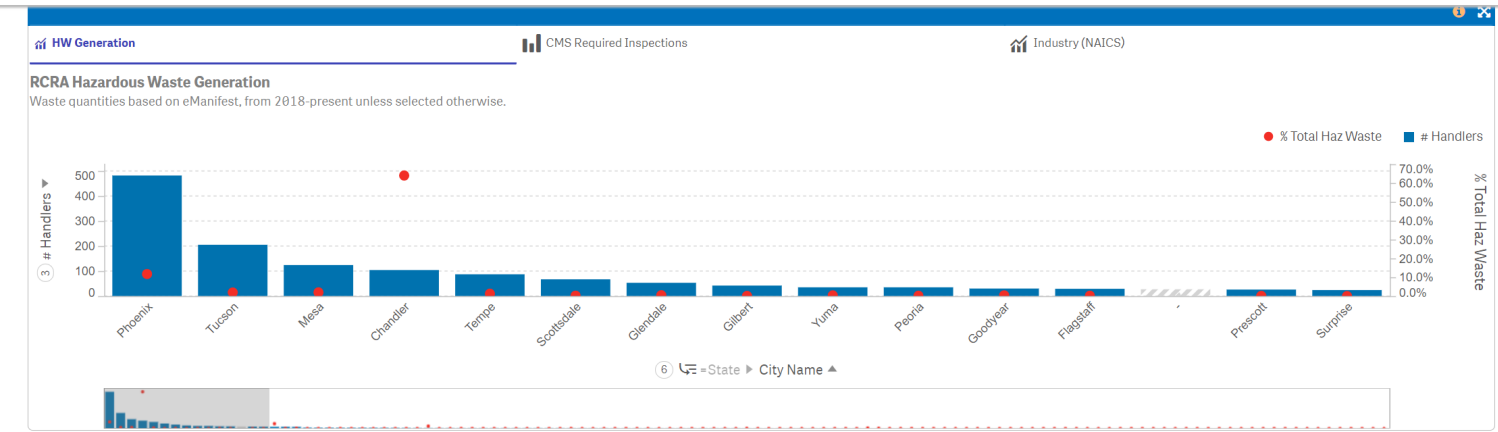
RCRA Integrated Targeting Assistant (RITA)

EPA Introduction Home Non-Notifiers TRI Releases Invalid Gen IDs Transporters AA/BB/CC Episodic Events/Closures RITA Score

Filters REGION STATE HANDLER ID HANDLER NAME TIME SINCE LAST INSP (YRS) Home Clear Selections View Selected Handler

LAST INSPECTION (FY) WASTE SHIPPED (CY) CMS REQUIRED INSPECTION? WASTE SHIPPED IN TANKS RCRA PA SCORE FED WASTE CODE SUB P STATUS EJ AUTO FLAG

ACUTE WASTE DOT HW DESCRIPTION OPERATING TSDF FEDERAL FACILITY TRIBAL LAND (ON OR NEAR) NAICS RECYCLER EJ FLAG, STATE PERCENTILES ONLY



Handler Name	Handler ID*	Region	State	City	RCRAInfo Status	Computed Status**	CMS Required Inspection	eManifest CY2021 (Kg)	eManifest CY2022 (Kg)	eManifest CY2023 (Kg)	Last Inspection	[State] Last Inspection	[EPA] Last Inspection	Offsite CMA During Covid***	Last Informal Enforcement	[State] Last Formal Enforcement	[EPA] Last Formal Enforcement	Current
US Army Garrison Yuma Proving Ground	AZ5213820991	09	AZ	Yuma	LQG	SQG	TSDf Due for Inspection (FCI-Eligible)	14,360	7,783	2,180	9/7/2023	9/7/2023	5/9/1989	N	9/15/2023	4/14/1994	-	No Viol
USmc - Barry M Goldwater Range Western	AZR000037382	09	AZ	Yuma	SQG	VSQG	TSDf Due for Inspection	90	22,861	156	3/22/2023	3/22/2023	9/17/2013	N	3/23/2023	-	-	No Viol
Arcadia Custom	AZR000039164	09	AZ	Tucson	LQG	LQG	LQG Due for Inspection	959	20,202	13,303	never inspected	-	-	N	-	-	-	No Viol
Radius Aerospace - Phoenix	XIA00000109	09	AZ	Chandler	LQG	LQG	LQG Due for Inspection	-	25,372	42,801	never inspected	-	-	N	-	-	-	No Viol
Skyline Assayers & Laboratories - Kolb	AZD983474834	09	AZ	Tucson	LQG	LQG	LQG Due for Inspection	88,856	90,777	72,580	never inspected	-	-	N	-	-	-	No Viol
Tucson Airport Area - Tarp/Prop 200	AZR000000349	09	AZ	Tucson	LQG	LQG	LQG Due for Inspection	112,491	112,491	59,874	never inspected	-	-	N	2/23/2000	6/6/2000	-	No Viol
Ups - Goodyear Hub - Azgdr	AZR000521120	09	AZ	Goodyear	LQG	LQG	LQG Due for Inspection	45,461	32,698	20,837	never inspected	-	-	Y	1/25/2021	-	9/28/2022	No Viol
Abbott Nutrition	AZD981399892	09	AZ	Casa Grande	LQG	LQG	LQG Due for Inspection	34,875	22,189	10,460	1/13/2011	1/13/2011	-	Y	2/26/2021	-	-	No Viol
Freeport Mcmoran Sierrita Mine	AZD982478216	09	AZ	Green Valley	LQG	LQG	LQG Due for Inspection	18,178	45,571	14,736	12/18/2014	12/18/2014	8/11/2009	N	11/30/2011	-	-	No Viol
Ge Parallel Design Inc	AZR000501205	09	AZ	Phoenix	LQG	LQG	LQG Due for Inspection	92,106	20,317	14,299	8/7/2015	8/7/2015	-	Y	2/23/2021	-	-	No Viol
Mayo Clinic Hospital	AZR000032235	09	AZ	Phoenix	LQG	LQG	LQG Due for Inspection	6,543	17,285	18,636	9/11/2015	9/11/2015	10/30/2014	Y	3/15/2021	-	-	No Viol
Sumco Southwest Corporation	AZR000004937	09	AZ	Phoenix	LQG	LQG	LQG Due for Inspection	7,537	45,233	41,807	9/22/2015	9/22/2015	3/19/2014	Y	1/25/2021	-	-	No Viol
Baaf Corporation Tucson	AZR000518779	09	AZ	Tucson	LQG	LQG	LQG Due for Inspection	17,841	15,937	8,572	7/25/2016	7/25/2016	-	N	-	-	-	No Viol
Inform Diagnostics	AZR000504993	09	AZ	Phoenix	LQG	LQG	LQG Due for Inspection	18,636	15,803	15,748	8/24/2016	8/24/2016	-	Y	12/15/2020	-	-	No Viol
Caris Life Sciences	AZR000509000	09	AZ	Phoenix	LQG	LQG	LQG Due for Inspection	23,672	24,309	26,562	8/30/2016	8/30/2016	-	Y	12/23/2020	-	-	No Viol
59th Ave Warehouse	AZR000508853	09	AZ	Phoenix	LQG	LQG	LQG Due for Inspection	6,566,205	-	625,958	9/20/2016	9/20/2016	-	N	5/3/2017	5/6/2015	-	Signific
Triax Industries	AZR000502591	09	AZ	Chandler	LQG	LQG	LQG Due for Inspection	33,780	40,992	47,264	2/13/2017	-	2/13/2017	N	-	-	9/30/2014	No Viol
Freeport-Mcmoran - Morenci	AZD074489469	09	AZ	Morenci	LQG	LQG	LQG Due for Inspection	17,846	14,164	21,177	5/4/2017	5/4/2017	-	Y	2/17/2021	-	-	No Viol


Waste Code Matrix
Entity Type

Generator

Waste Code Type

RCRA

[Search](#)
[Reset](#)
[Export CSV](#)

Waste Code	↑↓	Description	↑↓	2024	↑↓	2023	↑↓	2022	↑↓	2021	↑↓	2020	↑↓	2019	↑↓	2018
D001		Ignitable		11.45701		76.091		78.5642		94.3464		93.3853		133.4126		107.698
D002		Corrosives		1.954		38.2485		36.2405		31.358		34.9195		26.08524		32.338
D003		Reactivity		0		7.142		12.7535		10.181		10.969		10.027		10.617
D004		Arsenic		0.355		82.2385		3.123		19.3505		14.2116		8.0795		7.3045
D005		Barium		0		67.961		0.281		0.013		0.015		0.478		0.0135
D006		Cadmium		0.0405		0.905		0.638		0.2205		0.253		0.1615		0.2395
D007		Chromium		0.5235		186.2235		30.85		37.9945		20.3365		46.47874		27.8115
D008		Lead		2.273		192.7915		17.9485		72.5605		95.8038		146.6816		101.289
D009		Mercury		0.004		0.3815		0.0015		0.0235		0.0055		0		0.013
D010		Selenium		0		0.537		0.2625		0		0.015		0		0
D011		Silver		0.0715		11.155		0.9865		0.9005		0.514		0.807		0.742
D013		Lindane		0		0		0		0		0		0		0
D018		Benzene		0		0		0		0		0.2145		0		0.026

CERS Central

Welcome to the California Environmental Reporting System (CERS)

[Business Portal Sign in](#)[Regulator Sign In](#)[Business Training Portal Sign In](#)[Regulator Training Portal Sign In](#)

CUPA GIS

CalEPA has started a project to create a digital map of jurisdictional boundaries for Certified Unified Program Agencies (CUPAs) and their associated Participating Agencies (PAs). The project will be completed in two phases. The first phase is focused on validating the boundaries for CUPAs whose jurisdiction matches county and/or city lines. The second phase will focus on CUPAs that require additional boundary edits. CalEPA will implement a CUPA GIS Portal to allow CUPA managers with no GIS expertise to review, validate, and modify their jurisdictional boundary. To keep stakeholders up to date please see the new project website here: [CUPA GIS](#)



CDX Central Data Exchange

Contact Us



Log in to CDX

User ID

Password

Show Password

Log In

Register with CDX

[Forgot your Password?](#)

[Forgot your User ID?](#)

[Warning Notice and Privacy Policy](#)

Welcome

Welcome to the Environmental Protection Agency (EPA) Central Data Exchange (CDX) - the Agency's electronic reporting site. The Central Data Exchange concept has been defined as a central point which supplements EPA reporting systems by performing new and existing functions for receiving legally acceptable data in various formats, including consolidated and integrated data.

Online data can indicate if a facility is subject to RCRA Air Requirements (Subpart BB / CC)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF ENFORCEMENT AND
COMPLIANCE ASSURANCE

COMPLIANCE ADVISORY

Reduction of Hazardous Waste Air Emissions

April 2018

This advisory is for facilities that are affected by the air emissions requirements under the Resource Conservation and Recovery Act (RCRA). It highlights their responsibilities and recently observed compliance concerns. Hazardous waste air emissions from certain process vents, equipment, and waste storage or treatment are regulated under RCRA. As a result, certain facilities are required to properly identify and control volatile organic hazardous wastes.



Large Quantity Generators (LQGs) and facilities that treat, store or dispose of hazardous waste (*i.e.*, Treatment, Storage, and Disposal Facilities (TSDFs)) are likely to generate or manage some hazardous wastes that contain volatile organic chemicals. If these wastes are not identified, monitored, and managed properly, they pose potential risk to human health and the environment through releases into the air and threats to on-site workers, first responders, and near-by communities. EPA and states regularly conduct compliance review and monitoring activities to identify potential exposure and releases. Facilities identified as not complying with the regulations will be required to address their non-compliance issues.

To learn more about EPA's efforts to address hazardous waste air emissions, visit the [Reducing Hazardous Air Emissions at Hazardous Waste Facilities](#) webpage.

Who is Potentially Impacted?

Facilities that:

- treat, store, or dispose of organic¹ hazardous wastes; or

Manifests showing waste shipments via “TP / Portable Tanks” or “TT / Tanker Truck” indicates the facility may utilize hazardous waste tanks on site.



9-13. Waste Information

Waste Characteristics (Total lines: 3)

Line Number	HM	U.S. DOT Description	Containers	Type	Total Quantity	Units	Waste Codes	Management Method Code
1	X	UN1993, WASTE FLAMMABLE LIQUIDS, n.o.s., (XYLENE, PROPYLENE GLYCOL MONOMETHYLETHYER ACETATE), 3, II, RQ	4	DF	629	P	D001, F003, 214	H141
2	X	UN2582, WASTE FERRIC CHLORIDE, SOLUTION, 8, III, RQ (FERRIC CHLORIDE)	6	TP	Portable tanks	P	D002, D007, 792	H141
3	X	NA3077, HAZARDOUS WASTE, SOLID, n.o.s., (SOLDER PASTE, LEAD), 9, III	1	DF	7	P	D008, D011, 551	H141

Air Emissions Monitoring (RCRA BB/CC)

- Method 21 required by EPA for detecting VOC leaks from equipment sources
- Instrumentation requirements
- Calibration requirements
- Monitoring techniques for individual equipment types

Equipment to monitor:

- Pumps
- Flanges
- Compressors
- Pressure Relief Devices,
- Sampling Connections
- Open-ended valves / lines



Leak Detection and Repair

A Best Practices Guide



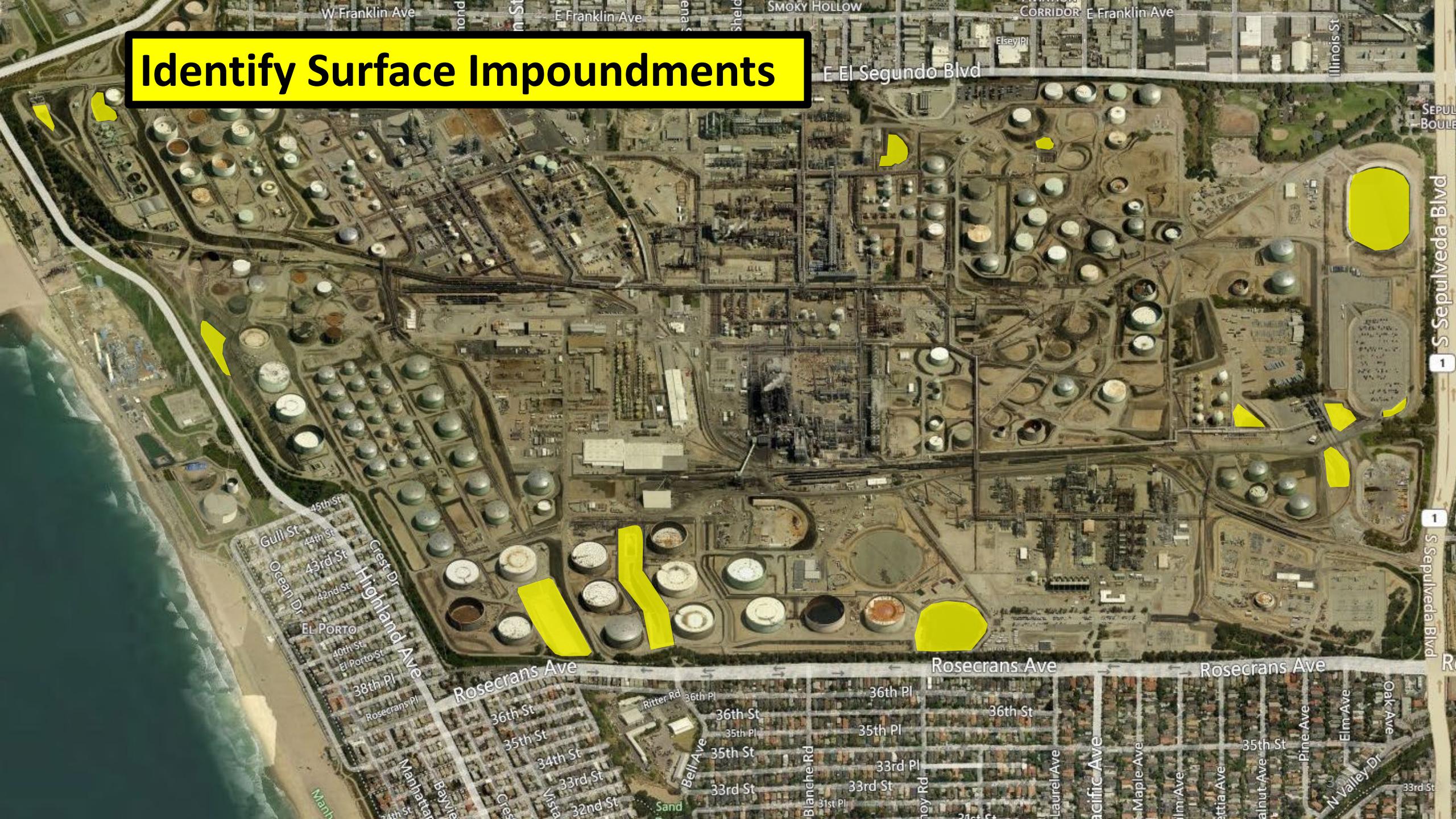
Bing Maps Birds Eye View shows facilities on an angle from North, South, East & West for most California cities. This helps you get oriented with facility before going there.



Google Maps Street View often shows all sides of a facility. The Time Lapse function can identify recently expanded operations or changes to the facility.



Identify Surface Impoundments



Surface Impoundments

- Ask about overflow bypasses during heavy storm events.
- Review any spill Reports.
- Look for ramps that allow vacuum truck to discharge.
- Assess BWON data (Benzene Waste Operations NESHAP) for any releases with hazardous levels of benzene (D018: 0.5 mg/L benzene)

Research and understand the listed waste streams for the industry.



K169--Crude oil storage tank sediment from petroleum refining operations.

K170--Clarified slurry oil storage tank sediment and/or in-line filter/separation solids from petroleum refining operations.

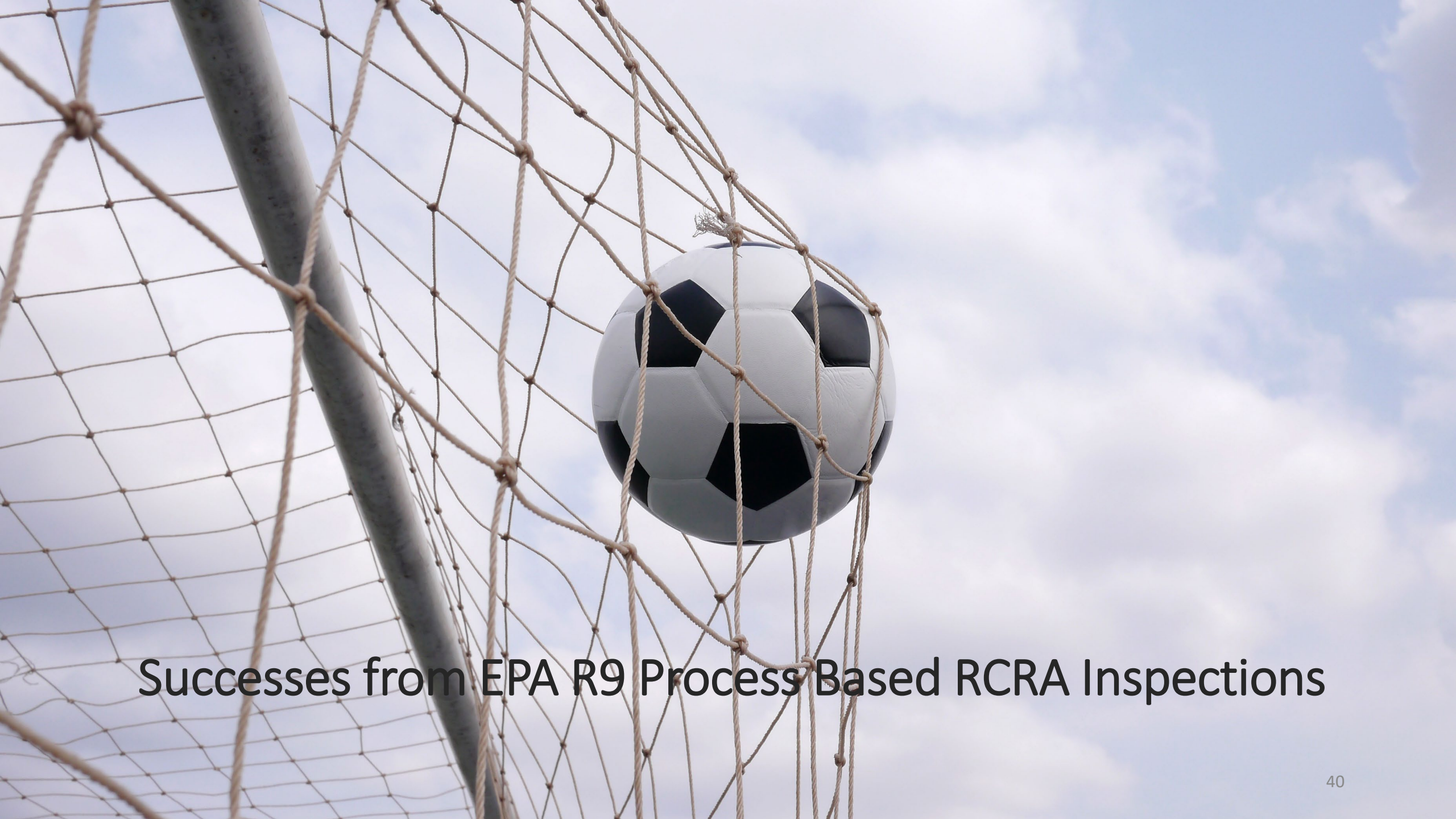
K169--Crude oil storage tank sediment from petroleum refining operations.

K170--Clarified slurry oil storage tank sediment and/or in-line filter/separation solids from petroleum refining operations.

Important tips I've learned from others:

Ask the same question in different ways if you're not getting a complete answer. Return to the question later and you may get a different response. Interview the operators who run the equipment in addition to the Environmental Manager. You may get different responses from operators on how wastes are managed.





Successes from EPA R9 Process Based RCRA Inspections

Valero Benicia:

Operated an unlined stormwater surface impoundment as a hazardous benzene waste without obtaining a RCRA permit.

Sampling proved benzene (D018) exceedances above RCRA levels.



Valero Benicia:

Refinery process/process area stormwater diverted to two interconnected unlined field retention ponds during heavy storm flow.

POTENTIAL SOURCE INVENTORY LIST												
Facility: Shell Oil Products US - Martinez Refinery Report Period: 2013												
EFFLUENT TREATMENT PLANT #2												
Waste Stream (Note 1)		Benzene Control (Note 2)		Water Content		Annual Waste Stream Characteristics						
						Waste Stream Description	Waste Stream Location	Waste Quantity (Mg/Yr)	Benzene Concentration (ppmw)		Benzene Quantity (Mg/Yr)	
									Range(Limits)	Weighted Average		
ID	Type	Yes	No	<= 10%	> 10%				Lower	Upper		
ETP2003	PWW		X		X	Diversion of waste water to Stormwater Holding Pond	Tank 12519/1252	3750.00	1.80	1.80	1.80	0.00675
ETP2004	M		X		X	Removal of solids materials for centrifuging	TK12520	36.53	110.02	110.02	110.02	0.00402

Note 1: Stream Types are LL = Landfill Leachate M = Maintenance O = Operations PWW = Process Waste Water PTW = Product Tank Waterdraw SD = ShutDown SO = Slop Oil S = Startup T = Turnaround U = Unclassified UM = Unscheduled Maintenance
 Note 2: Waste Stream is treated and is controlled for benzene emissions prior to and during treatment in accordance with 40 CFR 61 Subpart FF.

POTENTIAL SOURCE INVENTORY LIST												
Facility: Shell Oil Products US - Martinez Refinery Report Period: 2013												
EMSR DEA REGENERATION												
Waste Stream (Note 1)		Benzene Control (Note 2)		Water Content		Annual Waste Stream Characteristics						
						Waste Stream Description	Waste Stream Location	Waste Quantity (Mg/Yr)	Benzene Concentration (ppmw)		Benzene Quantity (Mg/Yr)	
									Range(Limits)	Weighted Average		
ID	Type	Yes	No	<= 10%	> 10%				Lower	Upper		
EDEA003	O		X		X	SAMPLE STATION REFLUX		0.02	2.30	2.30	2.30	0.00000
EDEA004	O		X		X	SAMPLE STATION RICH DEA		0.39	7.20	7.20	7.20	0.00000
EDEA005	M		X		X	Pump Maintenance	P-2850	0.03	2.20	2.20	2.20	0.00000
EDEA006	O		X		X	leak at CV-415	CV-415	0.01	7.20	7.20	7.20	0.00000
EDEA007	O		X		X	leak at CV-696	CV-696	0.01	7.20	7.20	7.20	0.00000
EDEA008	O		X		X	DEA1 reflux P2185, small seal leak	P2185	0.00	2.20	2.20	2.20	0.00000
EDEA009	M		X		X	Rich DEA sample station has leak at fast loop (MAC)	Rich DEA sample	0.00	7.20	7.20	7.20	0.00000

Note 1: Stream Types are LL = Landfill Leachate M = Maintenance O = Operations PWW = Process Waste Water PTW = Product Tank Waterdraw SD = ShutDown SO = Slop Oil S = Startup T = Turnaround U = Unclassified UM = Unscheduled Maintenance
 Note 2: Waste Stream is treated and is controlled for benzene emissions prior to and during treatment in accordance with 40 CFR 61 Subpart FF.



Valero Benicia:

Stored and treated hazardous waste on its heat exchanger bundle cleaning pad without a RCRA permit.

Oil recovery RCRA exclusion doesn't apply because the sludge is not reinserted back into the petroleum refining process.



Valero Benicia:

Spillage of listed waste: F037/F038 (petroleum refinery primary and secondary wastes) at several locations throughout the facility.



EXCLUDED RECYCLABLE MATERIAL

STATE AND FEDERAL LAW PROHIBIT IMPROPER DISPOSAL. IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY, THE U.S. ENVIRONMENTAL PROTECTION AGENCY OR THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL.

GENERATOR INFORMATION:

NAME _____ PHONE _____
ADDRESS _____ CITY _____ STATE _____ ZIP _____
MANIFEST TRACKING NO. _____
EPA ID NO. _____
EPA WASTE NO. _____ CA WASTE NO. _____ ACCUMULATION START DATE _____

CONTENTS, COMPOSITION:

PHYSICAL STATE: SOLID LIQUID | HAZARDOUS PROPERTIES: FLAMMABLE TOXIC CORROSIVE REACTIVITY OTHER _____

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

HANDLE WITH CARE!

STYLE JWMCA

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Many conditions must be met to meet the ERM RCRA exemption.



Shell Martinez:

Waste determination;
Treatment without a permit;
Air emission violations;
Failure to minimize
unplanned release.



Phillips 66 Carson

Land placement
of oil-bearing
secondary
hazardous
materials
(heat exchanger
bundle cleaning
sludge, K051).

Leaking selenium
waste, D010



By **KEYT News Team**

Published **December 13, 2018** 9:32 pm

EPA investigators execute search warrants at Greka Oil near Santa Maria

The Environmental Protection Agency and California officials are searching a Greka Oil facility near Santa Maria.

Investigators were spotted at a property west of the city on Sinton Road, off Betteravia Road Thursday morning.

The U.S. Attorney's Office says the EPA is executing federal search warrants.

A spokesman adds that the search warrants are under seal so the agency cannot comment on what they are looking for.

Investigators were seen working in two Greka Oil offices on both sides of Sinton Road.



Local News

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EPA Orders Greka to Conduct Tests of Hazardous Waste Storage in Santa Maria

The latest action comes as federal and state regulators seek millions of dollars in penalties for previous spills at other North County locations



Federal regulators contend that hazardous waste has been improperly handled at the Greka refinery on Sinton Road west of Santa Maria. (Janene Scully / Noozhawk photo)

Debbie Jordan:
"Today's order requires Greka to determine if its refinery is affecting nearby farmlands, groundwater and the communities of Santa Maria and Guadalupe."

EPA ID: CAD008361883 Name: GREKA REFINING COMPANY

Entity: Generator

Filter by shipment year from... through shipment year:

RCRA Code	Description	Weight (in Tons)													
		1993	2000	2001	2002	2003	2004	2007	2009	2010	2011	2012	2013	2014	2016
D002	Corrosives					0.04950									
D008	Lead														0.30000
D009	Mercury						0.01000								
D018	Benzene									0.40000	0.45000	1.17500	0.32500		
D039	Tetrachloroethylene		0.225100	0.517000	0.508740	0.571290	0.38781		0.312751	1.271850	0.37530			1.00000	
K051	API separator sludge from the petroleum refining industry.	53.70000							37.92600						
NONE	Unknown						2.65000								
TOTALS		53.700000	0.225100	0.517000	0.508740	0.620793	0.04781	37.926000	0.312751	1.671850	0.825301	1.175000	0.325001	1.000000	0.30000



2019 Inspection



12/13/2018 12:14
2018 Inspection

API Oil-Water Separator (K051) Waste Discharges to Surface Impoundment

Facility hadn't manifested any K051 waste between 2007 and 2019 (12 years). 20 cubic meters of K051 were removed in 2007.

25 – 30 tons of K051 were collected during a December 2019 clean-out. The waste was sent to Clean Harbors Aragonite, who rejected the waste and returned it to Greka due to high flashpoint.







Core Potential RCRA Violations

- Operating a Hazardous Waste Surface Impoundment without a RCRA Permit
- LDR / Illegitimate Recycling



- Storage Over 90 Days without a RCRA Permit

- Failure to Make Hazardous Waste Determinations





Out Of Service Since 2017

Out of Service Gas Oil Tank 25001

EPA analysis showed detectable levels of toluene, ethylbenzene, xylene, semi-volatiles and other constituents of gasoline and light hydrocarbons.



1 foot 9 inches



GAS OIL 25001 OUT OF SERVICE

Tesla, Fremont



- Storage & Treatment Without a Permit,
- Satellite Waste Storage > 55 gallons
- Universal Waste Violations
- Open Containers
- Hazardous Waste Determinations
- Subpart BB Air Emission Standards for Equipment Leaks. Waste Determinations not made at Point of Origination.
- Air Emissions Standards for Level 2 Containers
- Inadequate Aisle Space

A close-up photograph of a hand holding a yellow pencil, poised to draw on a piece of paper. The paper has a ruler and some faint technical drawings on it. The background is a soft, out-of-focus white.

In Summary:

- Understanding the listed wastes generated by a process is critical.
- When doing the facility walk-through, you can identify when listed wastes are mis-managed, disposed, or treated without a permit.

Summary of the Steps

- Research and prepare
- Brief initial plant orientation tour
- Overview of the facility operations
- Interview multiple facility operators familiar with the process(es)
- Follow the process and instrumentation diagrams
- Conduct sampling or monitoring
- Document Review
- Closing Conference

Typical Week

Day 1

- Arrive on site or make entry
- Discuss the media to be inspected
- Process evaluation and discussions
- Brief walk-through

Day 2

- Continued process evaluation and discussions
- In-depth walkthrough
- Compliance Monitoring
- Identify sampling locations

Day 3

- Continuation of Day 2 activities
- Begin sampling

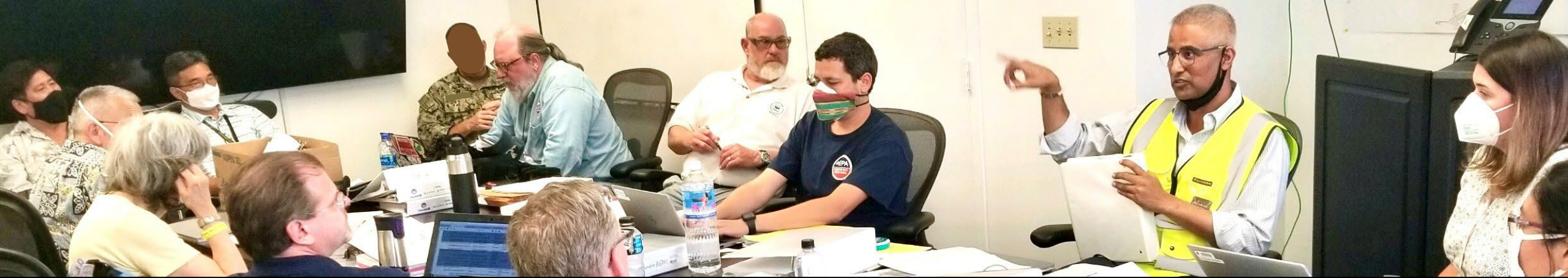
Day 4

- Re-visit areas as needed
- Wrap up walkthrough/visual inspection
- Finalize sampling events
- Conduct close-out meeting

Additional days may be required.

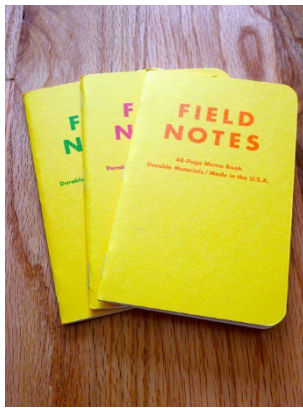


Closing Conference



- Express gratitude for facility's time and efforts during the week.
- Discuss *potential* areas of concern. Compliance determinations are not made in the field.
- Timeline for follow up contact
 - Discuss timeline for report.
 - Establish a company point of contact
- Request additional documents
 - P&IDs, Safety Data Sheets, waste determination documentation, any other info you think would help prove a violation.

Inspection Gear



Creature Comforts



Available Resources

- **EPA Process-Based Investigation Guide**

- <https://www.epa.gov/sites/default/files/documents/process-basedguide.pdf>

- **EPA Sector Notebooks**

- <https://archive.epa.gov/compliance/resources/publications/assistance/sectors/web/html/index-3.html>

- **RCRA Laws and Regulations**

- <https://www.epa.gov/rcra>

Remember: you can also reach out to your implementing state agency or regional EPA office to ask questions or to request compliance assistance



Any Questions?

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26th California Unified Program
Annual Training Conference
February 26-29, 2024