ANALYSIS OF KANSAS CITY, MARMATON, AND CHEROKEE GROUP CUTTINGS AND CORE SAMPLES FOR GAS CONTENT -- PETROL OIL & GAS #7-1 TRULOVE NW NW SE, sec. 7-T.21S.-R.14E., COFFEY COUNTY, KANSAS

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SUMMARY

Four cuttings and six core samples from the Pennsylvanian Kansas City, Marmaton, and Cherokee Groups were collected from the Petrol Oil & Gas #7-1 Trulove, NW NW SE, sec. 7-T.21S.-R.14E., in Coffey Co., KS. The samples calculate as having the following gas contents:

Su	Contents.	
•	CORE shale seam in Bethany Falls Ls.; 1051.0'-1051.6'	(3.4 scf/ton)
•	CORE Hushpuckney Shale; 1057.0'-1057.6'	(3.1 scf/ton)
•	CUTTINGS Lake Neosho Shale; 1264' to 1268'	(8 scf/ton)
•	CUTTINGS Anna Shale; 1324' to 1326'	(8 scf/ton)
•	CORE "V shale"; 1482.7' to 1483.6'	(25.6 scf/ton)
•	CORE Croweburg coal; 1483.6' to 1484.5'	(101.8 scf/ton)
•	CORE shale above Tebo coal; 1552.7' to 1553.5'	(3.3 scf/ton)
•	CORE Tebo coal; 1556.1' to 1556.8'	(68.0 scf/ton)
•	CUTTINGS Riverton coal; 1728' to 1731' (large sample) ¹	(125 scf/ton)
	CUTTINGS Riverton coal: 1728' to 1731' (small sample) ¹	(135 scf/ton)

¹assuming accompanying dark shales in sample desorb 3 scf/ton

The Riverton coal assays to be a high-volatile B bituminous coal. Chemical analysis of the gas indicates that it is a low-BTU gas, with mixed-biogenic-and-thermogenic origin.

BACKGROUND

The Petrol Oil & Gas Trulove well, NW NW SE, sec. 7-T.21S.-R.14E., in Coffey Co., KS, was selected for cuttings desorption tests in association with an on-going coalbed gas research project at the Kansas Geological Survey. The samples were gathered January 8, 9, and 10, 2004, by K. David Newell and Troy Johnson of the Kansas Geological Survey. Cuttings samples were obtained during normal drilling of the well, with brief cessation of drilling before zones of interest (i.e., coals and dark shales in the Pennsylvanian Kansas City, Marmaton, and Cherokee Groups) were penetrated. The well was drilled using a mud rotary rig ("Rig #9") owned by Coconut Drilling.

Lag times for samples to reach the surface (important for assessing lost gas) were determined by periodic carbide tests.

Four cuttings samples were collected:

•	Lake Neosho Shale; 1264' to 1268'	(459 grams dry wt.)
•	Anna Shale; 1324' to 1326'	(422 grams dry wt.)
•	Riverton coal; 1728' to 1731' (large sample)	(920 grams dry wt.)
•	Riverton coal; 1728' to 1731' (small sample)	(311 grams dry wt.)

Six core samples were also collected:

•	shale seam in Bethany Falls Ls.; 1051.0'-1051.6'	(741.2 grams dry wt.)
•	Hushpuckney Shale; 1057.0'-1057.6'	(2625.6 grams dry wt.)

•	"V shale"; 1482.7' to 1483.6'	(3241.3 grams dry wt.)
	Croweburg coal; 1483.6' to 1484.5'	(1107.5 grams dry wt.)
•	shale above Tebo coal; 1552.7' to 1553.5'	(3973.2 grams dry wt.)
•	Tebo coal; 1556.1' to 1556.8'	(1968.6 grams dry wt.)

The cuttings were placed in kitchen strainers after they were shoveled from a settling box in the mud stream situated immediately before the mud emptied into the mud pit. After catching the cuttings samples, the samples were washed in water while in the kitchen strainers to rid them of as much drilling mud as possible. The cuttings were then placed in desorption canisters.

The core samples was also obtained by a conventional coring technique, with time off bottom and at the surface noted.

Two samples (Lake Neosho Shale, Anna Shale) were placed in "Stoeckinger" desorption canisters, which average 38 cubic inches internal volume (620 cm³). The other samples were placed in canisters with approximately 153 cubic inches internal volume (2985 cm³).

The "Stoeckinger" desorption canisters were obtained from Bill Stoeckinger, consulting geologist to Petrol Oil and Gas. The other canisters were obtained from SSD, Inc., in Grand Junction, CO., or Pel-I-Cans in Dallas, TX.

Temperature baths for the desorption canisters were on site, with temperature kept at approximately 75 °F for the Croweburg and shallower samples. The Tebo and Riverton samples were placed in an 80 °F temperature bath. The canistered samples were transported to the laboratory at the Kansas Geological Survey in Lawrence, KS on January 10, 2004, and desorption measurements were continued at approximately the same temperature. Desorption measurements were periodically made until the canisters produced negligible gas with daily testing for at least two successive days.

DESORPTION MEASUREMENTS

The equipment and method for measuring desorption gas is that prescribed by McLennan and others (1995). The volumetric displacement apparatus is a set of connected dispensing burettes, one of which measures the gas evolved from the desorption canister. The other burette compensates for the compression that occurs when the desorbed gas displaces the water in the measuring burette. This compensation is performed by adjusting the cylinders so that their water levels are identical, then figuring the amount of gas that evolved by reading the difference in water level using the volumetric scale on the side of the burette.

The desorbed gas that collected in the desorption canisters was periodically released into the volumetric displacement apparatus and measured as a function of time, temperature, and atmospheric pressure. The time and atmospheric pressure were measured in the field using a portable weather station (model BA928) marketed by Oregon Scientific (Tualatin, OR). The atmospheric pressure was displayed in millibars on this instrument, however, this measurement was not the actual barometric pressure, but rather an altitude-compensated barometric pressure automatically converted to a sea-level-equivalent pressure. To translate this measurement to actual atmospheric pressure, a regression correlation was determined over several weeks by comparing readings from the Oregon Scientific instrument to that from a pressure transducer in the Petrophysics Laboratory in the Kansas Geological Survey in Lawrence, KS (Figure 1). The regression equation shown graphically in Figure 1 was entered into a spreadsheet and was used to automatically convert the millibar measurement to barometric pressure in pounds per square inch (psi).

A spreadsheet program written by K.D. Newell (Kansas Geological Survey) was used to convert all gas volumes at standard temperature and pressure. Conversion of gas volumes to standard temperature and pressure was by application of the perfect-gas equation, obtainable from basic college chemistry texts:

$$n = PV/RT$$

where n is moles of gas, T is degrees Kelvin (i.e., absolute temperature), V is in liters, and R is the universal gas constant, which has a numerical value depending on the units in which it is measured (for example, in the metric system R = 0.0820 liter atmosphere per degree mole). The number of moles of gas (i.e., the value n) is constant in a volumetric conversion, therefore the conversion equation, derived from the ideal gas equation, is:

$$(P_{stp}V_{stp})/(RT_{stp}) = (P_{rig}V_{rig})/(RT_{rig})$$

Customarily, standard temperature and pressure for gas volumetric measurements in the oil industry are 60 °F and 14.7 psi (see Dake, 1978, p. 13), therefore P_{stp} , V_{stp} , and T_{stp} , respectively, are pressure, volume, and temperature at standard temperature and pressure, where standard temperature is degrees Rankine (°R = 460 + °F). P_{rig} , V_{rig} , and T_{rig} , respectively, are ambient pressure, volume and temperature measurements taken at the rig site or in the desorption laboratory.

The universal gas constant R drops out as this equation is simplified and the determination of V_{stp} becomes:

$$V_{stp} = (T_{stp}/T_{rig}) (P_{rig}/P_{stp}) V_{rig}$$

The conversion calculations in the spreadsheet were carried out in the English metric system, the customary measure system used in American coal and oil industry. V is therefore converted to cubic feet; P is psia; T is °R. The desorbed gas was summed over the time period for which the coal samples evolved all of their gas.

Lost gas (i.e., the gas lost from the sample from the time it was drilled, brought to the surface, to the time it was canistered) was determined using the direct method (Kissel and others, 1975; also see McLennan and others, 1995, p. 6.1-6.14) in which the cumulative gas evolved is plotted against the square root of elapsed time. Time zero is assumed to be the moment that the rock is cut and its cuttings circulated off bottom. Characteristically, the cumulative gas evolved from the sample, when plotted against the square root of time, is linear for a short time period after the sample reaches ambient surface pressure conditions, therefore lost gas is determined by a line projected back to time zero. The period of linearity generally is about an hour for cuttings samples.

LITHOLOGIC ANALYSIS

Upon removal from the canisters, the cuttings were washed of drilling mud and dried in air for several days. After drying, the cuttings were weighed and then dry sieved into 5 size fractions: >0.0930", >0.0661", >0.0460", >0.0331", and <0.0331". For large sample sizes, the cuttings were run through a sample splitter and a lesser portion (approximately 75 grams) were sieved and weighed, and the derived size-fraction ratios were applied to the entire sample.

The size fractions were then inspected and sorted by hand under a dissecting microscope. Three major lithologic categories were differentiated: coal, dark shales (generally Munsell rock colors N3 [dark gray], N2 [grayish black], and N1 [black] on dry surface), and lighter-colored lithologies and/or dark and light-colored carbonates. The lighter-colored lithologies are considered to be incapable of generating significant amounts of gas. After sorting, and for every size class, each of these three lithologic categories was weighed and the proportion of coal, dark shale, and light-colored lithologies were determined for the entire cuttings sample based on the weight percentages.

DATA PRESENTATION

Data and analyses accompanying this report are presented in the following order: 1) data tables for the desorption analyses, 2) lost-gas graphs, 3) "lithologic component sensitivity analyses" showing the interdependence of gas evolved from dark shale versus coal in each cuttings sample, 4) a summary component analysis for all samples showing relative reliability of the data from all the samples, and 5) a desorption graph for all the samples.

Data Tables of the Desorption Analyses (Table 1)

These are the basic data used for lost-gas analysis and determination of total gas desorbed from the cuttings samples. Basic temperature, volume, and barometric measurements are listed at left. Farther to the right, these are converted to standard temperature, pressure and volumes. The volumes are cumulatively summed, and converted to scf/ton based on the total weight of coal *and* dark shale in the sample. At the right of the table, the time of the measurements are listed and converted to hours (and square root of hours) since the sample was drilled.

Lost-Gas Graphs (Figures 2-11)

Gas lost prior to the canistering of the sample was estimated by extrapolation of the first few data points after the sample was canistered. The linear characteristic of the initial desorption measurements is usually lost within the first hour after the cuttings leave the bottom of the hole, thus data for cuttings are presented in the lost-gas graphs for only up to one hour after cuttings were off bottom. Lost-gas for the core samples were posted for a 9-hour period after the core was pulled off bottom. The lost-gas volumes derived from these graphs are incorporated in the data tables described above.

"Lithologic Component Sensitivity Analyses" (Figures 12-14)

Collection of pure lithologies from relatively thin-bedded strata is rather difficult using cuttings. Mixed lithologies are more the norm rather than the exception. Some of this mixing is due to cavings from strata farther up hole. The mixing may also be due to collection of two or more successively drilled lithologies in the kitchen sieve at the exit line, or differential lifting of relatively less-dense coal compared to other lithologies, all of which are more dense than coal.

The total gas evolved from the sample is due to gas being desorbed from both the coal and dark shale. Both lithologies are capable of generating gas, albeit the coal will be richer in gas than the dark-colored shale. Even though dark-colored shale is less rich in sorbed gas than coal, if a sample has a large proportion of dark, organic-rich shale and only a minor amount of coal, the total volume of gas evolved from the dark-shale component may be considerable. The lighter-colored lithologies are considered to be incapable of generating significant amounts of gas.

The total amount of gas evolved from a cuttings sample can be expressed by the following equation:

A unique solution for gas content_{coal} in this equation is not possible because gas content_{dark shale} is not known exactly. An answer can only be expressed as a linear solution to the above equation. The richer in gas the dark shales are, the poorer in gas the admixed coal has to be, and vice versa. If there is little dark shale in a sample, a relatively well constrained answer for gas content_{coal} can be obtained. Conversely, if considerable dark shale is in a sample, the gas content of a coal will be hard to precisely determine.

The lithologic-component-sensitivity-analysis diagram therefore expresses the bivariant nature inherent in the determination of gas content in mixed cuttings. The gas content of dark shales in Kansas can vary greatly. Proprietary desorption analyses of dark shales in cores from southeastern Kansas have registered as much as 50 scf/ton, but can be as low as 2-4 scf/ton.

A value of 3 scf/ton for average dark shale is based on the assay of the gas content of cores of dark shales in wells in southeastern Kansas. However, high-gamma-ray shales (such as the Excello Shale), also colloquially known as "hot shales", typically have more organic matter and associated gas content than dark shales displaying no excessive gamma-ray level. Determination of gas content for a coal associated with a "hot" shale therefore carries more uncertainty than if the coal were associated with a shale without a high gamma-ray value.

In general, the assumed shale gas content does not have to be very much greater than 10 scf/ton before the associated coal starts to have a gas content less than that of the dark shale. In all the lithologic-component-sensitivity-analysis diagrams, a "break-even" point is therefore noted where the gas content of the coal is equal to that of the dark shale. This "break-even" point corresponds to the minimum gas content assignable to the coal and maximum gas content assignable to the dark shale. It can also be thought of the scf/ton gas content of the cuttings sample minus the weight of any of the lighter-colored lithologies, which are assumed to have no inherent gas content. Conversely, to assume that all the gas evolved from a cuttings sample is derived solely from the coal would result in an erroneously high gas content for the coal.

Desorption Graphs (Figures 15, 16)

These are desorption graphs (gas content per weight vs. square root of time) for all the samples. The rate at which gas is evolved from the samples is thus comparable at a common scale. Core and cuttings data are presented on separate graphs.

Gas Chemistry (Figure 17)

Gas isotopic chemistry is compared to similar analyses on other nearby conventional and coalbed gases.

ASHING and DENSITY EXPERIMENTS

Simple ashing of the samples was carried out in a muffle furnace at the Kansas Geological Survey. The samples were first weighed and then subjected to 110 °C until their weight stabilized. This first firing approximates moisture content. A second firing at 750 °C for three to four days essentially ashed the sample. Two crucibles of sample were utilized for both the 110 °C and 750 °C firings. Each crucible was filled with approximately 1.5 grams of pulverized coal (i.e., < 0.0460" sieve size). Results were accepted if the difference in weight loss for each sample was less than 2%.

unit	depth	moisture	ash	moisture-free ash
shale in B. Falls Ls.	1051'	0.73%	83.37%	83.98%
Hushpuckney Shale	1057'	1.04%	91.03%	91.98%
Lake Neosho Shale	1264'	0.88%	79.96%	80.67%
Anna Shale	1324'	0.94%	77.37%	78.10%
"V shale"	1483'	1.1%	77.6%	78.4%
Croweburg coal	1484'	1.02%	7.67%	7.75%

shale over Tebo coal	1553'	1.44%	90.00%	91.31%
Tebo coal	1556'	2.70%	35.75%	36.74%
Riverton large smpl	1728'	2.23%	7.59%	7.76%
Riverton small smpl	1728'	1.91%	6.35%	$6.47\%^{1}$

¹source of data for ashing and moisture are proximate analyses from Luman's Laboratories, Chetopa, KS

Using the equation from McLennan and others (1995):

$$G_c = G_{pc} (1-a_d)$$

where:

 $G_c = gas content, scf/ton$

G_{pc} = "pure coal", gas content, scf/ton

 $a_d = dry$ ash content, weight fraction

the gas content of the samples converts to:

unit	depth	moisture-free ash	G_c	G_{pc}
shale in B. Falls Ls.	1051'	83.98%	3.4 scf/ton	21.2 scf/ton
Hushpuckney Shale	1057'	91.98%	3.1 scf/ton	38.7 scf/ton
Lake Neosho Shale	1264'	80.67%	8 scf/ton	42 scf/ton
Anna Shale	1324'	78.10%	8 scf/ton	37 scf/ton
"V shale"	1483'	78.4%	25.6 scf/ton	118.5 scf/ton
Croweburg coal	1484'	7.75%	101.8 scf/ton	110.4 scf/ton
shale over Tebo coal	1553'	91.31%	3.3 scf/ton	26.4 scf/ton
Tebo coal	1556'	36.74%	68.0 scf/ton	107.5 scf/ton
Riverton large smpl	1728'	7.59%	125 scf/ton	136 scf/ton
Riverton large smpl	1728'	6.47%	135 scf/ton	145 scf/ton

Coal samples were also tested for their density. Cuttings samples (4 to 5 grams) were weighed and then placed in water in a 10-cc graduated cylinder to determine the volume of the sample. The core samples were weighed and immersed in water in a beaker filled to its brim. With placing the sample in the beaker, the displaced water was spilled from the beaker and subsequently weighed. The volume of the sample is thus easily converted to volume using 1 gram/cc for the density of the water. The following density measurements were calculated:

unit	depth	density and uncertainty
shale in Bethany Falls Ls.	1051'	$2.50 \text{ g/cc} \pm 0.06$
Hushpuckney Shale	1057'	$2.44 \text{ g/cc} \pm 0.01$
Lake Neosho Shale	1264'	$2.38 \text{ g/cc} \pm 0.07$
Anna Shale	1324'	$2.39 \text{ g/cc} \pm 0.07$
"V shale"	1483'	$2.08 \text{ g/cc} \pm 0.05$
Croweburg coal	1484'	$1.36 \text{ g/cc} \pm 0.03$

shale over Tebo coal	1553'	$2.49 \text{ g/cc} \pm 0.24$
Tebo coal	1556'	$1.67 \text{ g/cc} \pm 0.07$
Riverton large smpl	1728'	$1.26 \text{ g/cc} \pm 0.07$
Riverton small smpl	1728'	$1.26 \text{ g/cc} \pm 0.07$

Compositional and isotopic chemistry were performed on a gas sample from the "large sample" of the Riverton coal. This analysis was performed by Isotech Laboratories in Champaign, IL. The sample was taken after desorption ceased and consisted of headspace gas in the canister.

Isotopic Analyses

Analysis	Riverton	
	(1728')	
$\delta^{13}CO_2$	2.27	
$\delta^{13}C_{methane}$	-55.29	
$\delta DC_{methane}$	-247.7	
$\delta^{13}C_{ethane}$	-19.00	

Chemical Analyses (as reported; red = hydrocarbons; blue = non hydrocarbons, green = oxygen)

011/0-11/	
Component	(%)
Methane	67.38
Ethane	0.452
Propane	0.0482
n-Butane	0.0055
iso-Butane	0.0134
n-Pentane	0.0000
iso-Pentane	0.0000
Hexane+	0.0039
Nitrogen	29.00
Oxygen	0.488
Argon	0.272
Hydrogen	0.0000
Carbon Dioxide	2.33
Helium	0.0027

Chemical Analyses (recalculated after removing atmospheric contamination; red = hydrocarbons; blue = non hydrocarbons)

Component (%)	Riverton
Methane	69.00
Ethane	0.463
Propane	0.0494
n-Butane	0.0060
iso-Butane	0.0140
n-Pentane	0.0000
iso-Pentane	0.0000

Hexane+	0.0040
Nitrogen	27.83
Argon	0.260
Hydrogen	0.0000
Carbon Dioxide	2.38
Helium	0.0028

¹atmospheric component (based on oxygen content and atmospheric ratio of other gases to oxygen) subtracted from the analysis, with components recalculated to 100%

OtherChemical Data

HC Wetness (%)

	Riverton
Calculated BTU	740
Total % non-HCs	30.48

0.77

Plotting of the isotopes and gas wetness (Figure 17) indicates that the gas is of mixed biogenic and thermogenic origin. The large quantity of admixed non-hydrocarbon gases indicates that the gas produced will be a low-BTU gas (<950 BTU).

RESULTS and DISCUSSION

Proximate analyses were made for the Riverton coal samples. The proximate analyses were performed on the following samples by Luman's Laboratory (see Appendix 1):

Luman's Lab proximate analysis:

unit	depth	moisture	ash	moisture-free ash
Riverton large smpl	1728'	2.23%	7.59%	7.76%
Riverton small smpl	1728'	1.91%	6.35%	6.47%

According to the BTU/lb. (dry, ash-free) determinations, all the samples can be classified as high-volatile B bituminous coal.

The Riverton samples, even though they were from cuttings, registered good gas content. Two samples of cuttings, designated the "large" and "small" samples, were taken from this zone. The "small sample" had a markedly greater gas content (scf/ton) than the "large sample" 157.3 scf/ton vs. 125.8 scf/ton, based on the weight of coal calculated in the sample, even though the physical attributes of the samples were virtually identical. Upon examination of the desorption curves (Figure 15) the "small sample" shows an increase in gas generation in its later stages of desorption. This indicates a late-stage biogenic gas being produced in the desorption process. Using a curve based on the larger of the two samples, the gas content of the "small sample" (not counting residual) is likely closer to 136 scf/ton rather than 157 scf/ton.

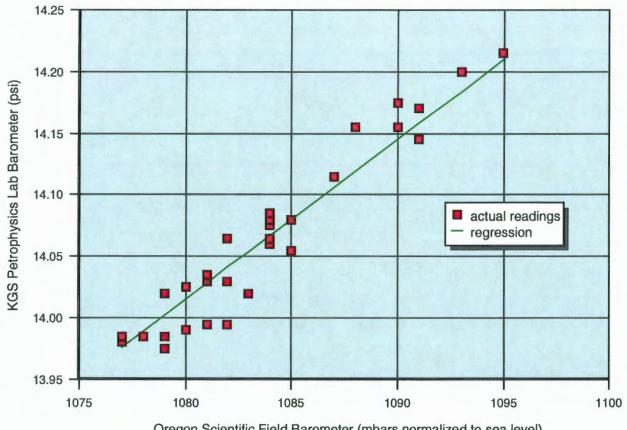
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FIGURES and TABLES

- FIGURE 1. Correlation of field barometer to Petrophysics Lab pressure transducer.
- TABLE 1. Desorption measurements for samples.
- FIGURE 2. Lost-gas graph for shale seam in Bethany Falls Ls.; 1051.0'-1051.6'.
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- FIGURE 4. Lost-gas graph for Lake Neosho Shale; 1264' to 1268'.
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- FIGURE 7. Lost-gas graph for Croweburg coal; 1483.6' to 1484.5'.
- FIGURE 8. Lost-gas graph for shale above Tebo coal; 1552.7' to 1553.5'.
- FIGURE 9. Lost-gas graph for Tebo coal; 1556.1' to 1556.8'.
- FIGURE 10. Lost-gas graph for Riverton coal; 1728' to 1731' (large sample).
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- FIGURE 12. Sensitivity analysis for Lake Neosho Shale; 1264' to 1268'.
- FIGURE 13. Sensitivity analysis for Anna Shale; 1324' to 1326'.
- FIGURE 14. Sensitivity analysis for Riverton coal; 1728' to 1731'.
- FIGURE 15. Desorption graph for cuttings samples.
- FIGURE 16. Desorption graph for core samples.
- FIGURE 17. Crossplot of isotopes and wetness for the Riverton gas.
- APPENDIX 1. Float/sink and proximate analyses for the two Riverton samples.

Correlation of Field Barometer to KGS Petrophysics Lab Barometer



Oregon Scientific Field Barometer (mbars normalized to sea level)

FIGURE 1.

TABLE 1 - Description measurements for Petrol Oil & Glas #7-1 Trulove, NW NW SE 7-21S-14E, Coffey Co., KS

AMPLE: 1	051.0'-1051.	6' (she lbs		Betharry F grams	alls La.) oore in	canister	MER 3	lba.		grams	moisture %		est. lost gas (oc)	=		TIME OF:			elapsed time (off bottom to canistering
y sample weig	what -	IIDS		741.20		wet sam	nple weight;	RAG.	1.660	782.00	2.73%			48			at surface	in canister	133.0 minutes
) cample way	,															1/8/04 5:53		1/8/04 8:08	
IG/LAB MEASUR							PREMENTS TO ST						SCF/TON	-		TIME SINCE		tt-t	1.488847429 SQRT (hrs) SQRT hrs. (since off bottom)
easured cc m					absolute T (F)		cubic ft (@STP)			cubic ft	0.00	without lost gas			1/8/04 8:11	2:18:00	at surface	in canister 0:05:00	
0		74	1078	0		13.992			0.00	0	0.00	0.00	2.0		1/8/04 8:18	2:23:00		0:10:00	
0		72	1079	0		14.005			0.00	8.58489E-05	1,88	0.00	2.		1/8/04 8:31	2:38:00		0:25:00	
2		73	1079	7E-05		14.005				0.000229484	6.50	0.08	2.		1/8/04 8:58	3:03:00		0:50:00	
5		74 75	1079	0.0002		14.018				0.000425858	12.06	0.52	2.1		1/8/04 9:39	3:48:00		1:33:00	1.940790217
8		75		0.0002		14.018				0.000558784	15.77	0.68	2.		1/8/04 10:01	4:08:00		1:55:00	2.033060091
4		73		0.0001		14.018				0.000888204	19.49	0.84	2.1	92	1/8/04 10:31	4:38:00		2:25:00	2.152517905
7		75		0.0002	535	14.005	0.000228912			0.000917116	25.97	1.12	3.5	20	1/8/04 11:16	5:23:00		3:10:00	
8		75		0.0003	535	14.005	0.000281814		7.41	0.00117873	33.38	1.44	3.5	52	1/8/04 12:01	6:08:00		3:55:00	
19		80	1077	0.0007	540	13.979	0.000814439		17.40	0.001793189	50.78	2.19			1/8/04 14:47	8:54:00		6:41:00	
-3		79	1078	-0.0001	539	13.992	-9.72869E-05		-2.75	0.001895882	48.02	2.08			1/8/04 17:41	11:48:00		9:35:00	
-10		76	1082	-0.0004		14.044				0.001368587	38.75	1.66			1/8/04 21:19	15:28:00		13:13:00	
-8		75	1084	-0.0002		14.070				0.001171447	33.17	1.43			1/9/04 0:00	18:07:00		15:54:00 20:43:00	
-5		72		-0.0002		14.098				0.00100595	28.49	1.23	3.		1/9/04 4:49	22:56:00		23:55:00	
-1		73	1089	-4E-05		14.135				0.000972821	27.55	1.19	3.1		1/9/04 8:01	28:08:00		27:20:00	
4		75	1091	0.0001		14.181				0.001105083	31.29	1.35	3.		1/9/04 11:26	32:25:00		30:12:00	
0		75	1089	0		14.135				0.001105083	31.29	1.35	3.4		1/9/04 14:18	33:59:00		31:48:00	
0		75	1089	0		14.135			-5.62	0.001105083	31.29 25.67	1.35	3.		1/9/04 15:52	37:50:00		35:37:00	
-6		75		-0.0002		14.181	-0.000198393		0.00	0.00090889	25.67	1.11	3.		1/10/04 0:24	42:31:00		40:18:00	
0		73 74	1091	0.0002		14.161				0.00090889	31.28	1.35	3.4		1/10/04 13:08	55:13:00		53:00:00	
6		70		-0.0002			-0.000233842			0.000871084	24 87	1.07	3.		1/10/04 17:17	59:24:00		57:11:00	
-/		74		0.0002		14.109				0.001102125	31.21	1.35	3.		1/11/04 21:10	87:17:00		85:04:00	9.342554968
-8		72		-0.0003		14.187				0.000835823	23.66	1.02	3.	10	1/12/04 9:22	99:29:00		97:16:00	9.974133212
-3		78		-0.0001		14.228				0.000738158	20.85	0.90	2.5	98	1/13/04 11:46	125:53:00		123:40:00	11.21977421
6		75		0.0002		14.083			5.59	0.000933459	28.43	1.14	3.5	22	1/14/04 11:48	149:55:00		147:42:00	
-4		75		-0.0001		14.135			-3.74	0.00080144	22.69	0.98	3.0		1/15/04 11:23	173:30:00		171:17:00	
-19		73																	
ECANISTERE				-0.0007 lys in air	533	14.135	-0.000829445		-17.82	0.000171995	4.87	0.21	2.:	29	1/21/04 10:44	316:51:00		314:38:00	17.8002809
	D 1/27/2004; 1057.0'-1057.	samp	ele dried 8 da ushpuckney s.	ys in air	533 re in canister 4		-0.000829445	lbe.			4.87 moisture % 2.79%	0.21	est. lost gas (oc)			TIME OF:	at surface	In canister	elapsed time (off bottom to canisterii 124.3 minutes
AMPLE: 1	D 1/27/2004; 1057.0'-1057. ght:	samp	ushpuckney s. 5.769	Shale) coo grams 2625.63	re in canister 4	wet sam	nple weight:	lbs.	5.955	grams 2700.98	moisture % 2.79%		est. lost gas (cc)	=		TIME OF: off bottom 1/8/04 5:53	at surface		elapsed time (off bottom to canisteri 124.3 minutes 2.071 hours
AMPLE: 1 ry sample weig	D 1/27/2004; 1057.0'-1057. ght: PREMENTS	8 (Hu	ushpuckney s. 5.789	Shale) congrams 2625.83	re in canister 4	wet sam	nple weight:	lbs. P (@60 deg F;	5.955 14.7 pei)	grams 2700.98 CUMULATIVE VC	moisture % 2.79% LUMES (@STP)	SCF/TON	est. lost gae (cc) 1: SCF/TON	= 35		TIME OF: off bottom 1/8/04 5:53 TIME SINCE	at surface	In canister	elapsed time (off bottom to canisteri 124.3 minutes
AMPLE: 1 ry sample weig IG/LAB MEASUI	D 1/27/2004; 1057.0'-1057. ght: PREMENTS measured T (i	6' (Hu lbs	ushpuckney s. 5.769	Shale) con grams 2625.83 CONVERS cubic ft	re in canister 4 SION OF RIGALA absolute T (F)	wet sam	nple weight: PREMENTS TO STE cubic ft (@STP)	bs. P (@60 deg F; cc (@STP)	5.955 14.7 pel)	grams 2700.98 CUMULATIVE VC cubic ft	moisture % 2.79%		est. lost gas (cc) 1: SCF/TON with lost gas	= 35		TIME OF: off bottom 1/8/04 5:53 TIME SINCE		In canister 1/8/04 7:57	elapsed time (off bottom to canisteri 124.3 minutes 2.071 hours 1.439039031 SOFIT (hrs) SORT hra. (since off bottom)
AMPLE: 1 ry sample weig IGALAB MEASUI neasured cc m 16	D 1/27/2004; 1057.0'-1057. ght: PREMENTS measured T (6' (Hu lbs	ushpuckney s. 5.769 seasured P 1078	Shale) con grams 2625.83 CONVERS cubic ft	re in canister 4 SION OF RIGALA absolute T (F) 534	wet sam B MEASU pela 13,992	iple weight: IREMENTS TO STE cubic ft (@STP) 0.000523722	bs. P (@60 deg F; cc (@STP)	5.955 14.7 pel)	grams 2700.98 CUMULATIVE VC cubic ft 0.000523722	moisture % 2.79% LUMES (@STP)	SCF/TON without lost gas	est. lost gas (cc) 1: SCF/TON with lost gas 1.	= 35	WEOF MEASURE	TIME OF: off bottom 1/8/04 5:53 TIME SINCE off bottom		in canister 1/8/04 7:57 in canister	elapsed time (off bottom to canisteri 124.3 minutes 2.071 hours 1.439039031 SCRT (hrs) SCRT hrs. (eince off bottom) 1.471980144
AMPLE: 1 ry sample weig IG/LAB MEASUI	D 1/27/2004; 1057.0'-1057. pht: PREMENTS measured T (I	6' (Hu lbs	ushpuckney s. 5.769	Shale) coordinates Shale) coordi	re in canister 4 SION OF RIGALA absolute T (F) 534 534	wet sam	ple weight: IREMENTS TO STI ouble ft (@STP) 0.000523722 0.000229128	bs. P (@60 deg F; cc (@STP)	5.955 14.7 pel) 14.83 8.49	grams 2700.98 CUMULATIVE VC cubic ft 0.000523722	moisture % 2.79% CLUMES (@STP) cc 14.83	SCF/TON without lost gas 0.16	est. lost gas (cc) 1: SCF/TON with lost gas 1.	35 TM 83	ME OF MEASURE 1/8/04 8:03 1/8/04 8:08 1/8/04 6:10	TIME OF: off bottom 1/8/04 5:53 TIME SINCE off bottom 2:13:00 2:17:00		in canister 1/8/04 7:57 in canister 0:05:45 0:08:45 0:12:45	elapsed time (off bottom to canister 124.3 minutes 2.071 hours 1.439039031 SORT (hre) SORT hrs. (since off bottom) 1.471980144 1.488847429 1.511070261
WPLE: 1 y sample weig G/LAB MEASUI easured cc n 16 7 7	D 1/27/2004; 1057.0'-1057. pht: IPEMENTS measured T (6' (Hu lbs	s. shouckney s.	Shale) coorgrams 2625.63 CONVERS cubic ft 0.0006 0.0002	SION OF RIGILAL absolute T (F) 534 534	wet sam B MEASU pela 13,992 13,992	ple weight: IFIEMENTS TO STI cubic ft (@STP) 0.000523722 0.000229128 0.000229128	bs. P (@60 deg F; cc (@STP)	5.955 14.7 pel) 14.83 8.49 8.49	grams 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285	moisture % 2.79% **LUMES (@STP) cc 14.83 21.32	SCF/TON without lost gae 0.18 0.28	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 1.	35 TIM 83 91	ME OF MEASURE 1/8/04 8:03 1/8/04 8:06	TIME OF: off bottom 1/8/04 5:53 TIME SINCE off bottom 2:10:00 2:13:00 2:17:00		in canister 1/8/04 7:57 in canister 0:05:45 0:08:45 0:12:45	elapsed time (off bottom to canister 124.3 minutes 2.071 hours 1.439039031 SORT (hrs) SORT hrs. (eince off bottom) 1.471980144 1.488847429 1.511070261 1.555247584
WPLE: 1 y sample weig G/LAB MEASUI sessured cc in 16 7	D 1/27/2004; 1057.0'-1057. pht: IREMENTS measured T (I	6' (Hu lbs	s. 5.769 seasured P 1078 1078 1078 1079	Shale) con grams 2625.63 CONVERS cuble ft 0.0006 0.0002 0.0002	re in canister 4 SION OF RIGALN absolute T (F) 534 534 534	wet sam B MEASU pela 13,992 13,992 13,992	ple weight: IFIEMENTS TO STI cubic ft (ØSTP) 0.000523722 0.000229128 0.00042752	bs. P (@80 deg F; cc (@STP)	5.955 14.7 pel) 14.83 8.49 8.49 12.11	grame 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285 0.000981978	moisture % 2.79% CLUMES (@STP) cc 14.83 21.32 27.81	SCF/TON without lost gae 0.18 0.28 0.34	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 1.	35 TM 83 91 99	ME OF MEASURE 1/8/04 8:03 1/8/04 8:06 1/8/04 6:10 1/8/04 6:30	TIME 0F: off bottom 1/8/04 5:53 TIME SINCE off bottom 2:10:00 2:17:00 2:27:00 2:37:00		in canister 1/8/04 7:57 in canister 0:05:45 0:08:45 0:22:45 0:32:45	elapsed time (off bottom to canister 124.3 minutes 7 2.071 hours 1.439039031 SQRT (hrs) SQRT hrs. (since off bottom) 1.471980144 1.408847429 1.511070261 1.555247584 1.617811408
y sample weig (G/LAB MEASUI leesured cc n 16 7 7 13	D 1/27/2004; 1057.0'-1057. ght: PREMENTS measured T (8 (Hu lbs	s. 5.769 seasured P 1078 1078 1079 1079	Shale) con grams 2625.63 CONVERS cuble ft 0.0006 0.0002 0.0002	SION OF RIGALM absolute T (F) 534 534 532 532 533	wet sam B MEASU pela 13.992 13.992 14.005	IPIEMENTS TO STI cubic ft (@STIP) 0.000523722 0.000229128 0.000229128 0.00042752 0.00042752	bs. P (@80 dag F; cc (@STP)	5.955 14.7 pel) 14.63 6.49 6.49 12.11 6.51 13.92	grame 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285 0.000981976 0.001409496 0.00163927 0.002130714	moisture % 2.79% CLUMES (ØSTP) cc 14.83 21.32 27.81 39.91 48.42 60.33	SCF/TON without lost gae 0.18 0.28 0.34 0.49 0.57	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2.	= 35 THM 83 91 99 13 21 36	ME OF MEASURE 1/8/04 8:08 1/8/04 8:08 1/8/04 6:10 1/8/04 6:30 1/8/04 6:35	TIME OF- off bottom 1/8/04 5:53 TIME SINCE off bottom 2:10:00 2:17:00 2:27:00 2:37:00 3:02:00		in canister 1/8/04 7:57 in canister 0:05:48 0:08:44 0:22:44 0:32:44	elapsed time (off bottom to carister 124.3 minutes 2.071 hours 1.439039031 SORT (hrs) SORT hrs. (since off bottom) 1.471980144 1.488847429 1.51070281 1.585247584 1.817811408 1.74184873
y sample weig G/LAB MEASUI sesured co n 16 7 7 13 7	D 1/27/2004; 1057.0'-1057. pht: phements measured T (i	6' (Hu lbs	s. 5.769 6easured P 1078 1078 1079 1079 1079 1080	Shale) congrams 2625.63 CONVERS cubic ft 0.0008 0.0002 0.0005 0.0005 0.0004	SICN OF RIGILAL absolute T (F) 534 534 532 533 534 535	wet sam B MEASU pela 13.992 13.992 14.005 14.005 14.005	ple weight: UPIEMENTS TO STI OUBIG RI (@STP) 0.000523722 0.000229128 0.000229128 0.00042752 0.00029771 0.000491445 0.00032732	bs. P (@60 dag F; cc (@STP)	5.955 14.7 pel) 14.63 6.49 6.49 12.11 6.51 13.92 9.27	grame 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285 0.001409498 0.001409498 0.001230714 0.002458035	2.79% 2.79% CLUMES (@STP) cc 14.83 21.32 27.61 39.91 46.42 60.33 69.80	SCF/TON without lost gae 0.18 0.28 0.34 0.49 0.57 0.74	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2. 2.	= 35 THM 83 91 99 13 21 36 50	WE OF MEASURE 1/8/04 8:03 1/8/04 8:06 1/8/04 8:10 1/8/04 6:20 1/8/04 6:30 1/8/04 8:55 1/8/04 9:38	TIME OF: off bottom 1/8/04 5:53 TIME SINCE off bottom 2:10:00 2:17:00 2:27:00 2:27:00 3:02:00 3:45:00		in canister 1/8/04 7:57 in canister 0:05:45 0:08:45 0:12:45 0:32:45 0:57:45 1:40:45	elapsed time (off bottom to canister 124.3 minutes 2.071 hours 1.439039031 SORT (hrs) SORT hrs. (eince off bottom) 1.471980144 1.488847429 1.511070261 1.555247584 1.1817811408 1.74184873 1.398491673
y sample weig IGAB MEASUI sessured cc n 16 7 7 13 7 15	D 1/27/2004; 1057.0'-1057. ght: IPIEMENTS measured T (I	8 (Hu lbs F) m 74 74 74 72 73 74 75 75	s. 5.769 seasured P 1078 1078 1078 1079 1079 1079 1080 1080	ys in air Shale) cor grams 2625.63 CONVERS cubic ft 0.0008 0.0002 0.0002 0.0005 0.0002 0.0002 0.0004 0.0004	SION OF RIGILAL absolute T (F) 534 534 532 533 534 535 535 535 535 535	wet sam B MEASU peia 13.992 13.992 14.005 14.005 14.005 14.018	Iple weight: IPIEMENTS TO STI cuble it (#STP) 0.000523722 0.000229128 0.000229128 0.00022971 0.000491445 0.0004932732 0.00018388	be. P (@60 deg F; cc (@STP)	5.955 14.7 pel) 14.63 6.49 6.49 12.11 6.51 13.92 9.27 4.63	grame 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285 0.001409498 0.00183927 0.002130714 0.002458035 0.002821895	2.79% LUMES (@STP) cc 14.83 21.32 27.61 39.91 46.42 60.33 89.80 74.24	SCF/TON without lost gas 0.18 0.28 0.34 0.49 0.57 0.74 0.85 0.91	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2. 2.	35 THM 83 91 99 13 21 38 50 55	ME OF MEASURE 1/8/04 8:03 1/8/04 8:06 1/8/04 6:10 1/8/04 6:30 1/8/04 6:35 1/8/04 9:36 1/8/04 10:00	TIME OF: off bottom 1/8/O4 5:53 TIME SINCE off bottom 2:10:00 2:17:00 2:27:00 3:02:00 3:45:00 4:07:00		in canister 1/8/04 7:57 in canister 0:05:48 0:12:48 0:22:48 0:57:48 1:40:48	elapsed time (off bottom to canister 124.3 minutes 7
y sample weig G/LAB MEASUl easured cc n 16 7 7 13 7 15 10 5	D 1/27/2004; 1067.0*-1057. pht: PREMENTS measured T ((8 (Hu lbs F) m 74 74 74 72 73 74 75 75 75	s. 5.769 683sured P 1078 1078 1078 1079 1079 1079 1080 1080 1080	Shale) coograms 2625.63 CONVERS cuble ft 0.0008 0.0002 0.0005 0.0002 0.0005 0.0002 0.0005 0.0002 0.0005 0.0002 0.0005 0.0002 0.0005 0.0002 0.0001	SION OF RIGHLA absolute T (F) 534 534 532 533 534 535	wet sam B MEASU peta 13.992 13.992 14.005 14.005 14.005 14.018	pole weight: UPIEMENTS TO STI OUBIC ft (Ø STP) 0.000523722 0.000229128 0.000229128 0.00042752 0.000429734 0.000491445 0.00032732 0.00018388 0.000131419	bs. P (@80 deg F; cc (@STP)	5.955 14.7 pel) 14.83 6.49 6.49 12.11 6.51 13.92 9.27 4.63 3.72	grame 2700.98 CUMULATIVE YC cubic ft 0.000523722 0.00075285 0.00981978 0.001409498 0.00143927 0.002130714 0.002458035 0.002821895 0.0028733114	moisture % 2.79% CLUMES (@STP) cc 14.83 21.32 27.61 39.91 48.42 60.33 69.80 74.24 77.98	SCF/TON without lost gae 0.18 0.28 0.34 0.49 0.57 0.74 0.85 0.91	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2. 2. 2. 2.	35 THM 83 91 99 13 21 38 50 55 80	ME OF MEASURE 1/8/04 8:03 1/8/04 8:06 1/8/04 6:10 1/8/04 6:10 1/8/04 6:35 1/8/04 9:36 1/8/04 10:30 1/8/04 10:30	TIME OF- off bottom 1/8/04 5:53 TIME SINCE off bottom 2:10:00 2:17:00 2:27:00 3:02:00 3:45:00 4:37:00 4:37:00		in canister 1/8/04 7:57 in canister 0:05:48 0:08:48 0:22:48 0:32:48 0:57:48 1:40:48 2:32:48	elapsed time (off bottom to carieter 124.3 minutes 2.071 hours 1.439039031 SORT (hrs) SORT hrs. (eince off bottom) 1.471980144 1.486847429 1.51070261 1.585247584 1.617611408 1.74184673 1.938491873 2.028957039 2.14884288
y sample weig IGAAB MEASUI easured cc n 16 7 7 13 7 15 10 5 4 8	D 1/27/2004; 1067.0'-1057. ght: PREMENTS measured T (6' (Hu lbs	s. 5.769 seasured P 1078 1078 1078 1079 1079 1080 1080 1080 1080 1080	ys in air Shale) coorgrams 2625.63 CONVERS: cuble ft 0.0008 0.0002 0.0002 0.0005 0.0004 0.0002 0.0004 0.0002	SION OF RIGILAL absolute T (F) 534 534 532 533 534 535 535 535	wet sam B MEASU pela 13.992 13.992 14.005 14.005 14.018 14.018 14.018	ple weight: PREMENTS TO STI ouble ft (@STP) 0.000523722 0.000229128 0.000229128 0.00042752 0.00028771 0.000491445 0.00032732 0.00018388 0.000131419 0.000281814	lbs. P (@60 dag F; cc (@STP)	5.955 14.7 pel) 14.63 6.49 12.11 6.51 13.92 9.27 4.63 3.72 7.41	grame 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285 0.001409498 0.001430947 0.002458035 0.002458035 0.002258035 0.002753114 0.003014728	moisture % 2.79% 2.79% CLUMES (ØSTP) cc 14.83 21.32 27.61 39.91 48.42 60.33 89.80 74.24 77.98 65.37	SCF/TON without lost gae 0.18 0.28 0.34 0.49 0.57 0.74 0.85 0.91	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2. 2. 2. 2. 2.	35 83 91 99 13 21 38 50 55 80 89	ME OF MEASURE 1/8/04 8:03 1/8/04 8:06 1/8/04 6:20 1/8/04 6:20 1/8/04 6:30 1/8/04 10:30 1/8/04 10:30 1/8/04 11:15	TIME OF: off bottom 1/8/04 5:53 TIME SINCE off bottom 2:10:00 2:17:00 2:27:00 2:37:00 3:02:00 4:07:00 4:37:00 5:22:00		in canister 1/8/04 7:57 in canister 0:05:48 0:08:48 0:12:48 0:32:48 0:57:48 1:40:48 2:02:48 2:32:48 3:17:48	elapsed time (off bottom to canister 124.3 minutes 7 2.071 hours 1.439039031 SORT (hre) SORT hra. (since off bottom) 1.471980144 1.488847429 1.5511070281 1.555247584 1.137811408 1.74184873 1.938491673 2.028957039 2.148842983 2.318608714
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WPLE: 1 y sample weig y sample weig (G/LAB MEASU) 16 7 7 13 3 7 7 15 10 0 5 4 8 8 11 1 21 1 0 0 8 -7 7 -5 5 4 4 0 0 4 9 9 0 8	D 1/27/2004; 1057.0'-1057. pht: PREMENTS measured T ((8 (Hu Ros	seasured P 1078 1079 1079 1080 1080 1089 1079 1079 1079 1079 1079 1079 1079 107	ye in air Shale) co yrams 2625.63 CONVERS cuble ft 0.0002 0.0002 0.0002 0.0002 0.0002 0.0004 0.0002 0.0004 0.0002 0.0001 0.0003 0.0004 0.0001 0.0003 0.0004 0.0003 0.0004 0.0003 0.0004 0.0003	sion OF Right. A sabeolute T (F) 534 534 535 535 535 535 535 535 535 535	wot sam b MEASU pela 13,992 13,992 14,005 14	pole weight: UPIEMENTS TO STI Cubic ft (Ø STP) 0.000523722 0.000229128 0.000229128 0.000229721 0.00042752 0.00032732 0.00018488 0.000131419 0.000359719 0.000679117 0.00067917 0.000182089 0.000132019 0.000132019 0.000132019 0.000287589 0.000132019 0.000287589 0.0002397589	bs. P (@60 dag F; co (@STP)	5.955 14.7 pm) 14.63 6.49 12.11 13.92 9.27 4.11 10.19 19.23 0.0-5.56 0.00 7.46 9.45 9.46 9.47 9.46 9.47 9.46 9.47 9.46 9.46 9.47 9.46 9.47 9.46 9.47 9.46 9.47 9.46 9.47 9.46 9.47 9.46 9.47 9.47 9.48 9.49 9.48 9.49 9.49 9.49 9.49 9.49	grams 2700.98 CUMLLATIVE VC cubic ft 0.000523722 0.00075285 0.00981976 0.001409498 0.00163927 0.002130714 0.002458035 0.002821895 0.002753114 0.004053684 0.004053684 0.004053684 0.004053684 0.004053684 0.003627202 0.00359422 0.00359422 0.00359422 0.00359422 0.00359422 0.00359423 0.00342885 0.003	moisture % 2.79% LUMES (@STP) cc 14.83 21.32 27.61 39.91 48.42 60.33 69.80 74.24 77.96 65.37 95.55 114.76 110.78 100.71 98.02 101.78 101.78 105.51 97.09 97.09 97.09 97.09 104.57 95.11	SCF/TON without lost gas 0.16 0.28 0.34 0.49 0.57 0.74 0.65 0.91 0.95 1.04 1.17 1.40 1.40 1.33 1.25 1.20 1.24 1.24 1.29 1.18 1.18 1.28	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	= 355 TIN 83 919 1336 555 560 889 81 900 889 883 883 883 883 883 883 883 883 883	ME OF MEASURE 1/8/04 8:03 1/8/04 8:08 1/8/04 8:08 1/8/04 8:09 1/8/04 9:03 1/8/04 9:03 1/8/04 9:03 1/8/04 10:03 1/8/04 10:03 1/8/04 11:15 1/8/04 12:00 1/8/04 14:50 1/8/04 14:50 1/8/04 12:05 1/8/04 12:05 1/8/04 12:05 1/8/04 11:15 1/8/04 11:25	TIME OF: off bottom 1/8/04 5:53 TIME SINCE 2:10:00 2:13:00 2:27:00 3:02:00 3:02:00 4:37:00 4:37:00 11:49:00 15:32:00 16:07:00 22:55:00 29:33:59:00 33:59:00 37:50:00 55:12:00 55:12:00 55:12:00 57:17:00		In canister 1/8/04 7:57 in canister 0:05:44 0:12:44 0:22:44 0:57:44 1:40:44 2:32:44 3:17:44 6:52:41 13:27:41 18:02:44 24:03:41 27:27:41 35:45:41 40:26:41 53:07:41	elapsed time (off bottom to canister 124.3 minutes 2.071 hours 1.439039031 SORT (hre) SORT hre. (since off bottom) 1.471980144 1.48847429 1.511070261 1.585247584 1.6117911408 1.74184873 2.028957039 2.148842983 2.318908714 2.473189574 2.99185508 3.437537979 3.941235001 4.258387779 4.787135539 5.112077203 5.5434457961 5.628522565 6.15080098 6.520480555 7.429870248 7.708058223 9.342554988
AMPLE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	D 1/27/2004; 1067.0'-1057. pht: IREMENTS measured T ((8 (Humber 1997) 18 (Hum	s. 5.769 sasured P 1078 1078 1078 1079 1079 1079 1080 1080 1080 1080 1080 1080 1080 108	ye in air Shale) cor grams 2625.63 CONVERS 0.0002 0.0002 0.0002 0.0002 0.0002 0.0004 0.0002 0.0001 0.0003 0.0004 0.0001 0.0003 0.0004 0.0003 0.0004 0.0003 0.0004 0.0003	SION OF RIGULAL absolute T (F) 534 534 534 535 535 535 535 536 536 537 538 538 538 538 538 538 538 538 538 538	wet sam 13.992 14.005 14.005 14.005 14.005 14.013 14.005 14.018 14.018 14.018 14.018 14.018 14.018 14.018 14.018 14.181 14.181 14.181 14.181 14.181	pole weight: IPIEMENTS TO STI cubic ft (Ø STP) 0.000523722 0.000229128 0.000229128 0.000229721 0.000481445 0.00032732 0.00018368 0.000131419 0.00035719 0.000679117 0.000198389 -0.000229973 -0.000185497 0.000185497 0.000132019 -0.000289738 0.000132019 -0.00033774 0.000333774 0.000333774 0.000333774 0.000333774	bs. P (@60 dag F; co (@STP)	5.955 14.7 pel) 14.83 6.49 9.27 4.63 3.72 9.27 7.41 19.23 0.00 6-8.51 1-4.89 3.75 0.00 4.89 0.00 1.40 1.40 1.40 1.40 1.40 1.40 1.40	grame 2700.98 CUMULATIVE VC cubic ft 0.000523722 0.00075285 0.00981976 0.001409496 0.001409496 0.002535114 0.0030147246 0.004053564 0.004053564 0.00367475 0.00359422 0.00359422 0.003724865 0.00359422 0.00372639 0.00342865 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.00342855 0.003455485	moisture % 2.79% (2.79%	SCF/TON without lost gas 0.18 0.28 0.34 0.49 0.57 0.74 0.85 0.91 1.04 1.17 1.40 1.33 1.25 1.20 1.24 1.24 1.29 1.18 1.18 1.28 1.18 1.29 1.19	est. lost gas (cc) 1; SCF/TON with lost gas 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	= 35 TIM 83 99 13 36 90 13 36 90 90 64 90 68 90 88 88 90 88 88 88 88 88 88 88 88 88	ME OF MEASURE 1/8/04 8:03 1/8/04 8:04 1/8/04 8:06 1/8/04 8:06 1/8/04 8:06 1/8/04 9:36 1/8/04 10:00 1/8/04 10:00 1/8/04 10:00 1/8/04 11:15 1/8/04 12:05 1/10/04 12:10	TIME OF- off bottom 1/8/04 5:53 TIME SINCE off bottom 2:11:00 2:13:00 2:17:00 3:02:00 3:45:00 4:07:00 6:57:00 11:48:00 2:55:00 6:57:00 15:32:00 16:07:00 22:55:00 33:59:00 37:50:00 42:31:00 55:12:00 59:23:00 99:28:00 99:28:00		in canister 1/8/04 7:57 in canister 0:05:45 0:08:46 0:22:46 0:22:46 0:57:46 1:40:46 2:32:48 3:17:46 6:52:46 9:44:41 18:02:41 20:50:41 24:03:41 31:54:41 40:26:41 35:45:41 40:26:41 57:18:41	elapsed time (off bottom to canisteri 124.3 minutes 1.439039031 SORT (hrs) SORT hrs. (since off bottom) 1.471980144 1.486847429 1.511070261 1.585247584 1.585247584 1.74164673 2.028657039 2.148842983 2.218808714 2.473189574 2.99185508 3.437537879 3.941235001 4.256387779 4.767135539 5.112077203 5.434457961 5.629522565 6.15080898 6.520480855 7.429870248 5.709058223 9.342554988 9.973297683
AMPLE 1 1 y sample weig y sample weig	D 1/27/2004; 1057.0'-1057. pht: PREMENTS measured T ((8 (Humber 1987) F) miles (Humber 1987) F) mil	s. 5.789 seasured P 1078 1078 1078 1078 1078 1079 1079 1079 1079 1079 1079 1079 1079	ye in air Shale) corgans 2625.83 CONVERS 2625.83 CONVERS 0.0008 0.0002 0.0005 0.0005 0.0002 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0003 0.0004 0.0003 0.0001 0.0003 0.0004	re in canister 4 SION OF RIGALA absolute T (F) 534 534 534 535 535 535 535 535 535 535	wet sam 13,992 13,992 14,005 14,005 14,005 14,005 14,005 14,005 14,005 14,005 14,005 14,005 14,005 14,005 14,001 14,005 14,101 14,109 14,135 14,161 14,109	ple weight: Unicity (@STP) 0.000523722 0.000229128 0.000229128 0.000229128 0.000229732 0.00042752 0.00049744 0.00032732 0.00018388 -0.0001938979 0.000193259 0.0001920973 0.0001920973 0.0001920973 0.000132019 0.000132019 0.00023973 0.000132019 0.00023973 0.000132019 0.00023973 0.000132019 0.00023973 0.000132019 0.00023973 0.000132019 0.00023973 0.000132019 0.00023973 0.00023033774 0.000333774 0.000333774 0.000333755	bs. P (@60 dag F; co (@6TP)	5,955 14,7 pel) 14,83 6,49 12,11 6,51 10,19 10,19 10,19 10,19 11,19 10,19 10,19 11,1	grams 2700.98 CUMLLATIVE VC cubic ft 0.000523722 0.00075285 0.00981976 0.001409498 0.00163927 0.002130714 0.002458035 0.002821895 0.002753114 0.004053684 0.004053684 0.004053684 0.004053684 0.004053684 0.003627202 0.00359422 0.00359422 0.00359422 0.00359422 0.00359422 0.00359423 0.00342885 0.003	moisture % 2.79% LUMES (@STP) cc 14.83 21.32 27.61 39.91 48.42 60.33 69.80 74.24 77.96 65.37 95.55 114.76 110.78 100.71 98.02 101.78 101.78 105.51 97.09 97.09 97.09 97.09 104.57 95.11	SCF/TON without lost gas 0.16 0.28 0.34 0.49 0.57 0.74 0.65 0.91 0.95 1.04 1.17 1.40 1.40 1.33 1.25 1.20 1.24 1.24 1.29 1.18 1.18 1.28	est. lost gas (cc) 1: SCF/TON with lost gas 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	= 35 TIM 83 91 99 113 221 36 89 89 105 50 05 89 89 89 89 89 89 89 89 89 89 89 89 89	ME OF MEASURE 1/8/04 8:03 1/8/04 8:08 1/8/04 8:08 1/8/04 8:09 1/8/04 9:03 1/8/04 9:03 1/8/04 9:03 1/8/04 10:03 1/8/04 10:03 1/8/04 11:15 1/8/04 12:00 1/8/04 14:50 1/8/04 14:50 1/8/04 12:05 1/8/04 12:05 1/8/04 12:05 1/8/04 11:15 1/8/04 11:25	TIME OF: off bottom 1/8/04 5:53 TIME SINCE 2:10:00 2:13:00 2:27:00 3:02:00 3:02:00 4:37:00 4:37:00 11:49:00 15:32:00 16:07:00 22:55:00 29:33:59:00 33:59:00 37:50:00 55:12:00 55:12:00 55:12:00 57:17:00		In canister 1/8/04 7:57 in canister 0:05:44 0:12:44 0:22:44 0:57:44 1:40:44 2:32:44 3:17:44 6:52:41 13:27:41 18:02:44 24:03:41 27:27:41 35:45:41 40:26:41 53:07:41	elapsed time (off bottom to canisteri 124.3 minutes 2.071 hours 1.438038031 SCRT (hrs) SCRT hrs. (since off bottom) 1.471980144 1.486847429 1.511070261 1.585247584 1.617611408 1.74184073 1.938491673 2.028957039 2.148642983 2.318608714 2.473189574 2.99185508 3.437537879 3.941235001 4.258387779 4.767135539 5.112077203 5.434457961 5.628522565 6.150880698 6.520480555 7.42870248 7.708058223 9.342554988 9.973297883 1.1218777421

17. 1089 0.005 533 14 135 0.00049893 14 07 0.003121875 88 40 1.08 2.73 1/21/04 10:45 318:52:00 314:47:45 17.80074905

ANISTERED 01/27	73 7/2004; sam		-0.0005 days in air		14.135	-0.00049693	-14.07	0.003121975	68.40	1.08	2.73	1/21/04	10:45	316:52:00		314:47:45	17.80074905
	o 1268' (Lak	e Neosho	Shale) cutt	lings in canister	Stoeckin	nger #5					net het can /os'			TIME OF:			elapsed time (off bottom to can
mple weight:	lbs		grams 151.02								est. lost gas (cc) = 20			off bottom	at surface	In canister	16.3 minutes
ampie weight.														1/8/04 17:18	1/8/04 17:29	1/8/04 17:34	0.272 hours
AB MEASUREMEN							(960 dag F; 14.7 pai)				SCF/TON	THE OFFIE		TIMESINCE	at aurface	in canister	0.522015325 SQRT (hrs SQRT hrs. (since off bottom)
ured oc measure		easured P		absolute T (F)		cubic ft (@STP)		cubic ft		ithout lost gas	with lost gas 5.41	TIME OF ME/		0:25:51	0:14:45	0:09:30	0.858378958
6	79		0.0002		13.992	0.000194574 3.2429E-05		0.000194574	5.51 6.43	1.17	5.41	1/8/04		0:27:51	0:14:45	0:11:30	0.681297781
1	79	1078	4E-05 4E-05		13.992			0.000259432	7.35	1.58	5.80		17:49	0:31:06	0:20:00	0:14:45	0.719953702
1	79 79	1078			13.992		1.84		9.18	1.95	6.18		17:54	0:35:36	0:24:30	0:19:15	0.770261334
2	79	1078	7E-05		13.992			0.000389148	11.02	2.34	6.56		16:02	0:44:06	0:33:00	0:27:45	0.85732141
1	78	1078	4E-05		13.992		0.92	0.000421837	11.94	2.53	6.76	1/8/04	18:09	0:50:36	0:39:30	0:34:15	0.918331621
2	78	1078			13.992		1.84	0.000488815	13.76	2.92	7.17	1/8/04	18:21	1:03:06		0:46:45	1.025508004
1	78	1078	4E-05	536	13.992			0.000519105	14.70	3.12	7.36		16:37	1:18:36	1:07:30	1:02:15	1.144552314
1	77	1078	4E-05		13.992			0.000551854	15.62	3.31	7.56		18:58	1:37:36	1:26:30	1:21:15	1.275408431
1	78	1080	4E-05		14.018			0.000584325	16.55	3.51	7.75		19:00	1:41:36 2:23:38	2:12:30	1:25:15 2:07:15	1.30128142 1.547040185
1	76	1080	4E-05		14.018			0.000818998	17.47	3.71	7.95 7.95	1/8/04		6:42:38	6:31:30	8:28:15	2.590388769
0	75	1084	0		14.070	0		0.000816998	17.47 17.47	3.71	7.95			11:31:36	11:20:30	11:15:15	3.3950945
0	72	1086	0		14.135			0.000818998	16.41	3.91	8.15		8:02	14:43:36	14:32:30	14:27:15	3.83753393
0	73 75	1089	4E-05		14.181	3.3128/E-US		0.000850125	18.41	3.91	6.15			16:09:36		17:53:15	
-1	75	1089			14.135			0.00081712	17.47	3.71	7.95			22:34:36		22:18:15	
-2	75	1091	-7E-05		14.181	-8.61309E-05		0.000550969	15.80	3.31	7.55		19:44	28:25:36		26:09:15	
0	73	1091	0		14.181	0		0.000550989	15,60	3.31	7.55			31:06:36	30:55:30	30:50:15	
-2	74	1087	-7E-05	534	14.109	-6.60118E-05		0.000484978	13.73	2.91	7.18			43:46:36	43:37:30	43:32:15	
-4	70	1091	-0.0001	530	14.181	-0.000133509		0.000351468	9.95	2.11	8.35			47:56:36	47:45:30	47:40:15	
-4	74	1087	-0.0001			-0.000132024		0.000219445	6.21	1.32	5.56			75:52:36	75:41:30	75:36:15	8.710721363 9.364028985
-8	72	1093	-0.0002			-0.000199877	-5.66		0.55	0.12	4.36			88:03:36		87:47:15 114:12:15	
-5 HSTERED 01/14	76		-0.0002		14.228	-0.000185775	-4.69	-0.00014821	-4.14	-0.88	3.36	1/13/04	11:47	114:28:36	114:17:30	114.12.15	10.00007000
E: 1324' to	o 1326' (Ann Iba		cuttings in o	canister Stoecki	nger #1						est. lost gas (oc) =			TIME OF:			elepsed time (off bottom to ca
mple weight:		0.788	347.39								22			off bottom		in canister 1/8/04 19:42	20.5 minutee 0.341 hours
														1/8/04 19:21			
									W. I. M. T. O. C.	VOC (TOAL	20577041				1/8/04 19:35	17004 19.42	
							(@60 deg F; 14.7 pei)				SCF/TON	TIME CEME	ASI FIE	TIME SINCE			0.584047182 SQRT (h
ned oc measure	red T (F) m		cubic ft	absolute T (F)	pela	cubic ft (@STP)	cc (OSTP)	cubic ft	CC W	without lost gas	with lost gas	TIME OF ME		TIME SINCE off bottom	at surface	in canister 0:05:45	0.584047182 SQRT (hi SQRT hrs. (since off bottom)
ned oc measure 2	red T (F) m 78	1080	cubic ft 7E-05	absolute T (F) 536	pela 14.018	cubic ft (@STP) 6.5342E-05	cc (@STP) 1.85027132	cubic ft				1/8/04		TIME SINCE	at surface 0:13:00	in canister 0:05:45 0:15:45	0.584047182 SQRT (h SQRT hrs. (since off bottom) 0.881017734 0.778924135 estimate
red oc measure 2 5	red T (F) m 78 76	1080 1060	cubic ft 7E-05 0.0002	absolute T (F) 536 536	pela	cubic ft (@STP) 6.5342E-05 0.000163355	cc (@STP) 1.85027132	cubic ft 6.5342E-05 0.000228697	1.65	without lost gas 0.17	with lost gas 2.20	1/8/04	19:48 19:58	TIME SINCE off bottom 0:26:13	at surface 0:13:00 0:23:00	in canister 0:05:45 0:15:45 0:20:45	0.584047182 SQRT (h SQRT hrs. (since off bottom) 0.661017734 0.776924135 estimate 0.828821117
red oc measure 2 5 3	red T (F) m 78	1080 1080 1080	7E-05 0.0002 0.0001	absolute T (F) 536 536 538	pela 14.018 14.018	cubic ft (@STP) 6.5342E-05 0.000163355 9.80129E-05	∞ (9 STP) 1.85027132 4.62587830 2.77540698	cubic ft 6.5342E-05 0.000228697	1.65 6.48	vithout lost gas 0.17 0.60	with lost gas 2.20 2.83	1/8/04 1/8/04 1/8/04	19:48 19:58	TIME SINCE off bottom 0:26:13 0:36:13 0:41:13 0:54:43	at surface 0:13:00 0:23:00 0:28:00 0:41:30	0:05:45 0:15:45 0:20:45 0:34:15	0.584047182 SQRT (h SQRT hrs. (since off bottom) 0.861017734 0.776924135 estimate 0.828821117 0.954957823
red oc measure 2 5	78 76 76	1080 1060	7E-05 0.0002 0.0001 0.0002	absolute T (F) 536 536 536 536	peia 14.018 14.018 14.018	cubic ft (@STP) 6.5342E-05 0.000163355 9.80129E-05	cc (@STP) 1.85027132 4.82587830 2.77540698 4.82998134	cubic ft 6.5342E-05 0.000228697 0.00032671	1.65 6.48 9.25	0.17 0.80 0.85 1.28 1.45	with lost gas 2.20 2.83 2.86 3.31 3.46	1/8/04 1/8/04 1/8/04 1/8/04 1/8/04	19:48 19:58 20:03 20:16 20:20	TIME SINCE off bottom 0:26:13 0:36:13 0:41:13 0:54:43 0:58:43	at surface 0:13:00 0:23:00 0:28:00 0:41:30 0:45:30	0:05:45 0:15:45 0:20:45 0:34:15 0:38:15	0.584047182 SQRT (h SQRT hrs. (since off bottom) 0.881017734 0.778924135 estimate 0.828821117 0.954957823 0.98924775
ned oc measure 2 5 3	red T (F) m 78 76 76 78	1080 1080 1080 1081	cubic ft 7E-05 0.0002 0.0001 0.0002 7E-05	absolute T (F) 536 538 538 536 536	pela 14.018 14.018 14.018 14.031	cubic ft (@STP) 6.5342E-05 0.000163355 9.80129E-05 0.000163508	oc (@STP) 1.85027132 4.62587630 2.77540698 4.62998134 1.85196453 2.77797660	cubic ft 6.5342E-05 0.000228697 0.00032671 0.000490216 0.000555618 0.000853722	1.65 6.48 9.25 13.88 15.73 16.51	vithout lost gas 0.17 0.60 0.85 1.28 1.45	with lost gas 2.20 2.83 2.86 3.31 3.46 3.74	1/8/04 1/8/04 1/8/04 1/8/04 1/8/04	19:48 19:58 20:03 20:16 20:20 20:27	TIME SINCE off bottom 0:26:13 0:36:13 0:41:13 0:54:43 0:56:43 1:05:13	at surface 0:13:00 0:23:00 0:28:00 0:41:30 0:45:30 0:52:00	in canister 0:05:45 0:15:45 0:20:45 0:34:15 0:38:15 0:44:45	0.584047182 SORT (h SORT hrs. (since off bottom) 0.881017734 0.776924135 estimate 0.828821117 0.954957823 0.98924775 1.042586278
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5 3 5 2 3 4 1 1 4 17 5 3 1 -1 0 3 -2 5 -1 2 3 0 2 3 4 1 1 4 7 5 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	red T (F) m 78 78 78 78 78 78 78 75 75 75	1080 1080 1081 1081 1081 1081 1081 1081	cubic ft 7E-05 0.0002 0.0001 0.0002 7E-05 0.0001 0.0001 4E-05 0.0001 4E-05 -4E-05 0.0001 -7E-05 0.0002 0.0002 0.0001 0.0001 0.0002 4E-05 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001 0.0002 0.0001	absolute T (F) 538 538 538 538 538 538 538 538 538 538	peix 14.018 14.018 14.031 14.031 14.031 14.031 14.031 14.031 14.070 14.135 14.161 14.161 14.161 14.161 14.161 14.161 14.163 14.161 14.163 14.161 14.163 14.161 14.163 16.163 16.1	cubic # (@STP)	co (@STP) 1.85027132 4.82587630 2.77540896 4.82998134 1.85196453 2.77797680 3.70398907 0.92599227 3.71089238 13.02 6.56 4.69 2.81 0.93 -0.94 0.00 2.80 1.89 4.87 -0.94 1.88 2.79 0.00	cubic ft 6.5342E-05 0.000228897 0.00032871 0.000480218 0.000555818 0.0006557818 0.000853722 0.000817228 0.000848278 0.001406224 0.00183992 0.001805583 0.00190476 0.001904899 0.002003717 0.001904899 0.002003717 0.001938982 0.002101991 0.00208879 0.002233839 0.002239803 0.002239803 0.002239803 0.002239803 0.002238904 0.002238890 0.002238890 0.002238890 0.002238890 0.002238904 0.002238890 0.00223890 0.002238890 0.0022890 0.0022890 0.0022890 0.0022890 0.002890 0.002890 0.002890 0.002890 0.002890 0.002890 0.002890 0.00289	cc 1.65 6.48 9.25 13.88 15.73 16.51 22.22 23.14 28.85 39.88 46.44 51.13 53.94 54.87 53.93 55.94 54.87 53.93 55.94 54.85 65.83 63.25 63.25 63.25 65.10	without lost gas 0.17 0.80 0.85 1.28 1.45 1.71 2.05 2.13 2.48 3.86 4.22 4.72 4.97 5.06 4.97 5.23 5.08 5.49 5.40 5.83 6.80	with lost gas 2.20 2.83 2.88 3.31 3.44 3.74 4.02 4.18 4.55 5.71 8.31 8.74 7.00 7.02 7.02 7.02 7.04 7.06 7.06 7.86 7.86 8.80 8.00 8.00	1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/9/04 1/	19:48 19:58 20:03 20:20 20:27 20:40 20:49 20:59 40:02 4:50 4:50 4:50 4:50 4:50 5:53 19:44 4:02 5:13:07 11:47 11:50 11:47 11:29 11:47 11:55 11:08	TIME SINCE off bottom 0:26:13 0:36:13 0:41:13 0:54:43 0:58:43 1:05:13 1:18:43 1:27:13 1:37:13 4:40:13 9:26:13 12:41:13 16:07:13 20:31:13 24:22:13 29:03:13 41:45:13 45:58:13 73:50:13 112:25:13 18:28:13	at surface 0:13:00 0:23:00 0:28:00 0:41:30 0:45:30 0:52:00 1:05:30 1:14:00 4:27:00 9:15:00 12:28:00 15:54:00 24:09:00 28:50:00 41:32:00 45:43:00 73:37:00 65:48:00 112:12:00 158:15:00 158:15:00 158:15:00 158:15:00	in canister 0:05:45 0:15:45 0:20:45 0:34:15 0:38:15 0:44:45 0:58:15 1:10:45 1:10:45 1:10:45 20:10:45 22:10:45 41:24:45 41:24:45 45:35:45 73:29:45 11:204:45 138:07:45 138:07:45 149:42:45 149:44 149:	0.584047182 SCRT (hr SQRT hra. (since of bottom) 0.861017734 0.776924135 estimate 0.828821117 0.954957823 0.98924775 1.042568278 1.145401434 1.205957956 1.272901323 2.161082548 3.077381643 3.551873727 4.015008573 4.529931322 4.936826153 5.390140175 8.481703422 8.777679872 8.592842829 9.2747171736 10.60284291 11.68204938 12.65122983 13.55496014 14.41134777
uned oc measure 5 3 5 2 3 4 1 4 14 7 5 3 1 -1 0 3 -2 5 -1 2 3 0 2 0 WISTERED 01/2	red T (F) m 78 78 78 78 78 78 78 76 75 75 75 75 75 75 75 75 75	1080 1080 1081 1081 1081 1081 1081 1081	cubic ft 7E-05 0.0002 0.0001 0.0002 7E-05 0.0001 0.0001 0.0001 0.0001 0.0002 0.0002 0.0002 0.0001 4E-05 0.0001 -7E-05 0.0002 0.0001 7E-05 0.0001 7E-05 0.0001	absolute T (F) 538 538 538 538 538 538 538 538 538 538	pain 14.018 14.018 14.018 14.018 14.018 14.018 14.031 14.031 14.031 14.031 14.031 14.031 14.031 14.031 14.031 14.031 14.031 14.090 14.181 14.1	cubic # (@STP)	co (@STP) 1.85027132 4.82587630 2.77540898 4.82998134 1.85198453 2.77797680 3.70398907 0.92599227 3.71089238 13.02 6.56 4.69 2.81 0.93 -0.94 1.82 4.87 -0.94 1.88 2.79 0.00 1.85 0.00	cubic ft 6.5342E-05 0.00228897 0.00032871 0.0004890218 0.000555818 0.000555818 0.000555818 0.000817228 0.000817228 0.000817228 0.00180928 0.00190476 0.001904899 0.001904899 0.001904899 0.001904899 0.001904899 0.00203717 0.001938982 0.002101991 0.00208879 0.002233839 0.002239839 0.002239839 0.002239839 0.002239839 0.002299043 0.002299043	cc 1.65 6.48 9.25 6.48, 9.25 13.88 15.73 16.51 22.22 23.14 28.85 39.88 46.44 51.13 53.94 54.87 53.93 53.93 55.74 54.85 59.52 58.58 60.48 63.25 63.25 65.10 65.10	without lost gas 0.17 0.80 0.85 1.28 1.45 1.71 2.05 2.13 2.48 3.86 4.22 4.72 4.97 5.06 4.97 5.23 5.08 5.49 5.40 5.83 6.80	with lost gas 2.20 2.83 2.86 3.31 3.44 3.74 4.08 4.16 4.57 5.71 6.31 6.77 7.00 7.06 7.06 7.55 7.44 7.66 7.86 8.03 6.05	1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/8/04 1/9/04 1/	19:48 19:58 20:03 20:20 20:27 20:40 20:49 20:59 40:02 4:50 4:50 4:50 4:50 4:50 5:53 19:44 4:02 5:13:07 11:47 11:50 11:47 11:29 11:47 11:55 11:08	TIME SINCE off bottom	at surface 0:13:00 0:28:00 0:28:00 0:41:30 0:45:30 0:52:00 1:05:30 1:14:00 1:24:00 1:24:00 20:18:00 24:09:00 24:09:00 45:43:00 45:43:00 112:12:00 15:54:00 112:12:00 18:15:50:00 18:33:100 207:28:00	in canister 0:05:45 0:15:45 0:20:45 0:34:15 0:34:15 0:34:15 0:34:15 0:55:15 1:00:45 1:18:45 4:19:45 12:20:45 15:46:45 20:10:45 24:01:45 45:35:45 45:35:45 112:04:45 138:07:45 138:23:45 138:23:45 138:23:45 138:23:45	0.584047182 SORT (mr SQRT hra. (since off bottom) 0.861017734 0.779924135 setimate 0.82821117 0.954957823 0.98924775 1.042586278 1.145401434 1.205857958 1.272901323 2.161082548 3.077381843 3.561873727 4.015008573 4.529931322 4.936826153 5.390140175 6.461703422 8.777679872 8.582942629 9.274711736 10.60284291 11.66204938 12.65122683 13.55498014 14.41134777

									Min di Indiana	24 1-1	-	NE OF MEACH	or all ballana	at surface	in canister	SQRT hrs. (since off bottom)
				absolute T (F) pela	cubic ft (@STP) oc (@STP) 0.00033097	9.37	o.00033097	9.37	without lost gas 0.09		.99	1/9/04 12	RE off bottom 39 2:32:00		0:10:00	1.591844852
10	7 4 7 4	1090	0.0004 7E-05	534 14.146 534 14.146			0.00033087	11.25	0.00		.01	1/9/04 12			0:14:00	1.61245155
2	73	1090	0.0001	533 14.146		3.76	0.0005298	15.00	0.15		.05	1/9/04 12			0:22:00	1.853279569
9	73	1090	7E-05	533 14.148			0.000598118	16.68	0.17		.06	1/9/04 12			0:26:00	1.673320053
9	74	1089	0.0003			8.43	0.000693718	25.31	0.25	2.	.15	1/9/04 13	11 3:04:00	1:31:00	0:42:00	1.751190072
1	74	1089	4E-05	534 14.135		0.94	0.000926765	26.24	0.26		.18	1/9/04 13			0:48:00	1.770122408
3	74	1089	0.0001	534 14.135	9.91999E-05	2.81	0.001025984	29.05	0.29		.18		19 3:12:00		0:50:00	1.788854382
8	75	1090	0.0003	535 14.148	0.000284281	7.48	0.001290265	36.54	0.36		.28	1/9/04 13			1:09:00	1.875277757
3	75	1089	0.0001	535 14.135		2.60	0.00138928	39.34	0.39		.29	1/9/04 13			1:17:00 1:23:00	1.910497317
2	75	1089	7E-05	535 14.135			0.001455289	41.21 44.95	0.41		.31	1/9/04 13		2:12:00	1:38:00	1.991849233
4	75	1089	0.0001	535 14.135 535 14.135			0.001587309 0.001983387	58.16	0.58		.45	1/9/04 14			2:15:00	2.148642983
12	75 75	1089	0.0004	535 14.135			0.002348419	88.44	0.66		.55	1/9/04 15			2:55:00	2.298550268
6	75	1089	0.0002	535 14.135			0.002544448	72.05	0.71	2.	.61	1/9/04 15	58 5:49:00		3:27:00	2.411776662
12	75	1090	0.0004	535 14.148		11.23	0.00294067	83.28	0.62		.72	1/9/04 16			4:26:00	2.607680962
21	75	1091	0.0007		0.000894374		0.003635244	102.94	1.02		.92	1/9/04 19			7:16:00 11:57:00	3.103761159 3.76373713
26	73	1091	0.0009	533 14.181			0.004498171	127.37 153.57	1.26		.16	1/10/04 0			17:29:00	4.455333882
28	75	1090	0.001	535 14.148 534 14.109			0.005423154	184.41	1.62		.72	1/10/04 13			24:39:00	5.197755926
33 10	7 4 7 0	1087	0.0004	530 14.161			0.006848123	193.86	1.92		.61	1/10/04 17			28:49:00	5.584203912
78	74	1067	0.0028	534 14.109			0.009420582	266.76	2.64		.53	1/11/04 21	12 59:05:00		58:43:00	7.686568372
23	72	1093	0.0008	532 14.187	0.000766195		0.010188778	268.48	2.85		.75	1/12/04 9			68:54:00	8.441958698
37	80	1092	0.0013	540 14.174			0.011399982	322.61	3.19		.09	1/12/04 17			78:51:00 95:18:00	8.900374524 9.88264472
17	76	1096	0.0008	536 14.226			0.011983617	338.77	3.35		.25	1/13/04 11			119:22:00	11.03328298
40	75	1085	0.0014	535 14.083 535 14.135		37.25 23.38	0.01327898	378.02 399.38	3.72		.85	1/15/04 11			142:58:00	12.05404498
25 35	75 75	1079	0.0009	535 14.135			0.015248841	431.79	4.27		.17	1/16/04 11			166:37:00	12.99935898
26	75	1077	0.0009	535 13.979			0.016097311	455.82	4.51	6.	.40	1/17/04 11	05 192:58:00		190:36:00	13.89124424
24	75	1087	0.0008	535 14.109	0.000790881	22.39	0.016887971	476.21	4.73		.62	1/18/04 10			213:35:00	14.69523732
28	73	1090	0.001	533 14.148			0.017818428	504.50	4.99	-	.88	1/19/04 18			246:21:00	15.77075352 18.37884815
20	7.4	1089	0.0007	534 14.135			0.018477758	523.23 540.12	5.17 5.34		.07	1/20/04 14			265:54:00 285:47:00	16.97498159
18	73 76	1089	0.0008	533 14.135 538 14.213			0.019074074	557.94	5.51		.41	1/22/04 11			311:13:00	17.70828431
19	75	1077		535 13.979			0.020943807	593.08	5.88		.78	1/23/04 12			338:13:00	18.40083405
22	75	1076	8000.0	535 13.992			0.021882578	613.41	6.06	7.	.98	1/24/04 17			364:58:00	19.18594202
24	76	1089	0.0008	538 13.875		21.90	0.02243581	835.31	6.28		.18	1/25/04 18			387:46:00	19.75263695
7	75	1078	0.0002	535 13.992		6.48	0.022884511	841.79	6.34		.24	1/26/04 15			410:52:00 429:28:00	20.32814141 20.77979788
3	75	1090	0.0001	535 14.148				644.59 723.74	6.37 7.15		.05	1/27/04 9 2/2/04 15			579:22:00	24.11914889
85	75 75	1085	0.003	535 14.083 535 14.181			0.025556721	804.26	7.15		.85	2/9/04 10			742:14:00	27.26735971
86	75	1091	0.0029	535 14.181			0.031148778	881.98	8.72			2/16/04 14			914:07:00	30.27347574
65		1086	0.0023	534 14.096		80.89	0.033290188	942.67	9.32		.21	2/23/04 14	45 1084:38:00		1082:16:00	32.93377193
58	75	1091	0.002	535 14.161			0.035207963	998.96	9.85		.75	3/2/04 10			1270:28:00	35.67632268
52	75	1088	0.0018	535 14.122			0.036922657	1045.53	10.33		.23	3/8/04 10			1413:53:00 1563:25:00	37.63309714 39.62169515
53	74	1081	0.0019	534 14.031			0.038682314	1094.79	10.82 11.15		.72	3/15/04 11 3/22/04 10			1749:47:00	41.85889085
35 54	75 75	1097	0.0012	535 14.239 535 14.122			0.041808592	1178 18	11.64		.54	3/30/04 20			1952:16:00	44.21123537
54	75	1080	0.0018	535 14.018			0.043308658	1226.36	12.12		.02	4/6/04 14			2114:24:00	48.00833258
31	75	1086	0.0011	535 14.098	0.001020331	28.89	0.044328989	1255.25	12.41	14.	.30	4/12/04 15			2258:41:00	47.55049947
26	68	1088	0.001	526 14.122			0.045284518	1261.74	12.67		.57	4/19/04 14			2426:11:00	49.28032062
44	76	1090	0.0018	536 14.148			0.046715349	1322.83	13.07		.97	4/28/04 11			2591:13:00 2787:37:00	50.92723567 52.63063113
47	76	1083		536 14.057 537 14.031			0.048255151	1366.43	13.51 13.88		.76	5/3/04 20			2929:41:00	54.14840718
41	77 78	1081	0.0014	538 14.044			0.050838918	1433.87	14.17		.07	5/17/04 9			3093:23:00	55.83948441
32	74	1075	0.0011	534 13.953			0.051818184	1481.80	14.45	16.	.34	5/24/04 10			3262:10:00	57.13609484
36		1077	0.0013	537 13.979			0.052851907	1496.59	14.79		.69	6/1/04 11			3454:32:00	58.79540798
34	78	1076	0.0012	536 13.986			0.053954492	1527.82	15.10		.00	8/14/04 10			3598:14:00 3788:28:00	60.00499979 61.3906245
23		1078	0.0008	535 13.992			0.054705935	1549.09	15.31 15.67		.21	8/14/04 10			3988:07:00	83.17027254
39		1082 1082	0.0014	537 14.044 537 14.044			0.055980086	1613.85	15.95		.85	7/1/04 14			4177:32:00	84.65214814
31		1082	0.0011	539 14.044			0.057989351	1841.50	18.22		.12	7/7/04 10			4318:13:00	85.73114432
30		1082		539 14.044		27.65	0.05894583	1669.15	16.50		.40	7/13/04 14	29 4468:22:00	4488:49:00	4468:00:00	66.84584255
2	73	1060	7E-05	533 14.016		1.68	0.05901154	1671.01	16.52		3.41	7/19/04 11			4608:59:00	
25		1091	0.0009	539 14.161			0.059832041	1694.25	18.75		3.64		29 4776:22:00		4774:00:00 4946:20:00	
39		1079	0.0014	540 14.005		35.78	0.0610956	1730.03 1748.71	17.10 17.28		1.00	6/2/04 14 6/9/04 14			5113:43:00	71.5288015
18		1086	0.0008	538 14.098 538 14.122			0.061664747	1750.43	17.28		20		12 5281:05:00		5278:43:00	
25	7 8 7 5		0.0009	535 13.968		23.09	0.08283118	1773.51	17.53		.43		19 5452:12:00	5450:39:00	5449:50:00	73.83901408
25	73	1087	-4E-05	533 14.109		-0.94	0.082598112	1772.57	17.52		.42	8/30/04 16	57 5822:50:00	5821:17:00	5820:28:00	
34	75	1087	0.0012	535 14.109	0.001120103		0.083718215	1804.29	17.83		7.73	9/7/04 16			5811:48:00	
33		1073	0.0012	537 13.927			0.084787374	1834.57	18.13		0.03	9/14/04 18			5982:20:00 8148:25:00	77.36084281 76.4269299
-2		1084	-7E-05	537 14.070			0.084721912	1832.71	18.11 18.22		0.01	9/21/04 16			6320:46:00	79.5181321
11		1089	0.0004	535 14.135 536 14.063			0.085084985 0.085774232	1882.51	18.22).31		24 8552:17:00		6549:55:00	
12		1085		532 14.005			0.088188888	1873.69	18.52				22 6620:15:00	6816:42:00	6617:53:00	82.5848049
12			0.0004		0.000394967		0.088583833	1684.87	16.63	20		10/27/04 14			7009:41:00	83.73798421

				canister MER 1												
ISTERED 11/2		ole dried 14	days in air													
10	73		0.0004		0.000329768	9.34	0.084497832	2392.70	23.65	25.55	11/21/05	13:59	16371:52:00	16370:19:00	16389:30:00	127.9525954
-3	74		-0.0001	534 14.109	-9.90177E-05		0.084187887	2383.36	23.56	25.45	11/10/05	17:39	16111:32:00	16109:59:00	16109:10:00	128.931215
16	77	1084	0.0008		0.000523895		0.084288884	2388.16	23.58	25.48	11/6/05		18021:21:00	18019:48:00	16018:59:00	126.5754716
36	78		0.0013		0.001168528		0.08374319	2371.33	23.44	25.34	10/20/05		15604:38:00	15803:05:00	15802:18:00	124.9165068
-15	85		-0.0005		-0.000504502		0.082574862	2338.25	23.11	25.01	10/13/05		15438:46:00	15435:13:00	15434:24:00	124.2447853
11	75 75	1079	-7E-05	535 14.005	-8.80702E-05		0.083079184	2352.53	23.25	25.15	9/29/05		15100:12:00	15098:39:00	15097:50:00	122.8828711
7	74	1082 1079	0.0002	534 14.044 535 14.005	0.000229979		0.082785515	2354.40	23.17	25.07	9/22/05		14934:01:00	14932:28:00	14931:39:00	122.2048144
9	75	1084	0.0003	535 14.070	0.00029588		0.082555538	2344.22	23.17	25.07	9/15/05		14784:40:00	14783:07:00	14762:18:00	121.5099447
3	75	1086	0.0001	535 14.098	9.87417E-05			2329.33	23.11	25.00	9/8/05		14597:35:00	14598:02:00	14595:13:00	120.8204591
2	75	1079	7E-05	535 14.005	8.54035E-05		0.082181115	2328.53 2329.33	23.00 23.02	24.89	9/1/05		14429:30:00	14427:57:00	14427:08:00	120.1228538
13	75		0.0005	535 13.940	0.000423153		0.082095712	2324.88	22.98	24.87	8/16/05 8/26/05		14284:03:00	14282:30:00	14281:41:00	119.5158985
12	75	1079	0.0004	535 14.005	0.000392421		0.081672559	2312.70	22.86	24.76		15:25	13925:18:00	13923:45:00	14091:48:00	118.7188556
10	76	1085	0.0004	536 14.083	0.000328222		0.081280138	2301.59	22.75	24.65	8/4/05		13757:37:00	13758:04:00	13755:15:00 13922:56:00	118.0055083
2	75	1087	7E-05	535 14.109	6.58884E-05		0.080951916	2292.29	22.86	24.55		14:27	13588:20:00			117.2928871
9	75	1085	0.0003		0.000295952		0.080888027	2290.43	22.84	24.54	7/22/05		13440:09:00	13438:38:00	13437:47:00 13585:58:00	116.5690067
16	75		0.0006	535 14.031	0.000524198		0.080590075	2282.05	22.58	24.45	7/14/05		13251:58:00	13250:23:00	13249:34:00	115.1170419 115.9318609
4	75	1085	0.0001	535 14.083	0.000131534		0.080085878	2287.20	22.41	24.31	7/7/05		13081:30:00	13079:57:00	13079:08:00	114.3743852
12	75	1081	0.0004	535 14.031	0.000393148		0.079934343	2263.48	22.37	24.27	7/1/05		12941:16:00	12939:43:00	12938:54:00	113.7598882
7	75	1084	0.0002	535 14.070	0.000229973		0.079541195	2252.35	22.26	24.16	8/23/05		12744:25:00	12742:52:00	12742:03:00	112.8911718
2	73	1081	7E-05	533 14.031	8.57708E-05	1.88	0.079311222	2245.84	22.20	24.10	8/16/05		12575:47:00	12574:14:00	12573:25:00	112.1418001
13	76		0.0005	538 13.986	0.00042315		0.079245451	2243.97	22.18	24.08	8/10/05		12443:18:00	12441:45:00	12440:58:00	111.5495406
12	74	1077	0.0004	534 13.979	0.000392427		0.078822302	2231.99	22.06	23.96		14:13	12244:08:00	12242:33:00	12241:44:00	110.6530814
6	73	1085	0.0003	533 14.083	0.000284058	7.48	0.078429875	2220.88	21.95	23.85	5/26/05		12077:31:00	12075:58:00	12075:09:00	109.8977555
2	72	1081	7E-05	532 14.031	8.58942E-05	1.67	0.078185819	2213.40	21.88	23.77	5/20/05	11:49	11929:42:00	11928:09:00	11927:20:00	109.223166
19	77		0.0007		0.000819593		0.078099925	2211.54	21.88	23.78	5/12/05	11:35	11737:28:00	11735:55:00	11735:08:00	108.3395896
15	76	1087	0.0005				0.077480332	2193.99	21.89	23.58	5/5/05	21:32	11579:25:00	11577:52:00	11577:03:00	107.807898
-5	75		-0.0002	535 14.018	-0.00018386		0.078987091	2180.02	21.55	23.44	4/28/05	14:41	11404:34:00	11403:01:00	11402:12:00	106.7921858
25	78	1072	0.0009		0.000810724		0.077150751	2184.88	21.59	23.49	4/21/05		11239:11:00	11237:38:00	11238:49:00	108.0150147
-2	75	1091	-7E-05	535 14.161	-8.81309E-05		0.078340027	2181.70	21.37	23.28		10:18	11088:11:00	11088:38:00	11085:49:00	105.3004432
15	75	1080	0.0005	535 14.018			0.078408158	2183.57	21.38	23.28	4/8/05		10924:30:00	10922:57:00	10922:08:00	104.520333
10	75	1084	0.0004		0.000328533		0.075915177	2149.67	21.25	23.14	4/2/05		10781:04:00	10779:31:00	10778:42:00	103.8319155
12	75	1081	0.0004	535 14.031	0.000309311		0.075588844	2140.37	21.18	23.05	3/23/05		10538:18:00	10538:43:00	10535:54:00	102.6580601
11	75	1075	0.0004	535 13.901	0.0003389511		0.075588844	2140.37	21.18	23.05		10:38	10418:31:00	10414:58:00	10414:09:00	102.0813378
17	75 75		0.0006		0.000358388		0.075197133	2129.34	21.05	22.94	3/10/05		10227:52:00	10226:19:00	10225:30:00	101.1329158
16	77	1087 1080	0.0006		0.000525144		0.074282302	2119.19	20.79	22.84	3/3/05		10060:08:00	10058:35:00	10057:48:00	100,300218
11	75	1089	0.0004		0.000383053 0.000525144		0.074282302	2103.43	20.79	22.89	2/24/05		9893:14:00	9891:41:00	9890:52:00	99.48473412
15	75	1093	0.0005		0.000496691		0.073394105	2078.28	20.84	22.44	2/17/05		9723:54:00	9722:21:00	9721:32:00	98.60983724
13	75	1093	0.0005	535 14.187	0.000430839		0.072897215	2064.21 2078.28	20.40 20.54	22.30 22.44	2/10/05		9558:54:00	9555:21:00	9554:32:00	97.75939853
-1	75	1094	-4E-05	535 14.200	-3.31564E-05		0.072488576	2052.02	20.28	22.18	1/27/05		9389:20:00	9387:47:00	9388:58:00	96.8985724
26	76	1078	0.0009		0.000847872		0.072499732	2052.98	20.29	22.19		15:11	9053:04:00 9222:12:00	9220:39:00	9219:50:00	98.03228824
19	75	1081	0.0007		0.000822485		0.07185188	2028.95	20.05	21.95	1/10/05		8811:58:00	8810:25:00 9051:31:00	9050:42:00	95.14780463
35	76	1085	0.0012		0.001148778		0.071029375	2011.32	19.88	21.78	12/31/04		8575:58:00	8574:25:00	8573:36:00 8809:36:00	93.87207808
-1	72	1100	-4E-05	532 14.278	-3.35262E-05		0.089880597	1978.79	19.56	21.46	12/23/04		8378:02:00	8378:29:00		92.60651525
26	75	1090	0.0009		0.000858913		0.089914123	1979.74	19.57	21.47	12/15/04		8191:31:00	8189:58:00	8189:09:00 8375:40:00	91.53159746
23	75	1081	0.0008		0.000753534		0.06905521	1955.42	19.33	21.22	12/3/04		7901:57:00	7900:24:00	7899:35:00	88.8929131 90.50899789
46	75	1080	0.0016		0.001505874		0.088301678	1934.08	19.12		11/24/04		7680:55:00	7679:22:00	7678:33:00	87.64083903
2	75	1095	7E-05	535 14.213			0.066798002	1891.44	18.69		11/12/04		7398:29:00	7398:58:00	7396:07:00	88.01443877

SPANE LL	1400.0 10 14	101.0	WOOD CO.	g could con	D 111 GG1110101 141	_,,,		_											the state of all the state of the second and second and second as a second as
		lbs.		grams				lba.		grams	moisture %		est. lost gas (cc) =		TIME OF:			elapsed time (off bottom to canistering)
dry sample we	inht		2.442	1107.53		wet sa	mple weight:		2.477	1123.35	1.41%		4	80		off bottom	at surface	in canister	138.0 minutes
diy danipio no	-gra-															1/9/04 10:07	1/9/04 11:4	0 1/9/04 12	:25 2.300 hours
RIGILAB MEAS	HEEMENTS			CONVER	SION OF RIGILA	BMEAS	UREMENTS TO ST	P (980 deg F: 14	(.7 pei)	CUMULATIVE V	OLUMES (OSTP	SCF/TON	SCF/TON			TIME SINCE			1.516575089 SQRT (hrs)
measured oc		(F) measu	medi P		absolute T (F)		cubic ft (@STP)			cubic ft	CC	without lost gas	with lost gas	TIME OF ME	ASURE	off bottom	at surface	in canister	SQRT hre. (since off bottom)
19		75	1091			14.18			17.79	0.000828243	17,79	0.51	14	40 1/9/04	12:31	2:24:00	0:51:0	0:08	:00 1.549193338
8		75	1091				1 0.000198393			0.000828836		0.68	14	58 1/9/04	12:34	2:27:00	0:54:0	0:09	:00 1.585247584
4		74	1090			14.14				0.000959024		0.79	14	67 1/9/04	12:38	2:29:00	0:58:0	0:11	:00 1.575859554
15		74	1090			14.14				0.001455478		1.19	15	08 1/9/04	12:44	2:37:00	1:04:0	0:19	:00 1.817811408
5		73	1090			14.14	8 0.000185795		4.69	0.001621274	45.91	1.33	15	21 1/9/04	12:48	2:41:00	1:08:0	0:23	:00 1.638088317
18		73	1090			14.14			16.90	0.002218137	62.81	1.82	15	70 1/9/04	13:01	2:54:00	1:21:0	0:36	:00 1.702938837
7		74	1090			14.14	8 0.000231879		6.56	0.002449816	89.37	2.01	15	89 1/9/04	13:07	3:00:00	1:27:0	0:42	:00 1.732050808
A		74	1090			14.14	8 0.000132388		3.75	0.002582204	73.12	2.12	16	.00 1/9/04	13:10	3:03:00	1:30:0	0:45	:00 1.74842492
18		74	1089			14.13			16.85	0.003177403	89.97	2.80	16	49 1/9/04	13:25	3:18:00	1:45:0	1:00	:00 1.816590212
3		75	1090			14.14	8 9.91054E-05		2.61	0.003278509	92.78	2.88	16	57 1/9/04	13:29	3:22:00	1:49:0	0 1:04	:00 1.834847859
9		75	1090			14.14	8 0.000297316		8.42	0.003573825	101,20	2.93	18	81 1/9/04	13:36	3:29:00	1:58:0	0 1:11	1.866389024
18		75	1089			14.13	5 0.000594087		16.82	0.004187912	118.02	3.41	17	30 1/9/04	13:54	3:47:00	2:14:0	0 1:29	:00 1.945079281
7		75	1089			14.13	5 0.000231034		8.54	0.004398945	124.58	3.60	17	49 1/9/04	14:04	3:57:00	2:24:0	0 1:39	:00 1.987460691
29		75	1089			14.13	5 0.00095714		27.10	0.005358085	151.67	4.39	18	27 1/9/04	14:45	4:38:00	3:05:0	0 2:20	:00 2.152517905
22		75	1089			14.13			20.58	0.006082191	172.23	4.98	18	.87 1/9/04	15:23	5:18:00	3:43:0	0 2:58	:00 2.29492193
21		75	1069			14.13	5 0.000893101		19.63	0.008775292	191.65	5.55	19	43 1/9/04	15:57	5:50:00	4:17:0	0 3:32	
24		75	1000			14 14	8 0 000792843		22.45	0.007588135	214.30	6.20	20	.08 1/9/04	18:55	6:48:00	5:15:0	0 4:30	:00 2.807880982

50	75	1091	0.0018	535	14.181	0.001853272	48.82	0.009221408	281.12	7.55	21.44	1/9/04 19:4	8 9:39:00	8:08:00	7:21:00	3.108444913
57	73	1091	0.002		14.181	0.001891802		0.011113208	314.89	9.10	22.99	1/10/04 0:2		12:47:00	12:02:00	3.785938897
72	75	1090	0.0025	535	14.148	0.002378529		0.013491737	382.04	11.05	24.94	1/10/04 5:5		18:19:00	17:34:00	4.457203907
78	74	1087	0.0028		14.109	0.00257448		0.018088197	454.94	13.18	27.04	1/10/04 13:0		25:28:00	24:43:00	5.197755926 5.585898018
1.1	70	1091	0.0004		14.161	0.000387151		0.018433348	485.34	13.48 18.03	27.35 31.91	1/10/04 17:1		29:39:00 57:33:00	28:54:00 58:48:00	7.887852438
169	74	1087	0.006		14.109	0.005577998		0.022011344	823.29 854.42	18.93	32.81	1/12/04 9:2		89:44:00	88:59:00	8.442945773
33	72	1093	0.0012		14.174	0.001099324		0.025835443	725.91	21.00	34.88	1/12/04 17:2		77:41:00	78:58:00	8.901310785
77	80 76		0.0027		14.228	0.002324778		0.028829023	759.71	21.98	35.88	1/13/04 11:4		98:08:00	95:23:00	9.883487913
36 82	75		0.0029		14.083	0.002898454		0.029525477	838.07	24.18	38.07	1/14/04 11:5	2 121:45:00	120:12:00	119:27:00	11.03403825
48	75		0.0017		14.135	0.001584231		0.031109708	880.93	25.48	39.37	1/15/04 11:2	8 145:19:00	143:48:00	143:01:00	12.05473828
61	75		0.0022		14.005	0.001994808	58.49	0.033104514	937.41	27.12	41.00	1/16/04 11:0	7 189:00:00	187:27:00	188:42:00	13
55	75		0.0019	535	13.979	0.001795282	50.84	0.034899778	988.25	28.59	42.47	1/17/04 11:0		191:28:00	190:41:00	13.89184413
23	75	1087	0.0008	535	14.109	0.000757717		0.035857493	1009.70	29.21	43.09	1/18/04 10:0		214:25:00	213:40:00	14.89580439
41	73		0.0014		14.148			0.037017015	1048.20	30.32	44.21	1/19/04 18:5		247:11:00	248:28:00	15.77128192 18.37988569
32	74		0.0011		14.135	0.001058132		0.038075147	1078.18	31.19	45.07	1/20/04 14:2		288:45:00 288:37:00	285:52:00	18.9754725
24	73	1089	0.0008		14.135	0.000795088		0.038870235	1100.88	31.84 32.57	45.72 48.48	1/21/04 10:1		312:03:00	311:18:00	17.7087549
27	78	1095	0.001			0.000894388		0.041755712	1182.39	34.20	48.09	1/23/04 12:4		337:02:00	338:17:00	18.40083405
61	75 75	1077	0.0022		13.979 13.992	0.001991109 0.001178172		0.041733712	1215.89	35.17	49.05	1/24/04 17:2		385:48:00	385:03:00	19.18837881
36	78		0.0013		13.875	0.001178772		0.044188388	1251.27	38.19	50.08	1/25/04 18:1		388:38:00	387:53:00	19.75305883
39	75	1078	0.0002		13.992	0.0002287		0.044417088	1257.75	38.38	50.27	1/26/04 15:2	2 413:15:00	411:42:00	410:57:00	20.32855135
-1	75	1091	-4E-05	535	14.181	-3.30654E-05		0.04438402	1258.81	38.38	50.24	1/27/04 9:5	8 431:49:00	430:18:00	429:31:00	20.78019891
118	73	1085	0.0041	533	14.083	0.003828809	108.42	0.048212829	1385.23	39.49	53.38	2/2/04 15:5		580:12:00	579:27:00	24.11949419
131	74	1091	0.0046	534	14.161	0.004339683	122.89	0.052552512	1488.12	43.05	58.93	2/9/04 10:4		743:04:00	742:19:00	27.2878851
122	75	1091	0.0043		14.181	0.004033982		0.058588495	1802.35	48.35	80.24	2/18/04 14:3		914:57:00	914:12:00	30.27375101
114	75	1086	0.004		14.098	0.003752184		0.080338879	1708.59	49.42	83.31	2/23/04 14:4		1083:08:00	1082:21:00 1270:30:00	32.93402498 35.87832288
95	75	1091	0.0034		14.181	0.003141218		0.083479894	1797.54	52.00	85.88 88.47	3/2/04 10:5		1271:15:00 1414:44:00	1413:59:00	37,83354001
96	75	1088	0.0034		14.122	0.003185553		0.088645447	1887.18 1988.97	54.59 58.98	70.84	3/15/04 11:5		1584:15:00	1583:30:00	39.82210441
88	74	1081	0.0031		14.031	0.002888488		0.071223229	2018.81	58.34	72.22	3/22/04 10:1		1750:37:00	1749:52:00	41.85888994
51	77 74	1088	0.0018		14.122	0.002842901		0.07388813	2091.85	80.50	74.39	3/30/04 20:4		1953:08:00	1952:21:00	44.21142386
87	75	1080	0.0031		14.018	0.002847888		0.078713818	2172.29	82.84	78.72	4/8/04 14:5	3 2118:48:00	2115:13:00	2114:28:00	48.00833258
33	74	1088	0.0012		14.098	0.001088192		0.077802011	2203.10	83.73	77.81	4/12/04 15:1	0 2281:03:00	2259:30:00	2258:45:00	47.55049947
84	77	1088	0.0023	537	14.122	0.002102509	59.54	0.079904519	2282.84	85.45	79.34	4/19/04 14:4		2427:01:00	2428:18:00	49.28048972
40	78	1090	0.0014	536	14.148	0.00131894		0.081223459	2299.98	88.53	80.42	4/28/04 11:4		2592:02:00	2591:17:00	50.92723587
54	74	1083	0.0019		14.057	0.00177578		0.082999218	2350.27	87.99	81.87	5/3/04 20:0		2788:28:00	2787:43:00	52.8309478 54.14858108
55	78	1081	0.0019		14.031	0.001798588		0.084797788	2401.20	89.48	83.34	5/10/04 14:1 5/17/04 9:5		2930:31:00	3093:27:00	55.83948441
24	75	1082	0.0008		14.044	0.000787024		0.08558481	2423.48 2485.87	70.10 71.91	83.99 85.79	5/24/04 10:3		3202:59:00	3282:14:00	57.13809484
88	78	1075	0.0024		13.953	0.002203121		0.088787185	2513.80	72.71	88.59	6/1/04 11:0		3455:23:00	3454:38:00	58.79589145
30 37	75 76		0.0011		13.988	0.000878234		0.089971514	2547.70	73.70	87.58	6/7/04 10:4		3599:04:00	3598:19:00	80.00513867
45	79		0.0016		13.992	0.001459304		0.091430818	2589.02	74.89	88.78	8/14/04 10:5	8 3788:51:00	3787:18:00	3788:33:00	81.39098025
12	78	1082	0.0004	538	14.044	0.000392778		0.091823595	2800.14	75.21	89.10	6/23/04 18:3	8 3990:29:00	3988:58:00	3988:11:00	83.17027254
25	77	1082	0.0009	537	14.044	0.000818763		0.092840359	2823.27	75.88	89.77	7/1/04 14:0		4178:24:00	4177:39:00	84.85253282
28	78	1082	0.0009	538	14.044	0.000847855		0.093488214	2847.28	78.58	90.48	7/7/04 10:4		4319:03:00	4318:18:00	85.7312711
25	79	1082	0.0009		14.044	0.000813733	==:-	0.094301948	2870.32	77.24	91.13	7/13/04 14:2		4488:49:00 4807:49:00	4488:04:00 4607:04:00	88.84584255 87.8923187
18	75	1080	0.0006		14.018	0.000589177		0.094891123	2887.01	77.73	91.81	7/19/04 11:2		4774:49:00	4774:04:00	89.11128295
-1	78	1091	-4E-05		14.181	-3.30037E-05		0.094858119	2888.07 2722.05	77.70 78.74	91.58 92.82	7/28/04 10:2 8/2/04 14:5		4947:10:00	4948:25:00	70.34711555
39	77 78	1079	0.0014		14.005 14.098	0.001270818		0.09839058	2729.47	78.95	92.84	8/9/04 14:1		5114:32:00	5113:47:00	71.5288015
5	78	1088	0.0003		14.122	0.00020184585		0.098555145	2734.13	79.09	92.97	8/18/04 11:1		5279:33:00	5278:48:00	72.87117723
30	75	1076	0.0011		13.988	0.000978325	27.70	0.09753347	2781.83	79.89	93.78	8/23/04 14:4	0 5452:33:00	5451:00:00	5450:15:00	73.84138406
12	78	1087	0.0004		14.109	0.000394593	11.17	0.097928082	2773.00	80.21	94.10	8/30/04 18:5	8 5822:51:00	5821:18:00	5820:33:00	74.9858853
4	75	1087	0.0001	535	14.109	0.000131777	3.73	0.098059839	2778.73	80.32	94.21	9/7/04 18:1		5812:38:00	5811:51:00	78.25057377
39	78	1073	0.0014		13.927	0.00128591		0.099325749	2812.58	81.38	95.24	9/14/04 18:5		5983:11:00	5982:28:00	77.38105825
8	76		-0.0002		14.070	-0.000198752		0.099128997	2807.01	81.20	95.08	9/21/04 18:5		8149:15:00 8321:38:00	8148:30:00 8320:53:00	78.42703815 79.5184485
-7	75	1089	-0.0002		14.135	-0.000231034		0.098897983	2800.47	81.01	94.89	9/28/04 21:1		6550:45:00	8550:00:00	80.94827848
19	75	1085	0.0007		14.083	0.000824788		0.099522751	2818.16 2839.48	81.52 82.14	95.40 98.02	10/19/04 14:2		8818:43:00	8817:58:00	82.5849058
23	75	1079	0.0008		14.005	0.00075214	13.00	0.100274891	2852.48	82.51		10/27/04 14:1		7010:31:00	7009:48:00	83.73808373
14	77 78	1088	0.0008		14.148	0.000459076		0.101292435	2888.27	82.97	98.85	11/5/04 11:1		7223:38:00	7222:53:00	85.00107842
-10	78	1090	-0.0004		14.213	-0.000331247		0.100981188	2858.89	82.70		11/12/04 18:4		7397:07:00	7398:22:00	88.01550248
34	75	1080	0.0012		14.018	0.00111289		0.102074077	2890.41	83.61		11/24/04 11:0		7879:23:00	7878:38:00	87.84093412
20	78	1081	0.0007	538	14.031	0.000651593		0.102725871	2908.88	84.14	98.03	12/3/04 18:0		7900:25:00	7899:40:00	88.89300885
-6	75	1090	-0.0002		14.148	-0.000198211	-5.81	0.10252748	2903.24	83.98		12/15/04 17:3		8189:59:00	8189:14:00	90.50708998
12	72	1100	-0.0004		14.278			0.102125148	2891.85	83.65		12/23/04 12:1		8378:30:00	8375:45:00	91.5318885
46	78	1085	0.0017		14.083	0.001575467		0.103700813	2936.48	84.94		12/31/04 18:0		8574:25:00	8573:40:00 8809:41:00	92.80851525
15	75	1081	0.0005		14.031	0.000491435		0.104192048	2950.38 2971.62	85.34 85.98	99.23 99.84	1/10/05 14:0		8810:28:00 9051:32:00	9050:47:00	95.14789221
23	78	1078	-0.0008		13.992	0.000750041		0.104942089	2971.62	85.52	99.84	1/27/05 18:2		9220:40:00	9219:55:00	98.03237301
-18	75 75	1094	0.0008			0.000285008		0.104411500	2984.10	85.74	99.83	2/3/05 15:3		9387:50:00	9387:05:00	98.8988304
8	75	1083	0.0003	030	.4.107	4.300200000	7.00		2001.70							

9	75	1093	0.0003	53	5 14.16	7 0.000298134		8.44	0.10497473	2972.54	65.99	99.67	2/10/05	15:03	9558:58:00	9555:23:00	9554:38:00	97.75958901
10	75	1089	0.0004	53	5 14.13	5 0.000330048	3	9.35	0.105304779	2981.89	88.28	100.14	2/17/05	14:03	9723:58:00	9722:23:00		96.61000625
18	77	1087	0.0000		7 14.10				0.105895588	2998.62		100.62	2/24/05	15:22	9893:15:00	9891:42:00		99.4848179
17	75	1080	0.0000		5 14.01				0.108452011	3014.37	67.20	101.08	3/3/05	14:15	10080:08:00	10058:35:00		100.300218
11	75	1075			5 13.95				0.108610396	3024.52		101.37	3/10/05	13:59	10227:52:00	10228:19:00	10225:34:00	101.1329156
17	75	1071	0.0000		5 13.90				0.107382204	3040.15		101.63	3/18/05	10:39	10416:32:00	10414:59:00	10414:14:00	102.0814194
-7	75 75	1081	-0.0002 4E-05		5 14.03 5 14.07	1 -0.000229338 0 3.28533E-05			0.107132887 0.107185721	3033.65 3034.56		101.84	3/23/05	12:24		10538:44:00	10535:59:00 10778:47:00	102.6561412 103.6319957
DECANISTERED 4/02/20					5 14.07	0 3.20333E-03		0.83	0.107108721	3034.30	07.70	101.00	4/2/05	15.12	10761.03.00	10778.32.00	10770.47.00	103.0318837
DECAMOTERED 4022	OOO, Sallip	Ne died 21	days in ai															
SAMPLE: 1552.7' to	o 1553.5°	("Tebo aha	le") core	in canister 6														
	lb		grams				lbs.		grams	moisture %		est. lost gas (cc) =			TIME OF:			slapsed time (off bottom to canistering)
dry sample weight:		6.759	3973.18	1	wet sa	mple weight:	8	.424	4274.88	7.08%		253				at surface	in canister	175.0 minutes
															1/10/04 0:08		1/10/04 3:01	2.917 hours
RIGILAB MEASUREMENT						CUREMENTS TO ST cubic ft (@STP)				LUMES (GISTP) cc	SCF/TON without lost gas	SCF/TON	TIME OF ME		TIME SINCE	at surface	in canister	1.707625128 SQRT (hrs) SQRT hrs. (since off bottom)
measured cc measured 3	81	1091	0.0001			1 9.80981E-05			9.80981E-05	2.78		With lost gas 2.08	1/10/04		2:59:45	at surface	0.04.45	1.730847577
1	81	1091	4E-05		1 14.18				0.000130795	3.70		2.07	1/10/04		3:00:15		0:05:15	1.733253203
1	81	1091	4E-05		1 14.18				0.000183494	4.83		2.08	1/10/04		3:00:45		0:05:45	1.735855498
0	81	1091	0	54	1 14.18	1 0		0.00	0.000163494	4.63	0.04	2.08	1/10/04	3:07	3:01:15		0:08:15	1.736054466
0	81	1091	0	54	1 14.16	1 0		0.00	0.000183494	4.83	0.04	2.08	1/10/04	3:08	3:01:45		0:08:45	1.740450133
0	81	1091	0	54	1 14.16	1 0		0.00	0.000183494	4.63	0.04	2.08	1/10/04	3:09	3:02:45		0:07:45	1.745231599
3	81	1091	0.0001			1 9.80961E-05			0.00028159	7.41	0.08	2.10	1/10/04	4	3:05:45		0:10:45	
4	82	1091				1 0.000130554			0.000392143	11.10	0.09	2.13	1/10/04		3:09:15		0:14:15	1.775997372
3	82		0.0001			1 9.79152E-05			0.000490058	13.66	0.11	2.15	1/10/04		3:14:15		0:19:15	1.799305422
5	81		0.0002			1 0.000183494			0.000853552	18.51		2.19	1/10/04		3:19:45		0:24:45	1.824600413 1.64729532
5	82		0.0002			1 0.000183192			0.000818744	23.13 28.67	0.19	2.23	1/10/04		3:24:45		0:44:45	1.913785921
8	82 81		0.0002		2 14.18	1 0.00019583 1 0.000198192			0.001012574	34.23		2.27	1/10/04		3:54:45		0:59:45	1.978004044
20	80		0.0002			1 0.000855185			0.001863952	52.78		2.47	1/10/04		4:54:45		1:59:45	2.218418028
15	81		0.0005			8 0.000490031			0.002353983	86.88	0.54	2.58	1/10/04		5:54:45		2:59:45	2,431563263
16	80	1091	0.0008			1 0.000524148			0.002878131	81.50		2.70	1/10/04		7:22:45		4:27:45	2.71648216
11	81	1091	0.0004	54	1 14.18	1 0.000359668	1	0.19	0.003237817	91.68	0.74	2.76	1/10/04	9:07	9:00:45		8:05:45	3.00208281
11	80	1090	0.0004	540	14.14	8 0.000380022			0.003597839	101.88	0.82	2.86	1/10/04		11:10:45		8:15:45	3.343526063
1	80	1087	4E-05		0 14.10				0.003830478	102.80	0.83	2.87	1/10/04		13:04:45		10:09:45	3.616513054
-2	80	1091	-7E-05		14.18				0.00356498	100.95	0.61	2.65	1/10/04		17:15:45		14:20:45	4.154616482
28	80	1087	0.001	540	0 14.10	9 0.000913897	2	5.88	0.004478858	128.83	1.02	3.06	1/11/04	21:15	45:08:45		42:13:45	8.719084915
28	80 79	1087 1093	0.001 7E-05	546 538	0 14.109 9 14.16	9 0.000913897 7 6.57804E-05	2	5.88 1.88	0.004478856 0.004544818	128.83 128.89	1.02 1.04	3.08 3.08	1/11/04	21:15 9:28	45:08:45 57:19:45		42:13:45 54:24:45	6.719064915 7.571602646
28 2 4	80 79 80	1087 1093 1096	0.001 7E-05 0.0001	546 538 546	0 14.109 9 14.167 0 14.220	9 0.000913697 7 6.57804E-05 8 0.000131838	2	5.88 1.88 3.73	0.004478856 0.004544818 0.004678254	128.83	1.02 1.04 1.07	3.08 3.08 3.11	1/11/04 1/12/04 1/13/04	21:15 9:28 11:48	45:08:45 57:19:45 83:41:45		42:13:45	8.719084915
28	80 79	1087 1093 1096 1085	0.001 7E-05	546 538 546 546	0 14.100 9 14.160 0 14.220 0 14.080	9 0.000913897 7 6.57804E-05	1	5.88 1.88 3.73 1.07	0.004478856 0.004544818	128.83 128.89 132.42	1.02 1.04	3.08 3.08	1/11/04	21:15 9:28 11:48 11:53	45:08:45 57:19:45		42:13:45 54:24:45 80:48:45	6.719064915 7.571602646 9.148542669
28 2 4 12	80 79 80 80	1067 1093 1096 1085 1089	0.001 7E-05 0.0001 0.0004	540 530 540 540	0 14.109 9 14.160 0 14.220 0 14.080 0 14.139	9 0.000913897 7 6.57804E-05 8 0.000131838 3 0.000390949	1	5.86 1.68 3.73 1.07 2.78	0.004478856 0.004544818 0.004878254 0.005087203	128.83 128.89 132.42 143.49	1.02 1.04 1.07 1.18	3.08 3.08 3.11 3.20	1/11/04 1/12/04 1/13/04 1/14/04	21:15 9:26 11:46 11:53 11:28	45:08:45 57:19:45 83:41:45 107:48:45		42:13:45 54:24:45 80:46:45 104:51:45	6.719064915 7.571802848 9.148542869 10.38167458
28 2 4 12 -3 10	80 80 80 81 80	1087 1093 1096 1085 1089 1079 1089	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004	544 538 540 540 544 54	0 14.109 9 14.160 0 14.229 0 14.080 0 14.139 1 14.009	9 0.000913697 7 6.57804E-05 8 0.000131838 3 0.000390949 5 -9.80978E-05	1	5.88 1.88 3.73 1.07 2.78 9.18	0.004478856 0.004544818 0.004676254 0.005087203 0.004989108	128.83 128.89 132.42 143.49 140.71	1.02 1.04 1.07 1.18 1.13	3.08 3.11 3.20 3.17	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04	21:15 9:28 11:48 11:53 11:28 11:08	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45		42:13:45 54:24:45 80:46:45 104:51:45 126:26:45	8.719084915 7.571802848 9.148542889 10.38187458 11.48134809
28 2 4 12 -3	80 80 80 81 80	1087 1093 1096 1085 1089 1079 1089	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004	544 538 540 540 544 54	0 14.109 9 14.160 0 14.229 0 14.080 0 14.139 1 14.009	9 0.000913897 7 6.57804E-05 8 0.000131838 3 0.000390949 5 -9.80978E-05 0.000323391	1	5.88 1.88 3.73 1.07 2.78 9.18	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498	128.83 128.89 132.42 143.49 140.71 149.87	1.02 1.04 1.07 1.18 1.13	3.08 3.08 3.11 3.20 3.17 3.25	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04	21:15 9:28 11:48 11:53 11:28 11:08	45:06:45 57:19:45 83:41:45 107:48:45 131:21:45 155:01:45		42:13:45 54:24:45 80:48:45 104:51:45 128:28:45 152:08:45	6.719084915 7.571602646 9.148542669 10.38167456 11.48134609 12.4510709
28 2 4 12 -3 10 -12 DECANISTERED 01/27/7	80 80 80 80 81 80 2004; eam	1067 1093 1096 1085 1089 1079 1089	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air	546 538 546 546 546 547	0 14.109 9 14.160 0 14.229 0 14.080 0 14.139 1 14.009	9 0.000913897 7 6.57804E-05 8 0.000131838 3 0.000390949 5 -9.80978E-05 0.000323391	1	5.88 1.88 3.73 1.07 2.78 9.18	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498	128.83 128.89 132.42 143.49 140.71 149.87	1.02 1.04 1.07 1.18 1.13	3.08 3.08 3.11 3.20 3.17 3.25	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04	21:15 9:28 11:48 11:53 11:28 11:08	45:06:45 57:19:45 83:41:45 107:48:45 131:21:45 155:01:45		42:13:45 54:24:45 80:48:45 104:51:45 128:28:45 152:08:45	6.719084915 7.571602646 9.148542669 10.38167456 11.48134609 12.4510709
28 2 4 12 -3 10 -12 DECANISTERED 01/27/7	80 80 80 81 80 2004; sam	1067 1093 1095 1085 1089 1079 1089 aple dried 5	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 days in air	546 538 546 546 546 547	0 14.109 9 14.160 0 14.229 0 14.080 0 14.139 1 14.009	9 0.00913897 6.57804E-05 0.000131893 3 0.000390949 5 -9.80978E-05 5 0.000323391 5 -0.000392391	1 -1	5.86 1.68 3.73 1.07 2.78 9.16 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498 0.004900108	126.63 128.69 132.42 143.49 140.71 149.67 136.76	1.02 1.04 1.07 1.18 1.13	3.06 3.06 3.11 3.20 3.17 3.25 3.16	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:46:45 131:21:45 155:01:45 274:38:45		42:13:45 54:24:45 80:48:45 104:51:45 128:28:45 152:08:45	6.719084915 7.571802846 9.148542899 10.38187456 11.48134809 12.4510709 16.57244198
28 2 4 12 -3 10 -12 DECANISTERED 01/27// SAMPLE: 1558.1' k	80 80 80 80 81 80 2004; eam	1067 1093 1096 1085 1089 1079 1089 uple dried 5 (Tebo coal)	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air	54(53) 54(54) 54(54) 54(54)	0 14.109 9 14.180 0 14.220 0 14.080 0 14.130 1 14.009 0 14.130	9 0.00913897 6.57804E-05 0.000131838 0.000390949 5 -9.80978E-05 0.000323391 -0.000392391	1 -1 -1 bs.	5.86 1.68 3.73 1.07 2.78 9.16 1.11	0.004478656 0.004544818 0.004676254 0.005087203 0.005087203 0.004969108 0.005292498 0.004900108	128.83 128.89 132.42 143.49 140.71 149.87	1.02 1.04 1.07 1.18 1.13	3.06 3.08 3.11 3.20 3.17 3.25 3.18	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04	21:15 9:26 11:46 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:46:45 131:21:45 155:01:45 274:38:45	at surface	42:13:45 54:24:45 80:48:45 104:51:45 128:28:45 152:08:45	6.719084915 7.571602646 9.148542669 10.38167456 11.48134609 12.4510709
28 2 4 12 -3 10 -12 DECANISTERED 01/27/7	80 80 80 81 80 2004; sam	1067 1093 1096 1085 1089 1079 1089 uple dried 5 (Tebo coal)	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 days in air	54(53) 54(54) 54(54) 54(54)	0 14.109 9 14.183 0 14.220 0 14.083 0 14.133 1 14.009 0 14.133	9 0.00913897 6.57804E-05 0.000131893 3 0.000390949 5 -9.80978E-05 5 0.000323391 5 -0.000392391	1 -1 -1 bs.	5.86 1.88 3.73 1.07 2.78 9.16 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498 0.004900108	128.63 128.69 132.42 143.49 140.71 149.67 136.76	1.02 1.04 1.07 1.18 1.13	3.06 3.06 3.11 3.20 3.17 3.25 3.16	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04	21:15 9:26 11:46 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:46:45 131:21:45 155:01:45 274:38:45	at surface	42:13:45 54:24:45 80:48:45 104:51:45 126:26:45 152:06:45 271:43:45	8.719084915 7.571802848 9.148542869 10.38187456 11.48134809 12.4510709 16.57244196
28 2 4 12 -3 10 -12 DECANISTERED 01/27// SAMPLE: 1558.1' k	80 80 80 81 80 2004; sam	1067 1093 1095 1085 1089 1079 1089 aple dried 5 (Tebo coal)	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 0 core in c grams 1988.83	546 531 546 546 547 547 540 canister 8	0 14.103 9 14.187 0 14.220 0 14.083 0 14.133 1 14.003 1 14.133 wet sai	9 0.000913897 6.57804E-05 6 0.000131838 3 0.000390349 6 -9.80978E-05 5 0.000323391 5 -0.000392391 mple weight:	2 1	5.88 1.88 3.73 1.07 2.78 9.18 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.005087203 0.004989108 0.005292498 0.004900108	126.63 126.69 132.42 143.49 140.71 149.67 136.76	1.02 1.04 1.07 1.16 1.13 1.21	3.06 3.08 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/15/04 1/18/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 63:41:45 107:46:45 131:21:45 155:01:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SINCE		42:13:45 54:24:45 80:46:45 104:51:45 126:28:45 152:08:45 271:43:45	8.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canlatering) 149.7 minutes 2.496 hours 1.579820865 SGHT (hrs)
28 2 4 12 -3 10 -12 DECANISTERED 01/27/2 SAMPLE: 1556.1' kdry sample weight: RIGAB MEASUREMENT measured or measured	80 79 80 80 80 81 80 2004; eam bo	1067 1093 1096 1085 1089 1079 1089 1089 Mple dried 5 (Tebo coal)	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 0 core in c grams 1988.83	546 531 546 541 547 547 547 548 548 548 548 548 548 548 548 548 548	0 14.10: 9 14.18: 0 14.22: 0 14.08: 0 14.13: 1 14.00: 14.13: wet sai	9 0.000913897 0.57804E-05 0.000131938 0.000131938 0.000380949 5 -9.80978E-05 5 0.000323391 0.000392391 mple weight: UHEMENTS TO STI ouble it (@STP)	2 1 1 - 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.86 1.68 3.73 1.07 2.78 9.16 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989106 0.005292498 0.004900108 yams 1979.78	128.83 128.89 132.42 143.49 140.71 149.87 138.76 moisture % 0.56%	1.02 1.04 1.07 1.16 1.13 1.21 1.12	3.06 3.06 3.11 3.20 3.17 3.25 3.16 est. lost gas (cc) = 715 SCF/TON with lost gas	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SINCE off bottom		42:13:45 54:24:45 80:46:45 104:51:45 128:28:45 152:08:45 271:43:45 in canister 1/10/04 2:38 in canister	6.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 16.57244198 elapsed time (off bottom to canletering) 149.7 minutes 2.496 hours 1.579820885 SQHT (hrs) SQHT hrs. (elince off bottom)
2 8 2 4 12 -3 10 -12 DECANISTERED 01/27// SAMPLE: 1556.1' k dry sample weight: RIGILAB MEASUREMENT measured co: measured 39	80 79 80 80 81 80 2004; earm 0 1556.8'	1087 1093 1095 1085 1089 1079 1089 pple dried 5 (Tebo coal) s. 4.340	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 1988.63 CONVERS cubic ft 0.0014	54(53) 54(54(54) 54(54) 54(54) 54(54) 54(54)	0 14.109 9 14.167 0 14.220 0 14.08 0 14.133 1 14.009 0 14.133 wet sai	9 0.00913897 7 8.57804E-05 8 0.000131838 3 0.000380949 5 -9.80978E-35 5 0.00032391 5 -0.000392391 UREMENTS TO STI cubic ft (@STP) 1 0.00127525	2 1 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.86 1.68 3.73 1.07 2.78 9.16 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498 0.004900108 yrams 1979.78	128.83 128.69 132.42 143.49 140.71 149.67 136.76	1.02 1.04 1.07 1.16 1.13 1.21 1.12	3.06 3.06 3.11 3.20 3.17 3.25 3.16 est. lost gas (cc) = 715 SCF/TON with lost gas	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 155:01:45 274:38:45 TIME OF: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45		42:13:45 54:24:45 60:48:45 104:51:45 128:28:45 152:08:45 271:43:45 in canister 1/10/04 2:38 in canister 0:18:00	6.719084915 7.571802846 9.148542899 10.38187456 11.48134809 12.4510709 16.57244196 elapsed time (off bottom to canistering) 149.7 minutes 2.496 hours 1.57962085 SCRTT (hrs) SQRT hrs. (elince off bottom) 1.882077014
2 8 2 4 12 -3 10 -12 DECANISTERED 01/27/7 SAMPLE: 1556.1' k dry sample weight: RIGILAB MEASUREMENT measured or measured 39 39	80 79 80 80 81 80 81 80 2004; earm bo	1087 1093 1095 1085 1089 1079 1089 vple dried 5 (Tebo coal) s. 4,340	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 0 core in c grams 1986.63 CONVERS cubic ft 0.0014	546 531 546 546 547 547 547 547 SKON OF RIGILL absolute T (F) 547	0 14.10: 9 14.16: 0 14.22: 0 14.08: 0 14.13: 1 14.00: 0 14.13: wet sai AB MEAS) psia 1 14.18:	9 0.000913897 8.57804E-05 8 0.000131838 3 0.000380949 5 -9.80978E-05 5 0.000382391 mple weight: UREMENTS TO STI Cuble it (@STP) 1 0.00127525 1 9.80981E-05	2 1 -1 -1 bs. 4 P (@00 deg F; 14.7 co (@STP)	5.86 1.68 3.73 1.07 2.78 9.16 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004898108 0.005282498 0.004900108 yrams 1979.78 CUMULATIVE VOI	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56%	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.63	3.06 3.08 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27	1/11/04 1/12/04 1/13/04 1/13/04 1/15/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 63:41:45 107:46:45 131:21:45 155:01:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SNCE off bottom 2:45:45 2:48:15		42:13:45 54:24:45 60:46:45 104:51:45 128:28:45 128:28:45 271:43:45 in canister 1/10/04 2:38 in canister 0:18:00 0:18:30	8.719084915 7.571802848 9.148542889 10.38187456 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canletering) 149.7 minutes 2.498 hours 1.5792085 SCRT (hrs) SCRT hrs. (elnoe off bottom) 1.882077014 1.88458203
28 2 4 12 -3 10 -12 DECANISTERED 01/27/2 SAMPLE: 1556.1' kt dry sample weight: RIGLAB MEASUREMENT measured or measured 39 3 3	80 79 80 80 81 80 2004; eam to 1556.8' b	1087 1093 1096 1085 1089 1079 1089 vple dried 5 (Tebo coal) s. 4.340	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 0 core in 6 grams 1966.63 CONVERS cubic ft 0.0014 0.0001 7E-05	544 531 544 544 547 547 540 Canister 8 SKON OF RIGIL absolute T (F) 547 547	0 14.10: 9 14.16: 0 14.22: 0 14.03: 1 14.00: 0 14.13: wet sai	9 0.000913897 6.57804E-05 6 0.000131838 3 0.00039949 5 -9.80978E-05 5 0.000323391 5 -0.000392391 mple weight: UHEMENTS TO STI	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.86 1.68 3.73 1.07 2.78 9.16 1.11	0.004478856 0.004544918 0.004678254 0.005087203 0.004989106 0.005292498 0.004900108 yams 1979.78 CLMULATIVE VOI tubic ft 0.00127525 0.001373348 0.001488743	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% ULMES (ØSTP) cc 38.11 38.89 40.74	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.83 0.68	3.06 3.08 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:48:15 2:47:15		42:13:45 54:24:45 80:46:45 104:51:45 128:28:45 152:06:45 271:43:45 in canister 1/10/04 2:38 in canister 0:18:00 0:17:30 0:17:30	6.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 16.57244196 elapsed time (off bottom to canletering) 149.7 minutes 2.496 hours 1.579820885 SQHT (hrs) SQHT hrs. (elince off bottom) 1.882077014 1.88458203 1.889580786
2 8 2 4 12 -3 10 -12 DECANISTERED 01/27/7 SAMPLE: 1556.1' k dry sample weight: RIGHAB MEASUREMENT measured comeasured 39 3 2 3	80 79 80 80 81 80 2004; eam o 1556.8' bi	1087 1093 1096 1089 1079 1089 1079 1089 spie dried 5 (Tebo coal) 8. 4.340 easured P 1091 1091 1091	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 days in air) core in c grams 1986.63 CONVERS cubic ft 0.0014 0.0001 7E-05 0.0001	544 531 544 544 544 544 540 SKON OF RIGIL absolute T (F) 544 544	0 14.10: 9 14.16: 0 14.22: 0 14.08: 0 14.13: 1 14.00: 0 14.13: wet sai wet sai 1 14.18: 1 14.18: 1 14.18:	9 0.000913897 8.57804E-05 3 0.000131838 3 0.000390948 5 -9.80978E-05 5 0.000323391 5 -0.00032391 mple weight: UPEMENTS TO STI cubic ft (@STP) 1 0.00127525 1 9.80991E-05 1 9.80991E-05	2 1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -	5.86 1.88 3.73 1.07 2.78 9.16 1.11 .365 7 pel) (6.11 2.76 1.85 2.78	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498 0.004900108 yrams 1979.78 CUMULATIVE VOI subbic ff 0.00127525 0.001373346 0.001438743 0.00153884	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56%	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.63 0.68	3.06 3.06 3.11 3.20 3.17 3.25 3.16 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:48:15 2:47:15 2:48:15		42:13:45 54:24:45 80:46:45 104:51:45 126:28:45 152:08:45 271:43:45 in canister 1/10/04 2:36 in canister 0:16:00 0:18:30 0:17:30 0:19:00	8.719084915 7.571802848 9.148542869 10.38187456 11.48134809 12.4510709 16.57244196 elapsed time (off bottom to canletering) 149.7 minutes 2.496 hours 1.579820885 SQRT (hrs) SQRT hrs. (elince off bottom) 1.88458203 1.88580786 1.677050983
28 2 4 12 -3 10 -12 DECANISTERED 01/27/5 SAMPLE: 1556.1' kdry sample weight: RIGILAB MEASUREMENT measured compassured compassu	80 79 80 80 81 80 2004; earm 0 1556.8' bo	1087 1093 1096 1085 1089 1079 1089 1079 1089 4.340 **Cassured P** 1091 1091 1091 1091 1091	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 1968.63 CONVERS cubic ft 0.0014 0.0001 7E-05 0.0001 0.0005	544 531 544 544 547 547 540 SION OF RIGIL absolute T (F) 54 54 54	0 14.10: 9 14.16: 0 14.22: 0 14.08: 0 14.08: 0 14.13: 1 14.00: 0 14.13: wet sai 1 4.18: 1 14.18: 1 14.18: 1 14.18:	9 0.000913897 6.57804E-05 6 0.000131838 3 0.000380948 5 -9.80978E-05 5 0.000382391 mple weight: UREMENTS TO STI cubic ft (@STP) 1 0.00127525 1 8.80981E-05 1 9.80981E-05 1 9.80981E-05 1 0.000425083	2 1 1 1 bs. 4 P (@00 deg F; 14.7 cc (@STP) 3	5.88 1.88 3.73 1.07 2.78 9.16 1.11 385 Fpel) (6.11 2.76 1.85 2.78 2.04	0.004478856 0.004544818 0.004678254 0.005087203 0.004989100 0.005292498 0.004900108 yrams 1979.78 CUMULATIVE VOI subic ft 0.00127525 0.001373348 0.001438743 0.00153884	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% ULMES (ØSTP) cc 38.11 38.89 40.74	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.63 0.66 0.71	3.06 3.08 3.11 3.20 3.17 3.25 3.16 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34 12.54	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 10:45 2:52 2:52 2:52 2:53 2:55 3:00	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:48:15 2:47:15		42:13:45 54:24:45 60:46:45 104:51:45 128:28:45 128:28:45 152:08:45 271:43:45 in canister 1/10/04 2:38 in canister 0:16:00 0:16:30 0:17:30 0:19:00 0:24:30	6.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 16.57244196 elapsed time (off bottom to canletering) 149.7 minutes 2.496 hours 1.579820885 SQHT (hrs) SQHT hrs. (elince off bottom) 1.882077014 1.88458203 1.889580786
28 2 4 12 -3 10 -12 DECANISTERED 01/27// SAMPLE: 1558.1' kt dry sample weight: RIGLAB MEASUREMENT measured or measured 39 3 13 13 10	80 79 80 80 81 80 2004; eam o 1556.8' bi	1087 1093 1096 1089 1079 1089 1079 1089 spie dried 5 (Tebo coal) 8. 4.340 easured P 1091 1091 1091	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 days in air) core in c grams 1986.63 CONVERS cubic ft 0.0014 0.0001 7E-05 0.0001	544 531 544 544 547 547 540 547 547 547 547 547 547 547	0 14.10: 9 14.16: 0 14.22: 0 14.08: 0 14.13: 1 14.00: 0 14.13: wet sai wet sai 1 14.18: 1 14.18: 1 14.18:	9 0.000913897 6.57804E-05 6 0.000131838 3 0.000390949 5 -9.80878E-05 5 0.000323391 5 -0.000392391 mple weight: UHEMENTS TO STI	2 1 - 1 - 1 bs. 4 P (@60 dag F; 14.7 oc (@STP) 3	5.88 1.08 3.73 1.07 2.78 9.16 1.11 385 7 pai) (6 1.11 1.11 2.76 1.85 2.78 2.78 9.18 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.005292498 0.004900108 yrams 1979.78 CUMULATIVE VOI subbic ff 0.00127525 0.001373346 0.001438743 0.00153884	128.83 128.89 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% ULMES (@STP) 50 36.11 36.69 40.74 43.52 55.58	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.63 0.68	3.06 3.06 3.11 3.20 3.17 3.25 3.16 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:08 10:45 2:52 2:52 2:53 2:53 2:53 2:53	45:08:45 57:19:45 63:41:45 107:46:45 131:21:45 155:01:45 274:38:45 TIME OF: off bottom 1/10/04 0:08 TIME SNCE off bottom 2:45:45 2:46:15 2:48:45 2:54:15		42:13:45 54:24:45 80:46:45 104:51:45 126:28:45 152:08:45 271:43:45 in canister 1/10/04 2:36 in canister 0:16:00 0:18:30 0:17:30 0:19:00	8.719084915 7.571802848 9.148542889 10.38187456 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canletering) 149.7 minutes 2.498 hours 1.57920885 SCRTf (hrs) SQRT hrs. (elnos off bottom) 1.882077014 1.88458203 1.89580768 1.877050983 1.704181573
28 2 4 12 -3 10 -12 DECANISTERED 01/27/5 SAMPLE: 1556.1' kdry sample weight: RIGILAB MEASUREMENT measured compassured compassu	80 79 80 80 80 81 80 2004; earm o 1556.8' b	1087 1093 1096 1085 1089 1079 1089 pile dried 5 (Tebo coal) a. 4.340	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 days in air 0.core in c grams 1988.83 CONVERS cubic ft 0.0001 7E-05 0.0005 0.0004	544 531 544 544 547 547 547 547 547 547 547 547	0 14.10:9 14.16:0 14.22:0 14.03:0 14.13:0 14.13:0 14.13:0 14.13:0 14.13:0 14.13:0 14.13:0 14.16:1 14.1	9 0.000913897 8.57804E-05 8 0.000131838 3 0.000131838 3 0.000380948 5 -0.000323391 5 -0.00032391 mple weight: UREMENTS TO STI cubic it (@STP) 1 0.00127525 1 9.80981E-05 1 9.80981E-05 1 9.80981E-05 1 0.000425083 1 0.000328987 1 0.000328987	2 1 -1 -1 bs. 4 P (@00 deg F; 14.7 co (@STP) 3	5.88 1.08 3.73 1.07 2.78 9.16 1.11 385 7 pai) (1.11 2.78 1.05 2.78 1.05 2.78 9.28 9.28	0.004478856 0.004544918 0.004678254 0.005087203 0.004989106 0.005292498 0.004900108 yams 1979.78 CLMULATIVE VOI tubbe ft 0.00127525 0.001373348 0.001498743 0.00158884 0.001681923 0.00228891	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% ULMES (@STP) cc 36.11 36.69 40.74 43.52 55.58 84.81	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.83 0.68 0.71 0.90 1.05	3.06 3.06 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34 12.54 12.69	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/18/04 1/21/04	21:15 9:28 11:48 11:53 11:28 11:08 10:45 2:52 2:52 2:53 2:55 3:00 3:05 3:10	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME 0F: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:48:15 2:48:45 2:54:45 2:58:45		42:13:45 54:24:45 80:46:45 104:51:45 126:26:45 152:06:45 271:43:45 in canister 1/10/04 2:38 in canister 0:18:00 0:18:30 0:17:30 0:19:00 0:24:30 0:28:00	6.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 16.57244196 elapsed time (off bottom to canistering) 149.7 minutes 2.496 hours 1.579820885 SQHT (hrs) SQHT hrs. (since off bottom) 1.882077014 1.88458203 1.889580786 1.877050983 1.704181573 1.728028285
2 8 2 4 12 -3 10 -12 DECANISTERED 01/27/7 SAMPLE: 1556.1' kt dry sample weight: RIG/LAB MEASUREMENT measured comeasured 39 3 2 3 13 10 10	80 79 80 80 81 80 2004; earm bi	1087 1093 1096 1085 1089 1079 1089 pole dried 5 (Tebo coal) s. 4.340	0.001 7E-05 0.0001 0.0004 -0.0004 days in air 0 core in c grams 1988.83 CONVERS cubic ft 0.0014 0.0001 7E-05 0.0001 0.0005 0.0004	544 531 544 544 547 547 547 547 547 547 547 547	0 14.10:9 14.16:0 14.22:0 14.10:0 14.13:0 14.13:0 14.13:0 14.13:0 14.13:0 14.18:1 14.1	9 0.000913897 8 57804E-05 8 0.000131838 3 0.00039949 5 -9.80978E-05 5 0.000323391 mple weight: UPEMENTS TO STI	2 1 -1 -1 bs. 4 P (@60 deg F; 14,7 co (@STP) 3	5.88 1.08 3.73 1.07 2.78 9.18 1.11 3.385 7 pel) (6.11 1.2.78 1.05 2.78 2.04 9.28 0.17 0.17	0.004478856 0.004544918 0.004678254 0.005087203 0.004989106 0.00522498 0.004900108 yrams 1979.78 CLMLILATIVE VOI 10.00127525 0.0012373346 0.001248743 0.00154884 0.001691923 0.00226891 0.0022615897 0.0022615897 0.0022615897	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% CLUMES (@STP) cc 38.11 38.89 40.74 43.52 55.58 84.81 74.07 64.24 94.41	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.83 0.66 0.71 0.90 1.05 1.21	3.06 3.06 3.11 3.20 3.17 3.25 3.16 est. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34 12.54 12.69 12.84 13.01 13.17	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/15/04 1/21/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04	21:15 9:26 11:46 11:53 11:53 11:53 11:08 10:45 2:52 2:52 2:55 3:10 3:15 3:20	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME OF: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:48:15 2:47:15 2:48:45 2:54:15 3:03:45 3:08:45 3:13:45		42:13:45 54:24:45 80:46:45 104:51:45 126:26:45 152:06:45 271:43:45 in canister 1/10/04 2:38 in canister 0:16:00 0:18:30 0:17:30 0:19:00 0:24:30 0:39:00 0:34:00 0:44:00	6.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 16.57244198 elapsed time (off bottom to canistering) 149.7 minutes 2.496 hours 1.579820885 SCHT (hrs) SCHT hrs. (elince off bottom) 1.682077014 1.682587686 1.677050983 1.704181573 1.729028285 1.773849721 1.7798498221
28 2 4 12 -3 10 -12 DECANISTERED 01/27/7 SAMPLE: 1556.1' kt dry sample weight: RIGLAB MEASUREMENT measured or measured 39 3 2 3 13 10 10 11 11 11	80 79 80 80 80 81 80 2004; earm o 1556.8' b: SS dT (F) m 81 81 81 81 81 81 81 81 81 81 81 81 81	1087 1093 1096 1085 1089 1079 1089 1079 1089 4.340 **Sessured P** 1091 1091 1091 1091 1091 1091 1091 10	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 -0.0004 days in air 0 core in c grams 1986.83 CONVERS cuble ft 0.0014 0.0001 7E-05 0.0001 0.0005 0.0001 0.0004 0.0004	544 531 544 544 547 547 547 541 544 544 544 544 544 544	0 14.10:9 14.16:0 14.22:0 14.08:0 14.13:1 14.00:0 14.13:1 14.00:0 14.13:1 14.18:1 14.1	9 0.000913897 8.57804E-05 8 0.000131838 3 0.000131838 3 0.000380948 5 -0.000389391 5 -0.000382391 UNEMENTS TO STI OLIDIO IT (#STP) 1 0.00127525 9.80961E-05 1 0.000328987 0 0.000328987 1 0.000358022 1 0.000358022 1 0.000358022	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.88 1.08 3.73 1.07 2.78 9.16 1.11 3.385 7 pel) (6.11 1.65 1.65 1.65 2.78 2.04 9.28 9.28 9.28 9.28	0.004478856 0.004544818 0.004678254 0.005087203 0.004898108 0.005292498 0.004900108 Type 18 Type 18 Ty	128.83 128.89 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% 40.74 43.52 55.58 84.81 74.07 64.24 94.41	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.63 0.66 0.71 1.09 1.05 1.21	3.08 3.08 3.11 3.20 3.17 3.25 3.18 est. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.34 12.54 12.69 12.84 13.01 13.17	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/15/04 1/21/04 1/21/04 1/21/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04	21:15 9:26 11:46 11:53 11:28 11:08 10:45 2:52 2:52 2:52 2:53 3:05 3:15 3:10 3:15 3:20 3:20	45:08:45 57:19:45 63:41:45 107:46:45 131:21:45 155:01:45 274:38:45 TIME OF: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:46:15 2:46:15 2:46:45 3:03:45 3:06:45 3:13:45 3:16:45		42:13:45 54:24:45 60:46:45 104:51:45 126:28:45 152:08:45 271:43:45 in canister 0:18:00 0:18:30 0:17:30 0:19:00 0:24:30 0:29:00 0:34:00 0:39:00 0:44:00 0:48:00	8.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canistering) 149.7 minutes 2.498 hours 1.579820865 SCHT (hrs) SCRT hrs. (since off bottom) 1.88458203 1.88458203 1.88458203 1.704181573 1.729028285 1.773449721 1.798986221 1.820027472
28 2 4 12 -3 10 -12 DECANISTERED 01/27/2 SAMPLE: 1556.1' kd dry sample weight: RIGLAB MEASUPEMENT measured oo measured 39 3 2 3 10 10 10 11 11 12 11	80 79 80 80 80 81 80 2004; earm 0 1568.8' b: 81 81 81 81 81 81 81 81 81 82 82 82	1087 1093 1096 1085 1089 1079 1089 1079 1089 1079 1091 1091 1091 1091 1091 1091 109	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 -0.0004 days in air 1988.83 CONVERS cubic ft 0.0014 0.0001 7E-05 0.0001 0.0004 0.0004 0.0004 0.0004	544 531 544 544 547 547 547 547 547 547 544 544	0 14.10:9 14.16:0 14.22:0 14.08:0 14.08:0 14.08:0 14.08:0 14.13:1 14.00:0 14.13:1 14.00:0 14.13:1 14.16:1 14.1	9 0.000913897 6 0.57804E-05 6 0.000131838 3 0.000389949 5 -0.000323391 mple weight: UREMENTS TO STI cubic ft (@STP) 1 0.00127525 1 8.0991E-05 1 8.53974E-05 1 0.000328987 1 0.000328987 1 0.000359022 1 0.000359022 1 0.000359022 1 0.000359022	2 2 1 1 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.86 1.88 3.73 1.07 9.18 9.18 1.11 385 7 pel) (6 6.11 2.76 1.85 2.04 9.26 9.26 9.26 9.26 9.20 0.17 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989100 0.005292498 0.004900108 THE STAN OF THE STAN OF	128.83 128.69 132.42 143.49 140.71 149.67 138.76 moisture % 0.56% 0.56% 40.74 43.52 55.58 64.81 74.07 94.24 94.41 105.52 115.68	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TCN without lost gas 0.59 0.83 0.86 0.71 0.90 1.05 1.21 1.37	3.06 3.08 3.08 3.11 3.20 3.17 3.25 3.18 est. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34 12.54 12.69 12.84 13.01 13.17 13.35	1/11/04 1/12/04 1/13/04 1/14/04 1/15/04 1/15/04 1/21/04 1/21/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04 1/10/04	21:15 9:26 11:53 11:28 11:08 10:45 2:52 2:52 2:53 2:55 3:00 3:15 3:20 3:25 3:33	45:08:45 57:19:45 83:41:45 107:48:45 131:21:45 274:38:45 TIME OF: off bottom 1/10/04 0:08 TIME SNCE off bottom 2:45:45 2:48:45 2:54:15 2:48:45 3:03:45 3:13:45 3:18:45 3:23:45		42:13:45 54:24:45 80:46:45 104:51:45 128:28:45 152:06:45 271:43:45 in canister 0:18:00 0:18:30 0:17:30 0:19:00 0:24:30 0:29:00 0:34:00 0:44:00 0:49:00 0:54:00	6.719084915 7.571802848 9.148542889 10.38187456 11.48134809 12.4510709 16.57244196 elapsed time (off bottom to canistering) 149.7 minutes 2.496 hours 1.57962085 SGRT (hrs) SQRT hrs. (elnos off bottom) 1.882077014 1.88458203 1.889580786 1.677050983 1.704181573 1.728028285 1.773849721 1.798988221 1.820027472 1.842778699
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28 2 4 12 -3 10 -12 DECANISTERED 01/27/7 SAMPLE: 1556.1' kt dry sample weight: RIGLAB MEASUREMENT measured or measured 39 3 2 3 13 10 10 11 11 11 11 12 11 30 30 60 61 45 51	80 79 80 80 80 81 80 80 81 81 81 81 81 81 81 81 82 82 82 82 81 79 80 80 80 80 80 80	1087 1093 1096 1085 1089 1079 1089 1079 1089 4.340 **SESSURE OF P 1091 1091 1091 1091 1091 1091 1091 109	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0004 -0.0001 0.0008 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001	544 531 544 544 547 547 547 548 544 544 544 544 544 544 544 544 544	0 14.101 0 14.221 0 14.081 0 14.221 0 14.081 0 14.221 0 14.081 0 14.221 0 14.31 1 14.001 0 14.131 0 14.131 0 14.131 0 14.131	0.000913897 0.000913897 0.000319383 0.000131838 0.000131838 0.000390948 0.000323391 0.000323391 0.00032991 0.00127525 0.00032897 0.000328987 0.000328987 0.000358022 0.000358022 0.000359022 0.000359022 0.000359022 0.000359022 0.000359022 0.000359022 0.000359022 0.000359022 0.000359023	2 2 1 1 1 1 1 1 1 1 1 2 2 5 5 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.88 1.88 1.07 2.78 9.16 1.11 385 7 pel) (6 8.11 1.85 2.78 2.04 9.26 0.17 0.17 7.73 7.77 0.17 7.77 0.17 7.77 0.17 7.77 0.17 7.77 0.17 7.77 0.17 7.77 0.17 0.1	0.004478856 0.004544818 0.004678254 0.005087203 0.004898108 0.004989108 0.004900108 0.005292498 0.004900108 CUMULATIVE VOI Nable ff 0.00127525 0.001373346 0.001438743 0.00158884 0.001961923 0.0026891 0.0026891 0.002874919 0.002894 0.003728326 0.004085349 0.0050845 0.008045482 0.008045482 0.008045482 0.008045889 0.0101298 0.0113151902 0.0113151902 0.0113151902 0.0113151902	128.83 128.89 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% 40.74 43.52 55.58 84.81 74.07 64.24 94.41 105.52 115.86 143.41 171.19 228.95 283.53 325.24 372.42	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TON without lost gas 0.59 0.63 0.66 0.71 1.090 1.05 1.21 1.37 1.54 4.172 1.68 2.33 2.39 3.69 4.81 5.29 6.00 7.90	3.08 3.08 3.08 3.11 3.20 3.17 3.25 3.18 est. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34 12.54 12.69 12.84 13.01 13.17 13.35 13.52 13.97 14.42 15.33 16.25 16.93 17.70 19.54	1/11/04 1/12/04 1/14/04 1/14/04 1/15/04 1/15/04 1/15/04 1/21/04 1/21/04 1/10/04	21:15 9:28 11:48 11:53 11:28 11:53 11:28 11:53 11:28 10:45 11:28 10:45 11:53 1	45:08:45 57:19:45 57:19:45 107:46:45 131:21:45 155:01:45 274:38:45 TIME 0F: off bottom 1/10/04 TME SNCE off bottom 2:45:45 2:47:15 2:48:45 2:58:45 3:03:45 3:10:45 3:23:45 3:23:45 4:23:45 4:23:45 5:23:45 5:23:45 5:23:45		42:13:45 54:24:45 60:46:45 104:51:45 126:26:45 152:06:45 271:43:45 in canister 1/10/04 2:38 in canister 0:18:00 0:18:30 0:19:00 0:24:30 0:29:00 0:44:00 0:54:00 0:54:00 1:24:00 1:54:00 2:25:400 3:24:00 4:56:00	8.719084915 7.571802848 9.148542889 10.38187458 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canistering) 149.7 minutes 2.498 hours 1.579820865 SCHT (hrs) SCRT hrs. (since off bottom) 1.88458203 1.88458203 1.88458203 1.704181573 1.728028285 1.77349721 1.798986221 1.798986221 1.820027472 1.842778699 1.909424271 2.91853008 2.322893311 2.428133714 2.719528145
28 2 4 12 -3 10 -12 DECANISTERED 01/27/2 SAMPLE: 1556.1' kd dry sample weight: RIGILAB MEASUPEMENT measured cc measured 39 3 2 3 13 10 10 11 11 12 12 11 30 60 61 45 51 122 119	80 79 80 80 80 81 81 81 81 81 81 81 81 82 82 82 82 82 82 81 79 80 80 81 80 81	1087 1093 1096 1085 1089 1079 1089 1079 1089 4.340 6.34 4.340 6.34 6	0.001 7E-05 0.0001 0.0004 -0.0004 -0.0004 -0.0004 0.0004 0.0011 7E-05 0.0001 7E-05 0.0004	544 531 544 544 547 547 547 547 547 547 547 547	west san west san west san west san i 14.16 i	mple weight: UPEMENTS TO STI 0.00032991 mple weight: UPEMENTS TO STI 0.00038948 10.00039948 10.00039949 10.000399391 mple weight: UPEMENTS TO STI 0.00039931 10.00039981 10.00032997 10.00032997 10.000359022 10.000359022 10.000359022 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359033 10.000979152 10.000359033 10.000979153 10.000999164 10.000999164	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.88 1.88 1.88 9.18 1.07 2.78 9.18 1.11 1.11 2.78 9.18 6.11 1.2.78 9.28 9.28 9.28 9.28 9.28 9.28 9.17 1.11 1.11 1.11 1.11 1.11 1.11 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989100 0.00522498 0.004900108 0.00127525 0.0013733346 0.001438743 0.00153884 0.00161923 0.00228891 0.00228891 0.0028891 0.003278292 0.003278292 0.00372832 0.0050845 0.0014085349 0.001648844 0.00101290 0.003045482 0.001485349	128.83 128.89 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% 0.56% 40.74 43.52 55.58 84.81 74.07 84.24 94.41 105.58 143.41 171.19 228.95 283.53 325.24 372.42 485.59 595.78	1.02 1.04 1.07 1.16 1.13 1.21 1.12 SCF/TCN without lost gas 0.59 0.63 0.66 0.71 0.90 1.05 1.21 1.37 1.54 1.72 2.33 2.79 3.89 4.61 5.29 6.06 7.90 9.70	3.08 3.08 3.08 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.30 12.34 12.54 12.69 12.84 13.01 13.17 13.35 13.52 13.97 14.42 15.33 16.25 16.93 17.70 19.54	1/11/04 1/12/04 1/14/04 1/15/04 1/15/04 1/15/04 1/21/04 1/21/04 1/21/04 1/10/04	21:15 9:26 11:48 11:48 11:48 11:48 11:48 11:48 11:53 11:28 1	45:08:45 57:19:45 83:41:45 107:46:45 131:21:45 155:01:46 274:38:45 TIME OF: off bottom 1/10/04 2:45:45 2:48:15 2:48:15 2:48:15 2:48:45 3:03:45 3:03:45 3:18:45 3:38:45 4:23:45 4:23:45 4:23:45 5:53:45 7:23:45 8:59:45		42:13:45 54:24:45 60:46:45 104:51:45 128:28:45 128:28:45 152:08:45 271:43:45 in canister 0:18:00 0:18:30 0:17:30 0:19:00 0:24:30 0:29:00 0:34:00 0:34:00 0:44:00 0:54:00 1:54:00 1:54:00 2:24:00 4:54:00 6:30:00 6:30:00	8.719084915 7.571802848 9.148542889 10.38187456 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canistering) 149.7 minutes 2.498 hours 1.57920885 SCRT (hrs) SQRT hrs. (elnos off bottom) 1.882077014 1.882580768 1.877050983 1.704181573 1.728028285 1.773849721 1.773849721 1.798986221 1.820027472 1.842778899 1.90940854 1.973786547 2.098624271 2.212853008 2.322893311 2.428133714 2.719528145
28 2 4 12 -3 10 -12 DECANISTERED 01/27/7 SAMPLE: 1556.1' kt dry sample weight: RIG/LAB MEASUREMENT measured or measured 39 3 2 3 13 10 10 11 11 12 11 30 30 60 61 45 51 122 119 130	80 79 80 80 80 81 80 80 81 81 81 81 81 81 81 82 81 82 81 79 80 80 81 80 81 80 80 81 80	1087 1093 1096 1085 1089 1079 1089 1079 1089 4.340 6882Ured P 1091 1091 1091 1091 1091 1091 1091 109	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0001 0.0004 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001	544 531 544 544 544 544 544 542 644 544 544 544 544 544 544 544 544 544	0 14.101 0 14.221 0 14.081 0 14.221 0 14.081 0 14.221 0 14.081 0 14.221 1 14.001 0 14.131 0 14.131 0 14.131 0 14.131 0 14.131 0 14.131 0 14.131	0.000913897 0.000913897 0.000313838 0.000131838 0.000131838 0.000390948 0.000392391 0.000392391 0.000392391 0.000392391 0.000392391 0.000390949 0.000390949 0.000390949 0.000390949 0.00039094 0.00039094 0.00039094 0.00039094 0.00039094 0.00039094 0.00039981 0.00039995 0.000990981 0.00039981 0.000990981 0.000990981 0.000990981 0.000990981 0.000990981	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.88 1.88 1.07 2.78 9.16 1.11 385 7 pell (6 8.11 1.2.76 1.85 1.85 2.04 9.26 0.17 0.17 7.73 8.59 1.65 1.11 1.11 1.11 1.11 1.11 1.11 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989108 0.004989108 0.004990108 1979.78 CUMLILATIVE VOI VAIDIO III 0.00127525 0.001373348 0.001438743 0.001438743 0.00158884 0.001681897 0.002818997 0.002874919 0.003333942 0.003333942 0.00333942 0.00468349 0.001001298 0.0101298 0.011151902 0.011151902 0.011151902 0.011151902 0.01213988	128.83 128.69 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% LUMES (@STP) cc 36.11 36.69 40.74 43.52 55.58 64.81 174.07 64.24 94.41 105.52 115.66 143.41 171.19 226.59 263.53 325.24 372.42 485.59 595.78	1.02 1.04 1.07 1.16 1.13 1.21 1.12 1.12 SCF/TON without lost gas 0.59 0.83 0.66 0.71 0.90 1.05 1.21 1.37 1.54 1.72 1.88 2.33 2.79 3.89 4.81 5.29 6.06 7.90 9.70	3.08 3.08 3.08 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.27 12.30 12.34 12.54 12.54 13.01 13.17 13.35 13.52 13.52 14.42 15.33 16.25 16.93 17.70 19.54 21.34 21.34 21.35 21.36 21.	1/11/04 1/12/04 1/14/04 1/14/04 1/15/04 1/15/04 1/16/04 1/10/04	21:15 9:28 9:28 11:48 11:53 11:48 11:08 10:45 11:08 10:45 2:52 2:52 2:52 2:53 3:00 3:26 3:30 3:26 3:30 3:26 3:30 3:26 3:30 3:26 3:30 3:26 3:30 3:30 3:30 3:30 3:30 3:30 3:30 3:3	45:08:45 57:19:45 57:19:45 63:41:45 107:46:45 131:21:45 155:01:45 274:38:45 TIME OF: off bottom 1/10/04 0:08 TIME SINCE off bottom 2:45:45 2:48:15 2:48:15 2:48:45 3:08:45 3:13:45 3:18:45 3:23:45 4:23:46 4:23:46 4:23:45 4:53:45 5:53:45 5:53:45 5:53:45 6:59:45 11:09:45		42:13:45 54:24:45 80:46:45 104:51:45 126:28:45 126:28:45 152:08:45 271:43:45 in canister 1/10/04 2:38 in canister 0:18:30 0:17:30 0:24:30 0:24:30 0:24:30 0:48:00 0:48:00 0:48:00 0:54:00 0:54:00 0:24:30 0:24:30 0:24:30 0:38:00 0:48:00	8.719084915 7.571802848 9.148542869 10.38187456 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canletering) 149.7 minutes 2.498 hours 1.579820885 SCHT (hrs) SCHT hrs. (elinoe off bottom) 1.88458203 1.88458203 1.88458203 1.704181573 1.728028285 1.775 1.773849721 1.798088221 1.820027472 1.842778899 1.90940854 1.973788547 2.098824271 2.212853008 2.322893311 2.426133714 2.719528145 2.999305475 3.341032774
28 2 4 12 -3 10 -12 DECANISTERED 01/27/2 SAMPLE: 1556.1' kd dry sample weight: RIGILAB MEASUPEMENT measured cc measured 39 3 2 3 13 10 10 11 11 12 12 11 30 60 61 45 51 122 119	80 79 80 80 80 81 81 81 81 81 81 81 81 82 82 82 82 82 82 81 79 80 80 81 80 81	1087 1093 1096 1085 1089 1079 1089 1079 1089 4.340 6.34 4.340 6.34 6	0.001 7E-05 0.0001 0.0004 -0.0001 0.0004 -0.0001 0.0004 0.0001	544 531 544 544 544 544 544 542 644 544 544 544 544 544 544 544 544 544	0 14.101 0 14.221 0 14.081 0 14.221 0 14.081 0 14.221 0 14.081 0 14.221 1 14.001 0 14.131 0 14.131 0 14.131 0 14.131 0 14.131 0 14.131 0 14.131	mple weight: UPEMENTS TO STI 0.00032991 mple weight: UPEMENTS TO STI 0.00038948 10.00039948 10.00039949 10.000399391 mple weight: UPEMENTS TO STI 0.00039931 10.00039981 10.00032997 10.00032997 10.000359022 10.000359022 10.000359022 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359023 10.000359033 10.000979152 10.000359033 10.000979153 10.000999164 10.000999164	2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.88 1.88 1.07 2.78 9.16 1.11 385 7 pell (6 8.11 1.2.76 1.85 1.85 2.04 9.26 0.17 0.17 7.73 8.59 1.65 1.11 1.11 1.11 1.11 1.11 1.11 1.11	0.004478856 0.004544818 0.004678254 0.005087203 0.004989100 0.00522498 0.004900108 0.00127525 0.0013733346 0.001438743 0.00153884 0.00161923 0.00228891 0.00228891 0.0028891 0.003278292 0.003278292 0.00372832 0.0050845 0.0014085349 0.001648844 0.00101290 0.003045482 0.001485349	128.83 128.89 132.42 143.49 140.71 149.67 136.76 moisture % 0.56% 0.56% 40.74 43.52 55.58 84.81 74.07 84.24 94.41 105.58 143.41 171.19 228.95 283.53 325.24 372.42 485.59 595.78	1.02 1.04 1.07 1.16 1.13 1.21 1.12 1.12 SCF/TON without lost gas 0.59 0.83 0.66 0.71 0.90 1.05 1.21 1.37 1.54 1.72 1.88 2.33 2.79 3.89 4.81 5.29 6.06 7.90 9.70	3.08 3.08 3.08 3.11 3.20 3.17 3.25 3.18 eet. lost gas (cc) = 715 SCF/TON with lost gas 12.22 12.30 12.34 12.54 12.69 12.84 13.01 13.17 13.35 13.52 13.97 14.42 15.33 16.25 16.93 17.70 19.54	1/11/04 1/12/04 1/14/04 1/15/04 1/15/04 1/15/04 1/21/04 1/21/04 1/21/04 1/10/04	21:15 9:28 9:28 11:48 11:53 11:48 11:08 10:45 11:08 10:45 2:52 2:52 2:52 2:53 3:00 3:26 3:30 3:26 3:30 3:26 3:30 3:26 3:30 3:26 3:30 3:26 3:30 3:30 3:30 3:30 3:30 3:30 3:30 3:3	45:08:45 57:19:45 83:41:45 107:46:45 131:21:45 155:01:46 274:38:45 TIME OF: off bottom 1/10/04 2:45:45 2:48:15 2:48:15 2:48:15 2:48:45 3:03:45 3:03:45 3:18:45 3:38:45 4:23:45 4:23:45 4:23:45 5:53:45 7:23:45 8:59:45		42:13:45 54:24:45 60:46:45 104:51:45 128:28:45 128:28:45 152:08:45 271:43:45 in canister 0:18:00 0:18:30 0:17:30 0:19:00 0:24:30 0:29:00 0:34:00 0:34:00 0:44:00 0:54:00 1:54:00 1:54:00 2:24:00 4:54:00 6:30:00 6:30:00	8.719084915 7.571802848 9.148542869 10.38187456 11.48134809 12.4510709 18.57244198 elapsed time (off bottom to canletering) 149.7 minutes 2.498 hours 1.579820885 SCHT (hrs) SCHT hrs. (elinoe off bottom) 1.88458203 1.88458203 1.88458203 1.704181573 1.728028285 1.775 1.773849721 1.798088221 1.820027472 1.842778899 1.90940854 1.973788547 2.098824271 2.212853008 2.322893311 2.426133714 2.719528145 2.999305475 3.341032774

109	80	1091	0.0038	540 14	1.161	0.00357078	101.11	0.031606931	895.01	14.57	28.20	1/10/04 1		17:13:45	14:44:00	4.150803135
152	80	1089	0.0054	540 14	1.135	0.004970281	140.74	0.038577211	1035.75	18.88	28.49	1/10/04 2		21:12:45	18:43:00	4.805702987
243	82	1085	0.0086	542 14	1.083	0.00788751	223.35	0.044484722	1259.10	20.49	32.13	1/11/04	9:25	33:18:45	30:49:00	5.77189819
153	80	1087	0.0054	540 14	1.109	0.004993792	141.41	0.049458513	1400.50	22.79	34.43	1/11/04 2	21:04	44:57:45	42:28:00	8.705408285
111	79	1093	0.0039	539 14	1.187	0.003849703	103.35	0.053108217	1503.85	24.47	38.11	1/12/04	9:25	57:18:45	54:49:00	7.570501985
90	80	1092	0.0032	540 14	1.174	0.002951037	83.58	0.056059253	1587.42	25.83	37.47	1/12/04 1	7:22	85:15:45	82:48:00	8.078520904
125	80	1096	0.0044	540 14	.228	0.004113875	118.49	0.080172929	1703.90	27.73	39.38	1/13/04 1	1:50	83:43:45	81:14:00	9.150364291
154	60	1085	0.0054	540 14	1.083	0.005017183	142.07	0.085190111	1845.97	30.04	41.68	1/14/04 1	1:54	107:47:45	105:18:00	10.38247723
103	80	1089	0.0036	540 14	1.135	0.003368019	95.37	0.08855813	1941.34	31.59	43.23	1/15/04 1	1:30	131:23:45	128:54:00	11.48280218
105	81	1079	0.0037	541 14	.005	0.003395801	98.15	0.071953732	2037.50	33.18	44.79	1/16/04 1	1:08	155:01:45	152:32:00	12.4510709
117	81	1077	0.0041	541 13	3.979	0.003778857	108.94	0.075730388	2144.44	34.90	48.53	1/17/04 1	1:08	179:01:45	178:32:00	13.38017813
33	80	1067	0.0012	540 14	.109	0.001077092	30.50	0.076807481	2174.94	35.39	47.03	1/16/04 1	0:07	202:00:45	199:31:00	14.21311015
57	80	1090	0.002	540 14	.148	0.001885587	52.83	0.078873048	2227.78	36.25	47.89	1/19/04 1	8:57	234:50:45	232:21:00	15.32488053
82	84	1089	0.0029	544 14	1.135	0.00288182	75.37	0.081334687	2303.13	37.48	49.12	1/20/04 1	4:28	254:19:45	251:50:00	15.94770098
36	80	1089	0.0013	540 14	.135	0.001177172	33.33	0.082511839	2338.47	38.02	49.88	1/21/04 1	0:18	274:11:45	271:42:00	18.55885988
33	80	1095	0.0012	540 14	.213	0.001085019	30.72	0.083596859	2387.19	38.52	50.18	1/22/04 1	1:44	299:37:45	297:08:00	17.30979973
71	80			540 13	.979	0.002298081	65.02	0.08589292	2432.21	39.58	51.22	1/23/04 1	2:41	324:34:45	322:05:00	18.01608078
43	80	1078	0.0015	540 13	.992	0.001391884	39.41	0.087284784	2471.82	40.22	51.88	1/24/04 1	7:29	353:22:45	350:53:00	18.79838202
45	81		0.0016	541 13	.875	0.001441771	40.63	0.086726554	2512.45	40.89	52.52	1/25/04 1	8:20	378:13:45	373:44:00	19.39682771
12	80	1078	0.0004	540 13		0.000388427	11.00	0.089114981	2523.45	41.07	52.70	1/26/04 1	5:23	399:16:45	398:47:00	19.98197104
5	79	1091	0.0002	539 14	.161	0.0001841	4.85	0.089279081	2528.09	41.14	52.78	1/27/04	9:57	417:50:45	415:21:00	20.44127768
150	80	1085	0.0053	540 14	.083	0.004888888	138.36	0.094165948	2888.47	43.39	55.03	2/2/04 1	5:53	587:48:45	585:17:00	23.82811714
122	81	1091	0.0043	541 14	.161	0.003989243	112.98	0.098155191	2779.43	45.23	58.87	2/9/04 1	0:48	730:39:45	728:10:00	27.0307695
99	81	1091	0.0035	541 14	.161	0.003237173	91.87	0.101392384	2871.10	48.72	58.36	2/16/04 1	4:39	902:32:45	900:03:00	30.04240059
75	80	1086	0.0026	540 14	.098	0.002445885	89.25	0.103838049	2940.35	47.85	59.49	2/23/04 1	4:47	1070:40:45	1068:11:00	32.72123419
83	80	1091	0.0029	540 14	.161	0.002719019	78.99	0.106557088	3017.35	49.10	80.74	3/2/04 1	0:55	1258:48:45	1256:19:00	35.47974774
75	80	1088	0.0026	540 14	.122	0.002450189	69.38	0.109007257	3068.73	50.23	81.87	3/8/04 1	0:24	1402:17:45	1399:48:00	37.44724066
65	81	1081	0.003	541 14	.031	0.002753915	77.98	0.111781172	3164.71	51.50	83.14	3/15/04 1	1:58	1571;49:45	1589:20:00	39.84630079
48	80	1097	0.0017	540 14	.239	0.001581093	44.77	0.113342265	3209.48	52.23	63.67	3/22/04 1	0:18	1738:11:45	1735:42:00	41.69187583
37	75	1088	0.0013	535 14	.122	0.001220057	34.55	0.114582322	3244.03	52.79	64.43	3/30/04 2	0:48	1940:39:45	1938:10:00	44.05295109
11	78	1081	0.0004	538 14	.031	0.000358376	10.15	0.114920898	3254.18	52.98	84.59	4/9/04 1	7:29	2177:22:45	2174:53:00	48.68239584
-4	76	1088	-0.0001	538 14	.098	-0.00013141	-3.72	0.114789288	3250.46	52.90	84.53	4/12/04 1	5:11	2247:04:45	2244:35:00	47.40336682
54	80	1088	0.0019	540 14	.122	0.001764138	49.95	0.118553424	3300.41	53.71	65.35	4/19/04 1	4:41	2414:34:45	2412:05:00	49.13836756
6	78	1090	0.0002	538 14	.148	0.000197105	5.58	0.11875053	3305.99	53.80	65.44	4/28/04 1	1:43	2579:38:45	2577:07:00	50.7898858
24	80	1083	0.0008	540 14	.057	0.000780457	22.10	0.117530987	3328.09	54.18	65.80	5/3/04 2	90:09	2758:02:45	2753:33:00	52.49805552
21	80	1081	0.0007	540 14	.031	0.000881839	19.30	0.118212828	3347.40	54.47	88.11	5/10/04 1	4:11	2918:04:45	2915:35:00	54.01924811
17	80	1082	0.0006	540 14	.044	0.000552313	15.84	0.11878494	3363.04	54.73	86.37	5/17/04	9:52	3081:45:45	3079:18:00	55.51382445
28	80	1075	0.001	540 13	.953	0.000903808	25.59	0.119888747	3388,83	55.15	88.78	5/24/04 1	0:40	3250:33:45	3248:04:00	57.01370449
28	80	1077	0.001	540 13	.979	0.000905489	25.84	0.120574238	3414.27	55.58	67.20	8/1/04 1	1:03	3442:58:45	3440:27:00	58.67862084
30	82	1076	0.0011	542 13	.988	0.000985889	27.35	0.121539925	3441.81	58.01	67.64	6/7/04 1	0:44	3588:37:45	3584:08:00	59.88847274
22	83	1078	0.0008	543 13		0.000708182	20.05	0.122248107	3481.67	58.33	87.97	6/14/04 1	0:58	3754:51:45	3752:22:00	81.27693285
-3	81	1082	-0.0001	541 14	.044	-9.72869E-05	-2.75	0.12215082	3458.91	56.29	87.93	6/23/04 1	6:37	3978:30:45	3974:01:00	83.05959483
0	81	1062	0	541 14	.044	0	0.00	0.12215082	3458.91	56.29	67.93	7/1/04 1	4:03	4185:58:45	4163:27:00	84.54413864

DECANISTERED 7/1/2004; sample dried 21 days in air

SAMPLE:	1728' to 1731	' (Riverton o	oal) cuttin	s in canister 10												71. 15. 05.				elapsed time (off bottom to canistering)
		lbs.	grams									est. lost gas				TIME OF:				
dry sample we	ight:	1.9	35 877	78									382				at surface	in canister		24.0 minutes
-,																1/10/04 10:24		1/10/04	10:48	
RIGILAB MEAS	BEMENTS		CONV	ERSION OF RIGH	AB MEAS	UREMENTS TO ST	P (@80 deg F; 14.7	pel)	CUMULATIVE VC	DLUMES (@STP)	SCF/TON	SCF/TON				TIME SINCE				0.832455532 SQRT (hrs)
measured cc		=) mage mad		t ebsolute T (F		cubic ft (@STP)				cc		with lost gas		TIME OF MEA	SURE	off bottom	at surface	in canister		SQRT hrs. (since off bottom)
53			90 0.00		0 14.14	0.00173485	45	1.12	0.00173485	49.12	1.79		15.01	1/10/04	10:55	0:31:00			0:07:00	0.718795288
4			90 0.00		0 14.14				0.001885587	52.83	1.93		15.14	1/10/04	10:55	0:31:30			0:07:30	0.724568837
4			90 0.00		0 14.14				0.001998484	58.53	2.08		15.28	1/10/04	10:58	0:32:00			0:08:00	0.730296743
9			90 0.00		0 14.14				0.002094871	59.31	2.18		15.38	1/10/04	10:56	0:32:30			0:08:30	0.735980072
4			90 0.00		0 14.14				0.002225588	63.02			15.51	1/10/04	10:57	0:33:00			0:09:00	0.741619849
4			90 0.00		0 14.14				0.002356505				15.65	1/10/04	10:58	0:34:00			0:10:00	0.752772653
4			90 0.00		0 14,14				0.002520152				15.82	1/10/04	10:59	0:35:00			0:11:00	0.783782818
26			90 0.00		0 14.14				0.003371112				18.70	1/10/04	11:04	0:40:00			0:18:00	0.818496581
20			90 0.00		0 14.14		_		0.003800217	101.95			18.93	1/10/04	11:05	0:41:00			0:17:00	0.828639784
,			90 0.00	-	0 14.14				0.003796592				17.14	1/10/04	11:08	0:42:00			0:18:00	0.838680027
0			90 0.00		0 14.14				0.004451177				17.81	1/10/04	11:10	0:48:00			0:22:00	0.875595036
20			90 0.00		0 14.14				0.005891264				19.30	1/10/04	11:20				0:32:00	0.968091783
44			90 0.00		0 14.14				0.007384079				20.82	1/10/04		1:07:00			0:43:00	1.056724499
45			90 0.00		0 14.14				0.008411415				21.91	1/10/04					0:52:00	1.125462868
32			89 0.00		9 14.13				0.009558011	270.85			23.09	1/10/04		1:26:00			1:02:00	
35			89 0.00		0 14.13				0.010787882				24.34	1/10/04		1:37:00			1:13:00	1.271482075
37					0 14.13				0.011977753				25.59	1/10/04					1:28:00	1.386260102
37						2 0.001078083			0.013055838				28.71	1/10/04		2:06:00			1:42:00	
33			88 0.00		0 14.10				0.015340577	434.40			29.07	1/10/04					2:12:00	
70			87 0.00						0.018786835				32.83	1/10/04		3:42:00			3:18:00	
105			87 0.00		7 14.10				0.024488948				38.52	1/10/04		8:59:00			8:35:00	
174		80 10	91 0.00	161 54	0 14.18	1 0.005700113	10	. 91	0.024460846	683.38	25.31		00.02	17 10/04	17.20	0.58.00			4.00.00	

251	80	1089	0.0089	540 14.135	0.008207503	232.41	0.032894451	925.80	33.79	47.00	1/10/04	22:21	11:57:00	11:33:00	3.456877203
297	82	1085	0.0105	542 14.083	0.00984029	272.98	0.042334741	1198.78	43.75	56.97	1/11/04	9:27	23:03:00	22:39:00	4.801041554
150	80	1087	0.0053	540 14.108	0.004895874	138.84	0.047230815	1337.42	48.81	82.03	1/11/04 2	21:08	34:42:00	34:18:00	5.89087059
107	79	1093	0.0038	539 14.187	0.003518183	99.82	0.050748798	1437.04	52.45	85.88	1/12/04	9:27	47:03:00	48:39:00	6.859300258
97	80	1092	0.0034	540 14.174	0.003180582	90.08	0.05392938	1527.10	55.74	88.95	1/12/04	17:24	55:00:00	54:38:00	7.416198487
117	80	1096	0.0041	540 14.228	0.0038504	109.03	0.05777978	1838.13	59.72	72.93	1/13/04	11:51	73:27:00	73:03:00	6.570297544
154	80	1084	0.0054	540 14.070	0.005012558	141.94	0.082792318	1778.07	84.90	78.11	1/14/04	11:58	97:32:00	97:08:00	9.875898584
96	80	1089	0.0035	540 14.135	0.003204523	90.74	0.085998841	1888.82	88.21	81.42	1/15/04 1	11:31	121:07:00	120:43:00	11.00530175
105	81	1079		541 14.005		98.15	0.089392443	1984.97	71.72	84.93	1/16/04 1	11:09	144:45:00	144:21:00	12.03120942
113	61	1077	0.004	541 13.979		103.29	0.073039983	2088.25	75.49	88.70	1/17/04 1	11:09	188:45:00	188:21:00	12.99038108
15	80	1087	0.0005	540 14.108			0.07352957	2082.12	75.99	89.21	1/18/04	10:08	191:44:00	191:20:00	13.64676061
42	80	1090	0.0015	540 14,148			0.074904198	2121.04	77.41	90.83	1/19/04 1		224:29:00	224:05:00	14.98278788
84	84	1089	0.003	544 14.135			0.077830738	2198.25	60.23	93.44	1/20/04		244:03:00	243:39:00	15,62209973
20	80	1089	0.0007	540 14.135		18.52		2218.77	80.91	94.12		0:18	283:54:00	283:30:00	16.24499923
14	80	1095	0.0005	540 14.213			0.078745031	2229.80	81.38	94.60	1/22/04	11:45	289:21:00	268:57:00	17.010291
88	80	1077	0.0023	540 13.979			0.080879398	2290.24	83.59	98.80		12:40	314:18:00	313:52:00	17,72758799
34	80	1078	0.0012	540 13.992			0.081979942	2321.40	84.73	97.94	1/24/04		343:08:00	342:42:00	18.52295873
41	81	1069	0.0014	541 13.875			0.083293555	2358.80	88.08	99.30	1/25/04		385:57:00	385:33:00	19,12961965
-3	80	1078	-0.0001	540 13.992			0.083198448	2355.85	85.98	99.20	1/26/04 1		389:00:00	388:38:00	19.72308292
-11	79		-0.0004		-0.000381021		0.082835428	2345.83	85.61	98.82	1/27/04		407:33:00	407:09:00	20.18788784
11	79	1091	0.0004	539 14.181			0.083198448	2355.85	85.98	99.20	1/28/04 1		432:03:00	431:39:00	20.78581247
24	80	1085	0.0008	540 14.083			0.083978347	2377.99	88.79	100.00	1/29/04		455:09:00	454:45:00	21.33424477
10	79	1089	0.0004	539 14.135			0.084305945	2387.27	87.13	100.34	1/30/04 1		480:12:00	479:46:00	21.91348818
	61	1081	0.0004	541 14.031			0.085899103	2428.72	88.57	101.78	1/31/04 1		508:08:00	505:44:00	22,49740726
43	80	1080	0.0005		0.000454008		0.088153108	2439.58	89.04	102.25	2/1/04 1		532:23:00	531:59:00	23.0734335
0	80	1085	0.0003	540 14.083			0.088153108	2439.58	89.04	102.25	2/2/04 1		557:07:00	558:43:00	23.80331898
		1094	0.0002	541 14.200		5.57		2445.15	89.24	102.45	2/3/04 1		577:53:00	577:29:00	24.03920409
6	81	1087	0.0002	540 14.109			0.088545875	2450.89	89.45	102.48	2/4/04 1		805:57:00	805:33:00	24.61605167
6	80	1087	0.0002	540 14.108			0.087194254	2489.08	90.12	103.33	2/5/04 1		828:10:00	827:48:00	25.08325331
20	80	1086	0.0007	540 14.098			0.087194254	2489.08	90.12	103.33	2/6/04		847:04:00	848:40:00	25.43750512
0		1095	-0.0002	540 14.030			0.088984099	2482.54	89.88	103.09	2/7/04 1		875:08:00	874:44:00	25.98332799
-7	80			540 14.213	4.444		0.087549442	2479.11	90.48	103.69	2/8/04 1		897:49:00	897:25:00	26.41821978
16	80	1083	0.0008	541 14.181			0.087941826	2490.23	90.89	104.10	2/9/04 1		719:57:00	719:33:00	28.83188402
12	81	1091	0.0004	540 14.174			0.087941828	2490.23	90.89	104.10	2/10/04 1		743:47:00	743:23:00	27.27239141
0	80	1082	0.0005	540 14.098			0.088430983	2504.08	91.39	104.61	2/11/04		787:00:00	788:38:00	27.89478485
15	80	1099	-0.0005	540 14.285			0.087988971	2490.99	90.92	104.13	2/12/04		791:17:00	790:53:00	28.12975888
14	80		0.0005	540 14.265		12.99	0.0884278	2503.98	91.39	104.13	2/13/04 1		817:54:00	817:30:00	28.59895103
14	80	1091	0.0003	540 14.083			0.089079182	2522.43	92.08	105.28	2/14/04 1		841:11:00	840:47:00	29.00316075
20	80	1085					0.088980815	2519.85	91.98	105.26	2/15/04 1		888:08:00	887:44:00	29.48410245
-3	80	1092	-0.0001	540 14.174 541 14.181			0.089538893	2535.39	92.54	105.75	2/16/04 1		891:38:00	891:14:00	29.86022998
17	81	1091	0.0008					2524.18	92.13	105.75	2/17/04		911:29:00	911:05:00	30,19078228
-12	80	1098	-0.0004	540 14.252			0.089141059			105.34	2/17/04		934:47:00	934:23:00	30.57422882
13	80	1091	0.0005	540 14.181		12.08	0.08958893	2538.24	92.57		2/19/04		958:34:00	958:10:00	30.98072781
56	62	1071		542 13.901			0.091329133	2588.14	94.39	107.80 107.47	2/20/04 1		989:57:00	989:33:00	31,48347088
-4	81	1076	-0.0001	541 13.968			0.091200137	2582.49	94.28 94.05		2/21/04 1		1017:16:00	1018:52:00	31.89481815
-6	80		-0.0002	540 14.083			0.091004882	2578.98		107.27 107.77	2/21/04 1		1017:18:00	1036:39:00	32,2032807
15	81	1079	0.0005	541 14.005			0.091489748	2590.69	94.55	107.77	2/23/04 1		1037:03:00	1059:25:00	32.55482555
-18	80	1085	-0.0008	540 14.083	-0.000586424	-18.81	0.090903324	2574.09	93.95	107.18	2/23/04	4.13	1038.49:00	1059.25.00	32.00402000

DECANISTERED 2/23/2004; sample dried for 5 days in air

SAMPLE	1728' to 173	1' (Riverto	n coal)	cuttings in	canister MER	Fe													
		lbs.		grame								est. lost gas (cc) =			TIME OF:				elapsed time (off bottom to canistering)
dry sample w	eight:		0.883	300.81								188			off bottom	at surface	in canister		25.0 minutes
															1/10/04 10:24		1/10/04	10:49	0.417 hours
RIGILAB MEAS	SUREMENTS			CONVER	SION OF RIGILA	BMEAS	UREMENTS TO ST	P (@80 deg F; 14.7 pei)	CUMULATIVE V	OLUMES (@STP)	SCF/TON	SCF/TON			TIME SINCE				0.845497224 SQRT (hrs)
measured co		(F) meas	ured P	cubic ft	absolute T (F)	pala	cubic ft (@STP)	cc (@STP)	cubic ft	CC	without lost gas	with lost gas	TIME OF MEA	SURE	off bottom	at surface	in canister		SQRT hrs. (since off bottom)
42		80	1090	0.0015	540	14.14	0.001374828	38.92	0.001374828	38.92	4.15	24.18	1/10/04	10:59	0:35:30		0:	10:30	0.769196717
2		80	1090	7E-05	540	14.148	8.54585E-05	1.85	0.001440087	40.78	4.35	24.38	1/10/04	11:00	0:38:00		0:	11:00	0.774596669
1		80	1090	4E-05	540	14,140	3.27292E-05	0.93	0.001472816	41.71	4.44	24.48	1/10/04	11:00	0:36:30		0:	11:30	0.779957264
1		80	1090	4E-05	540	14.14	3.27292E-05	0.93	0.001505545	42.83	4.54	24.58	1/10/04	11:01	0:37:00		0:	12:00	0.785281288
3		60	1090	0.0001	540	14.14	9.81877E-05	2.78	0.001803733	45.41	4.84	24.88	1/10/04	11:02	0:38:00		0:	13:00	0.795822428
1		80	1090	4E-05	540	14.14	3.27292E-05	0.93	0.001838482	48.34	4.94	24.97	1/10/04	11:03	0:39:00		0:	14:00	0.808225775
10)	60	1090	0.0004	540	14.14	0.000327292	9.27	0.001983765	55.81	5.93	25.98	1/10/04	11:07	0:43:00		0:	18:00	0.848581873
7		60	1090	0.0002	540	14,14	0.000229105	8.49	0.002192859	62.09	8.82	26.65	1/10/04	11:11	0:47:00		0:	22:00	0.865081203
20)	80	1090	0.0007	540	14.14	0.000854585	18.54	0.002847444	80.63	8.59	28.83	1/10/04	11:21	0:57:00		0:	32:00	0.974679434
16	5	80	1090	0.0008	540	14.14	0.000523888	14.83	0.003371112	95.48	10.17	30.21	1/10/04	11:32	1:08:00		0:	43:00	1.064581295
12	2	80	1090	0.0004	540	14.14	0.000392751	11.12	0.003783883	108.58	11.38	31.38	1/10/04	11:41	1:17:00		0:	52:00	1.132843031
14	1	79	1089	0.0005	539	14.13	0.000458838	12.99	0.004222501	119.57	12.74	32.78	1/10/04	11:51	1:27:00		1:	02:00	1.204159458
9)	80	1089	0.0003	540	14.13	0.000294293	8.33	0.004518794	127.90	13.83	33.87	1/10/04	12:00	1:38:00		1:	11:00	1.284911084
1.6	3	80	1089	0.0008	540	14.13	0.000523187	14.81	0.005039982	142.72	15.21	35.25	1/10/04	12:18	1:52:00		1:	27:00	1.386260102
12	2	80	1088	0.0004	540	14.12	0.00039203	11.10	0.005432012	153.82	18.39	38.43	1/10/04	12:29	2:05:00		1:	40:00	1.443375873
24	4	60	1087	0.0008	540	14.10	0.00078334	22.18	0.006215352	178.00	18.76	38.79	1/10/04	13:01	2:37:00		2:	12:00	1.617611408
38	3	77	1087	0.0013	537	14.10	0.001247217	35.32	0.007482588	211.32	22.52	42.58	1/10/04	14:07	3:43:00		3:	18:00	1.927665632

78	80	1091	0.0028	540	14.181	0.002555223	72.38	0.010017792	283.67	30.23	50.27	1/10/04		7:01:00	8:36:00	2.848899142
98	80	1089	0.0035	540	14.135	0.003204523	90.74	0.013222315	374.41	39.90	59.94	1/10/04		12:00:00	11:35:00	3.484101615
112	82	1085	0.004	542	14.083	0.003635396	102.94	0.01685771	477.36	50.87	70.91	1/11/04		23:07:00	22:42:00	4.807979479
53	80	1087	0.0019	540	14,109	0.001729878	48.98	0.018587588	528.34	56.09	78.13	1/11/04		34:44:00	34:19:00	5.893499244
28	79	1093	0.001	539	14.187	0.000920848	26.07	0.019508232	552.41	58.87	78.91	1/12/04		47:04:00	46:39:00	8.860515044
26	80	1092	0.0009	540	14.174	0.000852522	24.14	0.020380754	578.55	61.44	61.48	1/12/04		55:01:00	54:38:00	7.417322088
24	80	1096	0.0008	540	14.228	0.000789828	22.37	0.021150579	598.92	63.83	83.86	1/13/04	11:53	73:29:00	73:04:00	8.572242025
45	80	1084	0.0016	540	14.070	0.001484709	41.48	0.022815288	640.39	68.25	88.28	1/14/04	11:58	97:34:00	97:09:00	9.87758405
22	80	1089	0.0008	540	14.135	0.000719383	20.37	0.023334871	860.76	70.42	90.45	1/15/04		121:08:00	120:43:00	11.00805894
41	81	1079	0.0014	541	14.005	0.001325901	37.55	0.024880572	698.31	74.42	94.46	1/16/04	11:11	144:47:00	144:22:00	12.03259482
42	81	1077	0.0015	541	13.979	0.001355723	38.39	0.026018295	738.70	78.51	98.55		11:11	188:47:00	188:22:00	12.99166399
-2	80	1087	-7E-05	540	14.109	-8.52783E-05	-1.65	0.025951017	734.85	78.31	98.35	1/18/04	10:11	191:47:00	191:22:00	13.84858597
15	80	1090	0.0005	540	14.148	0.000490939	13.90	0.026441955	748.75	79.80	99.83	1/19/04	18:54	224:30:00	224:05:00	14.98332406
40	84	1089	0.0014	544	14.135	0.001298351	38.77	0.027740308	785.52	83.71	103.75	1/20/04		244:05:00	243:40:00	15.62318856
10	80	1089	0.0004	540	14.135	0.000328992	9.26	0.028087299	794.77	84.70	104.74	1/21/04	10:19	283:55:00	283:30:00	18.2455122
7	80	1095	0.0002	540	14.213	0.000230158	8.52	0.028297454	801.29	85.40	105.43	1/22/04		289:21:00	288:58:00	17.010291
4.1	80	1077	0.0014	540	13.979	0.001325895	37.55	0.029623349	838.84	89.40	109.43	1/23/04	12:39	314:15:00	313:50:00	17.7270979
20	80	1078	0.0007	540	13.992	0.000847378	16.33	0.030270727	857.17	91.35	111.39	1/24/04	17:31	343:07:00	342:42:00	18.52340861
25	81	1069	0.0009	541	13.875	0.000800984	22.88	0.031071711	879.85	93.77	113.80	1/25/04	18:22	365:58:00	365:33:00	19.13025527
-3	80	1078	-0.0001	540	13.992	-9.71068E-05	-2.75	0.030974804	877,10	93.47	113.51	1/26/04	15:25	389:01:00	388:38:00	19.72350544
-7	79	1091	-0.0002	539	14,181	-0.00022974	-8.51	0.030744864	870.59	92.78	112.82	1/27/04	9:58	407:34:00	407:09:00	20.18828043
9	79	1091	0.0003	539	14.181	0.00029538	8.38	0.031040244	878.98	93.67	113.71	1/28/04	10:28	432:04:00	431:39:00	20.78621338
20	80	1085	0.0007	540	14.083	0.000851582	18.45	0.031691826	897.41	95.84	115.68	1/29/04	9:33	455:09:00	454:44:00	21.33424477
10	79	1089	0.0004	539	14.135	0.000327599	9.28	0.032019425	908.89	96.83	118.86	1/30/04	10:35	480:11:00	479:48:00	21.91306589
33	81	1081	0.0012	541	14.031	0.001089187	30.28	0.033088592	938.96	99.85	119.89		12:33	508:09:00	505:44:00	22.49777767
15	80	1080	0.0005	540	14.018	0.000488435	13.77	0.033575027	950.74	101.32	121.38	2/1/04	14:48	532:24:00	531:59:00	23.07379466
5	80	1085	0.0002	540	14.083	0.000182898	4.81	0.033737922	955.35	101.81	121.85	2/2/04	15:32	557:08:00	558:43:00	23.60387203
10	81	1094	0.0004	541	14.200	0.000327888	9.28	0.034085809	984.63	102.80	122.84	2/3/04		577:54:00	577:29:00	24.03955074
12	80	1087	0.0004	540	14.109	0.00039187	11.09	0.034457479	975.72	103.99	124.02	2/4/04		805:57:00	805:32:00	24.81605167
19	80	1080	0.0007	540	14.018	0.00081815	17.45	0.035073629	993.17	105.84	125.88	2/5/04		828:11:00	827:48:00	25.0835858
6	80	1086	0.0002	540	14.098	0.000195855	5.54	0.035269284	998.71	108.44	126.47	2/6/04		847:04:00	648:39:00	25.43750512
0	80	1095	0	540	14.213	0	0.00	0.035269284	998.71	108.44	128.47	2/7/04		675:08:00	874:43:00	25.98332799
19	80	1083	0.0007	540	14.057	0.000817882	17.50	0.035887148	1016.21	108.30	128.34	2/8/04		897:51:00	897:28:00	28.41685068
11	81	1091	0.0004	541	14.161	0.000359886	10.19	0.036248832	1028.39	109.39	129.42	2/9/04		719:57:00	719:32:00	26.83188402
6	80	1092	0.0002	540	14.174	0.000198738	5.57	0.038443588	1031.98	109.98	130.01	2/10/04		743:48:00	743:23:00	27.27289897
18	80	1085	0.0006	540	14.083	0.000521288	14.78	0.038984833	1048.72	111.55	131.59	2/11/04		787:01:00	766:36:00	27.89508575
-6	80	1099	-0.0002	540	14.285	-0.000197997	-5.81	0.038788638	1041.12	110.95	130.99	2/12/04		791:18:00	790:53:00	28.1300551
15	80	1091	0.0005	540	14.181	0.000491389	13.91	0.037258225	1055.03	112.44	132.47	2/13/04		817:55:00	817:30:00	28.59924241
16	80	1085	0.0008	540	14.083	0.000521288	14.78	0.037779491	1069.79	114.01	134.05	2/14/04		841:11:00	840:48:00	29.00316075
1	80	1092	4E-05	540	14.174	3.27893E-05	0.93	0.03781228	1070.72	114.11	134.15		14:33	868:09:00	887:44:00	29.48438528
16	81	1091	0.0008	541	14.181	0.000523179	14.81	0.03833548	1085.54	115.89	135.72	2/16/04		891:39:00	891:14:00	29.86050904
-6	80	1098	-0.0002	540	14.252	-0.000197817	-5.60	0.038137843	1079.93	115.09	135.13	2/17/04		911:31:00	911:06:00	30.1913343
10	80	1091	0.0004	540	14.181	0.000327593		0.038485238	1089.21	118.08	138.12	2/18/04		934:47:00	934:22:00	30.57422862
38	82	1071	0.0013	542	13.901	0.001217522		0.039882758	1123.69	119.75	139.79	2/19/04		958:36:00	958:11:00	30.98128812
-3	81	1076	-0.0001	541	13.968	-9.87474E-05		0.039588011	1120.95	119.48	139.50	2/20/04		989:56:00	989:33:00	31.46373574
-1	80	1085	-4E-05	540	14.063	-3.25791E-05	-0.92	0.039553432	1120.02	119.38	139.40	2/21/04		1017:15:00	1016:50:00	31.89435687
13	81	1079	0.0005	541	14.005	0.000420408	11.90		1131.93	120.83	140.67		15:25	1037:01:00	1036:38:00	32.20274315
-9	80	1085	-0.0003	540	14.083	-0.000293212	-8.30	0.039680628	1123.63	119.75	139.78	2/23/04	14:14	1059:50:00	1059:25:00	32,55508153

DECANISTERED 2/23/2004; sample oven dried for 5 days in air

1051.0'-1051.6' (shale seam in Bethany Falls Ls.) core in canister MER 3 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

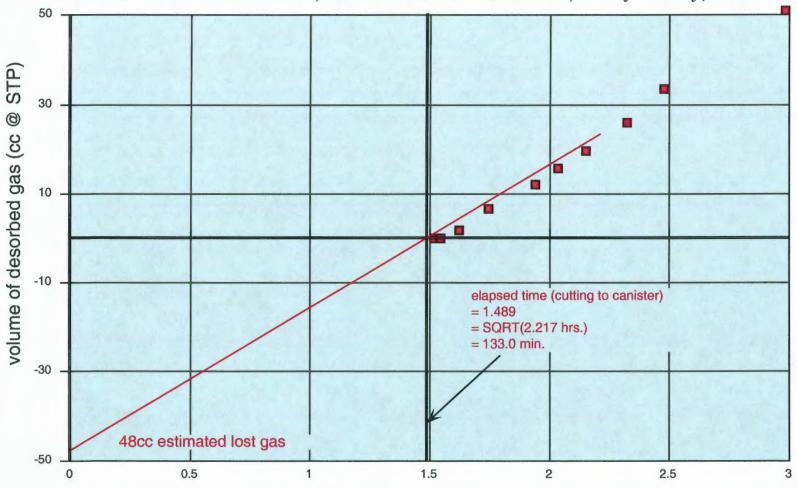


Figure 2.

1057.0'-1057.6' (Hushpuckney Shale) core in canister 4 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

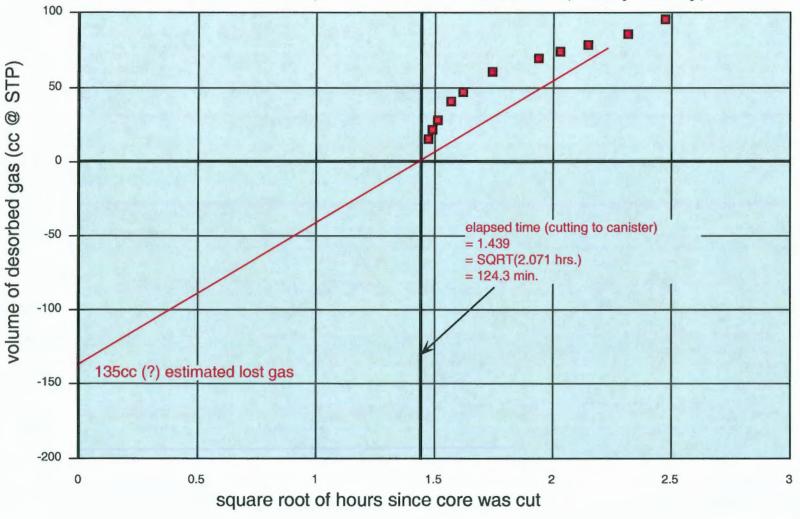


Figure 3.

1264' to 1268' (Lake Neosho Shale) cuttings in canister Stoeckinger #5 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

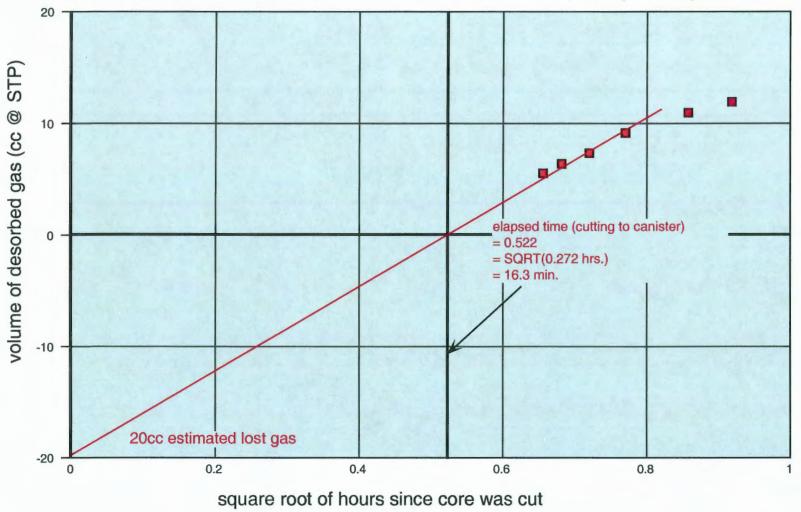


Figure 4.

1324' to 1326' (Lexington/Anna Shale) cuttings in canister Stoeckinger #1 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

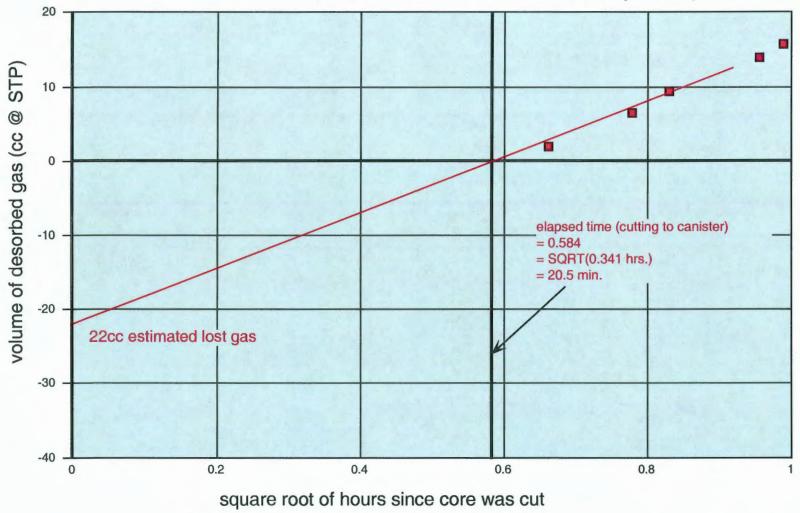


Figure 5.

1482.7' to 1483.6' (V Shale) core in canister MER 2 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

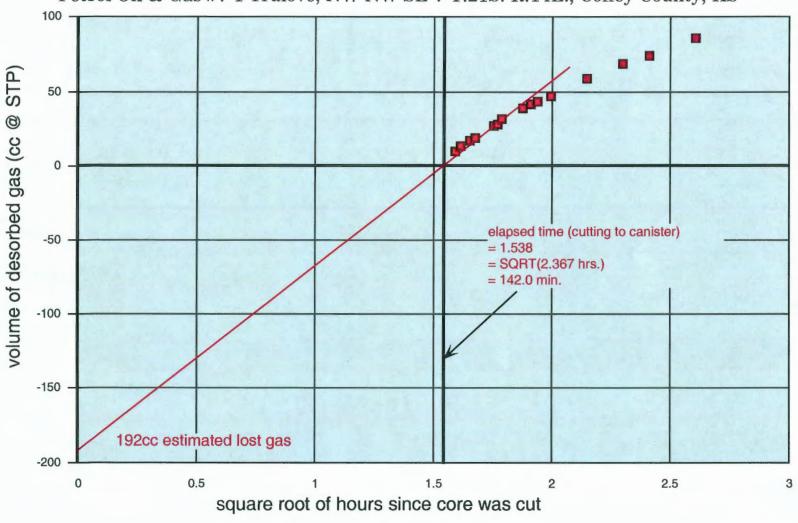


Figure 6.

1483.6' to 1484.5' (Croweburg coal) core in canister MER 1 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

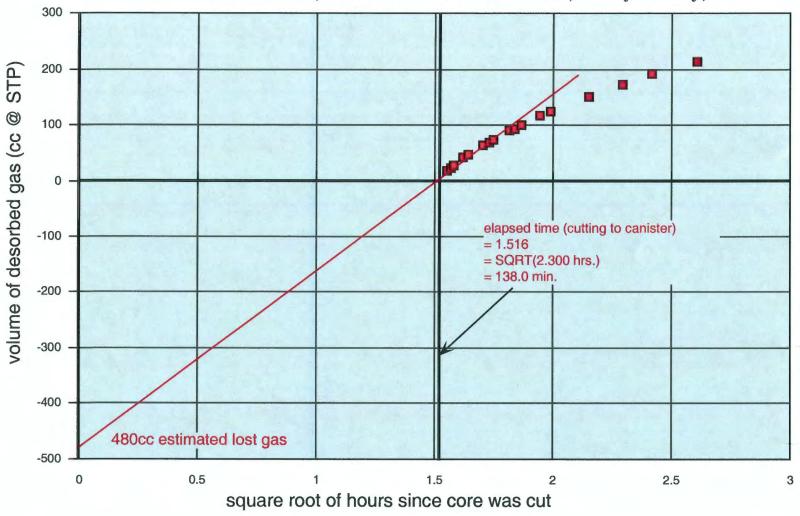


Figure 7.

1552.7' to 1553.5' ("Tebo shale") core in canister 8 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

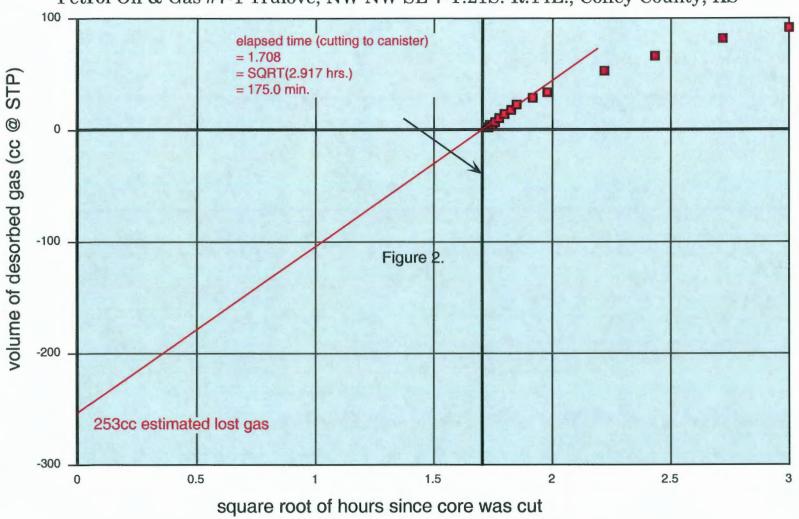


Figure 8.

1556.1' to 1556.8' (Tebo(?) coal) core in canister 6 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

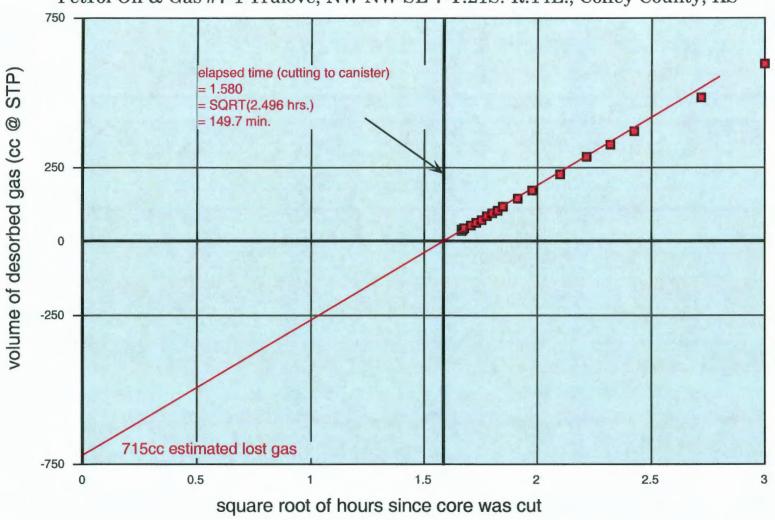


Figure 9.

1728' to 1731' (Riverton coal) cuttings in canister 10 Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

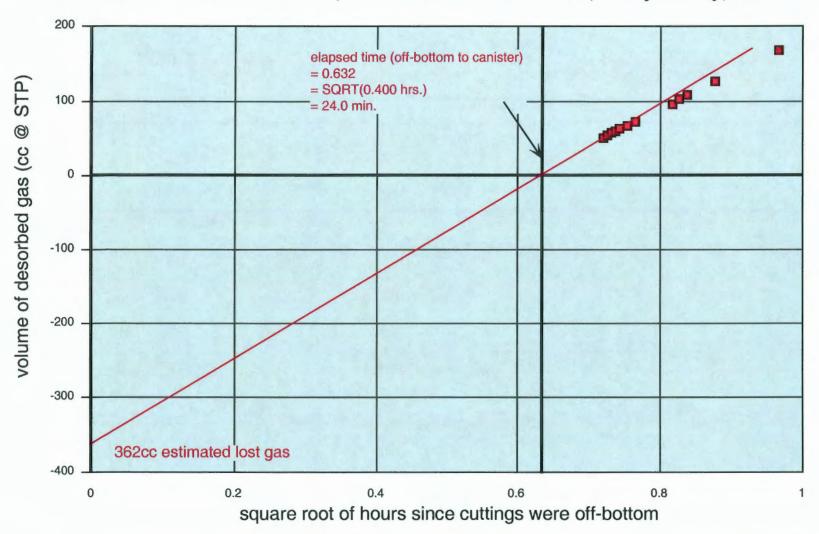


Figure 10.

1728' to 1731' (Riverton coal) cuttings in canister MER Fe Petrol Oil & Gas #7-1 Trulove; NW NW SE 7-T.21S.-R.14E., Coffey County, KS

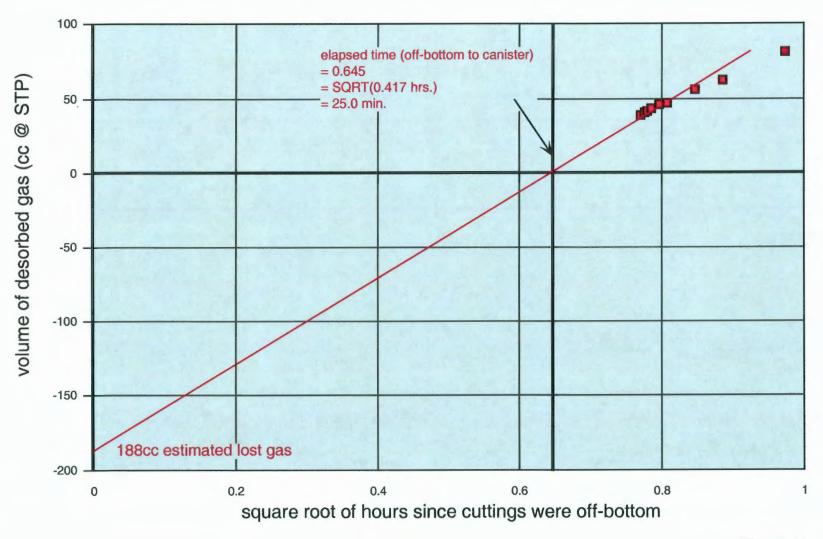


Figure 11.

Desorption Characteristics of Cuttings Samples Petrol Oil & Gas #7-1 Trulove, NW NW SE 7-21S-14E, Coffey Co., KS

LITHOLOGIC COMPONENT SENSITIVITY ANALYSIS for calculation of gas content of Lake Neosho Shale from 1264-1268'

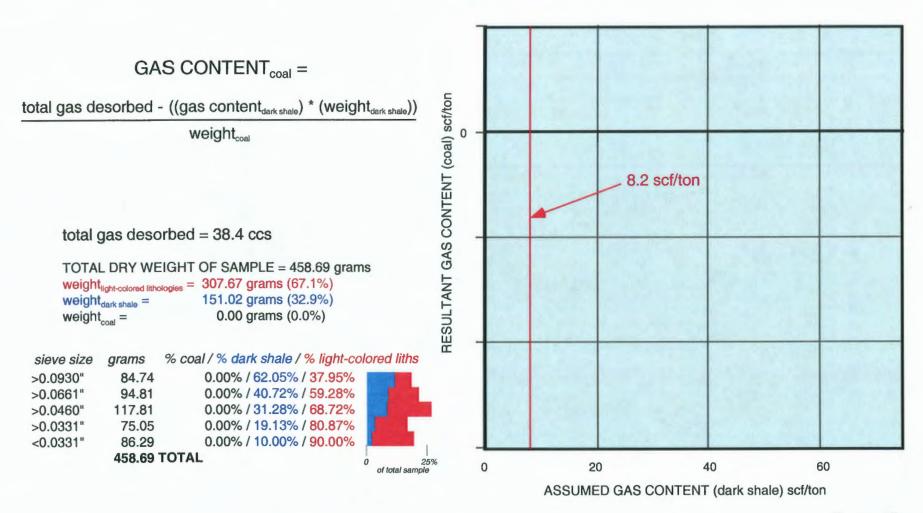
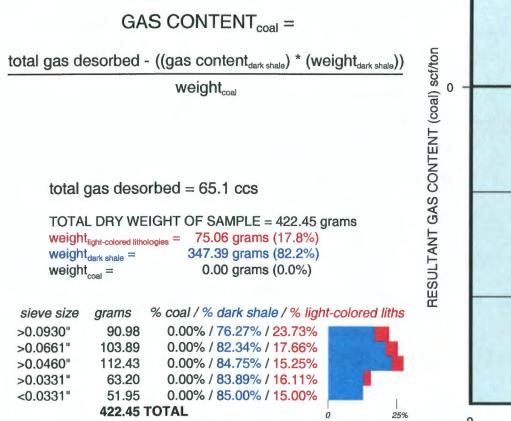


Figure 12.

Desorption Characteristics of Cuttings Samples Petrol Oil & Gas #7-1 Trulove, NW NW SE 7-21S-14E, Coffey Co., KS

LITHOLOGIC COMPONENT SENSITIVITY ANALYSIS for calculation of gas content of Anna Shale from 1324-1326'



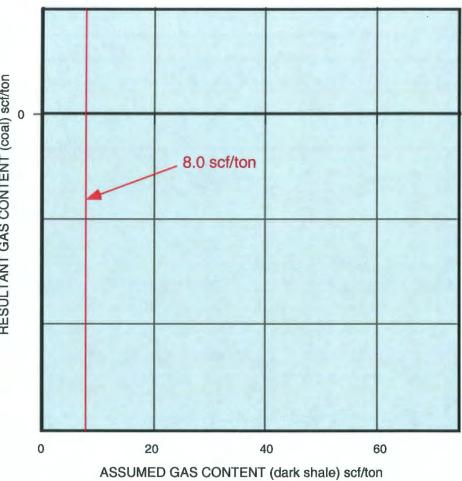
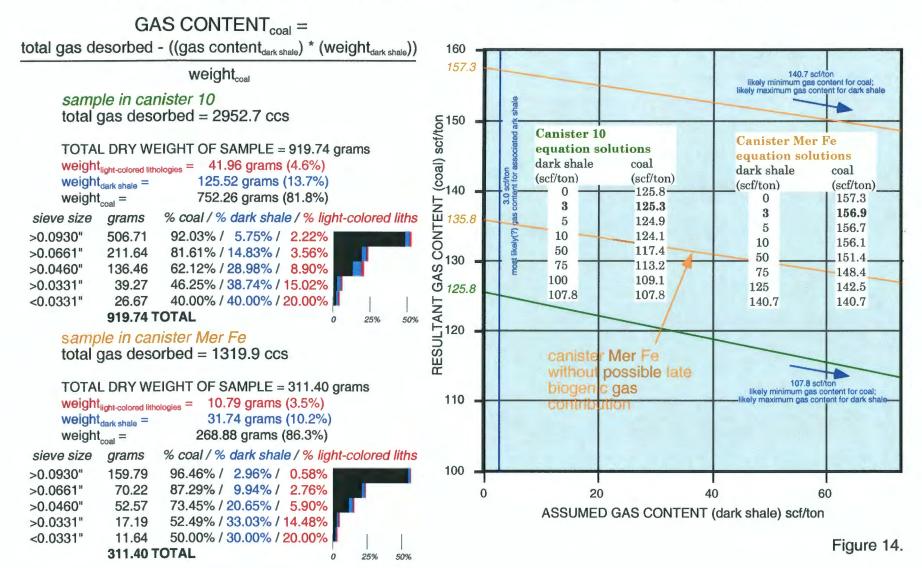


Figure 13.

Desorption Characteristics of Cuttings Samples Petrol Oil & Gas #7-1 Trulove, NW NW SE 7-21S-14E, Coffey Co., KS

LITHOLOGIC COMPONENT SENSITIVITY ANALYSIS for calculation of gas content of Riverton coal from 1728-1731'



PETROL OIL & GAS #7-1 TRULOVE

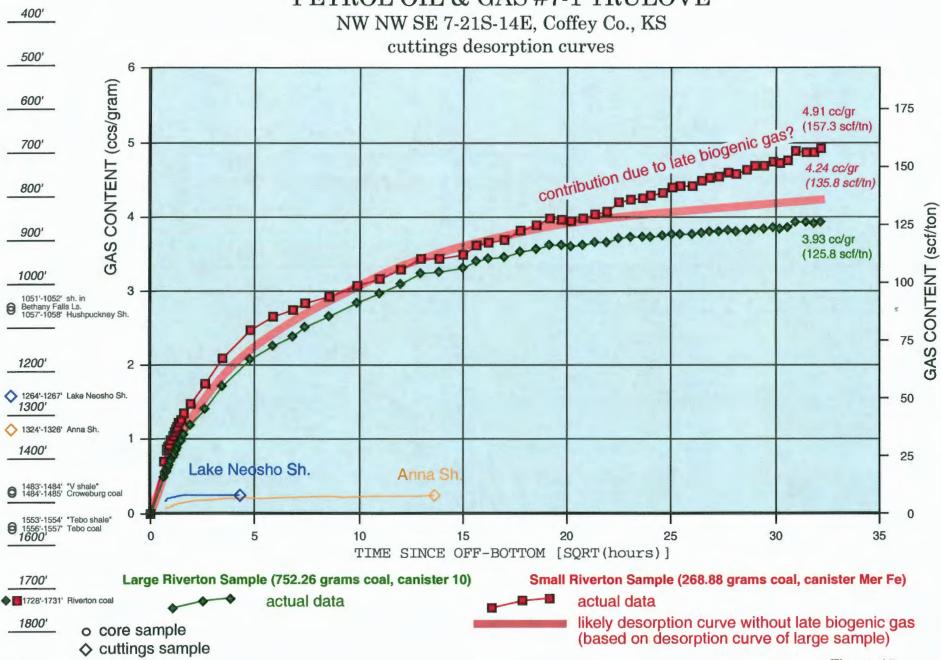
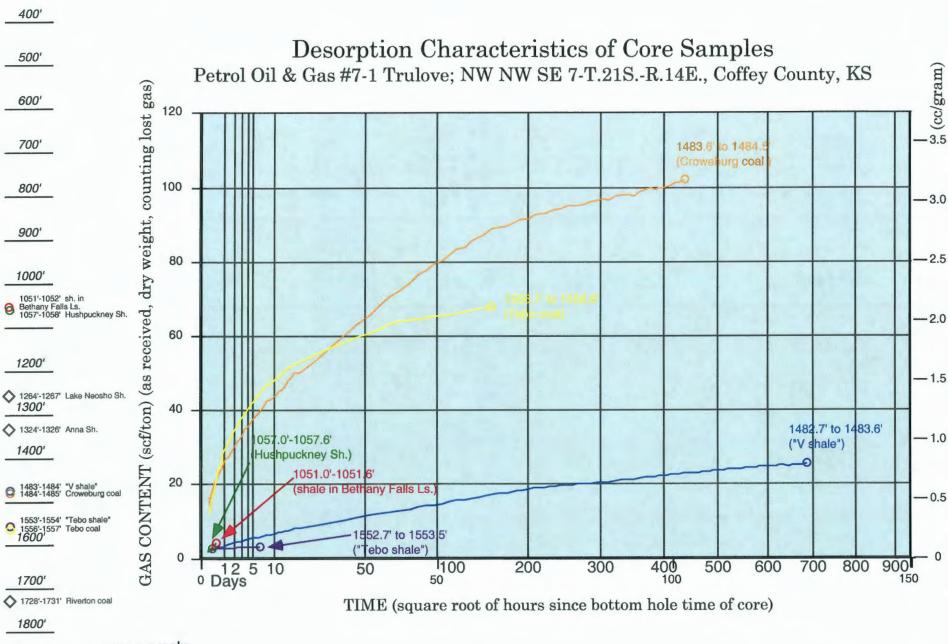
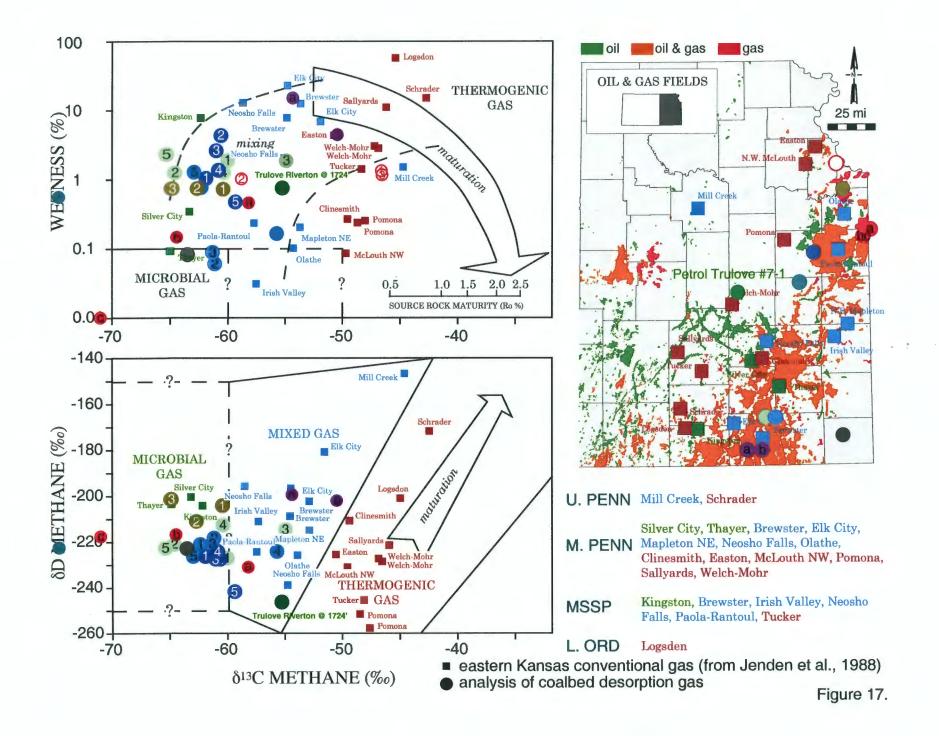


Figure 15.



o core sample

cuttings sample



LUMAN'S LABORATORIES

P.O. Box 326 - Chetopa, KS 67336 (620) 236-7874



March 19, 2004

William T. Stocckinger 5742 Hazel Rd. Bartlesville, OK 74006

Attn: William T. Stoeckinger

Please find listed below analysis on the following sample.

Lab ID, SM10-1 Sample ID. Riverton Large 859.11.

	As Received	Moisture Free	MAF
Moisture	2.23%		
Ash	7.59%	7.76%	
Volatile Matter	36.65%	37.49%	
Fixed Carbon	53,53%	54.75%	
ВТU/Љ	13,714	14,027	15,207
Sulfur	2.21%	2.26%	

84.81% Coal Floated at 1.65

Specific Gravity 1.31

Air Dried weight of sample 857.1 gm

Respectfully,

CGL:pdl

Luman's Laboratories

P.O. Box 326 . Chetopa, KS 67336 (620) 236-7874



March 19, 2004

William T. Stocckinger 5742 Hazel Rd. Bartlesville, OK 74006

Attn: William T. Stoeckinger

Please find listed below analysis on the following sample.

Lab ID. SM10-2 Sample ID. Riverton Large 270-88.

	As Received	Moisture Free	$M\Lambda F$
Moisture	1.91%		
Ash	6.35%	6.47%	
Volatile Matter	38.71%	39.46%	
Fixed Carbon	53.03%	54.07%	
BTU/lb	13,981	14,253	15,239
Sulfur	2.12%	2.16%	

86.98% Coal Floated at 1.65

Specific Gravity 1.31

Air Dried weight of sample 271.1 gm

Respectfully,

Carrol Luman

CGL:pdl

APPAIDIXI (2ml pg)