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Ref: QRY 16/37

Mr Gerry Baker RPS Aquaterra, West Pier Business Park, Dun Laoghaire, Dublin

29th April 2016

Dear Mr. Booker

Reference QRY 16/37: Stability comments for jobs 1263263, 1266038, 1266423, 1268041 and 1268418.

Following your recent query into stability comments, we would like to take this opportunity to apologise for any inconvenience this may have caused you. ALS Environmental has completed an investigation and the findings are summarised below.

Suspended solid stability comments Jobs 1266423 and 1268041

All samples in job 1266423 have stability comments for suspended solids. These samples were analysed within stability, however the analyst entered the results the following day which was passed the stability date. The analyst did not select the correct analysis date when entering the samples, so a stability comment was entered in error. Job 1268041, sample 15193760 has a stability comment for suspended solids. The sample was tested within stability but the analyst repeated the analysis to confirm the result. The repeat was carried out outside of stability and its confirmed the original result. In error the analyst reported the repeat result instead of the original. Job 1266423 will be reissued with the suspended solids stability comments removed. Sample 15193760 will be reissued with the result amended to 1000mg/l and the stability comment removed. To stop this happening again the analyst has been made aware of the errors and reminded of the importance of entering the correct date.

TOC stability comments jobs 1266038, 1266423, 1268041 and 1268418

Samples 15180193 to 196 (job 1266038) was tested within stability times for TOC but these results could not be reported due to quality failure. The samples were repeated but unfortunately the repeat analysis was outside of stability times. Samples 15182886 job 1266423, 15193759 job 1268041 and 15196541 job 1268418 were tested within stability but these results could not be reported as the samples were outside the range of the method. The samples were repeated but these repeats were outside of stability.









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Before testing the samples the analyst has to select what dilution to carry out on the samples. For these samples the analyst selected the incorrect dilutions. To address this, the analyst has been made aware of the impact of this error.

Ammoniacal Nitrogen stability comments jobs 1266423 and 1268418

Samples 15196538, 39, 40 (job 1268418) and 15182885 (job 1266423) were first tested for Ammoniacal Nitrogen within stability but these samples were over the range for the method they had been booked in for. This triggered analysis via a different method but this second method was carried out, outside of stability. We have three methods for the analysis of Ammoniacal Nitrogen covering different concentration ranges. If a sample is outside the range of the select method testing via a different method, it is automatically triggered. We aim to carry out the trigger analysis within stability but this is not always possible due to the short stability time of Ammoniacal Nitrogen. When requesting Ammoniacal Nitrogen analysis and you have information regarding expected ranges, please can you make your Customer Services Coordinator aware. This will help us select the most suitable method for the sample.

Metals stability comments jobs 1263263, 1266038, 1266423 \$1268041 and 1268418

Jobs 1263263, 1266038, 1266423, 1268041 and 1268418 all have some samples with stability comments for some metals determinands. These determinands were tested within stability but could not be reported due to quality failures. The repeat analysis was carried out outside of the stability times. The delays in carrying out the repeat analysis, was due to instrument breakdowns. These issues have now been resolved.

PAH and EH stability comments jobs 1266038, 1266423, 1268041 and 1268418

Samples in jobs 1266038, 1266423, 1268041 and 1268418 have stability comments for PAH. Towards the end of March, we identified some STL 33 bottles were contaminated. This impacted any Naphthalene analysis. The investigation into this issue caused a delay in the extraction of samples and as a result jobs 1266038, 1266423,

1268041 and 1268418 were analysed outside of stability. EH and PAH are extracted together, so the delay also caused jobs 1266038 and 1266423 to be extracted outside of stability times for EH. To address this issue all new batches of PAH bottles will be blank tested before use.









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VOC stability comments jobs 1263263, 1266038 and 1266423

Jobs 1266038 and 1266423 were tested outside of stability times for VOCs due to an instrument breakdown, which caused a backlog. This instrument failure was resolved and a new method is being developed to increase capacity and minimise the impact of this type of failure in the future. The samples in job 1263263 were analysed within stability times for VOC but a stability comment has been added in error. Report 1263263 will be reissued with VOC stability comment removed.

Phenol stability comments jobs 1263263, 1268041 and 1268418

Jobs 1263263, 1268041 and 1268418 were tested outside of stability for Phenols due to quality control failures. Analytical quality control failures caused a backlog which resulted in these jobs not being tested within stability times for Phenols. ALS endeavour to test all samples within stability but this is not always possible following quality control failures.

Once again, please accept our sincere apologies for these issues and the inconvenience that it has caused. Please be assured of ALS Environmental's commitment to delivering high For inspection that the drived for any othe quality service at all times. If you have any further queries, please do not hesitate to contact your customer Services Coordinator on 024 7642 1213.

Yours Sincerely,

A 1 Horosin

Andrew Horobin Organic Chemistry Operations Manager









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