

SERVICE REPORT

Job Number:	SE0702	Quote:	Sage:								
Customer:	Uni of Sheffield UK										
Contact:	Dr Heather Walker										
Instrument:	20-20, ANCA, CryoPrep, HT-EA										
Date of Visit:	08 -09 April 2026	Days:	2								
Engineer:	David Harris										
Reason for Visit:											
Service of instrument.											
Service Contract?	Yes / No	Expires:	31 MAR 2026								
Warranty?	Yes / No	Expires:	N/A								
Tick as Applicable:	☒ Call Out / ☐ Routine Service / ☐ Warranty / ☐ Emergency / ☐ Contract Visit										
Details of Visit:											
Arrived on site and inspected instrument – All OK. Customer reports high blank N₂ peaks via ANCA system. Ran pre-Service Ref gas specs. <table border="0"> <tr> <td><i>CO₂ Peak Shape = OK</i></td> <td><i>Ref Gas ¹³C Precision =0.019‰ S.D.</i></td> </tr> <tr> <td><i>CO₂ Stability = Stepping observed</i></td> <td><i>Ref Gas ¹³C Linearity =0.141‰ S.D.</i></td> </tr> <tr> <td><i>N₂ Peak Shape = OK</i></td> <td><i>Ref Gas ¹⁵N Precision =0.036‰ S.D.</i></td> </tr> <tr> <td><i>N₂ Stability = OK</i></td> <td><i>Ref Gas ¹⁵N Linearity =0.152‰ S.D.</i></td> </tr> </table> Proceeded to carry out PM Service. Vented instrument – All OK. No oil leaks noted on rotary pump. Removed old oil from backing pump. Replaced with new oil. Removed Source, removed old filament. Fitted new filament. – All OK. Fitted new copper gasket and PTFE ferrule to inlet. – All OK. Pumped down instrument. All OK 2.4e-8mBar vac achieved over night – All OK. Conditioned filament - All OK. Emissions approx. 100µA (with Trap set to 50µA in standby). Retuned instrument as required. Checked tuning, peak shapes and stabilities for N₂ & CO₂ Ref Gas. All OK.				<i>CO₂ Peak Shape = OK</i>	<i>Ref Gas ¹³C Precision =0.019‰ S.D.</i>	<i>CO₂ Stability = Stepping observed</i>	<i>Ref Gas ¹³C Linearity =0.141‰ S.D.</i>	<i>N₂ Peak Shape = OK</i>	<i>Ref Gas ¹⁵N Precision =0.036‰ S.D.</i>	<i>N₂ Stability = OK</i>	<i>Ref Gas ¹⁵N Linearity =0.152‰ S.D.</i>
<i>CO₂ Peak Shape = OK</i>	<i>Ref Gas ¹³C Precision =0.019‰ S.D.</i>										
<i>CO₂ Stability = Stepping observed</i>	<i>Ref Gas ¹³C Linearity =0.141‰ S.D.</i>										
<i>N₂ Peak Shape = OK</i>	<i>Ref Gas ¹⁵N Precision =0.036‰ S.D.</i>										
<i>N₂ Stability = OK</i>	<i>Ref Gas ¹⁵N Linearity =0.152‰ S.D.</i>										

SERVICE REPORT

Ran post service Ref Gas specs.

CO₂ Peak Shape = OK

CO₂ Stability = OK

N₂ Peak Shape = OK

N₂ Stability = OK

Ref Gas ¹³C Precision =0.015‰ S.D.

Ref Gas ¹³C Linearity =0.062‰ S.D.

Ref Gas ¹⁵N Precision =0.039‰ S.D.

Ref Gas ¹⁵N Linearity =0.133‰ S.D.

ANCA Testing Results.

ANCA ¹³C Precision =0.145‰ S.D.

ANCA ¹³C Linearity =0.153‰ S.D.

ANCA ¹⁵N Precision =0.239‰ S.D.

ANCA ¹⁵N Linearity =0.212‰ S.D.

Results good.

High blank N₂ peaks observed ANCA testing. Investigated issue. Leak found on autosampler. Tightened up holding nuts, leak resolved. Blank peaks still high. No other leak detected. N₂ Background also high. Adjusted isolation valve, this reduced N₂ Background. Engineer suspects air in O₂ line/cylinder. Issue on going.

Set off AS Beet mix Linearity batch – Results good.

Due to time constraints AS Beet mix Precision batch set off with user to report results to engineer post visit. Results of precision batch poor. User found damaged/spent reduction column and replaced for new. Customer reran DUAL precision batch using gelatine standards. Results improved to a passing spec, however large amounts of drift observed in un-drift corrected data and also very high blank peaks (+1nA peak height).

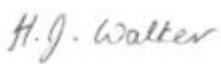
User also reports reduced separation between N₂ and CO₂.

Advised user on possible causes via email. Advised user to drop GC oven temp to increase sample separation and to bake out GC column over night at 130C-150C to remove trapped moisture.

All Specs pass – All OK.

Possible issue with air contamination still pending.

SERVICE REPORT

Recommendations:			
Test O ₂ sample line before running batch analysis via ANCA.			
Follow Up:			
N/A			
Parts Used:	Stock Number:	Quantity:	Charge:
Service Kit + Edwards 15 Oil	SC9001	1	Included in service
Total:			N/A
Engineer:	David Harris	Date:	20 April 2026
Signed:			
Customer:		Date:	20/4/26
Signed:			

SERVICE REPORT

NOTES:

N/A