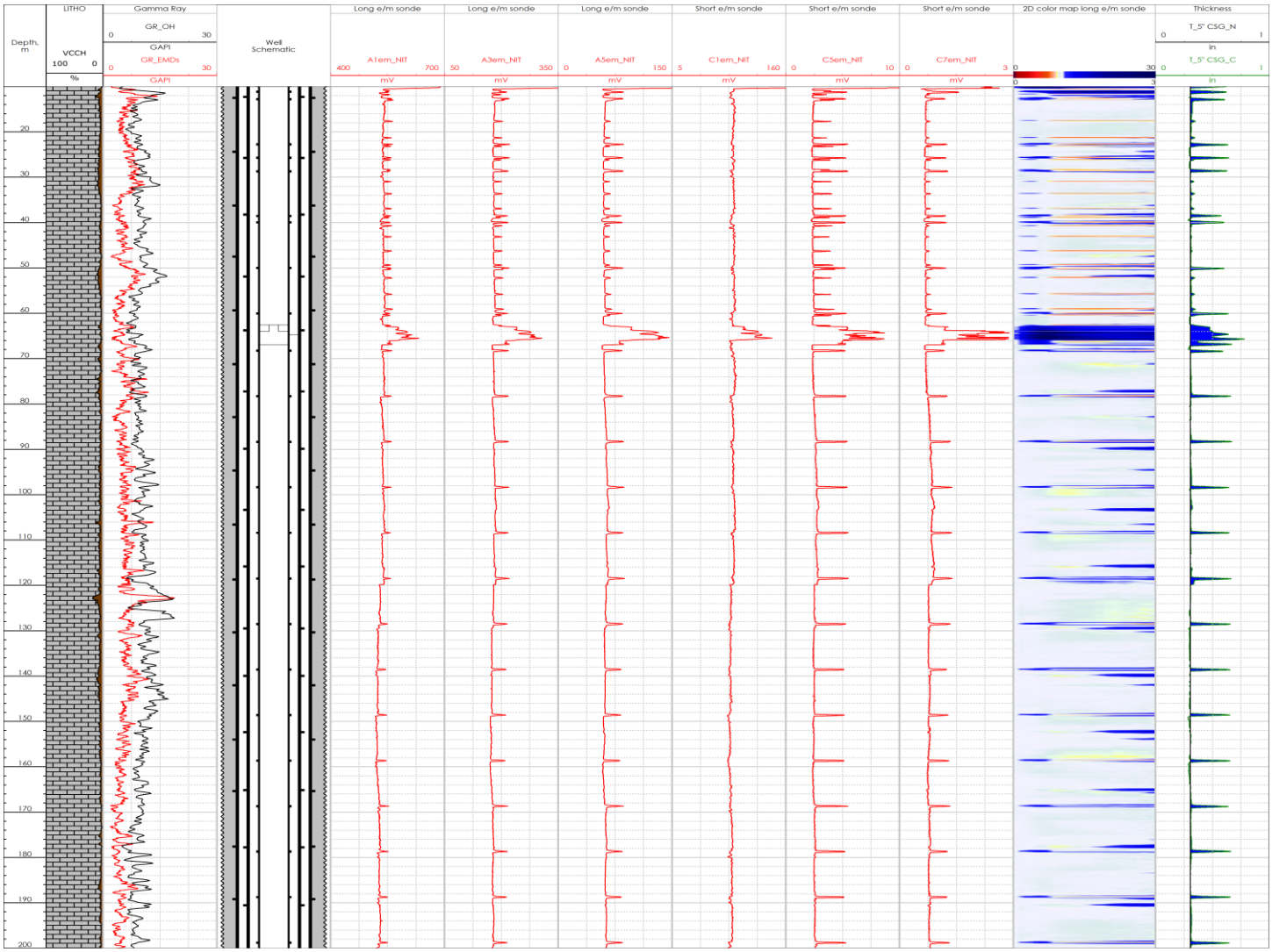
**Integrity Benefits**:
In addition to the above listed advantages the EMDs tool can identify all completion and casing accessories in all pipes. For example, the tubing retrievable sub surface safety valve, sliding side door, wireline nipples, production packers and other completion components. Additionally, the log data can identify external components such as pipe centralizers.

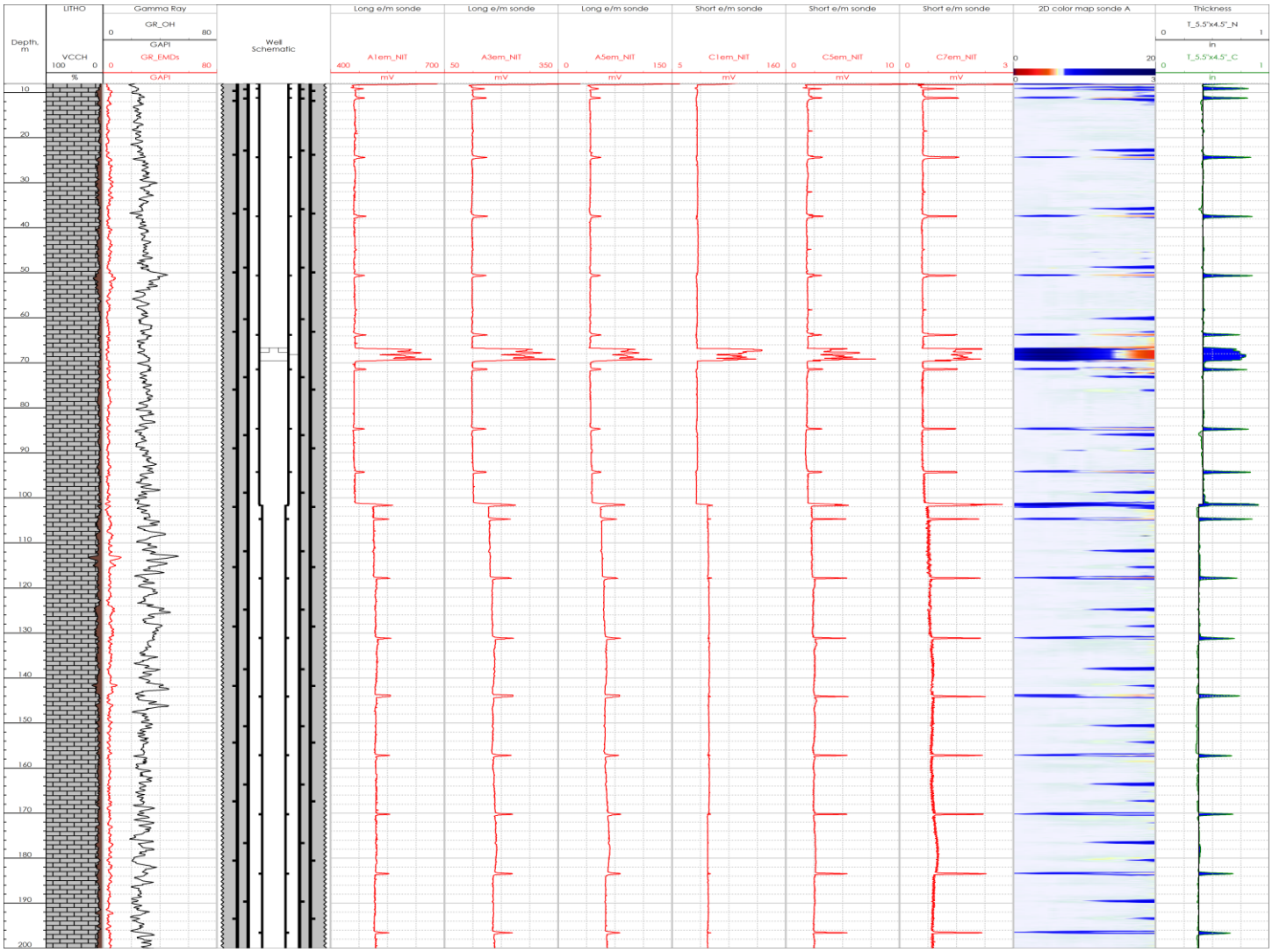
## Well #1

The well is a vertical producer with no requirement for artificial lift and was drilled in 1998. The well was completed with a 13 3/8" surface casing, a 9 5/8" intermediate casing and a 5.5" monobore production string. The production string was run with a TSM tubing retrievable sub-surface safety valve (TRSSSV). The EMDs log data identified the TRSSSV and wraps of the hydraulic control line for the operation of the safety valve. The log data plots recorded by the short electromagnetic (E/M) sonde gives a greater vertical resolution due to its short length and clearly shows all the ID changes across safety valve assembly.



## Well #2

The well is a vertical producer with no requirement for artificial lift and was drilled in 2013. The well was completed with a 13 3/8" surface casing, a 9 5/8" intermediate casing and a tapered 5.5" by 4.5" production string. The production string was run with an SP TRSSSV. The EMDs log data identified TRSSSV and the wraps of hydraulic control line for the operation of the safety valve. The log data plots show clearly all ID changes and the crossover from 5.5" to 4.5" at a depth of 102 m. The log data plots recorded by the short electromagnetic (E/M) sonde gives a greater vertical resolution due to its shorter length and clearly shows all ID changes across the safety valve assembly.




## Conclusion:

Taking into consideration the two wells above, it is clear that the data recorded by EMDs can identify all completion accessories in all pipes in the well, including external accessories such as clamps and centralizers.

The log data shows very clear ID changes across completion accessories. If the well history or completion diagram is unclear the log data can assist in identification and precise location of completion components.

Identification of all clamps on the outer surface of the pipe such as hydraulic control line clamps can be useful if the production string needs to be cut. The log data can also be used to identify an interval with no accessories such as casing centralizers to be selected thus minimizing complication during an intervention operation such as milling pipe for side tracking.