

Standard Operating Procedure Analytical Testing	SOP No. 7.027
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- 1 Purpose
 - 1.1 To establish a standard procedure for analytical testing.
- 2 Scope
 - 2.1 This procedure applies to the high purity piping installations where analytical testing is required.
- 3 References
 - 3.1 Instruction Manual of Total Hydrocarbon Analyzer FID Model 5-100
 - 3.2 Instructions of Alphadew HS 1
 - 3.3 Met One Particle Counter Model A2100B Operating Guide
 - 3.4 NanoTrace Oxygen Analyzer Platinum Series Instruction Manual
- 4 Definition
 - 4.1 O₂ : Oxygen
 - 4.2 H₂O : Moisture
 - 4.3 THC : Total Hydrocarbon
 - 4.4 PC : Particle Count
- 5 Responsibility
 - 5.1 Project Manager (PM) shall notify quality control inspector (QCI) when lines need to be tested.
 - 5.2 QCI shall perform this procedures and notify the PM of the results.
 - 5.3 PM shall notify the customer of findings.

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- 5.4 Ensure that all test equipment is traceable to the National Institute of Standards and Technology (NIST) before proceeding.
- 6 Materials Requirement
 - 6.1 None
- 7 Test Equipment
 - 7.1 Therma Analytical Cart System:
 - 7.1.1 Cart I: PC and THC
 - 7.1.2 Cart II: O₂ and H₂O
- 8 General Procedures
 - 8.1 Turn on the Cart system.
 - 8.2 Measure the background reading from the analytical test port of the Argon high purity purge cart.
 - 8.3 Connect the analytical test port to the SAMPLE IN of the analytical cart with 1/4" electropolished stainless steel tubing using VCR fittings. Using a new gasket when making the connection.
 - 8.4 Turn on the PURGE OUT valve. Ensure the PURGE OUT cap is removed.
 - 8.5 Cycle purge the sample line by opening and closing the PURGE OUT valve at least 20 times.
 - 8.6 Turn on the O₂, H₂O or PC, THC IN valves.
 - 8.7 Turn off the PURGE valve.
 - 8.8 For Cart I (PC and THC)
 - 8.8.1 Cycle purge the system by opening and closing THC IN valve and cycle block the PC out. (At least 20 times)
 - 8.8.2 With the PC OUT cap removed turn on the isolate valve and THC IN valve for Total Hydrocarbon Test and Particle Count.

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8.9 For Cart II (O₂ and H₂O)

8.9.1 Cycle purge the system by on/off O₂ and H₂O OUT valves and make sure that the O₂ and H₂O OUT caps are removed.

8.9.2 Turn both IN and OUT valves open for Oxygen and Moisture measurement.

8.10 When the reading is stable and within the specification, record the results on the analytical test report.

8.11 Close the O₂ and H₂O OUT valves, then close the inlet valves.

Or Close the Isolate and THC in valves, then close the PC in valve.

8.12 Notify the PM and make sure that the line to be tested is safe to test.

8.13 Isolate the line that is to be tested.

8.14 Connect the end of the line to the SAMPLE IN of the analytical cart with 1/4" electropolished stainless steel tubing with 1/4" VCR fittings. Using a new gasket every time.

8.15 Repeat steps 8.4 to 8.12.

8.16 If the line passes, hang the certification tag.

8.17 Fill in the form FN 7.027.1.

9 Review and Approval

9.1 QCI shall verify the performance and document accordingly.

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Document Approval

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