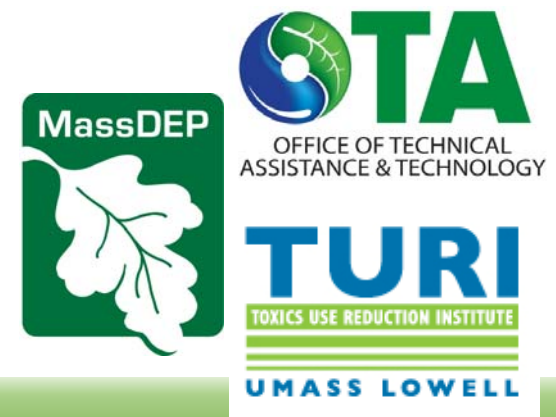




Session A: TUR Planning Refresher Challenges to Finalizing TUR Plans

April 25, 2018 Continuing Education Conference
Marlborough, MA



Agenda

Common
Challenges;
Situations
and
Strategies

Applying
“Good
Faith” to
Your Work

What the
Program
Has
Learned

Putting
your TUR
Planning
Activities
into
Context

Working
with
MassDEP

Common Challenges

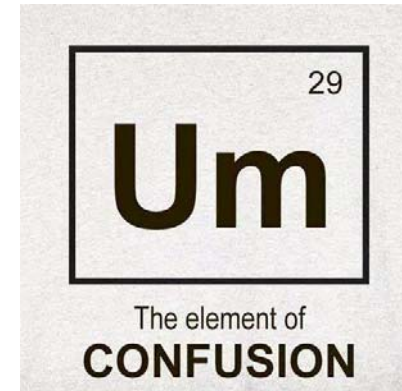
What challenges do you face

- As a consultant
- As company representative

What solutions have you employed

- As a consultant
- As company representative

What is “Good Faith”?



- It appears:
 - 3 times in the 3-page section of the Statute dealing with Planning
 - 10 times in the 10-pg Regulation
 - 20 times in the 20-pg Guidance Document
- But what does it mean??
 - ❖ *n. Honest intent to act without taking an unfair advantage over another person or to fulfill a promise to act, even when some legal technicality is not fulfilled.*

Based on our experience, you should:

- Review and know what chemicals are on the list and what their reporting thresholds are
- Not assume what has been done in the past is correct this reporting cycle.
- **Ask yourself these questions:**
 - Am I taking over reporting responsibilities from someone else who previously prepared and filed the Form-S report?
 - Have I accounted for all chemical use - especially those chemicals used in excess of 1,000 pounds?
 - Do I have current SDS for all chemicals?
 - Do we use PBTs? Rule this out!
 - Do we use Higher Hazard Substances (HHS)?

Commonly Overlooked or Incomplete Requirements

Pay attention to chemicals you previously reduced below thresholds and did not report on last year.
Ask: are we still below threshold?

Chemical name synonyms

Take care in materials accounting activities

Be sure to evaluate all processes where the chemical is used when identifying and evaluating TUR opportunities

Update process flow diagrams regularly to ensure accuracy

Water pretreatment chemicals included in a production unit?

Chemicals used in Waste Treatment (facility-wide planning)

Accounting for coincidentally manufactured chemicals

Commonly Missed Reports – Additional \$1,000 Fee & NON

- Higher Hazard Substances (HHS)
 - 1,000 lb threshold
- Use of PBTs
- Chemical Categories
- Differences in TRI and TURA Reporting List
- Wastewater Treatment and Cleaning Chemicals
- New Listings
 - Hexabromocyclododecane (HBCD) Category for RY 2018
- Reporting Water Dissociable Nitrate Compounds
 - Do you use nitric acid?
- Coincidentally Manufactured Chemicals

New Higher Hazard Substances

2,4-Toluene diisocyanate

- 2,4-TDI
- CAS 584-84-9

2,6-Toluene diisocyanate

- 2,6-TDI
- CAS 91-08-7

Toluene diisocyanate mixed isomers

- TDI-mixed isomers
- CAS 26471-62-5

Higher Hazard Substances (HHS)

- Trichloroethylene
- Formaldehyde
- n-Propyl bromide
- Cadmium
- Cadmium compounds
- Perchloroethylene
- DMF
- Methylene chloride
- Hydrogen fluoride
- Cyanide compounds
- **NEW:** Toluene diisocyanates

Formaldehyde (CAS 50-00-0)

Synonyms Include:

Formalin

Formol

Methylene
Glycol

Methyl
Aldehyde

Methylene
Oxide

Chemical Categories – Some are HHS or PBT's

- Nickel, Silver, Zinc, Copper & Antimony Compounds Category(25,000 lb threshold)
- Cadmium, Cyanide & Hexavalent Chromium Compounds Category(1,000 lb threshold)
 - Use DEP Category # 1216 for Cr (VI) compounds (total compound weight towards threshold 1,000 lb threshold)
 - Use DEP Category # 1217 for Non Cr(VI) Chromium Compounds (25,000 lb threshold)
- Lead Compounds(100 lb threshold)

Difference in TRI and TURA Reporting

- Reporting of Hydrochloric Acid and Sulfuric Acid (Both Aerosol and Non-Aerosol on Form-S)
- Sodium Hydroxide & Potassium Hydroxide
- Bleach (Sodium Hypochlorite)
- Acetone
- Benzoic Acid
- Ferrous Sulfate
- Tri-sodium Phosphate (TSP)
- Paraformaldehyde

Coincidentally Manufactured Chemicals

- HF reporting threshold lowered to 1,000 lb
 - Processing or Manufacturing HF from ammonium bifluoride (CAS 1341-49-7) or ammonium fluoride (CAS 12125-01-8) or other fluoride salts.
- Water Dissociable Nitrate Compounds
 - Nitric acid neutralization

TURA Amnesty – Which industry sectors had the most first-time filers?

Food and
Beverage

Plastics

Fabricated
Metals

Amnesty - Which sectors missed a reportable chemical?

21 Fabricated Metals

18 Chemical Manufacturing

12 Concrete

13 Food and Beverage

9 Utilities

6 Plastics and Rubber

6 Computer and Electronics

6 Chemical Distributors

Amnesty – Which chemicals were commonly missed?

19 Sodium Hydroxide

11 Nitrate Compounds

10 Sulfuric Acid

11 Lead or Lead Compounds

7 Acetone

6 Phosphoric Acid

6 Hypochlorous Acid

5 Acetic Acid

Putting Your TUR Planning Activities into Context

Making the business case for implementing TUR options that you and your team have determined to be technically and economically feasible may not be the no-brainer you feel it is

- Consider all costs associated with chemical use
- Consider process costs
- Consider opportunity costs
- Consider non-monetary benefits

Direct Costs

Cost	Considerations	Source of Information
Chemical	<ul style="list-style-type: none">• Easier metrics than many cost factors (e.g., \$/gal; \$/lb)• Consider concentrations	Purchasing; Vendors
Process	<ul style="list-style-type: none">• Production inefficiencies (e.g., avoidable waste)• Cost of utilities• Cost to change equipment for TUR• Maintenance• A current PFD may indicate ways to reduce/eliminate<ul style="list-style-type: none">• Determine where your \$ is being spent and prioritize accordingly	Process engineers; Operators; Facilities; QA

Indirect Costs

Cost	Considerations	Source of Information
Storage and Handling	<ul style="list-style-type: none"> Floor space, containment, compatibility, inspection intervals Maintenance 	Process engineers; Operators; Facilities; EH&S
Treatment	<ul style="list-style-type: none"> WWT chemicals (current and what would be required if changes adopted) Air scrubbers or thermal oxidizers (e.g., significant savings if go to non-VOC solvents) 	EH&S engineers; Process engineers; Operators; Facilities
Waste Generation	<ul style="list-style-type: none"> Hazardous waste vs non-hazardous Increased inspections, storage impacts, regulatory compliance 	EH&S engineers; Process engineers; Operators; Shipping; Facilities
Regulatory Compliance	<ul style="list-style-type: none"> TURA fees Reporting (TURA, TRI, air emissions, Tier II) Permits (and associated monitoring and reporting) Labelling (e.g., Cal Prop 65) 	EH&S; Facilities; Accounts Payable

Worker Health and Safety

Costs	Considerations	Sources of Information
PPE	<ul style="list-style-type: none"> • Hands, eyes, face, heads, lungs, hearing, safety 	EH&S; Operators; Purchasing; HR
Productivity Impacts	<ul style="list-style-type: none"> • Reduced productivity due to accidents or exposure • Consider “what if?” scenarios to determine range of potential liabilities • Benchmark against other companies • Look at past workers’ compensation figures 	EH&S; HR
Training	<ul style="list-style-type: none"> • Frequency and content development • Consider company culture • Multiple languages? 	HR; EH&S

Other Considerations

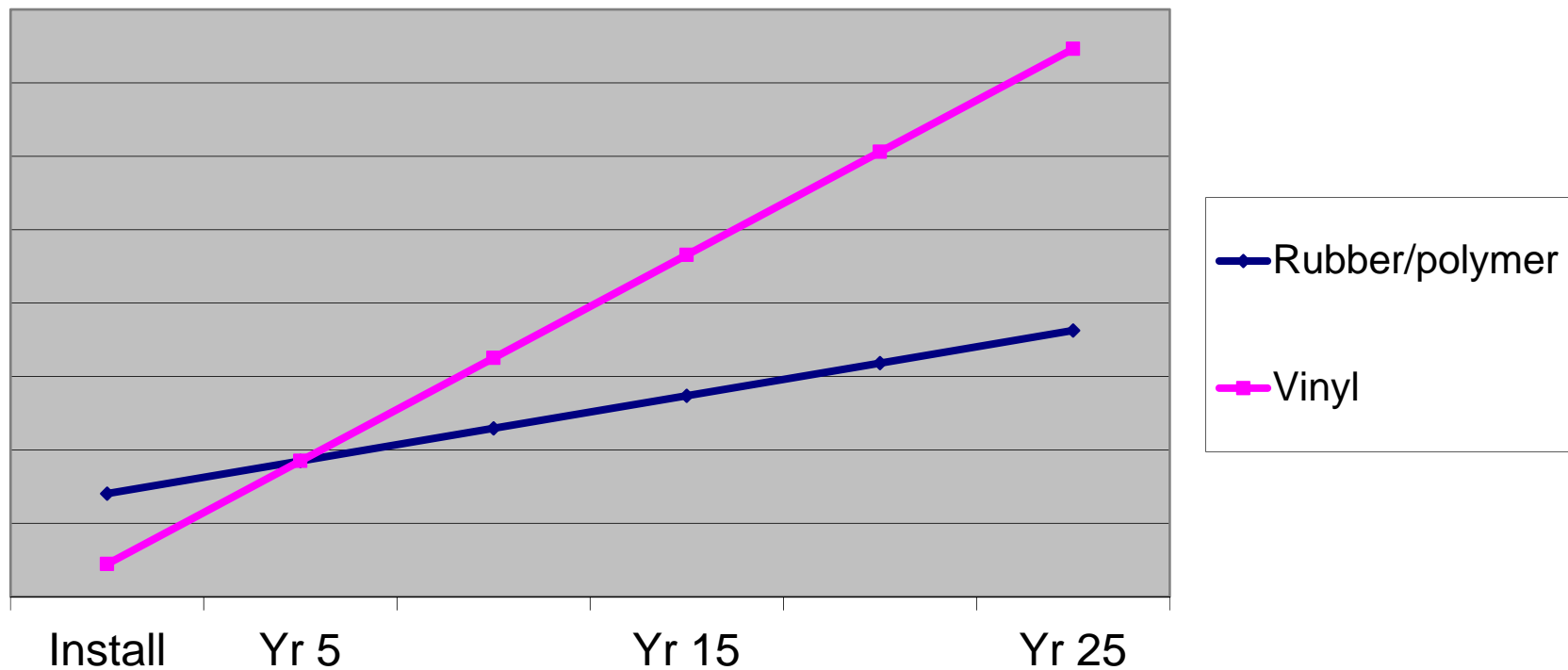
Consideration	Potential Outcome
Opportunity costs	<ul style="list-style-type: none">• Missed savings associated with TUR if not implemented• Reduced insurance liability with safer process
Potential Non-monetary benefits	<ul style="list-style-type: none">• Development of niche market• Improved neighbor relations• Improved regulator relations• Improved customer relations



Costing a System Change

Capital Costs vs. Lifecycle Costs

Cumulative Flooring Costs



Courtesy of Pure Strategies, 2015

Working with MassDEP

From MassDEP to YOU

Request for
Information or
Clarification

Inspection

Enforcement

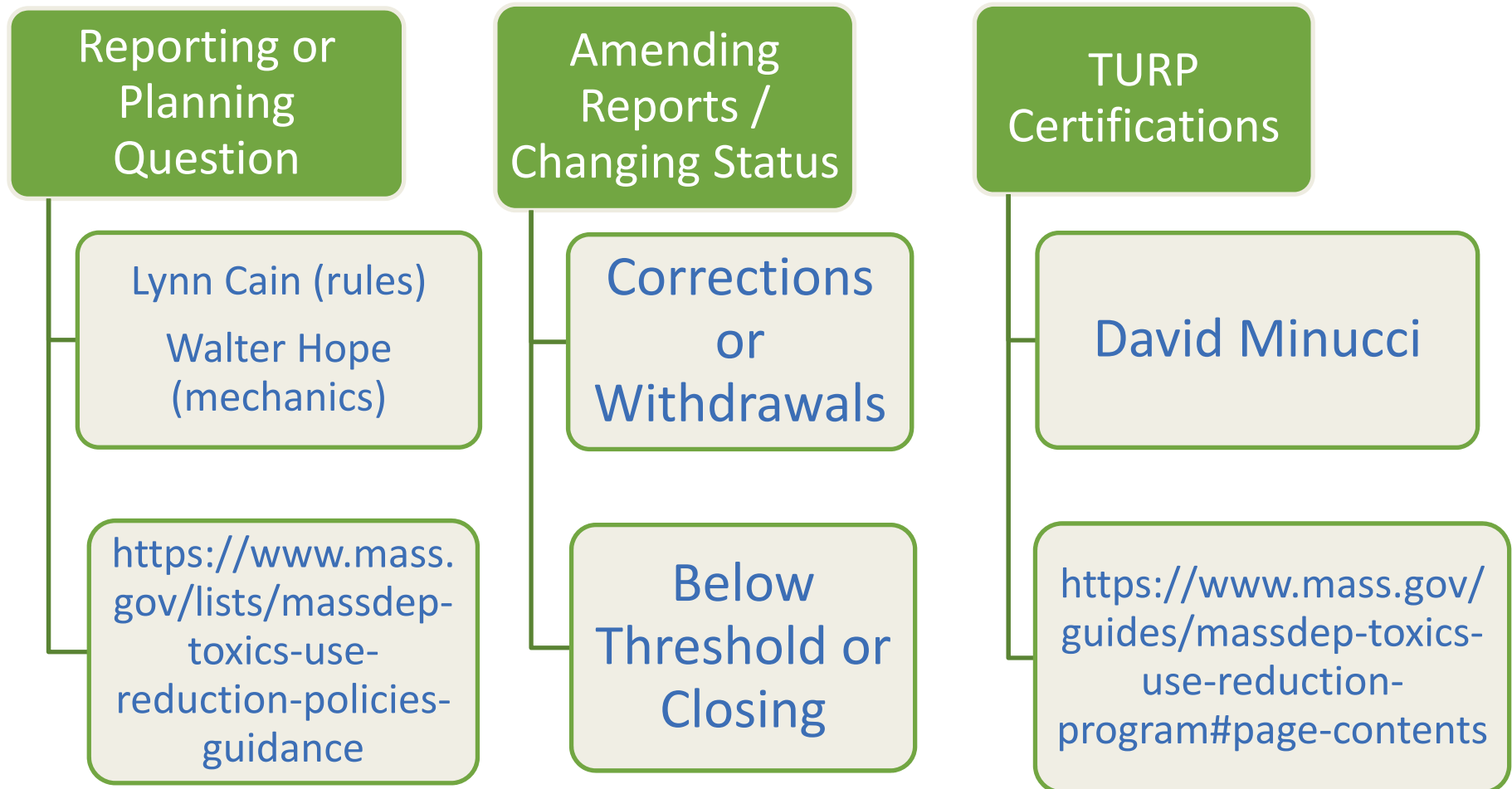
From YOU to MassDEP

Reporting or
Planning Questions

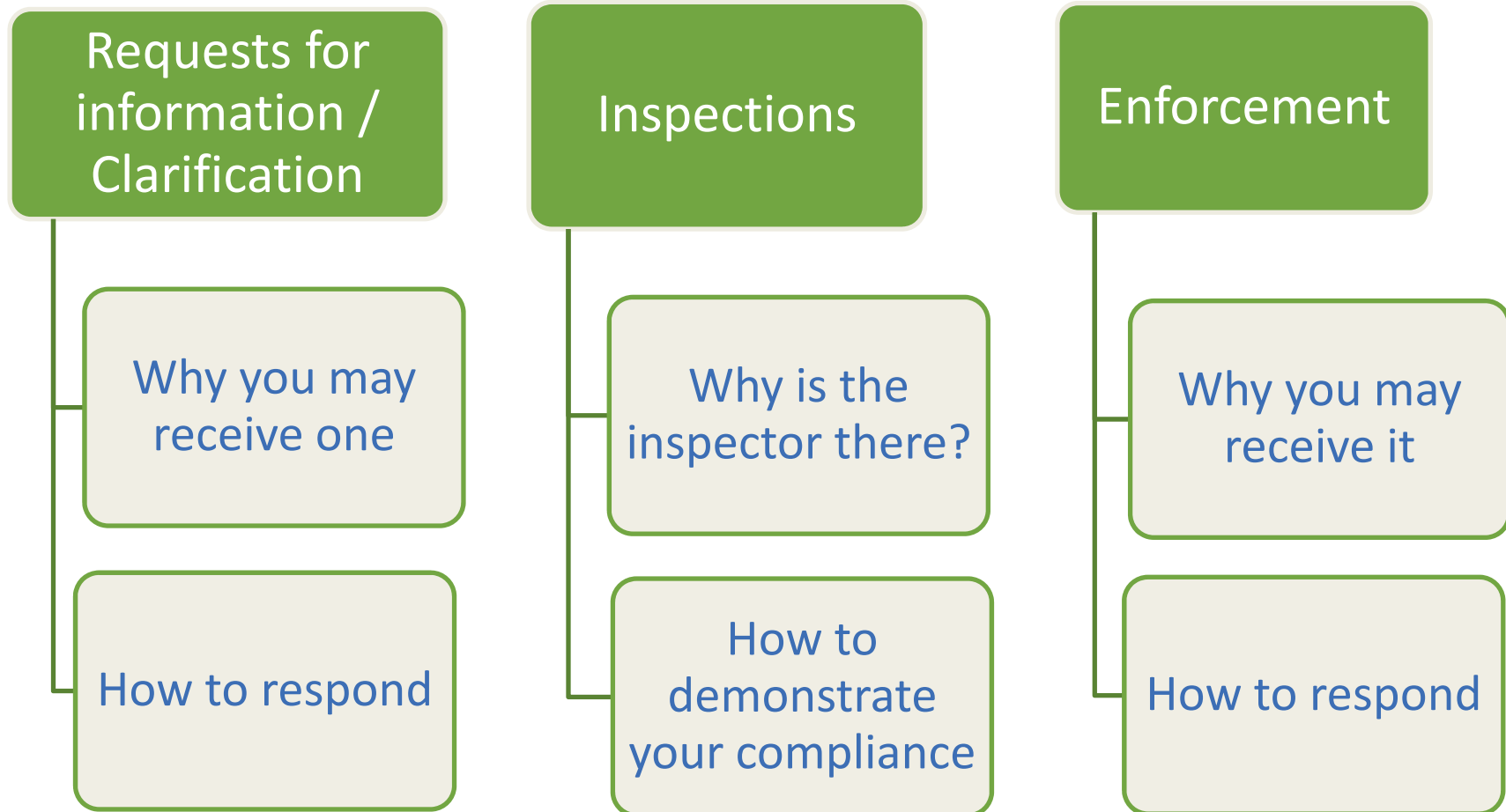
Amending Reports
or Status

TURP Applications

From You to MassDEP



From MassDEP to You



Contact us with questions and feedback!

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