

		EXAMINATION OF EXPOSED UNDERGROUND PIPING		GOM 60.30.30
Department:	Operations and Corrosion	Date Approved:	11-4-2020	
Approved by:	Tim Angstadt	Date Effective:	1-11-2021	
Revision Number:	1			

Purpose

Examining and reporting the condition of existing exposed underground piping provides valuable information about the pipe. In addition to reporting of defects and repairs, the information can also be used to verify and update pipeline information.

Scope

This document applies to when any buried UGI gas pipe is exposed. Pipeline activities that require an examination can include:

- A. Leak repair
- B. Installation of new service connections
- C. Tie-in of new mains
- D. Installation of tapping or stopping fittings
- E. Squeeze off or bag off locations
- F. Facility abandonment
- G. Inspection of One Call activities
- H. Pipeline Assessments
- I. Sinkhole or Washout Exposures

Responsibilities

- A. Vice President Operations is responsible for approving changes to this document.
- B. Director Engineering and Technical Services is responsible for reviewing and making changes to this procedure.
- C. Operations and construction personnel are responsible for inspecting and documenting the condition of underground pipe when exposed.
- D. Corrosion control personnel are responsible for inspecting Transmission pipelines when the main is exposed.

Equipment

In addition to the safety equipment for entering an excavation, the following equipment may be required to perform underground piping examinations:

- An electronic device (i.e. MDT or laptop) for entering electronic inspection reports.
- A National Institute of Standards & Technology (NIST) certified Ultrasonic Thickness (UT) Gauge is required to determine steel pipe thickness for steel pipe.
- A Pit Gauge is required to measure the depth of pits on the surface of pipe.
- High Resistance Voltmeter or Half Cell

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Persons performing pipe inspections must be qualified in the following:

Task 19 - Inspect the Condition of a Buried Metallic Pipe or Coating Exposed by Excavation

References

Federal Regulations

49 CFR: §192.459 External corrosion control: Examination of buried pipeline when Exposed

49 CFR: §192.917 How does an operator identify potential threats to pipeline integrity and use the threat identification in its integrity program?

49 CFR: §192.1007 What are the required elements of an integrity management plan?



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Procedures

1.0 General

Whenever any portion of a UGI buried pipeline is exposed for any reason, the condition of the exposed pipe and/or coating, shall be inspected.

Examination of pipelines involved in new construction or replacement projects are required in the following circumstances:

- 1.1 1.2.1 At final endpoints of any pipeline construction, if tying into existing main.
- 1.2 1.2.2 Any location along the project where existing main is abandoned and an internal corrosion inspection can be performed, refer to Section 2.10.
 - a) Internal corrosion is not requirement for non-gas carrying pipe (i.e. casing).

If a service is also in the same excavation as a main, then two forms shall be submitted: one for the main inspection and one for the service inspection.

- 1.3 1.3.1 If a new service line is being installed on an existing main, a form is not required for the new service.
- 1.3.2 If a portion of a service line is being abandoned or renewed, a form is required for the abandoned or removed section. The service card should document the existing condition of the abandoned pipe.

1.4 The following fields shall be completed for all inspections:

- 1.4.1 LMS ID
- 1.4.2 Location information
- 1.4.3 Reason for Inspection
- 1.4.4 Cover
- 1.4.5 Material type
- 1.4.6 Diameter
- 1.5 1.4.7 Facility Type (main, service, etc.)
- 1.6 1.4.8 Condition

Field Sketch

2.1 Some inspection requirements are based on the type of materials as shown in Sections 2.0 to 5.0.

2.2

2.0³ Steel Pipe

2.4 Verify coating type matches the GIS documented record, update if necessary.

2.5 If pipe does not have a coating, report coating type as “bare”.

2.6 If bare unprotected steel pipe is exposed, the exposed bare pipe shall be cleaned, coated and a 17 lb. magnesium anode installed prior to backfilling.

Report coating condition.

If the coating is in good condition, the coating does not need to be removed to perform the inspection.

If coating is disbonded or is not in good condition, remove coating and inspect the pipe.



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If there is corrosion present, determine the extent of corrosion, clean pipe and report the following:

- 2.7.1 Depth and length of deepest pit.
- 2.7.2 Depth and length of the longest pit.
- 2.7.3 Nominal wall thickness of pipe.
- 2.7 Report any other damages (i.e. dents or cracks).
- Take pipe to soil potentials at surface level and at the depth of the pipe.
- 2.9.1 If the potential at the pipe surface is below -0.850 volts, contact corrosion control personnel for remedial actions.
- 2.8 2.9.2 If necessary, install anodes as directed by corrosion control personnel.
- 2.9 If the inside of the pipe is accessible (i.e. abandonment or tie-in locations), or coupon cut during tapping, inspect the interior surface of the pipe for internal corrosion and document the findings. If a PILR is used as documentation, a comment shall be added to
- 2.10 document the internal corrosion condition.
- A PILR/PCR does not need to be completed when inspecting ground transitions at regulator stations or when inspecting anodeless risers.
- 2.11

3.0 Plastic Pipe

- 3.1 Verify type of plastic matches the record.
- 3.2 Document any scratches greater than 10% wall thickness. If scratched greater than 10% of wall thickness are found, the pipe must be scheduled for replacement.
- 3.3 Document any pipe gouges or dents found on the pipe.
- 3.4 Indicate if tracer wire is present.
- 3.5 Report SDR and Lot Number of pipe if visible from pipe markings.

4.0¹ Cast Iron Pipe

- 4.2 Wood blocking used in the installation of Cast Iron pipelines could cause stress points if ground settlement is observed and could cause moisture build up between the interface of the blocking and cast iron piping, leading to potential graphitization
- 4.3 4.3.1 Document if wood blocking is observed.
- Inspect and document any graphitization or corrosion.
- 4.4 Document if bell and spigot joints were observed.
- 4.3.1 If so, indicate if they were found encapsulated or clamped.
- 4.3.2 If the bell joint was not encapsulated or clamped, encapsulate or clamp the joint before backfilling the excavation.
- 5.1 5.2 Describe any defects discovered or repairs performed.

5.0 Transmission Pipelines

Contact Corrosion Control Personnel when any Transmission Lines are exposed.
A Corrosion Supervisor/Manager will determine the need for verifying material properties.



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Transmission pipeline inspections shall be recorded on Form 60.30.30-1 UGI
Transmission Inspection Form.

6.0 Remedial Action

- 5.3 If pipe coating is found damaged, repair coating.
- If steel pipe has been determined to have wall loss, refer to GOM 70.40.10 Pipeline Repair Procedures to determine action required.
- 6.1 If steel pipe has a dent or crack, refer to GOM 70.40.10 Pipeline Repair Procedures to determine action required.
- 6.2 If plastic pipe has a scratch at greater than 10% of the wall thickness, it must be replaced.
- 6.3 See GOM 70.40.10 Pipeline Repair Procedures.
- 6.4 If plastic pipe has any gouge or dent, it must be replaced. See GOM 70.40.10 Pipeline Repair Procedures.
- 6.5 If Cast Iron bell and spigot joints were found not encapsulated or clamped, encapsulate all such joints.
- 6.6

Record Keeping Requirements

Record of pipe inspection shall be documented in MapFrame on either a Pipe Condition Report (PCR) or PILR (Pipe Indication Leak Repair), depending on the version of MapFrame being used.

Form 35.20.10-3 shall be used to document external and internal corrosion conditions of a service line when applicable.

Form 60.30.30-1 shall be used to document inspections of transmission pipelines and kept for the life of the facility.

Revision Log

Revision Number 1: Date Approved: 11-4-2020

Section	Description and Reason for the Change
All	Previously the requirements for pipe inspections were part of a lengthy Corrosion Control Procedure (GOM 45.10.30). For ease of use, and for clarity, the pipe inspection requirements have been moved to a separate procedure.