



Oxygen and Nitrogen Generator Distributors

*Air is 78% nitrogen and 21% oxygen.  
Separating the air we breathe for a fraction of the cost.*

**O<sub>2</sub>N<sub>2</sub> Site: Pure Convenience®**





# from Afghanistan to Yemen

*How does a small company  
in Michigan have a global  
reach?*

In a word,  
**reputation.**

 Afghanistan	 Hungary	 Republic of Mauritius
 Argentina	 Malaysia	 Russia
 Australia	 Mexico	 Samoa
 Austria	 Micronesia	 Saudi Arabia
 Bangladesh	 Mongolia	 Scotland
 Bolivia	 Morocco	 Singapore
 Bosnia	 New Zealand	 Slovenia
 Brazil	 Norway	 South Africa
 Bulgaria	 Panama	 Spain
 Canada	 Peru	 Sweden
 Chile	 Philippines	 Switzerland
 China	 Portugal	 Tahiti
 Colombia	 India	 Taiwan
 Costa Rica	 Indonesia	 Tajikistan
 Denmark	 Iraq	 Thailand
 Dominican Republic	 Ireland	 Turkey
 Egypt	 International Olympics	 United Arab Emirates
 England	 Israel	 United Kingdom
 France	 Italy	 United Nations
 Germany	 Japan	 Uruguay
 Greece	 Jordan	 US Commonwealth N. Mariana Islands
 Guam	 Kazakhstan	 USA
 Guatemala	 Korea	 Vietnam
 Haiti	 Kuwait	 Yemen Republic
 Hong Kong	 Puerto Rico	



UL/IEC 60601-1



Our Portable Oxygen Generating System (POGS) has FDA clearance to:  
“generate and deliver USP 93% supplemental oxygen and medical grade  
air in disaster relief and emergency preparedness situations or military  
settings where bottled oxygen is not readily available.”

## 3 Divisions



### Field Service: Oil, Gas & Mines

- PSA and Membrane N2 Generators
- Flow rates up to 90,000 scfh



### Commercial

- PSA O2 Generators, 95% and 99%
- PSA and membrane N2 Generators  
95%-99.9995%



### Portable Oxygen

- POGS Military, Disaster Relief and  
Emergency Preparedness



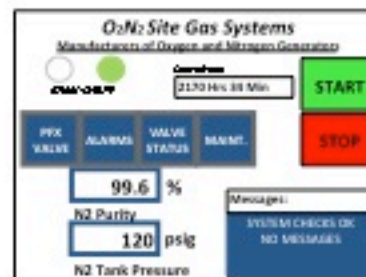




## Features and Benefits:

- Convenient
- Touch Screen Control
- Safe
- Fast Payback
- Low Operating Cost
- Reliable
- Lease/Rental Options

## Touch Screen



## Nitrogen

- Flow Rates 10-75,000 SCFH
- Purity Levels 95% to 99.9995%
- PSA and Membrane Technology

## Oxygen

- Purity levels 95% to 99%
- PSA Technology



## Why generate your own gas?

- Simplicity:** No expensive, long term contracts. You can buy, rent or lease. And with proper care, it will last for decades.
- Cost-effectiveness:** The average cost per CCF of self-generated gas is 1/3 to 1/2 the cost of cryo.
- Versatility:** Many On Site systems are portable and function anywhere there is electrical power and air— even in the world's harshest climates and conditions.
- Reliability:** Because On Site systems generate gas from air, you'll never run out of gas.

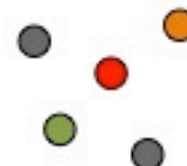
How it Works:  
Proportions of Gases in Atmosphere

**78%**  **nitrogen**

**20.9%**  **oxygen**

**1%**  **argon**

Balance: CO 2-300 PPM, trace quantities of rare gases

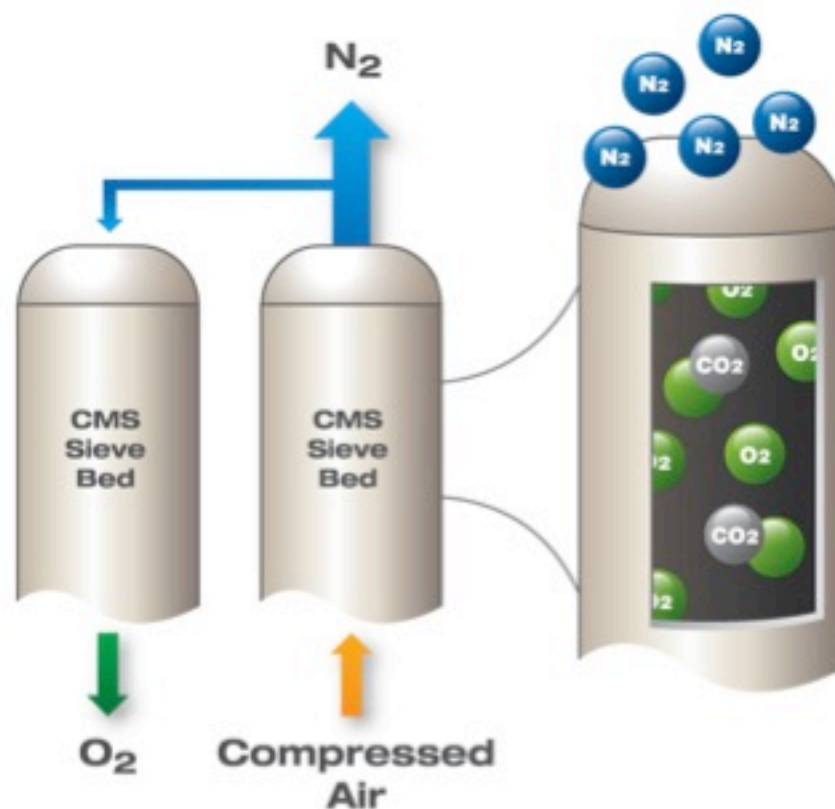




# Commercial Nitrogen

At a fraction of the cost of cylinders, dewars or bulk

## HOW DOES A N<sub>2</sub> PSA WORK ?



## Nitrogen Product Line



**N2 PSA**



**N2 Tire fill**



**N2 Cylinder Fill**



**N2 Membrane**



**N2 Membrane Trailer Systems**



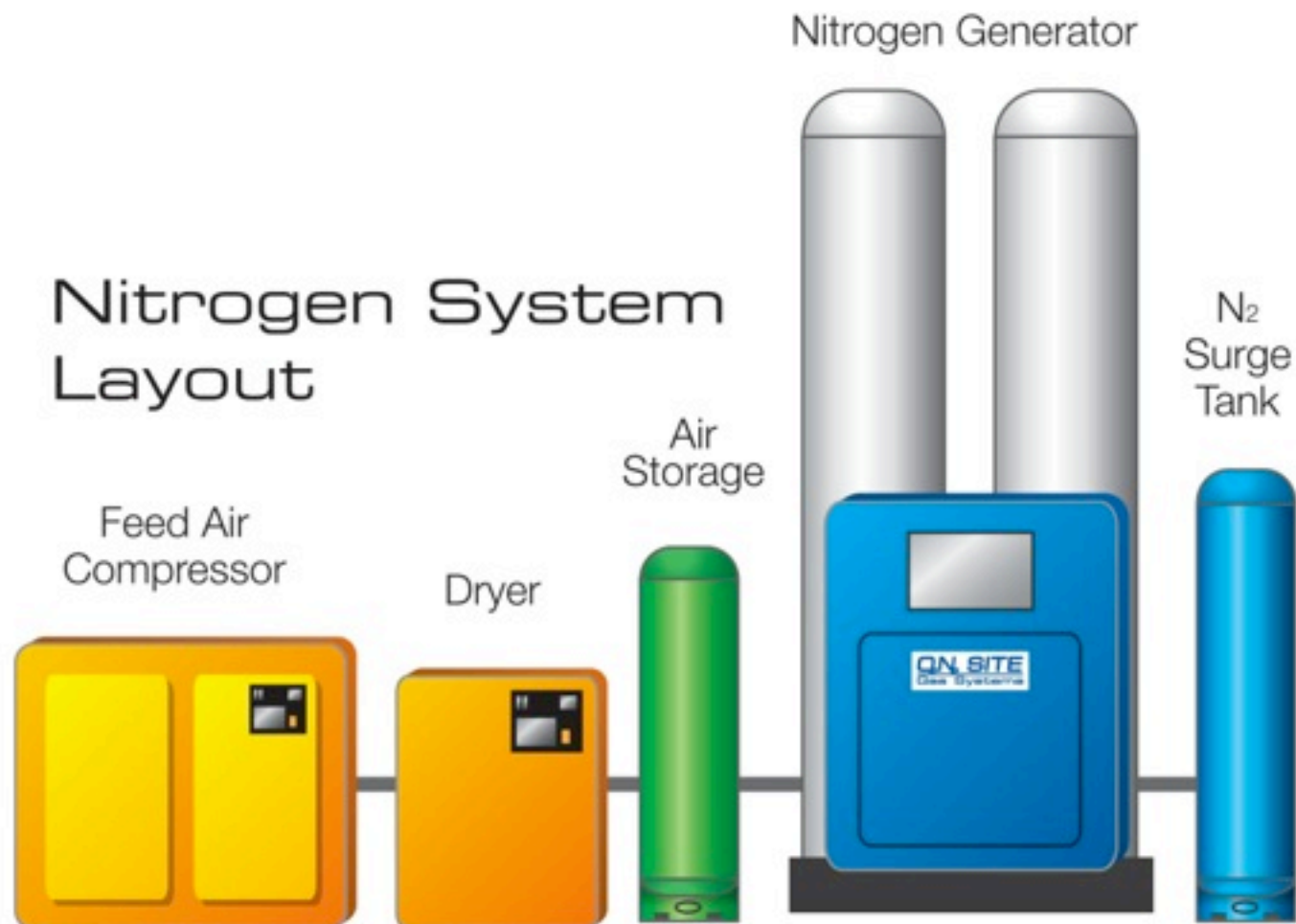
**N2 PSA Underground System**



**N2 Membrane Portable Systems**



## Nitrogen System Layout



## Packaging Applications





## Industrial Applications





# Compound System

## O<sub>2</sub>N<sub>2</sub> 330



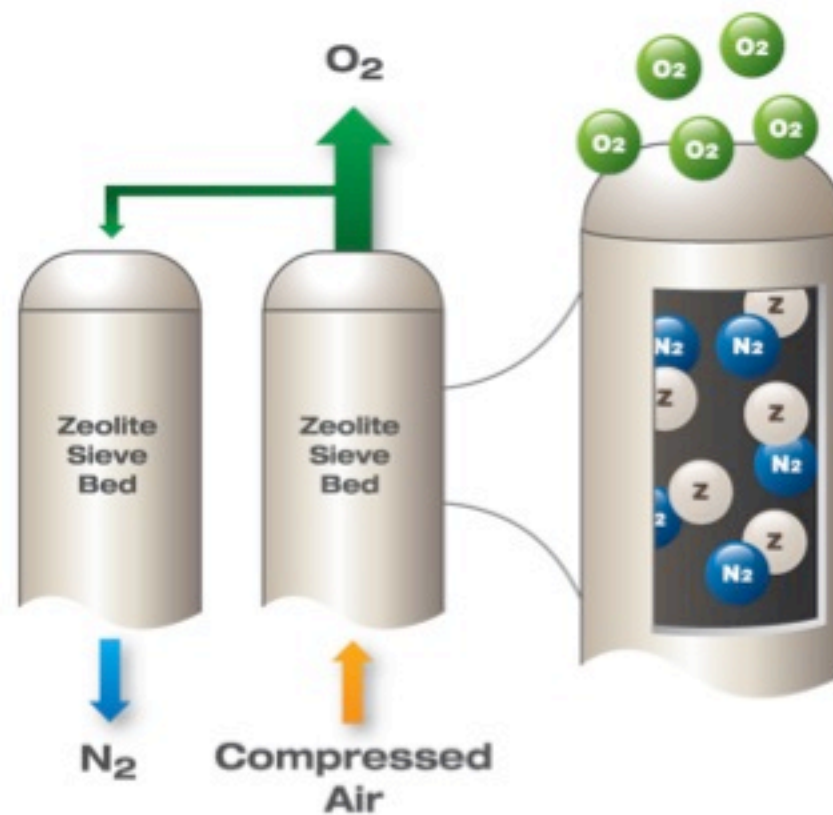
Turn-key, dual-purity nitrogen solution for laser cutting assist gas and beam purge

# High Purity Oxygen

- Commercial
- POGS line (portable)

*Eliminating logistical difficulties and providing  
limitless quantities in remote locations*

## HOW DOES AN O<sub>2</sub> PSA WORK ?





## Oxygen Product Line



O2 USP - 93%



O2 - 90 / 93 / 95%  
(cabinet)



O2 - 90 / 93 / 95%



O2 - 99%



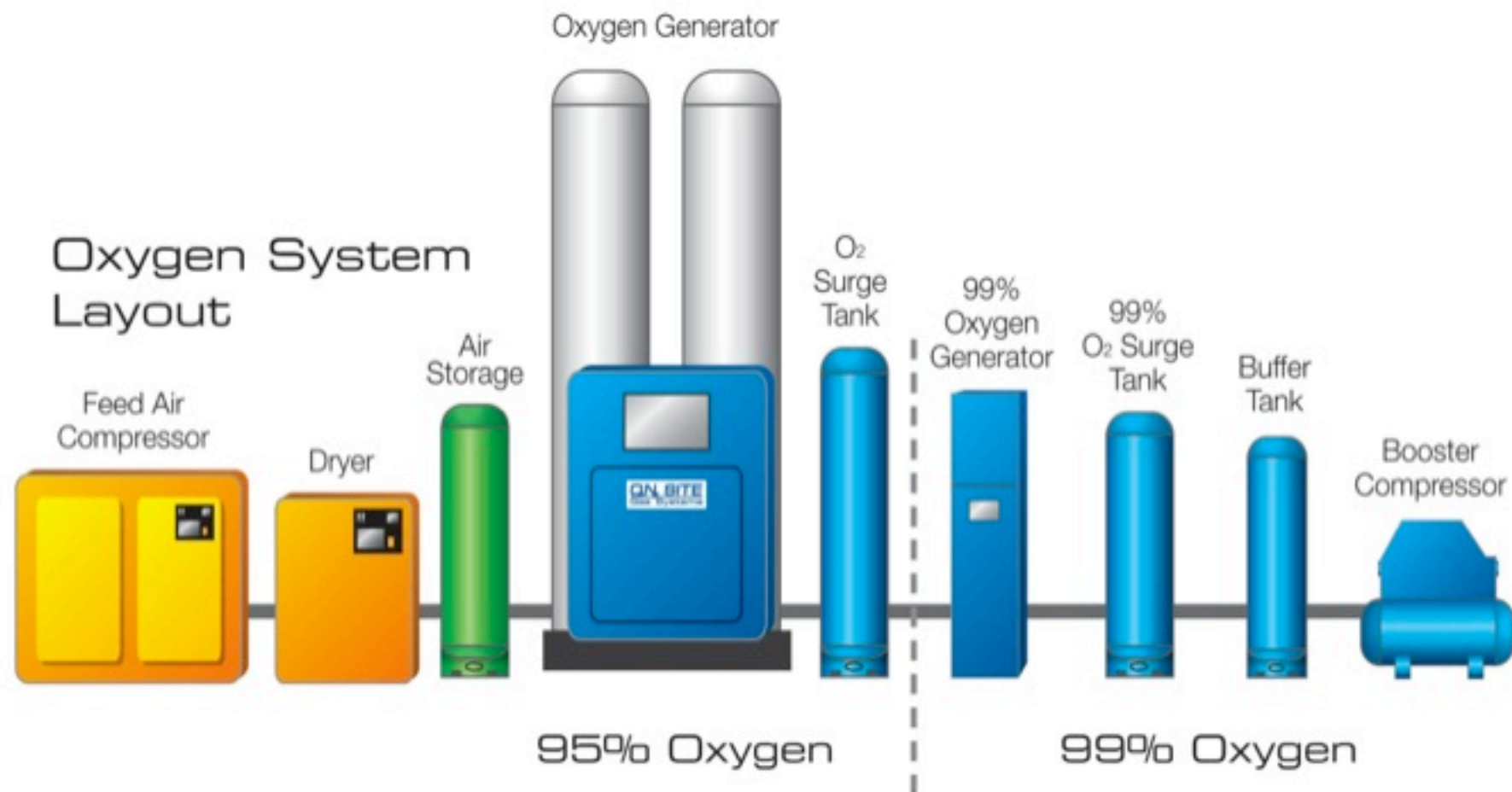
POGS Family (Portable)



O2 System Accessories



O2 Filling Station





## Oxygen Applications







## **Commercial oxygen system at work: Rugged, with a Sensitive Side**

This indigenous boy sits next to an On Site Gas Systems oxygen generator at a remote, village hospital in the Venezuelan Amazon.

This medical oxygen generator has been in regular operation there since 1996, performing—as equipment in an isolated area must do—with a minimum of maintenance and repair.

In an area where few things are certain, the medical staff – and the people they treat – have relied daily on its trusted supply of medical oxygen.

## POGS 65/130, 33, 10

- USP 93% O<sub>2</sub>
- Man-portable
- High Pressure Cylinder Filling



## POGS 10



- 10 LPM of USP 93% O<sub>2</sub>
- 10 LPM of Medical Air
- Man-portable

- High Pressure Cylinder Filling
- Integral compressor
- Suited for “leapfrogging”



## POGS 33



- 33 LPM of USP 93% O<sub>2</sub>
- 30 LPM of Medical Air
- Man-portable
- High Pressure Cylinder Filling
- Feed directly to patients or into distribution system
- First deployed in 2001 to Egypt for USMC Operation "Brightstar"

## POGS 65/130



- 65/130 LPM of USP 93% O<sub>2</sub>
- Man-portable
- Autonomous load sharing
- High Pressure Cylinder Filling
- Back Up (approx. 2 hrs. reserve min.)
- Scheduled maintenance alerts
- Automated troubleshooting
- On-screen maint/ TS instructions

## POGS 130

- 130 LPM of USP 93% O<sub>2</sub>
- High Pressure Cylinder Filling
- Scheduled maintenance alerts
- Automated troubleshooting
- On-screen maint/ TS instructions

### Unitized System

- Nominal setup time
- Integral Back Up  
(approx. 2 hrs. reserve min.)
- Integral distribution system





## Over 1000 POGS Built & Deployed

- US Army
- USMC
- US Navy
- US Air Force
- US Special Operations
- Canadian Army
- Canadian Special Operations
- Public Works and Government Services Canada
- Jordanian Army
- FEMA
- State and local emergency responders

## POGS at work











## Disaster Relief: Hurricane Katrina

Within 36 hours of notification we deployed to New Orleans with a three-member On Site Gas Response Team and eight POGS Systems





## Post-Katrina Cylinder Filling Station

- Over 2000 Cylinders filled
- Ran 24/7 for 2 weeks





## Post-Katrina Deployments

- Maravich Athletic Center, LSU, Baton Rouge (right, bottom left)
- Louis Armstrong Airport Terminal D, Triage Center (bottom right)
- Nichols University Medical Treatment Center, Tippedeaux, LA



## Disaster Relief: Haiti

*"Just wanted to say thanks and that many lives were saved because of the ability to make O2. It was a tough commodity to get in Haiti."*





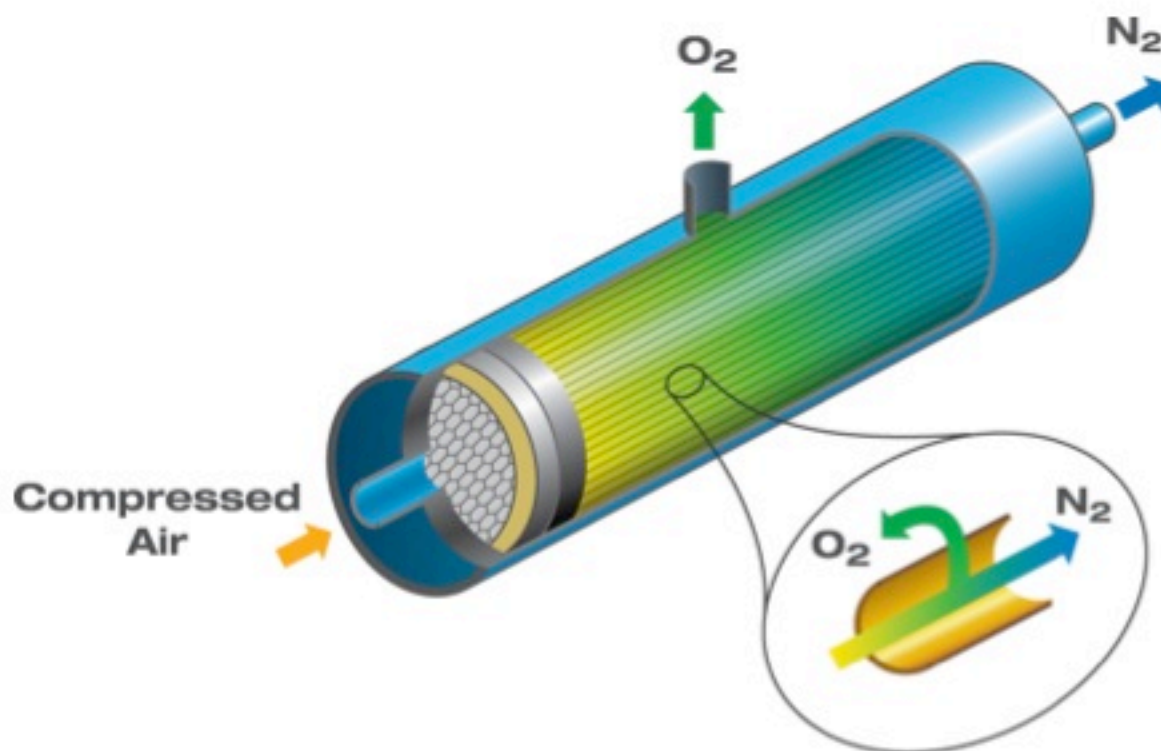
# Field Services

## Oil, Gas & Mining

*On Site, On Demand, Mega Volume*



## HOW DOES A N<sub>2</sub> MEMBRANE WORK ?



## Mining

### Applications

- Sealed Area Inerting
- Fire Suppression
- Fire Prevention



Underground PSA System  
sponsored by and tested at NIOSH



Stationary Systems

### Features and Benefits

- Rapid Response
- Factory Field Support
- Expandable
- Portable Systems
- Stationary Systems
- PSA and Membrane Technology
- Lease, Rent or Purchase



Trailer Systems



Portable Systems

## Oil & Gas

### Applications

- Enhanced Oil Recovery
- Underbalance Drilling
- Gas Lift
- Coil Tubing
- Well Workovers
- Pipeline Pigging
- Natural Gas Dilution
- Offshore Platforms
- Refineries
- Product Movement

### Features and Benefits

- Rapid Response
- Factory Field Support
- Expandable
- Portable, Stationary & Trailer Mounted Systems
- PSA and Membrane Technology
- Lease, Rent or Purchase







## OFFSHORE PLATFORM INERTING



## **FIRE RETARDANT FOAM**

**Mining application**



## Oil, Gas & Mining Applications





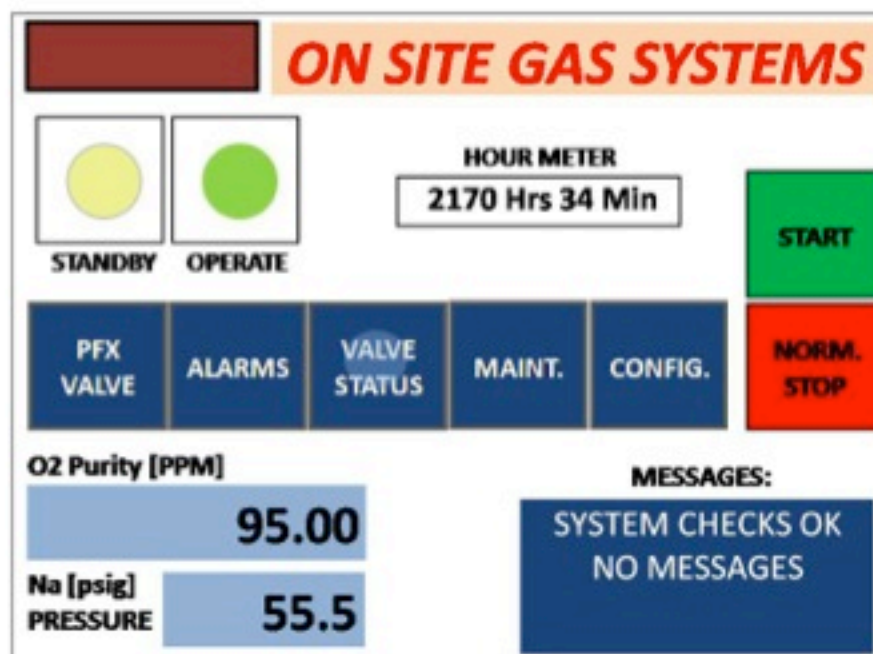
# Mining Fire Responses

Buchanan Mine, Virginia  
Pikesville Mine, Kentucky  
West Elk Mine, Colorado

Systems were at each site and operating within 24 hours of receiving the call to deploy.



## Touch Screen



*O<sub>2</sub>N<sub>2</sub> Site Gas Systems*  
Manufactures of Oxygen and Nitrogen Generators  
**PFX Valve - Purity and Flow Selection**

Purity	Flow (SCFH)
99.9%	151
99.99%	90
99.999%	52

MAIN  
MENU

ALARMS

VALVE  
STATUS

*O<sub>2</sub>N<sub>2</sub> Site Gas Systems*  
Manufactures of Oxygen and Nitrogen Generators  
**ALARM SCREEN**

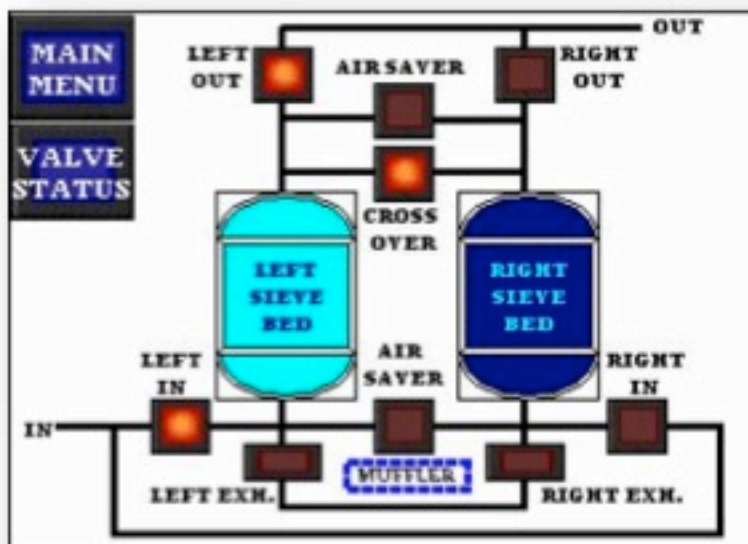
**System N2 Tank Pressure Low**

MAIN  
MENU

PFX  
VALVE

VALVE  
STATUS

RESET



*O<sub>2</sub>N<sub>2</sub> Site Gas Systems*  
Manufactures of Oxygen and Nitrogen Generators  
**Maintenance Schedule**

Current Hours

Reset  
Maintenance  
Message

Description

No Maintenance Messages  
Go To Main Menu

MAIN  
MENU

PFX  
VALVE

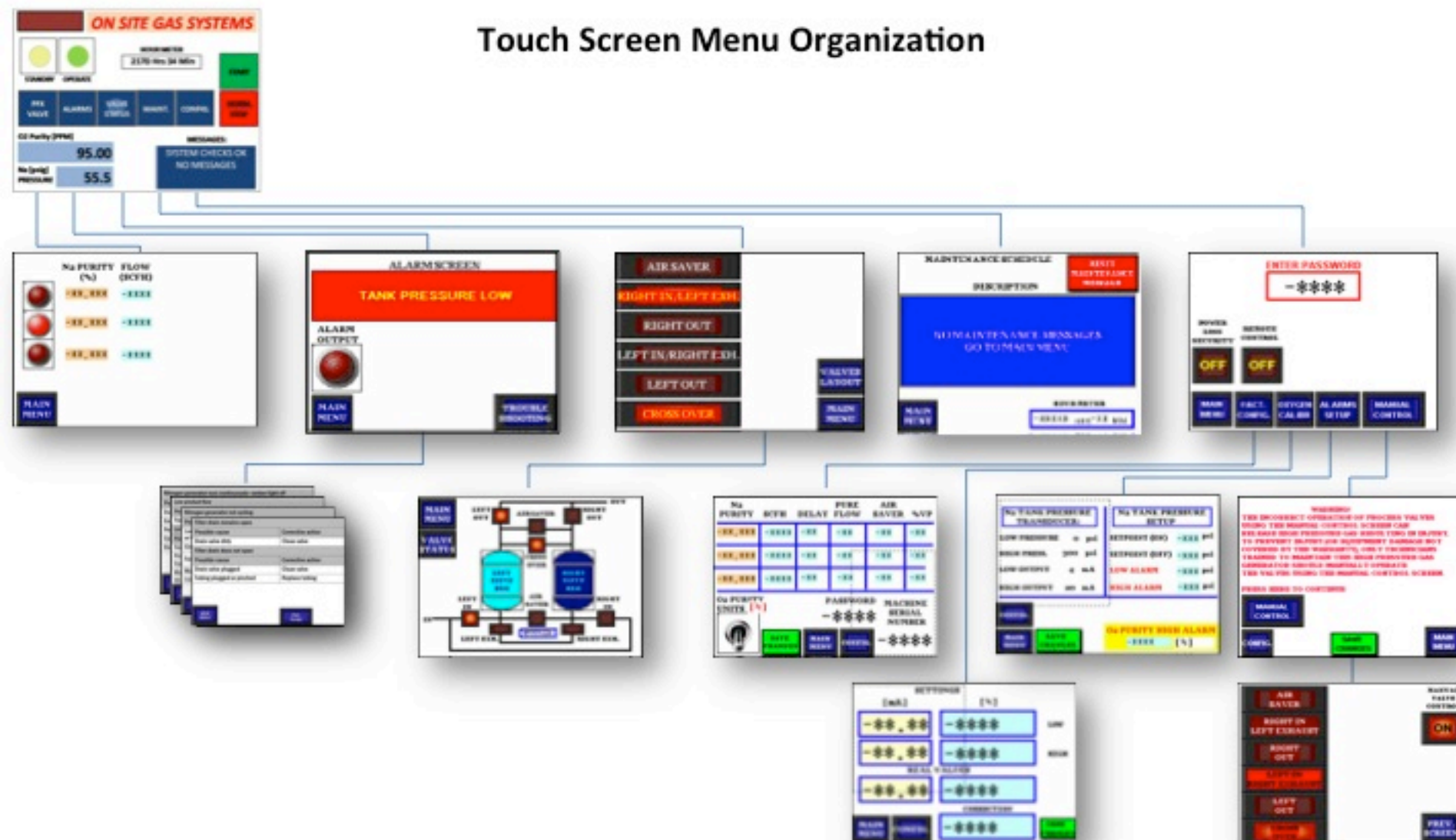
ALARMS

VALVE  
STATUS

CAL

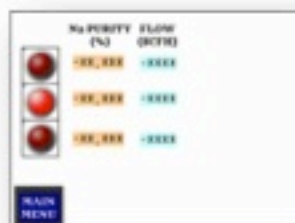


## Touch Screen Menu Organization





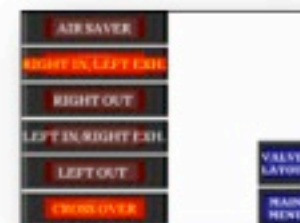
- Main Menu Screen**
- Indicates operating status
  - Indicates purity and tank pressure
  - Displays alarm and maintenance messages
  - Provides start and stop button



- Purity and Flow Selection Screen**
- Displays purity and flow design specification
  - Enables selection of purity and flow performance



- Alarm Screen**
- Displays alarm messages
  - Indicator light s when alarm is active



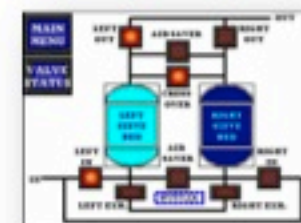
- Valve Status Screen**
- Indicates position of process valves (Valve is open when illuminated).



- Maintenance Screen**
- Indicates total operating hours
  - Displays maintenance requirements
  - Allows reset of maintenance timers



- Configuration Screen**
- Allows access to settings
  - Sets up remote start/stop switch
  - Sets up automatic restart



- Valve Layout Screen**
- Shows the location and operating status (open/closed) of process valves.



- Factory Configuration Screen**
- Allows authorized personnel to set performance parameters
  - Displays machine serial number



- Process Setpoint Screen**
- Allows authorized personnel to set alarm parameters



- Calibration Sensor Settings**
- Enables adjustment of the calibration setup and/or enter correction for the oxygen sensor.



- Manual Control Warning Screen**
- Warns untrained operators not to use manual mode
  - Allows navigation to manual control screen



- Manual Control Screen**
- Enables manual operation of the system's valves.
  - Allows users to confirm proper operation of valves by operating them individually on demand.





*That's the thing about air.  
It's free.*

**O<sub>2</sub>N<sub>2</sub> Site. The gas generating  
system specialists.**

**Thank You!**

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