Ryan Stevenson – Golder Associates

To Assess or not to Assess?

A Somewhat “Iron-ic” Tale

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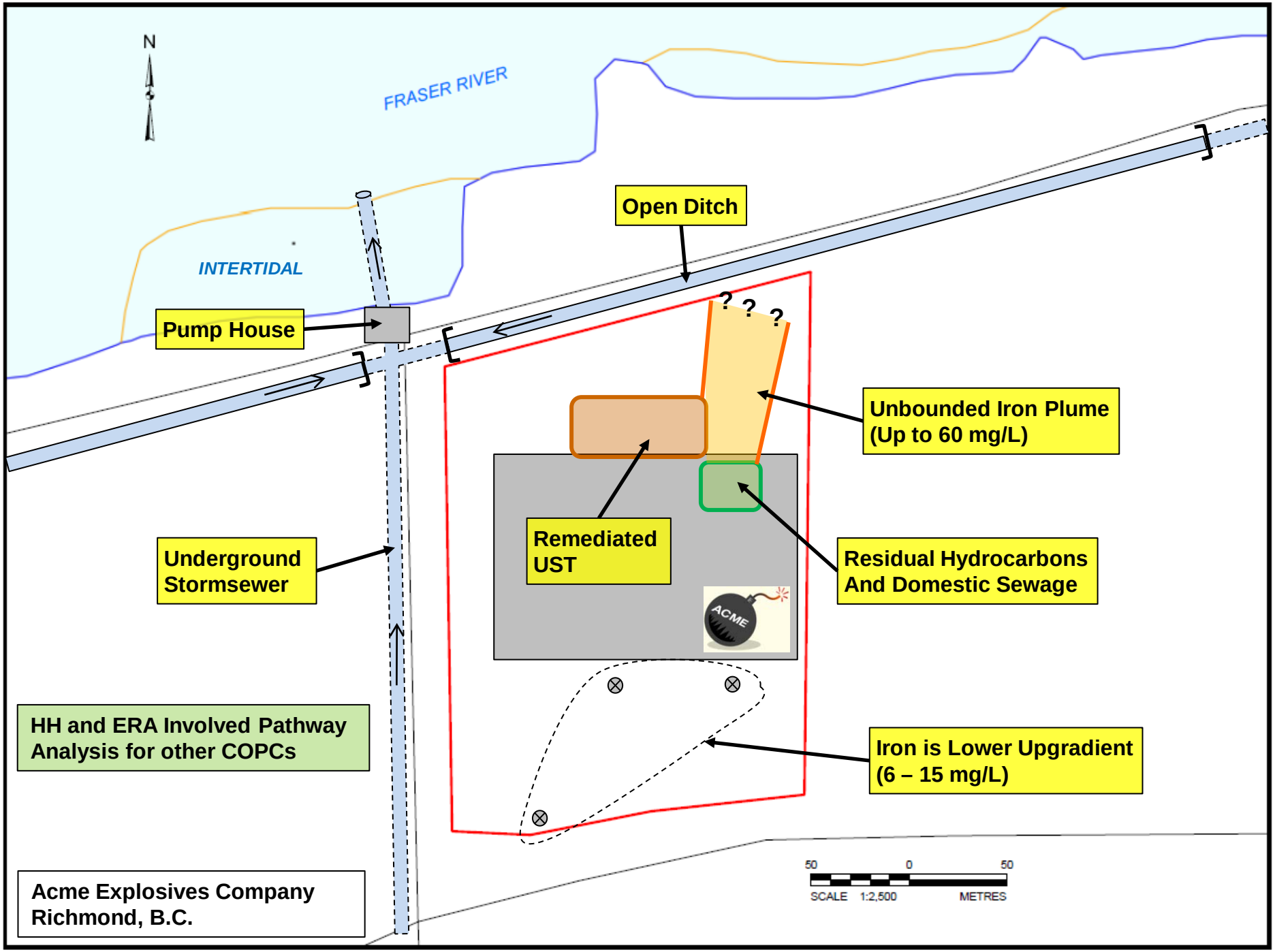
N
FRASER RIVER
INTERTIDAL
Open Ditch
Pump House
? ? ?
Unbounded Iron Plume
(Up to 60 mg/L)
Remediated
UST
Residual Hydrocarbons
And Domestic Sewage
Underground
Stormsewer
ACME
HH and ERA Involved Pathway
Analysis for other COPCs
Iron is Lower Upgradient
(6 – 15 mg/L)
50 0 50
SCALE 1:2,500 METRES
Acme Explosives Company
Richmond, B.C.

Is the ditch the “receiving environment?”

- What receptors are present? **-not fish bearing**
- Is there direct connectivity to a fish-bearing receiving environment? **-No**
- Does the water provide a significant source of resources to downstream environments? **-Unlikely**
- Was the water body designed to convey stormwater? **-Yes**
- Is the water body ephemeral? **-Yes**
- Is the water course actively maintained? **–Likely**

- **Receiving environment or not?**

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- **According to TG-15, CSR Standards Apply**

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- **Do we need to assess iron? (SAB White Papers Say <u>Yes</u>)**

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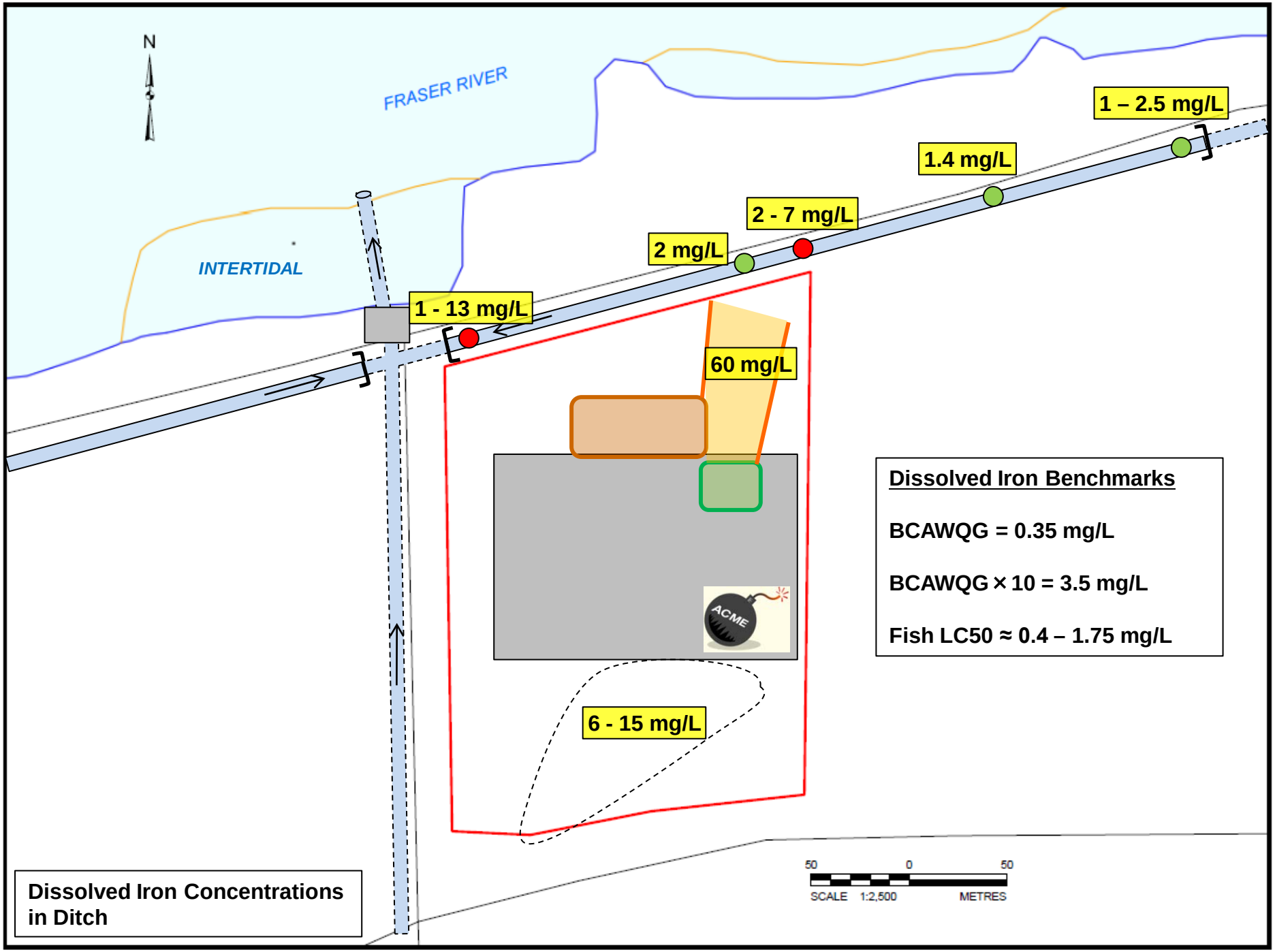
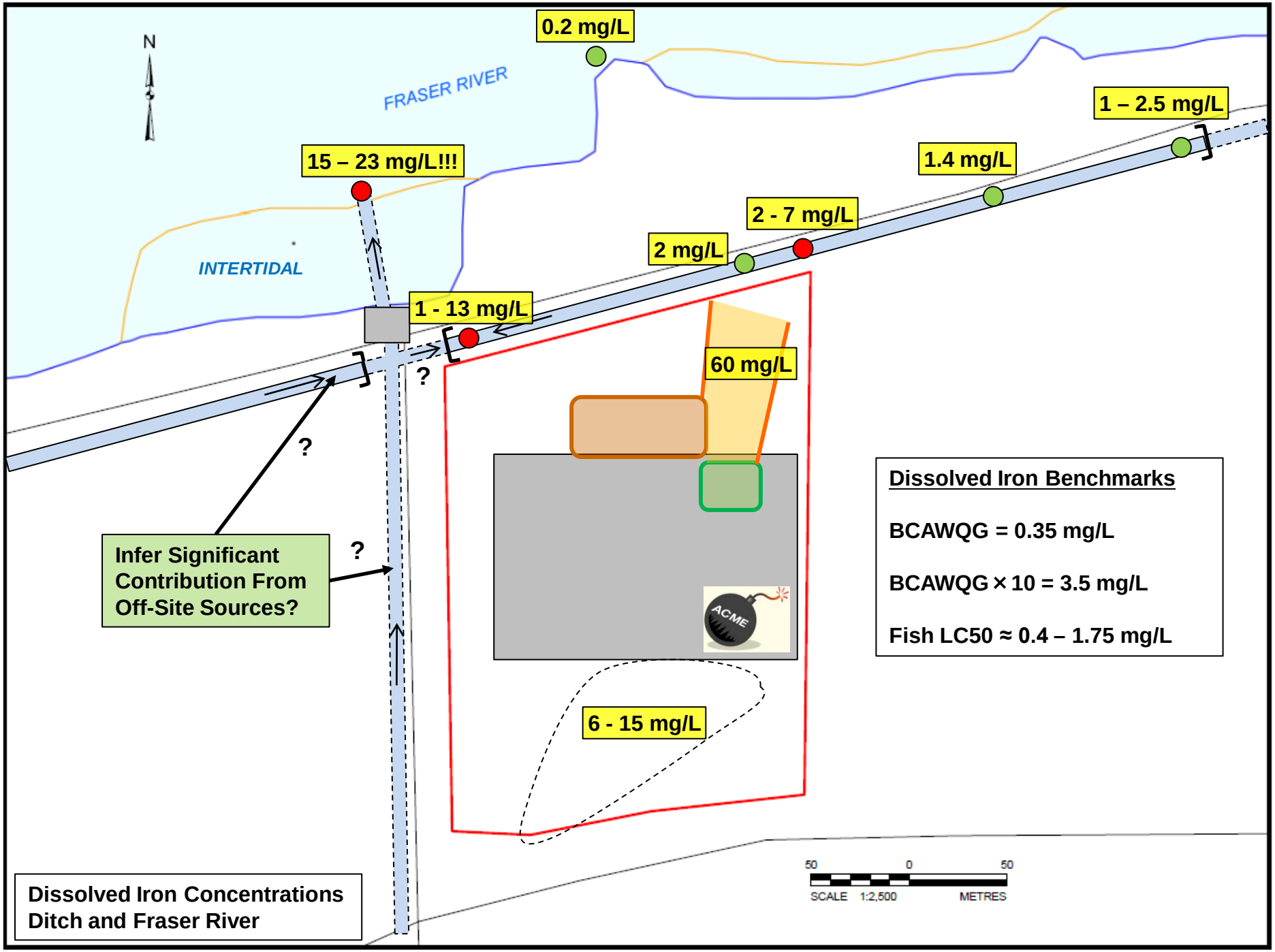

N
FRASER RIVER
INTERTIDAL
1 – 2.5 mg/L
1.4 mg/L
2 - 7 mg/L
2 mg/L
1 - 13 mg/L
60 mg/L
6 - 15 mg/L
ACME
Dissolved Iron Benchmarks
BCAWQG = 0.35 mg/L
BCAWQG × 10 = 3.5 mg/L
Fish LC50 ≈ 0.4 – 1.75 mg/L
50 0 50
SCALE 1:2,500 METRES
Dissolved Iron Concentrations in Ditch

Ditch Conditions


N
FRASER RIVER
INTERTIDAL
0.2 mg/L
15 – 23 mg/L!!!
1 – 2.5 mg/L
1.4 mg/L
2 - 7 mg/L
2 mg/L
1 - 13 mg/L
60 mg/L
6 - 15 mg/L
?
?
?
Infer Significant Contribution From Off-Site Sources?
ACME
Dissolved Iron Benchmarks
BCAWQG = 0.35 mg/L
BCAWQG × 10 = 3.5 mg/L
Fish LC50 ≈ 0.4 – 1.75 mg/L
50 0 50
SCALE 1:2,500 METRES
Dissolved Iron Concentrations
Ditch and Fraser River