

Attachment 3. STAR TPC GAS SYSTEM CHECK LIST
 (To be filled out once per shift and placed in Gas System Binder)

Valid from 11/1/2007

Computer Monitored Sensors

Sensor	Function	Value	Range	Comments
PI1 (PT1)	Output of Big Compressor		95 - 125 mbar	
PT2	Input to TPC		2.0 – 4.5 mbar	
PT3	Monitor Chamber Pressure		0.3 – 2.0 mbar	
PT5	Input of Big Compressor		0.5 – 1.6 mbar	
PT7	TPC/Gap Differential Pressure		0 – 2.0 mbar	
PT8	Input Pressure to TPC		1.5 - 2.5 mbar	
PT9	Pressure across Dryer Filter		10 - 90 mbar	< 0 If dryer loop off
PT10	Pressure across Main Filter		2.0 - 20 mbar	
FT1	Exhaust Rate		-6.0 – +20.0 lpm	Oscillates
PTB	New barometer		970 – 1040 mbar	
PI8	Argon Delivery Pressure		1.0 - 1.7 bar	
PI9	Methane Delivery Pressure		0.98 - 1.5 bar	
PI10	Nitrogen Pressure on Pad		2.2 - 4.0 bar	
PI13	Argon Pressure on Pad		2.2 – 4.3 bar	
PI14	Methane Pressure on Pad		5 - 155 bar	
PI15	Nitrogen Delivery Pressure		0.9 - 1.8 bar	
FM1	Methane mass flow controller		0.9 - 1.9 lpm	
FM5	Argon mass flow controller		10 – 20 lpm	
FI7	Recirculating flow in TPC		450 - 600 lpm	
O2 M1	Oxygen content		5 - 80 ppm	
O2 M5	Oxygen content		< 0 %	
H2O M2	Water Content		0 - 80 ppm	
CH4 M3(a)	Methane Content		9.5 - 10.5 %	
CH4 M4	Methane Content		9.5 - 10.5 %	
Leakage	Calculated Leak Rate		0 – 14.5 lpm	
CH4FM%	Methane/Argon Ratio		9.0 – 11.0	

Rack 1

FM5	Fresh Argon Flow		10 - 20 lpm	
FM1	Fresh Methane Flow (slaved)		1.0 - 1.9 lpm	
FI7	Recirculating Flow to TPC		500 - 600 lpm	
PT8	TPC Pressure		1200 - 2600 μ bar	
M2	Water Content		0 - 80 ppm	

TURN OVER FOR MORE!

Rack 2

Sensor	Function	Value	Range	Comments
PI7	Input to Big Compressor		6.0 - 12. mm H2O	
PI2	Output of SC#1		8.2 – 12.5 PSIA	
PI1	Output of Big Compressor 1		40 - 48 in H2O	Oscillates
PI3	Intermediate Input Pressure		5.0 – 12.0 in H2O	
PI4	Input To TPC		1.0 - 1.55 in H2O	
FI1a	Gas to Vent		0 – 50 SCFH	Oscillates
M4	Fresh Methane Content		9.5-10.5%	
FI2a	M4 P10 flow		4.0-6.0 x 100 cc/min	
SV14	Input to M1, M2, M3a		Open (Green)	
SV6,7,8	Input to M1,M2,M3a		Open (Green)	
TIC1	Purifier Temperature		205 - 240	
PI8a	Output of SC#2 (Back)		0.4 – 0.8 Bar	
FI3	M2 Flow (Back)		9-12x100 cc/min	

Rack 3

Sensor	Function	Value	Range	Comments
M1	Oxygen Meter		5 - 80 ppm	
M5	Oxygen Meter		< 80 ppm	
PI8	Argon Delivery Pressure		15.0 – 19.0 PSIG	
PI9	Methane Delivery Pressure		15 PSIG +/- 1	Must be less than PI8
PI15	Nitrogen Delivery Pressure		13 - 17 PSIG	
M3b	Methane Analyzer		9.5 - 10.5 %	
SV21	Methane Inlet		Open (Green)	
SV22	Argon-Methane Bypass		Closed (Red)	
FI2	M1 Flow		0.1-0.3 lpm	
FI4	M3a Flow		4.0 -6.0 x100 cc/min	
FI10	Insulation Gap Flow		10.0 – 20.0 lpm	
FI12	M4 Case Purge (Back)		2.0 – 4.0 lpm	
FI13	M3a Case Purge (Back)		2.0 - 4.0 lpm	

Mixing Room

Sensor	Function	Value	Range	Comments
PI10	Nitrogen Supply Pressure		26 - 52 PSIG	
PI11	Nitrogen Delivery Pressure		15 - 22 PSIG	
PI12	Argon Delivery Pressure		15 - 25 PSIG	
PI13	Argon Supply Pressure		30 - 45 PSIG	
FI16	Laser Nitrogen Flow		< 10 lpm	
FI17	Water Skid Nitrogen Flow		1- - 20 lpm	
PVENT	Vent Line Pressure		0 – 0.5 in H2O	
ODH	Room Oxygen content		19 – 22 %	
Bubbler	Oil Level		Between Marks	

Rack 4

M6	Gap Oxygen		0 – 40 ppm	
M7	Gap Water		0 – 40 ppm	
M8	Gap Methane		0 – 16 %LEL	
FI51	Gap N2 flow		5 – 20 lpm	
FI55	Gap return flow		0.8 – 3 lpm	

Software Alarms Enabled? _____

Chilled water flow to gas system (gpm) _____

Operator _____

Date & Time _____