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Environmental and Safety Audits for Industrial Facilities

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Agenda

1 **Benchtop Review Audit**
Document-driven desk review of permits, records, and compliance history

2 **Regulatory Program Audits**
Deep-dive into Air Permitting, RCRA Hazardous Waste, and Stormwater / Wastewater programs

3 **Full Environmental Audit**
Comprehensive on-site assessment combining document review, field verification, and interviews

4 **Best Practices & Key Takeaways**
Common pitfalls, corrective action planning, and audit program management

Introductory Concepts

Environmental/Safety Auditing

What is an audit?

- Systematic review of environmental and safety performance.
- Checks compliance with statutes, regulations, permits, and ordinances.
- Identifies gaps and improvement opportunities.
- Reviews operations, practices, and policies.

Why do industrial facilities audit?

- Assess environmental compliance, safety and management systems.
- Perform gap analyses to support continuous improvement.
- Address limited on-site environmental resources.
- Respond to identified regulatory gaps.

What Environmental Audits Cover

Waste Management

- Non-hazardous, hazardous, and universal waste
- RCRA contingency plans
- Labeling, storage, and training

Stormwater

- SWPPP and permitting
- Analytical requirements
- Training

Air & Wastewater

- Air: permitting, plans, ODS, and reporting
- Wastewater: permitting, analytical, and reporting

EPCRA & SPCC

- Tier II, EHS notification, and TRI
- SPCC plan, training, and periodic inspections

What Safety Audits Cover

Policies, Procedures, Training (OSHA 29 CFR 1910)

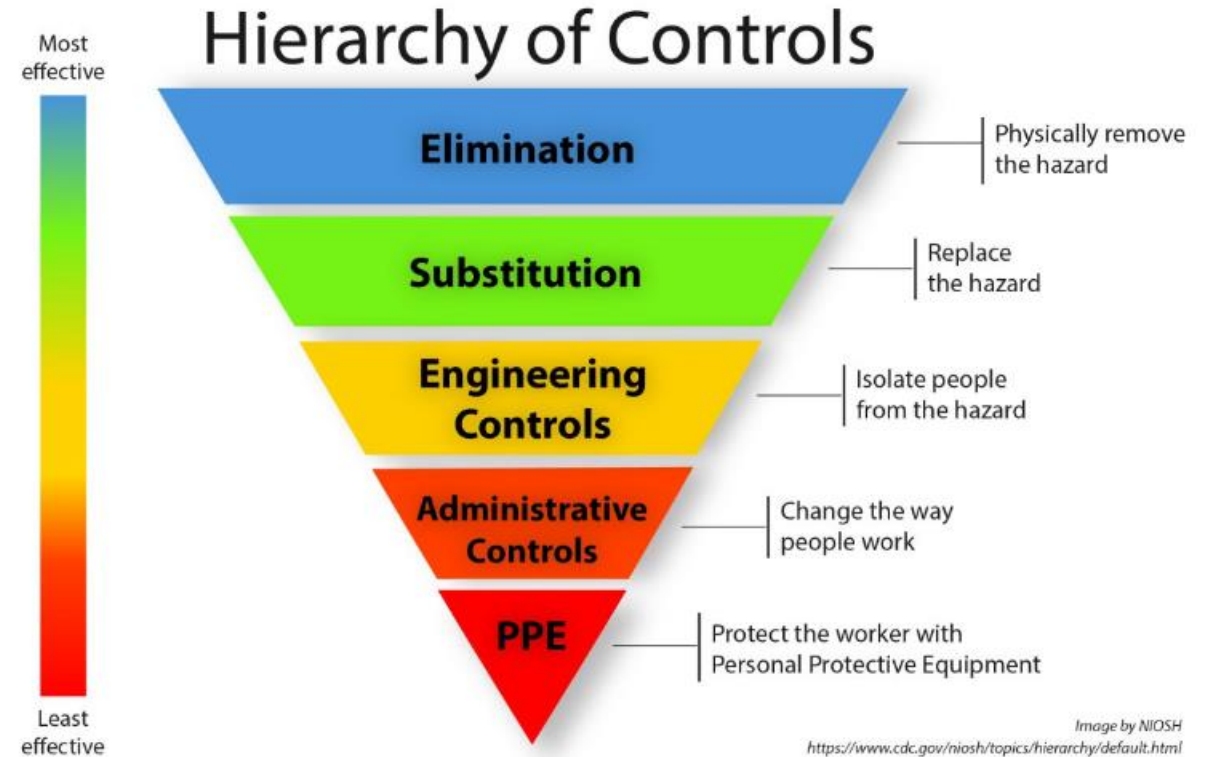
Hazcomm and General Duty

Fall Protection

Emergency Response

Hearing Conservation

Respiratory Protection



Ensuring Good Audit Outcomes

- 1 Planning:** scope, permits, timing, audit privilege, legal considerations, and the audit team.
- 2 Conducting:** review plans, inspect the site, request records, and interview staff.
- 3 Data analysis:** photos, reports, training records, and sampling results.
- 4 Reporting:** findings, citations, risk ranking (optional), and priorities (optional).
- 5 Corrective actions:** recommendations can be added, but tracking support is typically outside base scope and increases cost.

SECTION

1

Benchtop Review Audit

A document-driven desk review that evaluates compliance without setting foot on-site.

Benchtop Review: Step-by-Step

- 1 Define Scope & Objectives**
Identify which permits, programs, and timeframes to review. Prioritize high-risk areas.
- 2 Gather Documents**
Collect permits, monitoring reports, inspection logs, training records, and correspondence.
- 3 Develop Review Checklist**
Build a checklist mapping each permit condition and regulatory requirement to specific records.
- 4 Conduct Document Analysis**
Compare records to requirements.
Flag gaps and expired permits.
Note missed deadlines.
Identify inconsistencies.
- 5 Summarize Findings**
Document each finding.
Assign a severity rating.
Classify as compliant, minor, or major.
- 6 Prepare Report & Potential Cost**
Deliver the benchtop report.
Include corrective actions.
Provide estimated cost ranges.

Key Documents to Review

PERMITS & AUTHORIZATIONS

- Air permits (Title V, minor source)
- NPDES and stormwater permits
- RCRA generator notices
- State and county operating permits
- Wastewater discharge permits

MONITORING & REPORTS

- Emissions test results
- Discharge monitoring reports (DMRs)
- Waste manifests and LDR notices
- Annual and biennial filings

OPERATIONAL RECORDS

- Inspection logs
- Training records and certifications
- Spill prevention and response plans
- Equipment maintenance logs
- SWPPP records
- Pollution prevention (P2) plans
- Emergency contingency plans

SECTION

2

Regulatory Program

Targeted deep-dives into specific regulatory programs:

**Air Permitting | RCRA Hazardous Waste |
Stormwater & Wastewater | Safety**

Air Permitting Audit

Step-by-Step Process

- Verify permit inventory — confirm Title V, PSD, and minor source permits are current
- Review emission limits — compare unit limits to monitoring and stack test data
- Evaluate compliance records — check periodic tests, and deviation reports
- Assess recordkeeping — verify logs, fuel records, and material usage
- Check reporting — confirm inventories, monitoring reports, and notices were filed on time

Key Focus Areas

- Title V permit conditions and compliance certifications
- NSPS and NESHAP/MACT applicability
- PTE calculations and synthetic minor limits
- Fugitive emissions (LDAR) and leak repair tracking



RCRA Hazardous Waste Audit

Step-by-Step Process

- Confirm generator status — verify VSQG, SQG, or LQG category, monthly generation, and current EPA ID
- Audit waste characterization — confirm each waste stream is documented by testing or process knowledge
- Inspect accumulation areas — check container condition, labels, dates, closure, containment, and time limits
- Review manifesting — ensure manifests are complete, signed, and returned by the TSDF within 45 days
- Evaluate training — verify initial and annual RCRA training records for waste-handling personnel

Common Violations to Watch

- Open containers in central accumulation areas (CAAs)
- Missing or incorrect waste labels and start dates
- Exceeded storage time limits — especially 90-day LQG violations
- Incomplete manifests or missing exception reports
- SAAs over the 55-gallon limit



Step-by-Step Process

- 

- SWPPP completeness — accurate map, sources, and BMP details
- Outfall inventory and condition — identified, accessible, and labeled
- Pretreatment compliance for indirect discharges to POTWs
- SPCC alignment with stormwater controls
- No-exposure eligibility and supporting documentation
- Sampling protocols — collection, chain of custody, and lab QA/QC

SECTION

3

Full Environmental and Safety Audit

The most comprehensive approach — combining document review, on-site inspection, and personnel interviews across all media.

Full Audit: Three Phases

PRE-AUDIT

- Define scope, objectives, and criteria
- Assign audit team roles
- Send pre-audit questionnaire
- Review site maps, permits, and org chart
- Build the audit plan and protocols
- Legal team interactions and pre-audit notifications

ON-SITE AUDIT

- Open with site management
- Walk the facility and inspect conditions
- Interview EHS, operations, and maintenance staff
- Check records against field conditions
- Debrief daily with the audit team

POST-AUDIT

- Present preliminary findings in the closing conference
- Draft the report and document evidence
- Rank findings by severity and risk (optional)
- Set corrective actions, owners, and due dates (optional)

On-Site Inspection Focus Areas

Air Emissions

- Stack and vent condition
- Control equipment operation
- Fugitive emission sources
- Odor observations

Waste Management

- Container integrity and labeling
- Accumulation area compliance
- Secondary containment condition
- Waste staging and segregation

Water Management

- Outfall conditions and flow
- BMP effectiveness in field
- Treatment system operation
- Spill evidence near drains

Safety and General Compliance

- Chemical storage and SDS access
- Emergency equipment readiness
- Signage and postings
- Training documentation on-site

Audit Reporting & Corrective Actions

Audit Report Components

- Executive summary and overall compliance rating
- Audit scope, methods, and criteria
- Findings by media or program area with regulatory citations
- Severity ratings and regulatory citations, only if requested
- Evidence, documentation, and trend comparison

Corrective Action Planning

- Assign an owner to each finding
- Set deadlines based on risk
- Document root cause, not just symptoms
- Define specific, measurable actions
- Track status in a CA log
- Verify effectiveness and report progress



Typical Deliverable Example

Environmental Gap Analysis Findings Report												
Facility												
Audit Date: 12/12/24												
Final Report Date: 5/13/25												
Finding Number	Priority	Location	Violation Type	Topic	Citation/Basis	Finding Description	Recommended Corrective Action	Photo Log Ref #	Responsible Party	Corrective Actions Taken	Date Complete	Days to Complete
1	2	Administrative	Failure to comply with Wis. Adm. Code	Air	NR 406 and NR 407 Wis. Adm. Code	The facility was unable to provide records to demonstrate that an air permit for construction (NR 406) or operation (NR 407) is not required.	Confirm whether existing air permit exemption for RD113006650 covers the DeForest campus. If the permit does not include this site, conduct an air permit applicability study to demonstrate the appropriate exemptions in NR 406 (construction) and NR 407 are applicable.		DHS&S & SCS to determine next step	Completed air emissions estimates for this facility and confirmed that permitting thresholds were not exceeded. We understand that the MSD and ANP locations will be considered a single source since they are located adjacent to each other and have similar NAICS codes; the emissions will be modified to add ANP to the permit applicability study in conjunction with correcting ANP audit findings.	7/9/2025	57
2	2	Administrative	N/A	N/A - Local or Federal	EPCRA 302, 40 CFR 355; and WDM 1.03 Wis. Adm. Code	The facility was unable to demonstrate that the sulfuric acid at the site does not exceed the 1,000 pound notification limit for extremely hazardous substances.	Conduct a battery survey and identify other sources of sulfuric acid on site. If the amount exceeds 1,000 lbs, file an emergency planning notification with Wisconsin Emergency Management.		DHS&S	Calculated a maximum of 635 pounds of sulfuric acid on site; an emergency planning notification is not required; sulfuric acid was included on the 2024 Tier II report	2/27/25	N/A
3	2	Administrative	N/A	N/A - Local or Federal	EPCRA 311/312, 40 CFR 370; and WDM 1.04 Wis. Adm. Code	The facility was unable to demonstrate that the amount of reportable chemicals on site do not exceed Tier II reporting thresholds.	Conduct a survey of reportable chemicals on site. If any chemicals exceed their reporting threshold, file the appropriate report with Wisconsin Emergency Management.		DHS&S	Completed 2024 Tier II reporting	2/27/25	N/A
4	2	Administrative	Failure to comply with Wis. Adm. Code	Hazardous Waste	NR 662.011 Wis. Adm. Code	Hazardous waste determinations were not available for each solid waste generated at the facility. This may also have impacted the waste profiles set up with the disposal company. For instance, the printing ink profile indicated that the waste ink contained 1,1,1-trichloroethane (production and use was phased out decades ago), benzene, and tetrachloroethylene; these are not typical inkjet printing chemicals. SDS for the printing ink and make-up fluid indicate that the main components are ethanol and ethyl acetate.	Establish a process to make and document waste determinations. Use the waste determinations to update waste profiles with the waste vendor.	1	Maintenance & DHS&S	Maintenance contacted SafetyKleen to review and correct waste profiles. DHS&S established a waste process. Waste determinations are in place for industrial waste generated by the facility.	4/26/2025	68
5	2	Administrative	N/A	N/A - Local or Federal	Ozone Depleting Substances (ODS), 40 CFR 82	The facility was unable to provide records of ODS loss calculations for the chiller.	Acquire records from refrigerant vendor that include maintenance and loss; calculate loss rates and report to U.S. EPA, if required.		Corp Maint & DHS&S	Corp Maint have requested records from N/A; established a documentation process for future audits.		
6	2	Administrative	N/A									
7	2	Administrative	Failure to comply with Wis. Adm. Code									
8	3	Administrative	Failure to comply with Wis. Adm. Code									

IMPACT

	Trivial	Minor	Moderate	Major
Very Likely				

IMPACT DEFINITIONS

Audit Area	Trivial	Minor	Moderate	Major
HS	Although such violations reflect conditions which have a direct and immediate relationship to the safety and health of employees, the most serious injury or illness that could reasonably be expected to result from an employee's exposure would not be low, medium or high severity and would not cause death or serious physical harm. The condition constitutes a violation but not one likely to result in an injury.	Injuries or temporary, reversible illnesses not resulting in hospitalization and requiring only minor supportive treatment.	Injuries or temporary, reversible illnesses resulting in hospitalization for a variable but limited period of disability.	Death from injury or illness; injuries involving permanent disability; or chronic, irreversible illnesses
			Equipment not maintained with appropriate	

F

		IMPACT			
		Trivial	Minor	Moderate	Major
FREQUENCY	Very Likely	Medium	Medium	High	High
	Likely	Low	Medium	Medium	High
	Unlikely	Low	Low	Medium	Medium
	Rare	Low	Low	Low	Medium

IMPACT DEFINITIONS				
Audit Area	Trivial	Minor	Moderate	Major
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HS Example	Record keeping violation.	Common work place area that has not had appropriate job task assessment and training completed.	Equipment not maintained with appropriate machine guarding creating laceration injury; Employees observed handling and pouring caustic chemicals without wearing appropriate personal protective equipment to protect arms and body from chemical burns; Operator observed operating forklift near pedestrians without looking in the direction of travel	Employee working on energized piece of equipment (i.e., cardinal rule violation).
ENV	Regulatory requirement, however not a violation of permit or plan. Little to no risk of enforcement or penalty.	Regulatory requirement or federal or state permit violation that has low to moderate potential for enforcement or penalty because it is isolated and/or limited in scope (e.g. violation not continuing; penalty authority not to exceed \$50,000)	Regulatory requirement or federal or state permit violation that has moderate to high potential for enforcement and/or penalty because of the seriousness or duration of the violation (e.g. continuing violation; penalty authority \$50-100K)	Imminent danger to the environment or community; likely to result in enforcement and/or substantial penalty (e.g. high enforcement priority and/or potential fine greater than \$100K)
ENV Example	Incorrectly completing inspections.	Mixing permit required records.	Operating a source of air emissions without a permit.	Leaking fuel tank near a stream or storm drain.

Photo Log



Photo 1: Exterior view of the main street entrance to the facility.



Photo 2: Dryer exhaust stack.

SECTION

4

Best Practices and Takeaways

Best Practices & Common Pitfalls

Best Practices

- Focus first on the highest-risk areas
- Use the same checklist every time
- Have someone objective do the audit
- Think through disclosure early if issues come up
- Make sure leadership reviews findings and follow-up

Common Pitfalls

- Check-the-box audits
- Skipping field verification
- No follow-up on findings
- Missing stricter local rules
- Weak documentation / staff answers only

How does SCS add value?

BE POSITIVE

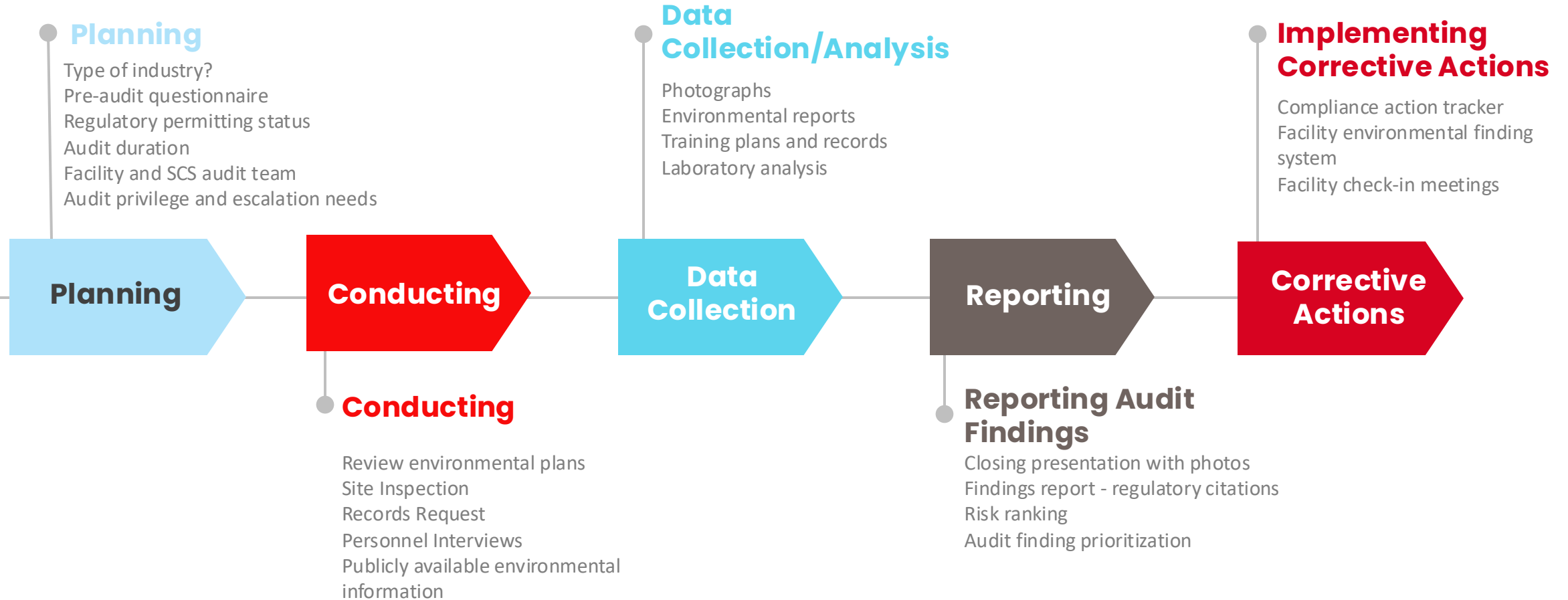
IDENTIFY
SOLUTIONS
(NOT PROBLEMS)

CELEBRATE BEST
PRACTICES

CORRECT REAL
TIME
(IF POSSIBLE)

IDENTIFY
EFFICIENCIES

Key Milestones of an Audit



Key Takeaways

- 1 A benchtop review is an alternative to a program-specific audit or a full environmental audit.
- 2 Regulatory program audits (air, RCRA, water) require deep, checklist-driven analysis of program-specific permit conditions and regulatory requirements.
- 3 A full environmental/safety audit is the gold standard — it combines document review, field verification, and interviews for a complete compliance picture.
- 4 Corrective actions and risk ranking are optional. Engage legal team early!
- 5 Self-disclosure options vary by state, so check the applicable jurisdiction before conducting the audit.



Questions?

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Thank you!