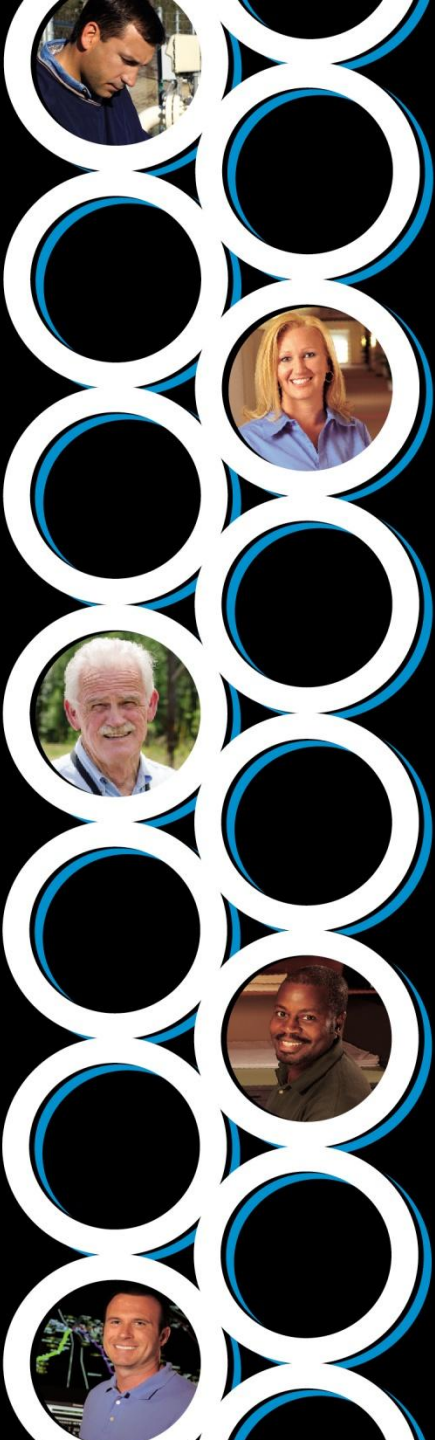


Gas Quality

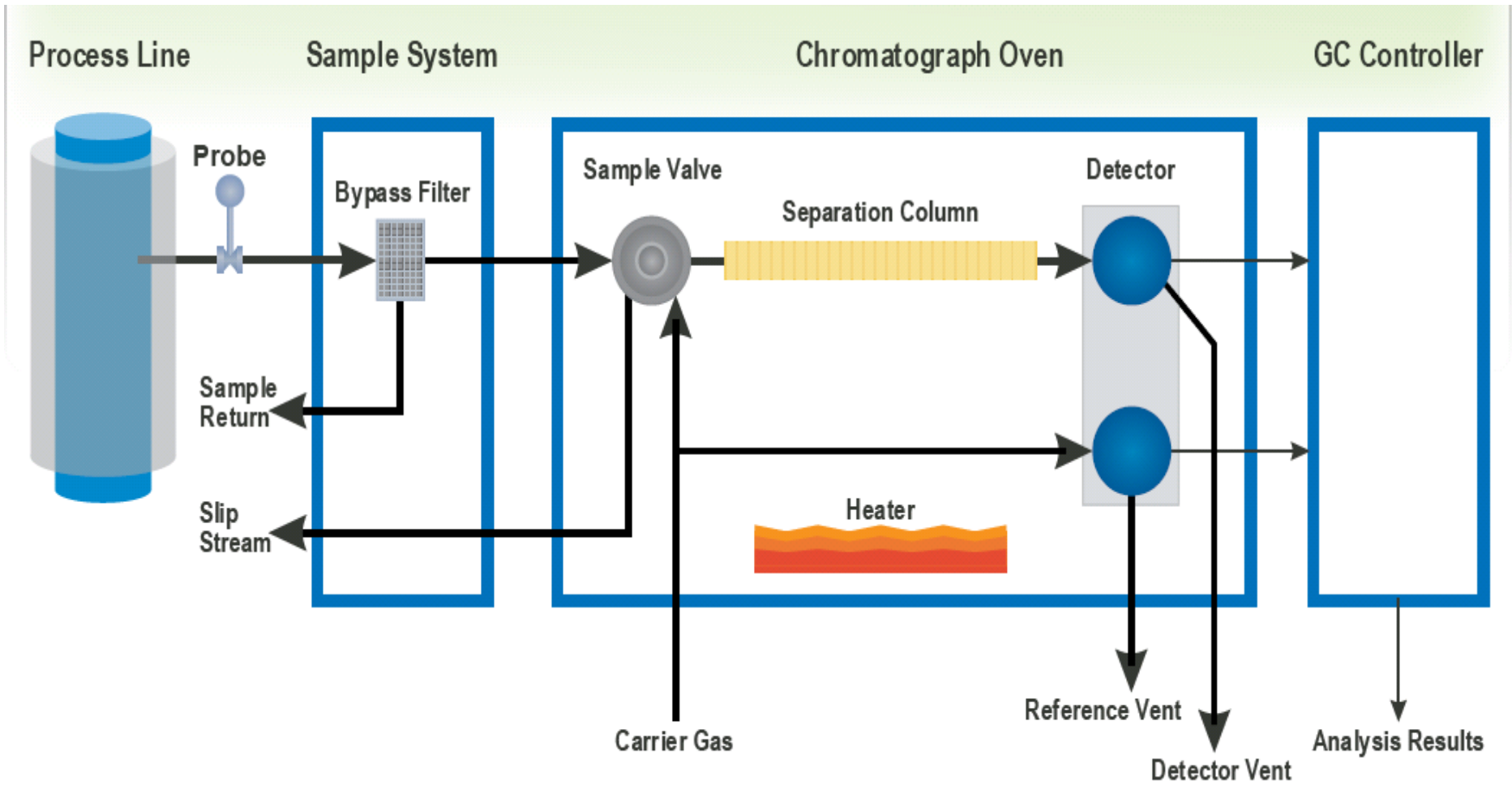
Vince Shirk
Supervisor

Gas Measurement Group



Gas Chromatograph





Gas Chromatograph Standards

- Gross Heating Value: Gas Processors Association Standard 2172 (GPA-2172)
- Gas Compressibility correction: American Gas Association Standard 8 (AGA-8)
- Standard Component Table: Gas Processors Association Standard 2145-03 (GPA-2145-03)
- Atmospheric Pressures: Gas Chromatographs calibrate automatically

Gas Quality Data Available



- British Thermal Unit (BTU)
- Specific Gravity (SG)
- Methane (CO_2)
- Ethane ($\text{C}_2 \text{H}_6$)
- Carbon Dioxide (CO_2)
- Nitrogen (N_2)
- Propane ($\text{C}_3 \text{H}_8$)
- Isobutane ($\text{C}_4 \text{H}_{10}$)
- Butane (Normal - $\text{C}_4 \text{H}_{10}$)
- Isopentane ($\text{C}_5 \text{H}_{12}$)
- Pentane (Normal - $\text{C}_5 \text{H}_{12}$)
- Hexane + (C_{6+})



Gas Quality Use

- British Thermal Unit (BTU) is used to determine the heating value of natural gas.
- Specific Gravity is used in the calculation of volume through the meter.



Components of Natural Gas



The top four components of Natural Gas are:

- Methane 96%
- Ethane 2%
- Carbon Dioxide 1%
- Nitrogen .5%



Components of Natural Gas – The Other .5%

- Propane
- Isobutane
- Butane (Normal)
- Isopentane
- Pentane (Normal)
- Hexane +



Where Is Gas Quality Data Found?



- Main page of CGT's EBB
- FG040 - Daily Average Report
- TA130 – Measurement Detail Report



- ▶ Capacity
- ▶ Gas Quality
- ▶ Index of Customers
- ▶ Notices
- ▶ Posted Imbalances
- ▶ Standards of Conduct
- ▶ Tariff
- ▶ Transactional Reporting
- ▶ Online Forms
- ▶ Downloads
- ▶ Search
- ▶ Customer Activities
- ▶ Site Map

Welcome to CGT's Informational Postings Internet Website

There are 3 Critical Notices in effect (as of 10/28/2010 11:22:04 AM CCT)

| | Notice Type | Posted Date/Time | Notice Effective Date/Time | Notice Identifier | Subject |
|-------------------------|-------------|-----------------------|----------------------------|-------------------|--------------------------------------|
| Details | Other | 10/27/2010 2:40:00 PM | 10/27/2010 2:40:00 PM | 0000001244 | OFO Probability |
| Details | Maintenance | 9/23/2010 9:30:00 AM | 6/8/2010 12:45:00 PM | 0000001153 | Berkeley County, SC - Main Line Work |
| Details | Maintenance | 9/16/2010 12:00:00 PM | 9/16/2010 12:00:00 PM | 0000001154 | Aiken County, SC - Main Line Work |

Most Recent 5 Non Critical Notices in effect (as of 10/28/2010 11:22:04 AM CCT)

| | Notice Type | Posted Date/Time | Notice Effective Date/Time | Notice Identifier | Subject |
|-------------------------|-------------|-----------------------|----------------------------|-------------------|--|
| Details | Maintenance | 10/26/2010 1:00:00 PM | 10/26/2010 1:00:00 PM | 0000001243 | Berkeley County, SC - Main Line Valve Station Work |
| Details | Other | 10/25/2010 7:00:00 AM | 10/25/2010 8:00:00 AM | 0000001242 | CGT Scheduling Assistance Oct. 25 - Oct. 31, 2010 |
| Details | Other | 10/22/2010 4:27:00 PM | 10/22/2010 4:27:00 PM | 0000001240 | CGT Tariff Filing |
| Details | Other | 10/19/2010 9:13:00 AM | 10/19/2010 9:13:00 AM | 0000001237 | CGT Internet Website Maintenance |
| Details | Maintenance | 10/18/2010 9:30:00 AM | 10/18/2010 9:30:00 AM | 0000001236 | Aiken County, SC - Main Line Work |

Cycle Indicators (as of 10/28/2010 11:22:04 AM CCT)

| | ID1 | ID2 | Timely | Evening |
|--------------------|------------|------------|---------------|----------------|
| Gas Day | 10/28/2010 | 10/28/2010 | 10/29/2010 | 10/29/2010 |
| Nomination Cycle | Closed | Closed | Open | Open |
| Confirmation Cycle | Open | Closed | Closed | Closed |

Current Unaudited Gas Quality Snapshot (as of 10/28/2010 11:18:04 AM CCT)

| Location | BTU | Specific Gravity | CO2 | Nitrogen | Methane | Ethane | Propane | I-Butane | Butane | I-Pentane | Pentane | Hexane+ |
|-----------------|--------|------------------|-------|----------|---------|--------|---------|----------|--------|-----------|---------|---------|
| Bethune_11Sys | 1.0174 | 0.5839 | 1.32% | 0.55% | 95.84% | 1.93% | 0.22% | 0.04% | 0.04% | 0.02% | 0.01% | 0.02% |
| Bethune_13Sys | 1.0176 | 0.5794 | 1.13% | 0.41% | 96.51% | 1.64% | 0.18% | 0.04% | 0.04% | 0.02% | 0.01% | 0.03% |
| Bethune_18Sys | 1.0176 | 0.5794 | 1.13% | 0.41% | 96.51% | 1.64% | 0.18% | 0.04% | 0.04% | 0.02% | 0.01% | 0.03% |
| Bushy_Park | 1.0365 | 0.5778 | 0.44% | 0.17% | 96.50% | 2.32% | 0.39% | 0.08% | 0.07% | 0.02% | 0.01% | 0.00% |
| Dorchester_12C | 1.0349 | 0.5783 | 0.52% | 0.19% | 96.47% | 2.25% | 0.37% | 0.08% | 0.07% | 0.02% | 0.01% | 0.02% |
| Grover | 1.0136 | 0.5837 | 1.41% | 0.62% | 95.83% | 1.86% | 0.18% | 0.03% | 0.03% | 0.01% | 0.01% | 0.02% |
| Salley_Charlest | 1.0181 | 0.5765 | 0.96% | 0.36% | 96.90% | 1.52% | 0.15% | 0.03% | 0.03% | 0.01% | 0.01% | 0.03% |

Current Unaudited Gas Quality Snapshot per Upstream Interconnect Agreement (as of 10/28/2010 11:18:04 AM CCT)

| Location | BTU | Specific Gravity | CO2 | Nitrogen | Methane | Ethane | Propane | I-Butane | Butane | I-Pentane | Pentane | Hexane+ |
|--------------|--------|------------------|-------|----------|---------|--------|---------|----------|--------|-----------|---------|---------|
| SNG_Aiken | 1.0179 | 0.5785 | 1.06% | 0.41% | 96.63% | 1.62% | 0.16% | 0.03% | 0.03% | 0.01% | 0.01% | 0.03% |
| SNG_PortWent | 1.0490 | 0.5771 | 0.00% | 0.02% | 96.47% | 2.73% | 0.54% | 0.11% | 0.09% | 0.03% | 0.01% | 0.00% |

Central Time (CCT):
10/28/2010 12:21:19 PM



Daily Average Gas Quality Information for mainline Flow

Report No: FG040

| Location | GasDay | Heating Value (BTU/mcf) | Specific Gravity | CO2 (%) | Nitrogen (%) | Methane (%) | Ethane (%) | Propane (%) | I-Butane (%) | Butane (%) | I-Pentane (%) | Pentane (%) | Hexane+ (%) | Temp (F) |
|---------------|------------|-------------------------|------------------|---------|--------------|-------------|------------|-------------|--------------|------------|---------------|-------------|-------------|----------|
| Bethune_11Sys | 07/29/2010 | 1.0163 | 0.5840 | 1.30 | 0.65 | 95.74 | 1.98 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 79.0071 |
| | 07/30/2010 | 1.0161 | 0.5829 | 1.29 | 0.62 | 95.91 | 1.86 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 77.3215 |
| | 07/31/2010 | 1.0160 | 0.5828 | 1.27 | 0.60 | 95.93 | 1.88 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 60.0000 |
| | 08/01/2010 | 1.0168 | 0.5825 | 1.25 | 0.57 | 96.00 | 1.86 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 76.7987 |
| | 08/02/2010 | 1.0167 | 0.5848 | 1.34 | 0.64 | 95.64 | 2.03 | 0.22 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 78.5557 |
| | 08/03/2010 | 1.0155 | 0.5844 | 1.36 | 0.65 | 95.69 | 1.98 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 78.9718 |
| | 08/04/2010 | 1.0155 | 0.5841 | 1.35 | 0.64 | 95.72 | 1.99 | 0.19 | 0.03 | 0.03 | 0.01 | 0.01 | 0.03 | 79.3085 |
| | 08/05/2010 | 1.0158 | 0.5837 | 1.32 | 0.64 | 95.75 | 1.99 | 0.19 | 0.03 | 0.03 | 0.01 | 0.01 | 0.02 | 78.7080 |
| | 08/06/2010 | 1.0166 | 0.5838 | 1.29 | 0.63 | 95.75 | 2.02 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 77.9000 |
| | 08/07/2010 | 1.0169 | 0.5838 | 1.29 | 0.62 | 95.76 | 2.01 | 0.20 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 79.0645 |
| | 08/08/2010 | 1.0162 | 0.5838 | 1.32 | 0.62 | 95.79 | 1.94 | 0.21 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 79.1978 |
| | 08/09/2010 | 1.0166 | 0.5844 | 1.31 | 0.66 | 95.69 | 1.99 | 0.22 | 0.04 | 0.04 | 0.02 | 0.01 | 0.03 | 78.7928 |
| | 08/10/2010 | 1.0171 | 0.5849 | 1.33 | 0.65 | 95.65 | 2.01 | 0.23 | 0.04 | 0.04 | 0.02 | 0.01 | 0.03 | 79.3803 |
| | 08/11/2010 | 1.0164 | 0.5843 | 1.33 | 0.64 | 95.71 | 1.99 | 0.21 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 79.3863 |
| | 08/12/2010 | 1.0165 | 0.5843 | 1.33 | 0.63 | 95.71 | 2.00 | 0.21 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 79.3436 |
| | 08/13/2010 | 1.0167 | 0.5841 | 1.32 | 0.62 | 95.74 | 1.99 | 0.21 | 0.03 | 0.04 | 0.01 | 0.01 | 0.03 | 78.5544 |
| | 08/14/2010 | 1.0174 | 0.5846 | 1.31 | 0.63 | 95.69 | 2.00 | 0.22 | 0.04 | 0.04 | 0.02 | 0.01 | 0.03 | 78.1454 |



Measurement Detail Report

Report No: TA130

Report Date/Time: 10/28/2010

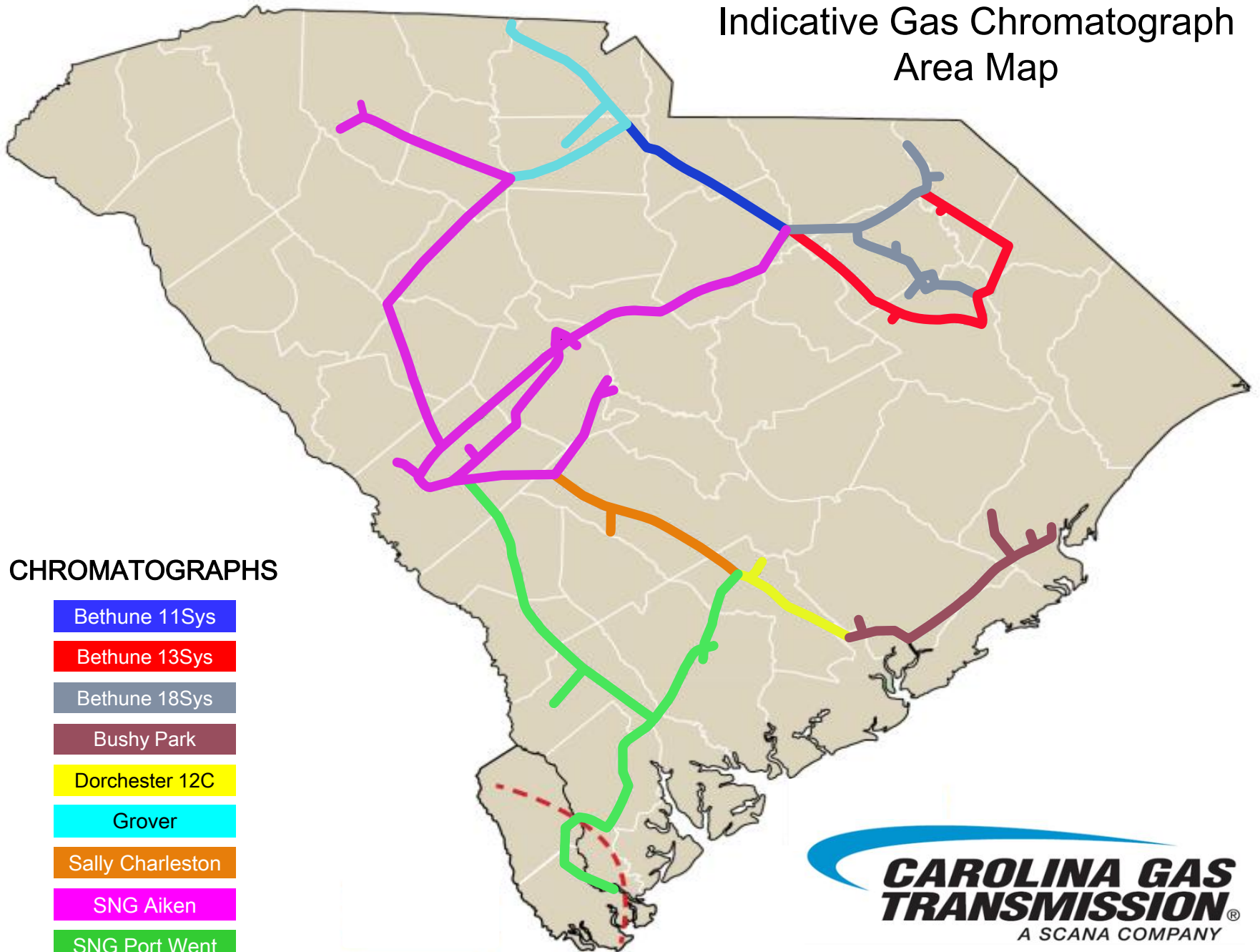
TSP: 13-713-9213

TSP Name: Carolina Gas Transmission

| Meter ID | Gas Day | Meas Qty (Dt) | Meas Vol (Mcf) | BTU | SG | StmntBasis | Adjustment Type |
|--------------------------------|-----------|---------------|----------------|--------|--------|------------|-----------------|
| Pnt Oper: 00-123-4567 | | | | | | | |
| Pnt Oper Name: AAA Production | | | | | | | |
| Loc: 123456 | | | | | | | |
| Loc Prop: 12345 | | | | | | | |
| Loc Name: AAA Production | | | | | | | |
| Station: 123456 | | | | | | | |
| Station Name: Hwy 96 and Hwy 1 | | | | | | | |
| 123456789 | | | | | | | |
| | 9/1/2007 | 84 | 82 | 1.0282 | 0.5797 | Actual | |
| | 9/2/2007 | 24 | 23 | 1.0268 | 0.5785 | Actual | |
| | 9/3/2007 | 83 | 81 | 1.0267 | 0.5784 | Actual | |
| | 9/4/2007 | 85 | 83 | 1.0259 | 0.5773 | Actual | |
| | 9/5/2007 | 17 | 16 | 1.0248 | 0.5747 | Actual | |
| | 9/6/2007 | 90 | 87 | 1.0266 | 0.5773 | Actual | |
| | 9/7/2007 | 65 | 63 | 1.0304 | 0.5815 | Actual | |
| | 9/8/2007 | 54 | 52 | 1.0304 | 0.5817 | Actual | |
| | 9/9/2007 | 24 | 23 | 1.0266 | 0.5776 | Actual | |
| | 9/10/2007 | 83 | 81 | 1.0281 | 0.5784 | Actual | |

Not Actual Customer Data

Indicative Gas Chromatograph Area Map



CHROMATOGRAPHS

- Bethune 11Sys
- Bethune 13Sys
- Bethune 18Sys
- Bushy Park
- Dorchester 12C
- Grover
- Sally Charleston
- SNG Aiken
- SNG Port Went



Questions And Discussion

