



DC VOLTAGE GRADIENT TECHNOLOGY & SUPPLY LTD

GLOBAL LEADERS IN DCVG / CIPS EQUIPMENT, ECDA & SURVEY SOFTWARE

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SHAM DCVG

Pipeline Operators should be aware of the fact that a number of instrument and pipeline survey companies are offering sham (fraudulent, deceptive, dishonest) techniques as DCVG. These sham techniques are based on variations of CIPS (Close Interval Potential Surveys) and bear no direct relationship to the true DCVG technique as invented in the early 80s by John Mulvaney.

Purveyors of these fraudulent methods obviously do not understand how the true DCVG technique works and also can have very little understanding of the CIPS technique not to realise that the limitations and errors built into CIPS prevent it ever giving data similar in nature and quality to the true DCVG technique.

The CIPS and Sham DCVG techniques are set out in the Technical Paper: -

*"Understanding voltage surveys results in reliable coating data",
Pipeline & Gas Industry, March 2001*



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The major differences between Sham DCVG and True DCVG are: -

- 1) True DCVG has no connection to the pipe, Sham DCVG does.
- 2) True DCVG locates epi-centre of coating fault during survey. Sham does not as data has to be post survey processed.
- 3) True DCVG enables coating fault severity, current demand, corrosion status and indication of potential metal loss to be determined. An analogue DCVG meter is essential to gather data for these calculations. Sham DCVG methods have none of these capabilities, so gather very little information about coating faults.
- 4) Sham techniques take data totally at random with regard to coating fault locations. Even post processing does not give accurate coating fault locations.
- 5) Sham DCVG suffers from CIPS attenuation steps as trailing cable is moved from test post to test post. This step is usually not corrected for.
- 6) For best data Sham DCVG requires one half-cell to be over the pipeline, hence must locate pipeline before survey. True DCVG is a very accurate pipe locator in its own right if a coating fault is present. The True DCVG technique will hold you on the pipeline route.
- 7) Sham lateral gradient, which they call DCVG, is taken between 1.5 and 2m, which is only a small proportion of the total lateral gradient. In some soils distances of 50m plus to get the full gradient are required. Measurements at small distances are meaningless.
- 8) Sham DCVG like CIPS does not detect small coating faults. On the true DCVG defect severity scale of 0-100%, the Sham technique does not detect faults below 15% and if CP is weak this can be 30%+. Sham DCVG therefore misses many coating faults. On average this can be more than 50% of the total number of coating faults present
- 9) To analyse data to prioritise faults for repair all data must be fault specific. True DCVG gives this Sham DCVG does not. Hence using Computer Programs for analysis of Sham DCVG information is not possible. Remember rubbish in, rubbish out for any program.
- 10) Purveyors of Sham DCVG are trying to cash in on the accuracy and good name of true DCVG, but they do not have the equipment for True DCVG. Also they do not possess CIPS equipment specifically designed so CIPS can be done at the same CP pulsing frequency as analogue True DCVG to run the two techniques as a one pass survey.