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# CRYOGENIC SYSTEM

## RUN 9 RHIC RETREAT



# Cryogenic Systems Run 9

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## •COOLDOWN

293K to 45K

CRYOPLANT

45K WAVE: 21 DAYS

4K FILL: 6 DAYS

## COOLDOWN PREVIOUS

293K TO 90K

LN2 , 4 WEEKS

90K TO 4K WAVE, 10 DAYS

# Cryogenic Systems Run

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- **AGS COLD SNAKE**

Helium loss, power outage, A18 water cooling tower restart delay  
(Cooling water system PLC problem)

- **COMPRESSOR SYSTEM**

Second stage compressor trips.

Compressor suction valve closed on instrument  
airline fitting failure on two skids

## **CRYO CONTROLS**

- Symax analog output cards & power supply  
@ rack 6 O'clock
- Corrector leads: Thermistor flow card failures.
- Spin rotator lead flow controller.

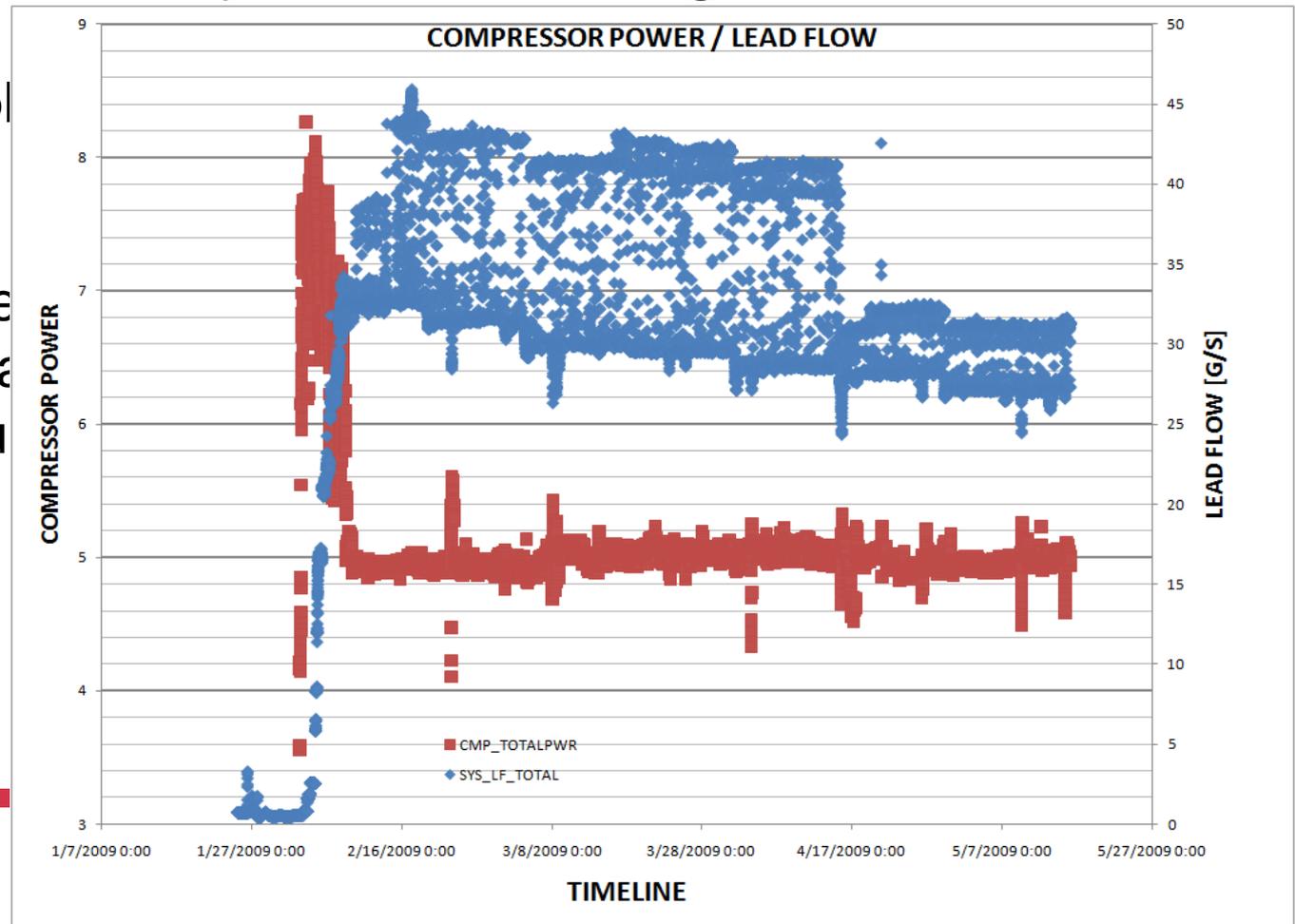
# Cryogenic Systems Run

## Maintenance days

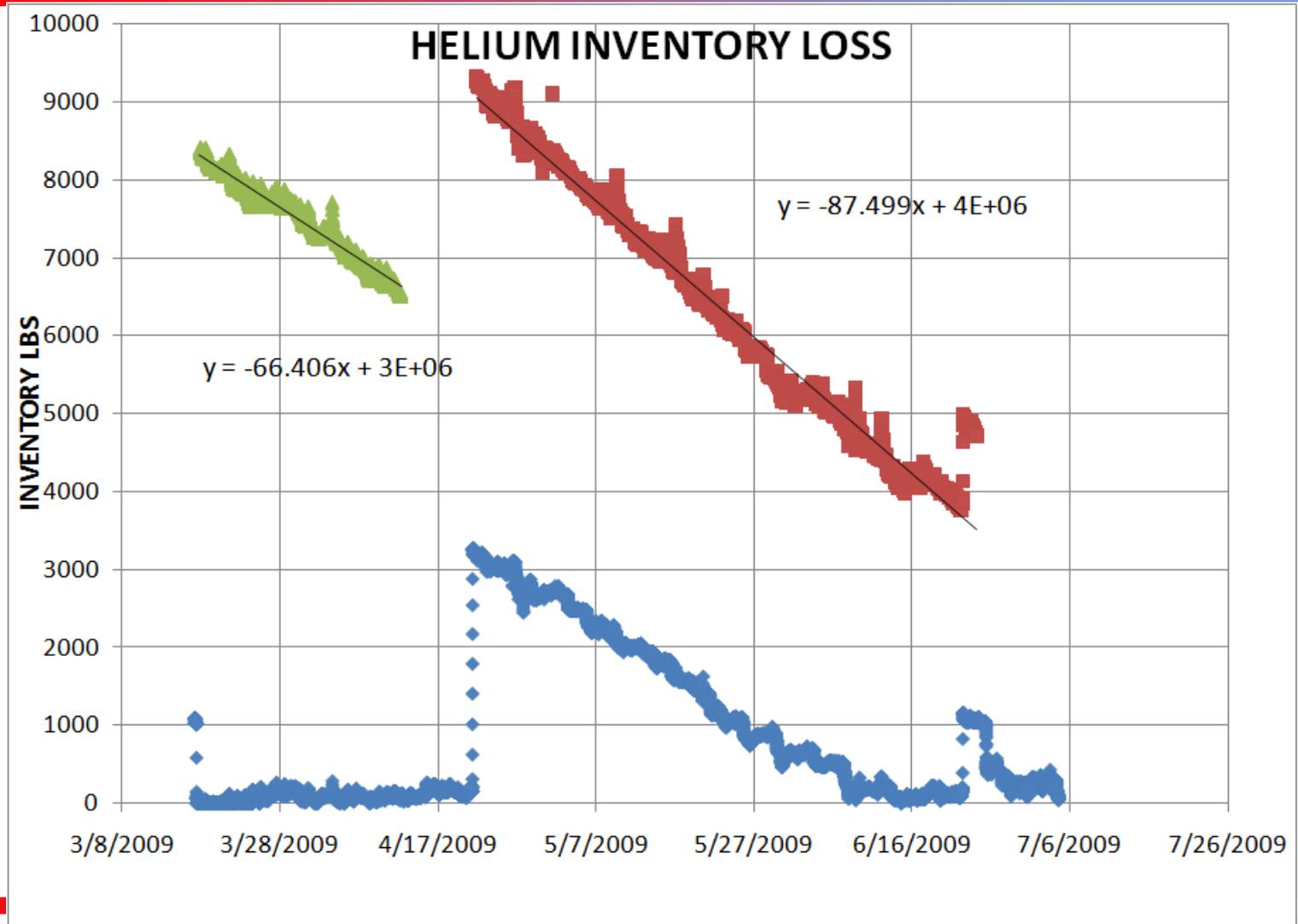
- Corrector leads thermistor flows:  
Calibration and adjustment: 32 to 27 g/s

- Flow test for triple  
Sector 6

- ODH for cryoline  
Zone isolation  
Depressure



# Cryogenic Systems Run



# Cryogenic Systems

## Summer Shutdown ELECTRICAL/CONTROLS

### OTHER WORK

- Rack Move  
6Q3, 6Q6, 6Q14 to 1006B
- 80K circulator VFD replacements
- Turbine pods vacuum controllers
- Auto-unload logic for 2<sup>nd</sup> Stage compressor
  
- 4160 & 480 MCC's maintenance

### Cryocontrols upgrade

- Rotoflow expander skid  
Trips/alarms back to PLC
  
- Compressor Temp sensor back to PLC
- 1005H Refrigerator Room PLC rack
  - 2300 processor
  - I/O for Rotoflow feedbacks
  
- 1 Rack upgrade RHIC Temp diodes electronics with Lakeshore 218's & AMI level units

# Cryogenic Systems

## Summer Shutdown OTHER

### MAINTENANCE WORK

- M+H lines Reliefs 5 yr retest
- Compressor overhaul
- Rotoflow Exp 3A
- Seal Gas compressor

### • ODH

- Install vent line to Valvebox vacuum vessel reliefs
- *Valve box Power leads feedthrough fix*
- Zone isolation logic

### Projects

- 56 MHz SCRF Cavity
  - Tie-in taps to RHIC S & R lines
- *Snake magnet swap with dummy*
- 80K cooler lines enlarge Valve/flowmeter
  - Carry-over from 2008 shutdown
- Assess RHIC portable dewar fill station? AGS cold snake, EBIS, etc...