

WHO YA GOING TO CALL? EMERGENCY RESPONSE – LABORATORY PERSPECTIVE



Who you gonna call?

PATRICK NOVAK, VICE PRESIDENT CARO
REMTECH 2015 CONFERENCE
OCTOBER 15, 2015

- Response Overview
- Recent Emergencies
- CARO – Laboratory Involvement
- Lessons learned
- Follow Up



- Mount Polly
- March 4, 2015 – Port Metro Vancouver
Chemical Fire – Trichloroisocyanuric acid
- April 16, 2015 – Squamish Terminals
Major Fire – Air & Water Contaminants
- Future?

**Worst-case scenario Vancouver earthquake could
have death toll of 10,000**

Inside the grim hypothetical used by provincial planners to prepare
for the big one

- First Responder & Immediate Vicinity – Onsite Testing
- Fire Suppressant Contamination – Water, PBOS, PFOS, others
- Challenging Sampling Environment
- Who Leads?
- Who Pays?
- Who Understands The Data?
- Stakeholders?



How The World Usually Sees Vancouver



An aerial photograph of a busy shipping lane, likely the Strait of Juan de Fuca, showing several large cargo ships moving through the water. The ships are leaving white wakes behind them. The water is dark blue, and the sky is a pale, hazy blue. The text "How The World Saw Vancouver April 2015" is overlaid in white, sans-serif font in the upper center of the image.

How The World Saw Vancouver April 2015

Photo Credit: Richard Lam

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Fri Apr 10, 2015 11:50pm BST

Related: REGULATORY NEWS

British Columbia: oil spill response shows unprepared for more tankers

VANCOUVER, APRIL 10 | BY JULIE GORDON

Vancouver oil spill response 'embarrassing,' says international expert

Anita Burke calling for re-opening of Kitsilano Coast Guard station in wake of English Bay spill

By The Early Edition, CBC News | Posted: Apr 29, 2015 1:12 PM PT | Last Updated: Apr 29, 2015 8:46 PM PT

Updated: Vancouver wants answers on English Bay spill

Vancouver, BC, Canada / News Talk 980 CKNW | Vancouver's News. Vancouver's Talk

Shane Woodford

May 25, 2015 02:29 pm



The city of Vancouver is looking to sit down this week or next with the chair of a review of the April 8th fuel spill into English Bay.

At the time the city wasn't notified of the spill until 12 hours after the initial report.

And it took almost 13 hours to completely put booms around

the leaking vessel.



- Estimated 2,800L Released in Vancouver Harbour – In middle of all major regional public beaches.
- New ship on maiden voyage
- Arrived morning of April 6, 2015
- 16:48 - Wednesday April 8th First Report of Discharge to Coast Guard
- Multiple Reports Shortly Thereafter to 911, Port Metro Vancouver, Coast Guard, Joint Rescue Coordination Centre
- Intermediate Fuel Oil IFO 380 – Known as Bunker Fuel
- 17:35 - Captain of M/V Marathassa Denies Pollution Coming From Vessel

- 17:00 – 19:57: Spill Response Coordination Challenges
- 19:57 – Response to Spill Initiated by Coast Guard and Port Metro Vancouver
- 06:00 – Thursday April 9th City of Vancouver Notified
- 07:00 – Unified Command Established

Read Coast Guard Assessment Report:

<http://www.ccg-gcc.gc.ca/independent-review-Marathassa-oil-spill-ER-operation>

Some Stakeholders

Canadian Coast Guard
Vancouver Coastal Health
International Tanker Owners Pollution Federation
Stanley Park Ecology Society
Musqueam First Nation
Squamish Nation
North Shore Emergency Management Office
City of North Vancouver
District of North Vancouver
District of West Vancouver
Oiled Wildlife Society
Tsleil-Waututh Nation
Western Canada Marine Response Corporation
City of Vancouver
Canada Shipping Federation
Vancouver Aquarium
Transport Canada
Environment Canada
Focus Wildlife
British Columbia Chamber of Shipping
Port Metro Vancouver
Province of British Columbia (Ministry of Environment
and Emergency Management British Columbia)
Local sailors

Residents
Businesses
Tourism
Economy
Etc...

Photo Credit: Richard Lam



- **Unified Command requests Environment Canada's (EC) National Environmental Emergency Centre (NEEC) who is responsible for providing expert advice and support in environmental emergency response and ensuring that all the appropriate and reasonable mitigation actions to protect the environment are taken in accordance with EC's acts and regulations, in collaboration with DFO and other federal and provincial jurisdictions.**
 - **NEEC Declined on-site support – Showed up on-site April 19th**
 - **NEEC Elected to Service Remotely From Head Offices in Gatineau, QC**

- Friday, April 10th, >36 hours after spill, City of Vancouver Environmental Manager Involved
- What Are We Dealing With?
- How Do We Find Out?
- Who Can Help Us Get Information We Need?

- Friday, April 10th, CARO Contacted

- Emergency Analysis of:

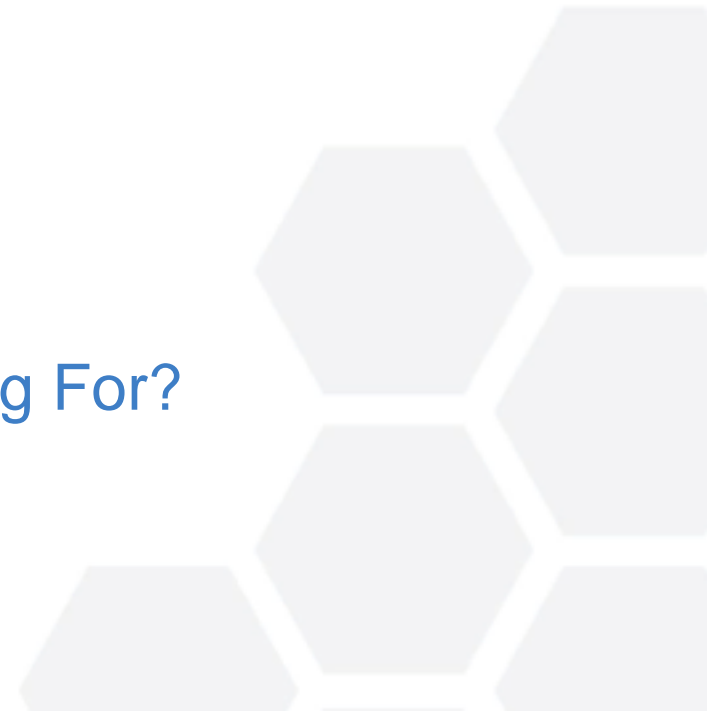


- Rush Hydrocarbon GC Scan
 - What is it? Is it Bunker Fuel? What to compare to?

INTERMEDIATE FUEL OIL GENERAL SPECIFICATIONS

Parameter	Value	Analytical Methods
Density @ 15 ° C (max) kg /L	0.99	D-1298
Viscosity kinematic @ 50 ° C (max)	380	D-445
Pour point (max) ° C	32	D-97
Flash point (min) ° C	65	D-93
Sulphur Total (max) %mass	3.5	D-1552
Carbon Residue Conradson (max)%mass	20	D-189
Ash (max) %mass	0.15	D-482
Water & sediment (max) %vol	1.0	D-1796
Colorific value higher (min) MJ/kg	41.7	CALCULATED

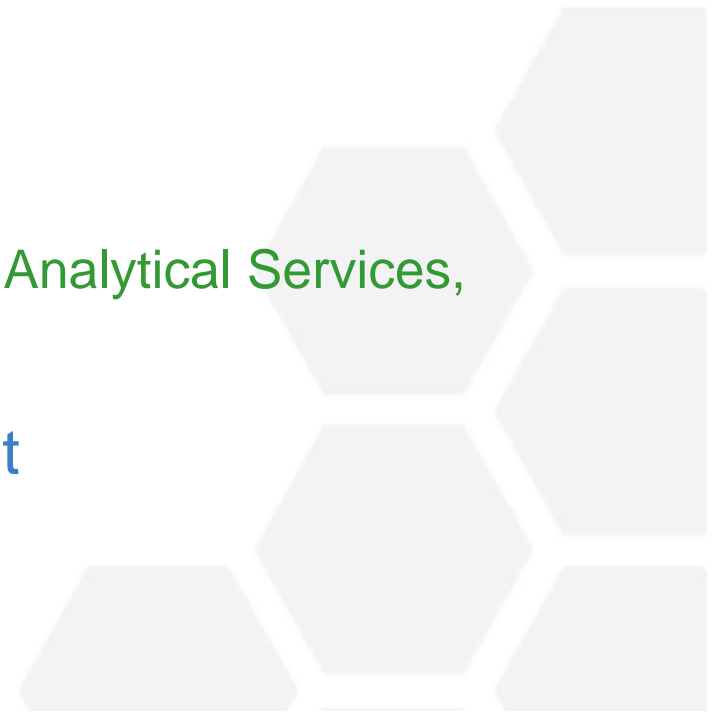
- Fuel Oil Specifications Wouldn't Help
- Fingerprinting Analysis Too Long
- What Tests Can Be Done Quickly/Locally?
 - Hydrocarbon Scans
 - Metals Analysis
 - Routine Chemical Parameters
- What Was City of Vancouver Looking For?
 - Confirmation & Information Initially



- Professional Judgement – Professional Chemists
- Weight of Evidence Approach
- High Certainty That Was Fuel Oil >90% But...
 - Really bad sample
 - No specific test to say = Fuel Oil
 - Variability in Different Fuels i.e. Old vs. New
 - No substance to match to.
- Insufficient Data – Need More



- More Certainty by More Analysis & Better Samples
- Local Expertise, Prior Experience
- More Detailed Sampling & Testing Plan
 - Routine Contaminated Site Testing
 - PAH Analysis
 - Fingerprinting Through Partners – Axys Analytical Services, Others
- Comparison to Suspect Contaminant



- Currently a lack of coordination between first responders (CCG) and local municipalities/First Nations
- Federal system focuses on on-water response
- Regional oil spill response plan needed
- Local knowledge is critical in response
- Important to involve and meet needs of local health authority
- Source sample critical

- Laboratories Should Be Involved in Emergency Planning Steps and Trialing/Training
- Sample Suspect Substance(s)
- Document Emergency Responses, Share with Industry – Expanded Knowledgebase
- No 2 Incidents are the Same – Emergency Process for Different Potential Issues
- Involve Regional or Specialized Partners
 - No Lab Can Do It All

- Clients' Purchasing Departments Limiting Options For Efficiency
 - Recommend to All Clients More Inclusive Standing Offers to Involve Most Regional Partners Who Could Help i.e. unique services outside of routine
 - Funds to Partners for Emergency Preparedness of Identified Needs
- Involve Professional Associations – APEG BC, P.Chem BC, RPBio – They Want to Help
- Don't Recreate The Wheel – Find Out What is Working in Other Jurisdictions – Washington State
- CARO Emergency Analytical Response Team

- City of Vancouver Emergency Services Expanding To Address Variety of Potential Issues
- Building Regional Expertise & Partnerships
- Striving for “World Class” Emergency Response
- Sharing Knowledge & Developments Locally
 - Contaminants Databases
 - Emergency Procedures Protocols
- Working Across Jurisdictional Boundaries
 - Most Emergencies Are Cross Jurisdictional
- Training and Testing Emergency Plans

CARO Analytical Services
CARING ABOUT RESULTS...OBVIOUSLY
British Columbia, Alberta, Yukon

Special Thanks To:

Jennifer Mayberry, City of Vancouver Environmental Manager

Brent Mussato, B.Sc. P.Chem - President (bmussato@caro.ca)
Patrick Novak, B.Sc. P.Chem - Vice President (pnovak@caro.ca)
Brent Coates, B.Sc. – Richmond Business Manager (bcoates@caro.ca)
Stephen Varisco, B.Sc., P.Chem - Technical Manager (svarisco@caro.ca)