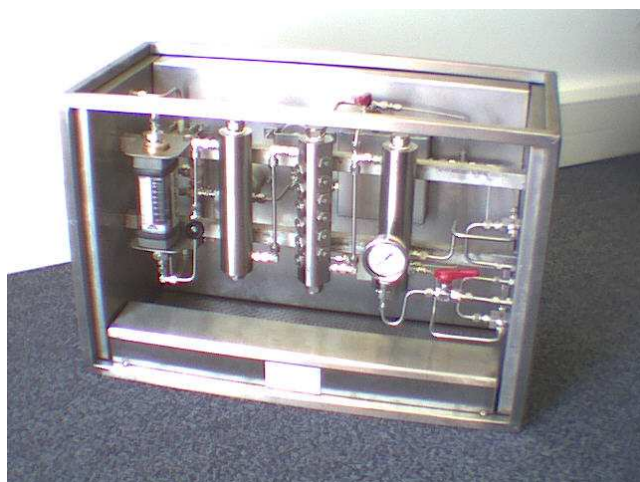


Field Applications Literature

PMAC provide a comprehensive range of purpose built equipment and instrumentation for field-testing and measurement of oilfield chemistry issues. Having the ability to pre-empt or evaluate ever-changing production scenarios is important in supporting a quality flow assurance system within any Integrity Management Programme. PMAC instrumentation and know-how allows for sound proactive decision-making based on good test results. Although inline analysers and probes are an ideal source of sand and corrosion monitoring (where they are available), no such single tool is ready for scale, wax or asphaltene control. These are therefore high risk / high cost prevention areas.



PMAC provide a range of sidestream systems that are small enough to be portable, yet robust enough for the rigors of oilfield environments. These can be simple “stand-alone” systems or included in a multi-functional sidestream. Whether evaluation of corrosion, scale, wax or asphaltene potentials; to chemical inhibitor evaluation and optimisation; to SAG testing of drilling mud’s PMAC

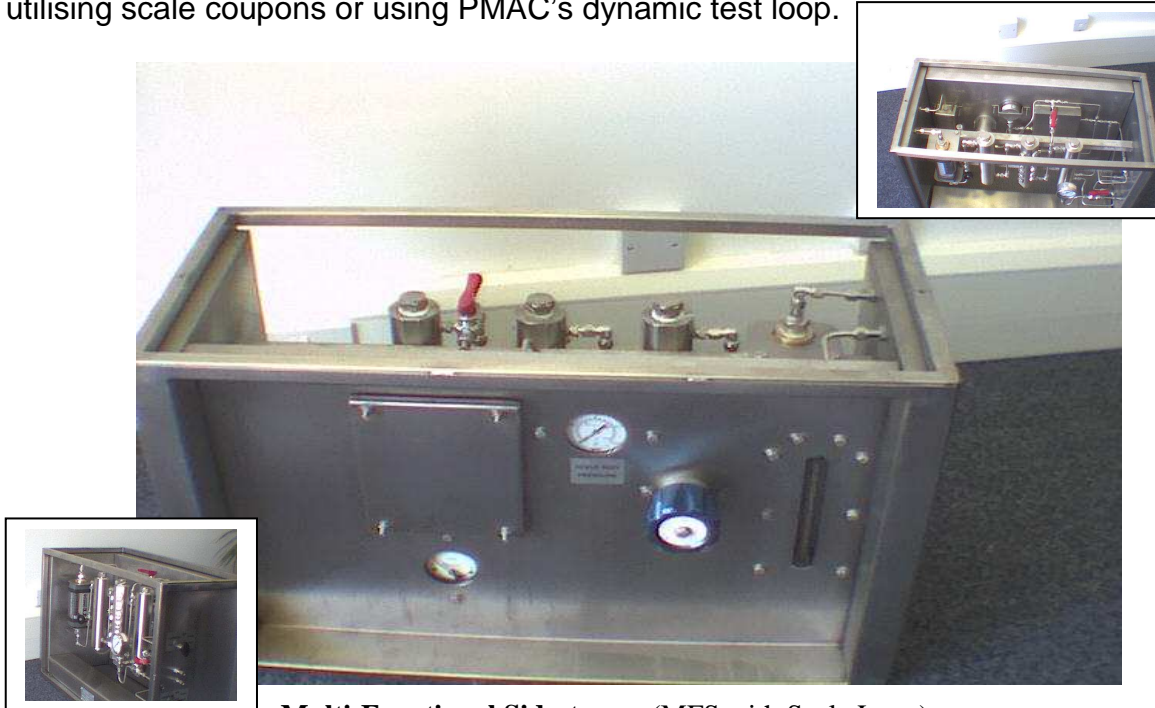
can provide you with the appropriate capabilities based on sound industry practices and in-house expertise. Transferring our experience from our laboratory instrumentation to Field applications PMAC provide high quality, easy to operate systems have been proved to be invaluable to oilfield operations and managers.

The Field Corrosion Sidestream is designed for dynamic measurement of corrosion rates under flowing conditions, in the absence of online facilities. The standard systems typically operate at pressures of either 100 or 400 bar although a low-pressure system is available in polycarbonate.

The HP systems are typically manufactured in a stainless steel frame or carrying case incorporating between 2-4 test cells, a flow indicator and integral system control valves. Cells are machined to accept either ½ or ¾" NPT probes. Optional chemical dosing pump can be fitted to allow for Field evaluation of inhibitors. Corrosion monitoring is via a portable logger.

The sidestream is ideal for determination/ measurement of corrosion rates, the evaluation of the efficiency of corrosion inhibitors in the field or process plant where intrusive equipment cannot be installed.

PMAC have developed their **Multi-Functional Sidestream** system (MFS) with service capabilities in addition to corrosion rates (ER & LPR), the MFS can be built to provide for bio-film, weight loss coupons and scale either utilising scale coupons or using PMAC's dynamic test loop.



Multi-Functional Sidestream (MFS with Scale Loop)

Above is a 3x - cell unit with options of:

- ER and/or LPR measurement or
- Specially designed weight-loss coupons;
- The unit also has ten bio-studs surface mounted on the second cell
- Dynamic Scale Loop / inline filter

All fitments are standard interchangeable 3/4 NPT fittings. There are 2 x 3-way inlet valves and a third main inlet. The main inlet goes via the first mixing cell only, from there it flows through the corrosion / bio-film / probe route; via a ball valve this can also put flow to the Scale Loop. The 2 x 3-way valves can be set up to flow (independently) either through the Mixing Cell (as with the Main Inlet Valve) or directly to the Scale Loop.



This will allow you a number of options for testing:

- Compatibility of 2 or 3 different waters;
- Combination of 2 waters + inhibitor or
- Single water with Bio and/or corrosion and/or scale inhibitors.

The dynamic capillary test loop / or inline filter test uses a differential pressure gauge (rated to 400 bar) to allow you to manually monitor scale build-up across the DP. The backpressure regulator and a small rotameter allow the operator to set up the flow conditions.

For further details please contact us directly or by email to: sales@pmacsystems.com