



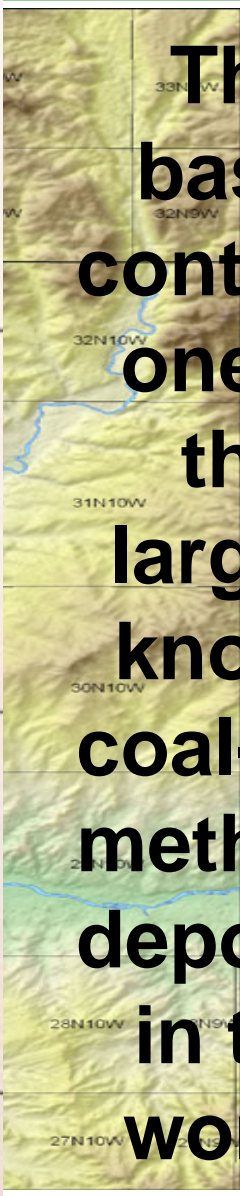
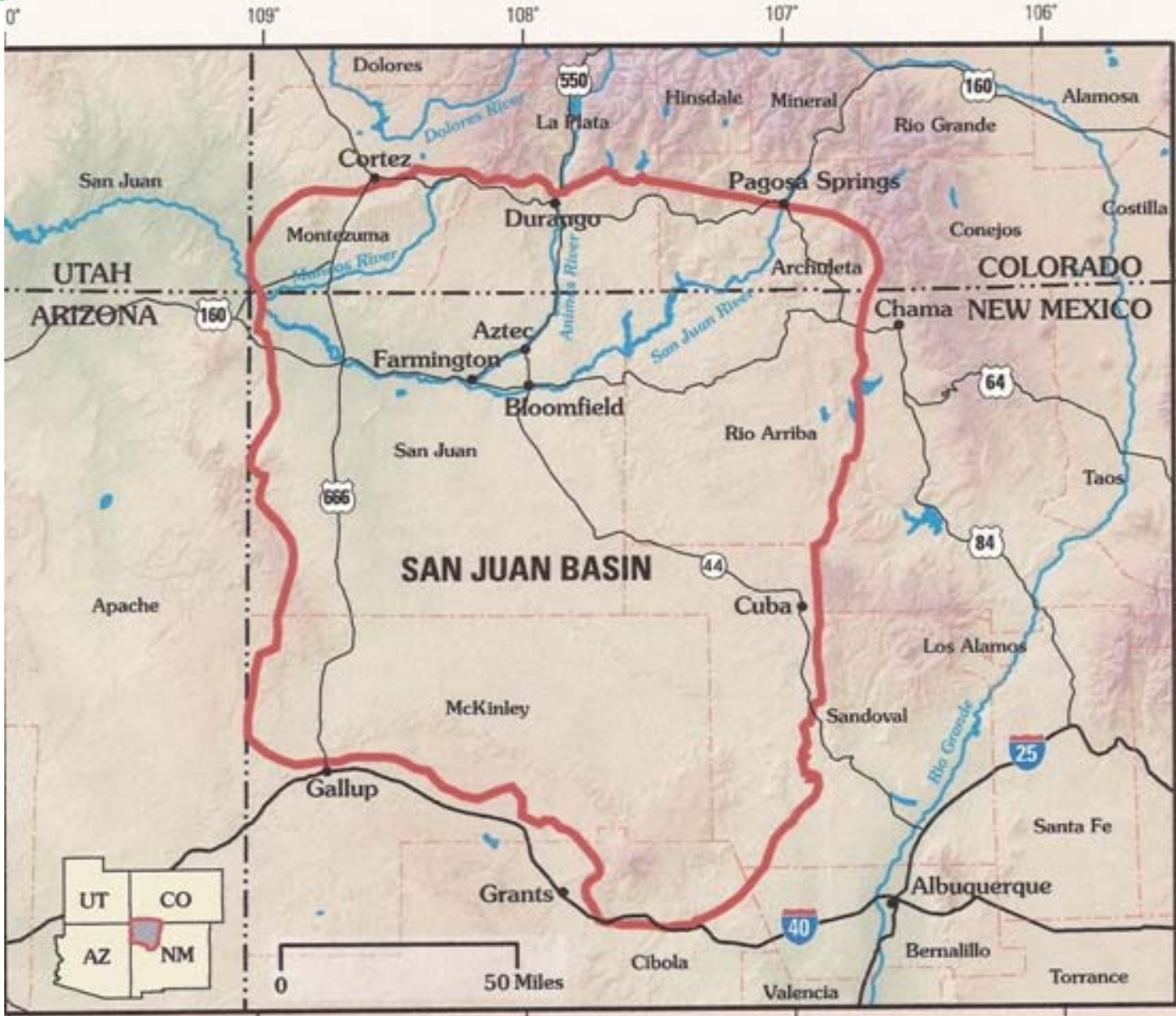
**Weatherford®**

**Controlled Pressure Drilling & Testing Services  
EPA GAS STAR WORKSHOP  
DURANGO, COLORADO**

**STUART BUCKINGHAM  
FARMINGTON, NM**

***SEPTEMBER 13, 2007***

# District of San Juan Basin



**The basin contains one of the largest known coal-bed methane deposits in the world.**

# Facts on Gas/Cbm Emissions



- An estimated 25.2 Bcf (Billion cubic feet) of natural gas can be recovered annually using green completions in the United States.
- Why is flaring preferable to venting? Besides the obvious!
- Methane is \_\_\_\_\_ X more effective/damaging as a greenhouse gas than carbon dioxide. (CO<sub>2</sub>)



- Environmental Protection
  - Public Protection
    - Safety
- Resource Preservation

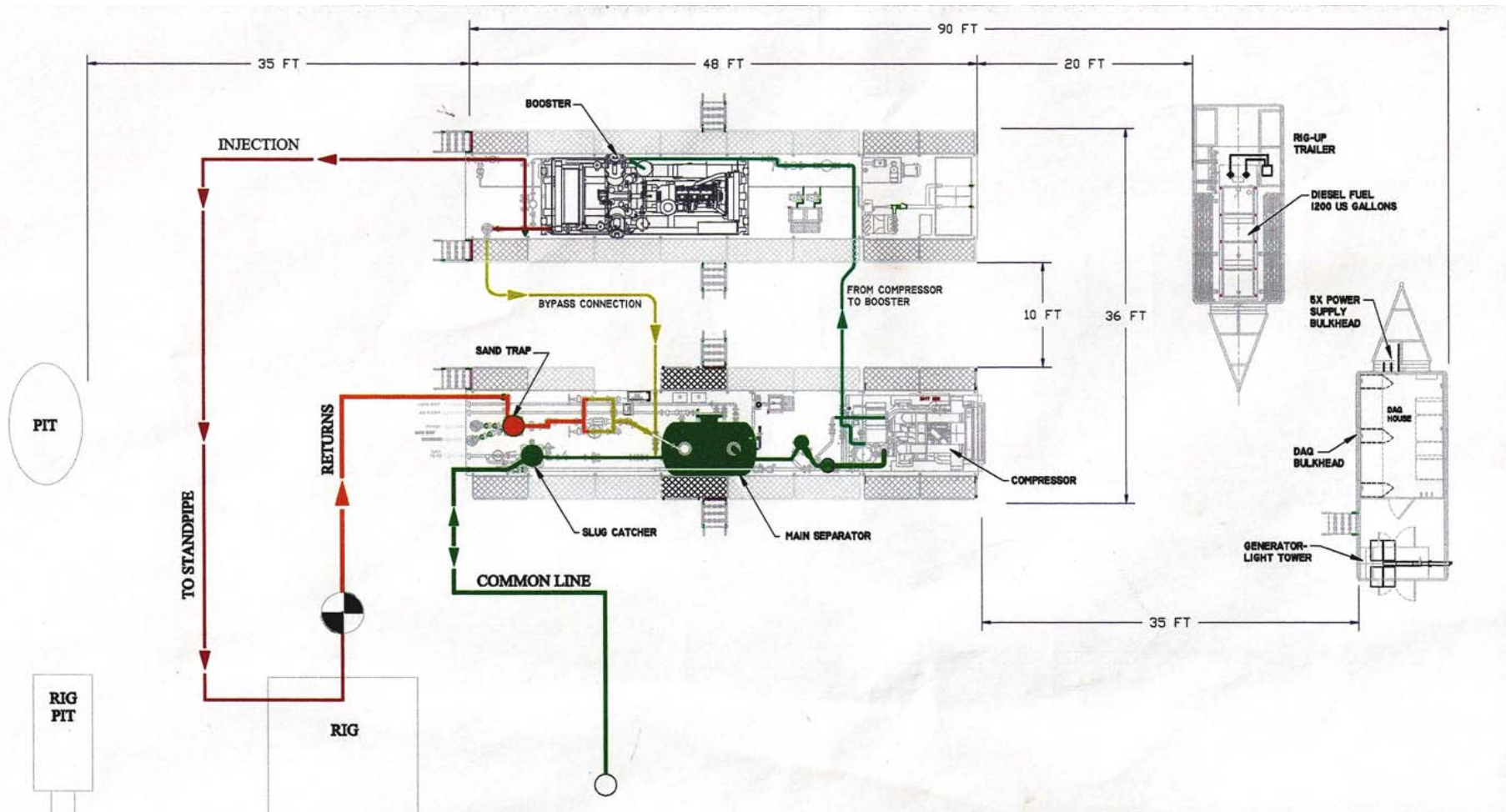
# Closed Loop Summary



- Used on cased hole, new drill completions with no N2.
- Currently in use in Colorado for BP in Fruitland Coal wells ranging from 2000 to 3500’.
- Successfully used in vertical and deviated wells up to 40 degrees.
- Duration on well depends on deviation and sand/water flow.
- With sufficient bottom hole pressure equipment can be set prior to arrival of rig.
- In under-pressured wells tubing is staged in to half way above top perforations then staged gradually as water is unloaded.
- The unit allows for well servicing in close proximity to structures, homes and even schools with the majority of the gas “sold” to the pipeline and only minimal releases of gas.
- The unit has also been used on a limited basis to drill or mill composite bridge plugs while keeping the well in production.



# Closed Loop System



REV.	DESCRIPTION	BY	APP.	DATE
0	ISSUED FOR INFORMATION	DCK		

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	BY	DATE								
	DWN WJB	1-31-06								
	CHK									
APP										
FILE LOCATION										
SCALE: NTS	SIZE: B	DRAWING NO.:								
		SHEET: 11 OF 11								

# Greenhouse Gas Unit





# Data Acquisition Main Screen

