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PFAS: The Impact of Technical and Regulatory Uncertainty on the Regulated Community and the Transactional Due Diligence Practice

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AGENDA

- Uniqueness of PFAS
- When should PFAS Be considered in Due diligence?
- Liability Identification and Estimation
- Technical Approach
- Conclusions
- The PFAS Story at Golder

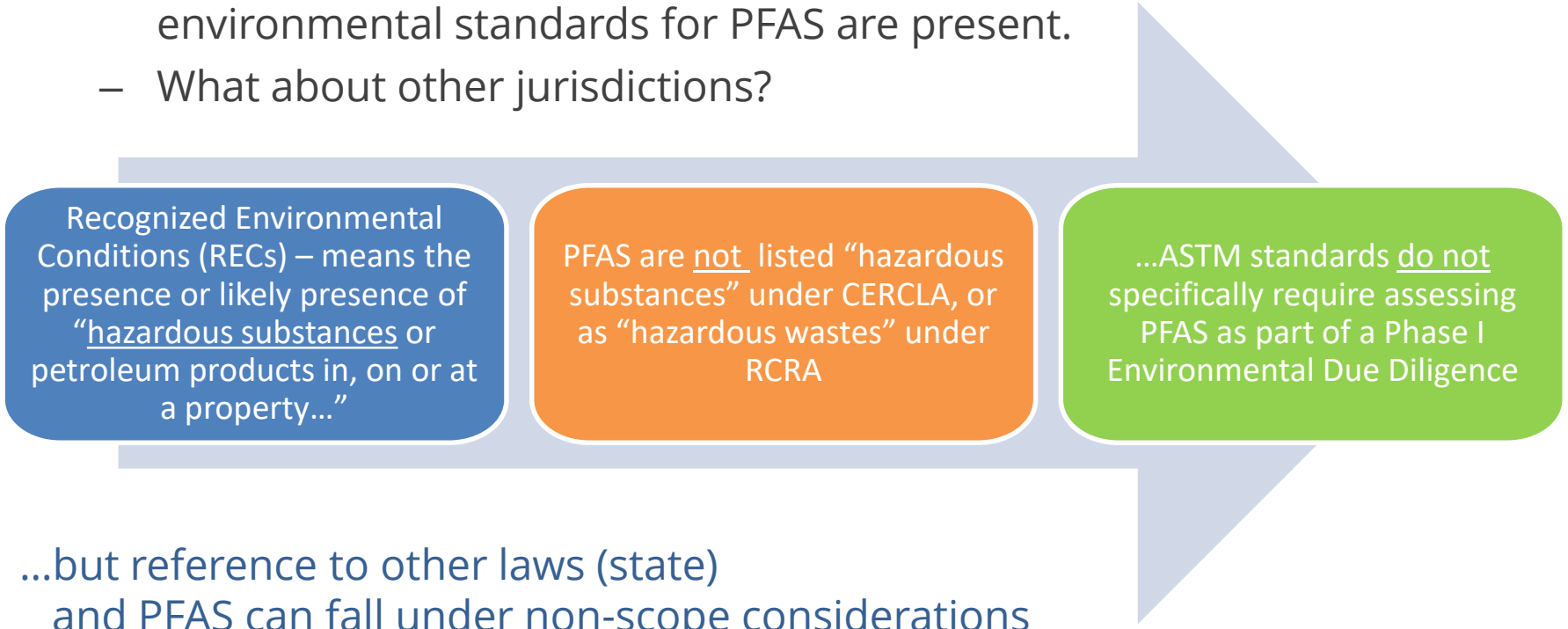
UNIQUENESS OF PFAS

- Environmental assessments for property transactions have not included checking for PFAS contamination until recently.

- How are PFAS different from other contaminants encountered in a transaction?
  - Thousands of compounds and ubiquitous: which ones should we focus on?
  - High water solubility: how many properties are affected?
  - Diverse properties and recalcitrant: what sustainable treatment is effective?
  - Uncertainty on health effects: what levels are safe?
  - Environmental criteria in parts per trillion: which property is clean?
  - Evolving regulatory framework: is today's liability different tomorrow?
  - Lack of databases: what records should we check?

WHEN SHOULD PFAS BE CONSIDERED IN DUE DILIGENCE?

- Should buyers and sellers complete due diligence regarding potential PFAS impacts?
  - Relatively straightforward proposition in jurisdiction where environmental standards for PFAS are present.
  - What about other jurisdictions?



…but reference to other laws (state) and PFAS can fall under non-scope considerations

WHEN SHOULD PFAS BE CONSIDERED IN DUE DILIGENCE?

- Do players involved in the transaction always want to know (buyer vs. seller; plant engineer vs. investor)?

- Many of them have never heard about PFAS before so some awareness building is typically required.
  - Can this be done effectively in the due-diligence period?
  - Being effectively prepared for a transaction can minimize liabilities but also risk of delays.

Use of PFAS-containing products in industries such as manufacturing and resource extraction have not been tracked until recently. It is well possible that PFAS are used in industrial processes without awareness.

- PFAS concern is also extending to residential property transaction.

LIABILITY IDENTIFICATION

Standard Tools are inadequate:

- Typical electronic database searches are unlikely to reveal PFAS related concerns
  - PFAS use alone would not result in a facility being a Waste Generator
  - PFAS leaks/spills records will not show up
  - PFAS storage typically not registered
  - Remediation sites just beginning to show up in some cleanup databases
- Lack of owner knowledge/record keeping
- Lack of Environmental Professional knowledge

LIABILITY ESTIMATION

Lack of historical precedent:

- Costs to assess sites?
  - Evolving state of knowledge regarding release mechanisms, fate and transport
- Costs to remediate sites?
  - What concentrations will require cleanup?
  - Can they be remediated?
  - How will they be remediated?
- Is environmental insurance an option?
- Third-party claims and class actions

WHAT IT COMES DOWN TO IN MOST CASES…

1. Brief client's staff on PFAS (facts and risks/uncertainties).
2. Be open and transparent on what we know and what we don't know.
3. Adapt the approach to the client's risk tolerance.
4. Based on jurisdiction and client's input determine if and what level of PFAS assessment should be conducted and documented.
   - Is the Seller open to intrusive testing?

- Often the selection is to look for regulated PFAS that could pose health risk to receptors based on the current/expected use of the property.
  - This approach provides value even if the transaction is not concluded.

TECHNICAL APPROACH

- Identification of all the significant potential uses and sources of PFAS at the property and in its vicinity.

CONVENTIONAL	EMERGING
AFFF use (incl. historical fires)	Stormwater
Known PFAS impacted sites nearby	Car washes / automotive detailing
Fill material	Septic systems
Manufacturing processes	Carpet cleaning facilities
Landfills and WWTPs	Stone cutting/sealing facilities
Biosolids	Junkyards

TECHNICAL APPROACH

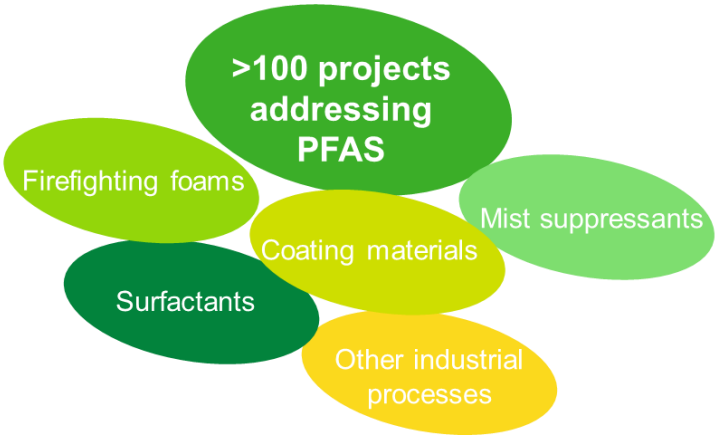
- Process/product review (SDSs).
  - Phase out of PFOS/PFOA use does not mean phase out of PFAS.
  - PFAS residue in storage tanks, pipes and equipment can be significant.
- Waste transportation and waste/wastewater disposal practices
  - Investigation requirements passed by the WWTP to the generator.
  - Pre-treatment requirements.
- If PFAS are present, assess role of historical remediation for other contaminants.
- Always consider upgradient/background concentrations.

CONCLUSIONS

- Given the widespread use of PFAS and low regulatory standards, avoiding any potential PFAS risk could be unrealistic.
  - Understand the comfort level of the parties involved in the transaction and be prepared to manage the risks effectively.
  - Openly discuss uncertainties.
- Engage in the regulatory process.
- Social and political interest in this class of contaminants is very high.
  - Proactive and effective engagement can make a difference.

THE PFAS STORY AT GOLDER

- We have been addressing PFAS challenges for our clients since the early 2000s
- Internal technical network of more than 100 practitioners globally focused on innovating, sharing PFAS knowledge and addressing PFAS challenges for the benefit of our clients
- Involved in several R&Ds with prestigious industrial partners and universities
- PFAS project experience in all geographies and market sectors



Golder PFAS R&D

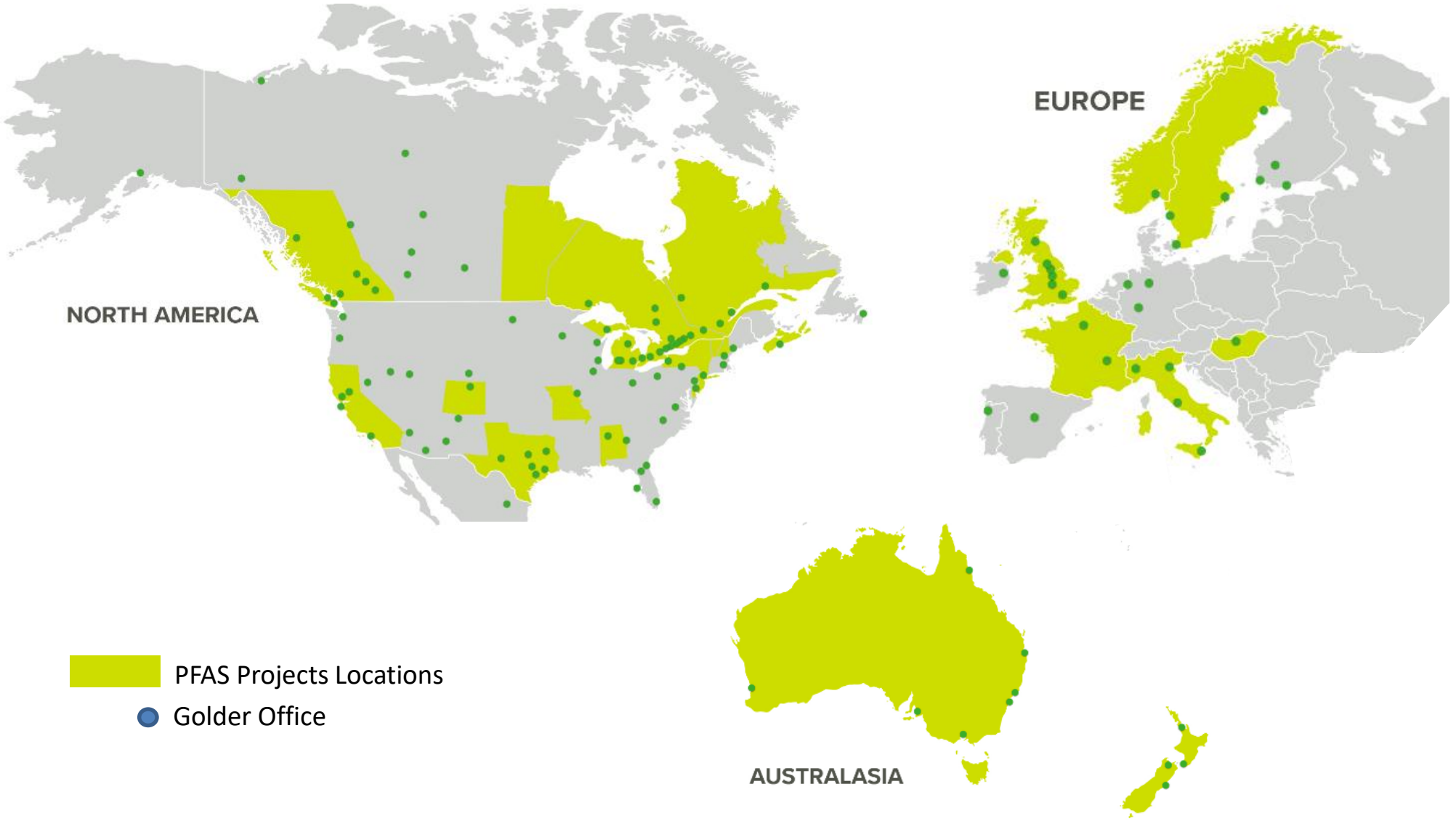
Testing and Screening
- Passive Sampler
- Analytical tools, F&T and toxicity

Soil Treatment
- Ball-milling
- Solidification / stabilization

Water / Wastewater Treatment
- Electro-coagulation
- Electro-oxidation
- Non-thermal plasma

SERVICE EXPERINECE

- Portfolio screening and site prioritization
- Standards derivation and peer review
- Site investigation
- Risk assessment
- Remediation
- Permitting and litigation
- Development of technical protocols
- Design of alternative site operations and systems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PFAS Projects Locations
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Thank you!

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