

UN PCFV

Fuel Sampling & Testing Program April 2010 Update

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Key Participants in This Program

Afton Chemical (Sponsor & Data Analysis)

US EPA

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IPIECA

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NRDC

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PCFV Advisory Group (AG)

Background

Agreed at 7GPM that a fuel sampling & testing program is desired. Intent was to:

- **Help confirm lead use stopped.**
- **Increase awareness.**
- **Add credibility to positive achievements of lead-free countries & PCFV.**
- **Be helpful positive program. (Not misperceived as “checking-up”).**

Many Challenges

- **Achieving “certainty” that no lead addition occurs is not possible. (Would require enormous sampling program beyond current PCFV resources).**

- **Technical/logistical challenges include:**
 - **Logistics of getting representative samples & testing in many diverse global locations.**
 - **Safety concerns over transporting samples to testing locations.**
 - **Where to sample (refinery, marketing terminal, import location, “at the pump” retail site, etc.).**

Agreed Goals from 7GPM

Considering both PCFV's intentions and the identified challenges, goals should be:

- **Recognize program will not provide “certainty”.**
- **Still highly positive to achieve “measurably improved” level of confidence that lead use has stopped.**
- **Ensure findings are used in a positive manner. (i.e. program to assist countries and confirm their achievements, & increase awareness, not check up on them.)**

...continued

Agreed Goals from 7GPM - continued

- **Assess a large number of countries.**
- **Achieve the above within a reasonable time-frame (end of 2009?) at a cost consistent with the PCFV's priorities.**

Note: These are challenging and ambitious goals.

7GPM ACTION PLAN

To **Implement a Phased Approach**

Phase 1.

Initial Approach For Most Countries

- Afton willing to purchase large existing data set from major respected testing company.
- This independent company conducts ongoing sampling and testing in many countries of interest.
- Afton can provide “analysis” of large data set to PCFV to allow confirmation lead is not added to fuels.
- Testing company copyright terms do not allow publication of raw data.

Phase 1 - continued

- **This serves PCFV's goals because:**
 - **The “analysis” will show if lead levels are above or below specific levels that the PCFV can define.**
 - **PCFV can disclose underlying information for a particular country, directly to that country, if desired.**

Phase 1 - continued

Description of Independently Collected Data Set

- **Sampling is not publicly disclosed in advance.**
- **Occurs 1-2 times per year in each country.**
- **Number of samples varies but the typical case involves four locations per country with two fuel grades sampled at each location (yields eight gasoline samples per country)**

Phase 1 - Summary

- **Phase 1 is not perfect.**
- **Does not serve all the PCFVs goals.**
- **However, it is a very good start:**
 - **Addresses most of the identified challenges.**
 - **Is relatively easy to implement. (Difficult contracting on copyright issues complete.)**
 - **Achieves measurable improvement over current status.**
 - **Provides results quickly.**

Possible Phase 2

Pursue Other Sources of Information

- **In some cases, more or additional data will be desired.**
- **Other PCFV members or stakeholders may have access to data.**
- **We could therefore encourage them to share it.**

Possible Phase 3

Maintain flexibility to implement “country specific” solutions.

- **If Phase 1 & 2 don't serve needs for a particular country, country-specific solutions may need to be developed.**
- **For example, Jane Akumu's excellent work identifying case-by-case testing possibilities in some specific countries.**
- **Phase 3 likely follows Phase 1 & 2 because:**
 - **Likely done on a “case by case” basis.**
 - **Logistics, organization, and cost challenges likely significant.**

Phase 1 - Results

Important To Recognize What This Program is Not...

- **Not statistically relevant (because number of samples are too small).**
- **No certain conclusions can be drawn.**
- **Not a true “verification” program.**

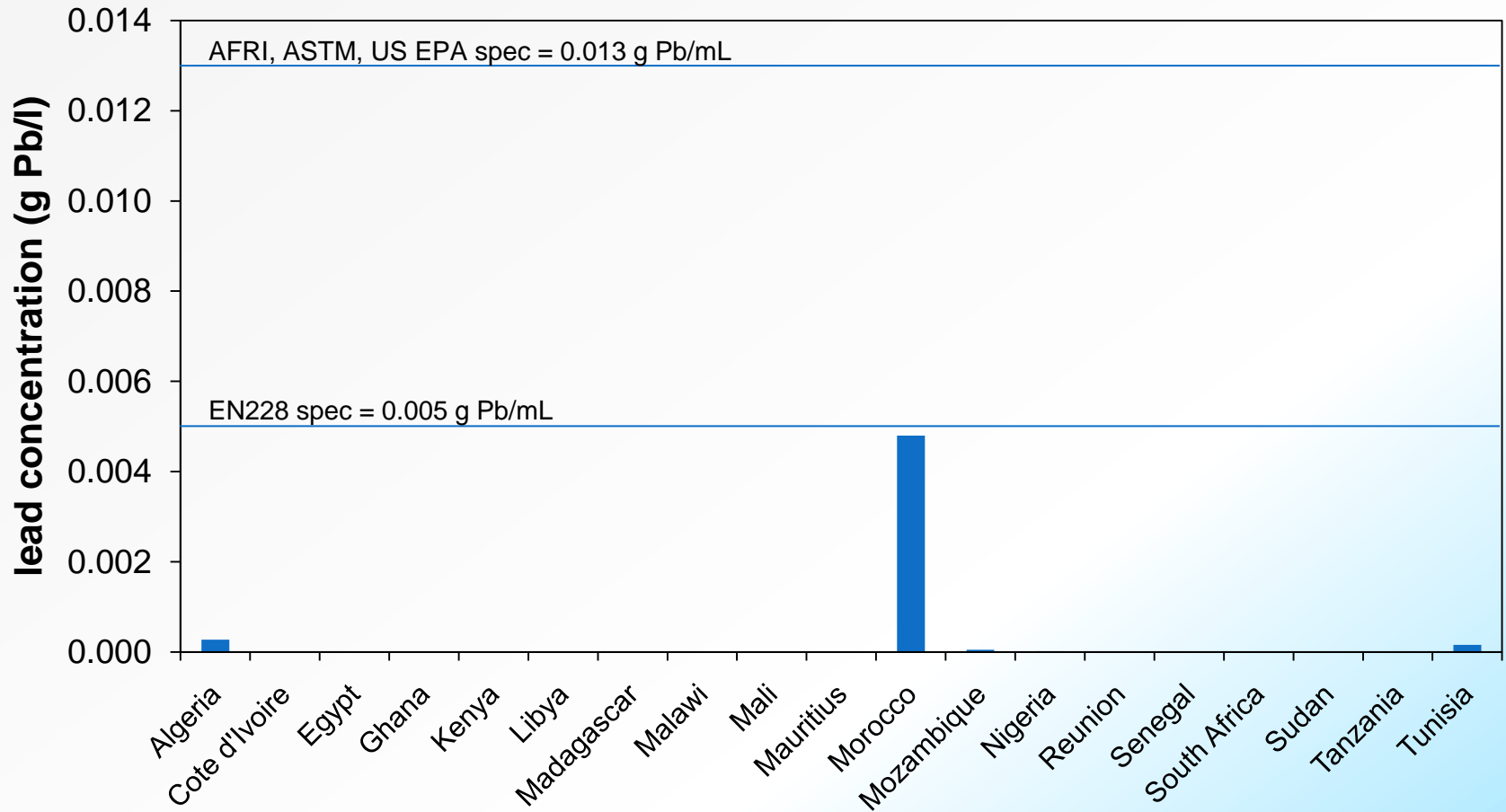
What It Is...

- **Improved insight versus previous status of no insight.**
- **Very “interesting” snapshot of many countries.**
- **Provides some level of comfort at anecdotal level.**
- **Helps guide discussion for any follow-up action.**

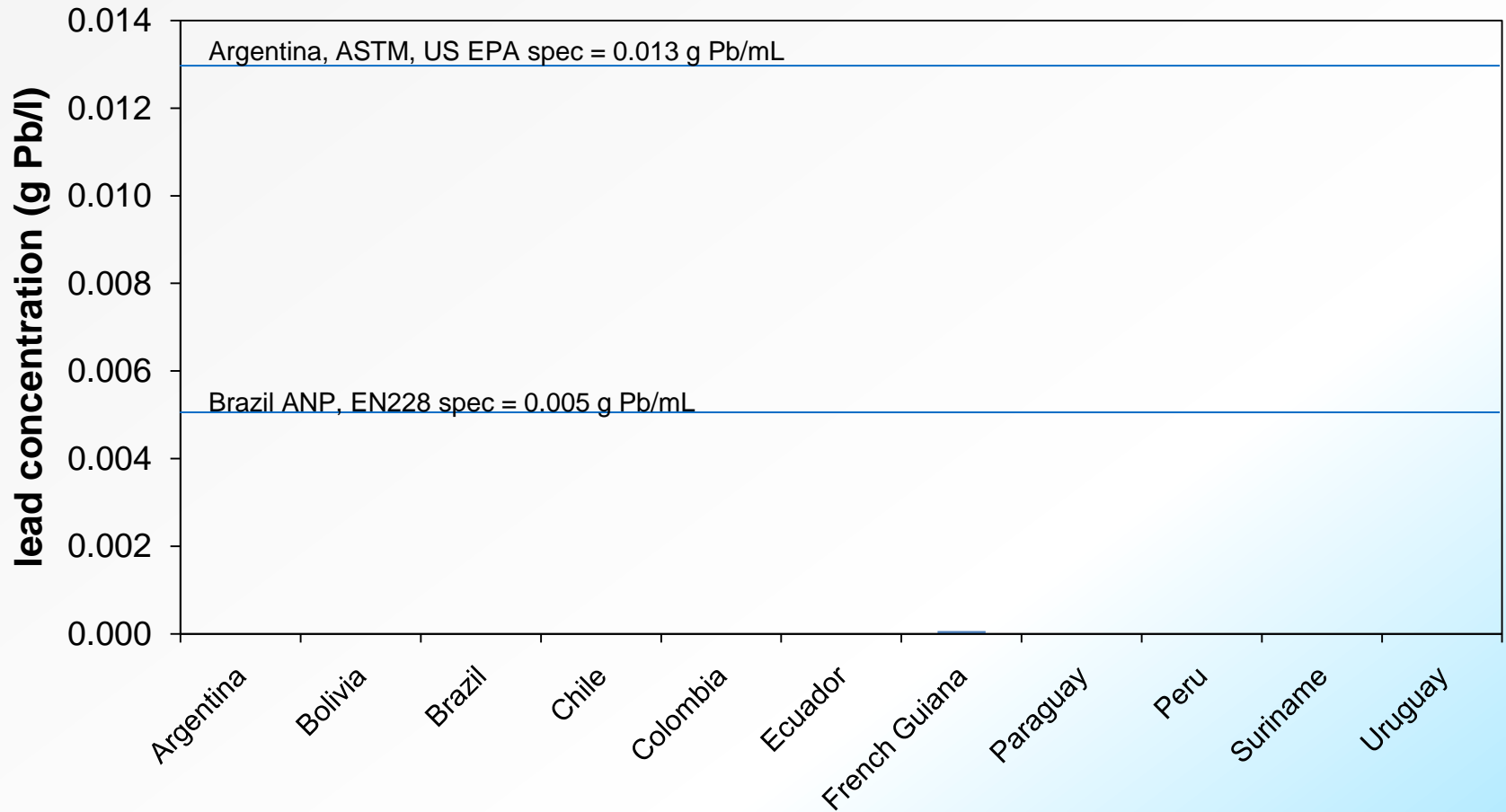
Background Information

- **Survey data comprise fuel samples collected and tested between June 2008 and February 2009.**
 - **Number of samples skewed toward late 2008 / early 2009**
 - **Data available to Afton mid-late 2009 (i.e. relatively recently).**
- **Analytical methods used to measure fuel properties have a range of uncertainty that should be considered.**
 - **Lower limit of detection: 2.5 mg Pb/liter**
 - **Method repeatability: ± 1.3 mg Pb/liter**
 - **Residual lead from pipes, tankage, etc. can contribute mg amounts.**
 - **Therefore “unleaded” specs are up to 13 mg/liter.**

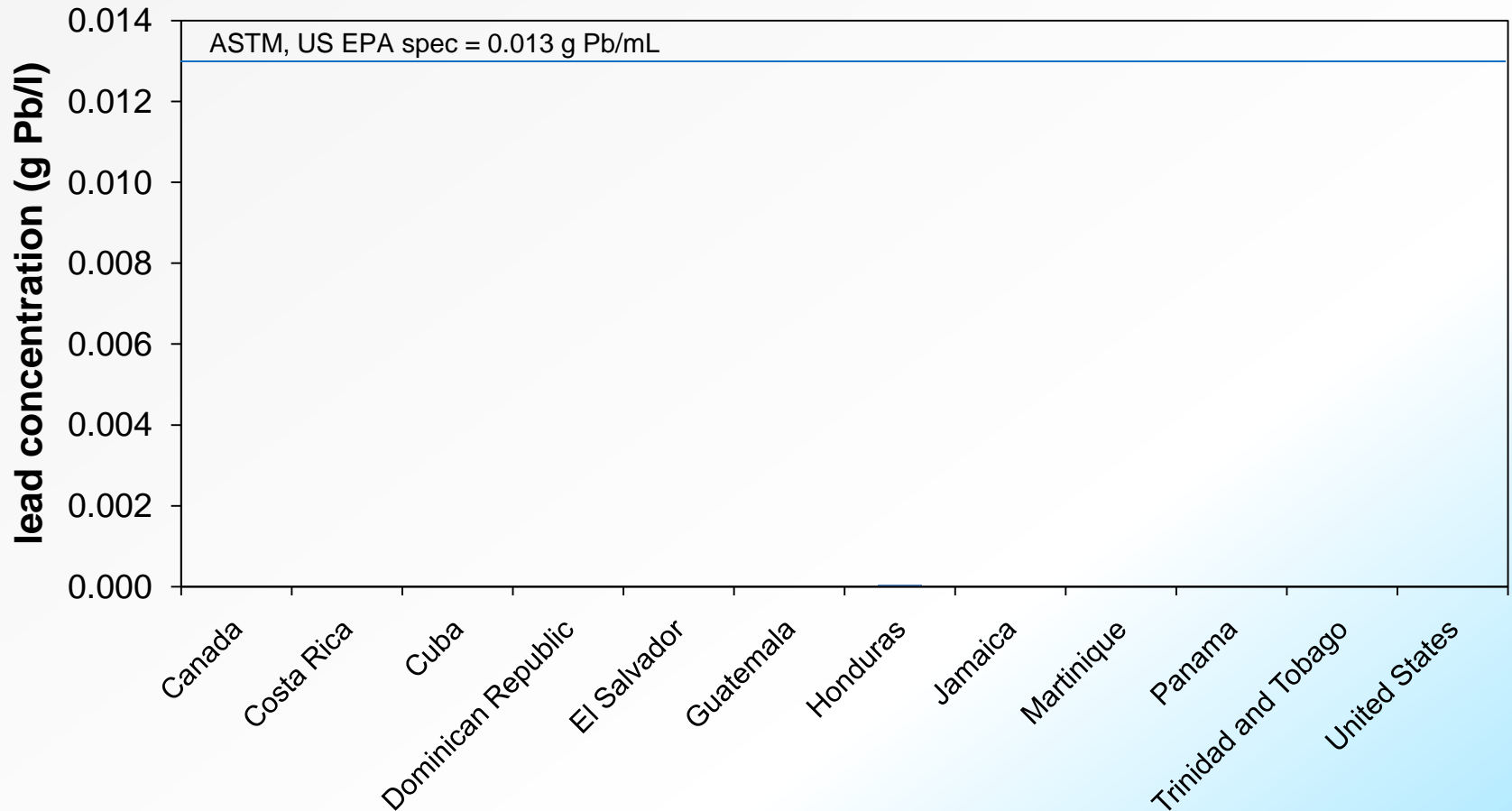
Lead Levels in African Gasoline



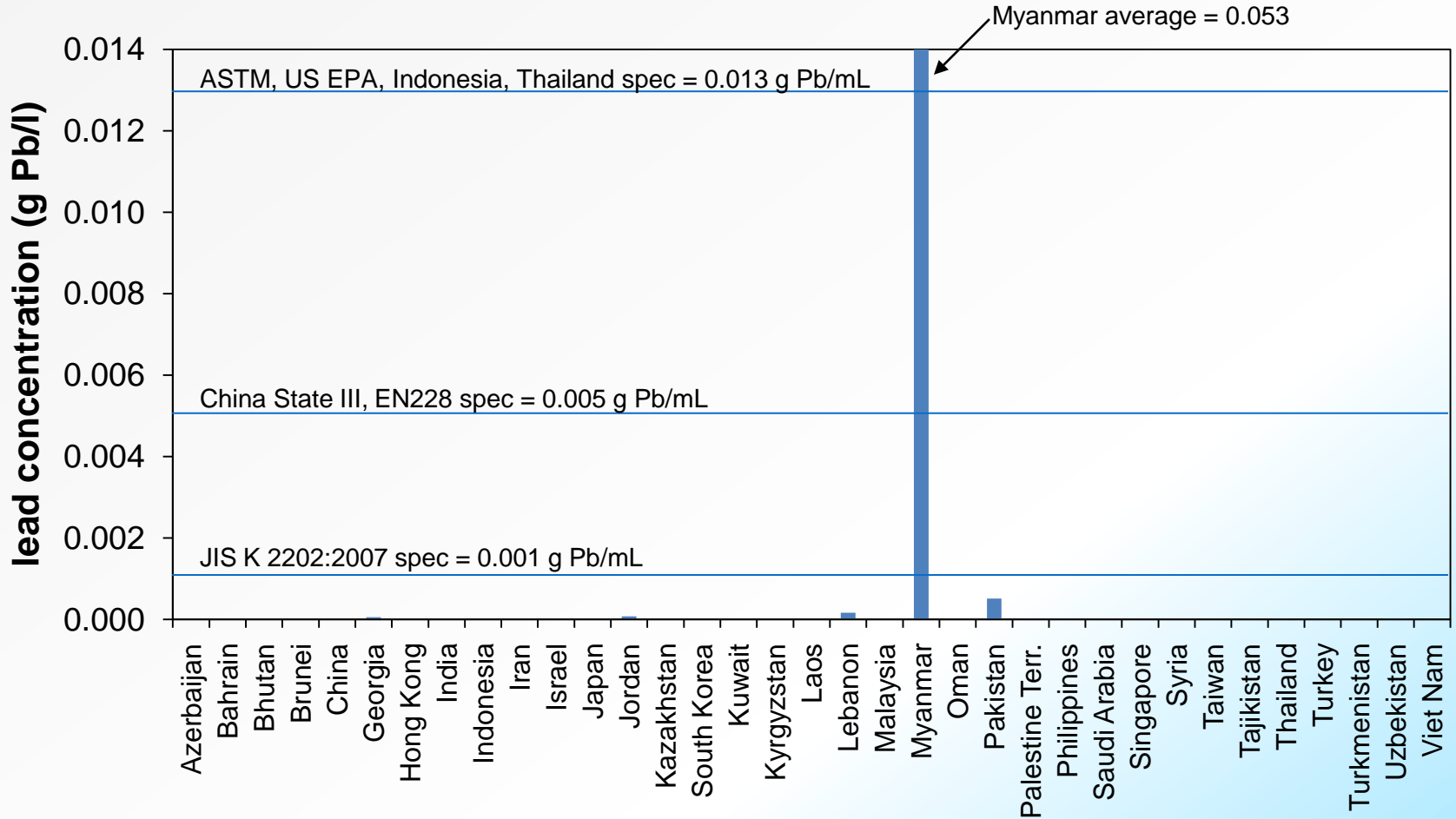
Lead Levels in Gasoline in South America



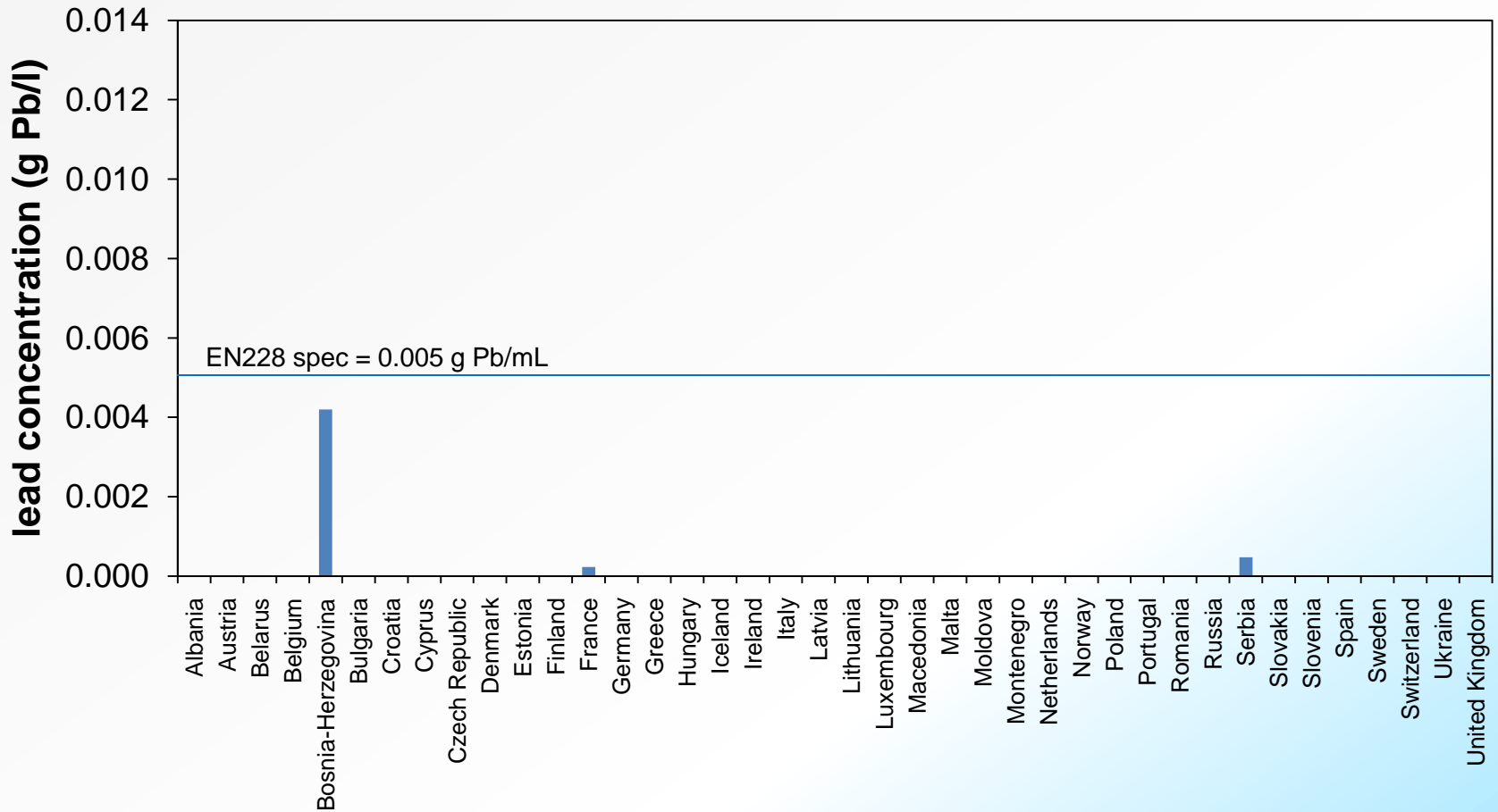
Lead Levels in Gasoline - Caribbean, Central & North America



Lead Levels in Unleaded Gasoline in Asia



Lead Levels in Unleaded Gasoline in Europe



Next Steps

- **Are Phase 1 results consistent with known status in countries?**
 - **Are any follow up discussions appropriate?**
- **Phase 2 & 3 Lead Testing?**
- **Survey of sulfur Data?**
- **Communication Plan?**
- **Others Items?**

Communication Issues

The PCFV should develop a communication plan for this program that supports the goals of:

- **Adding credibility to the positive achievements of individual countries & the PCFV.**
- **Raising awareness.**
- **Helping countries with next steps in the unlikely event that unexpected lead use appears.**