

PCB Technical Guidance Phase I – Site Investigation

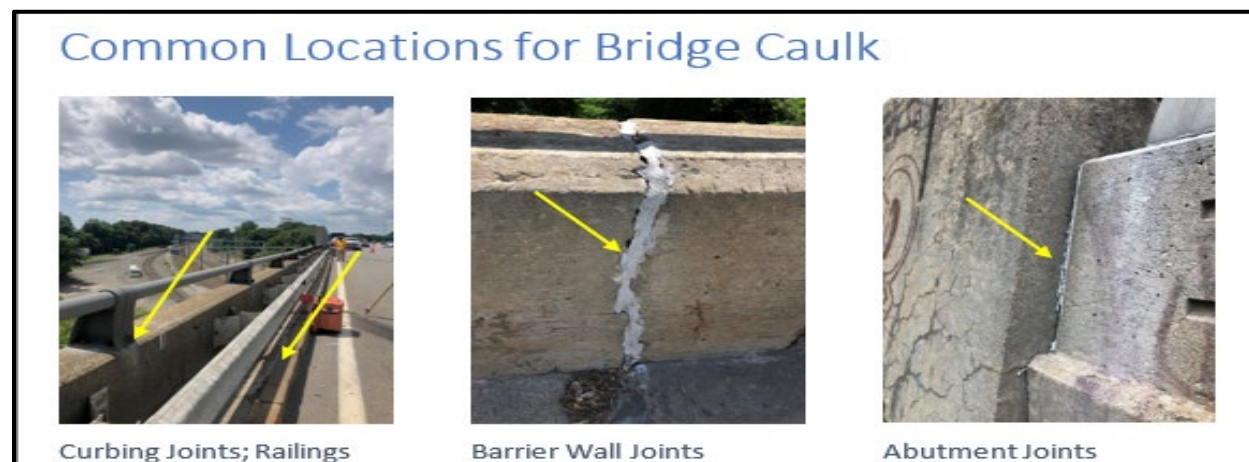
This Technical Guidance document outlines EPA/RIDEM requirements to complete a Site Investigation for Polychlorinated biphenyls (PCBs) and prepare a Notice of Release (NOR) and a Site Investigation Report (SIR). Phase 1 is completed when a Letter of Responsibility (LOR) and Remedial Decision Letter (RDL) is acquired from RIDEM.

STEP 1: Determine Applicability

Determine the applicability of this document to the project and the potential for disturbing PCBs. If RIDOT has required PCB sampling as part of your contract, it is likely that bridge was constructed or reconstructed between 1950 and 1980, and the project involves a bridge replacement or reconstruction involving caulking. If this is the case, the bridge and surrounding soils must be sampled for PCBs. Proceed to Step 2.

STEP 2: Determine Nature and Extent & Sample Caulking

Determine the nature and extent of the contamination. Bridge structures must be inspected to identify if one or more types/colors of caulking compounds are present. A minimum of three samples must be collected from each different type of caulking material, as determined by the inspector. In order to differentiate among caulking types, the inspector must evaluate physical characteristics such as color, texture, elasticity, and condition. Caulking materials used on opposite sides of a bridge are to be considered different types of caulking and must be tested separately. Submit test results to DOT.LRSMM@dot.ri.gov. See page 5 for sampling instructions.



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STEP 3: Notify Permitting Agencies

EPA and RIDEM require notification of PCB activity within 15 days of discovery.

RIDEM

A Notice of Release is required if PCBs are greater than or equal to **1 mg/kg**. Complete the **required notification form and report content as required in [Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases](#) 1.6.2**. The RIDOT Environmental Division Administrator is the Responsible Party and will need to sign the notification form: [RIDEM Hazardous Material Release Notification Form](#).

EPA

A notification is required if PCBs are greater than or equal to **10 mg/kg**. Written notification can be made via email to ORCRPCBs@epa.gov. RIDOT's EPA ID Number is **RITSCA113514**.

STEP 4: Sample Adjacent Porous Materials, if applicable

If laboratory analysis indicates that caulking materials contain ≥ 50 mg/kg, adjacent concrete and/or other porous surfaces must also be assessed. Concrete samples must be taken 6 inches away from the PCB contaminated material on both sides of each caulk joint sample location that contained PCBs at ≥ 50 mg/kg. EPA requested that concrete samples be taken in close proximity to the location of each caulking material. If concrete and/or other porous surfaces have the potential to meet the definition of *PCB Remediation Waste*, a standard of ≤ 1 mg/kg of PCBs must be used for evaluation.

If analytical results reveal PCB concentrations in concrete exceeding 1 mg/kg, a second round of concrete samples must be collected at 6 inches away from the location of each contaminated concrete sample. This procedure must continue at distances further away from the source material (the caulk) until PCB concentrations are ≤ 1 mg/kg or until physical or technical limitations preclude additional sampling. Submit all test results to DOT.LRSMM@dot.ri.gov.

Testing is not required for non-porous building materials such as granite curbing or steel bridge components during this phase of the site investigation.

STEP 5: Sample Adjacent Soils, if applicable

If there is reason to believe that the PCBs in contact with stormwater have the potential to contaminate soil downstream, the soils must be tested as well. The soils must be tested at the surface and at a depth of 1 foot below the surface. One sample location (at two depths) per 50 sq ft is adequate to preliminarily characterize the soils.

A minimum of one soil sample must be collected from the ground surface within 6 horizontal inches of every caulk joint that contacts the soil.

If PCB concentrations in soils are found above 10 mg/kg, continue sampling further from the source until the soils are below 10 mg/kg or until physical or technical limitations preclude additional sampling. If PCBs greater than 10 mg/kg are identified in soils by laboratory sampling, the soils become jurisdictional under RIDEM Remediation

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Regulations. Any soil samples above 1 mg/kg are jurisdictional and regulated by EPA. Submit all test results to DOT.LRSMM@dot.ri.gov.

If soil disturbance is proposed in the project, additional testing for Rhode Island Resource Recovery (RIRRC) disposal characterization parameters must be performed to ensure the soil is only contaminated with PCBs, and to determine disposal options.

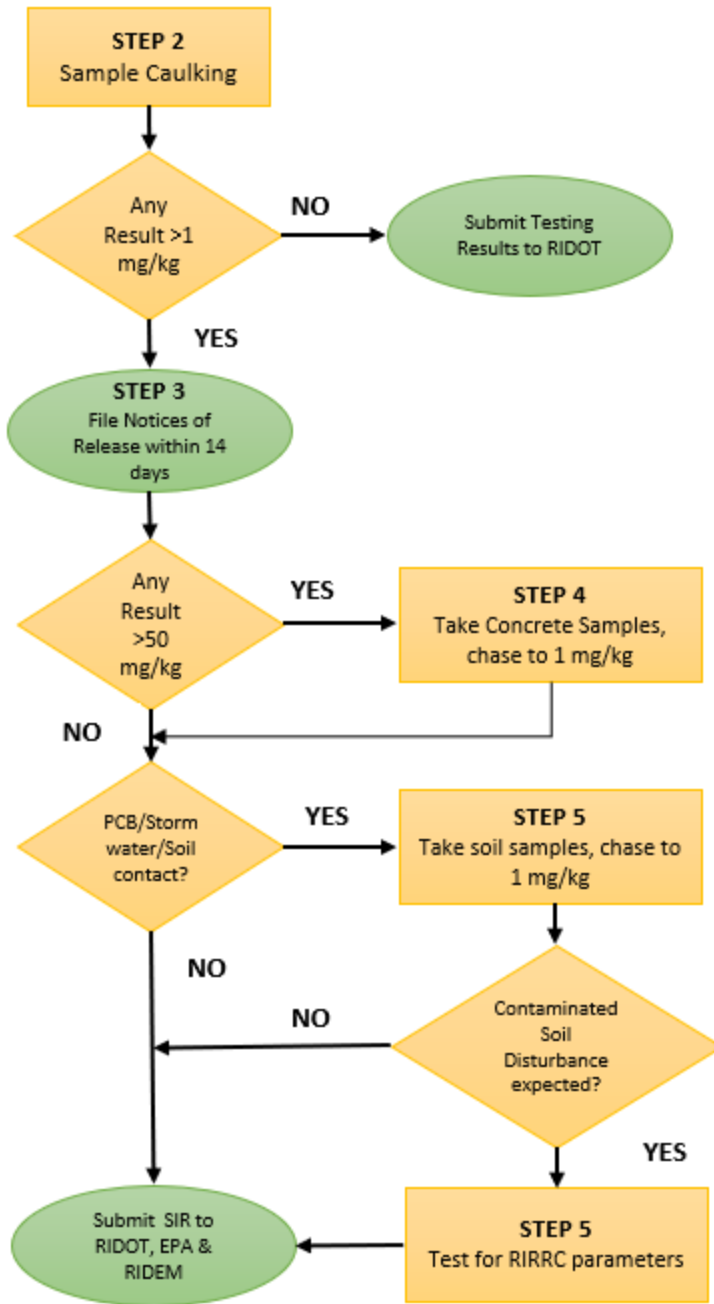
STEP 6: Develop a Site Investigation Report (SIR)

A Site Investigation Report (SIR) must be prepared and should include a description of all sampled materials, sampling locations, material quantity (i.e. linear length of each type of caulking), and lab reports.

If the project is Design-Build, the NOR and SIR must be included in the contract documents.

The SIR must be reviewed by the RIDOT Environmental Division. Submissions can be made to DOT.LRSMM@dot.ri.gov.

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Sampling Instructions:

- 1) Collect bulk samples with a clean knife or other cutting tool and place into clean, appropriately sized containers supplied by an accredited laboratory. Workers on RIDOT bridge replacement and/or reconstruction projects need have a minimum of OSHA 24-hour construction safety training. All personnel must utilize proper personal protective equipment (PPE) during all work activities. Proper chain of custody procedures must be observed. Submit samples for laboratory analysis of PCBs utilizing EPA Method 8082 with Soxhlet Extraction Method 3540 or alternative extraction methods as included in the regulations.
- 2) The concrete samples must be obtained following the guidance provided in the USEPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (PCBs), Revision 4 (May 2011) [STANDARD OPERATING PROCEDURE \(SOP\) FOR SAMPLING POROUS SURFACES FOR PCBs, 05-05-2011, SDMS# 484692 \(epa.gov\)](#) and in accordance with the Code of Federal Regulations (CFR) 40 CFR 761. Level C Personal Protective Equipment (PPE) needs to be utilized during sampling activities to minimize exposure to concrete dust.
- 3) Generate a fine concrete powder with a rotary impact hammer equipped with a one-inch diameter carbide drill bit and collect into appropriate containers provided by the laboratory. Collect samples from each sampling location at a depth of 0-0.5 inch into the concrete substrate area. A ½-inch deep hole generates approximately 10 grams (20 mL) of powder. A minimum of approximately 20 grams of concrete powder is required for PCB and total solids analysis. Therefore, multiple 1" diameter holes located closely adjacent to each other will be needed to generate sufficient sample volume for a PCB determination. Sample holes shall be filled with non-shrink gout.
- 4) Discard all disposable sampling equipment after completing the sampling task and do not reuse. Decontaminate all non-disposable sampling equipment after each sample is collected according to the guidelines for decontamination provided by EPA. Refer to Section 11 of [STANDARD OPERATING PROCEDURE \(SOP\) FOR SAMPLING POROUS SURFACES FOR PCBs, 05-05-2011, SDMS# 484692 \(epa.gov\)](#).