

Pipeline Integrity and  
Monitoring Technology  
in the State of California:  
**Catalogue of Technology  
Assessments**

January 2012

## Section 2.1: Internal and External Assessment and Inspection Methods

## Alternating Current Voltage Gradient

### Method

External Inspection Method

### Description

Alternating Current Voltage Gradient (ACVG) A-Frame

### Strengths

Connects to pipeline mappers (PCM) for pipe locating and depth, does not require drilling in asphalt, precise defect location

### Weaknesses

May not find disbonded areas. Relatively inexpensive

### Manufacturers

Radiodetection



**Utilities Using Technology**  
Multiple

**References**  
NACE SP0502-2010

## Broadband Electromagnetic Technology

### Method

External Inspection Method

### Description

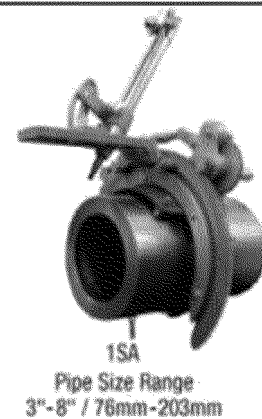
Technology induces eddy currents to flow in close proximity to a transmitter/ receiver in a ferrous pipe. These currents migrate time, allowing a complete profile of the ferrous pipe to be obtained. The technique scans through the full wall of the pipe registering corrosion or flaws within the full wall thickness

### Strengths

Scanning is not limited by the diameter of the pipe. Equipment has the ability to survey through thick coatings (>2") of materials such as paint, tar, plastic, and concrete commonly found on many buried and exposed pipelines. The pipeline does not have to be taken off-line, as readings are taken from the outside of the pipe. Through-hole technology.

### Weaknesses

Unit might miss small detailed clusters of cracks. Rather it will indicate a wide/shallow depression of wall loss. Cannot differentiate from ID/OD ferrous loss. Reading based on % wall loss relative to "good" wall.



**Manufacturers**  
RockSolid Group/GTI

**Utilities Using Technology**  
Australia

**References**  
<http://www.rocksolidgroup.com.au/admin/file/content103/c3/bem%20brochure%20a4.pdf>