



Emergency Spill Response Sampling Kit and Techniques

*Everything you have always
wanted to know...*

1. Who We Are
2. Project Planning
3. Regulations and DL's
4. Sampling 101
5. Emergency Spill Kit
6. Choosing your lab
7. Questions?





- Established in Kelowna in **1987** - 2017 is our **30 year Birthday!**
- the only full service environmental laboratory in the Okanagan
- **85 employees** with the most PChems of any commercial lab in BC
 - We hire for enthusiasm and ambition!



Technical Expertise

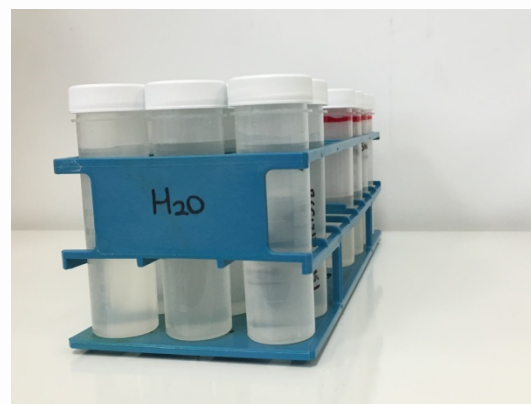


Quality



Client Focused Service

- How to decide what to sample for?
 - Conclusion
 - End Data
 - Regulations
 - Decision



- **Knowing the regulations**
 - CDWQ / CCME / CSR / MINING
 - Regional Districts
 - First Nation
 - Interior Health
 - Permit Compliance

- **Detection Limits**
 - Vary between regulations
 - Industry Challenges



1. DL Challenges

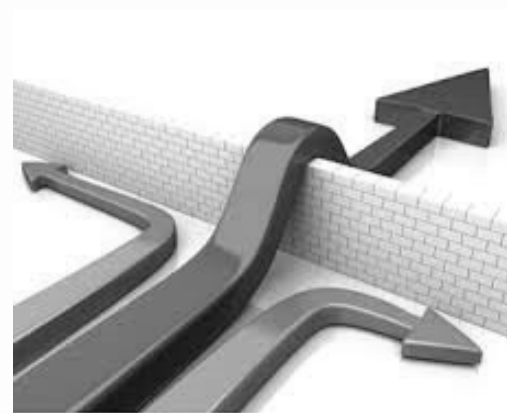
- ABT1, CCME low levels
- LC Triple Quad, new ICP-MS

2. Interferences

- Types of sample Matrix

3. High Concentration Samples

- Dilutions prior to running (qualifiers)
- Provide us with as much information as you can 😊



- Field challenges
- Hold time/preservatives
- Equipment
- Technique
- Submission to the lab



1. Sediment in Water Samples

- Hydrocarbons : limited solubility in water
- Adhere to surface of particulate
- \uparrow sediment \rightarrow \uparrow PAH



2. Field vs. Lab Filtration for Metals

- Certain metals drop out of solution when exposed to air due to oxidation
- Form low solubility hydroxides/carbonates @ pH > 5.5
- $\text{Fe}^{2+} \rightarrow \text{Fe}^{3+}(\text{OH})$ (ppt)

Hold Times and Preservatives

- COD, NH₃, TKN, etc.
- Commonly Unpreserved: 3 days, Preserved: 28 days
- Qualifier on Login notice – ‘PRES’

Volume Challenges

- Bottles > min. vol. required

Lower DL Requirements

- mg/L : ↑L, ↓ concentration
- Increase sample volume
- Decrease final volume (min 200-500uL required for injection)



Reduce contamination!

- Use Lab grade bottles
- Storage of containers
- Wear clean latex gloves
- Use clean equipment
- Use a clean source of rinse water



**Good
Choice?**

Remember:

- Ensure the integrity of the sample
- Be aware of possible sources of contamination
- Avoid touching lids or the inside of bottles with bare hands
- Every time a sample is handled, contamination can occur

Source for Specific Techniques:
BC Field Sampling Manual




- Cooler
- Protect Glass Containers
- Ice or Ice Packs
- Courier / Tracking
- Custody Seal
- COC



EMERGENCY

SPILL RESPONSE

SAMPLING KIT

 **24/7: (888) 311-8849**
Order Kits: <https://caro.ca/store>

Containers for:

- ✓ **Soil:** *Hydrocarbons, glycols, metals...*
- ✓ **Water:** *Potability, microbiology, metals, hydrocarbons*

+ gloves for safe handling!





Do Not Drink



Contamination can pose a threat to human/animal habitat:

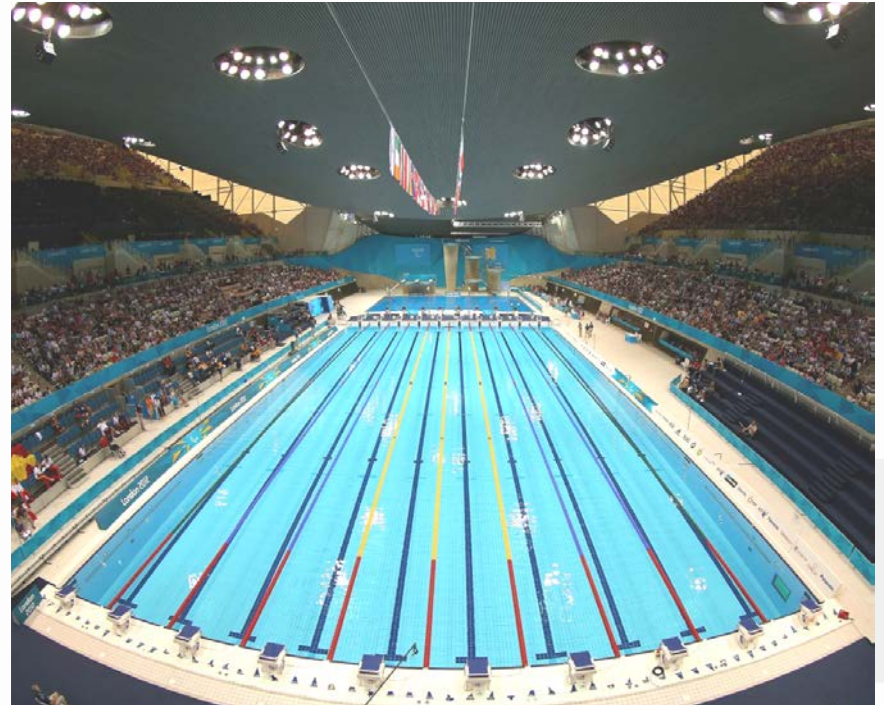
- Drinking water source
- Well
- House or other buildings
- Fish bearing stream
- Swimming/recreational water body
- High Traffic Area

**Laboratory testing is often the only way
to detect harmful contamination!**

PPM: mg/L



*1 ¼ 2L bottles in an
Olympic-size
swimming pool!*



PPB: ug/L



*½ tsp in an Olympic-
size swimming pool!*

Industry Standards:

- › High Quality Data / Quality Management
- › Turnaround Time – meeting 97%+
- › Competitive Pricing
- › Accreditations
 - › CALA / EWQA
 - › B.C Provincial Health Officer
- › Friendly Customer Service



- › **Technical Leadership**
- › **Accessibility – Locations**
and People (call us anytime!)
- › Focus on building ***Relationships***
- › **Network within industry** (we present at more conferences than any other lab)
- › ***Support to make your project run smoothly***



Questions?



Caring About Results... Obviously!

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