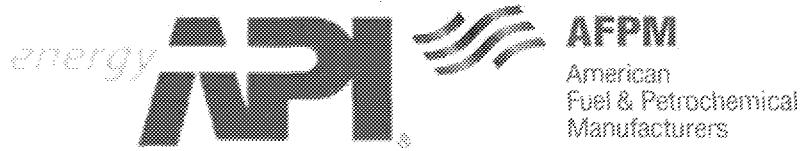


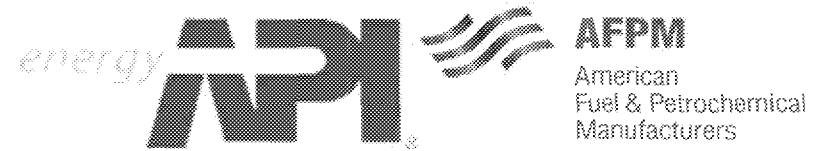
Petr Samp



oleum Refining ELG pling Plan and QAPP

**Washington, D.C.
January 2018**

Agenda



- Agency and industry collaboration
- Refineries are highly variable and complex
- Site sampling and data collection
- Generic Sampling Plan
- Removal of PAHs and naphthenic acids
- Quality Assurance Project Plan (QAPP)
- Key takeaways and conclusion

EPA and industry trades

Collaboration through the years



- 1st refinery ELG meeting with EPA was May 26, 2016
- Working together, we have:
 - Improved 308 survey clarity and quality
 - Strengthened agency's understanding of refining operations through presentations and site visits
- Need to resolve remaining issues with generic sampling plan and quality assurance project plan (QAPP)

Refineries are highly variable

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WHY do they vary?

Age and evolution: retrofitting, process improvements

Crude availability, slate

Local and/or state fuel standards

Market size and competition

Product mix

Regulations

Transportation options

HOW do they vary?

Level of facility integration: highly integrated vs. independent

Physical size

Production capacity

Different processing technologies and configuration

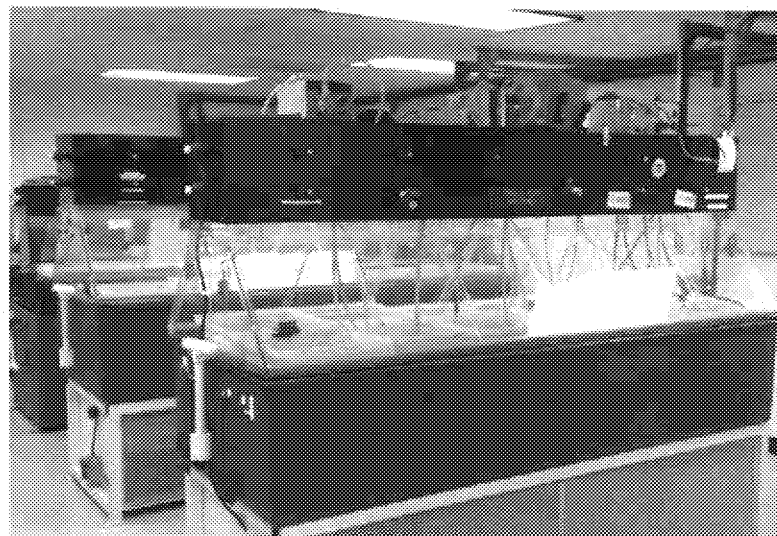
Refinery tours



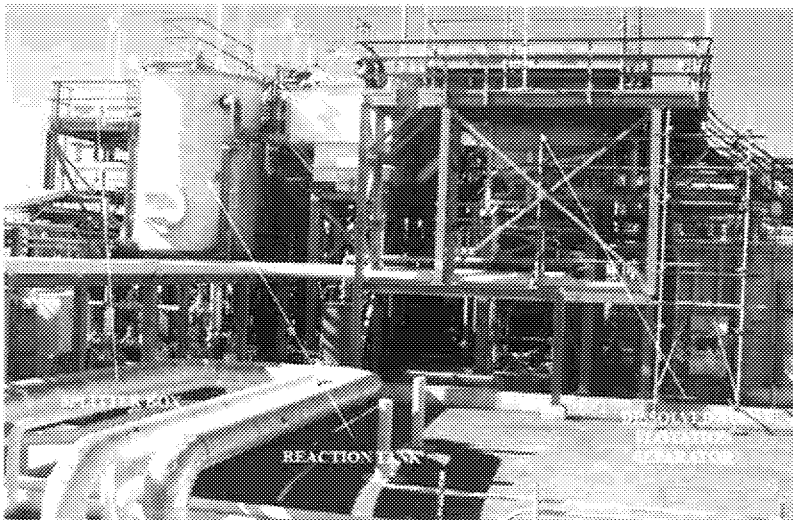
Treatment technologies are complex, diverse and site-specific



constructed wetlands



fish lab



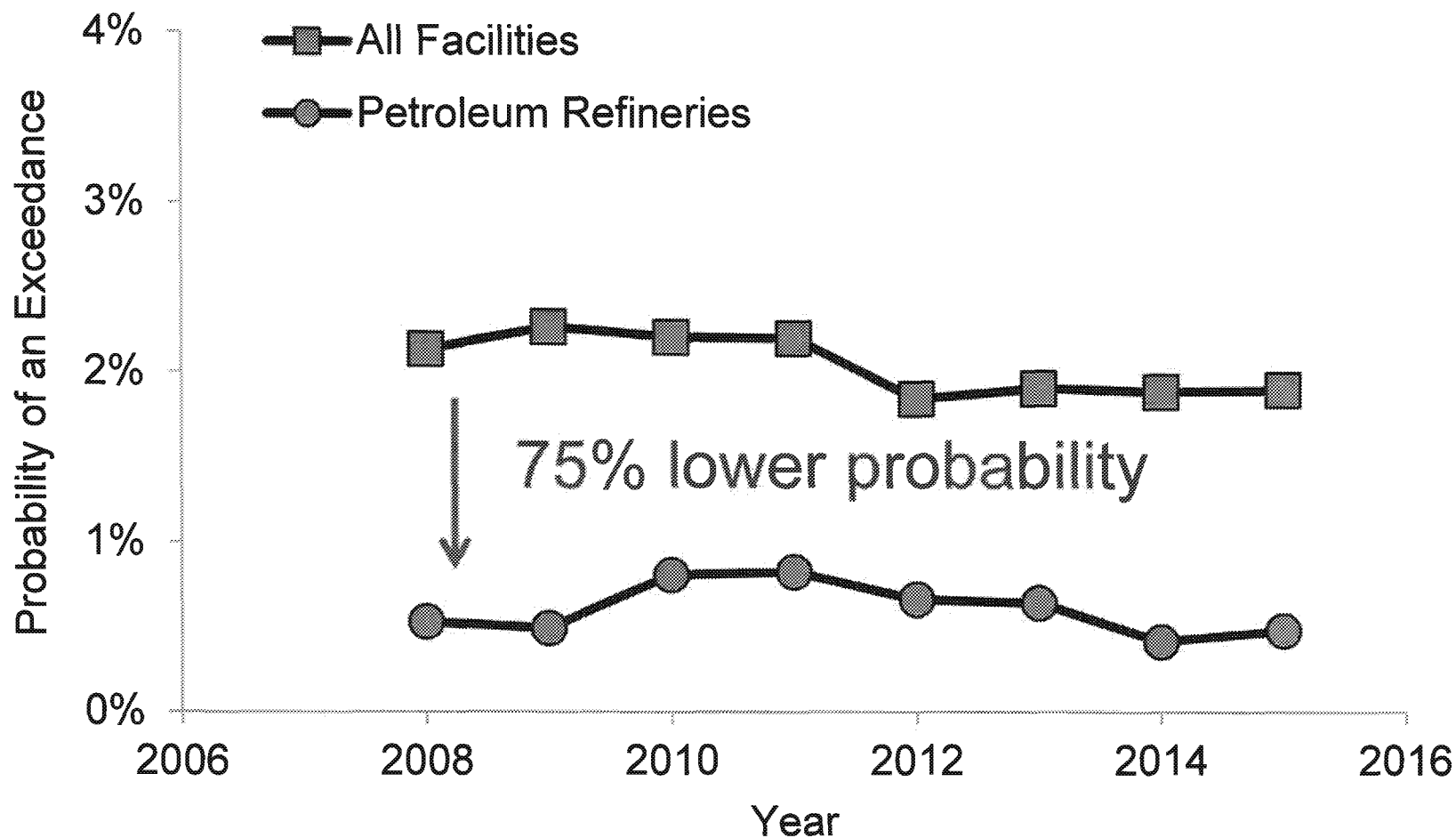
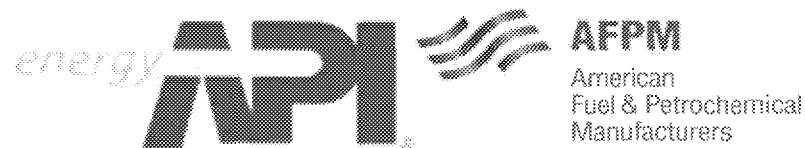
selenium treatment plant



Lamella filters

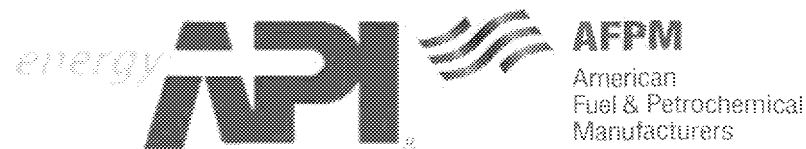
NPDES performance

Refineries have leading compliance



Source: ICIS-NPDES database; echo.epa.gov

General Sampling Plan



- Timing and site selection
- General Sampling Plan must allow refineries to provide clarity and/or consistency on:

Sampling requirements	Preservation guidelines	Analysis
a) Grab vs. composite	a) Residence times	a) 40 CFR 136 methods only
b) Address phase separation	b) Protocols	b) Method of choice for each analyte
c) Field and instrument blanks	c) Direct measurements for physical parameters (e.g., temperature, pH)	c) Handling on-site vs off-site analysis

Remove Alkylated PAH and Naphthenic Acids from sampling



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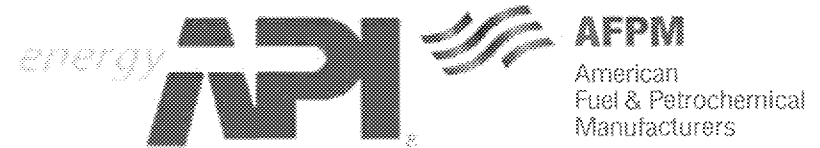
- Limited quantitative capability
 - Phase separation and extraction procedures
 - Interferences in refinery wastewaters
- Absence of alkylated PAH speciation results in toxicity variability
 - Toxic weighting factors do not exist
- Any new method must follow normal regulatory process of public notice and comment for approval
 - Lack of independent verification
 - Unknown instrumentation bias and calibration procedures
- Industry is a willing participant in development of new methods that are scientifically sound, reliable, and promote quality decision-making
- Volatile, semi-volatile list sufficiently supports ELG decision-making

QAPP concerns



- Reject non-detect data with unknown or high MDL/ML
 - Approved EPA methods should be reported
 - Identify exceptions to non EPA methods
- Do not use J-flag values
- Do not use ad-hoc data
- Do not use gray literature
- Clarify timeframe for data acceptability
- EPA should have final authority for QA tests

Site sampling study



- Refineries need to address characteristics of high quality data:
 - representative
 - number of samples
 - uses approved EPA collection and analytical methods
- What are EPA's data quality requirements?
- Estimates may be allowed for:
 - flow
 - pH
 - temperature
- Additional data provided by refineries?
- Audits of sampling events
 - random audit procedures
 - advance notice preferred
- Delays of results from third-party labs
- Agree site specific plans must include specific analyte list and EPA-approved methods

Site Selection Considerations

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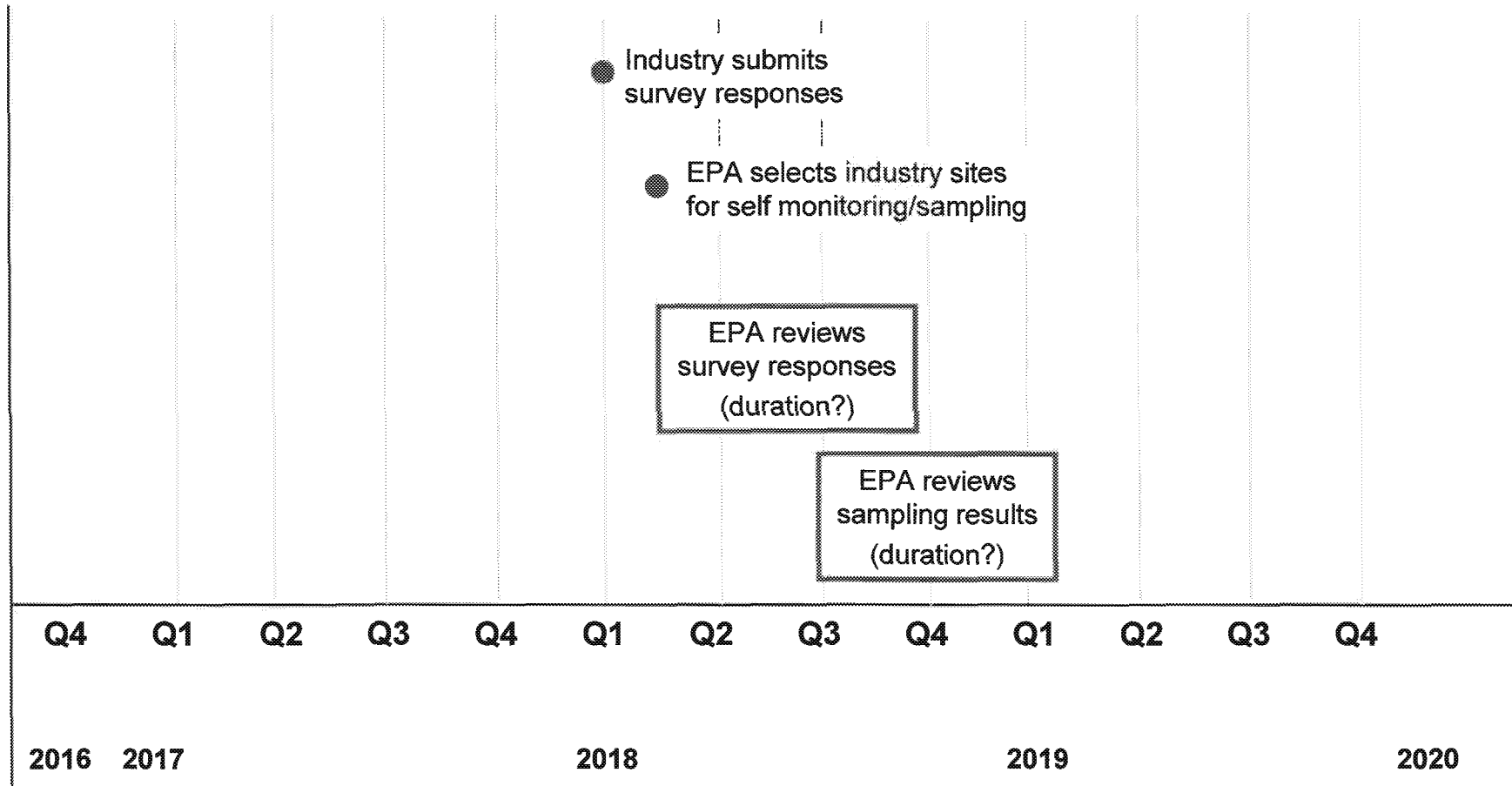


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- Which refineries will be required to self-monitor?
- Criteria?
- Status of site-specific sampling plans?
- Industry considerations and concerns:
 - Budget and resources
 - Preparation and planning
 - Refinery turnarounds
 - Process operations and safety considerations

Understand 308 schedule



When will EPA make the ELG determination?

Key Takeaways

- Incorporate changes to general sampling plan
- Remove alkylated PAH and naphthenic acids from analysis
- Address QAPP concerns
- Finalize schedule and sites for the sampling study
- Continued collaboration

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Questions?

