

SECTION 02774
CONDITION ASSESSMENT DATA COLLECTION FOR PIPELINES BEING REPAIRED
OR TO BE ABANDONED

1.0 GENERAL

1.1 DESCRIPTION

A. Scope:

1. Where a pipeline is being repaired or is being prepared for abandonment, HRSD wishes to collect condition assessment data on the pipeline while it is out of service. This section specifies the procedures for collecting condition assessment data on pipelines being repaired or to be abandoned. This section pertains to both pressure mains and gravity sewer mains. This section does not cover the work involved in the repair work or in the actual abandonment of the pipeline.

B. Requirements:

1. The condition assessment data may be taken from all types of pipes including ductile iron pipe, cast iron pipe, asbestos cement pipe, reinforced concrete pipe, prestressed concrete cylinder pipe and possibly high-density polyethylene pipe or polyvinyl chloride pipe.
2. The condition data shall be formatted to fit HRSD data management requirements and provided to HRSD for review prior to the commencement of the abandonment procedures or repairs.

2.0 MATERIALS

2.1 EQUIPMENT

A. General:

1. All equipment specified in this section shall be in good working condition and manufactured or fabricated to withstand the severity of the work covered under this section.

B. Closed Circuit Television (CCTV) *{if applicable}*

1. CCTV equipment shall meet the minimum requirements specified in Section “02761 – Television Inspection of Pipelines” for CCTV Inspection. This includes the camera and lighting equipment, conveyance system and video recording equipment.

C. Ultrasonic Ferrous Pipe Wall Thickness Testing Equipment *{if applicable}*

1. Ultrasonic wall thickness testing equipment (UST) for ferrous material pipe shall meet the minimum requirements specified Section “02773 – Ultrasonic Pipeline Inspection”.

3.0 EXECUTION

3.1 GENERAL

- A. The Contractor shall collect data on the physical condition of HRSD pipelines as and where directed by the Engineer.

3.2 PIPELINE CONDITION INSPECTION

- A. Contractor shall be responsible for obtaining coupons or sections from the pipelines being repaired or to be abandoned, assessing the condition of the coupon and recording critical information. Wherever possible and appropriate, the Contractor shall use coupons taken from line stop operations, bypassing operations or from any other operations where material is removed from the pipe wall as part of the work. Where this is not possible, the Contractor shall take coupons or sample sections from the pipeline where directed by the Engineer.
- B. For each site of repair work or from each pipeline to be abandoned, the Contractor shall record the following information:
1. General Data Each Site, All Pipelines
 - a. Line identification number (HRSD assigned facility ID Number)
 - b. Street or other location identification.
 - c. Pipe material
 - d. Where appropriate and available, record pipe class.
 - e. Pipeline inner diameter.
 - f. Presence and type of external coating or wrap
 - g. Presence and type of interior liner, coating
 - h. If a repair of a failure, record description of apparent cause of failure
 - i. Photograph of inspection site and if a repair, photograph of failure section
 2. Coupon Data
 - a. GPS coordinates of coupon location to 0.1-foot accuracy. The vertical datum must include the pipe crown elevation at the site of the coupon, regardless of where the coupon was taken from the pipe wall.
 - b. The clock position of the center of the coupon or section taken from the pipe. The clock reference should be when looking downstream.
 - c. The flow direction shall be painted on the coupon prior to cutting.
 - d. Coupon thickness, taken at a minimum of 3 locations
 - e. General condition of coupon especially interior wall. Note presence and extent of corrosion, pitting or tuberculation.
 - f. Take photographs of the coupon, including one photograph of the exterior of the coupon, one of the interior and one close-up of the coupon on edge. The Unique Coupon #, as assigned by the Engineer, clock position of coupon, and the flow direction shall be clearly denoted in every photo.
 - g. All documentation, photos and videos shall bear the Coupon Tag number in the title. This number is a combination of the date the coupon was retrieved, the HRSD asset ID number and the Unique Coupon #.
 3. For All Pipelines
 - a. When directed by the Engineer in the plans, insert CCTV equipment and conduct a visual inspection of the pipeline and record the inspection electronically. The CCTV inspection should extend as far as is practicable for the equipment.
 - b. Where access is feasible, conduct a visual inspection of the open ends of the pipeline and record observations of interior conditions. Note instances of corrosion or wall loss, pitting or tuberculation on the pipe interior.
 4. For Ferrous Pipelines *{if applicable}*
 - a. Where access to interior of the pipeline is feasible, take wall thickness measurements around the exposed pipe ends in at least the four quadrants (crown, invert and both springlines).
 - b. Where access to the interior of the ferrous pipeline is not feasible, conduct external wall thickness testing using ultrasonic testing (UST) equipment as specified in Section “02773 – Ultrasonic Pipeline Inspection”. UST wall thickness tests should be conducted at as many locations around

the pipe perimeter as time permits with a minimum of at least three locations at the pipe crown, and once at each of the springline locations.

5. For Asbestos Cement Pipelines *{if applicable}*
 - a. Visually inspect the condition of interior wall of the pipe and note areas of softness and depth of soft material.
 - b. The coupon/sample shall be contained in accordance with appropriate asbestos handling procedures and delivered as requested by OWNER for further testing.
6. For Reinforced Concrete Pipe *{if applicable}*
 - a. Visually inspect the condition of interior wall of the pipe and note areas of softness and depth of soft material.
 - b. The coupon/sample thickness dimensions should include the thickness of the concrete material over the reinforcing steel on both the interior and exterior sides of the steel reinforcing.
7. For Prestressed Concrete Cylinder Pipe *{if applicable}*
 - a. Visually inspect the condition of interior wall of the pipe and note areas of softness and depth of soft material.
 - b. The coupon/sample thickness dimensions should include the thickness of each layer of the composite pipe including the interior mortar layer, the steel cylinder thickness, the mortar layer between the steel cylinder and the prestressing wires (for embedded PCCP only) and the exterior concrete layer. Where there is not cementitious layer between the cylinder and wire, record as a lined cylinder PCCP.
8. For All Plastic Pipe *{if applicable}*
 - a. Where plastic pipelines (HDPE, PVC or GRP) are being repaired or abandoned, only coupons or sample wall sections will be needed as indicated above. No additional internal inspection tests will be required.

3.3 DATA MANAGEMENT

- A. All documentation, photos, and videos shall be turned over to the Engineer. When requested, coupons shall be turned over to HRSD upon direction by the Engineer, and the Contractor shall coordinate with Engineer on how to affix the Coupon Tag number prior to delivery.

END OF SECTION