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# Keeping up with Complicated AQ Regulations

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| NSPS 0000a<br>Affected Facility  | Production<br>(Well Site) | Gathering | Gas<br>Processing | Transmission<br>and Storage* |
|----------------------------------|---------------------------|-----------|-------------------|------------------------------|
| Hydraulically<br>Fractured Wells | X                         |           |                   |                              |
| Centrifugal<br>Compressors       |                           | X         | X                 | X                            |
| Reciprocating<br>Compressors     |                           | X         | X                 | X                            |
| Pneumatic<br>Controller          | X                         | X         | X                 | X                            |
| Pneumatic Pumps                  | X                         |           | X                 |                              |
| Storage Vessels                  | X                         | X         | X                 | X                            |
| Equipment Leaks                  | X                         | X         | X                 | X                            |
| Sweetening Units                 |                           |           | X                 |                              |

\* Up to the Local Distribution Company (LDC)

| NSPS OOOOa Affected Facility                                                                       | Standard                                                                                   | Compliance Date                                                        |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Hydraulically fractured wildcat wells, delineation wells, or low pressure wells                    | Completion combustion                                                                      | August 2, 2016                                                         |
| Other hydraulically fractured wells                                                                | REC, completion combustion unless GOR < 300 scf/bbl                                        | August 2, 2016<br>November 30, 2016 for REC standard for non-gas wells |
| Centrifugal compressors with wet seals (not on well sites, up to the LDC)                          | 95% reduction (P.E. Certification if equipped with CVS)                                    | August 2, 2016                                                         |
| Reciprocating compressors (not on well sites, up to the LDC)                                       | Change rod packing or route emissions to process (P.E. Certification if equipped with CVS) | August 2, 2016                                                         |
| Pneumatic controllers at NG processing plants                                                      | Zero bleed rate                                                                            | August 2, 2016                                                         |
| Continuous bleed pneumatic controllers between wellhead and the LDC (not at gas processing plants) | ≤6 scfh bleed rate                                                                         | August 2, 2016                                                         |

| NSPS OOOOa Affected Facility                          | Standard                                                                                       | Compliance Date   |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------|
| Pneumatic pumps at gas processing plants              | Zero bleed rate                                                                                | November 30, 2016 |
| Pneumatic pumps at well sites                         | 95% reduction if control or process available onsite (P.E. Certification if equipped with CVS) | November 30, 2016 |
| Storage vessels                                       | 95% reduction (P.E. Certification if equipped with CVS)                                        | August 2, 2016    |
| Equipment leaks at gas processing plants              | Leak Detection and Repair (LDAR) program                                                       | August 2, 2016    |
| Equipment leaks at well sites and compressor stations | LDAR program                                                                                   | June 3, 2017      |
| Sweetening units at gas processing plants             | Reduce SO <sub>2</sub> as calculated                                                           | August 2, 2016    |

# Engines and Turbines

- > Engines: NSPS IIII, JJJJ; MACT ZZZZ
- > Turbines: NSPS GG and KKKK; MACT YYYYY
- > Typical Requirements:
  - ❖ Emission limits
  - ❖ Source testing
  - ❖ Hours tracking
  - ❖ Startup, shutdown, maintenance tracking

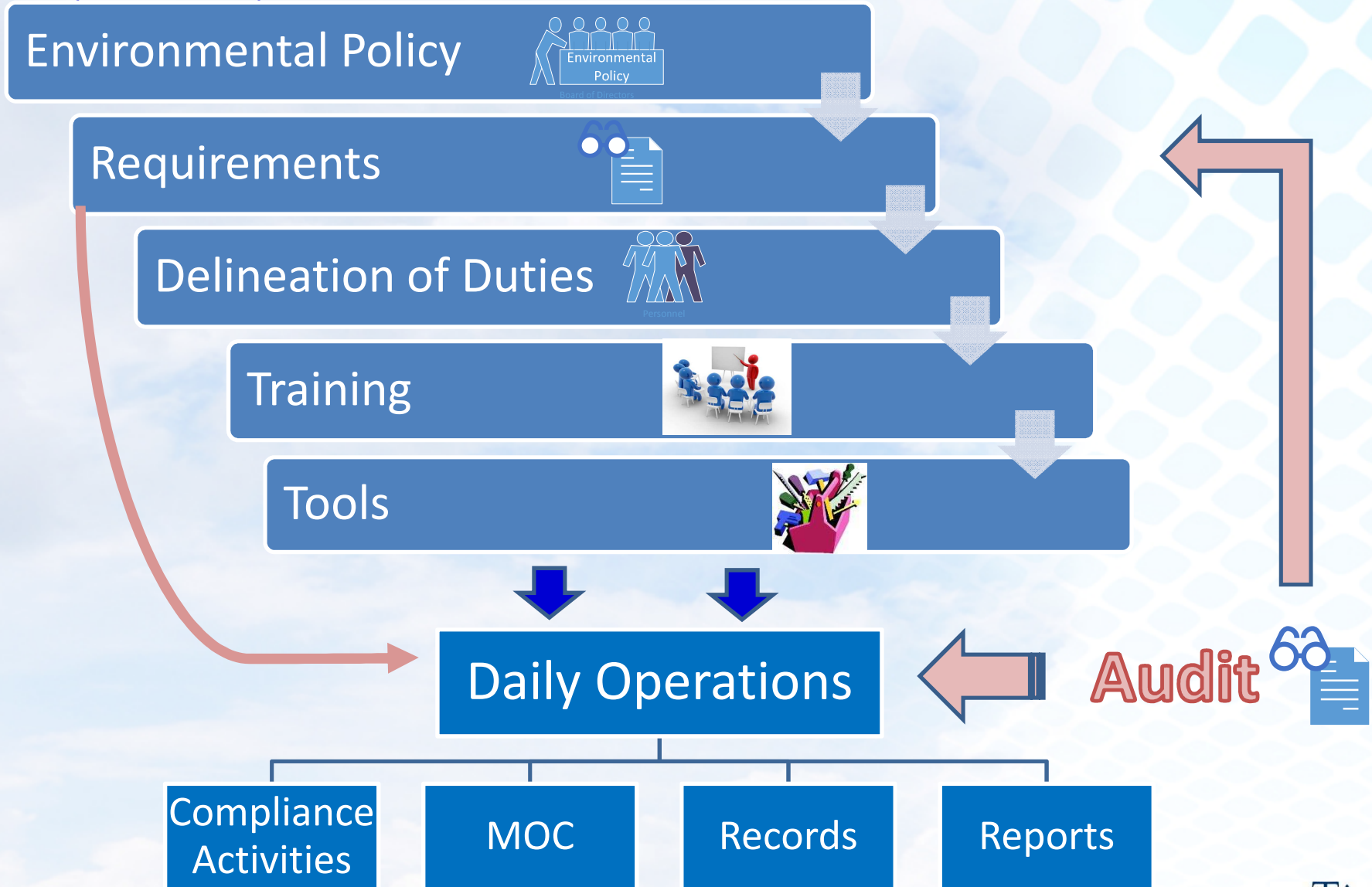
# All Units - Air Permitting

- > All states require some level of authorization for operations downstream of the well site
  - ❖ More states are now also requiring review for changes at well sites
- > What is involved?
  - ❖ Identifying “projects” that may require authorization
  - ❖ Estimating and reporting air emissions
  - ❖ Applying control technologies
  - ❖ Waiting for written authorization from the agency

# How to Keep Up?

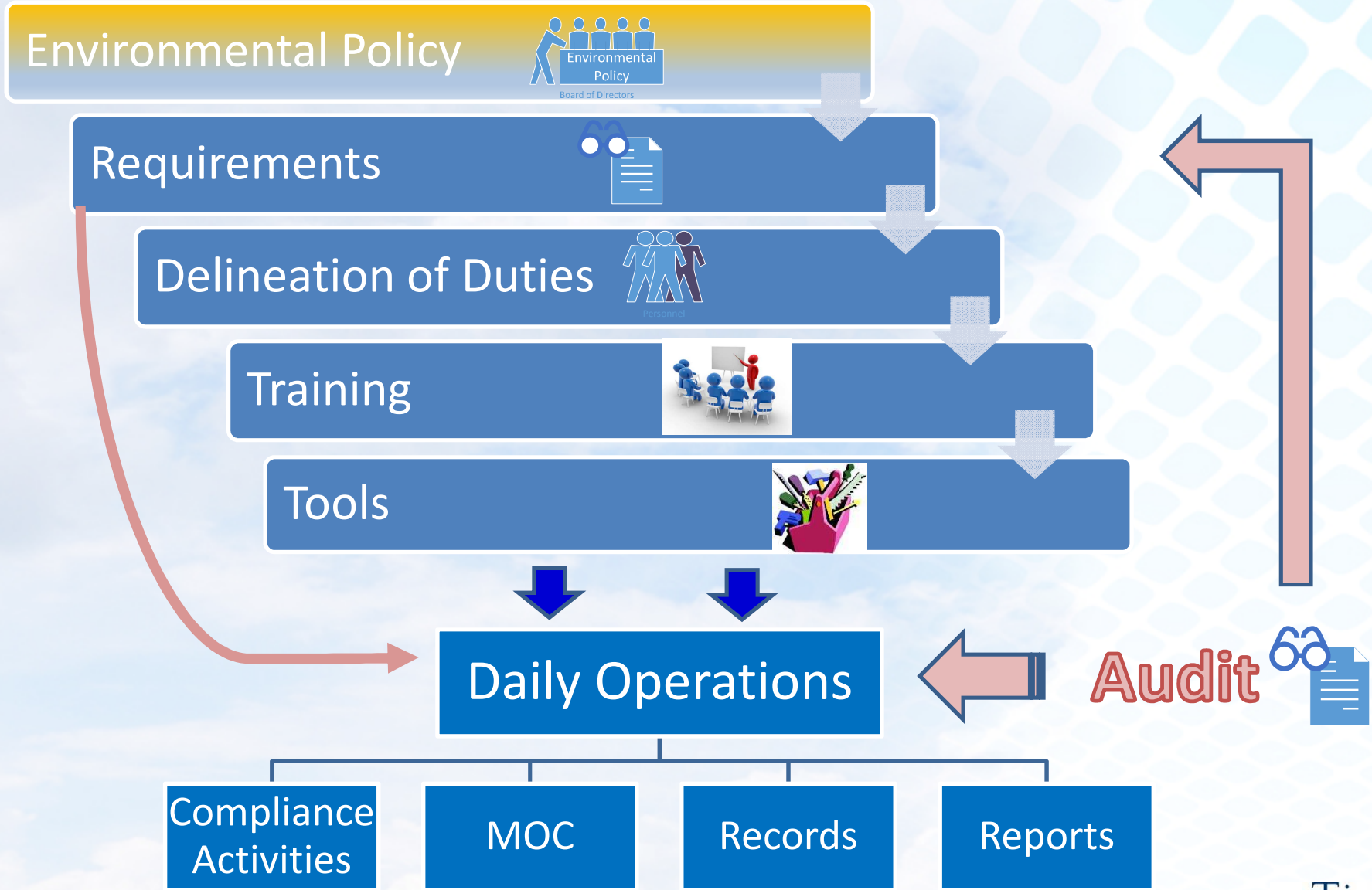


# Compliance Management and Audit Plan (CMAP)





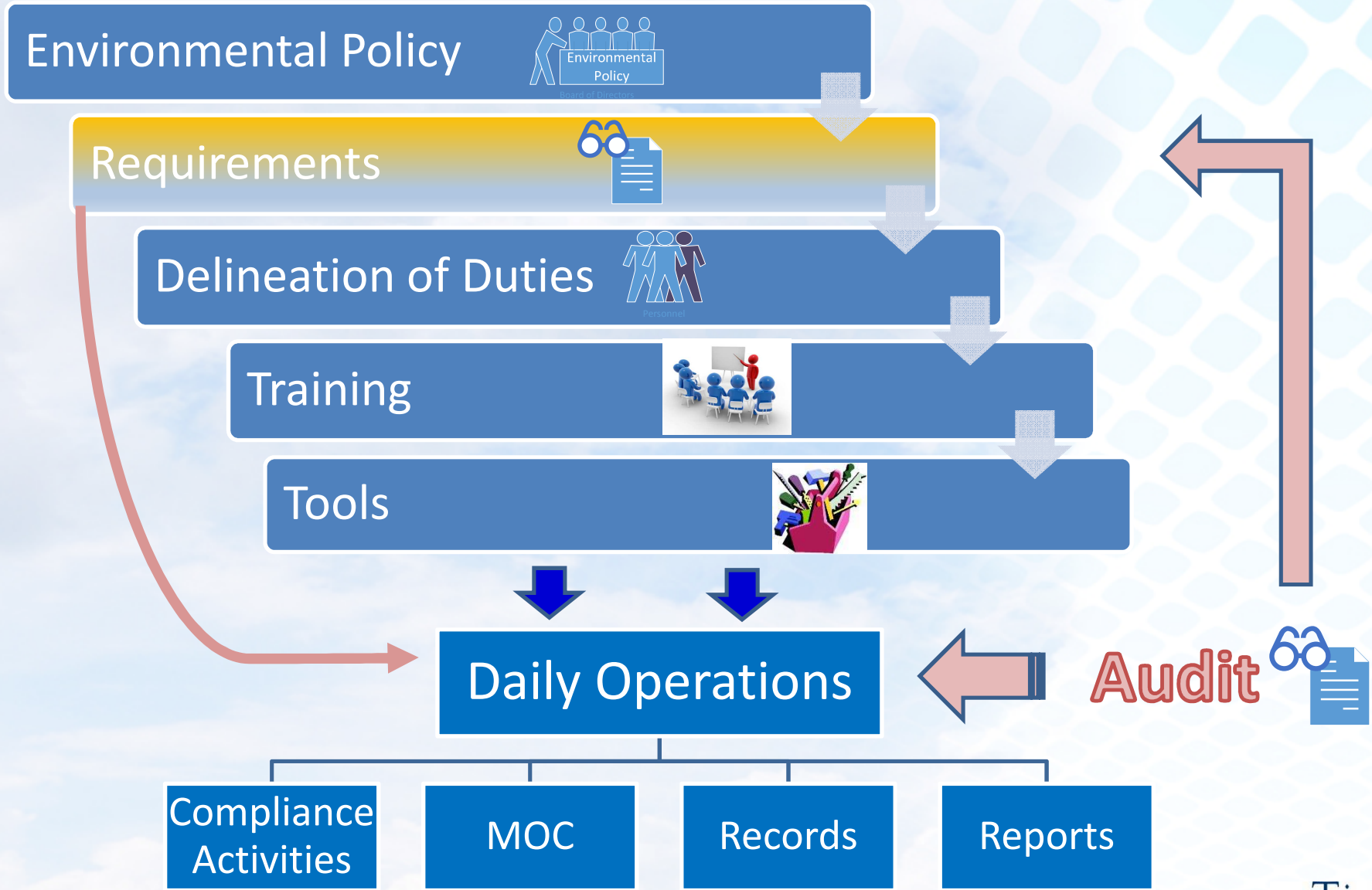
# Compliance Management and Audit Plan



# Corporate Environmental Policy

- > In the context of a CMAP, the environmental policy is the statement that demonstrates the company's commitment to environmental compliance
- > The policy should be reinforced in training during audit visits, and during performance reviews
- > The policy can be presented during training in the context of why it is important (environmental responsibility, good stewardship, safety, and reduced risk of penalties and prosecution)

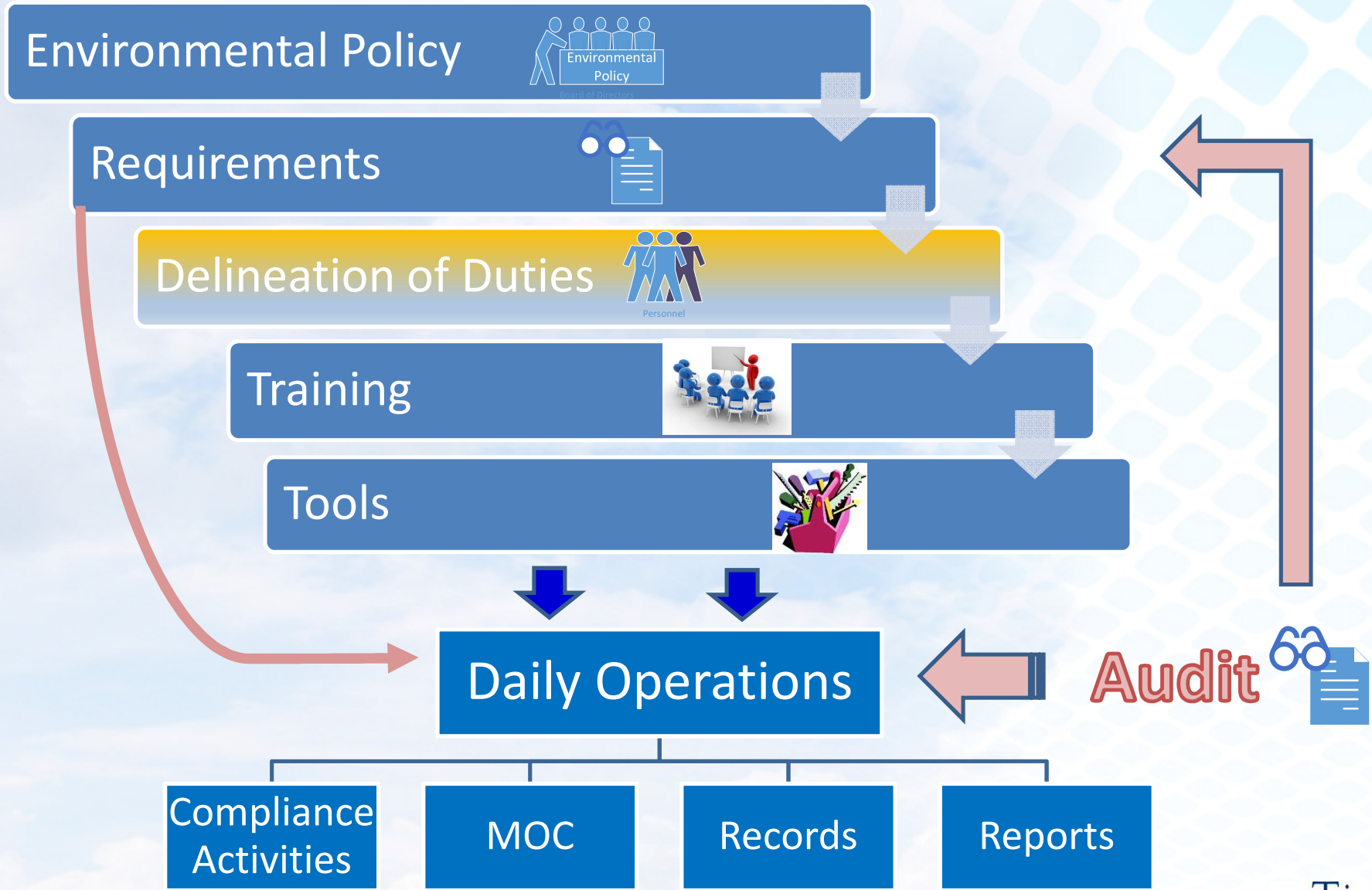
# Compliance Management and Audit Plan



# Requirements

- > Determine applicable regulations and their detailed requirements
- > How to document these requirements for each site?
  - ❖ Excel
  - ❖ Binders
  - ❖ EMIS (Intelex/ACTS, Enviance, etc.)
- > Can result in hundreds, or not thousands, of individual tasks and compliance touch points in a region or field

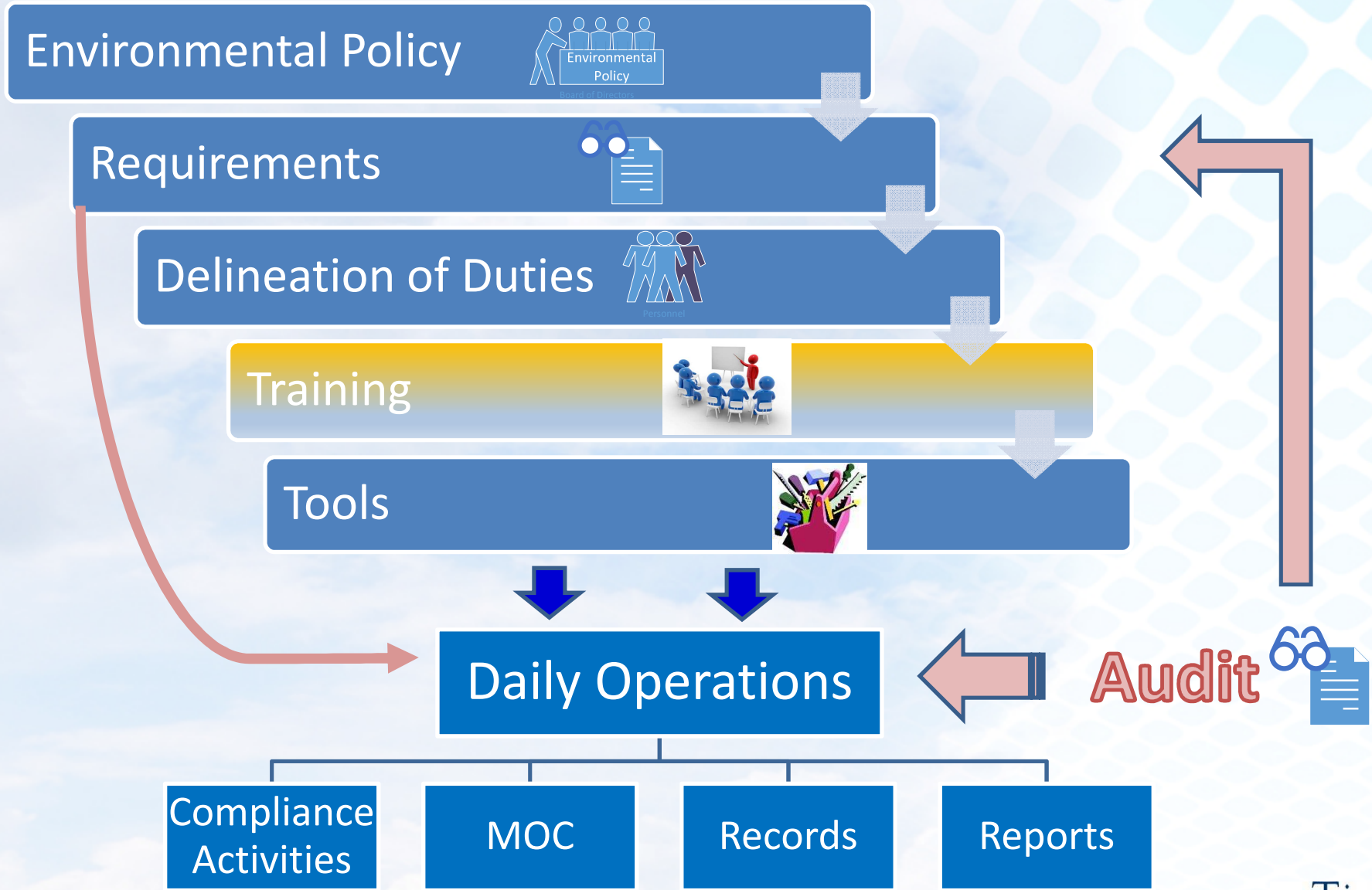
# Compliance Management and Audit Plan



# Delineation of Duties

- > The specific duties and expectations of each individual with environmental responsibilities must be clearly stated in writing and should be continually reinforced and reevaluated.
- > These duties and expectation may be stated as part of the job description, discussed during performance reviews, and reinforced during staff meetings and training events.
- > A cross-functional flow diagram that graphically illustrates duties and expectations can be very effective.
  - ❖ This exercise is often useful in identifying gaps in responsibilities and lines of communication.
- > Once duties and responsibilities have been established in writing, you will then be able to develop training modules that are specifically designed with these duties and responsibilities in mind.

# Compliance Management and Audit Plan



# Training Program

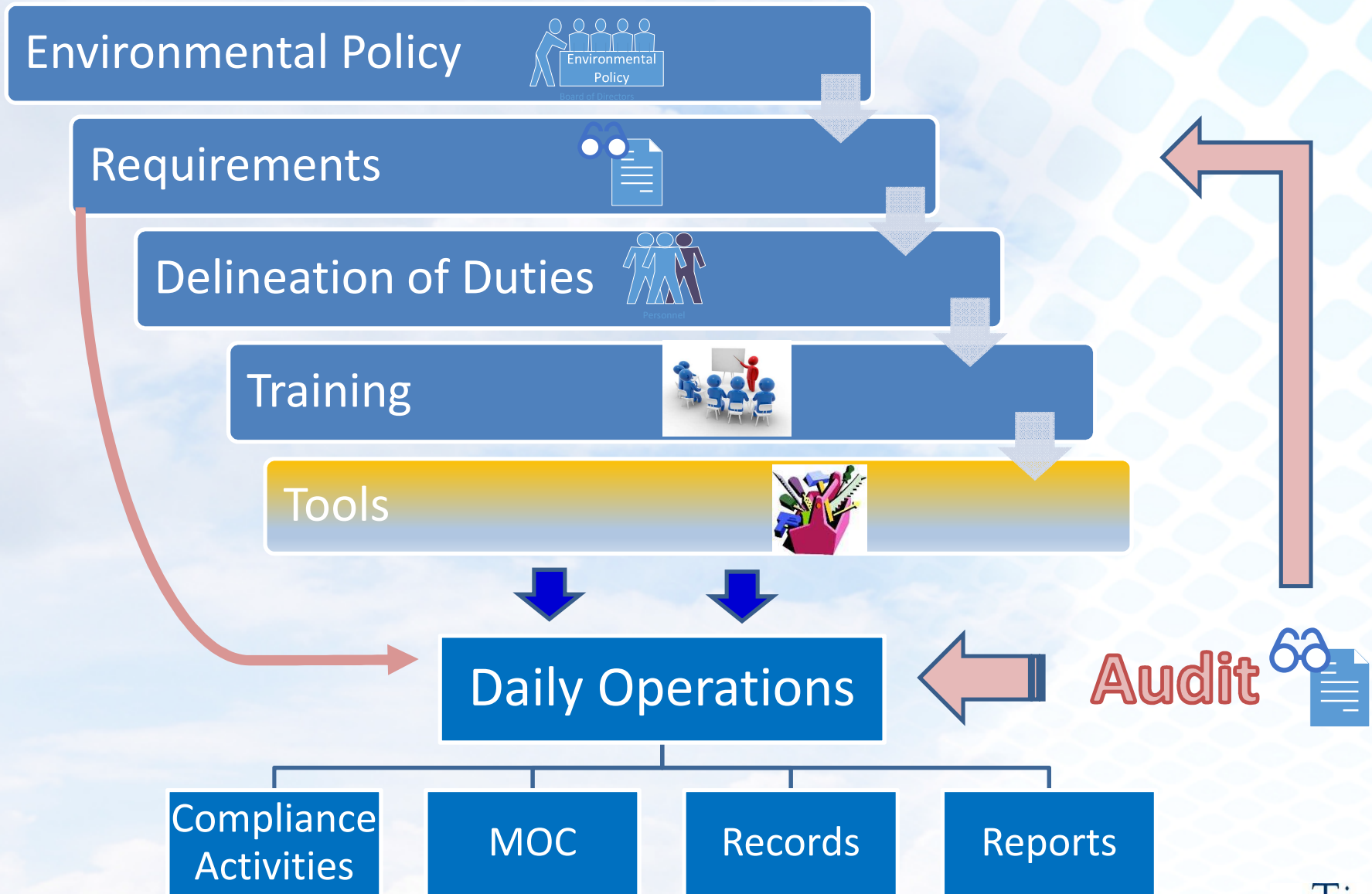
- > An effective, consistent, and timely training program is pivotal to the success of a CMAP
- > Training helps to prevent gaps in compliance coverage, ensures consistency, helps manage “typical risks,” and is important for transitioning responsibilities
- > To be effective on an ongoing basis, a training program must be strategically developed in a way that enables employees to effectively attend to their assigned responsibilities
- > The level of regulatory detail should be appropriate to the duties, with task-specific training being the focus
- > As such, a training module should be developed for each level of responsibility identified under *Delineation of Duties and Responsibilities* section above



# Training Program (cont.)

- > Training modules should be designed and developed for different needs, and may include:
  - ❖ New employee orientation;
  - ❖ Training upon promotion or upon increased job responsibilities;
  - ❖ Annual refreshers;
  - ❖ Periodic webinars or luncheons on relevant topics or trending issues;
  - ❖ Training over lunch during an audit (this also enhances the feeling of cooperation and reaffirms that Corporate HES personnel are there to help the field to succeed);
  - ❖ External training to further develop more advanced skills;
  - ❖ Training upon discovery of a potential or confirmed violation, in order to avoid future similar violations;
  - ❖ Auditor training (initial training and periodic refreshers)

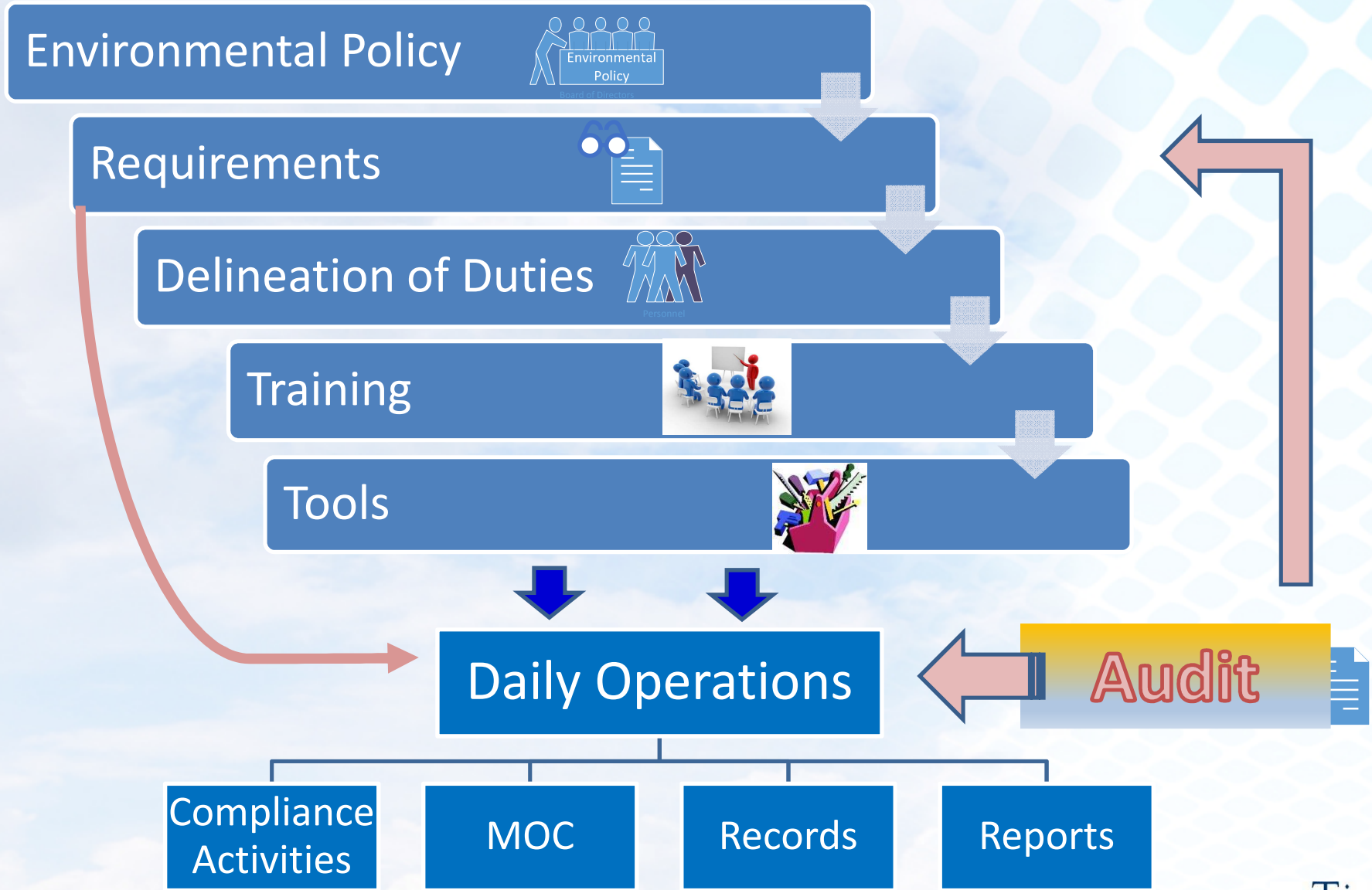
# Compliance Management and Audit Plan



# Compliance Assistance Tools

- > White Papers and Guidance Documents - Developed based on systemic issues, focus areas, findings during Audits, etc.
- > Decision Flow Charts - These may be developed for routine events such as asset swaps (MOC), process modifications, process improvement and maintenance events, upset events, CapEx decisions, recordkeeping and reporting requirements, etc.
- > Checklists - Compliance checklists are very effective tools for assisting personnel to comply with permit conditions, site changes and maintenance, NSPS and NESHAP requirements, SSM/M requirements
- > Reporting Tools - Having readily-available and vetted reporting and recordkeeping templates with instructions available ensures consistency and saves time

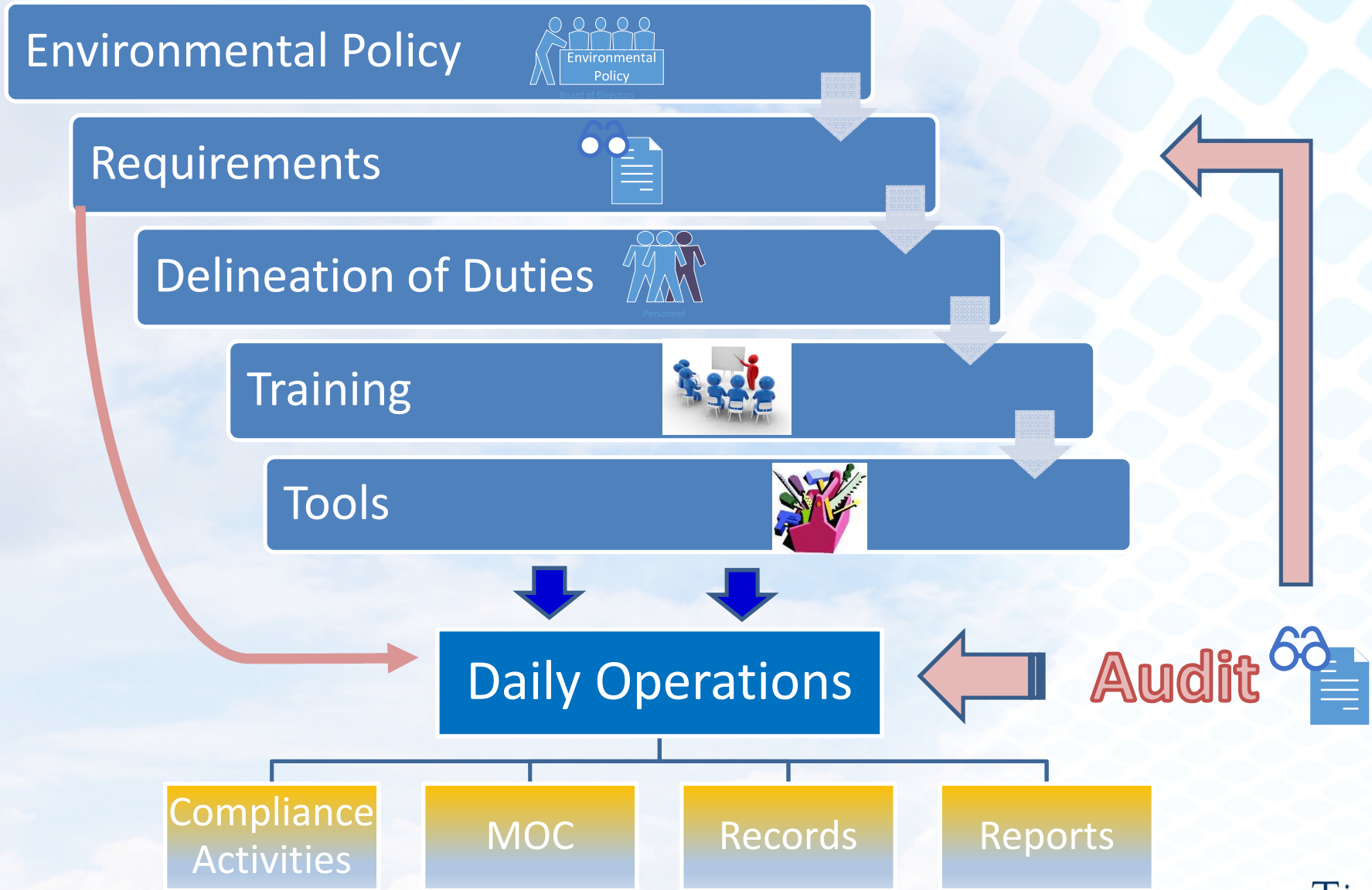
# Compliance Management and Audit Plan



# The Audit Program (cont.)

- > The audit program should consist of the following:
  - ❖ Detailed Compliance Audit
  - ❖ Interim Compliance Review
  - ❖ Field Review
  - ❖ Acquisition Audit (Due Diligence)
  - ❖ Focus Area Audits

# Compliance Management and Audit Plan



Compliance Activities

MOC

Records

Reports

# Operations: Management of Change

- > A challenge is to capture and review activities at sites during the normal course of operational maintenance and upgrades
  - ❖ These changes can trigger permitting and other requirements
  - ❖ How to capture these for further review
    - ◆ Develop screening tools
    - ◆ Add an "Environmental Review" field in Maximo, etc.
    - ◆ Include Environmental in engineering meetings

# Operations:

## Internal Documentation

- > How to manage the flow of compliance data coming from the field?
  - ❖ Have an established policy for file retention and reporting
  - ❖ Intranet (forms, folders)
  - ❖ EMIS
- > Be aware of the file and records retention policy of the EPA, State, and your company



# More on the way...

- > Information Request from EPA
- > BLM flaring and venting rule
- > LDAR for upstream sites June 2017
- > EPA enforcement priorities include flaring, venting, and LDAR

# CMAP Summary

- > An effective, intentional CMAP does not happen overnight

