GR- MT. KLAPPAN 84A
SUMMIT - NASS - SKEENA
CONFIDENTIAL COAL
QUALITY FROM
APPENDIX III, VOL. I
(DIAMOND DRILLHOLE DATA
AND COAL QUALITY)



710

KPNSSOOH82007

CONFIDENTIAL

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - D SAMPLE ID - 4740 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 9.53 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 38.28 | 16.49 | 38.28 | 16.49 | 61.72 | 65.17 | 28.31 | 28.31 |
| 2.60 | 61.72 | 65.17 | 100.00 | 46.54 | | | 9.42 | 16.65 |

FORM 9999

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - D SAMPLE ID - 4741 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 9.53 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 66.63 | 12.44 | 66.63 | 12.44 | 33.37 | 57.63 | 28.70 | 28.70 |
| 2.60 | 33.37 | 57.63 | 100.00 | 27.52 | | | 13.01 | 23.46 |

Gulf

FORM 2929

SEAM D

GCRI COAL DIVISION HEAD PROJ KPN BLK SS DS DDH82007

SAMPLE ID 47 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 26/10/82
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | 10.00 | | |
| SURFACE MOISTURE %(AD,AR) | __.__ | TOTAL SULPHUR % | 0.53 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | 00227 |
| | | SPECIFIC GRAVITY | 1.68 |
| RESIDUAL MOISTURE %(AD,EM) | 1.54 | FSI | __.__ |
| ASH % | 32.04 | HGI | 39.0 |
| VOLATILE MATTER % | 7.84 | CO2 % | 2.29 |
| FIXED CARBON % | 58.58 | | |

GROSS CALORIFIC VALUE (MJ/KG) __.__
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION SIZE PROJ KPN BLK SS DS DDH82007

SAMPLE ID 47 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SZ1 DATE ANALYSED 26/10/82

| FRACTION SIZE FROM (MM) | TO (MM) | WT% | ASH% | FSI | CAL (MJ/KG) | RM | VM | TS |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 0.60 | 89.28 | 29.67 | __._ | 23.37 | 1.35 | 8.14 | 0.49 |
| 0.60 | 0.15 | 7.27 | 41.73 | __._ | 18.07 | 1.45 | 7.93 | 0.45 |
| 0.15 | 0.00 | 3.45 | 56.15 | __._ | 11.90 | 1.38 | 7.58 | 0.38 |

GCRI COAL DIVISION ULTIMATE PROJ KPN BLK SS DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 03/11/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.54 |
| CARBON | % | 59.99 |
| HYDROGEN | % | 1.88 |
| SULPHUR | % | 0.53 |
| NITROGEN | % | 0.67 |
| ASH | % | 32.04 |
| OXYGEN | % | 3.35 |

SEAM D

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 08/11/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1265.0 | INITIAL TEMP.(C) | 1190.0 |
| SOFTENING TEMP.(C) | 1295.0 | SOFTENING TEMP.(C) | 1245.0 |
| HEMISPHERICAL TEMP.(C) | 1320.0 | HEMISPHERICAL TEMP.(C) | 1280.0 |
| FLUID TEMP.(C) | 1410.0 | FLUID TEMP.(C) | 1375.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS > REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1  DATE ANALYSED 10/11/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 49.54 |
| ALUMINIUM OXIDE % | (AL2O3) | 24.11 |
| FERRIC OXIDE % | (FE2O3) | 8.01 |
| TITANIUM DIOXIDE % | (TIO2) | 0.59 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.72 |
| CALCIUM OXIDE % | (CAO) | 2.98 |
| MAGNESIUM OXIDE % | (MGO) | 3.15 |
| SULPHUR TRIOXIDE % | (SO3) | 2.76 |
| SODIUM OXIDE % | (NA2O) | 1.89 |
| POTASSIUM OXIDE % | (K2O) | 1.28 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 19/11/82

| | | |
|---|---|---|
| PYRITE | % | 47.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 51.00 |

TOTAL 100.00

GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - D SAMPLE ID - 47 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.60 RELATIVE WEIGHT % - 89.28 ASH % - 29.67

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 23.57 | 6.16 | 23.57 | 6.16 | 76.43 | 35.92 | 32.80 | 32.80 |
| 1.60 | 31.27 | 15.01 | 54.84 | 11.21 | 45.16 | 50.40 | 29.27 | 30.79 |
| 1.70 | 12.58 | 24.78 | 67.42 | 13.74 | 32.58 | 60.29 | 25.24 | 29.75 |
| 1.80 | 4.58 | 31.80 | 72.00 | 14.89 | 28.00 | 64.96 | 22.00 | 29.26 |
| 1.90 | 4.57 | 37.96 | 76.57 | 16.26 | 23.43 | 70.22 | 18.90 | 28.64 |
| 2.00 | 2.36 | 44.16 | 78.93 | 17.10 | 21.07 | 73.14 | 16.19 | 28.27 |
| 2.10 | 2.69 | 52.79 | 81.62 | 18.28 | 18.38 | 76.12 | 13.32 | 27.78 |
| 2.20 | 1.72 | 56.70 | 83.34 | 19.07 | 16.66 | 78.12 | 11.26 | 27.43 |
| 2.30 | 1.25 | 63.73 | 84.59 | 19.73 | 15.41 | 79.29 | 9.00 | 27.16 |
| 2.60 | 15.41 | 79.29 | 100.00 | 28.91 | | | 3.07 | 23.45 |

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.15 RELATIVE WEIGHT % - 7.27 ASH % - 41.73

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.40 | 1.81 | 1.60 | 1.81 | 1.60 | 98.19 | 43.55 | 34.40 | 34.40 |
| 1.50 | 23.86 | 7.79 | 25.67 | 7.35 | 74.33 | 55.03 | 32.41 | 32.55 |
| 1.60 | 9.47 | 15.95 | 35.14 | 9.67 | 64.86 | 60.74 | 28.01 | 31.33 |
| 1.70 | 5.67 | 22.57 | 40.81 | 11.46 | 59.19 | 64.40 | 25.33 | 30.49 |
| 1.80 | 3.42 | 29.87 | 44.23 | 12.89 | 55.77 | 66.51 | 21.50 | 29.80 |
| 1.90 | 2.82 | 40.60 | 47.05 | 14.55 | 52.95 | 67.89 | 18.40 | 29.11 |
| 2.00 | 2.21 | 49.03 | 49.26 | 16.09 | 50.74 | 68.72 | 14.67 | 28.47 |
| 2.10 | 2.76 | 51.88 | 52.02 | 17.99 | 47.98 | 69.69 | 13.71 | 27.68 |
| 2.30 | 2.83 | 62.75 | 54.85 | 20.30 | 45.15 | 70.12 | 9.99 | 26.77 |
| 2.60 | 45.15 | 70.12 | 100.00 | 42.79 | | | 6.40 | 17.57 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSD0H82007 SEAM - D SAMPLE ID - 47 WASHABILITY ID - WA1

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.48 ASH % - 56.15

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ/KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 30.00 | 19.07 | 26.65 | 19.07 | 26.65 | 80.93 | 62.09 | 24.01 | 24.01 |
| 45.00 | 4.38 | 42.69 | 23.45 | 29.65 | 76.55 | 63.20 | 17.59 | 22.81 |
| 60.00 | 4.44 | 48.72 | 27.89 | 32.68 | 72.11 | 64.09 | 15.14 | 21.59 |
| 90.00 | 4.82 | 58.73 | 32.71 | 36.52 | 67.29 | 64.47 | 11.53 | 20.11 |
| 120.00 | 4.61 | 61.82 | 37.32 | 39.65 | 62.68 | 64.67 | 10.34 | 18.90 |
| 300.00 | 62.68 | 64.67 | 100.00 | 55.33 | | | 9.51 | 13.01 |

SEAM D

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 47 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP3

SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.58 | 47.34 | 42.27 |
| 0.60 | 0.15 | 1.62 | 36.27 | 2.64 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 47 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP3 DATE ANALYSED 01/12/82
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE %(AD,AR) | __.__ | TOTAL SULPHUR % | 0.42 |
| TOTAL MOISTURE % (AR) | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE (AD,EM) | 0.76 | FSI | __._ |
| ASH % | 10.80 | HGI | 35.0 |
| VOLATILE MATTER % | 5.40 | CO2 % | __.__ |
| FIXED CARBON % | 83.04 | | |

GROSS CALORIFIC VALUE (MJ/KG) 30.91
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 13/12/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 0.76 |
| CARBON | % | 83.68 |
| HYDROGEN | % | 2.77 |
| SULPHUR | % | 0.42 |
| NITROGEN | % | 1.01 |
| ASH | % | 10.80 |
| OXYGEN | % | 0.56 |

SEAM 5

GCRI COAL DIVISION ASH FUSION PROJ KPN BLK SS DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 13/12/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1215.0 | INITIAL TEMP.(C) | 1205.0 |
| SOFTENING TEMP.(C) | 1390.0 | SOFTENING TEMP.(C) | 1365.0 |
| HEMISPHERICAL TEMP.(C) | 1415.0 | HEMISPHERICAL TEMP.(C) | 1410.0 |
| FLUID TEMP.(C) | 1470.0 | FLUID TEMP.(C) | 1440.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION ASH MINERAL PROJ KPN BLK SS DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 21/12/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 56.24 |
| ALUMINIUM OXIDE % | (AL2O3) | 23.79 |
| FERRIC OXIDE % | (FE2O3) | 5.58 |
| TITANIUM DIOXIDE % | (TIO2) | 1.60 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 1.85 |
| CALCIUM OXIDE % | (CAO) | 2.11 |
| MAGNESIUM OXIDE % | (MGO) | 1.14 |
| SULPHUR TRIOXIDE % | (SO3) | 1.03 |
| SODIUM OXIDE % | (NA2O) | 1.26 |
| POTASSIUM OXIDE % | (K2O) | 1.05 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION SULPHUR PROJ KPN BLK SS DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 03/12/82

| | | |
|---|---|---|
| PYRITE | % | 7.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 91.00 |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 47 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP4

SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 2.30 | 84.59 | 75.52 |
| 0.60 | 0.15 | 2.30 | 54.85 | 3.99 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 47 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP4 DATE ANALYSED 29/11/82
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

SURFACE MOISTURE %(AD,AR) __.__
TOTAL MOISTURE % (AR) __.__
EQUILIBRIUM MOISTURE % __.__
.SIDUAL MOISTURE (AD,EM) 1.26
ASH % 19.92
VOLATILE MATTER % 7.63
FIXED CARBON % 71.19

TOTAL SULPHUR % 0.58
PHOSPHOROUS % _.___
CHLORINE (PPM) _____
SPECIFIC GRAVITY 1.60
FSI __._
HGI 50.0
CO2 % 1.14

GROSS CALORIFIC VALUE (MJ/KG) 26.38
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP4 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 09/12/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.26 |
| CARBON | % | 71.56 |
| HYDROGEN | % | 2.29 |
| SULPHUR | % | 0.58 |
| NITROGEN | % | 0.86 |
| ASH | % | 19.92 |
| OXYGEN | % | 3.53 |

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 02/12/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1220.0 | INITIAL TEMP.(C) | 1220.0 |
| SOFTENING TEMP.(C) | 1335.0 | SOFTENING TEMP.(C) | 1330.0 |
| HEMISPHERICAL TEMP.(C) | 1365.0 | HEMISPHERICAL TEMP.(C) | 1360.0 |
| FLUID TEMP.(C) | 1400.0 | FLUID TEMP.(C) | 1400.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1  DATE ANALYSED 20/12/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 53.14 |
| ALUMINIUM OXIDE % | (AL2O3) | 23.17 |
| FERRIC OXIDE % | (FE2O3) | 6.45 |
| TITANIUM DIOXIDE % | (TIO2) | 1.00 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.87 |
| CALCIUM OXIDE % | (CAO) | 2.27 |
| MAGNESIUM OXIDE % | (MGO) | 1.97 |
| SULPHUR TRIOXIDE % | (SO3) | 1.65 |
| SODIUM OXIDE % | (NA2O) | 1.58 |
| POTASSIUM OXIDE % | (K2O) | 1.87 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 47
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 02/12/82

| | | |
|---|---|---|
| PYRITE | % | 15.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 83.00 |

GCRI COAL DIVISION **SAMPLE PRODUCT** PROJ KPN BLK SS DS **DDH82007**

SAMPLE ID 47 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP5

SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION | YEILD/FRACTION RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.80 | 24.66 | 22.02 |
| 0.60 | 0.15 | 1.80 | 7.96 | 0.58 |

GCRI COAL DIVISION **COALCOMP** PROJ KPN BLK SS DS **DDH82007**

SAMPLE ID 47 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP5 DATE ANALYSED 02/12/82
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE %(AD,AR) | __.__ | TOTAL SULPHUR % | 0.36 |
| TOTAL MOISTURE % (AR) | __.__ | PHOSPHOROUS | _.___ |
| EQ MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPG | _.__ |
| INHERENT MOISTURE (AD,EM) | 1.20 | FSI | __._ |
| ASH % | 23.17 | HGI | ___._ |
| FIXED CARBON % | 68.71 | CO2 % | __.__ |
| VOLITILE MATTER % | 6.92 | | |

GROSS CALORIFIC VALUE (MJ,KG) 25.64
NET CALORIFIC VALUE (MJ,KG) __.__

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
## Sample #4740-4741
## Pellet #1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.35 | 26 | 4.03 |
| 2 | 4.13 | 27 | 4.17 |
| 3 | 4.10 | 28 | 4.43 |
| 4 | 4.30 | 29 | 3.85 |
| 5 | 3.98 | 30 | 4.15 |
| 6 | 3.95 | 31 | 4.09 |
| 7 | 4.11 | 32 | 4.16 |
| 8 | 4.35 | 33 | 4.12 |
| 9 | 4.17 | 34 | 4.19 |
| 10 | 4.27 | 35 | 4.49 |
| 11 | 4.37 | 36 | 4.07 |
| 12 | 4.15 | 37 | 4.18 |
| 13 | 4.01 | 38 | 4.43 |
| 14 | 4.15 | 39 | 4.16 |
| 15 | 3.77 | 40 | 4.10 |
| 16 | 3.87 | 41 | 4.26 |
| 17 | 4.07 | 42 | 4.10 |
| 18 | 4.27 | 43 | 4.18 |
| 19 | 4.12 | 44 | 4.10 |
| 20 | 4.02 | 45 | 4.24 |
| 21 | 4.39 | 46 | 4.10 |
| 22 | 4.05 | 47 | 4.29 |
| 23 | 4.16 | 48 | 4.42 |
| 24 | 3.87 | 49 | 4.11 |
| 25 | 4.06 | 50 | 4.38 |

# Gulf Canada Resources Inc.
# Sample #4740-4741
# Pellet #1

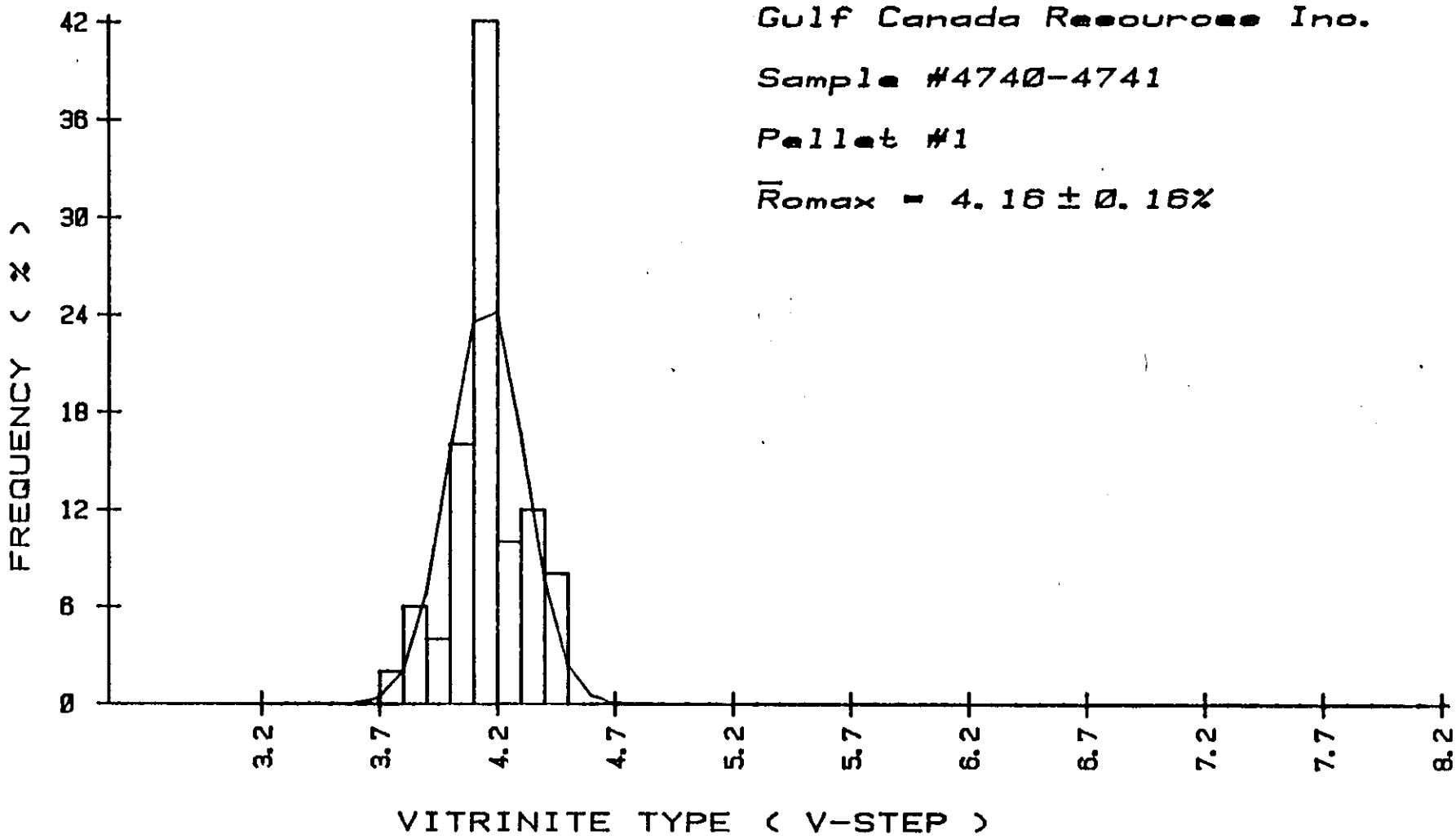
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 4.16 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 3.83 |
| VARIANCE ..... | 0.0253 |
| STANDARD DEVIATION ..... | 0.1591 |
| SKEWNESS ..... | -0.0367 |
| KURTOSIS ..... | 2.8854 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 6 | 3.70 | 1 | 2.00 |
| 7 | 3.80 | 3 | 6.00 |
| 8 | 3.90 | 2 | 4.00 |
| 9 | 4.00 | 8 | 16.00 |
| 10 | 4.10 | 21 | 42.00 |
| 11 | 4.20 | 5 | 10.00 |
| 12 | 4.30 | 6 | 12.00 |
| 13 | 4.40 | 4 | 8.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
## Sample #4740-4741
## Pellet #2

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.25 | 26 | 3.97 |
| 2 | 3.93 | 27 | 3.71 |
| 3 | 4.25 | 28 | 4.35 |
| 4 | 4.03 | 29 | 3.99 |
| 5 | 3.91 | 30 | 4.16 |
| 6 | 3.98 | 31 | 3.97 |
| 7 | 3.71 | 32 | 4.23 |
| 8 | 3.98 | 33 | 3.85 |
| 9 | 3.76 | 34 | 3.69 |
| 10 | 3.61 | 35 | 3.51 |
| 11 | 3.85 | 36 | 3.70 |
| 12 | 4.10 | 37 | 3.67 |
| 13 | 4.30 | 38 | 3.83 |
| 14 | 3.98 | 39 | 4.19 |
| 15 | 4.09 | 40 | 3.55 |
| 16 | 3.94 | 41 | 3.98 |
| 17 | 4.23 | 42 | 3.84 |
| 18 | 3.62 | 43 | 3.56 |
| 19 | 3.88 | 44 | 3.94 |
| 20 | 3.89 | 45 | 4.09 |
| 21 | 3.69 | 46 | 3.68 |
| 22 | 3.79 | 47 | 4.06 |
| 23 | 3.99 | 48 | 4.17 |
| 24 | 3.86 | 49 | 3.82 |
| 25 | 4.35 | 50 | 4.10 |

# Gulf Canada Resources Inc.
# Sample #4740-4741
# Pellet #2

## BASIC STATISTICS

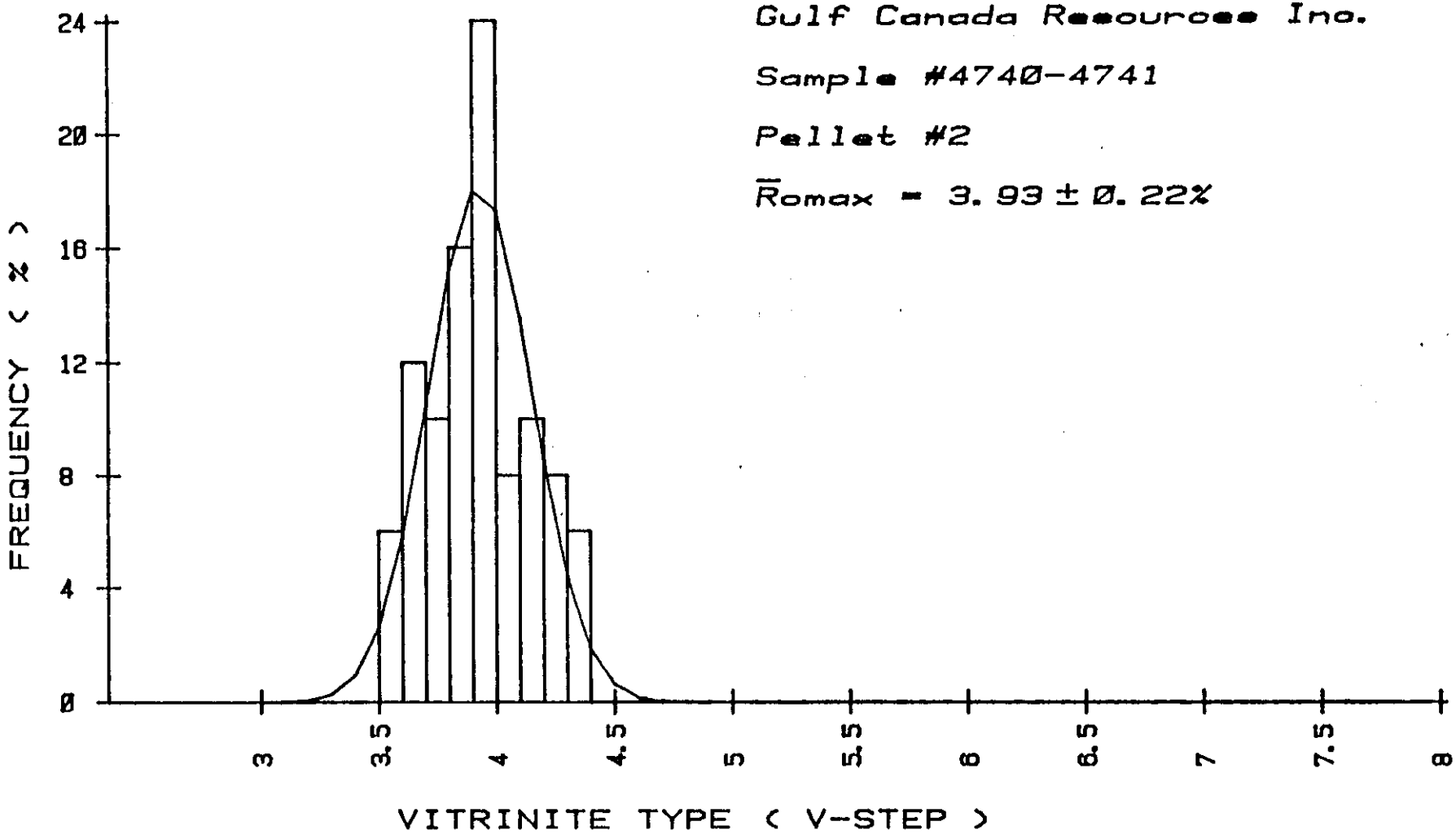
| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 3.93 |
| STANDARD ERROR OF THE MEAN ..... | 0.03 |
| COEFFICIENT OF VARIATION .....% | 5.58 |
| VARIANCE ..... | 0.0482 |
| STANDARD DEVIATION ..... | 0.2195 |
| SKEWNESS ..... | 0.0470 |
| KURTOSIS ..... | 2.2130 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 6 | 3.50 | 3 | 6.00 |
| 7 | 3.60 | 6 | 12.00 |
| 8 | 3.70 | 5 | 10.00 |
| 9 | 3.80 | 8 | 16.00 |
| 10 | 3.90 | 12 | 24.00 |
| 11 | 4.00 | 4 | 8.00 |
| 12 | 4.10 | 5 | 10.00 |
| 13 | 4.20 | 4 | 8.00 |
| 14 | 4.30 | 3 | 6.00 |

## VITRINITE TYPE DISTRIBUTION

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - C SAMPLE ID - 4742 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 9.53 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 44.66 | 17.17 | 44.66 | 17.17 | 55.34 | 51.42 | 28.17 | 28.17 |
| 2.60 | 55.34 | 51.42 | 100.00 | 36.12 | | | 14.50 | 20.61 |

GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - C SAMPLE ID - 4743 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 9.53 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 29.01 | 13.82 | 29.01 | 13.82 | 70.99 | 64.07 | 29.32 | 29.32 |
| 2.60 | 70.99 | 64.07 | 100.00 | 49.49 | | | 9.91 | 15.54 |

FORM 9999

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - C SAMPLE ID - 4744 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 9.53 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 57.53 | 16.29 | 57.53 | 16.29 | 42.47 | 59.82 | 28.31 | 28.31 |
| 2.60 | 42.47 | 59.82 | 100.00 | 34.78 | | | 11.78 | 21.29 |

GCRI COAL DIVISION **HEAD** PROJ KPN BLK SS DS DDH82007

MPLE ID 48 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 26/10/82
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | 10.00 | | |
| SURFACE MOISTURE %(AD,AR) | __.__ | TOTAL SULPHUR % | 0.28 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | 00079 |
| | | SPECIFIC GRAVITY | 1.71 |
| RESIDUAL MOISTURE %(AD,EM) | 1.28 | FSI | __._ |
| ASH % | 37.67 | HGI | 49.0 |
| VOLATILE MATTER % | 5.96 | CO2 % | 0.84 |
| FIXED CARBON % | 55.09 | | |

GROSS CALORIFIC VALUE (MJ/KG) __.__
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION **SIZE** PROJ KPN BLK SS DS DDH82007

SAMPLE ID 48 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SZ1 DATE ANALYSED 26/10/82

| FRACTION SIZE OM (MM) | TO (MM) | WT% | ASH% | FSI | CAL (MJ/KG) | RM | VM | TS |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 0.60 | 86.24 | 36.69 | __._ | 21.19 | 1.26 | 5.80 | 0.33 |
| 0.60 | 0.15 | 8.55 | 38.82 | __._ | 19.76 | 1.19 | 6.24 | 0.30 |
| 0.15 | 0.00 | 5.21 | 52.40 | __._ | 13.99 | 1.25 | 6.65 | 0.23 |

GCRI COAL DIVISION **ULTIMATE** PROJ KPN BLK SS DS DDH82007

SAMPLE ID 48
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 03/11/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.28 |
| CARBON | % | 55.92 |
| HYDROGEN | % | 1.94 |
| SULPHUR | % | 0.28 |
| NITROGEN | % | 0.49 |
| ASH | % | 37.67 |
| OXYGEN | % | 2.42 |

GCRI COAL DIVISION **ASH FUSION** PROJ KPN BLK SS DS **DDH82007**

SAMPLE ID 48
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 08/11/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1290.0 | INITIAL TEMP.(C) | 1220.0 |
| SOFTENING TEMP.(C) | 1435.0 | SOFTENING TEMP.(C) | 1390.0 |
| HEMISPHERICAL TEMP.(C) | 1480.0 | HEMISPHERICAL TEMP.(C) | 1435.0 |
| FLUID TEMP.(C) | 1500.0 | FLUID TEMP.(C) | 1500.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS > REDUCTION TEMPS

GCRI COAL DIVISION **ASH MINERAL** PROJ KPN BLK SS DS **DDH82007**

SAMPLE ID 48
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 10/11/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 53.85 |
| ALUMINIUM OXIDE % | (AL2O3) | 27.99 |
| FERRIC OXIDE % | (FE2O3) | 4.07 |
| TITANIUM DIOXIDE % | (TIO2) | 0.78 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.58 |
| CALCIUM OXIDE % | (CAO) | 0.95 |
| MAGNESIUM OXIDE % | (MGO) | 1.80 |
| SULPHUR TRIOXIDE % | (SO3) | 1.03 |
| SODIUM OXIDE % | (NA2O) | 2.36 |
| POTASSIUM OXIDE % | (K2O) | 1.58 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION **SULPHUR** PROJ KPN BLK SS DS **DDH82007**

SAMPLE ID 48
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 19/11/82

| | | |
|---|---|---|
| PYRITE | % | 14.00 |
| SULPHATE | % | 4.00 |
| ORGANIC | % | 82.00 |

TOTAL 100.00

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - C SAMPLE ID - 48 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.60 RELATIVE WEIGHT % - 86.24 ASH % - 36.69

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 11.60 | 6.22 | 11.60 | 6.22 | 88.40 | 43.69 | 32.97 | 32.97 |
| 1.60 | 24.20 | 16.54 | 35.80 | 13.20 | 64.20 | 53.92 | 28.33 | 29.83 |
| 1.70 | 10.66 | 25.53 | 46.46 | 16.03 | 53.54 | 59.57 | 24.80 | 28.68 |
| 1.80 | 8.97 | 29.78 | 55.43 | 18.25 | 44.57 | 65.57 | 22.73 | 27.72 |
| 1.90 | 8.98 | 39.68 | 64.41 | 21.24 | 35.59 | 72.10 | 18.19 | 26.39 |
| 2.00 | 4.82 | 46.07 | 69.23 | 22.97 | 30.77 | 76.17 | 16.25 | 25.68 |
| 2.10 | 4.81 | 54.04 | 74.04 | 24.99 | 25.96 | 80.28 | 13.22 | 24.87 |
| 2.20 | 2.60 | 60.95 | 76.64 | 26.21 | 23.36 | 82.43 | 10.88 | 24.40 |
| 2.30 | 2.22 | 65.06 | 78.86 | 27.30 | 21.14 | 84.25 | 9.23 | 23.97 |
| 2.60 | 21.14 | 84.25 | 100.00 | 39.34 | | | 2.60 | 19.45 |

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.15 RELATIVE WEIGHT % - 8.55 ASH % - 38.82

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 23.49 | 10.94 | 23.49 | 10.94 | 76.51 | 46.61 | 30.43 | 30.43 |
| 1.60 | 15.89 | 14.68 | 39.38 | 12.45 | 60.62 | 54.98 | 28.94 | 29.83 |
| 1.70 | 10.92 | 23.20 | 50.30 | 14.78 | 49.70 | 61.96 | 25.44 | 28.88 |
| 1.80 | 7.20 | 30.25 | 57.50 | 16.72 | 42.50 | 67.33 | 22.09 | 28.03 |
| 1.90 | 5.33 | 38.38 | 62.83 | 18.56 | 37.17 | 71.49 | 19.21 | 27.28 |
| 2.00 | 5.62 | 42.60 | 68.45 | 20.53 | 31.55 | 76.63 | 16.39 | 26.38 |
| 2.10 | 4.58 | 46.37 | 73.03 | 22.15 | 26.97 | 81.77 | 12.83 | 25.53 |
| 2.30 | 4.51 | 62.25 | 77.54 | 24.48 | 22.46 | 85.69 | 9.72 | 24.61 |
| 2.60 | 22.46 | 85.69 | 100.00 | 38.23 | | | 0.00 | 19.09 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - C SAMPLE ID - 48 WASHABILITY ID - WA1

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.21 ASH % - 52.40

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 30.00 | 49.27 | 26.73 | 49.27 | 26.73 | 50.73 | 74.89 | 24.50 | 24.50 |
| 45.00 | 4.24 | 49.89 | 53.51 | 28.57 | 46.49 | 77.17 | 15.15 | 23.76 |
| 60.00 | 3.55 | 65.48 | 57.06 | 30.86 | 42.94 | 78.13 | 9.97 | 22.90 |
| 90.00 | 3.44 | 70.38 | 60.50 | 33.11 | 39.50 | 78.81 | 8.03 | 22.06 |
| 120.00 | 4.06 | 75.82 | 64.56 | 35.79 | 35.44 | 79.15 | 5.78 | 21.03 |
| 300.00 | 35.44 | 79.15 | 100.00 | 51.16 | | | 4.48 | 15.17 |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 48 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP4

SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.80 | 55.43 | 47.80 |
| 0.60 | 0.15 | 2.00 | 68.45 | 5.85 |
| 0.15 | 0.00 | 120.00 | 64.56 | 3.36 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 48 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP4 DATE ANALYSED 29/11/82
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE %(AD,AR) | __.__ | TOTAL SULPHUR % | 0.36 |
| TOTAL MOISTURE % (AR) | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | 1.59 |
| RESIDUAL MOISTURE (AD,EM) | 1.13 | FSI | __._ |
| ASH % | 21.14 | HGI | 42.0 |
| VOLATILE MATTER % | 6.99 | CO2 % | 0.27 |
| FIXED CARBON % | 70.74 | | |

GROSS CALORIFIC VALUE (MJ/KG) 26.29
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 48
SAMPLE PRODUCT ID SP4 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 09/12/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.13 |
| CARBON | % | 71.16 |
| HYDROGEN | % | 2.26 |
| SULPHUR | % | 0.36 |
| NITROGEN | % | 0.86 |
| ASH | % | 21.14 |
| OXYGEN | % | 3.09 |

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 48
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 02/12/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1205.0 | INITIAL TEMP.(C) | 1195.0 |
| SOFTENING TEMP.(C) | 1485.0 | SOFTENING TEMP.(C) | 1470.0 |
| HEMISPHERICAL TEMP.(C) | 1500.0 | HEMISPHERICAL TEMP.(C) | 1480.0 |
| FLUID TEMP.(C) | 1500.0 | FLUID TEMP.(C) | 1500.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 48
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1  DATE ANALYSED 20/12/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 54.70 |
| ALUMINIUM OXIDE % | (AL2O3) | 27.93 |
| FERRIC OXIDE % | (FE2O3) | 3.09 |
| TITANIUM DIOXIDE % | (TIO2) | 0.90 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.79 |
| CALCIUM OXIDE % | (CAO) | 0.79 |
| MAGNESIUM OXIDE % | (MGO) | 1.14 |
| SULPHUR TRIOXIDE % | (SO3) | 0.99 |
| SODIUM OXIDE % | (NA2O) | 1.47 |
| POTASSIUM OXIDE % | (K2O) | 2.48 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 48
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 02/12/82

| | | |
|---|---|---|
| PYRITE | % | 3.00 |
| SULPHATE | % | 3.00 |
| ORGANIC | % | 94.00 |

Vitrinite Reflectance Data for
Gulf Canada Resources Inc.
Sample #4742-4744
Pellet #1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.24 | 26 | 4.03 |
| 2 | 4.23 | 27 | 4.01 |
| 3 | 4.29 | 28 | 3.97 |
| 4 | 4.23 | 29 | 3.82 |
| 5 | 4.21 | 30 | 3.82 |
| 6 | 4.15 | 31 | 3.86 |
| 7 | 4.21 | 32 | 4.03 |
| 8 | 4.14 | 33 | 4.06 |
| 9 | 4.32 | 34 | 3.97 |
| 10 | 4.14 | 35 | 4.12 |
| 11 | 4.37 | 36 | 4.24 |
| 12 | 4.18 | 37 | 4.15 |
| 13 | 4.05 | 38 | 4.21 |
| 14 | 4.19 | 39 | 4.02 |
| 15 | 4.32 | 40 | 4.11 |
| 16 | 4.18 | 41 | 4.16 |
| 17 | 4.15 | 42 | 4.10 |
| 18 | 4.16 | 43 | 4.24 |
| 19 | 4.15 | 44 | 4.22 |
| 20 | 4.00 | 45 | 4.22 |
| 21 | 4.06 | 46 | 3.97 |
| 22 | 4.24 | 47 | 4.03 |
| 23 | 4.03 | 48 | 4.35 |
| 24 | 4.10 | 49 | 4.06 |
| 25 | 3.91 | 50 | 4.08 |

# Gulf Canada Resources Inc.
# Sample #4742-4744
# Pellet #1

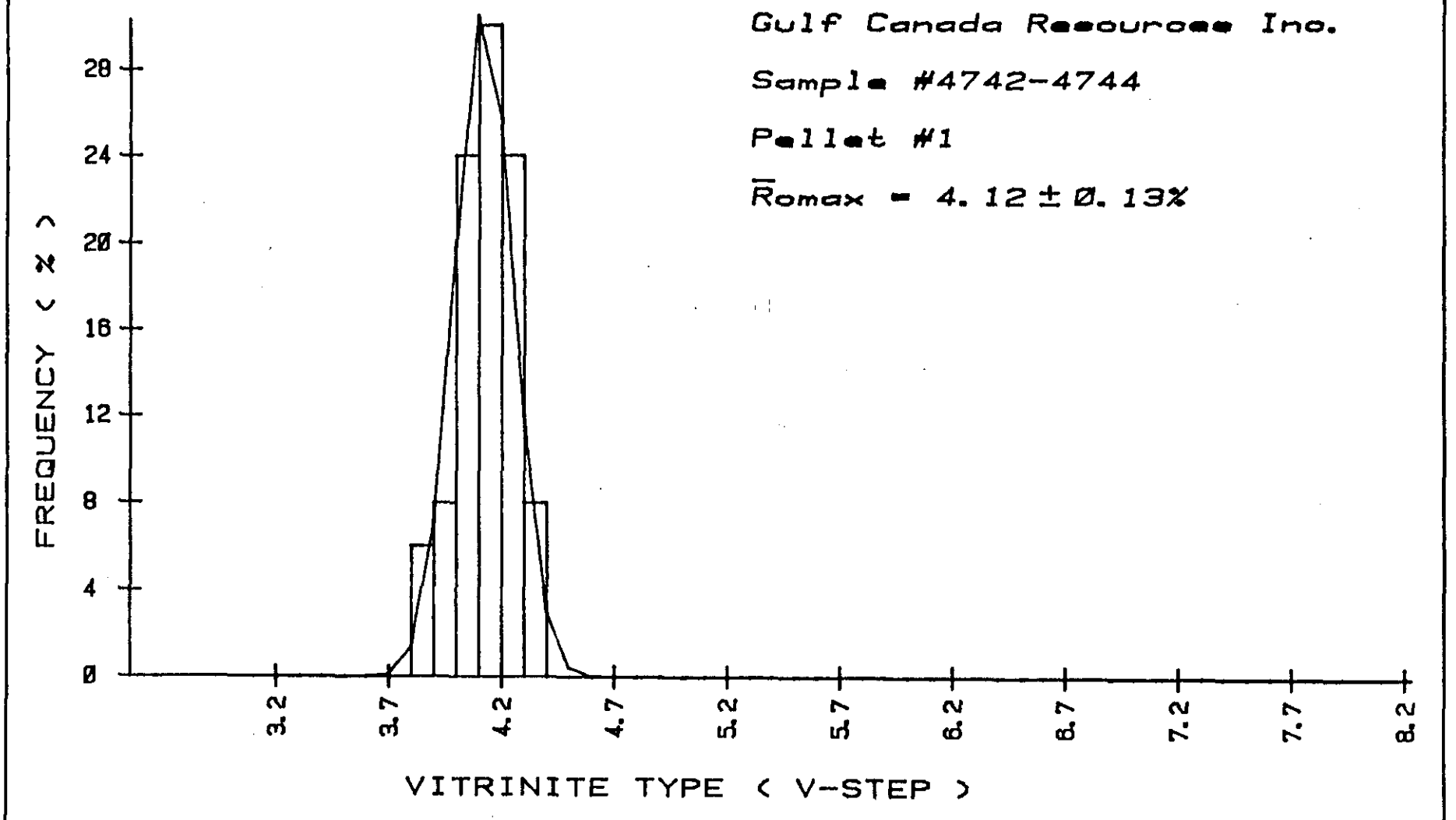
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 4.12 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 3.13 |
| VARIANCE ..... | 0.0167 |
| STANDARD DEVIATION ..... | 0.1291 |
| SKEWNESS ..... | -0.3875 |
| KURTOSIS ..... | 2.8248 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 7 | 3.80 | 3 | 6.00 |
| 8 | 3.90 | 4 | 8.00 |
| 9 | 4.00 | 12 | 24.00 |
| 10 | 4.10 | 15 | 30.00 |
| 11 | 4.20 | 12 | 24.00 |
| 12 | 4.30 | 4 | 8.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
## Sample #4742-4744
## Pellet #2

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.12 | 26 | 3.23 |
| 2 | 4.28 | 27 | 3.14 |
| 3 | 4.38 | 28 | 3.11 |
| 4 | 4.40 | 29 | 3.72 |
| 5 | 3.67 | 30 | 3.78 |
| 6 | 3.99 | 31 | 3.86 |
| 7 | 4.05 | 32 | 3.90 |
| 8 | 3.92 | 33 | 4.05 |
| 9 | 3.66 | 34 | 3.88 |
| 10 | 3.38 | 35 | 3.85 |
| 11 | 3.45 | 36 | 3.60 |
| 12 | 4.27 | 37 | 3.86 |
| 13 | 3.53 | 38 | 3.54 |
| 14 | 4.07 | 39 | 4.14 |
| 15 | 4.14 | 40 | 4.42 |
| 16 | 3.45 | 41 | 3.57 |
| 17 | 3.79 | 42 | 3.09 |
| 18 | 3.82 | 43 | 3.12 |
| 19 | 4.02 | 44 | 3.88 |
| 20 | 3.88 | 45 | 3.97 |
| 21 | 3.86 | 46 | 4.08 |
| 22 | 4.01 | 47 | 4.08 |
| 23 | 4.10 | 48 | 4.21 |
| 24 | 3.44 | 49 | 4.11 |
| 25 | 3.18 | 50 | 3.62 |

# Gulf Canada Resources Inc.
# Sample #4742-4744
# Pellet #2

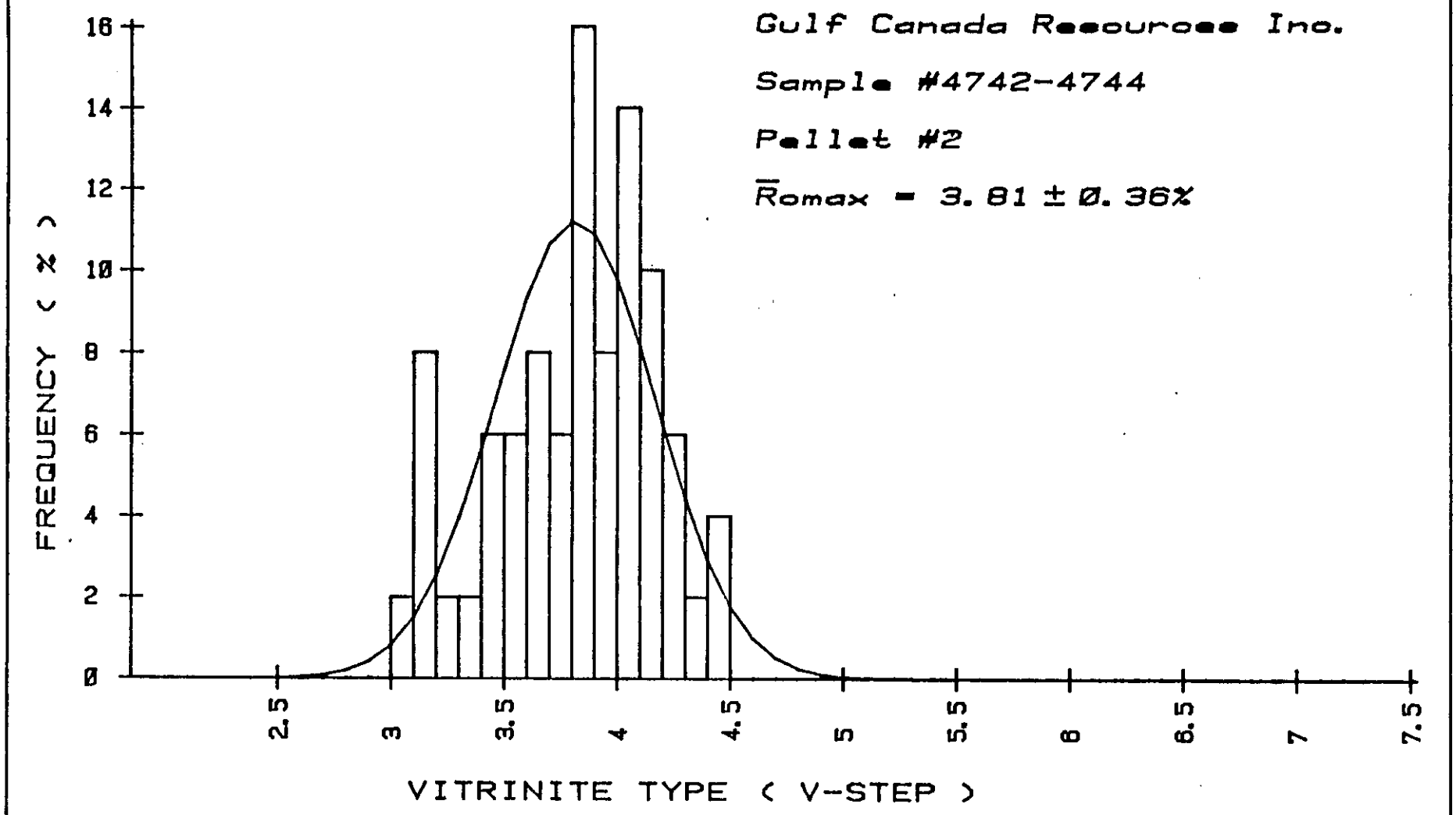
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 3.81 |
| STANDARD ERROR OF THE MEAN ..... | 0.05 |
| COEFFICIENT OF VARIATION .....% | 9.34 |
| VARIANCE ..... | 0.1268 |
| STANDARD DEVIATION ..... | 0.3561 |
| SKEWNESS ..... | -0.4639 |
| KURTOSIS ..... | 2.4455 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 6 | 3.00 | 1 | 2.00 |
| 7 | 3.10 | 4 | 8.00 |
| 8 | 3.20 | 1 | 2.00 |
| 9 | 3.30 | 1 | 2.00 |
| 10 | 3.40 | 3 | 6.00 |
| 11 | 3.50 | 3 | 6.00 |
| 12 | 3.60 | 4 | 8.00 |
| 13 | 3.70 | 3 | 6.00 |
| 14 | 3.80 | 8 | 16.00 |
| 15 | 3.90 | 4 | 8.00 |
| 16 | 4.00 | 7 | 14.00 |
| 17 | 4.10 | 5 | 10.00 |
| 18 | 4.20 | 3 | 6.00 |
| 19 | 4.30 | 1 | 2.00 |
| 20 | 4.40 | 2 | 4.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - B SAMPLE ID - 4745 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 9.53 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 51.18 | 15.14 | 51.18 | 15.14 | 48.82 | 57.60 | 28.74 | 28.74 |
| 2.60 | 48.82 | 57.60 | 100.00 | 35.87 | | | 12.52 | 20.82 |

FORM 9999

GCRI COAL DIVISION HEAD PROJ KPN BLK SS DS DDH82007

MPLE ID 49 DATA TYPE (REAL,BORO,AVER,CALC) REAL
PLIT SAMPLE ID HD1 DATE ANALYSED 26/10/82
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | 10.00 | | |
| SURFACE MOISTURE %(AD,AR) | __.__ | TOTAL SULPHUR % | 0.63 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | 00036 |
| | | SPECIFIC GRAVITY | 1.71 |
| RESIDUAL MOISTURE %(AD,EM) | 1.68 | FSI | __._ |
| ASH % | 36.39 | HGI | 43.0 |
| VOLATILE MATTER % | 6.66 | CO2 % | 1.47 |
| FIXED CARBON % | 55.27 | | |

GROSS CALORIFIC VALUE (MJ/KG) __.__
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION SIZE PROJ KPN BLK SS DS DDH82007

SAMPLE ID 49 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SZ1 DATE ANALYSED 26/10/82

| FRACTION SIZE (MM) | TO (MM) | WT% | ASH% | FSI | CAL (MJ/KG) | RM | VM | TS |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 0.60 | 88.55 | 35.11 | __._ | 21.57 | 1.31 | 6.40 | 0.61 |
| 0.60 | 0.15 | 7.68 | 38.29 | __._ | 19.97 | 1.06 | 6.68 | 0.62 |
| 0.15 | 0.00 | 3.77 | 49.37 | __._ | 14.93 | 1.08 | 6.99 | 0.48 |

GCRI COAL DIVISION ULTIMATE PROJ KPN BLK SS DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 03/11/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.68 |
| CARBON | % | 56.75 |
| HYDROGEN | % | 1.61 |
| SULPHUR | % | 0.63 |
| NITROGEN | % | 0.56 |
| ASH | % | 36.39 |
| OXYGEN | % | 2.38 |

GCRI COAL DIVISION **ASH FUSION** PROJ KPN BLK SS DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 08/11/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1270.0 | INITIAL TEMP.(C) | 1225.0 |
| SOFTENING TEMP.(C) | 1320.0 | SOFTENING TEMP.(C) | 1285.0 |
| HEMISPHERICAL TEMP.(C) | 1345.0 | HEMISPHERICAL TEMP.(C) | 1310.0 |
| FLUID TEMP.(C) | 1380.0 | FLUID TEMP.(C) | 1340.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS > REDUCTION TEMPS

GCRI COAL DIVISION **ASH MINERAL** PROJ KPN BLK SS DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 10/11/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 57.55 |
| ALUMINIUM OXIDE % | (AL2O3) | 20.34 |
| FERRIC OXIDE % | (FE2O3) | 5.38 |
| TITANIUM DIOXIDE % | (TIO2) | 0.37 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.88 |
| CALCIUM OXIDE % | (CAO) | 3.12 |
| MAGNESIUM OXIDE % | (MGO) | 2.99 |
| SULPHUR TRIOXIDE % | (SO3) | 2.32 |
| SODIUM OXIDE % | (NA2O) | 1.98 |
| POTASSIUM OXIDE % | (K2O) | 1.09 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION **SULPHUR** PROJ KPN BLK SS DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 19/11/82

| | | |
|---|---|---|
| PYRITE | % | 54.00 |
| SULPHATE | % | 3.00 |
| ORGANIC | % | 43.00 |
| TOTAL | | 100.00 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - B SAMPLE ID - 49 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.60 RELATIVE WEIGHT % - 88.55 ASH % - 35.11

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 13.74 | 4.90 | 13.74 | 4.90 | 86.26 | 40.42 | 33.28 | 33.28 |
| 1.60 | 24.49 | 15.28 | 38.23 | 11.55 | 61.77 | 50.39 | 29.41 | 30.80 |
| 1.70 | 10.89 | 26.38 | 49.12 | 14.84 | 50.88 | 55.52 | 25.05 | 29.53 |
| 1.80 | 12.32 | 31.64 | 61.44 | 18.21 | 38.56 | 63.15 | 21.66 | 27.95 |
| 1.90 | 7.78 | 39.68 | 69.22 | 20.62 | 30.78 | 69.09 | 18.19 | 26.85 |
| 2.00 | 4.77 | 46.07 | 73.99 | 22.26 | 26.01 | 73.31 | 16.25 | 26.17 |
| 2.10 | 5.92 | 53.48 | 79.91 | 24.57 | 20.09 | 79.15 | 13.12 | 25.20 |
| 2.20 | 2.47 | 60.49 | 82.38 | 25.65 | 17.62 | 81.77 | 10.57 | 24.76 |
| 2.30 | 2.15 | 65.63 | 84.53 | 26.67 | 15.47 | 84.01 | 8.84 | 24.36 |
| 2.60 | 15.47 | 84.01 | 100.00 | 35.54 | | | 2.83 | 21.03 |

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.15 RELATIVE WEIGHT % - 7.68 ASH % - 38.29

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 30.32 | 5.55 | 30.32 | 5.55 | 69.68 | 49.85 | 32.88 | 32.88 |
| 1.60 | 13.12 | 14.57 | 43.44 | 8.27 | 56.56 | 58.03 | 28.85 | 31.66 |
| 1.70 | 9.65 | 22.29 | 53.09 | 10.82 | 46.91 | 65.38 | 25.66 | 30.57 |
| 1.80 | 6.83 | 30.09 | 59.92 | 13.02 | 40.08 | 71.39 | 22.20 | 29.62 |
| 1.90 | 4.45 | 40.75 | 64.37 | 14.94 | 35.63 | 75.22 | 18.41 | 28.84 |
| 2.00 | 4.57 | 48.61 | 68.94 | 17.17 | 31.06 | 79.14 | 15.51 | 27.96 |
| 2.10 | 4.36 | 53.81 | 73.30 | 19.35 | 26.70 | 83.27 | 13.44 | 27.10 |
| 2.30 | 4.52 | 64.63 | 77.82 | 21.98 | 22.18 | 87.07 | 9.12 | 26.05 |
| 2.60 | 22.18 | 87.07 | 100.00 | 36.41 | | | 0.00 | 20.27 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH82007 SEAM - B SAMPLE ID - 49 WASHABILITY ID - WA1

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 3.77 ASH % - 49.37

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 30.00 | 57.31 | 25.95 | 57.31 | 25.95 | 42.69 | 77.96 | 25.01 | 25.01 |
| 45.00 | 3.13 | 48.71 | 60.44 | 27.13 | 39.56 | 80.28 | 15.59 | 24.52 |
| 60.00 | 1.99 | 60.27 | 62.43 | 28.19 | 37.57 | 81.34 | 10.29 | 24.07 |
| 90.00 | 3.15 | 76.14 | 65.58 | 30.49 | 34.42 | 81.81 | 5.70 | 23.19 |
| 120.00 | 2.13 | 78.83 | 67.71 | 32.01 | 32.29 | 82.01 | 4.59 | 22.60 |
| 300.00 | 32.29 | 82.01 | 100.00 | 48.15 | | | 3.14 | 16.32 |

Gulf

FORM 9999

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 49 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP4

SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.80 | 61.44 | 54.41 |
| 0.60 | 0.15 | 1.80 | 59.92 | 4.60 |
| 0.15 | 0.00 | 30.00 | 57.31 | 2.16 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 49 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP4 DATE ANALYSED 29/11/82
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

SURFACE MOISTURE %(AD,AR) __.__
TOTAL MOISTURE % (AR) __.__
EQUILIBRIUM MOISTURE % __.__

RESIDUAL MOISTURE (AD,EM) 0.70
ASH % 18.87
VOLATILE MATTER % 5.72
FIXED CARBON % 74.71

TOTAL SULPHUR % 0.82
PHOSPHOROUS % _.___
CHLORINE (PPM) _____
SPECIFIC GRAVITY 1.54
FSI __.__
HGI 38.0
CO2 % 0.26

GROSS CALORIFIC VALUE (MJ/KG) 25.57
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP4 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 09/12/82

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 0.70 |
| CARBON | % | 75.22 |
| HYDROGEN | % | 2.59 |
| SULPHUR | % | 0.82 |
| NITROGEN | % | 0.79 |
| ASH | % | 18.87 |
| OXYGEN | % | 1.01 |

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 02/12/82

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1210.0 | INITIAL TEMP.(C) | 1190.0 |
| SOFTENING TEMP.(C). | 1360.0 | SOFTENING TEMP.(C) | 1350.0 |
| HEMISPHERICAL TEMP.(C) | 1380.0 | HEMISPHERICAL TEMP.(C) | 1375.0 |
| FLUID TEMP.(C) | 1440.0 | FLUID TEMP.(C) | 1420.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
LIT SAMPLE ID AM1  DATE ANALYSED 20/12/82

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 60.73 |
| ALUMINIUM OXIDE % | (AL2O3) | 21.18 |
| FERRIC OXIDE % | (FE2O3) | 2.86 |
| TITANIUM DIOXIDE % | (TIO2) | 0.77 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 1.12 |
| CALCIUM OXIDE % | (CAO) | 1.89 |
| MAGNESIUM OXIDE % | (MGO) | 1.75 |
| SULPHUR TRIOXIDE % | (SO3) | 2.37 |
| SODIUM OXIDE % | (NA2O) | 1.47 |
| POTASSIUM OXIDE % | (K2O) | 1.31 |

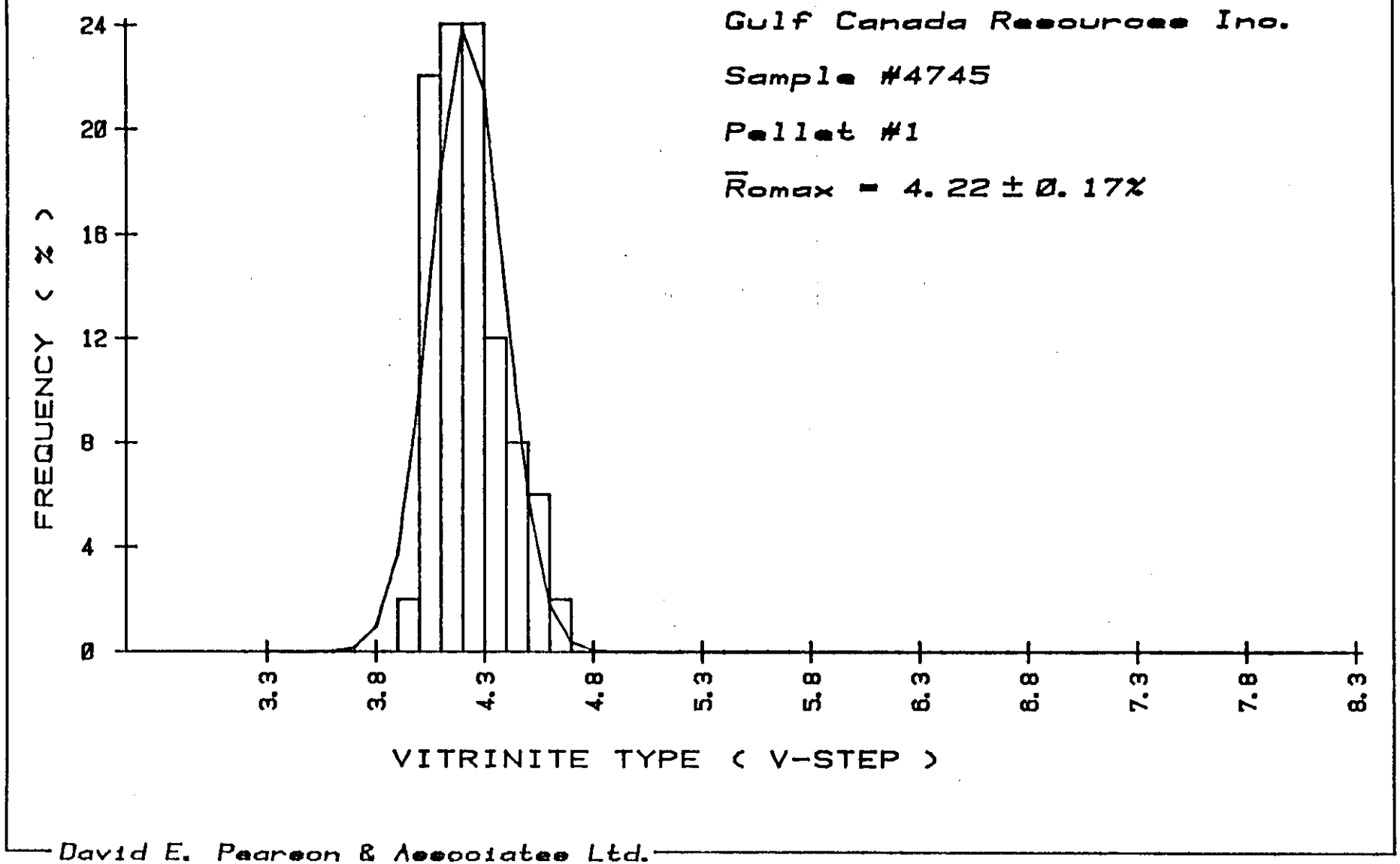
90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH82007

SAMPLE ID 49
SAMPLE PRODUCT ID SP4  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 02/12/82

| | | |
|---|---|---|
| PYRITE | % | 40.00 |
| SULPHATE | % | 1.00 |
| ORGANIC | % | 59.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
## Sample #4745
## Pellet #2

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 3.49 | 26 | 3.87 |
| 2 | 3.89 | 27 | 4.30 |
| 3 | 3.68 | 28 | 3.59 |
| 4 | 3.23 | 29 | 4.01 |
| 5 | 3.62 | 30 | 2.90 |
| 6 | 3.38 | 31 | 3.77 |
| 7 | 4.26 | 32 | 3.25 |
| 8 | 3.12 | 33 | 4.02 |
| 9 | 3.86 | 34 | 3.38 |
| 10 | 3.49 | 35 | 3.40 |
| 11 | 4.48 | 36 | 3.48 |
| 12 | 4.42 | 37 | 3.13 |
| 13 | 4.23 | 38 | 3.09 |
| 14 | 4.39 | 39 | 4.21 |
| 15 | 3.76 | 40 | 4.10 |
| 16 | 3.99 | 41 | 3.06 |
| 17 | 4.21 | 42 | 4.03 |
| 18 | 3.20 | 43 | 3.45 |
| 19 | 3.71 | 44 | 4.01 |
| 20 | 3.58 | 45 | 4.05 |
| 21 | 4.03 | 46 | 4.23 |
| 22 | 3.44 | 47 | 3.51 |
| 23 | 3.36 | 48 | 4.27 |
| 24 | 3.51 | 49 | 3.86 |
| 25 | 4.14 | 50 | 4.21 |

Gulf Canada Resources Inc.
Sample #4745
Pellet #2

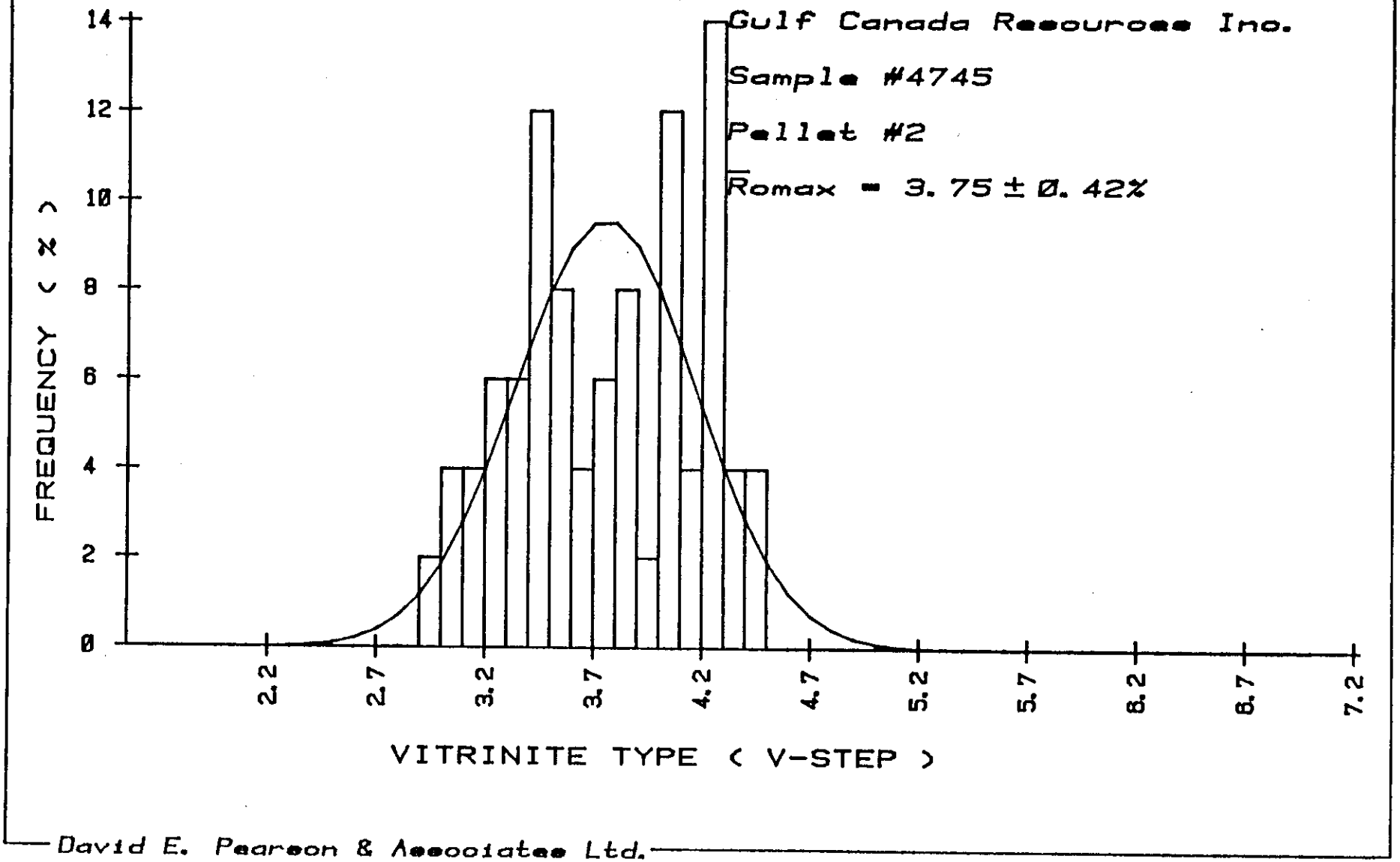
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 3.75 |
| STANDARD ERROR OF THE MEAN ..... | 0.06 |
| COEFFICIENT OF VARIATION .....% | 11.12 |
| VARIANCE ..... | 0.1743 |
| STANDARD DEVIATION ..... | 0.4175 |
| SKEWNESS ..... | -0.1213 |
| KURTOSIS ..... | 1.9161 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 8 | 2.90 | 1 | 2.00 |
| 9 | 3.00 | 2 | 4.00 |
| 10 | 3.10 | 2 | 4.00 |
| 11 | 3.20 | 3 | 6.00 |
| 12 | 3.30 | 3 | 6.00 |
| 13 | 3.40 | 6 | 12.00 |
| 14 | 3.50 | 4 | 8.00 |
| 15 | 3.60 | 2 | 4.00 |
| 16 | 3.70 | 3 | 6.00 |
| 17 | 3.80 | 4 | 8.00 |
| 18 | 3.90 | 1 | 2.00 |
| 19 | 4.00 | 6 | 12.00 |
| 20 | 4.10 | 2 | 4.00 |
| 21 | 4.20 | 7 | 14.00 |
| 22 | 4.30 | 2 | 4.00 |
| 23 | 4.40 | 2 | 4.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample #4745
# Pellet #1

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 1 | 4.15 |
| 2 | 4.34 |
| 3 | 4.38 |
| 4 | 4.19 |
| 5 | 4.53 |
| 6 | 4.21 |
| 7 | 4.10 |
| 8 | 4.35 |
| 9 | 4.09 |
| 10 | 4.34 |
| 11 | 4.07 |
| 12 | 4.16 |
| 13 | 4.37 |
| 14 | 4.17 |
| 15 | 4.20 |
| 16 | 3.94 |
| 17 | 4.26 |
| 18 | 4.21 |
| 19 | 3.80 |
| 20 | 4.06 |
| 21 | 3.96 |
| 22 | 4.02 |
| 23 | 4.17 |
| 24 | 4.38 |
| 25 | 4.37 |

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 26 | 3.89 |
| 27 | 4.30 |
| 28 | 4.27 |
| 29 | 4.04 |
| 30 | 4.55 |
| 31 | 4.50 |
| 32 | 4.13 |
| 33 | 4.06 |
| 34 | 4.23 |
| 35 | 4.02 |
| 36 | 4.23 |
| 37 | 4.25 |
| 38 | 4.04 |
| 39 | 3.91 |
| 40 | 4.28 |
| 41 | 4.07 |
| 42 | 4.22 |
| 43 | 4.21 |
| 44 | 4.14 |
| 45 | 4.03 |
| 46 | 4.19 |
| 47 | 4.11 |
| 48 | 4.12 |
| 49 | 4.40 |
| 50 | 4.16 |

# Gulf Canada Resources Inc.
# Sample #4745
# Pellet #1

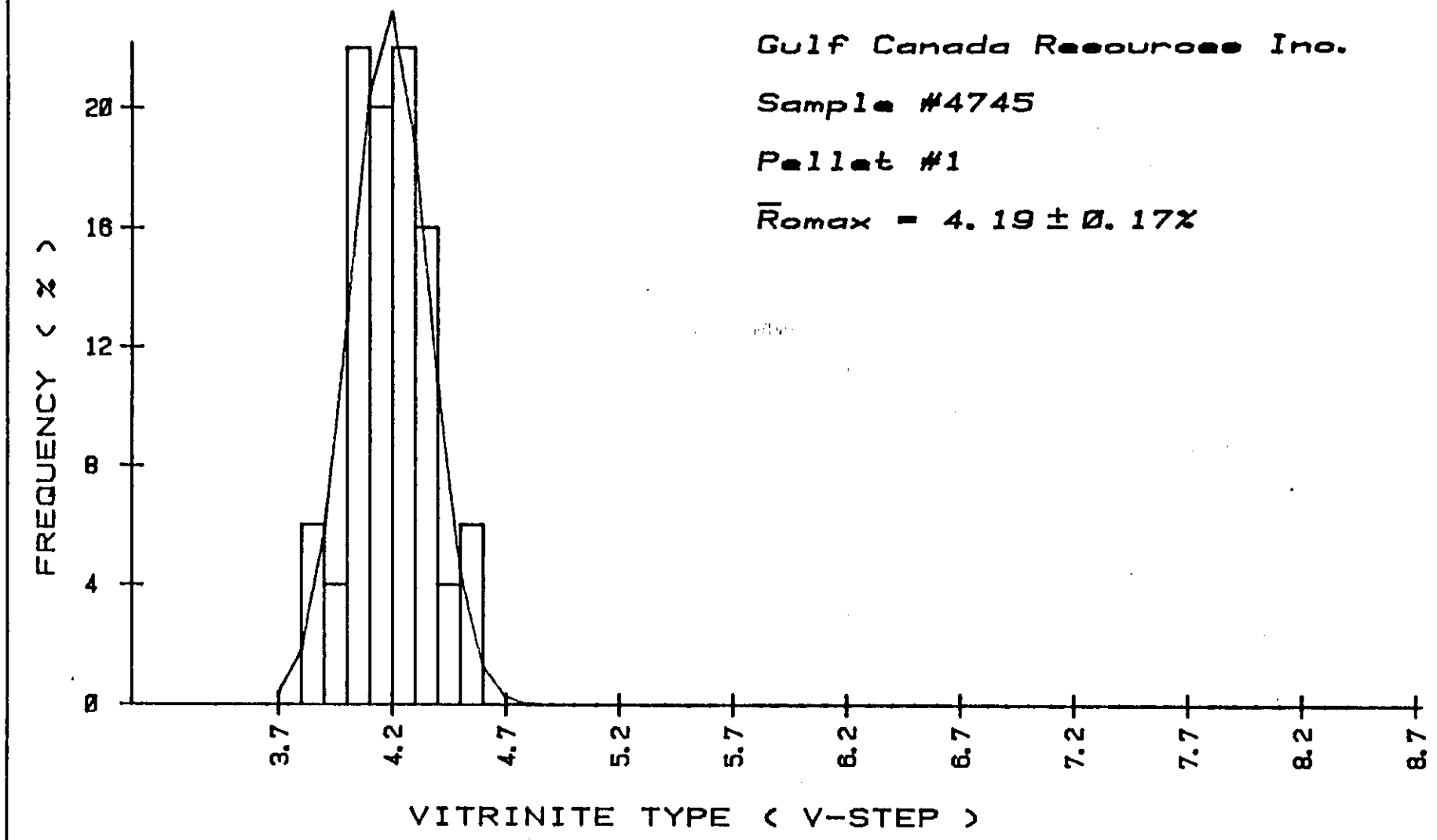
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 4.19 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.09 |
| VARIANCE ..... | 0.0294 |
| STANDARD DEVIATION ..... | 0.1714 |
| SKEWNESS ..... | -0.0083 |
| KURTOSIS ..... | 2.6561 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 3.80 | 3 | 6.00 |
| 3 | 3.90 | 2 | 4.00 |
| 4 | 4.00 | 11 | 22.00 |
| 5 | 4.10 | 10 | 20.00 |
| 6 | 4.20 | 11 | 22.00 |
| 7 | 4.30 | 8 | 16.00 |
| 8 | 4.40 | 2 | 4.00 |
| 9 | 4.50 | 3 | 6.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample #4745
# Pellet #2

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 1 | 4.29 |
| 2 | 3.94 |
| 3 | 4.24 |
| 4 | 3.97 |
| 5 | 4.00 |
| 6 | 3.22 |
| 7 | 4.21 |
| 8 | 3.78 |
| 9 | 2.80 |
| 10 | 3.13 |
| 11 | 3.51 |
| 12 | 4.17 |
| 13 | 3.80 |
| 14 | 3.83 |
| 15 | 3.03 |
| 16 | 4.19 |
| 17 | 3.15 |
| 18 | 3.55 |
| 19 | 3.02 |
| 20 | 3.44 |
| 21 | 3.52 |
| 22 | 2.83 |
| 23 | 3.01 |
| 24 | 3.90 |
| 25 | 3.84 |

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 26 | 3.96 |
| 27 | 3.98 |
| 28 | 3.90 |
| 29 | 3.54 |
| 30 | 4.38 |
| 31 | 3.81 |
| 32 | 4.15 |
| 33 | 4.19 |
| 34 | 3.78 |
| 35 | 3.14 |
| 36 | 3.68 |
| 37 | 4.05 |
| 38 | 2.85 |
| 39 | 3.18 |
| 40 | 3.90 |
| 41 | 3.92 |
| 42 | 3.25 |
| 43 | 3.87 |
| 44 | 4.02 |
| 45 | 3.37 |
| 46 | 4.00 |
| 47 | 2.40 |
| 48 | 3.62 |
| 49 | 3.27 |
| 50 | 3.07 |

# Gulf Canada Resources Inc.
# Sample #4745
# Pellet #2

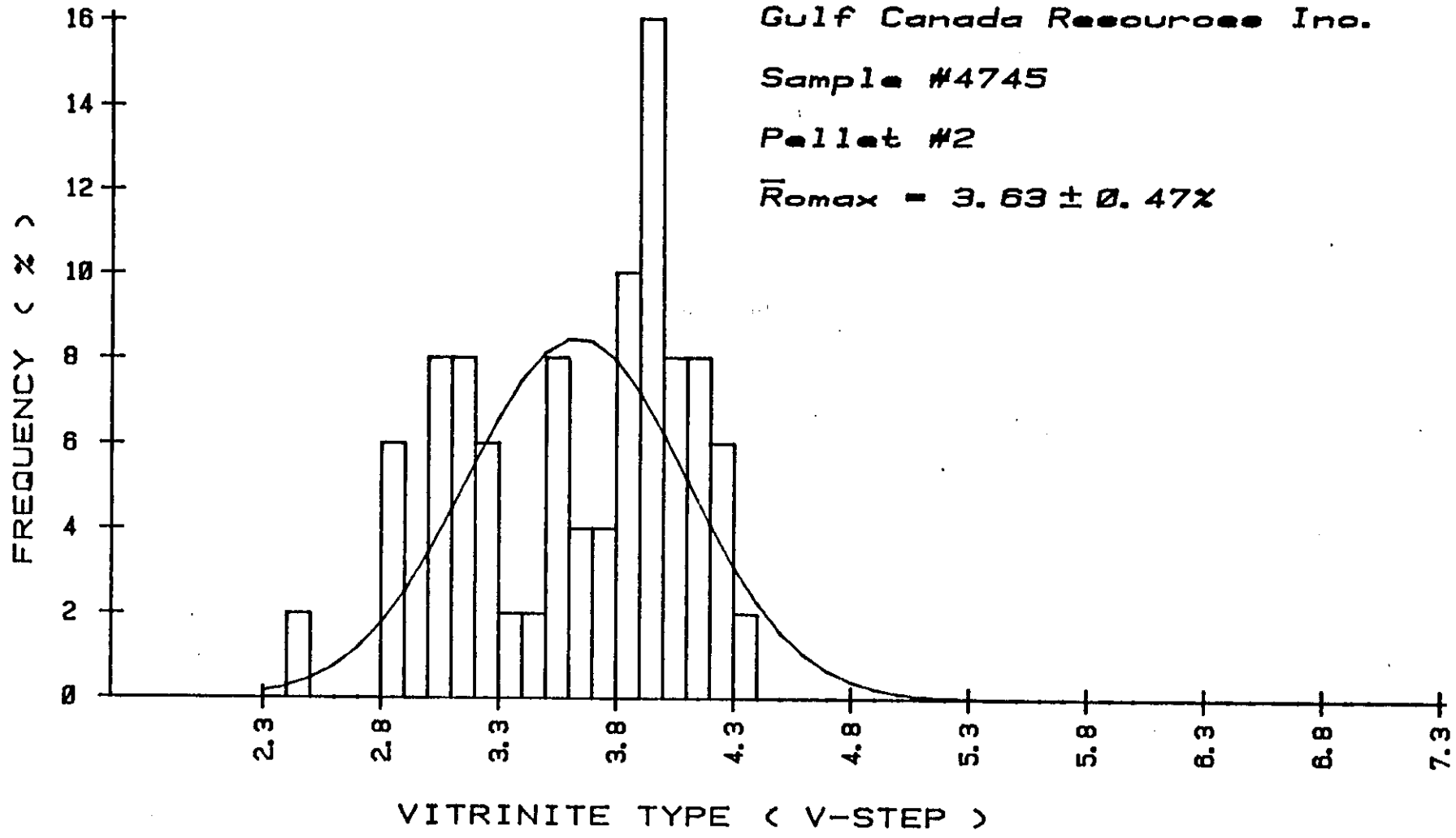
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 50 |
| MEAN MAXIMUM REFLECTANCE | |
| OF VITRINITE .....% | 3.63 |
| STANDARD ERROR OF THE MEAN ..... | 0.07 |
| COEFFICIENT OF VARIATION .....% | 12.98 |
| VARIANCE ..... | 0.2225 |
| STANDARD DEVIATION ..... | 0.4717 |
| SKEWNESS ..... | -0.5398 |
| KURTOSIS ..... | 2.3864 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 2.40 | 1 | 2.00 |
| 6 | 2.80 | 3 | 6.00 |
| 8 | 3.00 | 4 | 8.00 |
| 9 | 3.10 | 4 | 8.00 |
| 10 | 3.20 | 3 | 6.00 |
| 11 | 3.30 | 1 | 2.00 |
| 12 | 3.40 | 1 | 2.00 |
| 13 | 3.50 | 4 | 8.00 |
| 14 | 3.60 | 2 | 4.00 |
| 15 | 3.70 | 2 | 4.00 |
| 16 | 3.80 | 5 | 10.00 |
| 17 | 3.90 | 8 | 16.00 |
| 18 | 4.00 | 4 | 8.00 |
| 19 | 4.10 | 4 | 8.00 |
| 20 | 4.20 | 3 | 6.00 |
| 21 | 4.30 | 1 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

KPNDDH83003

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - G UPPER SAMPLE ID - 6373 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 7.85 | 11.55 | 7.85 | 11.55 | 92.15 | 58.96 | 30.73 | 30.73 |
| 2.60 | 92.15 | 58.96 | 100.00 | 55.24 | | | 12.05 | 13.52 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE - .

DATA SOURCE - KPNSSDDH83003 SEAM - G LOWER SAMPLE ID - 6374 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 17.04 | 14.52 | 17.04 | 14.52 | 82.96 | 63.63 | 29.46 | 29.46 |
| 2.60 | 82.96 | 63.63 | 100.00 | 55.26 | | | 9.72 | 13.08 |

Gulf

FORM 9999

GCRI COAL DIVISION HEAD PROJ KPN BLK SS DS DDH83003

SAMPLE ID 10 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 24/10/83
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | 10.00 | | |
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.38 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | 00519 |
| | | SPECIFIC GRAVITY | 1.94 |
| RESIDUAL MOISTURE % | 1.62 | FSI | __._ |
| ASH % | 55.49 | HGI | 59.0 |
| VOLATILE MATTER % | 7.25 | CO2 % | 5.32 |
| FIXED CARBON % | 35.64 | | |

GROSS CALORIFIC VALUE (MJ/KG) 13.05
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION SIZE PROJ KPN BLK SS DS DDH83003

SAMPLE ID 10 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SZ1 DATE ANALYSED 18/10/83

| FRACTION SIZE FROM (MM) | TO (MM) | WT% | ASH% | FSI | CAL (MJ/KG) | RM | VM | TS |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 0.60 | 88.43 | 55.30 | __._ | 12.33 | 1.58 | 7.34 | 0.36 |
| 0.60 | 0.15 | 8.60 | 51.19 | __._ | 15.06 | 1.60 | 6.58 | 0.39 |
| 0.15 | 0.00 | 2.97 | 58.54 | __._ | 11.01 | 1.43 | 7.98 | 0.56 |

GCRI COAL DIVISION ULTIMATE PROJ KPN BLK SS DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 10/11/83

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.62 |
| CARBON | % | 38.33 |
| HYDROGEN | % | 1.43 |
| SULPHUR | % | 0.38 |
| NITROGEN | % | 0.34 |
| ASH | % | 55.49 |
| OXYGEN | % | 2.41 |

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 17/11/83

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1250.0 | INITIAL TEMP.(C) | 1200.0 |
| SOFTENING TEMP.(C) | 1300.0 | SOFTENING TEMP.(C) | 1255.0 |
| HEMISPHERICAL TEMP.(C) | 1330.0 | HEMISPHERICAL TEMP.(C) | 1290.0 |
| FLUID TEMP.(C) | 1365.0 | FLUID TEMP.(C) | 1340.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1  DATE ANALYSED 24/11/83

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 57.07 |
| ALUMINIUM OXIDE % | (AL2O3) | 18.23 |
| FERRIC OXIDE % | (FE2O3) | 6.06 |
| TITANIUM DIOXIDE % | (TIO2) | 0.48 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.47 |
| CALCIUM OXIDE % | (CAO) | 2.74 |
| MAGNESIUM OXIDE % | (MGO) | 2.72 |
| SULPHUR TRIOXIDE % | (SO3) | 1.28 |
| SODIUM OXIDE % | (NA2O) | 1.31 |
| POTASSIUM OXIDE % | (K2O) | 1.21 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 08/11/83

| | | |
|---|---|---|
| PYRITE | % | 47.00 |
| SULPHATE | % | 3.00 |
| ORGANIC | % | 50.00 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - G LOWER SAMPLE ID - 10 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.60 RELATIVE WEIGHT % - 88.43 ASH % - 55.30

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 6.28 | 6.30 | 6.28 | 6.30 | 93.72 | 57.90 | | |
| 1.60 | 5.87 | 17.01 | 12.15 | 11.47 | 87.85 | 60.64 | | |
| 1.70 | 5.32 | 25.90 | 17.47 | 15.87 | 82.53 | 62.87 | | |
| 1.80 | 9.28 | 32.34 | 26.75 | 21.58 | 73.25 | 66.74 | | |
| 1.90 | 8.39 | 38.82 | 35.14 | 25.70 | 64.86 | 70.36 | | |
| 2.00 | 6.68 | 43.37 | 41.82 | 28.52 | 58.18 | 73.45 | | |
| 2.10 | 3.68 | 47.44 | 45.50 | 30.05 | 54.50 | 75.21 | | |
| 2.60 | 54.50 | 75.21 | 100.00 | 54.66 | | | | |

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.15 RELATIVE WEIGHT % - 8.60 ASH % - 51.19

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 16.96 | 4.92 | 16.96 | 4.92 | 83.04 | 59.27 | | |
| 1.60 | 8.10 | 15.12 | 25.06 | 8.22 | 74.94 | 64.05 | | |
| 1.70 | 5.44 | 22.80 | 30.50 | 10.82 | 69.50 | 67.28 | | |
| 1.80 | 5.20 | 29.07 | 35.70 | 13.48 | 64.30 | 70.37 | | |
| 1.90 | 5.48 | 35.20 | 41.18 | 16.37 | 58.82 | 73.64 | | |
| 2.00 | 4.90 | 41.69 | 46.08 | 19.06 | 53.92 | 76.55 | | |
| 2.10 | 4.68 | 48.09 | 50.76 | 21.74 | 49.24 | 79.25 | | |
| 2.60 | 49.24 | 79.25 | 100.00 | 50.06 | | | | |

Gulf

FORM 9999

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - G LOWER SAMPLE ID - 10 WASHABILITY ID - WA1

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 2.97 ASH % - 58.54

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 30.00 | 40.22 | 31.09 | 40.22 | 31.09 | 59.78 | 76.78 | | |
| 45.00 | 5.10 | 41.92 | 45.32 | 32.31 | 54.68 | 80.03 | | |
| 60.00 | 1.28 | 46.29 | 46.60 | 32.69 | 53.40 | 80.84 | | |
| 300.00 | 53.40 | 80.84 | 100.00 | 58.40 | | | | |

Gulf

FORM 9999

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10 | SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP3 | SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.58 | 8.76 | 7.75 |
| 0.60 | 0.15 | 1.67 | 2.40 | 0.21 |
| 0.15 | 0.00 | ___.__ | ___.__ | 0.00 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10 | DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP3 | DATE ANALYSED 12/01/84
SPLIT SAMPLE ID CC1 | ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.58 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE | 0.76 | FSI | __.__ |
| ASH % | 9.45 | HGI | 37.0 |
| VOLATILE MATTER % | 5.73 | CO2 % | 0.29 |
| FIXED CARBON % | 84.06 | | |

GROSS CALORIFIC VALUE (MJ/KG) 31.48
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP3 | DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 | DATE ANALYSED 10/02/84

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 0.76 |
| CARBON | % | 83.98 |
| HYDROGEN | % | 2.50 |
| SULPHUR | % | 0.58 |
| NITROGEN | % | 0.95 |
| ASH | % | 9.45 |
| OXYGEN | % | 1.78 |

GCRI COAL DIVISION | ASH FUSION | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10
AMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 13/02/84

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1220.0 | INITIAL TEMP.(C) | 1145.0 |
| SOFTENING TEMP.(C) | 1305.0 | SOFTENING TEMP.(C) | 1225.0 |
| HEMISPHERICAL TEMP.(C) | 1330.0 | HEMISPHERICAL TEMP.(C) | 1265.0 |
| FLUID TEMP.(C) | 1340.0 | FLUID TEMP.(C) | 1275.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION | ASH MINERAL | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 27/01/84

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 55.61 |
| ALUMINIUM OXIDE % | (AL2O3) | 25.30 |
| FERRIC OXIDE % | (FE2O3) | 6.80 |
| TITANIUM DIOXIDE % | (TIO2) | 2.22 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 1.17 |
| CALCIUM OXIDE % | (CAO) | 2.08 |
| MAGNESIUM OXIDE % | (MGO) | 2.79 |
| SULPHUR TRIOXIDE % | (SO3) | 0.61 |
| SODIUM OXIDE % | (NA2O) | 0.80 |
| POTASSIUM OXIDE % | (K2O) | 1.13 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION | SULPHUR | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 14/02/84

| | | |
|---|---|---|
| PYRITE | % | 10.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 88.00 |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10 | SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP6 | SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.70 | 6.02 | 5.32 |
| 0.60 | 0.15 | 1.80 | 0.50 | 0.04 |
| 0.15 | 0.00 | ___.__ | ___.__ | 0.00 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10 | DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP6 | DATE ANALYSED 12/01/84
SPLIT SAMPLE ID CC1 | ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.61 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE | 1.73 | FSI | __.__ |
| ASH % | 23.01 | HGI | 43.0 |
| VOLATILE MATTER % | 7.33 | CO2 % | 0.81 |
| FIXED CARBON % | 67.93 | | |

GROSS CALORIFIC VALUE (MJ/KG) 25.15
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP6 | DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 | DATE ANALYSED 10/02/84

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.73 |
| CARBON | % | 67.98 |
| HYDROGEN | % | 1.88 |
| SULPHUR | % | 0.61 |
| NITROGEN | % | 0.69 |
| ASH | % | 23.01 |
| OXYGEN | % | 4.10 |

GCRI COAL DIVISION | ASH FUSION | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 13/02/84

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1180.0 | INITIAL TEMP.(C) | 1155.0 |
| SOFTENING TEMP.(C) | 1300.0 | SOFTENING TEMP.(C) | 1270.0 |
| HEMISPHERICAL TEMP.(C) | 1335.0 | HEMISPHERICAL TEMP.(C) | 1315.0 |
| FLUID TEMP.(C) | 1375.0 | FLUID TEMP.(C) | 1370.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION | ASH MINERAL | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 06/02/84

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 65.07 |
| ALUMINIUM OXIDE % | (AL2O3) | 18.95 |
| FERRIC OXIDE % | (FE2O3) | 4.48 |
| TITANIUM DIOXIDE % | (TIO2) | 1.06 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.92 |
| CALCIUM OXIDE % | (CAO) | 2.73 |
| MAGNESIUM OXIDE % | (MGO) | 2.94 |
| SULPHUR TRIOXIDE % | (SO3) | 0.42 |
| SODIUM OXIDE % | (NA2O) | 0.85 |
| POTASSIUM OXIDE % | (K2O) | 1.21 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION | SULPHUR | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 10
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 15/02/84

| | | |
|---|---|---|
| PYRITE | % | 16.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 82.00 |

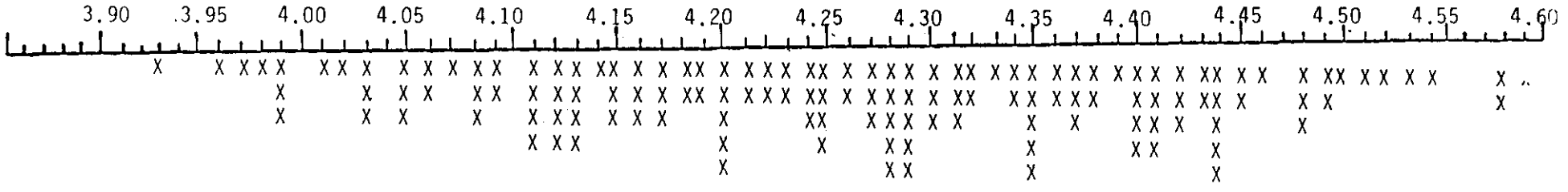
IAD Batch: # 97-P036- 662-12

Report of Analysis on Sample: 06374

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro : 4.26

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 140 )

V-Type Table for Vitrinites (=100%)

| V-39 | V-40 | V-41 | V-42 | V-43 | V-44 | V-45 |
|---|---|---|---|---|---|---|
| 5.0 | 11.4 | 18.6 | 23.6 | 17.1 | 18.6 | 5.7 |

V-Type Table for Vitrinites (= %)

(Adjusted to = Maceral % of Reactive Vitrinites)

| V- | V- | V- | V- |
|---|---|---|---|
| | | | |

GCRI COAL DIVISION HEAD PROJ KPN BLK SS DS DDH83003

SAMPLE ID 11 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 25/10/83
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | 10.00 | | |
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.62 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | 00350 |
| | | SPECIFIC GRAVITY | 2.02 |
| RESIDUAL MOISTURE % | 1.38 | FSI | __._ |
| ASH % | 61.14 | HGI | 63.0 |
| VOLATILE MATTER % | 5.55 | CO2 % | 3.58 |
| FIXED CARBON % | 31.93 | | |

GROSS CALORIFIC VALUE (MJ/KG) 10.44
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION SIZE PROJ KPN BLK SS DS DDH83003

SAMPLE ID 11 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SZ1 DATE ANALYSED 18/10/83

| FRACTION SIZE FROM (MM) | TO (MM) | WT% | ASH% | FSI | CAL (MJ/KG) | RM | VM | TS |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 0.60 | 86.48 | 64.60 | __._ | 9.00 | 1.45 | 5.59 | 0.57 |
| 0.60 | 0.15 | 9.06 | 46.68 | __._ | 17.50 | 1.43 | 6.03 | 0.62 |
| 0.15 | 0.00 | 4.46 | 52.31 | __._ | 12.59 | 1.43 | 6.66 | 0.60 |

GCRI COAL DIVISION ULTIMATE PROJ KPN BLK SS DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 10/11/83

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.38 |
| CARBON | % | 32.90 |
| HYDROGEN | % | 1.32 |
| SULPHUR | % | 0.62 |
| NITROGEN | % | 0.29 |
| ASH | % | 61.14 |
| OXYGEN | % | 2.35 |

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 17/11/83

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1250.0 | INITIAL TEMP.(C) | 1195.0 |
| SOFTENING TEMP.(C) | 1305.0 | SOFTENING TEMP.(C) | 1265.0 |
| HEMISPHERICAL TEMP.(C) | 1350.0 | HEMISPHERICAL TEMP.(C) | 1285.0 |
| FLUID TEMP.(C) | 1380.0 | FLUID TEMP.(C) | 1340.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1  DATE ANALYSED 25/11/83

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 61.17 |
| ALUMINIUM OXIDE % | (AL2O3) | 19.58 |
| FERRIC OXIDE % | (FE2O3) | 4.54 |
| TITANIUM DIOXIDE % | (TIO2) | 0.57 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.98 |
| CALCIUM OXIDE % | (CAO) | 2.24 |
| MAGNESIUM OXIDE % | (MGO) | 1.61 |
| SULPHUR TRIOXIDE % | (SO3) | 1.03 |
| SODIUM OXIDE % | (NA2O) | 1.51 |
| POTASSIUM OXIDE % | (K2O) | 1.36 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP1  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 08/11/83

| | | |
|---|---|---|
| PYRITE | % | 72.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 26.00 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - E UPPER SAMPLE ID - 11 WASHABILITY ID - WA1

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 4.46 ASH % - 52.31

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 30.00 | 37.35 | 23.58 | 37.35 | 23.58 | 62.65 | 69.07 | | |
| 45.00 | 6.72 | 29.74 | 44.07 | 24.52 | 55.93 | 73.80 | | |
| 60.00 | 2.28 | 36.06 | 46.35 | 25.09 | 53.65 | 75.40 | | |
| 90.00 | 2.59 | 48.05 | 48.94 | 26.30 | 51.06 | 76.79 | | |
| 300.00 | 51.06 | 76.79 | 100.00 | 52.08 | | | | |

Gulf

FORM 9999

GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - E UPPER SAMPLE ID - 11 WASHABILITY ID - WA2

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.60 RELATIVE WEIGHT % - 86.48 ASH % - 64.60

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.45 | 0.82 | 5.35 | 0.82 | 5.35 | 99.18 | 64.79 | | |
| 1.50 | 3.56 | 6.26 | 4.38 | 6.09 | 95.62 | 66.97 | | |
| 1.55 | 4.60 | 10.80 | 8.98 | 8.50 | 91.02 | 69.81 | | |
| 1.60 | 4.34 | 18.57 | 13.32 | 11.78 | 86.68 | 72.37 | | |
| 1.70 | 6.48 | 22.35 | 19.80 | 15.24 | 80.20 | 76.41 | | |
| 1.80 | 5.18 | 28.60 | 24.98 | 18.01 | 75.02 | 79.72 | | |
| 1.90 | 4.66 | 36.52 | 29.64 | 20.92 | 70.36 | 82.58 | | |
| 2.00 | 4.07 | 41.92 | 33.71 | 23.46 | 66.29 | 85.07 | | |
| 2.10 | 2.27 | 47.95 | 35.98 | 25.00 | 64.02 | 86.39 | | |
| 2.60 | 64.02 | 86.39 | 100.00 | 64.30 | | | | |

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.16 RELATIVE WEIGHT % - 9.06 ASH % - 46.68

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.45 | 2.73 | 2.22 | 2.73 | 2.22 | 97.27 | 46.82 | | |
| 1.50 | 12.69 | 5.84 | 15.42 | 5.20 | 84.58 | 52.96 | | |
| 1.55 | 7.05 | 11.89 | 22.47 | 7.30 | 77.53 | 56.70 | | |
| 1.60 | 8.14 | 14.30 | 30.61 | 9.16 | 69.39 | 61.67 | | |
| 1.70 | 8.62 | 20.84 | 39.23 | 11.73 | 60.77 | 67.46 | | |
| 1.80 | 5.54 | 26.88 | 44.77 | 13.60 | 55.23 | 71.53 | | |
| 1.90 | 5.58 | 32.99 | 50.35 | 15.75 | 49.65 | 75.87 | | |
| 2.00 | 4.43 | 40.75 | 54.78 | 17.77 | 45.22 | 79.31 | | |
| 2.10 | 1.74 | 46.25 | 56.52 | 18.65 | 43.48 | 80.63 | | |
| 2.60 | 43.48 | 80.63 | 100.00 | 45.60 | | | | |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 11 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP3 SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.57 | 9.31 | 8.05 |
| 0.60 | 0.15 | 1.63 | 3.03 | 0.27 |
| 0.15 | 0.00 | ___.__ | ___.__ | 0.00 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 11 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP3 DATE ANALYSED 13/01/84
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.63 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE | 0.78 | FSI | __._ |
| ASH % | 9.45 | HGI | ___._ |
| VOLATILE MATTER % | 5.93 | CO2 % | 0.59 |
| FIXED CARBON % | 83.84 | | |

GROSS CALORIFIC VALUE (MJ/KG) 31.26
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 10/02/84

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 0.78 |
| CARBON | % | 84.04 |
| HYDROGEN | % | 2.50 |
| SULPHUR | % | 0.63 |
| NITROGEN | % | 0.82 |
| ASH | % | 9.45 |
| OXYGEN | % | 1.78 |

GCRI COAL DIVISION | ASH FUSION | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 14/02/84

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1185.0 | INITIAL TEMP.(C) | 1130.0 |
| SOFTENING TEMP.(C) | 1245.0 | SOFTENING TEMP.(C) | 1190.0 |
| HEMISPHERICAL TEMP.(C) | 1270.0 | HEMISPHERICAL TEMP.(C) | 1220.0 |
| FLUID TEMP.(C) | 1330.0 | FLUID TEMP.(C) | 1280.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION | ASH MINERAL | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 06/02/84

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 46.44 |
| ALUMINIUM OXIDE % | (AL2O3) | 22.55 |
| FERRIC OXIDE % | (FE2O3) | 10.90 |
| TITANIUM DIOXIDE % | (TIO2) | 2.61 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 1.98 |
| CALCIUM OXIDE % | (CAO) | 4.33 |
| MAGNESIUM OXIDE % | (MGO) | 3.02 |
| SULPHUR TRIOXIDE % | (SO3) | 2.53 |
| SODIUM OXIDE % | (NA2O) | 1.71 |
| POTASSIUM OXIDE % | (K2O) | 1.12 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION | SULPHUR | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 15/02/84

| | | |
|---|---|---|
| PYRITE | % | 13.00 |
| SULPHATE | % | 1.00 |
| ORGANIC | % | 86.00 |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 11 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP6 SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.80 | 12.26 | 10.60 |
| 0.60 | 0.15 | 1.90 | 1.63 | 0.15 |
| 0.15 | 0.00 | 90.00 | 2.18 | 0.10 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 11 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP6 DATE ANALYSED 13/01/84
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 1.32 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE | 1.71 | FSI | __._ |
| ASH % | 23.24 | HGI | ___._ |
| VOLATILE MATTER % | 8.22 | CO2 % | 1.08 |
| FIXED CARBON % | 66.83 | | |

GROSS CALORIFIC VALUE (MJ/KG) 24.96
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 10/02/84

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.71 |
| CARBON | % | 66.87 |
| HYDROGEN | % | 1.79 |
| SULPHUR | % | 1.32 |
| NITROGEN | % | 0.69 |
| ASH | % | 23.24 |
| OXYGEN | % | 4.38 |

GCRI COAL DIVISION  ASH FUSION  PROJ KPN  BLK SS  DS DDH83003

AMPLE ID 11
SAMPLE PRODUCT ID SP6  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1  DATE ANALYSED 14/02/84

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1185.0 | INITIAL TEMP.(C) | 1160.0 |
| SOFTENING TEMP.(C) | 1265.0 | SOFTENING TEMP.(C) | 1215.0 |
| HEMISPHERICAL TEMP.(C) | 1290.0 | HEMISPHERICAL TEMP.(C) | 1250.0 |
| FLUID TEMP.(C) | 1370.0 | FLUID TEMP.(C) | 1260.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION  ASH MINERAL  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP6  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1  DATE ANALYSED 13/02/84

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 54.15 |
| ALUMINIUM OXIDE % | (AL2O3) | 22.66 |
| FERRIC OXIDE % | (FE2O3) | 7.06 |
| TITANIUM DIOXIDE % | (TIO2) | 1.23 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 2.05 |
| CALCIUM OXIDE % | (CAO) | 4.24 |
| MAGNESIUM OXIDE % | (MGO) | 2.55 |
| SULPHUR TRIOXIDE % | (SO3) | 1.29 |
| SODIUM OXIDE % | (NA2O) | 1.82 |
| POTASSIUM OXIDE % | (K2O) | 1.19 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION  SULPHUR  PROJ KPN  BLK SS  DS DDH83003

SAMPLE ID 11
SAMPLE PRODUCT ID SP6  DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1  DATE ANALYSED 15/02/84

| | | |
|---|---|---|
| PYRITE | % | 7.00 |
| SULPHATE | % | 1.00 |
| ORGANIC | % | 92.00 |

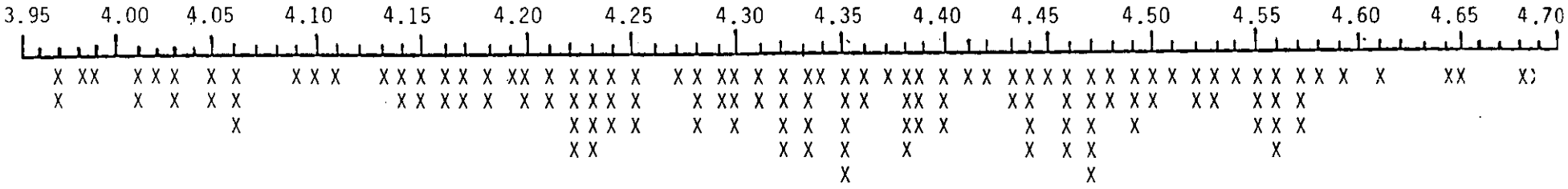
IAD Batch: # 97-P036-662-12

Report of Analysis on Sample: 06375

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro : 4.33

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 133 )

V-Type Table for Vitrinites (=100%)

| V- 39 | V- 40 | V-41 | V- 42 | V-43 | V-44 | V-45 | V-46 |
|---|---|---|---|---|---|---|---|
| 3.0 | 8.3 | 10.5 | 18.0 | 21.8 | 19.6 | 15.0 | 3.8 |

V-Type Table for Vitrinites (= %)

(Adjusted to = Maceral % of Reactive Vitrinites)

| V- | V- | V- | V- |
|---|---|---|---|

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - E LOWER SAMPLE ID - 6376 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 54.69 | 14.23 | 54.69 | 14.23 | 45.31 | 56.03 | 29.38 | 29.38 |
| 2.60 | 45.31 | 56.03 | 100.00 | 33.17 | | | 13.08 | 21.99 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - E LOWER SAMPLE ID - 6377 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.00 RELATIVE WEIGHT % - 100.00 ASH % -

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.70 | 9.03 | 14.37 | 9.03 | 14.37 | 90.97 | 71.25 | 29.35 | 29.35 |
| 2.60 | 90.97 | 71.25 | 100.00 | 66.11 | | | 7.24 | 9.24 |

FORM 9999

GCRI COAL DIVISION HEAD PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID HD1 DATE ANALYSED 26/10/83
ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | 10.00 | | |
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 1.24 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | 00559 |
| | | SPECIFIC GRAVITY | 1.90 |
| RESIDUAL MOISTURE % | 1.49 | FSI | __._ |
| ASH % | 52.42 | HGI | 67.0 |
| VOLATILE MATTER % | 6.71 | CO2 % | 4.81 |
| FIXED CARBON % | 39.38 | | |

GROSS CALORIFIC VALUE (MJ/KG) 13.98
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION SIZE PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SZ1 DATE ANALYSED 18/10/83

| FRACTION SIZE FROM (MM) | TO (MM) | WT% | ASH% | FSI | CAL (MJ/KG) | RM | VM | TS |
|---|---|---|---|---|---|---|---|---|
| 10.00 | 0.60 | 84.64 | 53.67 | __._ | 13.32 | 1.52 | 6.44 | 1.34 |
| 0.60 | 0.15 | 9.89 | 46.76 | __._ | 16.57 | 1.44 | 6.50 | 1.16 |
| 0.15 | 0.00 | 5.47 | 51.46 | __._ | 14.11 | 1.38 | 7.11 | 1.07 |

GCRI COAL DIVISION ULTIMATE PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 10/11/83

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.49 |
| CARBON | % | 40.06 |
| HYDROGEN | % | 1.42 |
| SULPHUR | % | 1.24 |
| NITROGEN | % | 0.38 |
| ASH | % | 52.42 |
| OXYGEN | % | 2.99 |

GCRI COAL DIVISION | ASH FUSION | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 17/11/83

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1260.0 | INITIAL TEMP.(C) | 1205.0 |
| SOFTENING TEMP.(C) | 1320.0 | SOFTENING TEMP.(C) | 1250.0 |
| HEMISPHERICAL TEMP.(C) | 1335.0 | HEMISPHERICAL TEMP.(C) | 1285.0 |
| FLUID TEMP.(C) | 1360.0 | FLUID TEMP.(C) | 1320.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION | ASH MINERAL | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 25/11/83

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 55.30 |
| ALUMINIUM OXIDE % | (AL2O3) | 19.49 |
| FERRIC OXIDE % | (FE2O3) | 6.11 |
| TITANIUM DIOXIDE % | (TIO2) | 0.52 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 0.55 |
| CALCIUM OXIDE % | (CAO) | 3.04 |
| MAGNESIUM OXIDE % | (MGO) | 2.57 |
| SULPHUR TRIOXIDE % | (SO3) | 2.20 |
| SODIUM OXIDE % | (NA2O) | 1.49 |
| POTASSIUM OXIDE % | (K2O) | 1.26 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION | SULPHUR | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP1 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 08/11/83

| | | |
|---|---|---|
| PYRITE | % | 80.00 |
| SULPHATE | % | 1.00 |
| ORGANIC | % | 19.00 |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - E LOWER SAMPLE ID - 12 WASHABILITY ID - WA1

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 10.00 X 0.60 RELATIVE WEIGHT % - 84.64 ASH % - 53.67

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 6.68 | 6.61 | 6.68 | 6.61 | 93.32 | 56.19 | | |
| 1.60 | 13.50 | 14.90 | 20.18 | 12.16 | 79.82 | 63.17 | | |
| 1.70 | 7.93 | 22.96 | 28.11 | 15.20 | 71.89 | 67.61 | | |
| 1.80 | 5.98 | 30.48 | 34.09 | 17.88 | 65.91 | 70.98 | | |
| 1.90 | 6.15 | 36.89 | 40.24 | 20.79 | 59.76 | 74.49 | | |
| 2.00 | 4.67 | 42.30 | 44.91 | 23.03 | 55.09 | 77.21 | | |
| 2.10 | 2.89 | 48.03 | 47.80 | 24.54 | 52.20 | 78.83 | | |
| 2.60 | 52.20 | 78.83 | 100.00 | 52.88 | | | | |

ANALYSIS TYPE - FLOAT

FRACTION SIZE(MM) 0.60 X 0.15 RELATIVE WEIGHT % - 9.89 ASH % - 46.76

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 1.50 | 15.85 | 5.17 | 15.85 | 5.17 | 84.15 | 53.28 | | |
| 1.60 | 14.26 | 14.02 | 30.11 | 9.36 | 69.89 | 61.29 | | |
| 1.70 | 7.71 | 21.62 | 37.82 | 11.86 | 62.18 | 66.21 | | |
| 1.80 | 5.97 | 27.84 | 43.79 | 14.04 | 56.21 | 70.29 | | |
| 1.90 | 5.71 | 33.82 | 49.50 | 16.32 | 50.50 | 74.41 | | |
| 2.00 | 4.44 | 40.86 | 53.94 | 18.34 | 46.06 | 77.65 | | |
| 2.10 | 2.14 | 46.01 | 56.08 | 19.40 | 43.92 | 79.19 | | |
| 2.60 | 43.92 | 79.19 | 100.00 | 45.66 | | | | |

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GULF CANADA RESOURCES INC. - COAL DIVISION

DEC 06/84 WASHABILITY REPORT 1 PAGE -

DATA SOURCE - KPNSSDDH83003 SEAM - E LOWER SAMPLE ID - 12 WASHABILITY ID - WA1

ANALYSIS TYPE - FROTH

FRACTION SIZE(MM) 0.15 X 0.00 RELATIVE WEIGHT % - 5.47 ASH % - 51.46

| S.G.TME | ELEMENTAL WT% | ELEMENTAL ASH% | CUM. FLOATS WT% | CUM. FLOATS ASH% | CUM. SINKS WT% | CUM. SINKS ASH% | C.V. (MJ\|KG) | CUM. C.V. |
|---|---|---|---|---|---|---|---|---|
| 30.00 | 46.20 | 27.02 | 46.20 | 27.02 | 53.80 | 71.33 | | |
| 45.00 | 5.26 | 38.80 | 51.46 | 28.22 | 48.54 | 74.85 | | |
| 60.00 | 1.27 | 42.83 | 52.73 | 28.58 | 47.27 | 75.71 | | |
| 90.00 | 1.54 | 49.61 | 54.27 | 29.17 | 45.73 | 76.59 | | |
| 300.00 | 45.73 | 76.59 | 100.00 | 50.86 | | | | |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 12 | SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
SAMPLE PRODUCT ID SP3 | SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.56 | 11.33 | 9.59 |
| 0.60 | 0.15 | 1.62 | 3.13 | 0.31 |
| 0.15 | 0.00 | ___.__ | ___.__ | 0.00 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 12 | DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP3 | DATE ANALYSED 13/01/84
SPLIT SAMPLE ID CC1 | ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.58 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE | 0.67 | FSI | __._ |
| `SH % | 8.97 | HGI | ___._ |
| JLATILE MATTER % | 4.89 | CO2 % | 0.20 |
| FIXED CARBON % | 85.47 | | |

GROSS CALORIFIC VALUE (MJ/KG) 31.56
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP3 | DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 | DATE ANALYSED 10/02/84

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 0.67 |
| CARBON | % | 85.25 |
| HYDROGEN | % | 2.27 |
| SULPHUR | % | 0.58 |
| NITROGEN | % | 0.89 |
| ASH | % | 8.97 |
| OXYGEN | % | 1.37 |

GCRI COAL DIVISION | ASH FUSION | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 15/02/84

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1250.0 | INITIAL TEMP.(C) | 1195.0 |
| SOFTENING TEMP.(C) | 1395.0 | SOFTENING TEMP.(C) | 1325.0 |
| HEMISPHERICAL TEMP.(C) | 1435.0 | HEMISPHERICAL TEMP.(C) | 1360.0 |
| FLUID TEMP.(C) | 1500.0 | FLUID TEMP.(C) | 1430.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION | ASH MINERAL | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 13/02/84

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 50.00 |
| ALUMINIUM OXIDE % | (AL2O3) | 26.64 |
| FERRIC OXIDE % | (FE2O3) | 3.39 |
| TITANIUM DIOXIDE % | (TIO2) | 2.02 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 1.56 |
| CALCIUM OXIDE % | (CAO) | 3.19 |
| MAGNESIUM OXIDE % | (MGO) | 1.90 |
| SULPHUR TRIOXIDE % | (SO3) | 1.40 |
| SODIUM OXIDE % | (NA2O) | 1.75 |
| POTASSIUM OXIDE % | (K2O) | 2.06 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION | SULPHUR | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP3 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 15/02/84

| | | |
|---|---|---|
| PYRITE | % | 7.00 |
| SULPHATE | % | 2.00 |
| ORGANIC | % | 91.00 |

GCRI COAL DIVISION | SAMPLE PRODUCT | PROJ KPN | BLK SS | DS DDH83003

'AMPLE ID 12 SAMPLE PRODUCT TYPE (CLEAN,RAW) CLEAN
.AMPLE PRODUCT ID SP6 SAMPLE WEIGHT (KG) __.__

| FRACTION SIZE FROM (MM) | FRACTION SIZE TO (MM) | CUTPOINT | YIELD/FRACTION% | YIELD/FRACTION% RELATIVE TO TOTAL SAMPLE |
|---|---|---|---|---|
| 10.00 | 0.60 | 1.90 | 22.72 | 19.23 |
| 0.60 | 0.15 | 1.80 | 1.20 | 0.12 |
| 0.15 | 0.00 | 30.00 | 2.53 | 0.14 |

GCRI COAL DIVISION | COALCOMP | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 12 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SAMPLE PRODUCT ID SP6 DATE ANALYSED 13/01/84
SPLIT SAMPLE ID CC1 ANALYSIS BASIS TYPE (AD,DB,AR,EM) AD
NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| SURFACE MOISTURE % | __.__ | TOTAL SULPHUR % | 0.92 |
| TOTAL MOISTURE % | __.__ | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE | 1.11 | FSI | __._ |
| ASH % | 24.88 | HGI | ___._ |
| JLATILE MATTER % | 6.95 | CO2 % | 0.84 |
| . IXED CARBON % | 67.06 | | |

GROSS CALORIFIC VALUE (MJ/KG) 24.98
NET CALORIFIC VALUE (MJ/KG) __.__

GCRI COAL DIVISION | ULTIMATE | PROJ KPN | BLK SS | DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID UL1 DATE ANALYSED 10/02/84

ANALYSIS BASIS TYPE (DAF,DB,AD) AD

| | | |
|---|---|---|
| WATER | % | 1.11 |
| CARBON | % | 67.38 |
| HYDROGEN | % | 1.96 |
| SULPHUR | % | 0.92 |
| NITROGEN | % | 0.60 |
| ASH | % | 24.88 |
| OXYGEN | % | 3.15 |

GCRI COAL DIVISION | ASH FUSION | PROJ KPN BLK SS DS DDH83003

AMPLE ID 12
AMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AF1 DATE ANALYSED 15/02/84

| OXIDIZING ATMOSPHERE | | REDUCING ATMOSPHERE | |
|---|---|---|---|
| INITIAL TEMP.(C) | 1195.0 | INITIAL TEMP.(C) | 1170.0 |
| SOFTENING TEMP.(C) | 1310.0 | SOFTENING TEMP.(C) | 1250.0 |
| HEMISPHERICAL TEMP.(C) | 1340.0 | HEMISPHERICAL TEMP.(C) | 1300.0 |
| FLUID TEMP.(C) | 1360.0 | FLUID TEMP.(C) | 1345.0 |

NORMAL RANGES ALL TEMPS.
1000.0 >= VALUES <= 1500.0
OXIDATION TEMPS >= REDUCTION TEMPS

GCRI COAL DIVISION | ASH MINERAL | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID AM1 DATE ANALYSED 13/02/84

| | | |
|---|---|---|
| SILICON DIOXIDE % | (SIO2) | 57.54 |
| ALUMINIUM OXIDE % | (AL2O3) | 23.38 |
| FERRIC OXIDE % | (FE2O3) | 5.54 |
| TITANIUM DIOXIDE % | (TIO2) | 1.18 |
| PHOSPHOROUS PENTOXIDE % | (P2O5) | 1.25 |
| CALCIUM OXIDE % | (CAO) | 3.88 |
| MAGNESIUM OXIDE % | (MGO) | 1.89 |
| SULPHUR TRIOXIDE % | (SO3) | 2.06 |
| SODIUM OXIDE % | (NA2O) | 1.66 |
| POTASSIUM OXIDE % | (K2O) | 1.56 |

90.0 <= TOTAL <= 100.0

GCRI COAL DIVISION | SULPHUR | PROJ KPN BLK SS DS DDH83003

SAMPLE ID 12
SAMPLE PRODUCT ID SP6 DATA TYPE (REAL,BORO,AVER,CALC) REAL
SPLIT SAMPLE ID SU1 DATE ANALYSED 15/02/84

| | | |
|---|---|---|
| PYRITE | % | 10.00 |
| SULPHATE | % | 1.00 |
| ORGANIC | % | 89.00 |

IAD Batch: 97-P036-662-12

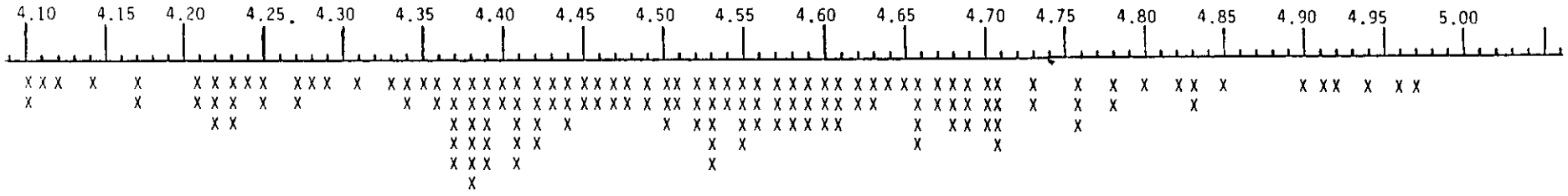
Report of Analysis on Sample: 06376-06377

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 4.50

Distribution of Vitrinite Reflectance Readings:

%Ro




Number of Counts (Total= 151)

V-Type Table for Vitrinites (=100%)

| V- 41 | V- 42 | V- 43 | V- 44 | V- 45 |
|---|---|---|---|---|
| 4.6 | 9.9 | 15.3 | 17.2 | 20.5 |
| V- 46 | V- 47 | V- 48 | V-49 | V- |
| 15.9 | 9.3 | 3.3 | 4.0 | |

GR-MT. KLAPPAN 54A
SUMMIT - NASS-SKEENA
CONFIDENTIAL COAL
QUALITY DATA FROM
APPENDIX III, VOL. II
(COAL TRENCH DATA
AND COAL QUALITY)
(1)

CONFIDENTIAL

710

SUMMIT AREA

CONFIDENTIAL

1981

# HEAD RAW ANALYSIS

Trench No. TRC-81-007

Lab Sample No. 01401

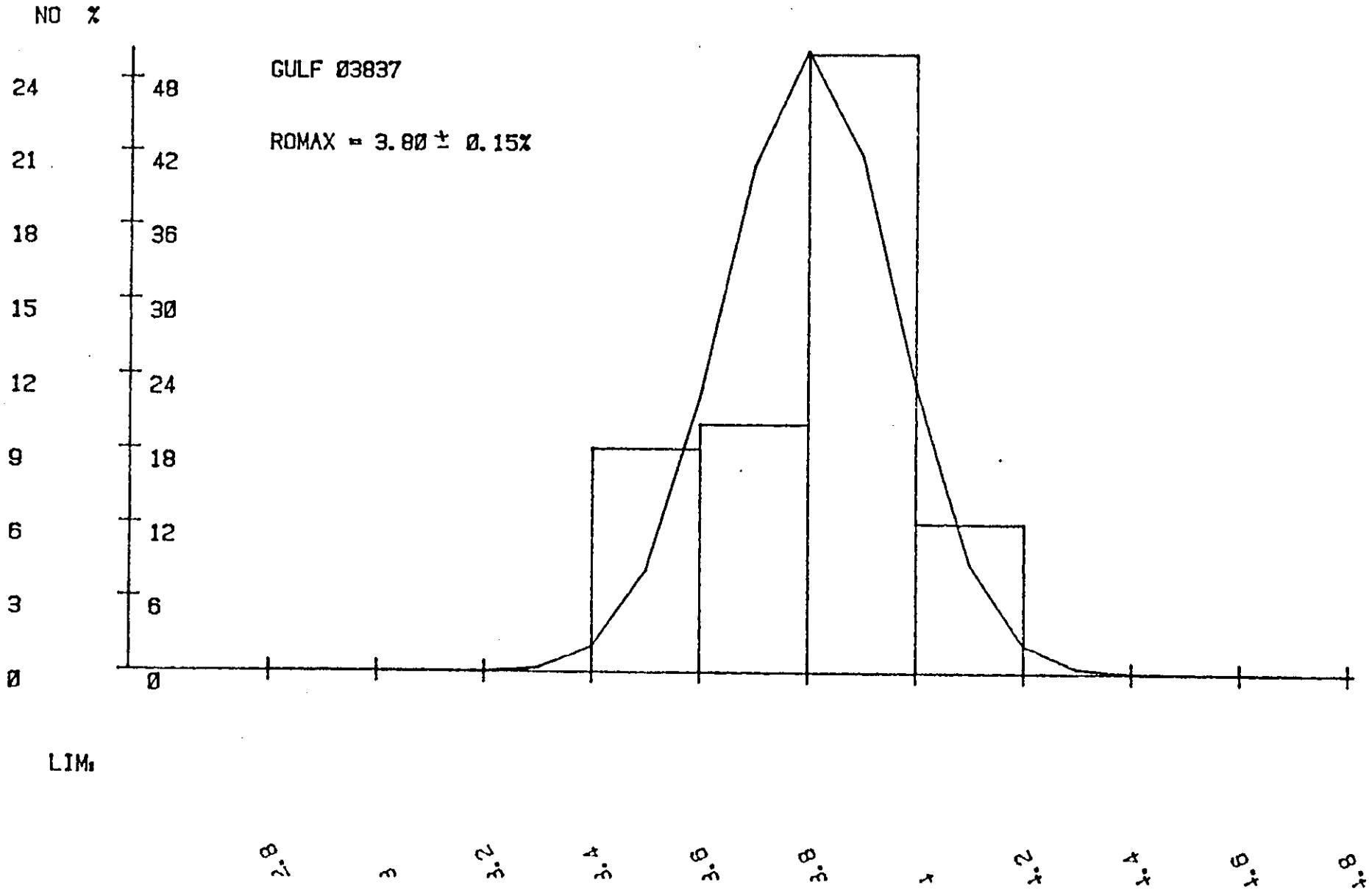
| | AIR DRY BASIS | DRY BASIS |
|---|---|---|
| RESIDUAL MOISTURE % | 2.1 | |
| ASH % | 22.3 | 22.8 |
| VOLATILE MATTER % | 6.3 | 6.4 |
| FIXED CARBON % | 69.3 | 70.8 |
| SULPHUR % | 0.55 | 0.56 |
| CALORIFIC VALUE (cal/gm) | 6207 | 6340 |
| SP. GR. | 1.56 | - |
| FSI | 0 | - |
| HGI | 42 | - |
| VITRINITE REFLECTANCE % | 3.80 | - |

03837

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 3.5800 | 3.4500 |
| 3 | 3.5900 | 3.5500 |
| 5 | 3.5600 | 3.5500 |
| 7 | 3.6200 | 3.7200 |
| 9 | 3.5400 | 3.8000 |
| 11 | 3.8700 | 3.7100 |
| 13 | 3.8300 | 3.5200 |
| 15 | 3.9200 | 3.5700 |
| 17 | 3.8200 | 3.7100 |
| 19 | 3.8900 | 3.6800 |
| 21 | 3.8100 | 3.7900 |
| 23 | 3.8800 | 3.6800 |
| 25 | 3.7600 | 3.8500 |
| 27 | 3.9200 | 3.8300 |
| 29 | 4.0200 | 3.9500 |
| 31 | 3.8200 | 3.8200 |
| 33 | 3.8300 | 3.9400 |
| 35 | 3.8300 | 3.8700 |
| 37 | 3.9700 | 3.7600 |
| 39 | 3.9500 | 4.0500 |
| 41 | 3.8300 | 4.0400 |
| 43 | 3.8000 | 3.9500 |
| 45 | 3.9600 | 3.7900 |
| 47 | 4.0500 | 3.8300 |
| 49 | 4.0200 | 4.0600 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .02
MEAN = 3.8028
COEF OF VARIATION = 4.17%
VARIANCE = .0252
STANDARD DEVIATION = .1587
SKEWNESS = -.3599
KURTOSIS = 2.3195

95.00% C.I. FOR MEAN:
( 3.7577, 3.8479)
ONE-TAIL t( 49 , 025 )=
2.01003450016


NO %
GULF 03837
ROMAX = 3.80 ± 0.15%
24
21
18
15
12
9
6
3
0
48
42
36
30
24
18
12
6
0
LIM:

## CLEAN COAL COMPOSITE

Trench No. TRC-81-007

Lab Sample No. 01401

| | AIR DRY BASIS | DRY BASIS |
|---|---|---|
| YIELD % | 84.4 | |
| RESIDUAL MOISTURE % | 1.1 | |
| ASH % | 16.2 | 16.4 |
| VOLATILE MATTER % | 6.3 | 6.4 |
| VOLATILE MATTER (dmmf) % | | 5.93 |
| FIXED CARBON % | 76.4 | 77.2 |
| SULPHUR % | 0.48 | 0.49 |
| CALORIFIC VALUE (cal/gm) | 6777 | 6852 |
| SP. GR. | 1.53 | - |
| FSI | 0 | - |
| HGI | 34 | - |
| VITRINITE REFLECTANCE % | 3.80 | - |

GULF CANADA RESOURCES INC.

PROJECT: Mt. Klappan

SAMPLE NO.: 01401

## SIZE CONSIST

| Size | Wt. % |
|---|---|
| 3/8" x 28m | 93.40 |
| 28m x 100m | 4.65 |
| 100m x 0 | 1.95 |
| | 100.00 |

## RAW SAMPLE ANALYSIS

AIR DRY BASIS

PROXIMATE ANALYSIS:

| | MESH SIZE FRACTION | | |
|---|---|---|---|
| | 3/8" x 28m | 28m x 100m | 100 x 0 |
| Ash % | 21.2 | 34.7 | 49.2 |
| Moisture % | - | 2.0 | 1.7 |
| Calorific Value (cal/gm) | - | 4901 | 3529 |

GULF CANADA RESOURCES INC.

PROJECT: Mt. Klappan

SAMPLE NO.: 01401

## SIMULATED PRODUCT CONTRIBUTION BY SIZE FRACTION

| Size | Cut Point | Size Analysis | Product Yield |
|---|---|---|---|
| 3/8" x 28m | 1.80 | 93.40 | 79.20 |
| 28m x 100m | 2.00 | 4.65 | 3.25 |
| 100m x 0 | - | 1.95 | 1.95 |
| | | 100.00 | 84.40 |

TRENCH NO.: TRC-81-007
SAMPLE NO.: 01401

SINK-FLOAT ANALYSIS, adb: +28M

| SG FRACTION | WT% | RM% | ASH% | C.V. Cal/gm | CUMULATIVE WT% | CUMULATIVE ASH% |
|---|---|---|---|---|---|---|
| - 1.40 | nil | - | -- | - | - | - |
| 1.40 - 1.50 | 27.0 | 0.7 | 6.4 | 7834 | 27.0 | 6.4 |
| 1.50 - 1.60 | 40.6 | 1.1 | 16.1 | 6795 | 67.6 | 12.2 |
| 1.60 - 1.70 | 10.6 | 1.2 | 25.4 | 5937 | 78.2 | 14.0 |
| 1.70 - 1.80 | 6.6 | 1.2 | 34.3 | 5074 | 84.8 | 15.6 |
| 1.80 - 1.90 | 4.4 | 1.4 | 41.2 | 4387 | 89.2 | 16.9 |
| 1.90 - 2.00 | 3.1 | 1.3 | 46.9 | 3772 | 92.3 | 17.9 |
| +2.00 | 7.7 | 1.1 | 61.3 | -- | 100.0 | 21.2 |

SINK-FLOAT ANALYSIS, adb: 28M x 100M

| SG FRACTION | WT% | RM% | ASH% | C.V. Cal/gm | CUMULATIVE WT% | CUMULATIVE ASH% |
|---|---|---|---|---|---|---|
| - 1.40 | 6.5 | 0.9 | 2.1 | 8146 | 6.5 | 2.1 |
| 1.40 - 1.50 | 25.4 | 0.9 | 5.6 | 7818 | 31.9 | 4.9 |
| 1.50 - 1.60 | 16.7 | 1.3 | 13.2 | 7057 | 48.6 | 7.7 |
| 1.60 - 1.70 | 8.0 | 2.1 | 22.5 | 6112 | 56.6 | 9.8 |
| 1.70 - 1.80 | 5.8 | 2.3 | 30.6 | 5278 | 62.4 | 11.8 |
| 1.80 - 1.90 | 4.5 | 2.4 | 40.1 | 4332 | 66.9 | 13.7 |
| 1.90 - 2.00 | 2.9 | 2.6 | 44.4 | 3908 | 69.8 | 14.9 |
| +2.00 | 30.2 | 1.6 | 78.5 | -- | 100.0 | 34.1 |

N.B. - Insufficient Sample for Froth Flotation Test.

TRENCH NO.: TRC-81-007

## ULTIMATE ANALYSIS, adb

| $H_2O$% | C % | H% | N% | S% | ASH % | O% (by diff) |
|---|---|---|---|---|---|---|
| 1.14 | 75.55 | 2.23 | 0.88 | 0.48 | 16.24 | 3.48 |

## ASH FUSION TEMPERATURES (°C)

| ATMOSPHERE | I.D.T. | S.T. | H.T. | F.T. |
|---|---|---|---|---|
| OXIDIZING | 1232 | 1365 | 1393 | 1415 |
| REDUCING | 1176 | 1310 | 1371 | 1382 |

## MINERAL ANALYSIS OF ASH

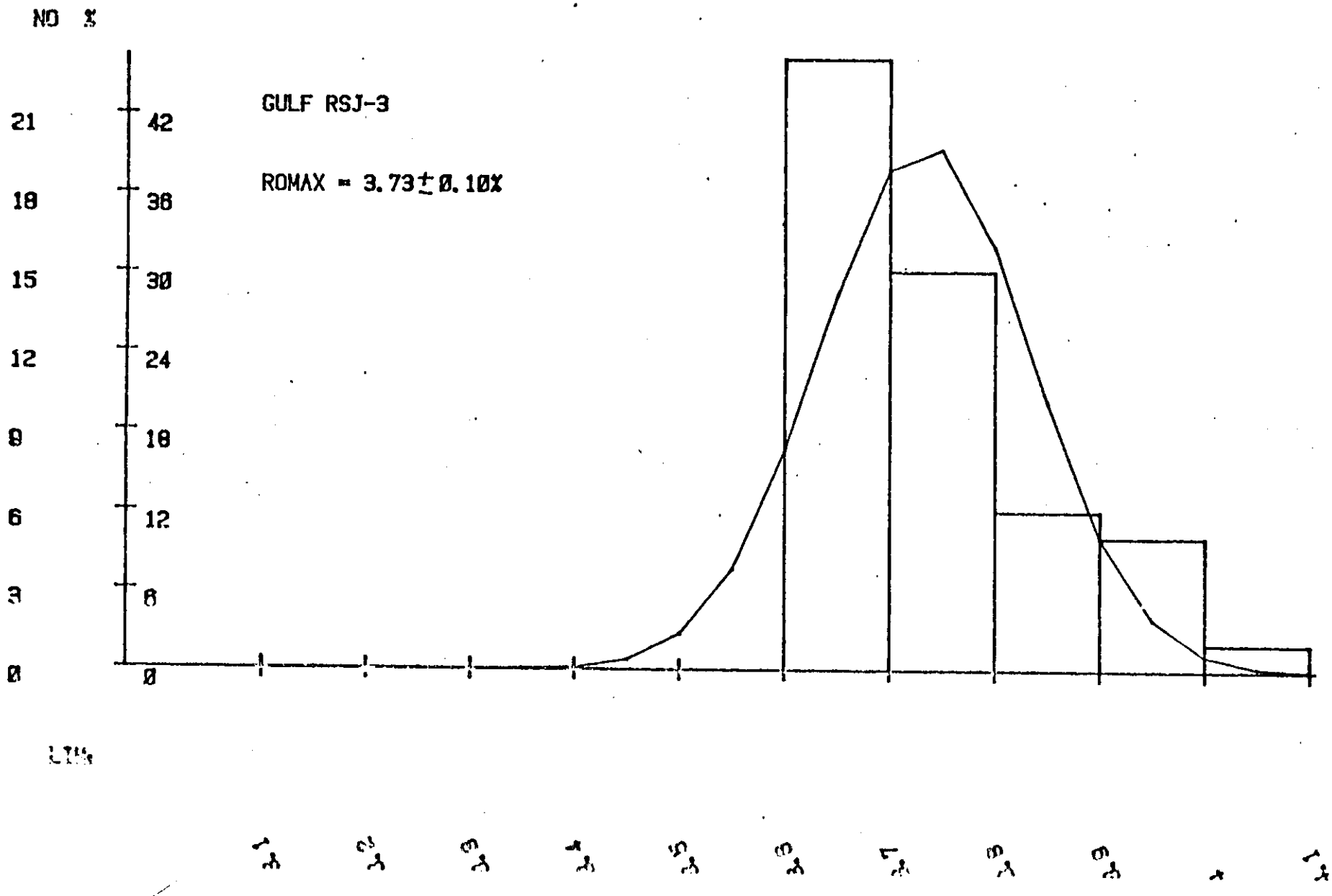
| $SiO_2$ | $Al_2O_3$ | $TiO_2$ | $Fe_2O_3$ | CaO | MgO | $Na_2O$ | $K_2O$ | $P_2O_5$ | $SO_3$ | Undet. |
|---|---|---|---|---|---|---|---|---|---|---|
| 52.75 | 26.57 | 1.88 | 6.34 | 2.89 | 1.94 | 2.44 | 1.18 | 1.30 | 0.90 | -1.81 |

RSJ-3 (02325) (KPNSSOTC81012) → KPNSSTRC81008

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 3.7300 | 3.7200 |
| 3 | 3.6900 | 3.6500 |
| 5 | 3.6700 | 3.8000 |
| 7 | 3.8000 | 3.6400 |
| 9 | 3.9200 | 3.7900 |
| 11 | 3.6700 | 3.6400 |
| 13 | 3.6700 | 3.9000 |
| 15 | 3.6600 | 3.7400 |
| 17 | 3.6200 | 3.7800 |
| 19 | 3.8700 | 3.8300 |
| 21 | 4.0100 | 3.6700 |
| 23 | 3.7300 | 3.8500 |
| 25 | 3.7100 | 3.7200 |
| 27 | 3.7200 | 3.9100 |
| 29 | 3.6900 | 3.7800 |
| 31 | 3.7200 | 3.9400 |
| 33 | 3.7600 | 3.6900 |
| 35 | 3.8000 | 3.6600 |
| 37 | 3.6900 | 3.6000 |
| 39 | 3.6500 | 3.6300 |
| 41 | 3.6200 | 3.7200 |
| 43 | 3.9100 | 3.7900 |
| 45 | 3.6200 | 3.6300 |
| 47 | 3.6100 | 3.6000 |
| 49 | 3.7600 | 3.6700 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 3.7330
COEF OF VARIATION = 2.69%
VARIANCE = .0101
STANDARD DEVIATION = .1003
SKEWNESS = .8331
KURTOSIS = 2.9533

95.00% C.I. FOR MEAN:
( 3.7045, 3.7615)
ONE-TAIL t( 49 , .025 )=
2.01003450016


NO %
GULF RSJ-3
ROMAX = 3.73±0.10%
21
18
15
12
9
6
3
0
42
36
30
24
18
12
6
0

1982

| GCRI COAL DIVISION | HEAD | PROJ KPN | BLK FC | DS TRC82035 | |
|---|---|---|---|---|---|
| SAMPLE ID | 82 | DATA TYPE (REAL,BORO,AVER,CALC) | | | REAL |
| SPLIT SAMPLE ID | HD1 | DATE ANALYSED | 13/01/83 | | |
| | | ANALYSIS BASIS TYPE (AD,DB,AR,EM) | | | AD |
| NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) | | ASTM | | | |

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | ---.-- | | |
| SURFACE MOISTURE %(AD,AR) | 4.00 | TOTAL SULPHUR % | 0.42 |
| TOTAL MOISTURE % | 4.96 | PHOSPHOROUS % | -.--- |
| EQUILIBRIUM MOISTURE % | --.-- | CHLORINE (PPM) | ----- |
| | | SPECIFIC GRAVITY | -.-- |
| RESIDUAL MOISTURE %(AD,EM) | 1.00 | FSI | --.- |
| ASH % | 29.10 | HGI | ---.- |
| VOLATILE MATTER % | 6.30 | CO2 % | --.-- |
| FIXED CARBON % | 63.60 | | |
| GROSS CALORIFIC VALUE (MJ/KG) | 23.28 | | |
| NET CALORIFIC VALUE (MJ/KG) | --.-- | $Ro_{max}$=4.17 | |

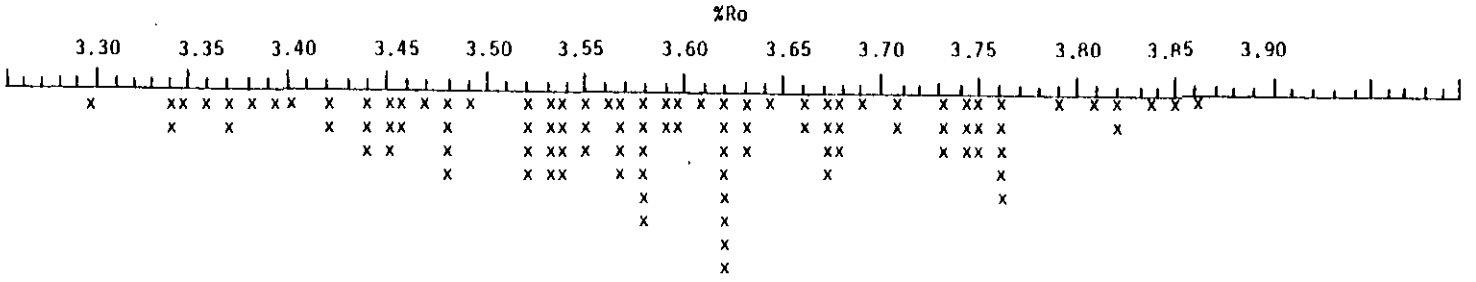
1983

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06760

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.58

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedure. Only relatively unoxidized particles were selected and measured, thus biasing the analysis.

Number of Counts (Total= 106 )

V-Type Table for Vitrinites (=100%)

| V-33 | V-34 | V-35 | V-36 |
|---|---|---|---|
| 8.5 | 16.0 | 26.4 | 27.4 |

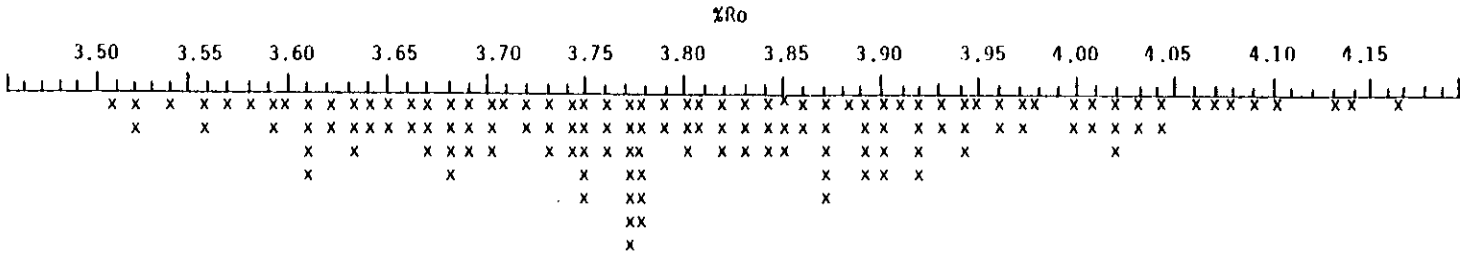
| V-37 | V-38 |
|---|---|
| 16.0 | 5.7 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06761

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.81

Distribution of Vitrinite Reflectance Readings:




This sample is heavily oxidized.

Number of Counts (Total= 139 )

V-Type Table for Vitrinites (=100%)

| V- 35 | V- 36 | V- 37 | V-38 |
|---|---|---|---|
| 7.2 | 18.7 | 25.1 | 20.9 |
| V- 39 | V-40 | V-41 | |
| 14.4 | 10.8 | 2.9 | |

IAD Batch: 97-N263-662-57

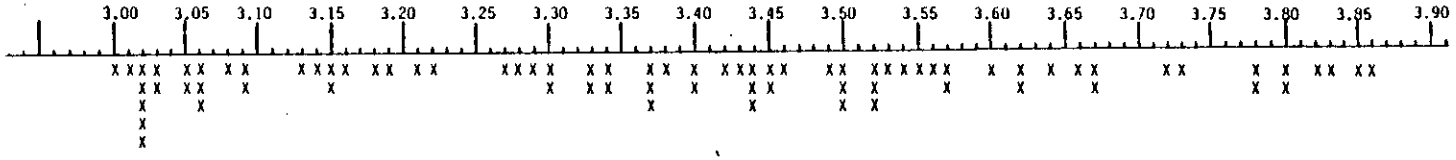
Report of Analysis on Sample: 06762

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 3.38

Distribution of Vitrinite Reflectance Readings:

%Ro




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were selected and measured, thus biasing the analysis. Also, only 79 relatively unoxidized coal particles could be discovered.

Number of Counts (Total= 79 )

V-Type Table for Vitrinites (=100%)

| V-30 | V-31 | V-32 | V-33 | V-34 |
|---|---|---|---|---|
| 21.5 | 8.9 | 6.3 | 12.7 | 13.9 |
| V-35 | V-36 | V-37 | V-38 | V- |
| 15.2 | 8.9 | 5.0 | 7.6 | |

REFLECTANCE ANALYSIS

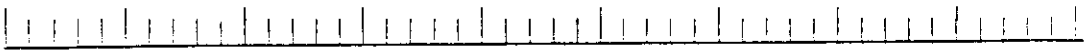
IAD Batch: 97-N263-662-57

Report of Analysis on Sample: 06763

Mean-Maximum Vitrinite Ro: *

Distribution of Vitrinite Reflectance Readings:

%Ro



*This sample contained very little coal at all and those particles were highly oxidized. We tried to restrict measurement to relatively unoxidized coal, but even then the reflectances ranged from 1.45 to 4.16 and we could get only 51 counts, too few to calculate a mean-maximum reflectance.

Number of

Counts

(Total = _____)

V-Type Table for Vitrinites (=100%)

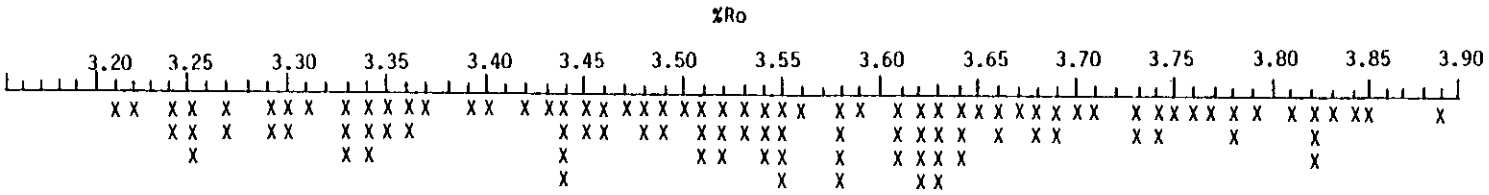
V-____ V-____ V-____ V-____

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06764

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.54

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were measure, thus biasing the analysis.

Number of Counts (Total= 106 )

V-Type Table for Vitrinites (=100%)

| V- 32 | V- 33 | V-34 | V-35 |
|---|---|---|---|
| 10.4 | 14.2 | 15.0 | 20.8 |
| V- 36 | V-37 | V-38 | |
| 20.8 | 11.3 | 7.5 | |

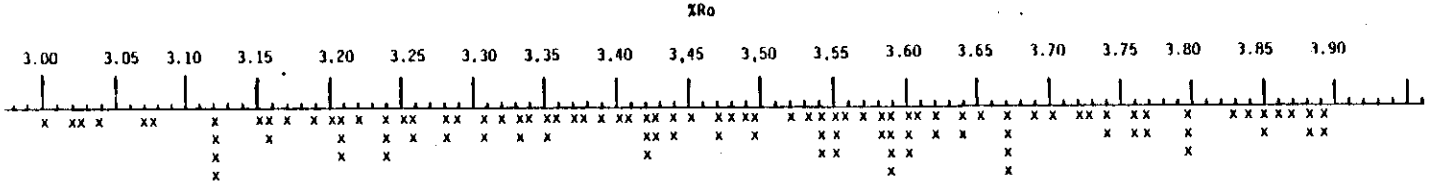
IAD Batch: 97-N263-662-57

Report of Analysis on Sample: 03572

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 3.48

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedure. Only relatively unoxidized particles were selected and measured; thus biasing the analysis.

Number of Counts (Total= 109 )

V-Type Table for Vitrinites (=100%)

| V- 30 | V- 31 | V- 32 | V- 33 | V- 34 |
|---|---|---|---|---|
| 5.5 | 8.3 | 12.8 | 11.0 | 12.8 |

| V- 35 | V- 36 | V- 37 | V- 38 | V- |
|---|---|---|---|---|
| 16.5 | 12.8 | 8.3 | 11.9 | |

IAD Batch: 97-N263-662-57

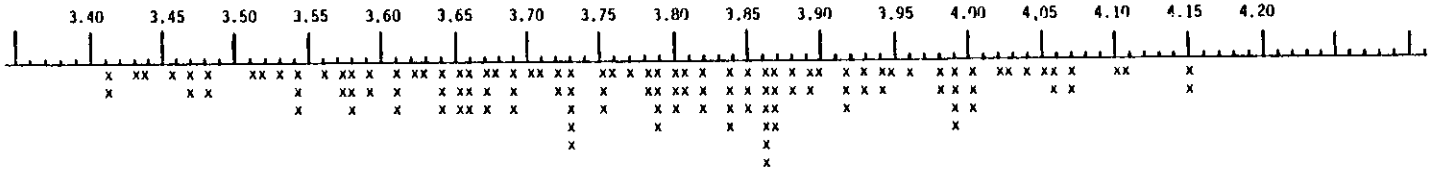
Report of Analysis on Sample: 06757

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 3.77

Distribution of Vitrinite Reflectance Readings:

%Ro




This sample moderatley oxidized.

Number of Counts (Total= 123 )

V-Type Table for Vitrinites (=100%)

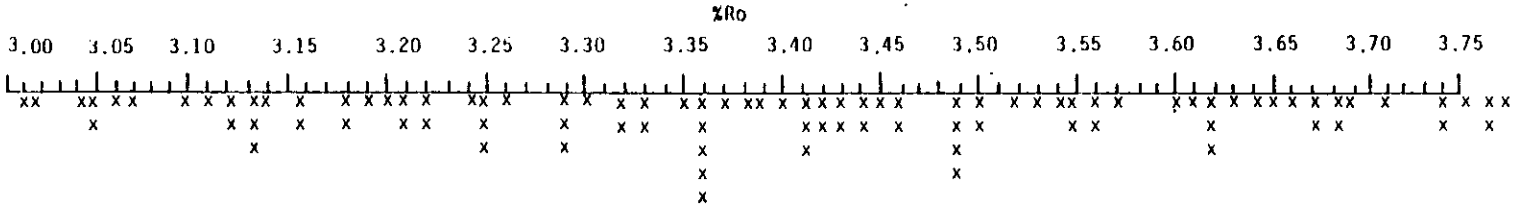
| V-34 | V- 35 | V- 36 | V- 37 | V-38 |
|---|---|---|---|---|
| 7.3 | 12.2 | 17.1 | 16.2 | 22.0 |
| V-39 | V- 40 | V- 41 | V- | V- |
| 13.0 | 8.9 | 3.3 | | |

IAD Batch # 97- N263-662-57
Report of Analysis on Sample: 06758

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.39

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedure. Only relatively unoxidized particles were selected and measured, thus biasing the analysis. There were so few relatively unoxidized particles that only 96 counts were available.

Number of Counts (Total= 96 )

V-Type Table for Vitrinites (=100%)

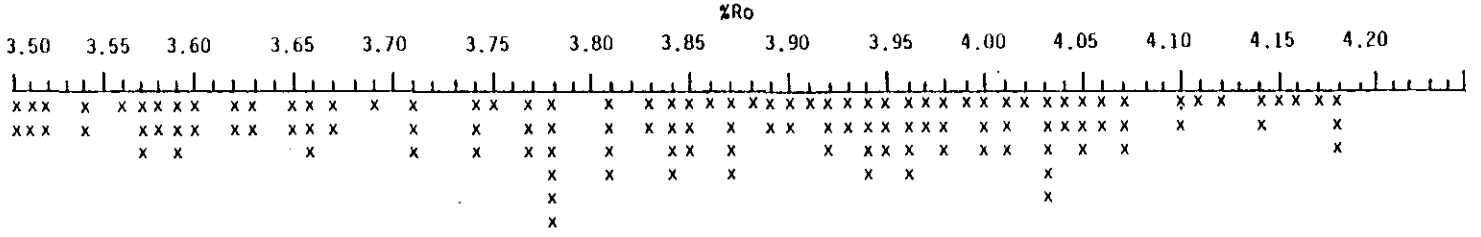
| V-30 | V-31 | V-32 | V-33 |
|---|---|---|---|
| 7.3 | 13.5 | 14.6 | 14.6 |
| V-34 | V-35 | V-36 | V-37 |
| 17.7 | 10.4 | 14.6 | 7.3 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06754

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.87

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were selected and measured, thus biasing the analysis.

Number of Counts (Total= 126 )

V-Type Table for Vitrinites (=100%)

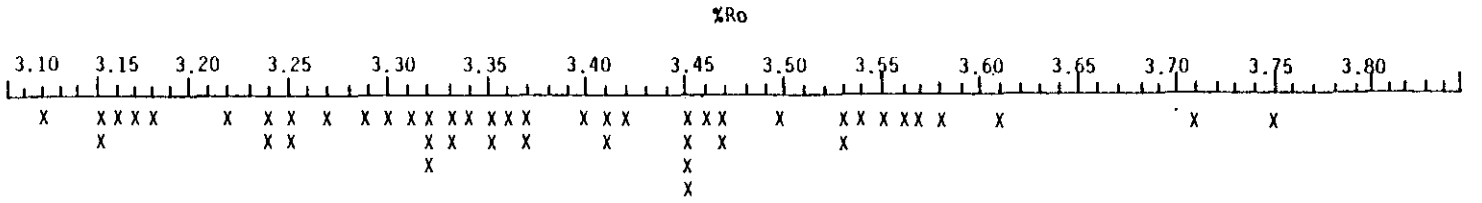
| V-35 | V-36 | V-37 | V-38 | V-39 | V-40 | V-41 |
|---|---|---|---|---|---|---|
| 13.5 | 11.1 | 12.7 | 16.7 | 19.0 | 17.5 | 9.5 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06755

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.38

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were selected and measured; thus biasing the analysis. This sample also contains very little coal so that 100 counts could not be obtained.

Number of Counts (Total= 48 )

V-Type Table for Vitrinites (=100%)

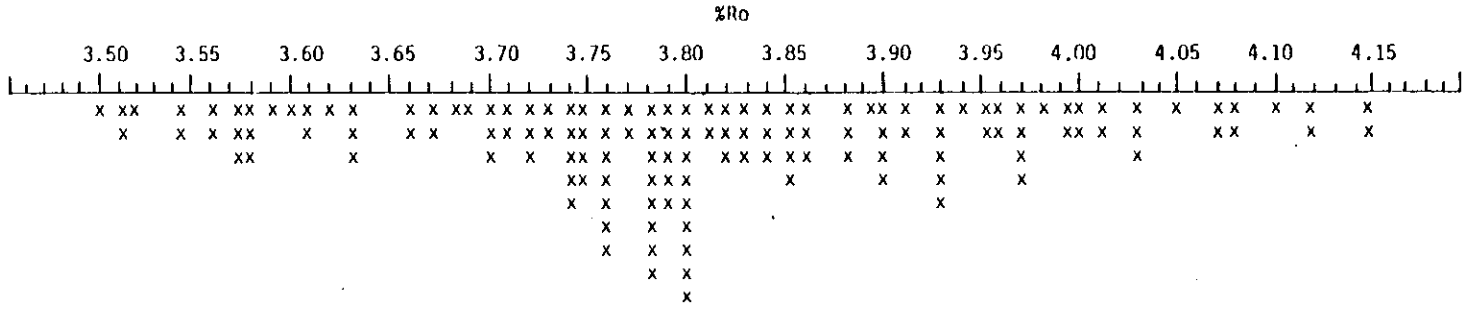
| V-31 | V-32 | V-33 | V-34 | V-35 | V-36 | V-37 |
|---|---|---|---|---|---|---|
| 12.5 | 14.6 | 27.1 | 22.9 | 16.6 | 2.1 | 4.2 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06756

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.81

Distribution of Vitrinite Reflectance Readings:




This sample is moderately oxidized.

Number of Counts (Total= 140 )

V-Type Table for Vitrinites (=100%)

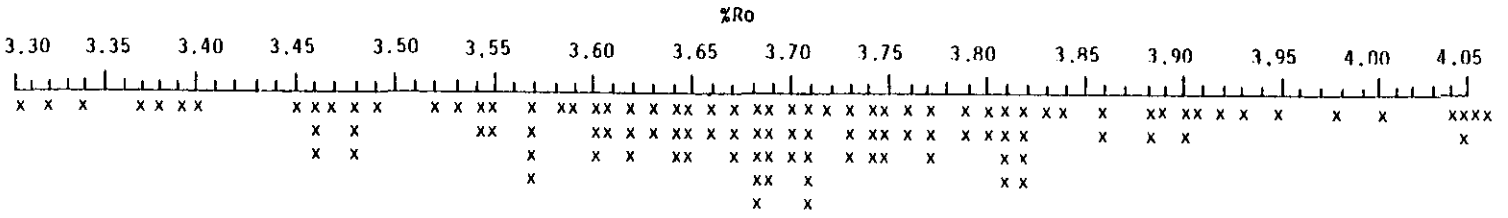
| V-35 | V-36 | V-37 | V-38 | V-39 | V-40 | V-41 |
|---|---|---|---|---|---|---|
| 10.7 | 9.3 | 29.3 | 22.1 | 16.4 | 8.6 | 3.6 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06759

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.69

Distribution of Vitrinite Reflectance Readings:




This sample is heavily oxidized.

Number of Counts (Total= 112 )

V-Type Table for Vitrinites (=100%)

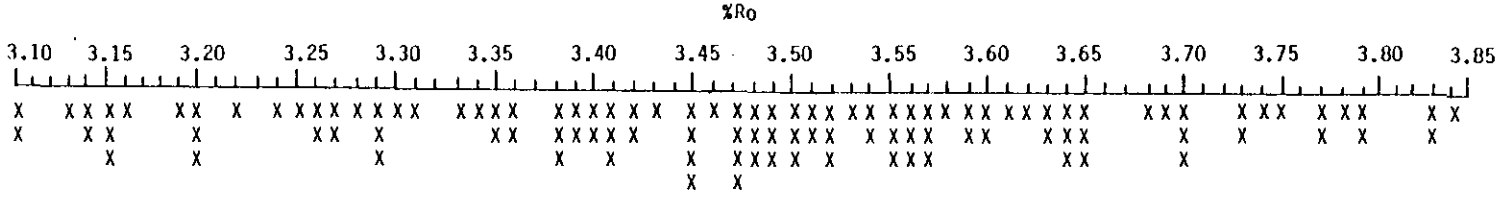
| V- 33 | V- 34 | V-35 | V- 36 |
|---|---|---|---|
| 5.4 | 8.9 | 10.7 | 26.7 |
| V- 37 | V-38 | V-39 | V- 40 |
| 22.3 | 15.2 | 6.3 | 4.5 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06768

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.49

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were selected and measured, this biasing the analysis.

Number of Counts (Total= 112 )

V-Type Table for Vitrinites (=100%)

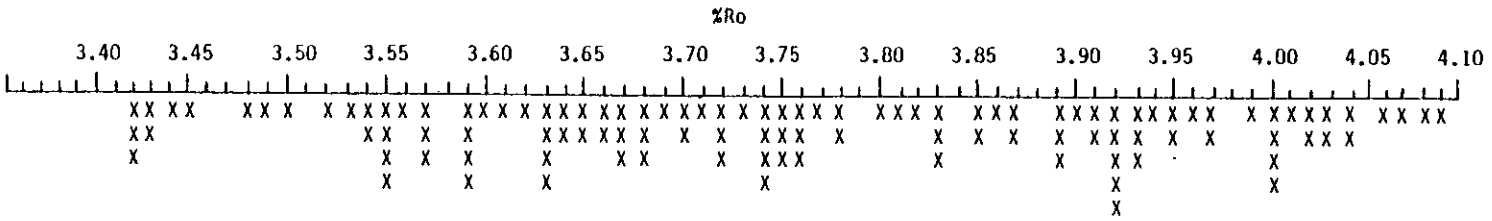
| V-31 | V-32 | V-33 | V-34 |
|---|---|---|---|
| 8.5 | 12.0 | 11.0 | 19.7 |
| V-35 | V-36 | V-37 | V-38 |
| 19.7 | 12.0 | 10.3 | 6.8 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06765

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.76

Distribution of Vitrinite Reflectance Readings:




This sample is heavily oxidized.

Number of Counts (Total= 113 )

V-Type Table for Vitrinites (=100%)

| V- 34 | V- 35 | V-36 | V-37 |
|---|---|---|---|
| 8.0 | 15.0 | 17.7 | 17.7 |
| V- 38 | V- 39 | V-40 | |
| 12.4 | 15.9 | 13.3 | |

## REFLECTANCE ANALYSIS

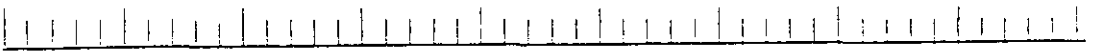
IAD Batch: 97-N267-662-57

Report of Analysis on Sample: 06766

Mean-Maximum Vitrinite Ro: *

Distribution of Vitrinite Reflectance Readings:

%Ro



*This sample is extremely oxidized. Even by trying to pick out the relatively unoxidized particles the range of values were too great (2.55 - 4.28) and the number of particles too small to get a meaningful mean-maximum reflectance.

Number of

Counts

(Total = _____)

V-Type Table for Vitrinites (=100%)

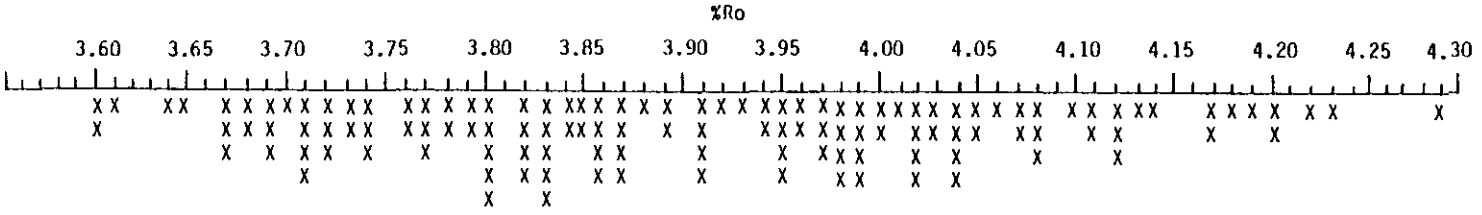
V-____ V-____ V-____ V-____

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06767

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.90

Distribution of Vitrinite Reflectance Readings:




This sample is heavily oxidized.

Number of Counts (Total= 127 )

V-Type Table for Vitrinites (=100%)

| V-36 | V-37 | V-38 | V- 39 |
|---|---|---|---|
| 10.2 | 17.3 | 22.8 | 19.7 |
| V-40 | V-41 | V-42 | |
| 16.6 | 9.5 | 3.9 | |

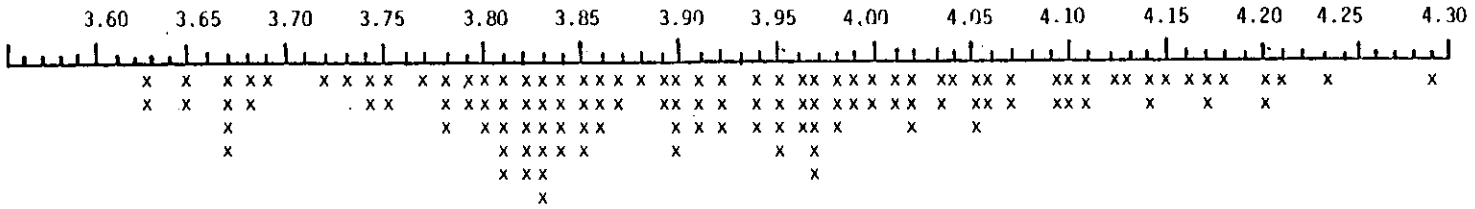
IAD Batch: # 97-M263-662-57

Report of Analysis on Sample: 03573

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro : 3.92

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 125 )

V-Type Table for Vitrinites (=100%)

| V-36 | V-37 | V-38 | V-39 | V-40 | V-41 | V-42 |
|---|---|---|---|---|---|---|
| 8.8 | 9.6 | 28.0 | 24.0 | 15.2 | 10.4 | 4.0 |

IAO Batch: 97-N263-662-57

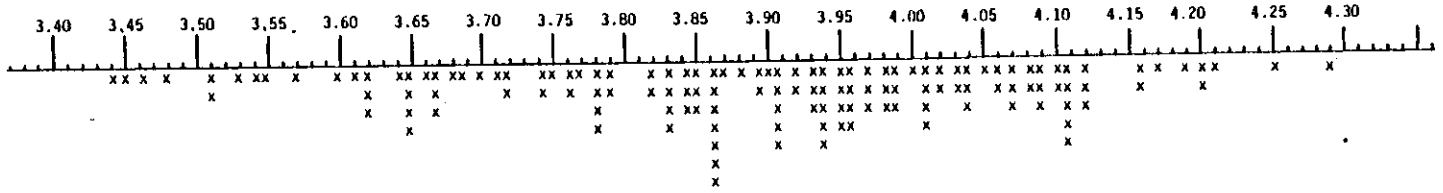
Report of Analysis on Sample: 03574

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 3.89

Distribution of Vitrinite Reflectance Readings:

%Ro




THIS SAMPLE IS HEAVILY OXIDIZED.

Number of Counts (Total= 140 )

V-Type Table for Vitrinites (=100%)

| V-34 | V-35 | V-36 | V-37 | V-38 |
|---|---|---|---|---|
| 2.9 | 4.3 | 11.4 | 11.4 | 16.4 |
| V-39 | V-40 | V-41 | V-42 | V- |
| 23.6 | 16.4 | 10.0 | 3.6 | |

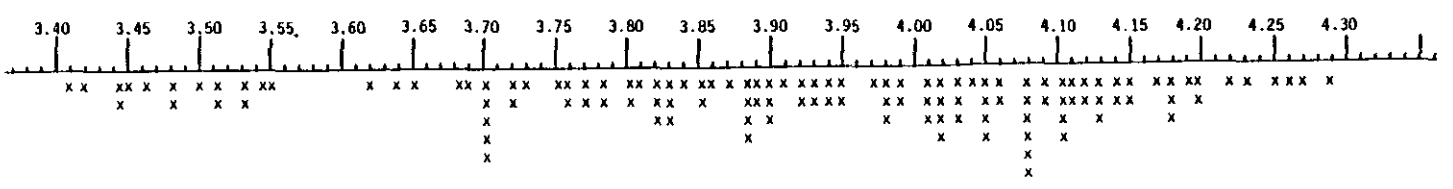
IAD Batch: 97-N263-662-57

*Report of Analysis on Sample:* 03575

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 3.90

Distribution of Vitrinite Reflectance Readings:




This sample highly oxidized

Number of Counts (Total= 127 )

V-Type Table for Vitrinites (±100%)

| V-34 | V-35 | V-36 | V-37 | V-38 |
|---|---|---|---|---|
| 7.1 | 5.5 | 3.9 | 11.8 | 15.7 |
| V-39 | V-40 | V-41 | V-42 | V- |
| 14.2 | 19.8 | 15.7 | 6.3 | |

IAD Batch: 97-N263-662-57

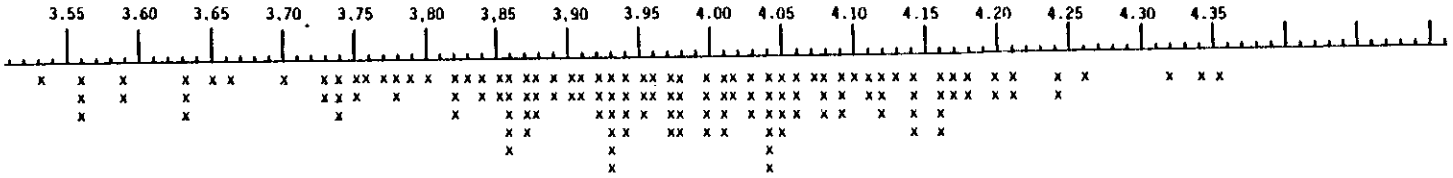
Report of Analysis on Sample: 03576

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 3.96

Distribution of Vitrinite Reflectance Readings:

%Ro




Number of Counts (Total= 139 )

V-Type Table for Vitrinites (=100%)

| V-35 | V-36 | V-37 | V-38 | V-39 |
|---|---|---|---|---|
| 4.3 | 3.6 | 9.4 | 16.6 | 21.6 |
| V-40 | V-41 | V-42 | V-43 | V- |
| 23.6 | 13.7 | 5.0 | 2.2 | |

## REFLECTANCE ANALYSIS

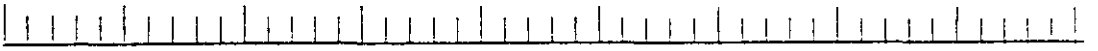
IAD Batch: 97-N263-662-57

Report of Analysis on Sample: 03577

Mean-Maximum Vitrinite Ro: 2.99*

Distribution of Vitrinite Reflectance Readings:

%Ro



* This number is highly questionable. This sample is extremely oxidized and very few unoxidized particles were present. Only relatively unoxidized particles were measured, but even so, there is an extreme spread of reflectance values (2.42-3.75). Because of the particle selection and because only 78 counts could be obtained, this analysis does not follow ASTM procedures.

Number of
Counts
(Total = 78 )

V-Type Table for Vitrinites (=100%)

| V-24 | V-25 | V-26 | V-27 | V-28 | V-29 | V-30 | V-31 |
|---|---|---|---|---|---|---|---|
| 6.4 | 2.6 | 9.0 | 11.5 | 10.3 | 11.5 | 6.4 | 6.4 |

| V-32 | V-33 | V-34 | V-35 | V-36 | V-37 |
|---|---|---|---|---|---|
| 9.0 | 6.4 | 1.3 | 3.8 | 6.4 | 9.0 |

## REFLECTANCE ANALYSIS

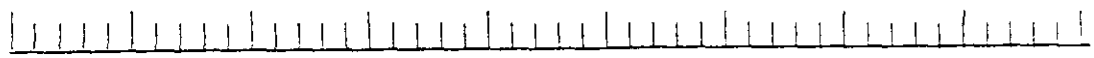
IAD Batch: 97-N263-662-57

Report of Analysis on Sample: 03578

Mean-Maximum Vitrinite Ro:*

Distribution of Vitrinite Reflectance Readings:

%Ro



*This sample is extremely weathered and contains little to no unoxidized particles. Even by selecting only the least oxidized particles the reflectance measurements had a spread tooextreme (2.20 - 3.99) to allow calculation of a meaningful mean-maximum reflectance.

Number of
Counts
(Total = ____)

V-Type Table for Vitrinites (=100%)

V-____ V-____ V-____ V-____

## REFLECTANCE ANALYSIS

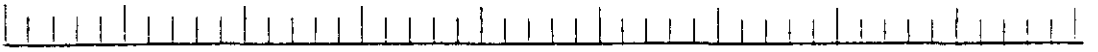
IAD Batch: 97-N263-662-57

Report of Analysis on Sample: 03579

Mean-Maximum Vitrinite Ro: 3.35

Distribution of Vitrinite Reflectance Readings:

%Ro



Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were selected and measured, thus biasing the analysis. The spread of reflectance values make this sample impractial to graph.

Number of
Counts
(Total = 151 )

V-Type Table for Vitrinites (=100%)

| V- 27 | V- 28 | V-29 | V- 30 |
|---|---|---|---|
| 2.6 | 4.0 | 4.0 | 10.6 |
| V- 31 | V- 32 | V-33 | V- 34 |
| 12.6 | 13.1 | 9.3 | 9.3 |
| V- 35 | V- 36 | V-37 | V- 38 |
| 9.3 | 8.6 | 9.3 | 7.3 |

1984

# GULF CANADA RESOURCES INC.

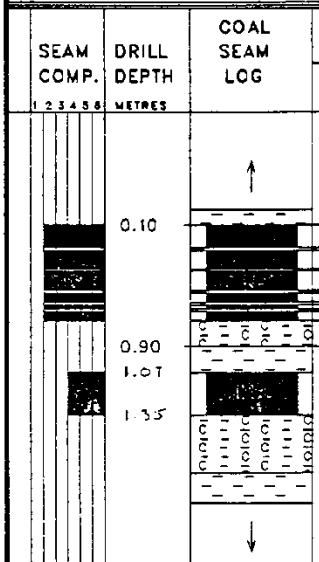
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84008 SEAM : INTERVAL(M) : 0.10 - 0.90 ELEVATION(M) : 2045.4

GEOLOGIST : G. DIX SCALE: 1: 47 DATE : NOV 30/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.V AL MJ/KG | $R_O$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.10 | | | 0.15 | | | | | | | | | | | | |
| | | | 0.02 | 0.12 | | | | | | | | | | | | |
| | | | 0.01 | 0.13 | | | | | | | | | | | | |
| | | | 0.02 | | 100.0 | 1554 | 1554 | 0.54/ 0.26 | | 3.64 | 25.88 | 9.93 | 60.55 | 0.35 | 22.45 | 4.24 |
| | | | 0.02 | | | | | 0.80 | | | | | | | | |
| | 0.90 | | 0.17 | | | | | | | | | | | | | |
| | 1.07 | | | | | | | | | | | | | | | |
| | 1.35 | | | | | | | | | | | | | | | |

PLOT 1 16.46.11 FRI 30 NOV, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 01554
# Pellet #1922/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.31 | 51 | 4.47 |
| 2 | 4.20 | 52 | 4.22 |
| 3 | 4.19 | 53 | 4.30 |
| 4 | 4.34 | 54 | 4.11 |
| 5 | 4.01 | 55 | 4.46 |
| 6 | 4.40 | 56 | 4.32 |
| 7 | 4.35 | 57 | 4.15 |
| 8 | 4.12 | 58 | 4.49 |
| 9 | 4.23 | 59 | 3.89 |
| 10 | 4.51 | 60 | 4.77 |
| 11 | 4.34 | 61 | 3.89 |
| 12 | 4.28 | 62 | 4.91 |
| 13 | 4.15 | 63 | 4.58 |
| 14 | 4.33 | 64 | 3.96 |
| 15 | 4.38 | 65 | 4.28 |
| 16 | 4.36 | 66 | 3.92 |
| 17 | 4.29 | 67 | 3.91 |
| 18 | 4.21 | 68 | 4.38 |
| 19 | 4.24 | 69 | 4.15 |
| 20 | 4.13 | 70 | 4.14 |
| 21 | 4.08 | 71 | 4.24 |
| 22 | 4.36 | 72 | 4.61 |
| 23 | 4.26 | 73 | 4.02 |
| 24 | 4.07 | 74 | 4.35 |
| 25 | 4.00 | 75 | 3.97 |
| 26 | 4.15 | 76 | 4.05 |
| 27 | 4.13 | 77 | 3.88 |
| 28 | 4.02 | 78 | 3.84 |
| 29 | 4.20 | 79 | 4.23 |
| 30 | 4.24 | 80 | 4.46 |
| 31 | 4.15 | 81 | 3.94 |
| 32 | 4.06 | 82 | 4.50 |
| 33 | 4.78 | 83 | 4.31 |
| 34 | 4.20 | 84 | 4.35 |
| 35 | 4.25 | 85 | 4.24 |
| 36 | 4.60 | 86 | 3.87 |
| 37 | 4.10 | 87 | 4.27 |
| 38 | 4.22 | 88 | 3.94 |
| 39 | 4.25 | 89 | 4.62 |
| 40 | 4.07 | 90 | 4.19 |
| 41 | 4.36 | 91 | 4.65 |
| 42 | 4.16 | 92 | 4.08 |
| 43 | 4.41 | 93 | 4.24 |
| 44 | 4.33 | 94 | 3.91 |
| 45 | 4.32 | 95 | 4.14 |
| 46 | 4.23 | 96 | 4.14 |
| 47 | 4.35 | 97 | 3.91 |
| 48 | 4.13 | 98 | 4.30 |
| 49 | 4.13 | 99 | 4.38 |
| 50 | 4.20 | 100 | 4.47 |

# Gulf Canada Resources Inc.
# Sample 01554
# Pellet #1922/1

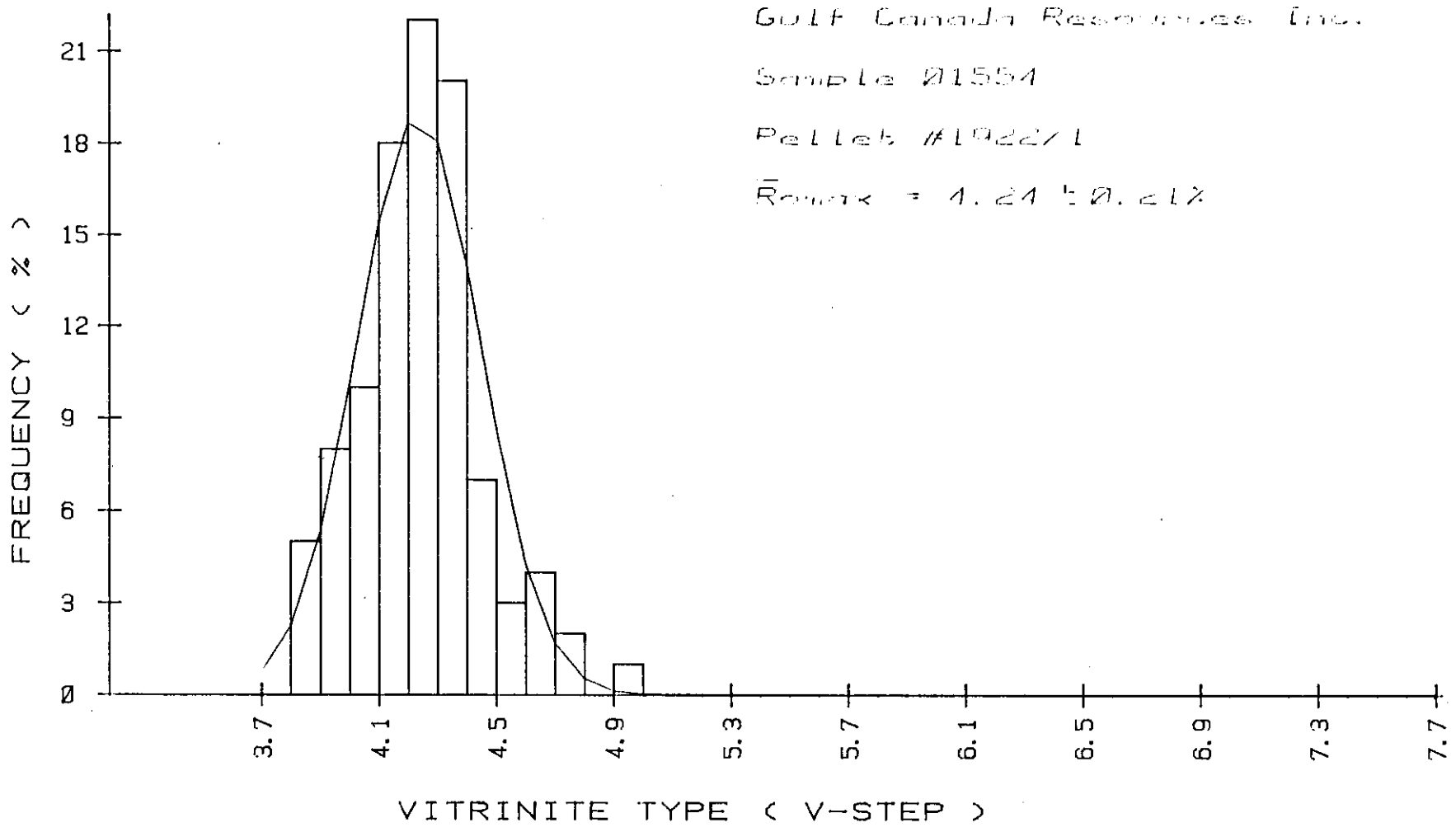
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.24 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.98 |
| VARIANCE ..... | 0.0445 |
| STANDARD DEVIATION ..... | 0.2109 |
| SKEWNESS ..... | 0.5130 |
| KURTOSIS ..... | 3.5188 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 3.80 | 5 | 5.00 |
| 3 | 3.90 | 8 | 8.00 |
| 4 | 4.00 | 10 | 10.00 |
| 5 | 4.10 | 18 | 18.00 |
| 6 | 4.20 | 22 | 22.00 |
| 7 | 4.30 | 20 | 20.00 |
| 8 | 4.40 | 7 | 7.00 |
| 9 | 4.50 | 3 | 3.00 |
| 10 | 4.60 | 4 | 4.00 |
| 11 | 4.70 | 2 | 2.00 |
| 13 | 4.90 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION



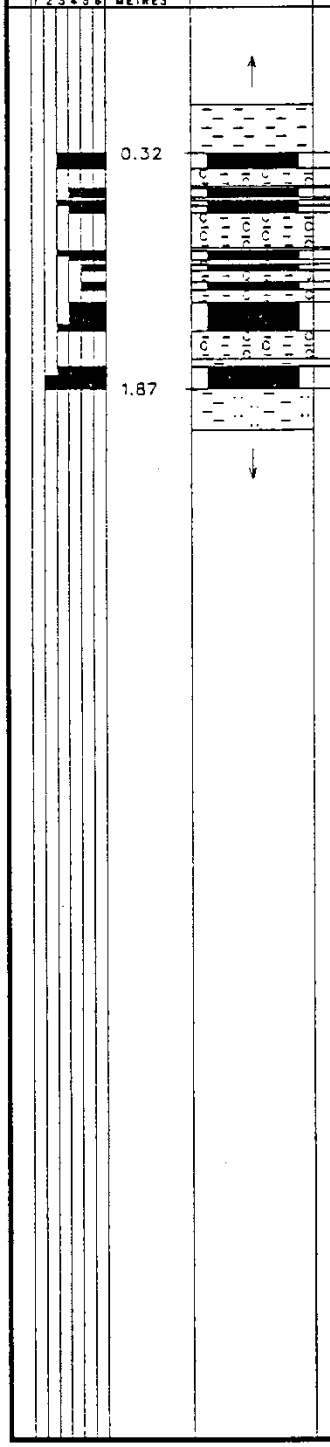

David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

**SEAM DETAIL** — COAL DIVISION, MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN SN TRC84013 SEAM : INTERVAL(M) : 0.32 – 1.87 ELEVATION(M) : 2103.0

GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 11/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.32 | | | 0.10 | | | | | | | | | | | | |
| | | | | 0.11 | | | | | | | | | | | | |
| | | | | 0.23 | | | | | | | | | | | | |
| | | | | 0.19 | | | | | | | | | | | | |
| | | | | 0.18 | | | | | | | | | | | | |
| | 1.87 | | | 0.15 | | | | | | | | | | | | |
| | | | | | 100.0 | 1805 | 1805 | 0.72 / 0.83 1.55 | | 3.36 | 35.18 | 9.80 | 51.66 | 0.28 | 18.73 | 4.60 |

PLOT 1 09.25.13 TUES 11 DEC, 1984 JOB-TSTCE00 GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 01805
# Pellet #1924/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.25 | 51 | 4.72 |
| 2 | 4.22 | 52 | 4.62 |
| 3 | 4.55 | 53 | 4.39 |
| 4 | 4.35 | 54 | 5.18 |
| 5 | 4.57 | 55 | 5.06 |
| 6 | 4.22 | 56 | 4.10 |
| 7 | 4.45 | 57 | 5.22 |
| 8 | 4.31 | 58 | 4.29 |
| 9 | 4.89 | 59 | 5.02 |
| 10 | 4.98 | 60 | 4.63 |
| 11 | 4.78 | 61 | 4.67 |
| 12 | 4.67 | 62 | 4.97 |
| 13 | 4.96 | 63 | 4.51 |
| 14 | 4.68 | 64 | 4.48 |
| 15 | 4.42 | 65 | 4.31 |
| 16 | 4.72 | 66 | 4.69 |
| 17 | 4.82 | 67 | 4.70 |
| 18 | 3.96 | 68 | 4.52 |
| 19 | 4.29 | 69 | 4.69 |
| 20 | 4.57 | 70 | 4.90 |
| 21 | 4.33 | 71 | 4.84 |
| 22 | 4.66 | 72 | 4.71 |
| 23 | 4.38 | 73 | 4.46 |
| 24 | 4.83 | 74 | 4.21 |
| 25 | 4.70 | 75 | 4.77 |
| 26 | 4.50 | 76 | 4.70 |
| 27 | 4.73 | 77 | 4.69 |
| 28 | 4.96 | 78 | 4.74 |
| 29 | 3.92 | 79 | 4.90 |
| 30 | 4.57 | 80 | 4.92 |
| 31 | 4.79 | 81 | 5.26 |
| 32 | 4.60 | 82 | 4.56 |
| 33 | 4.42 | 83 | 4.15 |
| 34 | 4.60 | 84 | 4.34 |
| 35 | 4.74 | 85 | 4.34 |
| 36 | 4.76 | 86 | 4.59 |
| 37 | 5.09 | 87 | 4.96 |
| 38 | 4.17 | 88 | 3.89 |
| 39 | 4.66 | 89 | 4.73 |
| 40 | 4.07 | 90 | 4.34 |
| 41 | 4.39 | 91 | 4.63 |
| 42 | 4.73 | 92 | 4.99 |
| 43 | 4.73 | 93 | 4.81 |
| 44 | 4.90 | 94 | 4.60 |
| 45 | 4.51 | 95 | 4.05 |
| 46 | 4.43 | 96 | 4.06 |
| 47 | 4.83 | 97 | 4.68 |
| 48 | 4.39 | 98 | 4.98 |
| 49 | 4.61 | 99 | 4.71 |
| 50 | 4.27 | 100 | 4.69 |

# Gulf Canada Resources Inc.
# Sample 01805
# Pellet #1924/1

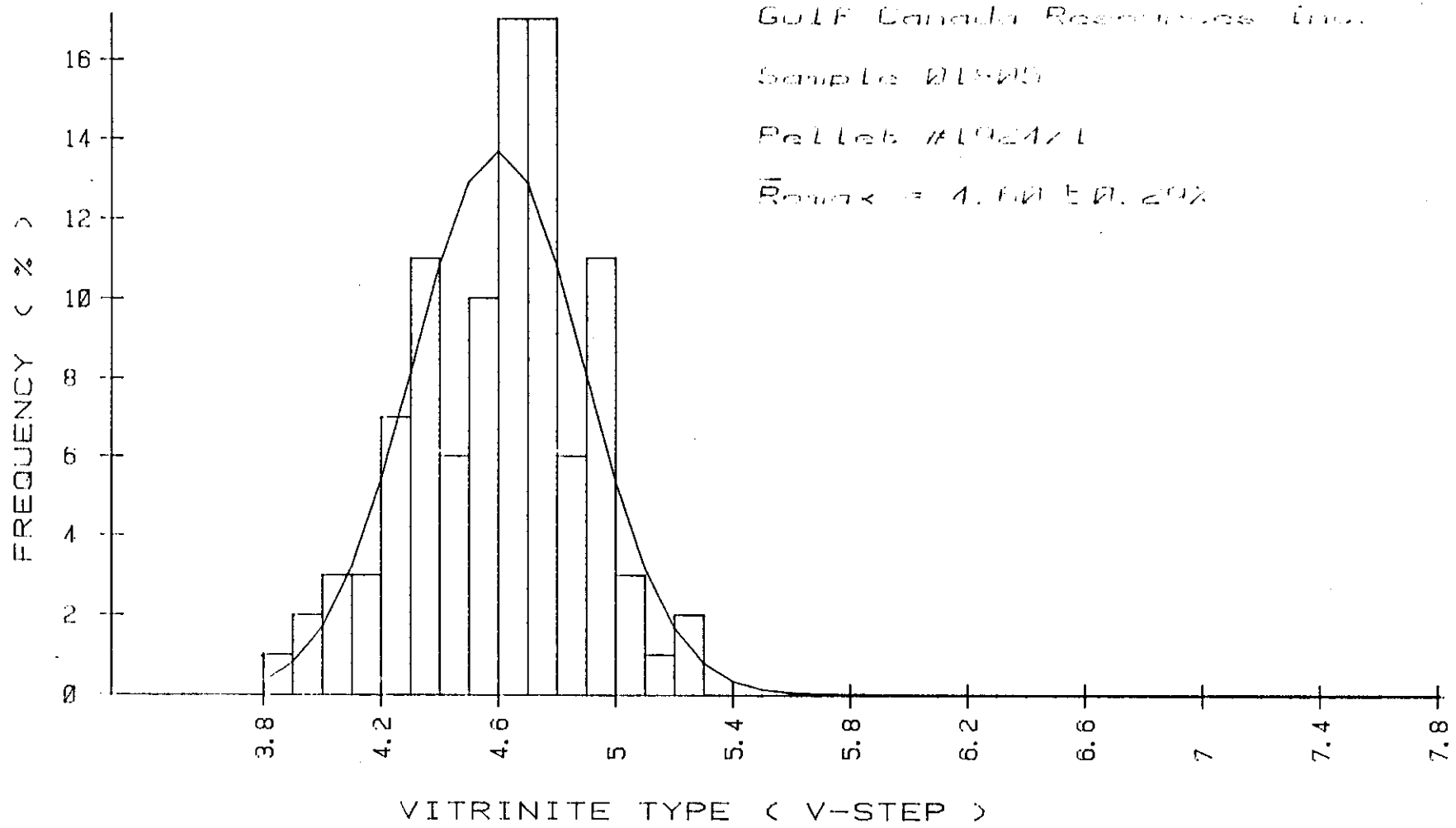
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.60 |
| STANDARD ERROR OF THE MEAN ..... | 0.03 |
| COEFFICIENT OF VARIATION .....% | 6.36 |
| VARIANCE ..... | 0.0856 |
| STANDARD DEVIATION ..... | 0.2925 |
| SKEWNESS ..... | -0.2319 |
| KURTOSIS ..... | 2.7410 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.80 | 1 | 1.00 |
| 2 | 3.90 | 2 | 2.00 |
| 3 | 4.00 | 3 | 3.00 |
| 4 | 4.10 | 3 | 3.00 |
| 5 | 4.20 | 7 | 7.00 |
| 6 | 4.30 | 11 | 11.00 |
| 7 | 4.40 | 6 | 6.00 |
| 8 | 4.50 | 10 | 10.00 |
| 9 | 4.60 | 17 | 17.00 |
| 10 | 4.70 | 17 | 17.00 |
| 11 | 4.80 | 6 | 6.00 |
| 12 | 4.90 | 11 | 11.00 |
| 13 | 5.00 | 3 | 3.00 |
| 14 | 5.10 | 1 | 1.00 |
| 15 | 5.20 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

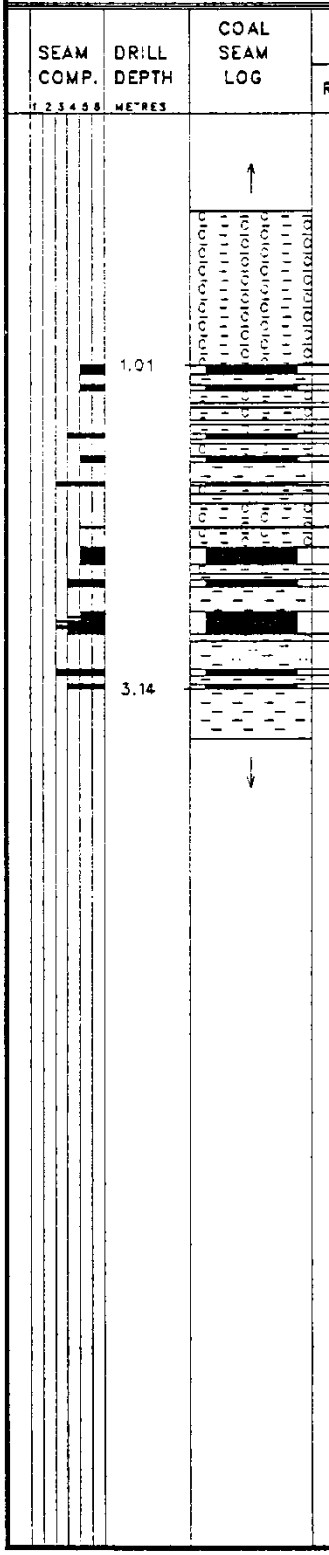
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84016 SEAM : INTERVAL(M) : 1.01 - 3.14 ELEVATION(M) : 1996.0

GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 11/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.01 | | | | 100.0 | 1808 | 1806 | 0.59/ 1.54<br>2.13 | | 3.57 | 49.23 | 10.47 | 36.67 | 0.31 | 13.28 | 4.33 |
| | 3.14 | | | | | | | | | | | | | | | |

PLOT 1 11.29.28 TUES 11 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 01806
# Pellet #1925/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.29 | 51 | 4.87 |
| 2 | 4.94 | 52 | 4.42 |
| 3 | 4.39 | 53 | 4.03 |
| 4 | 4.07 | 54 | 4.26 |
| 5 | 4.10 | 55 | 4.53 |
| 6 | 4.46 | 56 | 4.23 |
| 7 | 4.36 | 57 | 4.04 |
| 8 | 4.10 | 58 | 4.13 |
| 9 | 3.97 | 59 | 4.43 |
| 10 | 4.07 | 60 | 4.29 |
| 11 | 4.07 | 61 | 4.34 |
| 12 | 4.30 | 62 | 4.45 |
| 13 | 4.39 | 63 | 4.46 |
| 14 | 4.09 | 64 | 4.78 |
| 15 | 4.59 | 65 | 4.11 |
| 16 | 4.76 | 66 | 4.19 |
| 17 | 4.29 | 67 | 4.83 |
| 18 | 4.21 | 68 | 4.20 |
| 19 | 4.33 | 69 | 4.49 |
| 20 | 4.37 | 70 | 4.15 |
| 21 | 4.23 | 71 | 4.43 |
| 22 | 4.01 | 72 | 4.71 |
| 23 | 4.14 | 73 | 4.52 |
| 24 | 4.10 | 74 | 4.16 |
| 25 | 4.00 | 75 | 4.18 |
| 26 | 4.21 | 76 | 4.24 |
| 27 | 4.22 | 77 | 4.47 |
| 28 | 4.72 | 78 | 4.38 |
| 29 | 4.31 | 79 | 4.05 |
| 30 | 4.31 | 80 | 4.21 |
| 31 | 4.17 | 81 | 4.05 |
| 32 | 4.53 | 82 | 4.43 |
| 33 | 4.45 | 83 | 4.51 |
| 34 | 4.28 | 84 | 4.14 |
| 35 | 4.08 | 85 | 4.39 |
| 36 | 4.96 | 86 | 4.45 |
| 37 | 4.20 | 87 | 4.59 |
| 38 | 4.78 | 88 | 3.98 |
| 39 | 4.36 | 89 | 4.18 |
| 40 | 4.33 | 90 | 4.42 |
| 41 | 4.81 | 91 | 4.52 |
| 42 | 4.30 | 92 | 4.63 |
| 43 | 4.20 | 93 | 4.65 |
| 44 | 4.29 | 94 | 4.10 |
| 45 | 4.25 | 95 | 4.49 |
| 46 | 4.28 | 96 | 4.31 |
| 47 | 4.41 | 97 | 4.09 |
| 48 | 4.84 | 98 | 3.85 |
| 49 | 4.33 | 99 | 4.24 |
| 50 | 4.23 | 100 | 4.31 |

# Gulf Canada Resources Inc.
# Sample 01806
# Pellet #1925/1

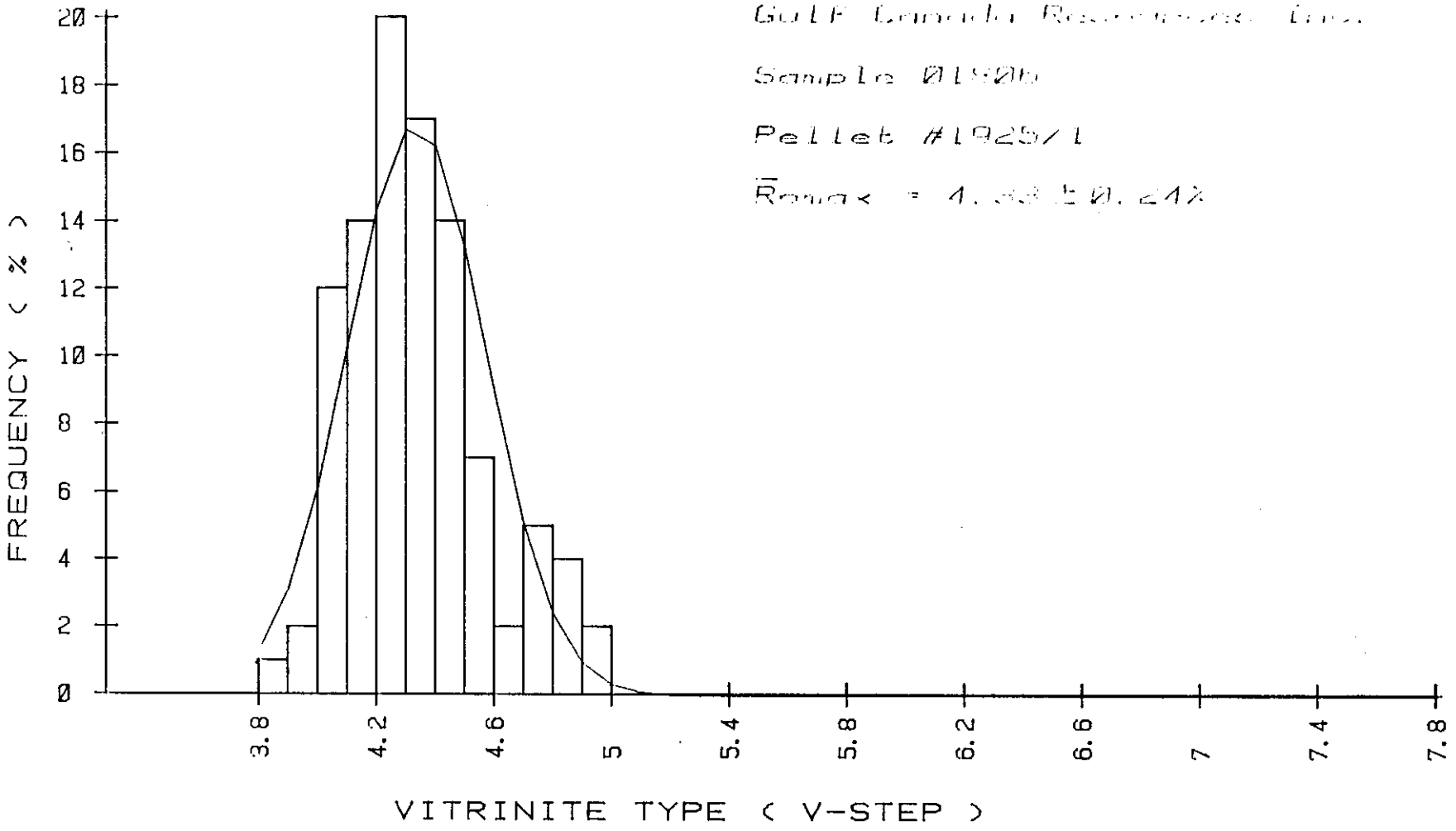
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.33 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 5.45 |
| VARIANCE ..... | 0.0558 |
| STANDARD DEVIATION ..... | 0.2362 |
| SKEWNESS ..... | 0.6830 |
| KURTOSIS ..... | 3.0522 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.80 | 1 | 1.00 |
| 2 | 3.90 | 2 | 2.00 |
| 3 | 4.00 | 12 | 12.00 |
| 4 | 4.10 | 14 | 14.00 |
| 5 | 4.20 | 20 | 20.00 |
| 6 | 4.30 | 17 | 17.00 |
| 7 | 4.40 | 14 | 14.00 |
| 8 | 4.50 | 7 | 7.00 |
| 9 | 4.60 | 2 | 2.00 |
| 10 | 4.70 | 5 | 5.00 |
| 11 | 4.80 | 4 | 4.00 |
| 12 | 4.90 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION



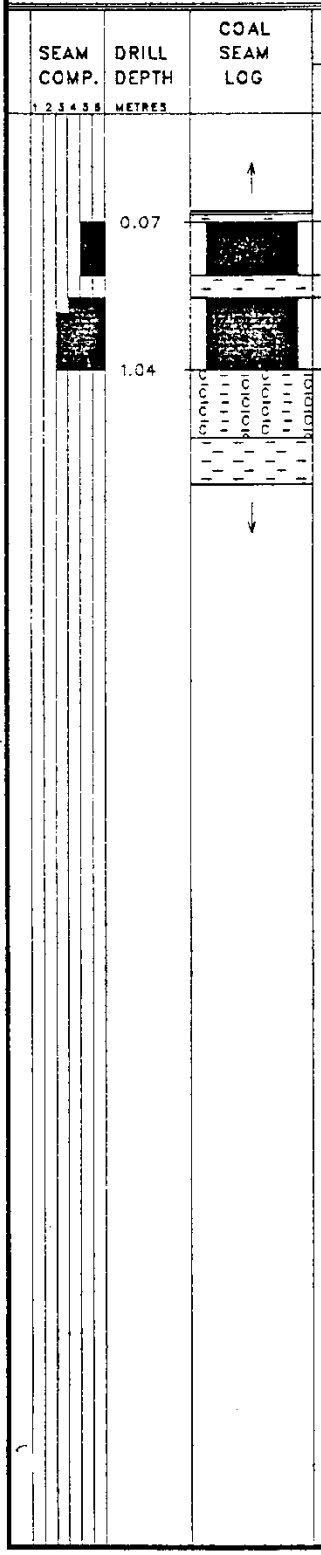

David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

**SEAM DETAIL** — COAL DIVISION, MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN SN TRC84021 SEAM : INTERVAL(M) : 0.07 – 1.04 ELEVATION(M) : 1844.0

GEOLOGIST : FAWCETT SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.V AL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.07 | | | 0.35 | | | | | | | | | | | | |
| | | | 0.13 | | | | | | | | | | | | | |
| | | | | | 100.0 | 6385 | 6385 | 0.82/ 0.15 | | 6.28 | 22.63 | 18.65 | 45.44 | 0.27 | 17.29 | 4.35 |
| | | | | 0.47 | | | | 0.97 | | | | | | | | |
| | 1.04 | | | | | | | | | | | | | | | |

PLOT 1 18.13.48 TUES 4 DEC, 1984 JOB-TSTCEGG GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc. Sample 06385 Pellet #1937/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.31 | 51 | 4.31 |
| 2 | 4.11 | 52 | 4.24 |
| 3 | 4.26 | 53 | 4.92 |
| 4 | 4.79 | 54 | 4.54 |
| 5 | 4.06 | 55 | 4.01 |
| 6 | 4.11 | 56 | 4.52 |
| 7 | 4.21 | 57 | 4.32 |
| 8 | 4.30 | 58 | 4.29 |
| 9 | 4.46 | 59 | 4.29 |
| 10 | 4.44 | 60 | 4.44 |
| 11 | 4.54 | 61 | 4.03 |
| 12 | 4.56 | 62 | 4.38 |
| 13 | 4.41 | 63 | 4.46 |
| 14 | 4.42 | 64 | 4.32 |
| 15 | 4.25 | 65 | 4.54 |
| 16 | 4.16 | 66 | 4.24 |
| 17 | 4.28 | 67 | 4.35 |
| 18 | 4.31 | 68 | 4.26 |
| 19 | 4.26 | 69 | 4.61 |
| 20 | 4.20 | 70 | 4.30 |
| 21 | 4.16 | 71 | 4.19 |
| 22 | 4.58 | 72 | 4.90 |
| 23 | 4.08 | 73 | 4.49 |
| 24 | 4.97 | 74 | 4.59 |
| 25 | 4.96 | 75 | 4.22 |
| 26 | 4.89 | 76 | 4.48 |
| 27 | 4.30 | 77 | 4.32 |
| 28 | 4.18 | 78 | 4.26 |
| 29 | 4.40 | 79 | 4.41 |
| 30 | 4.31 | 80 | 4.29 |
| 31 | 4.01 | 81 | 4.27 |
| 32 | 4.10 | 82 | 4.30 |
| 33 | 4.23 | 83 | 4.27 |
| 34 | 4.17 | 84 | 4.31 |
| 35 | 4.16 | 85 | 4.48 |
| 36 | 4.33 | 86 | 4.43 |
| 37 | 4.17 | 87 | 4.19 |
| 38 | 4.19 | 88 | 4.21 |
| 39 | 4.30 | 89 | 4.23 |
| 40 | 4.58 | 90 | 4.40 |
| 41 | 4.39 | 91 | 4.51 |
| 42 | 4.34 | 92 | 4.21 |
| 43 | 4.34 | 93 | 4.22 |
| 44 | 4.20 | 94 | 4.20 |
| 45 | 4.28 | 95 | 4.45 |
| 46 | 4.27 | 96 | 4.41 |
| 47 | 4.24 | 97 | 4.27 |
| 48 | 4.30 | 98 | 4.74 |
| 49 | 4.62 | 99 | 4.04 |
| 50 | 4.58 | 100 | 4.45 |

Gulf Canada Resources Inc.
Sample 06385
Pellet #1937/1

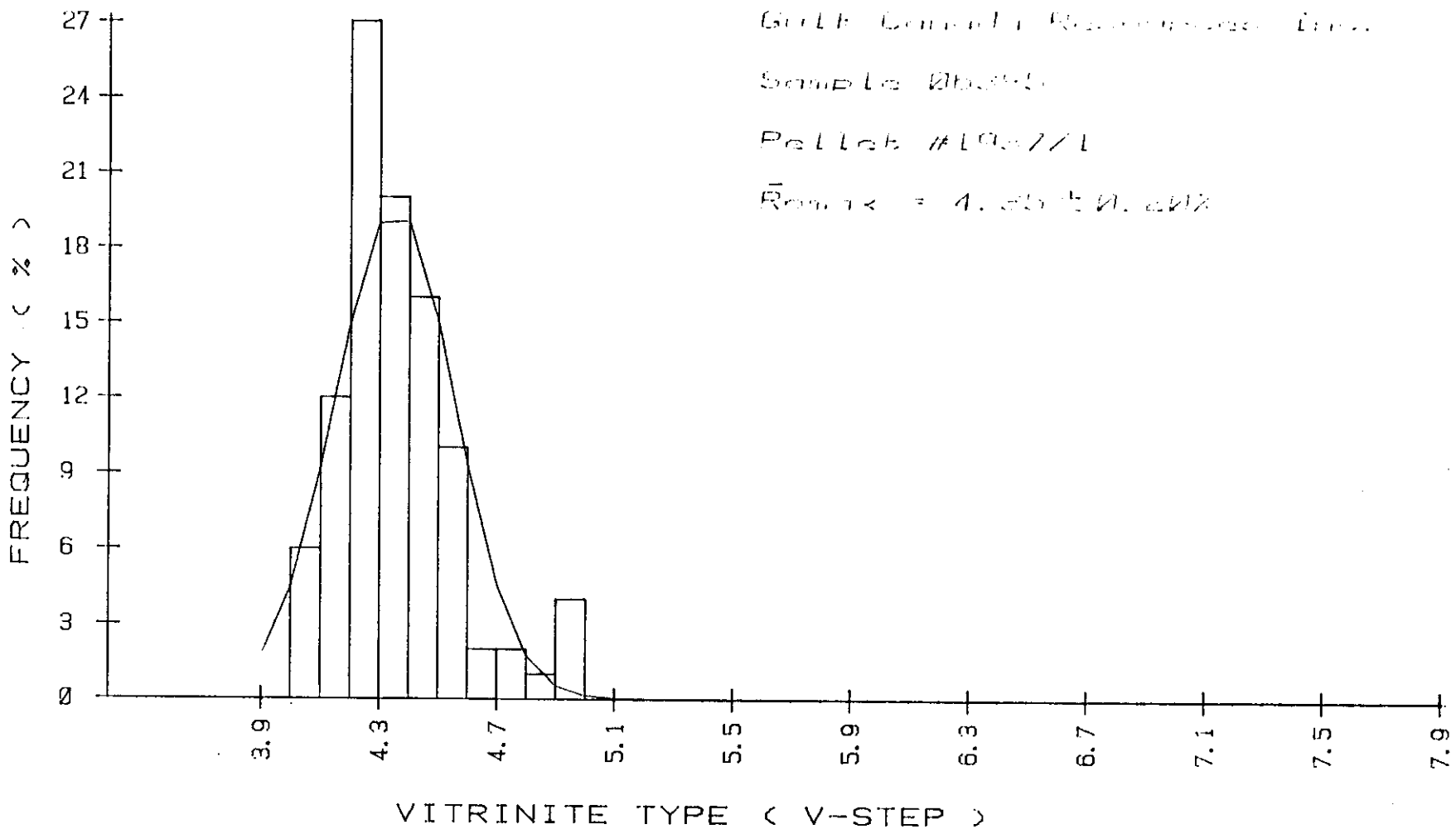
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.35 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.68 |
| VARIANCE ..... | 0.0415 |
| STANDARD DEVIATION ..... | 0.2038 |
| SKEWNESS ..... | 1.1055 |
| KURTOSIS ..... | 4.3532 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 4.00 | 6 | 6.00 |
| 3 | 4.10 | 12 | 12.00 |
| 4 | 4.20 | 27 | 27.00 |
| 5 | 4.30 | 20 | 20.00 |
| 6 | 4.40 | 16 | 16.00 |
| 7 | 4.50 | 10 | 10.00 |
| 8 | 4.60 | 2 | 2.00 |
| 9 | 4.70 | 2 | 2.00 |
| 10 | 4.80 | 1 | 1.00 |
| 11 | 4.90 | 4 | 4.00 |

# VITRINITE FREQUENCY DISTRIBUTION



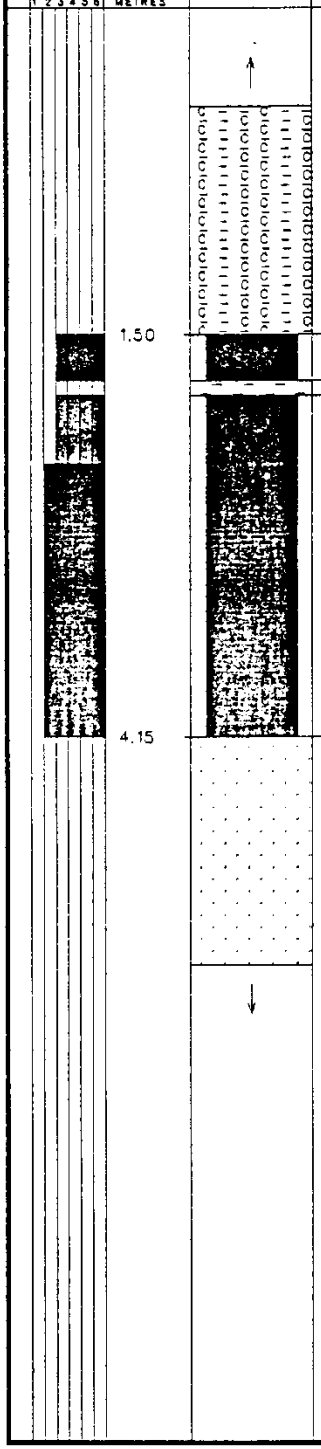

David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

**SEAM DETAIL** — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN SN TRC84022 SEAM : INTERVAL(M) : 1.50 – 4.15 ELEVATION(M) : 2027.0

GEOLOGIST : FAWCETT SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.V AL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.50 | | | 0.30 | | | | | | | | | | | | |
| | | | 0.10 | | | | | | | | | | | | | |
| | | | | 2.25 | 100.0 | 6388 | 6368 | 2.56 / 0.10<br>2.65 | | 4.83 | 23.31 | 13.74 | 58.32 | 0.37 | 21.94 | 4.11 |
| | 4.15 | | | | | | | | | | | | | | | |

PLOT 1 18.14.09 TUES 4 DEC, 1984 JOB-TSTC660 GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For
# Gulf Canada Resources Inc.
# Sample 06386
# Pellet #1938/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.18 | 51 | 4.29 |
| 2 | 4.01 | 52 | 4.06 |
| 3 | 3.91 | 53 | 4.39 |
| 4 | 4.03 | 54 | 4.00 |
| 5 | 4.30 | 55 | 4.32 |
| 6 | 4.18 | 56 | 4.48 |
| 7 | 4.11 | 57 | 4.08 |
| 8 | 4.19 | 58 | 4.01 |
| 9 | 4.31 | 59 | 4.17 |
| 10 | 3.99 | 60 | 4.14 |
| 11 | 4.06 | 61 | 4.02 |
| 12 | 4.29 | 62 | 3.97 |
| 13 | 3.85 | 63 | 3.89 |
| 14 | 4.59 | 64 | 4.26 |
| 15 | 4.22 | 65 | 4.21 |
| 16 | 4.28 | 66 | 4.19 |
| 17 | 4.14 | 67 | 4.08 |
| 18 | 4.14 | 68 | 4.18 |
| 19 | 4.01 | 69 | 4.33 |
| 20 | 4.06 | 70 | 4.31 |
| 21 | 4.11 | 71 | 4.03 |
| 22 | 4.14 | 72 | 4.22 |
| 23 | 4.09 | 73 | 4.07 |
| 24 | 4.20 | 74 | 4.13 |
| 25 | 3.83 | 75 | 3.96 |
| 26 | 4.00 | 76 | 4.22 |
| 27 | 4.35 | 77 | 4.18 |
| 28 | 3.95 | 78 | 4.11 |
| 29 | 3.93 | 79 | 3.98 |
| 30 | 4.00 | 80 | 3.74 |
| 31 | 3.95 | 81 | 4.32 |
| 32 | 3.95 | 82 | 3.96 |
| 33 | 4.30 | 83 | 4.07 |
| 34 | 3.99 | 84 | 4.02 |
| 35 | 3.82 | 85 | 4.25 |
| 36 | 4.20 | 86 | 4.05 |
| 37 | 3.94 | 87 | 4.11 |
| 38 | 4.22 | 88 | 3.99 |
| 39 | 4.00 | 89 | 4.19 |
| 40 | 4.15 | 90 | 4.21 |
| 41 | 4.07 | 91 | 4.34 |
| 42 | 4.18 | 92 | 4.11 |
| 43 | 4.01 | 93 | 4.20 |
| 44 | 3.84 | 94 | 4.34 |
| 45 | 4.15 | 95 | 4.08 |
| 46 | 4.06 | 96 | 4.08 |
| 47 | 4.25 | 97 | 4.39 |
| 48 | 4.03 | 98 | 4.00 |
| 49 | 3.87 | 99 | 4.08 |
| 50 | 3.84 | 100 | 4.30 |

# Gulf Canada Resources Inc.
# Sample 06386
# Pellet #1938/1

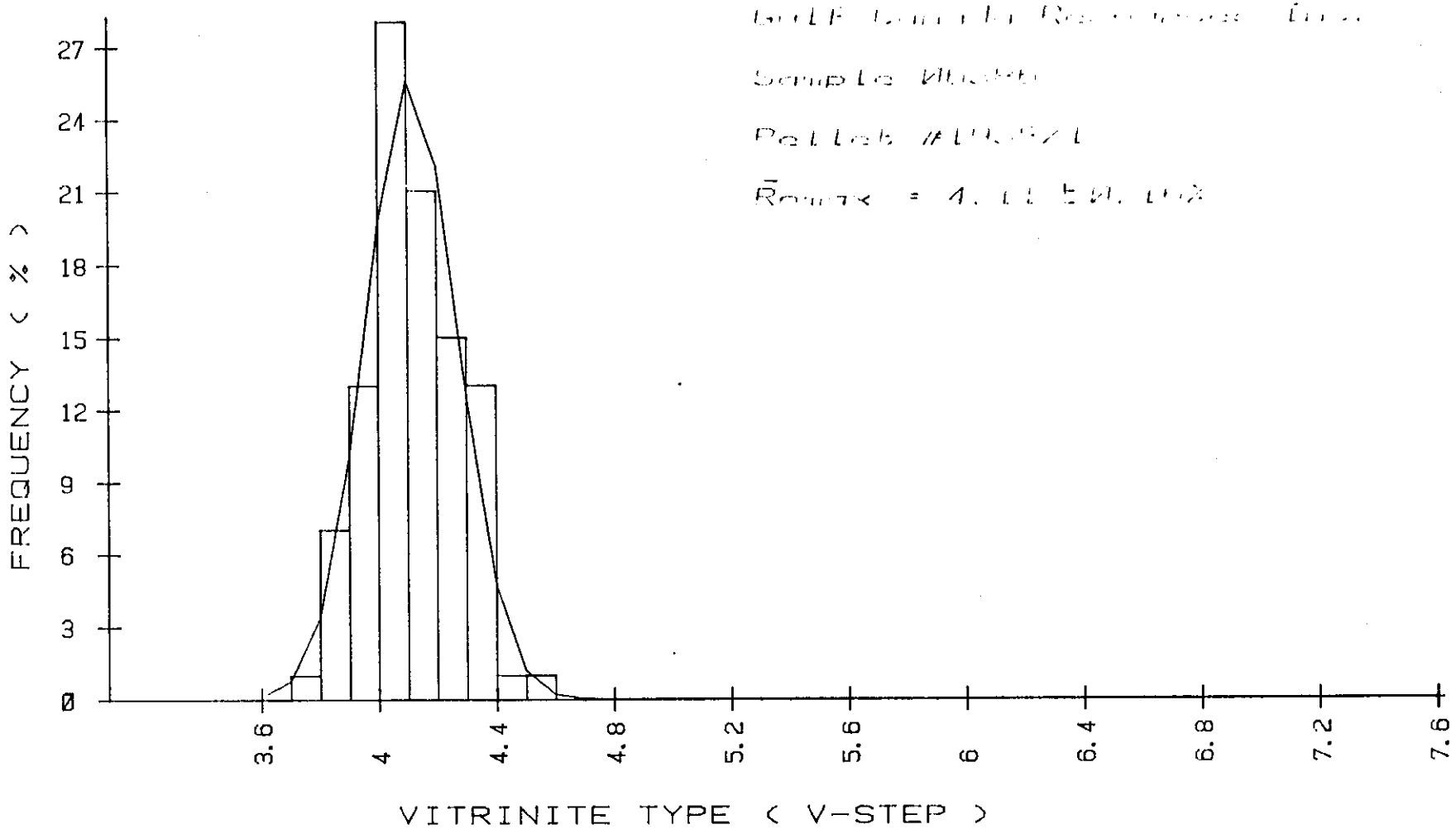
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.11 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 3.78 |
| VARIANCE ..... | 0.0242 |
| STANDARD DEVIATION ..... | 0.1555 |
| SKEWNESS ..... | 0.2143 |
| KURTOSIS ..... | 3.0077 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 3.70 | 1 | 1.00 |
| 3 | 3.80 | 7 | 7.00 |
| 4 | 3.90 | 13 | 13.00 |
| 5 | 4.00 | 28 | 28.00 |
| 6 | 4.10 | 21 | 21.00 |
| 7 | 4.20 | 15 | 15.00 |
| 8 | 4.30 | 13 | 13.00 |
| 9 | 4.40 | 1 | 1.00 |
| 10 | 4.50 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION



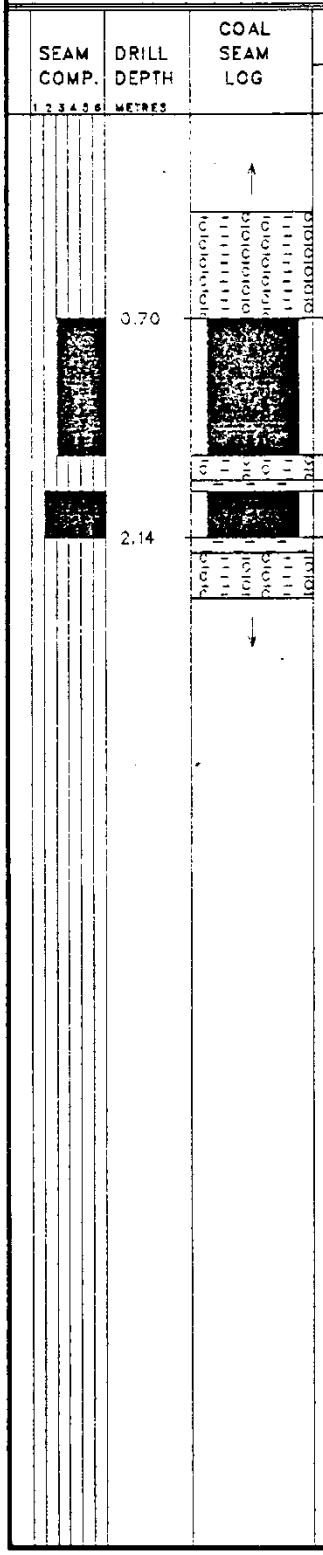

David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

**SEAM DETAIL** — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN SN TRC84023 SEAM : INTERVAL(M) : 0.70 - 2.14 ELEVATION(M) : 1965.0

GEOLOGIST : FAWCETT SCALE: 1: 47 DATE : DEC 04/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.70 | | | 0.90 | 100.0 | 6387 | 6387 | 1.20 / 0.24 1.44 | | 5.27 | 30.22 | 14.58 | 49.93 | 0.32 | 18.93 | 4.28 |
| | 2.14 | | 0.16 | 0.30 | | | | | | | | | | | | |

PLOT 1 18.14.18 TUES 4 DEC, 1984 JOB-TSICEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 06387
# Pellet #1939/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.30 | 51 | 4.20 |
| 2 | 4.18 | 52 | 4.37 |
| 3 | 4.01 | 53 | 4.20 |
| 4 | 4.38 | 54 | 4.82 |
| 5 | 4.36 | 55 | 4.19 |
| 6 | 4.07 | 56 | 4.11 |
| 7 | 4.59 | 57 | 4.09 |
| 8 | 4.08 | 58 | 4.23 |
| 9 | 4.38 | 59 | 4.09 |
| 10 | 4.29 | 60 | 4.04 |
| 11 | 4.62 | 61 | 4.52 |
| 12 | 4.34 | 62 | 4.25 |
| 13 | 4.62 | 63 | 4.38 |
| 14 | 4.12 | 64 | 4.18 |
| 15 | 4.23 | 65 | 4.17 |
| 16 | 4.38 | 66 | 4.05 |
| 17 | 4.47 | 67 | 4.44 |
| 18 | 4.13 | 68 | 4.28 |
| 19 | 4.19 | 69 | 4.03 |
| 20 | 4.18 | 70 | 4.02 |
| 21 | 4.26 | 71 | 4.31 |
| 22 | 4.22 | 72 | 4.42 |
| 23 | 4.15 | 73 | 4.30 |
| 24 | 4.12 | 74 | 4.24 |
| 25 | 4.39 | 75 | 4.06 |
| 26 | 4.43 | 76 | 4.14 |
| 27 | 4.19 | 77 | 4.51 |
| 28 | 4.45 | 78 | 4.26 |
| 29 | 4.09 | 79 | 4.31 |
| 30 | 4.49 | 80 | 4.08 |
| 31 | 4.09 | 81 | 4.53 |
| 32 | 4.73 | 82 | 4.27 |
| 33 | 4.45 | 83 | 4.08 |
| 34 | 4.19 | 84 | 4.16 |
| 35 | 4.62 | 85 | 4.37 |
| 36 | 4.29 | 86 | 4.46 |
| 37 | 4.26 | 87 | 4.33 |
| 38 | 4.34 | 88 | 4.27 |
| 39 | 4.28 | 89 | 4.05 |
| 40 | 4.03 | 90 | 4.39 |
| 41 | 4.18 | 91 | 4.53 |
| 42 | 4.38 | 92 | 4.08 |
| 43 | 4.18 | 93 | 4.22 |
| 44 | 4.45 | 94 | 4.09 |
| 45 | 4.30 | 95 | 4.17 |
| 46 | 4.52 | 96 | 4.49 |
| 47 | 4.44 | 97 | 4.27 |
| 48 | 4.23 | 98 | 4.01 |
| 49 | 4.07 | 99 | 4.64 |
| 50 | 4.09 | 100 | 4.21 |

# Gulf Canada Resources Inc.
# Sample 06387
# Pellet #1939/1

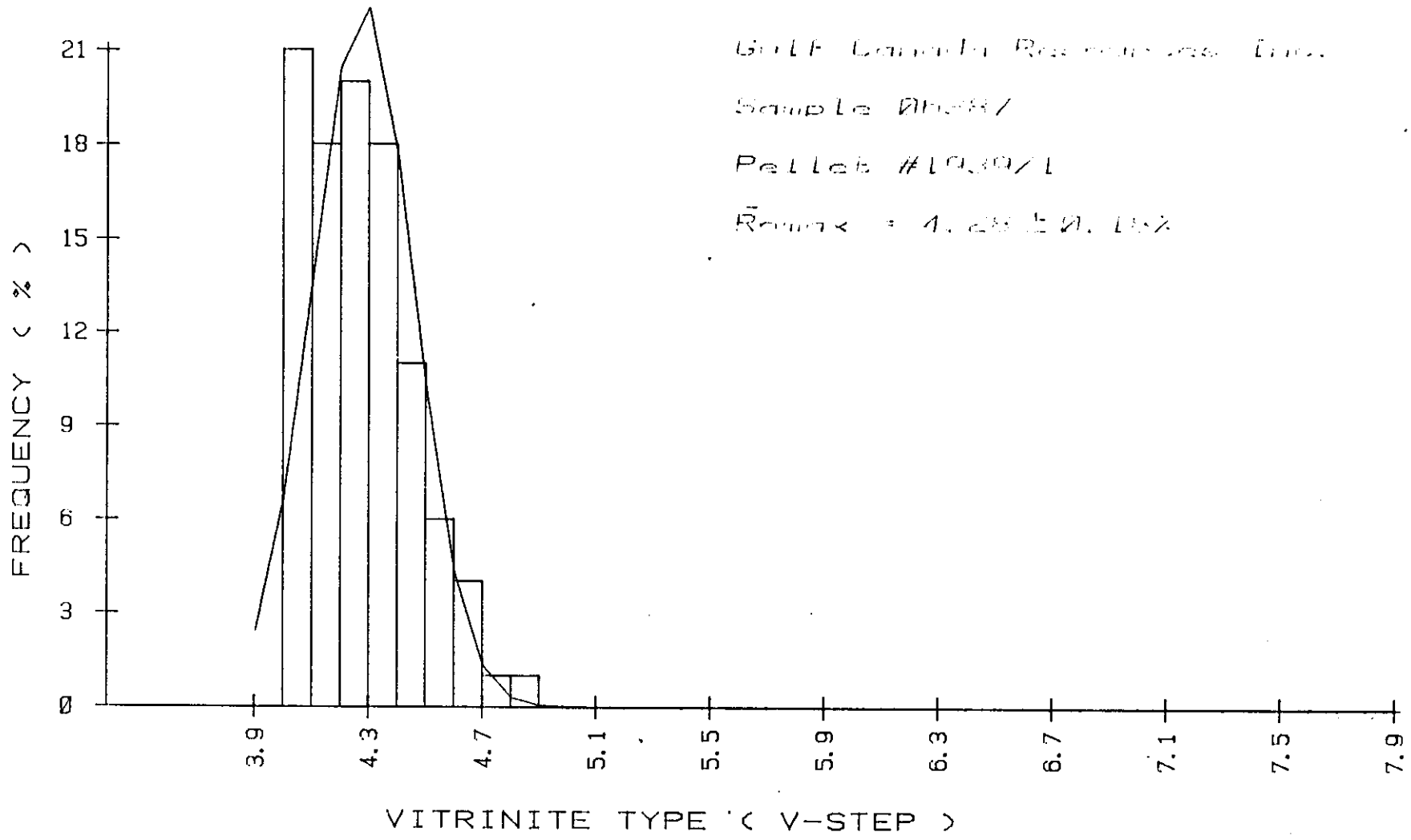
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.28 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.15 |
| VARIANCE ..... | 0.0315 |
| STANDARD DEVIATION ..... | 0.1774 |
| SKEWNESS ..... | 0.6254 |
| KURTOSIS ..... | 2.9019 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 4.00 | 21 | 21.00 |
| 3 | 4.10 | 18 | 18.00 |
| 4 | 4.20 | 20 | 20.00 |
| 5 | 4.30 | 18 | 18.00 |
| 6 | 4.40 | 11 | 11.00 |
| 7 | 4.50 | 6 | 6.00 |
| 8 | 4.60 | 4 | 4.00 |
| 9 | 4.70 | 1 | 1.00 |
| 10 | 4.80 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

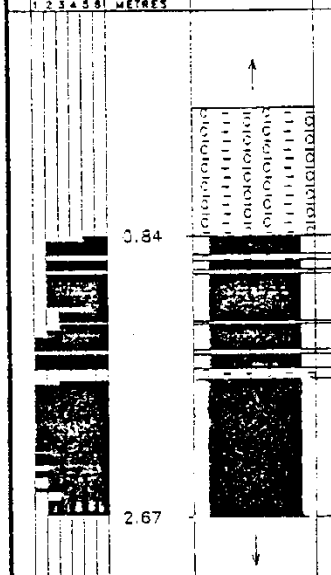
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84026 SEAM : INTERVAL(M) : 0.84 – 2.67 ELEVATION(M) : 1798.0

GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 18/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_o$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.84 | | | 6.12 | | | | | | | | | | | | |
| | | | | 0.31 | | | | | | | | | | | | |
| | | | | 0.17 | | | | | | | | | | | | |
| | | | | 0.09 | | | | | | | | | | | | |
| | 2.67 | | | 0.88 | 100.0 | 1807 | 1807 | 1.63/0.20 1.83 | | 8.83 | 19.30 | 19.70 | 54.47 | 0.35 | 21.00 | 4.07 |

PLOT 1 07.39.25 TUES 18 DEC, 1984 JOB-TSACEGSD GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 01807
# Pellet #1926/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.02 | 51 | 4.09 |
| 2 | 3.86 | 52 | 3.88 |
| 3 | 4.00 | 53 | 4.18 |
| 4 | 4.16 | 54 | 4.38 |
| 5 | 4.01 | 55 | 4.10 |
| 6 | 4.12 | 56 | 4.00 |
| 7 | 3.99 | 57 | 3.98 |
| 8 | 3.91 | 58 | 4.09 |
| 9 | 3.85 | 59 | 3.91 |
| 10 | 3.77 | 60 | 3.87 |
| 11 | 4.06 | 61 | 4.05 |
| 12 | 3.96 | 62 | 3.98 |
| 13 | 4.24 | 63 | 4.01 |
| 14 | 3.94 | 64 | 4.03 |
| 15 | 4.02 | 65 | 4.14 |
| 16 | 3.88 | 66 | 4.23 |
| 17 | 4.10 | 67 | 4.20 |
| 18 | 4.12 | 68 | 3.88 |
| 19 | 4.12 | 69 | 4.26 |
| 20 | 4.11 | 70 | 4.12 |
| 21 | 4.27 | 71 | 4.29 |
| 22 | 4.39 | 72 | 3.81 |
| 23 | 4.05 | 73 | 4.30 |
| 24 | 4.05 | 74 | 4.11 |
| 25 | 3.99 | 75 | 4.02 |
| 26 | 3.92 | 76 | 4.18 |
| 27 | 4.04 | 77 | 4.13 |
| 28 | 4.26 | 78 | 3.96 |
| 29 | 4.30 | 79 | 3.94 |
| 30 | 4.04 | 80 | 4.01 |
| 31 | 4.17 | 81 | 3.98 |
| 32 | 4.30 | 82 | 3.90 |
| 33 | 3.84 | 83 | 3.84 |
| 34 | 3.96 | 84 | 4.20 |
| 35 | 3.88 | 85 | 3.91 |
| 36 | 3.97 | 86 | 4.18 |
| 37 | 3.98 | 87 | 4.28 |
| 38 | 3.92 | 88 | 3.92 |
| 39 | 4.00 | 89 | 4.20 |
| 40 | 4.26 | 90 | 4.20 |
| 41 | 4.34 | 91 | 4.02 |
| 42 | 4.08 | 92 | 4.30 |
| 43 | 4.12 | 93 | 4.26 |
| 44 | 4.14 | 94 | 3.93 |
| 45 | 4.04 | 95 | 4.11 |
| 46 | 4.08 | 96 | 4.23 |
| 47 | 4.11 | 97 | 4.00 |
| 48 | 3.82 | 98 | 4.13 |
| 49 | 3.89 | 99 | 4.15 |
| 50 | 4.20 | 100 | 4.09 |

# Gulf Canada Resources Inc.
# Sample 01807
# Pellet #1926/1

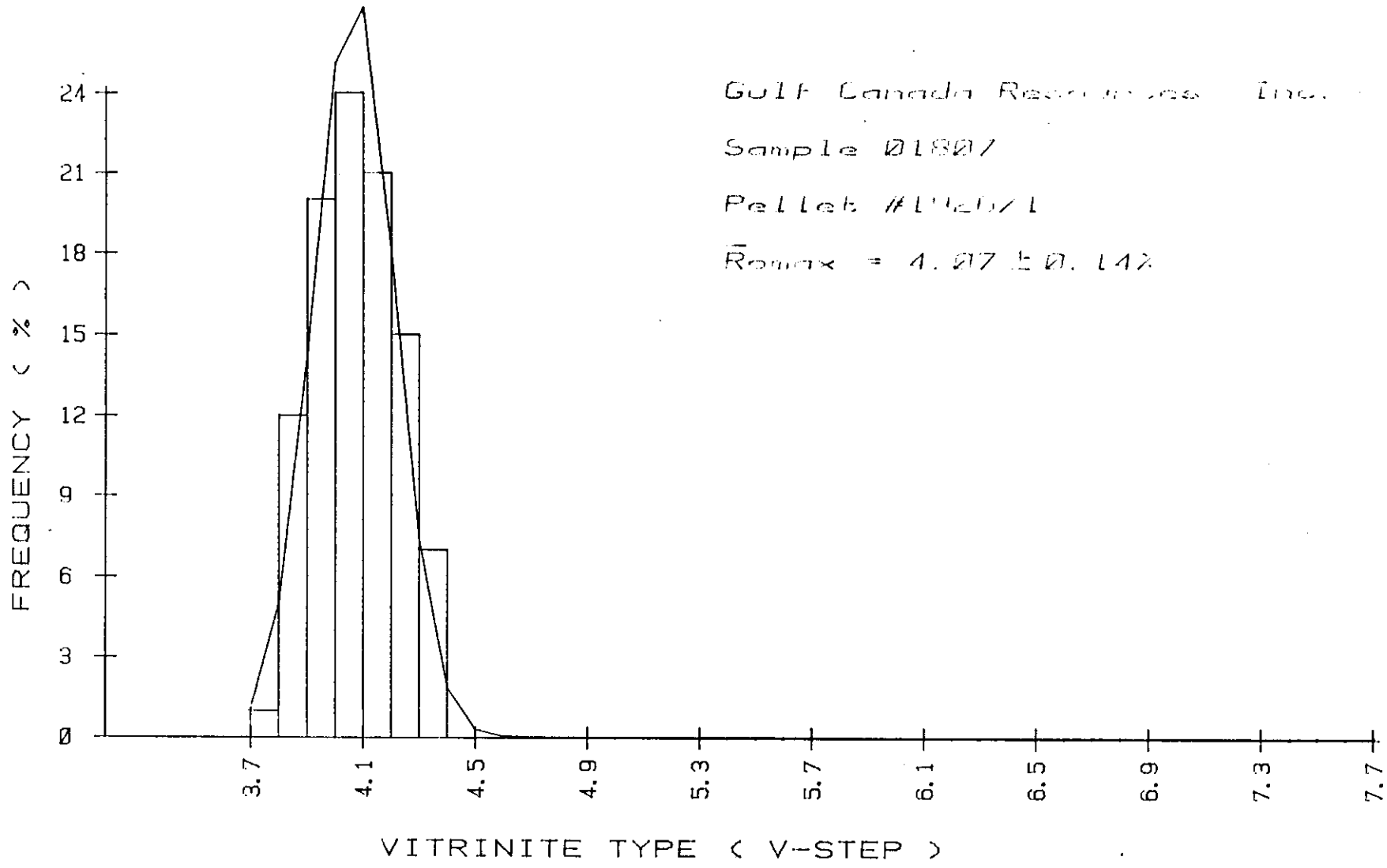
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.07 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 3.51 |
| VARIANCE ..... | 0.0204 |
| STANDARD DEVIATION ..... | 0.1429 |
| SKEWNESS ..... | 0.1757 |
| KURTOSIS ..... | 2.2723 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.70 | 1 | 1.00 |
| 2 | 3.80 | 12 | 12.00 |
| 3 | 3.90 | 20 | 20.00 |
| 4 | 4.00 | 24 | 24.00 |
| 5 | 4.10 | 21 | 21.00 |
| 6 | 4.20 | 15 | 15.00 |
| 7 | 4.30 | 7 | 7.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84027 SEAM : INTERVAL(M) : 1.30 – 4.78 ELEVATION(M) : 1765.0

GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 17 /84 DRAWING NO. :

| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_o$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.30 | | | 0.11 | | | | | | | | | | | | |
| | | | 0.08 | 0.28 | | | | | | | | | | | | |
| | | | 0.19 | | | | | | | | | | | | | |
| | | | 0.26 | | | | | | | | | | | | | |
| | | | 0.07 | | | | | | | | | | | | | |
| | | | 0.10 | 0.03 | | | | | | | | | | | | |
| | | | 0.25 | | | | | | | | | | | | | |
| | | | 0.83 | 0.12 | 100.0 | 1810 | 1810 | 1.68 / 0.61 | | 11.41 | 23.41 | 20.89 | 44.29 | 0.31 | 17.27 | |
| | | | 0.22 | | | | | 2.29 | | | | | | | | |
| | | | 0.01 | 0.18 | | | | | | | | | | | | |
| | | | | 0.36 | | | | | | | | | | | | |
| | | | 0.02 | | | | | | | | | | | | | |
| | | | 0.02 | 0.11 | | | | | | | | | | | | |
| | | | | 0.16 | | | | | | | | | | | | |
| | 3.75 | | 0.57 | | | | | | | | | | | | | |
| | | | | 0.94 | 100.0 | 1808 | 1808 | 1.01/0.02 / 1.03 | | 4.71 | 19.16 | 13.72 | 62.41 | 0.40 | 23.10 | 4.16 |
| | 4.78 | | | | | | | | | | | | | | | |

PLOT 1 13:23:59 MON 17 DEC, 1984 JOB-TSRCEGSD GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc. Sample 01808 Pellet #1927/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.06 | 51 | 4.32 |
| 2 | 4.12 | 52 | 4.04 |
| 3 | 3.98 | 53 | 4.18 |
| 4 | 4.21 | 54 | 4.27 |
| 5 | 4.29 | 55 | 4.29 |
| 6 | 4.28 | 56 | 4.08 |
| 7 | 4.45 | 57 | 4.13 |
| 8 | 4.17 | 58 | 4.30 |
| 9 | 4.44 | 59 | 4.21 |
| 10 | 4.40 | 60 | 3.97 |
| 11 | 3.94 | 61 | 4.28 |
| 12 | 4.37 | 62 | 3.95 |
| 13 | 4.12 | 63 | 3.97 |
| 14 | 4.41 | 64 | 4.15 |
| 15 | 4.44 | 65 | 4.04 |
| 16 | 4.39 | 66 | 3.99 |
| 17 | 4.46 | 67 | 4.04 |
| 18 | 4.16 | 68 | 4.02 |
| 19 | 4.42 | 69 | 4.13 |
| 20 | 4.19 | 70 | 4.00 |
| 21 | 4.19 | 71 | 4.04 |
| 22 | 4.11 | 72 | 4.05 |
| 23 | 4.23 | 73 | 4.31 |
| 24 | 4.52 | 74 | 4.29 |
| 25 | 4.43 | 75 | 4.10 |
| 26 | 4.09 | 76 | 3.97 |
| 27 | 4.06 | 77 | 4.20 |
| 28 | 4.21 | 78 | 3.91 |
| 29 | 4.27 | 79 | 4.33 |
| 30 | 4.15 | 80 | 4.32 |
| 31 | 4.12 | 81 | 4.16 |
| 32 | 4.20 | 82 | 4.42 |
| 33 | 4.09 | 83 | 4.12 |
| 34 | 4.13 | 84 | 4.11 |
| 35 | 4.01 | 85 | 4.03 |
| 36 | 4.28 | 86 | 4.43 |
| 37 | 3.95 | 87 | 4.08 |
| 38 | 4.15 | 88 | 4.18 |
| 39 | 4.17 | 89 | 4.13 |
| 40 | 4.07 | 90 | 4.14 |
| 41 | 4.29 | 91 | 4.54 |
| 42 | 4.13 | 92 | 4.35 |
| 43 | 4.30 | 93 | 4.10 |
| 44 | 4.23 | 94 | 4.12 |
| 45 | 4.15 | 95 | 4.22 |
| 46 | 4.15 | 96 | 3.96 |
| 47 | 4.11 | 97 | 4.02 |
| 48 | 4.13 | 98 | 4.03 |
| 49 | 4.08 | 99 | 4.12 |
| 50 | 4.38 | 100 | 4.25 |

# Gulf Canada Resources Inc.
# Sample 01808
# Pellet #1927/1

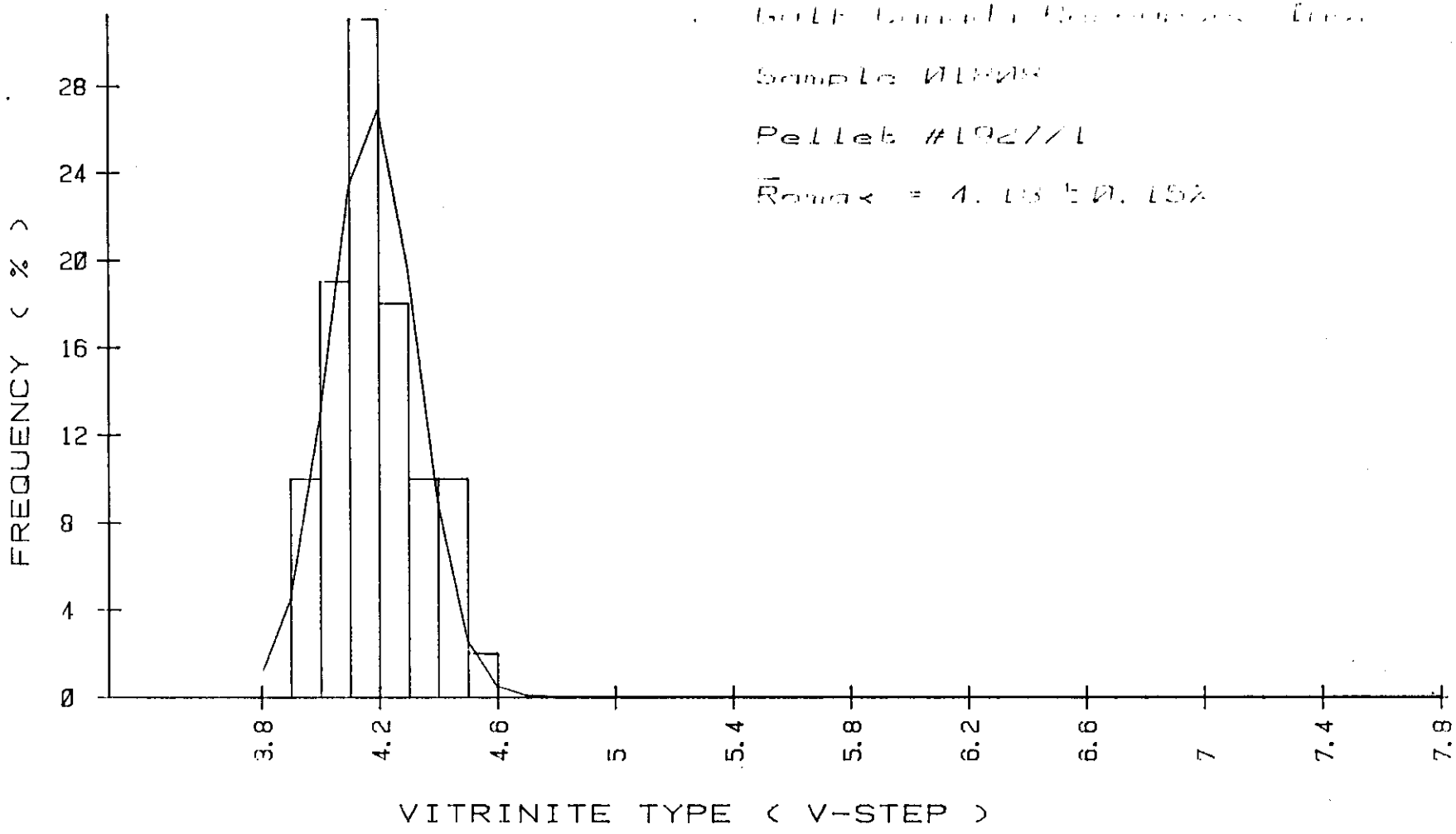
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.18 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 3.52 |
| VARIANCE ..... | 0.0217 |
| STANDARD DEVIATION ..... | 0.1471 |
| SKEWNESS ..... | 0.4158 |
| KURTOSIS ..... | 2.4222 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ). |
|---|---|---|---|
| 2 | 3.90 | 10 | 10.00 |
| 3 | 4.00 | 19 | 19.00 |
| 4 | 4.10 | 31 | 31.00 |
| 5 | 4.20 | 18 | 18.00 |
| 6 | 4.30 | 10 | 10.00 |
| 7 | 4.40 | 10 | 10.00 |
| 8 | 4.50 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

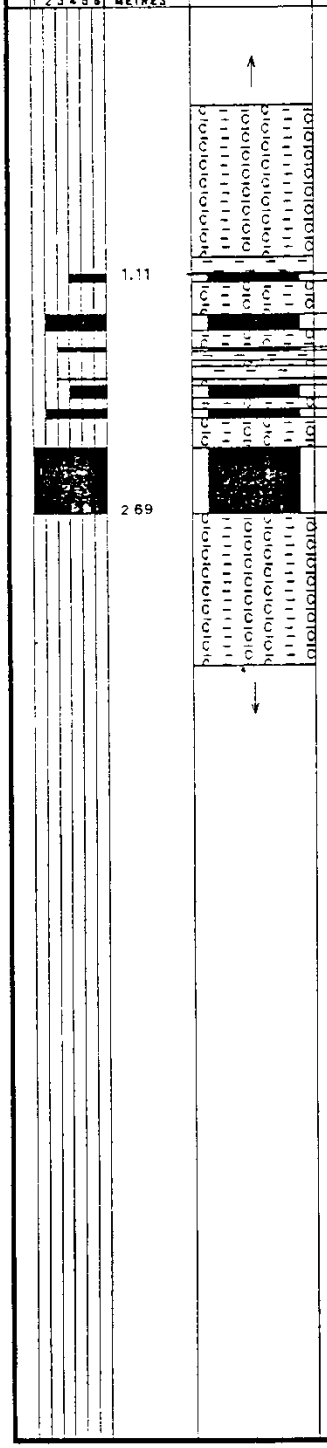
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SN TRC84028 SEAM : INTERVAL(M) : 1.11 – 2.69 ELEVATION(M) : 1767.0

GEOLOGIST : DAKIN SCALE: 1:47 DATE : DEC 05/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.V AL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.11 | | 0.22 | 0.10 | 100.0 | 06388 | 06388 | 0.75/0.83 / 1.58 | | 4.51 | 30.96 | 13.90 | 50.63 | 0.29 | 18.69 | 4.26 |
| | 2.69 | | 0.20 | 0.43 | | | | | | | | | | | | |

PLOT 1 12.17.59 WED 5 DEC, 1984 JOB-TSTCEGD GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For
# Gulf Canada Resources Inc.
# Sample 06388
# Pellet #1940/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.07 | 51 | 4.07 |
| 2 | 4.30 | 52 | 4.25 |
| 3 | 3.92 | 53 | 4.45 |
| 4 | 4.23 | 54 | 4.13 |
| 5 | 4.29 | 55 | 4.19 |
| 6 | 4.24 | 56 | 4.00 |
| 7 | 4.23 | 57 | 4.54 |
| 8 | 4.16 | 58 | 4.01 |
| 9 | 4.30 | 59 | 4.08 |
| 10 | 4.46 | 60 | 4.61 |
| 11 | 4.14 | 61 | 4.07 |
| 12 | 4.46 | 62 | 4.48 |
| 13 | 4.46 | 63 | 4.23 |
| 14 | 4.11 | 64 | 4.48 |
| 15 | 4.31 | 65 | 4.17 |
| 16 | 4.08 | 66 | 4.32 |
| 17 | 4.15 | 67 | 4.40 |
| 18 | 4.44 | 68 | 4.33 |
| 19 | 4.22 | 69 | 4.33 |
| 20 | 4.24 | 70 | 4.35 |
| 21 | 4.32 | 71 | 4.44 |
| 22 | 4.08 | 72 | 4.26 |
| 23 | 4.29 | 73 | 4.33 |
| 24 | 4.11 | 74 | 4.12 |
| 25 | 4.24 | 75 | 4.10 |
| 26 | 4.06 | 76 | 4.26 |
| 27 | 4.23 | 77 | 4.11 |
| 28 | 4.27 | 78 | 4.16 |
| 29 | 4.23 | 79 | 4.20 |
| 30 | 4.11 | 80 | 4.49 |
| 31 | 4.33 | 81 | 4.29 |
| 32 | 4.40 | 82 | 4.15 |
| 33 | 4.07 | 83 | 4.17 |
| 34 | 4.32 | 84 | 4.33 |
| 35 | 4.23 | 85 | 4.19 |
| 36 | 4.10 | 86 | 4.42 |
| 37 | 4.20 | 87 | 4.45 |
| 38 | 4.40 | 88 | 4.34 |
| 39 | 4.38 | 89 | 4.22 |
| 40 | 4.54 | 90 | 4.17 |
| 41 | 4.28 | 91 | 4.38 |
| 42 | 4.10 | 92 | 4.30 |
| 43 | 4.29 | 93 | 4.43 |
| 44 | 4.39 | 94 | 4.23 |
| 45 | 4.20 | 95 | 4.09 |
| 46 | 4.42 | 96 | 4.30 |
| 47 | 4.46 | 97 | 4.10 |
| 48 | 4.03 | 98 | 4.18 |
| 49 | 4.20 | 99 | 4.44 |
| 50 | 4.30 | 100 | 4.47 |

Gulf Canada Resources Inc.
Sample 06388
Pellet #1940/1

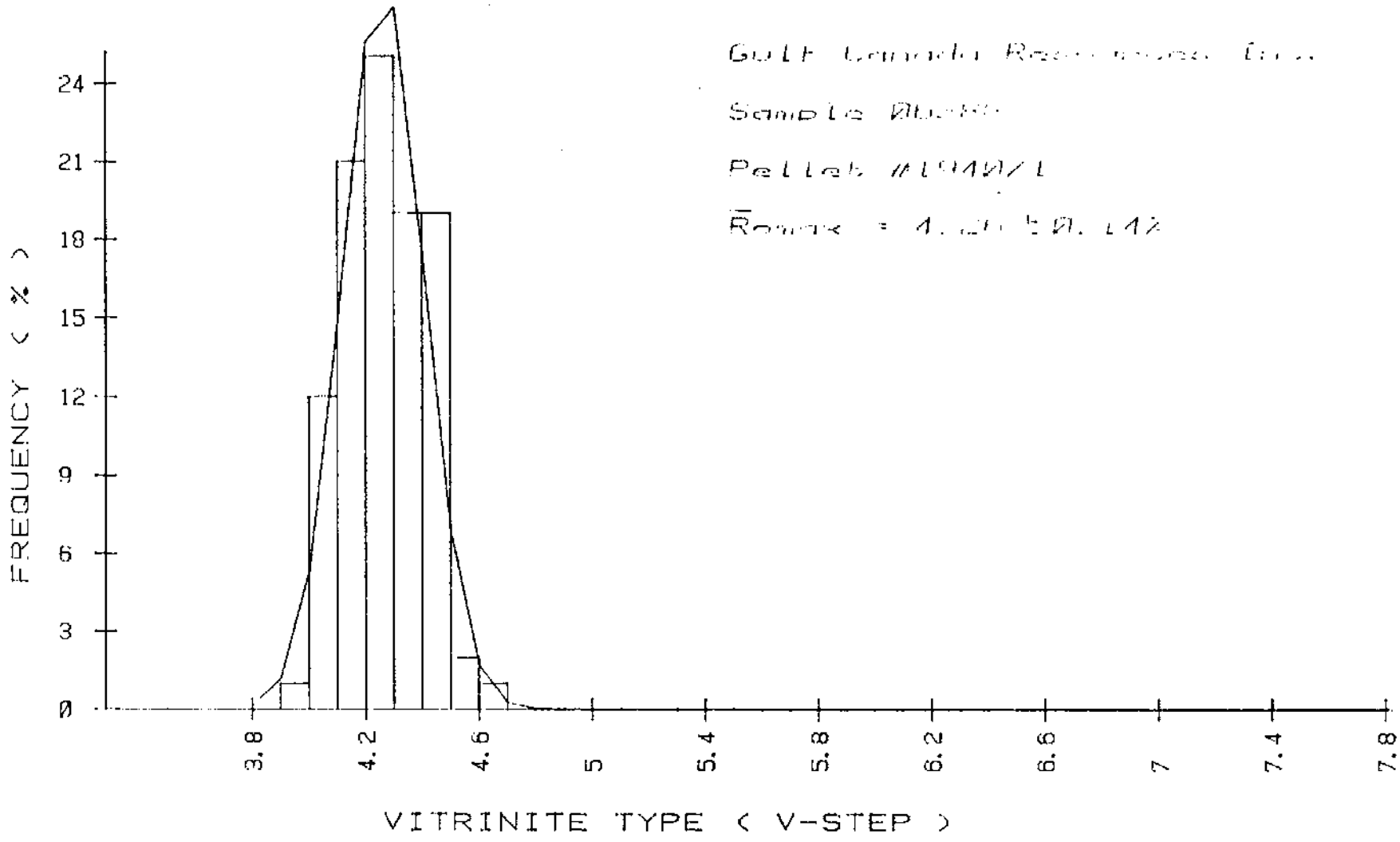
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.26 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 3.35 |
| VARIANCE ..... | 0.0204 |
| STANDARD DEVIATION ..... | 0.1429 |
| SKEWNESS ..... | 0.1270 |
| KURTOSIS ..... | 2.3370 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 3.90 | 1 | 1.00 |
| 3 | 4.00 | 12 | 12.00 |
| 4 | 4.10 | 21 | 21.00 |
| 5 | 4.20 | 25 | 25.00 |
| 6 | 4.30 | 19 | 19.00 |
| 7 | 4.40 | 19 | 19.00 |
| 8 | 4.50 | 2 | 2.00 |
| 9 | 4.60 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

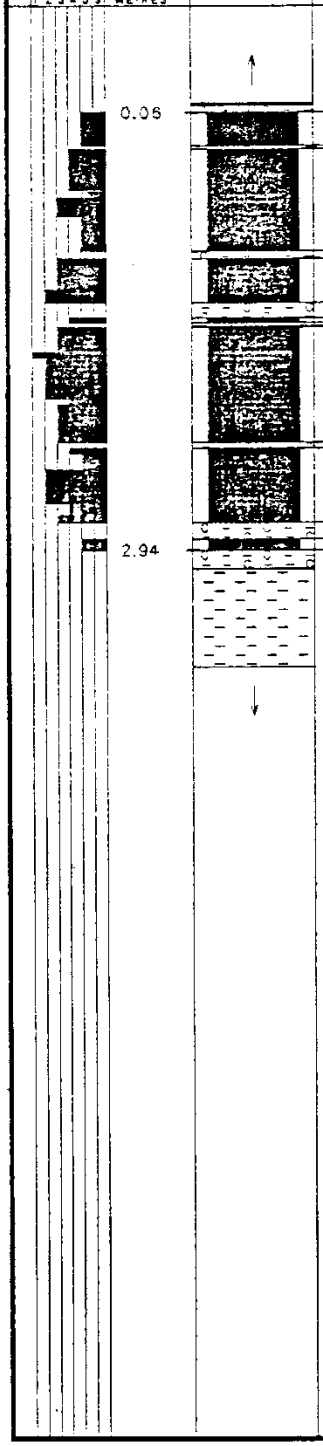
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN SS TRC84029 SEAM : INTERVAL(M) : 0.06 – 2.94 ELEVATION(M) : 1550.0

GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 10/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.06 | | | 0.22 | | | | | | | | | | | | |
| | | | | 0.67 | | | | | | | | | | | | |
| | | | | 0.29 | | | | | | | | | | | | |
| | | | | 0.76 | 100.0 | 1809 | 1809 | 2.53 / 0.35 2.88 | | 7.40 | 24.83 | 22.30 | 45.67 | 0.32 | 17.93 | 3.59 |
| | | | | 0.49 | | | | | | | | | | | | |
| | 2.94 | | | | | | | | | | | | | | | |

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 01809
# Pellet #1928/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 3.47 | 51 | 3.44 |
| 2 | 3.69 | 52 | 3.81 |
| 3 | 3.58 | 53 | 3.50 |
| 4 | 3.76 | 54 | 3.67 |
| 5 | 3.47 | 55 | 3.68 |
| 6 | 3.71 | 56 | 3.60 |
| 7 | 3.49 | 57 | 3.45 |
| 8 | 3.51 | 58 | 3.66 |
| 9 | 3.89 | 59 | 3.84 |
| 10 | 3.69 | 60 | 3.10 |
| 11 | 3.87 | 61 | 3.75 |
| 12 | 3.69 | 62 | 3.69 |
| 13 | 3.69 | 63 | 3.77 |
| 14 | 3.86 | 64 | 3.94 |
| 15 | 3.22 | 65 | 3.50 |
| 16 | 3.52 | 66 | 3.84 |
| 17 | 3.50 | 67 | 3.61 |
| 18 | 3.43 | 68 | 3.25 |
| 19 | 3.67 | 69 | 3.60 |
| 20 | 3.59 | 70 | 3.98 |
| 21 | 3.42 | 71 | 3.44 |
| 22 | 3.69 | 72 | 3.45 |
| 23 | 3.50 | 73 | 3.73 |
| 24 | 3.71 | 74 | 3.62 |
| 25 | 3.58 | 75 | 3.63 |
| 26 | 3.69 | 76 | 3.33 |
| 27 | 3.94 | 77 | 3.70 |
| 28 | 3.90 | 78 | 3.72 |
| 29 | 3.60 | 79 | 3.84 |
| 30 | 3.62 | 80 | 3.44 |
| 31 | 3.14 | 81 | 3.57 |
| 32 | 3.36 | 82 | 3.55 |
| 33 | 3.80 | 83 | 3.47 |
| 34 | 3.26 | 84 | 3.61 |
| 35 | 3.67 | 85 | 3.34 |
| 36 | 3.49 | 86 | 3.47 |
| 37 | 3.66 | 87 | 3.69 |
| 38 | 3.56 | 88 | 3.27 |
| 39 | 3.44 | 89 | 3.66 |
| 40 | 3.65 | 90 | 3.59 |
| 41 | 3.68 | 91 | 3.54 |
| 42 | 3.43 | 92 | 3.22 |
| 43 | 3.61 | 93 | 3.50 |
| 44 | 3.46 | 94 | 3.68 |
| 45 | 3.59 | 95 | 3.68 |
| 46 | 3.47 | 96 | 3.59 |
| 47 | 3.64 | 97 | 3.50 |
| 48 | 3.65 | 98 | 3.41 |
| 49 | 3.37 | 99 | 3.57 |
| 50 | 3.77 | 100 | 3.49 |

Gulf Canada Resources Inc.
Sample 01809
Pellet #1928/1

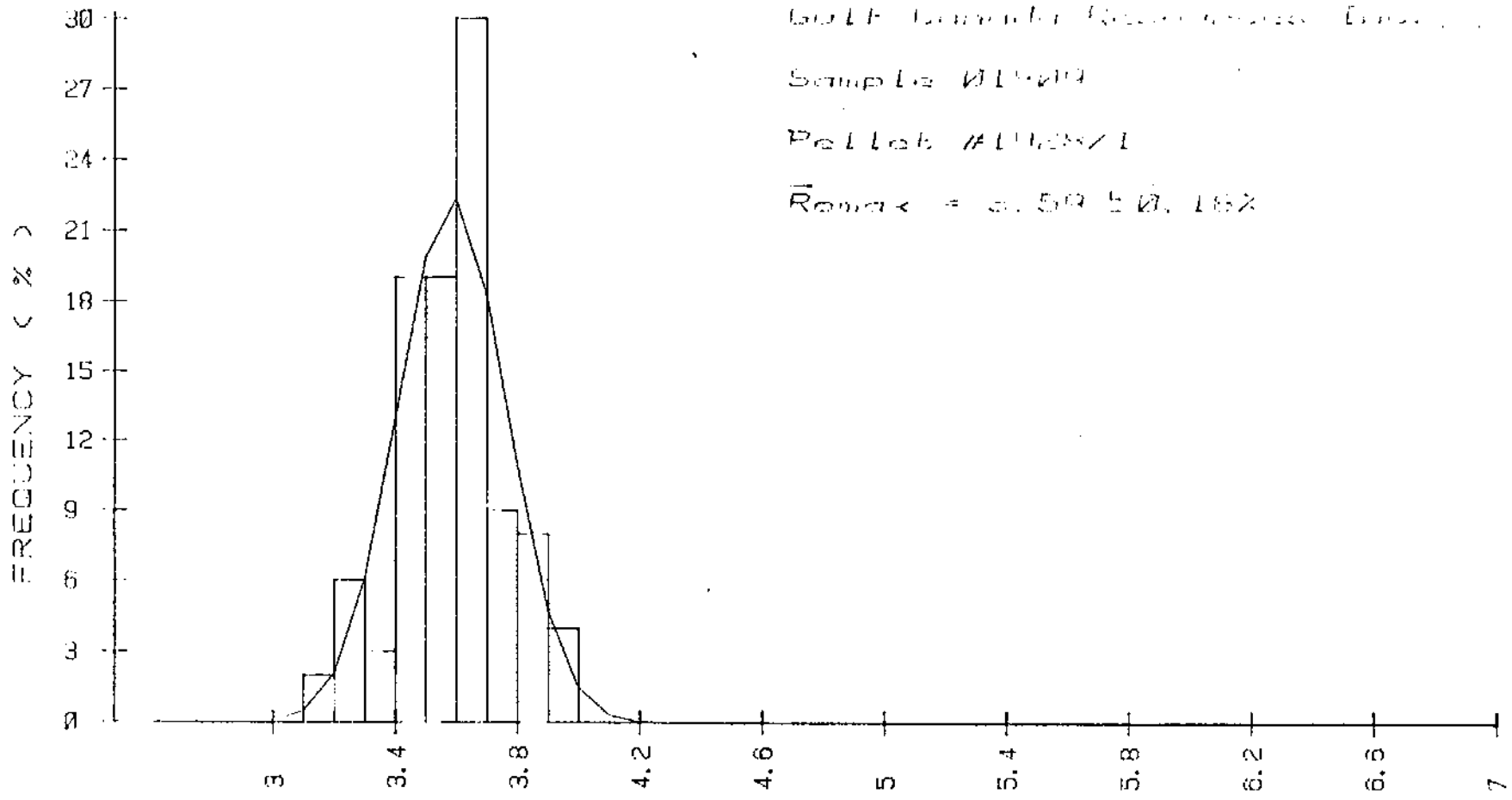
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 3.59 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.96 |
| VARIANCE ..... | 0.0317 |
| STANDARD DEVIATION ..... | 0.1780 |
| SKEWNESS ..... | -0.2853 |
| KURTOSIS ..... | 3.1151 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 3.10 | 2 | 2.00 |
| 3 | 3.20 | 6 | 6.00 |
| 4 | 3.30 | 3 | 3.00 |
| 5 | 3.40 | 19 | 19.00 |
| 6 | 3.50 | 19 | 19.00 |
| 7 | 3.60 | 30 | 30.00 |
| 8 | 3.70 | 9 | 9.00 |
| 9 | 3.80 | 8 | 8.00 |
| 10 | 3.90 | 4 | 4.00 |

# VITRINITE FREQUENCY DISTRIBUTION



GR-MT. KLAPPAN 54A
SUMMIT-NASS-SKEENA
CONFIDENTIAL COAL
QUALITY DATA FROM
APPENDIX III, VOL. II
(COAL TRENCH DATA AND
COAL QUALITY)
(2)

CONFIDENTIAL

710

NASS AREA

~~CONFIDENTIAL~~

1982

GCRI COAL DIVISION HEAD PROJ KPN BLK LK DS TRC82021

| | | | |
|---|---|---|---|
| SAMPLE ID | 68 | DATA TYPE (REAL,BORO,AVER,CALC) | REAL |
| SPLIT SAMPLE ID | HD1 | DATE ANALYSED 13/01/83 | |
| | | ANALYSIS BASIS TYPE (AD,DB,AR,EM) | AD |

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | ___.__ | | |
| SURFACE MOISTURE %(AD,AR) | 4.90 | TOTAL SULPHUR % | 0.41 |
| TOTAL MOISTURE % | 6.61 | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE %(AD,EM) | 1.80 | FSI | __._ |
| ASH % | 27.50 | HGI | ___._ |
| VOLATILE MATTER % | 8.10 | CO2 % | __.__ |
| FIXED CARBON % | 62.60 | | |

GROSS CALORIFIC VALUE (MJ/KG) 22.59

NET CALORIFIC VALUE (MJ/KG) __.__

$Ro_{max}$=4.93

GCRI COAL DIVISION HEAD PROJ KPN BLK LK DS TRC82022

| | | | |
|---|---|---|---|
| SAMPLE ID | 69 | DATA TYPE (REAL,BORO,AVER,CALC) | REAL |
| SPLIT SAMPLE ID | HD1 | DATE ANALYSED 13/01/83 | |
| | | ANALYSIS BASIS TYPE (AD,DB,AR,EM) | AD |

NAME OF STANDARD (ASTM,JIS,DIN,BS,AS,GOST,ISO) ASTM

| | | | |
|---|---|---|---|
| TOP SIZE (MM) | ___.__ | | |
| SURFACE MOISTURE %(AD,AR) | 12.90 | TOTAL SULPHUR % | 0.30 |
| TOTAL MOISTURE % | 15.08 | PHOSPHOROUS % | _.___ |
| EQUILIBRIUM MOISTURE % | __.__ | CHLORINE (PPM) | _____ |
| | | SPECIFIC GRAVITY | _.__ |
| RESIDUAL MOISTURE %(AD,EM) | 2.50 | FSI | __._ |
| ASH % | 39.40 | HGI | ___._ |
| VOLATILE MATTER % | 11.80 | CO2 % | __.__ |
| FIXED CARBON % | 46.30 | | |

GROSS CALORIFIC VALUE (MJ/KG) 16.85

NET CALORIFIC VALUE (MJ/KG) __.__

$Ro_{max}$=5.25

1983

IAD Batch: 97-N263-662-57

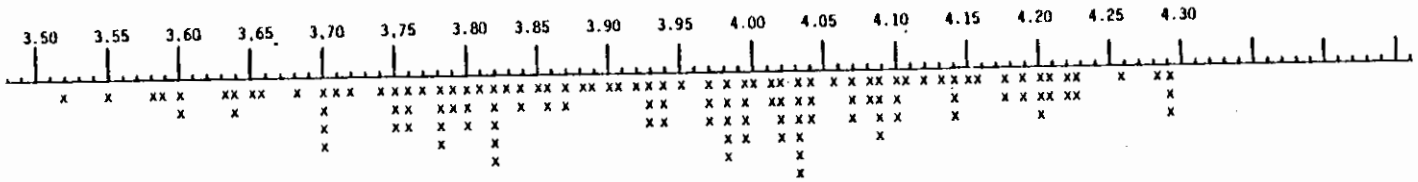
Report of Analysis on Sample: 06301

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro:3.95

Distribution of Vitrinite Reflectance Readings:

%Ro




Number of Counts (Total= 130 )

V-Type Table for Vitrinites (=100%)

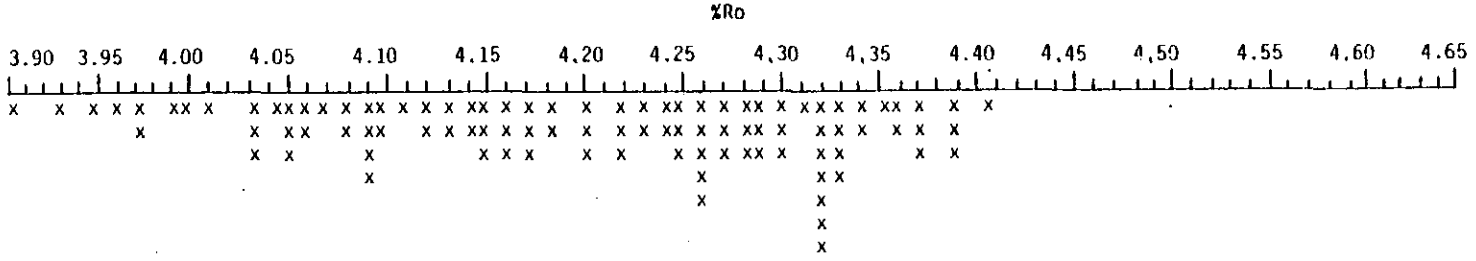
| V-35 | V-36 | V-37 | V-38 | V-39 |
|---|---|---|---|---|
| 3.1 | 6.2 | 15.4 | 14.6 | 16.9 |
| V-40 | V-41 | V-42 | V- | V- |
| 21.5 | 11.5 | 10.8 | | |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06302

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 4.26

Distribution of Vitrinite Reflectance Readings:




Coal is moderately oxidized.

Number of Counts (Total= 125 )

V-Type Table for Vitrinites (=100%)

| V-39 | V-40 | V-41 | V-42 |
|---|---|---|---|
| 5.6 | 14.4 | 16.0 | 21.6 |
| V-43 | V-44 | V-45 | V-46 |
| 20.8 | 9.6 | 8.0 | 4.0 |

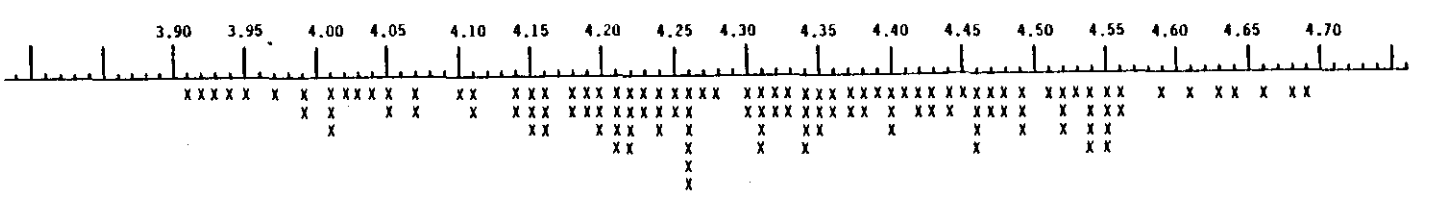
IAD Batch: 97-N263-662-57

Report of Analysis on Sample: 06303

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 4.31

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 127 )

V-Type Table for Vitrinites (=100%)

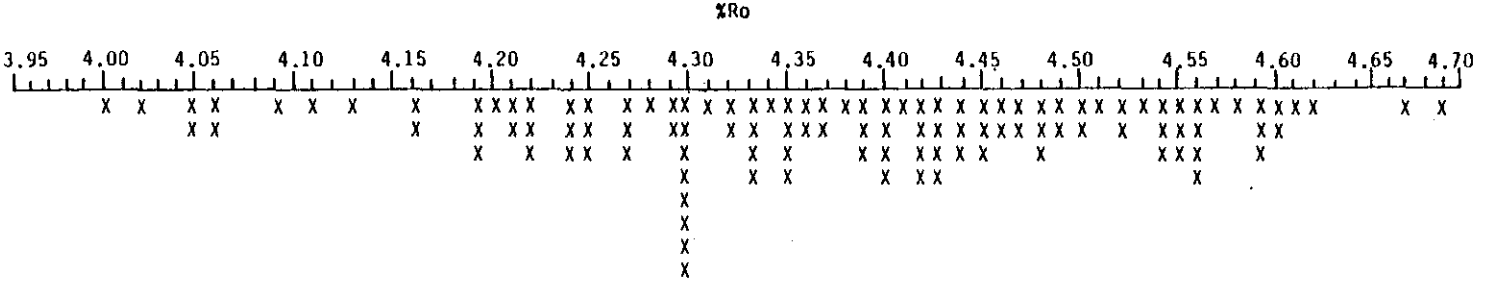
| V- 39 | V- 40 | V- 41 | V- 42 | V-43 |
|---|---|---|---|---|
| 6.3 | 7.9 | 11.8 | 20.5 | 18.9 |
| V- 44 | V- 45 | V- 46 | V- | V- |
| 17.3 | 12.6 | 4.7 | | |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06304

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 4.37

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 115 )

V-Type Table for Vitrinites (=100%)

| V-40 | V-41 | V-42 | V-43 |
|---|---|---|---|
| 6.1 | 6.1 | 15.7 | 24.3 |

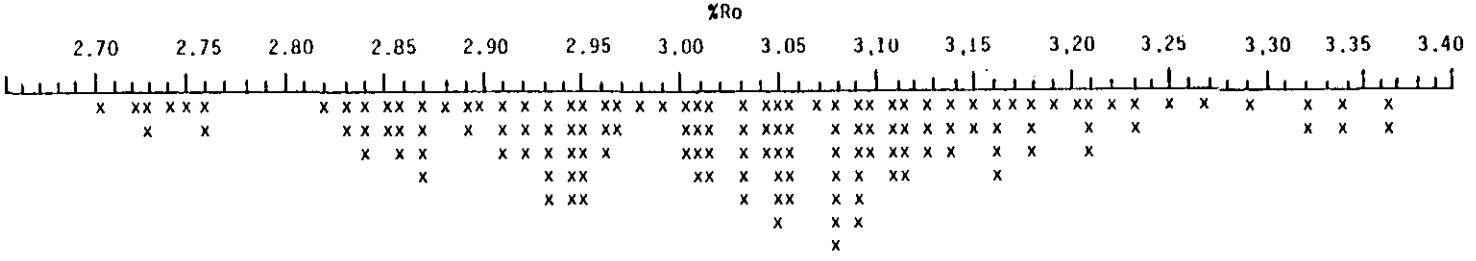
| V-44 | V-45 | V-46 |
|---|---|---|
| 24.3 | 18.3 | 5.2 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06305

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.03

Distribution of Vitrinite Reflectance Readings:




Because this sample is extremely oxidized, it could not be analyzed according to ASTM procedures. Only relatively unoxidized particles were selected and measured, thus biasing the analysis.

Number of Counts (Total= 143 )

V-Type Table for Vitrinites (=100%)

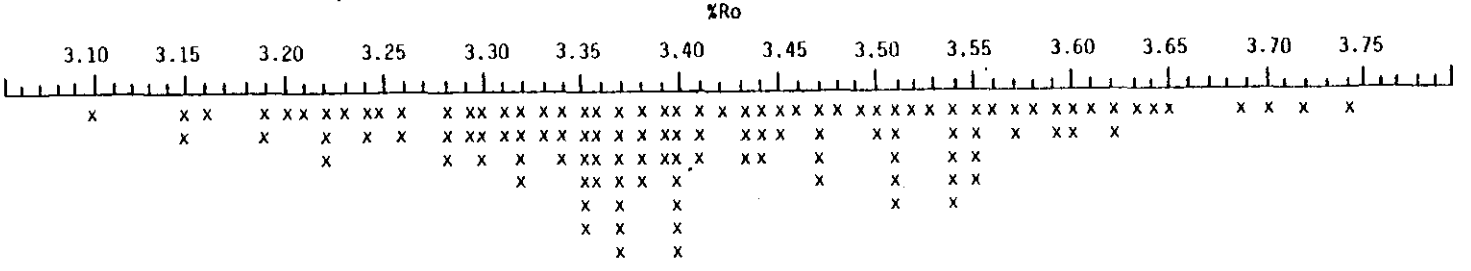
| V- 27 | V- 28 | V-29 | V- 30 |
|---|---|---|---|
| 5.6 | 12.6 | 20.3 | 30.7 |
| V-31 | V-32 | V-33 | |
| 19.6 | 7.0 | 4.2 | |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06306

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.42

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 122 )

V-Type Table for Vitrinites (=100%)

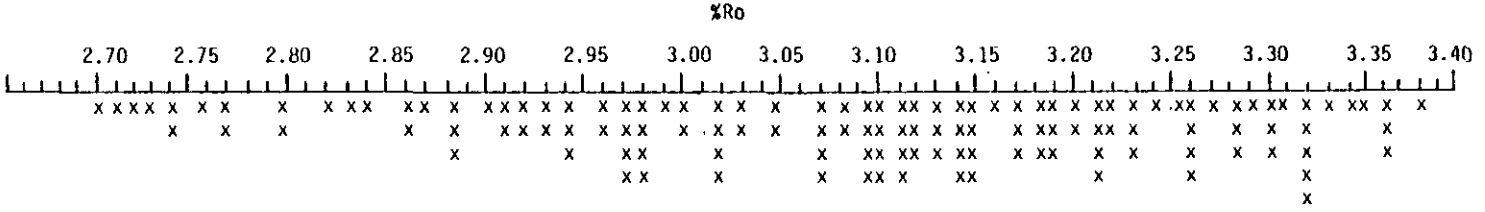
| V-31 | V-32 | V-33 | V-34 |
|---|---|---|---|
| 4.9 | 13.1 | 31.1 | 21.3 |
| V-35 | V-36 | V-37 | |
| 19.7 | 7.4 | 2.5 | |

TAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06309

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.08

Distribution of Vitrinite Reflectance Readings:




Sample is extremely weathered.

Number of Counts (Total= 132 )

V-Type Table for Vitrinites (=100%)

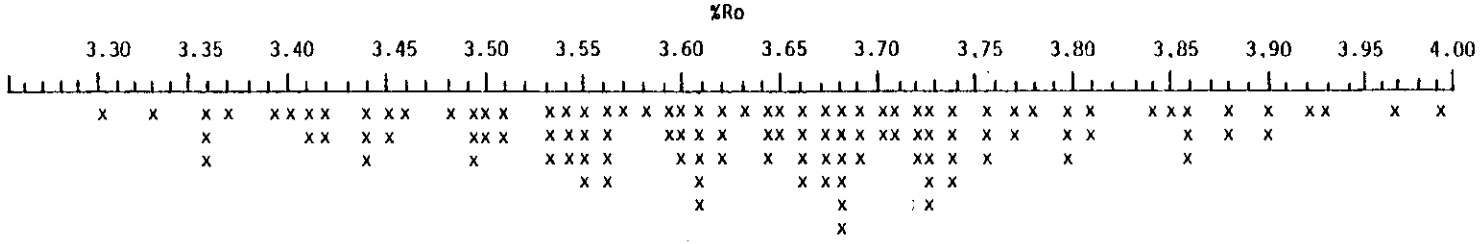
| V-27 | V-28 | V-29 | V-30 |
|---|---|---|---|
| 6.8 | 9.1 | 15.9 | 15.2 |
| V-31 | V-32 | V-33 | |
| 24.2 | 16.7 | 12.1 | |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06310

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.64

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 118 )

V-Type Table for Vitrinites (=100%)

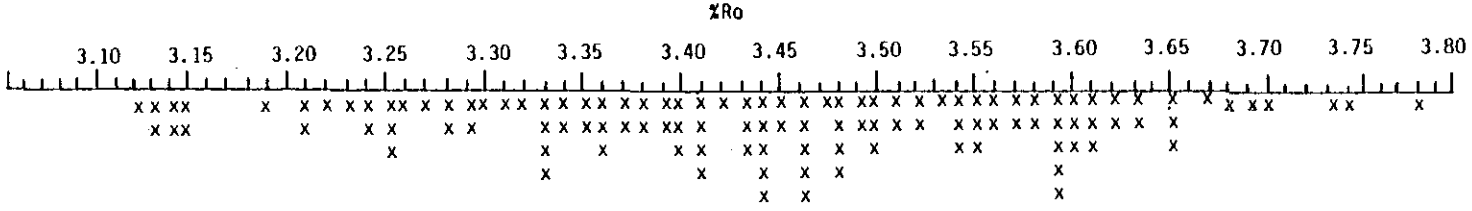
| V-33 | V-34 | V-35 | V-36 |
|---|---|---|---|
| 5.9 | 12.7 | 18.6 | 28.9 |
| V-37 | V-38 | V-39 | |
| 18.6 | 10.2 | 5.1 | |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06311

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.44

Distribution of Vitrinite Reflectance Readings:




This sample is moderately oxidized

Number of Counts (Total= 118 )

V-Type Table for Vitrinites (=100%)

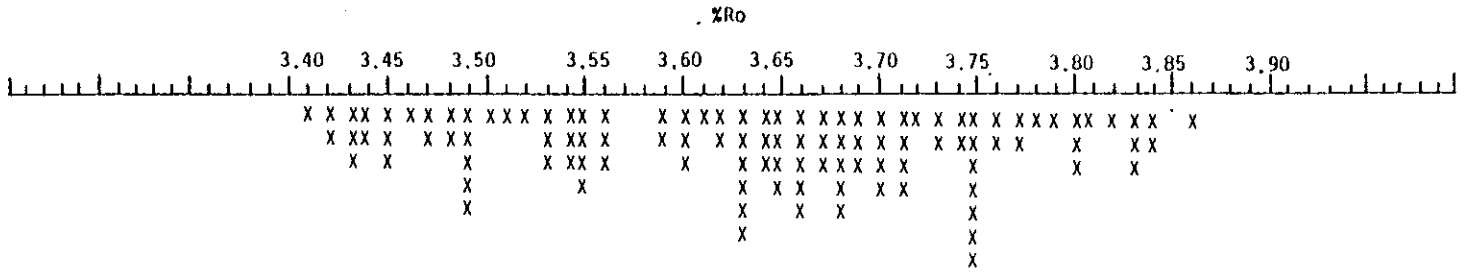
| V-31 | V-32 | V-33 | V-34 |
|---|---|---|---|
| 6.8 | 12.7 | 16.9 | 25.4 |
| V-35 | V-36 | V-37 | |
| 21.2 | 13.6 | 3.4 | |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06312

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.63

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 111 )

V-Type Table for Vitrinites (=100%)

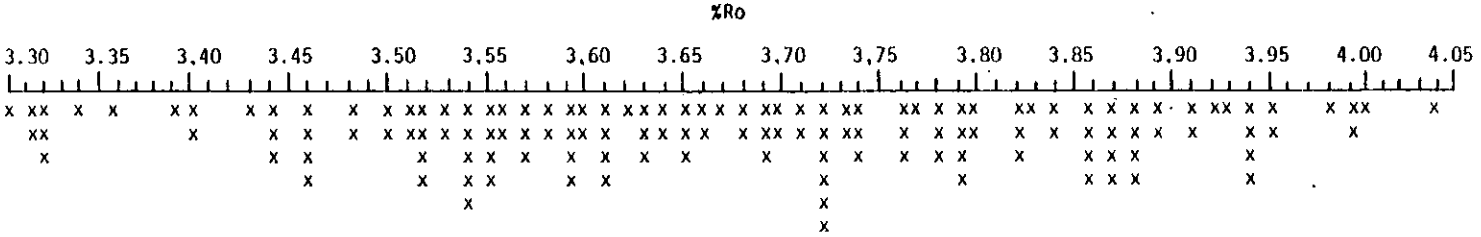
| V-34 | V-35 | V-36 | V-37 | V-38 |
|---|---|---|---|---|
| 18.9 | 16.2 | 31.6 | 23.4 | 9.9 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06313

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 3.67

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 139 )

V-Type Table for Vitrinites (=100%)

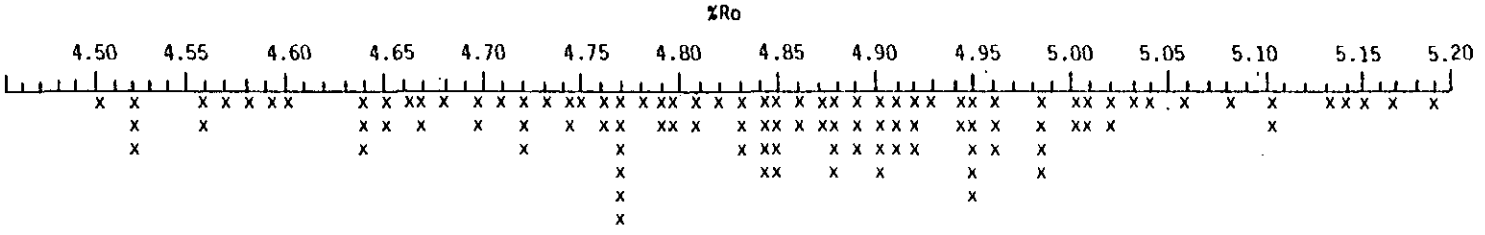
| V- 33 | V-34 | V-35 | V- 36 |
|---|---|---|---|
| 6.5 | 8.6 | 21.6 | 16.5 |
| V- 37 | V-38 | V-39 | V-40 |
| 18.7 | 17.3 | 9.4 | 1.4 |

IAD Batch # 97-N263-662-57
Report of Analysis on Sample: 06307

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro- 4.84

Distribution of Vitrinite Reflectance Readings:




Number of Counts (Total= 109 )

V-Type Table for Vitrinites (=100%)

| V- 45 | V- 46 | V-47 | V- 48 |
|---|---|---|---|
| 8.2 | 9.2 | 19.3 | 24.8 |
| V-49 | V-50 | V-51 | |
| 22.9 | 9.2 | 6.4 | |

IAD Batch: 97-N263-662-57

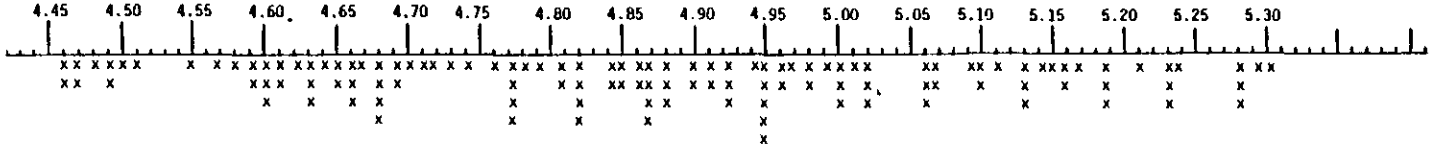
Report of Analysis on Sample: 06308

## REFLECTANCE ANALYSIS

Mean-Maximum Vitrinite Ro: 4.87

Distribution of Vitrinite Reflectance Readings:

%Ro




Number of Counts (Total= 123 )

V-Type Table for Vitrinites (=100%)

| V-44 | V- 45 | V- 46 | V- 47 | V- 48 |
|---|---|---|---|---|
| 5.7 | 5.7 | 17.9 | 9.8 | 15.4 |
| V-49 | V- 50 | V- 51 | V- 52 | V- 53 |
| 15.4 | 10.6 | 11.4 | 7.3 | 0.8 |

1984

# GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — TRUE THICKNESS

DATA SOURCE: KPN NR TRC84004 SEAM : INTERVAL(M) : 1.62 – 3.01 ELEVATION(M) : 1859.2

GEOLOGIST : MCKENZIE SCALE: 1:47 DATE : DEC 18/84 DRAWING NO. :

| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_O$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.62 | | 0.39 | 3.08 | | | | | | | | | | | | |
| | | | 0.08 | 0.09 | | | | | | | | | | | | |
| | | | 0.17 | 3.15 | 100.0 | 1803 | 1803 | 0.74/0.65 1.39 | | 11.17 | 34.62 | 19.96 | 34.25 | 0.24 | 13.54 | 4.18 |
| | | | | 0.16 | | | | | | | | | | | | |
| | | | 0.08 | 0.15 | | | | | | | | | | | | |
| | | | 0.07 | | | | | | | | | | | | | |
| | 3.01 | | | | | | | | | | | | | | | |

PLOT 1 12.04.50 TUES 18 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc. Sample 01804 Pellet #1923/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.55 | 51 | 4.56 |
| 2 | 3.82 | 52 | 3.68 |
| 3 | 3.99 | 53 | 4.11 |
| 4 | 3.97 | 54 | 4.50 |
| 5 | 4.30 | 55 | 4.47 |
| 6 | 3.91 | 56 | 4.26 |
| 7 | 4.52 | 57 | 4.28 |
| 8 | 3.70 | 58 | 4.39 |
| 9 | 4.11 | 59 | 3.83 |
| 10 | 4.54 | 60 | 4.44 |
| 11 | 4.28 | 61 | 4.22 |
| 12 | 3.98 | 62 | 4.08 |
| 13 | 3.87 | 63 | 4.10 |
| 14 | 4.17 | 64 | 4.60 |
| 15 | 4.07 | 65 | 3.65 |
| 16 | 4.07 | 66 | 4.05 |
| 17 | 4.65 | 67 | 4.15 |
| 18 | 4.27 | 68 | 4.69 |
| 19 | 4.48 | 69 | 4.30 |
| 20 | 4.07 | 70 | 4.26 |
| 21 | 4.59 | 71 | 3.83 |
| 22 | 4.64 | 72 | 4.08 |
| 23 | 4.24 | 73 | 4.08 |
| 24 | 4.09 | 74 | 4.38 |
| 25 | 4.11 | 75 | 4.12 |
| 26 | 4.10 | 76 | 4.05 |
| 27 | 3.93 | 77 | 3.71 |
| 28 | 4.34 | 78 | 4.21 |
| 29 | 3.76 | 79 | 4.37 |
| 30 | 4.37 | 80 | 3.77 |
| 31 | 4.21 | 81 | 4.32 |
| 32 | 4.03 | 82 | 4.21 |
| 33 | 4.43 | 83 | 4.07 |
| 34 | 3.97 | 84 | 3.97 |
| 35 | 4.42 | 85 | 4.53 |
| 36 | 3.75 | 86 | 4.37 |
| 37 | 4.63 | 87 | 4.57 |
| 38 | 4.47 | 88 | 4.31 |
| 39 | 4.16 | 89 | 3.69 |
| 40 | 4.06 | 90 | 4.09 |
| 41 | 4.33 | 91 | 4.45 |
| 42 | 4.13 | 92 | 4.20 |
| 43 | 4.15 | 93 | 4.10 |
| 44 | 3.96 | 94 | 4.13 |
| 45 | 4.35 | 95 | 4.20 |
| 46 | 4.29 | 96 | 4.29 |
| 47 | 4.18 | 97 | 4.09 |
| 48 | 3.96 | 98 | 3.80 |
| 49 | 4.11 | 99 | 4.18 |
| 50 | 4.39 | 100 | 4.13 |

# Gulf Canada Resources Inc.
# Sample 01804
# Pellet #1923/1

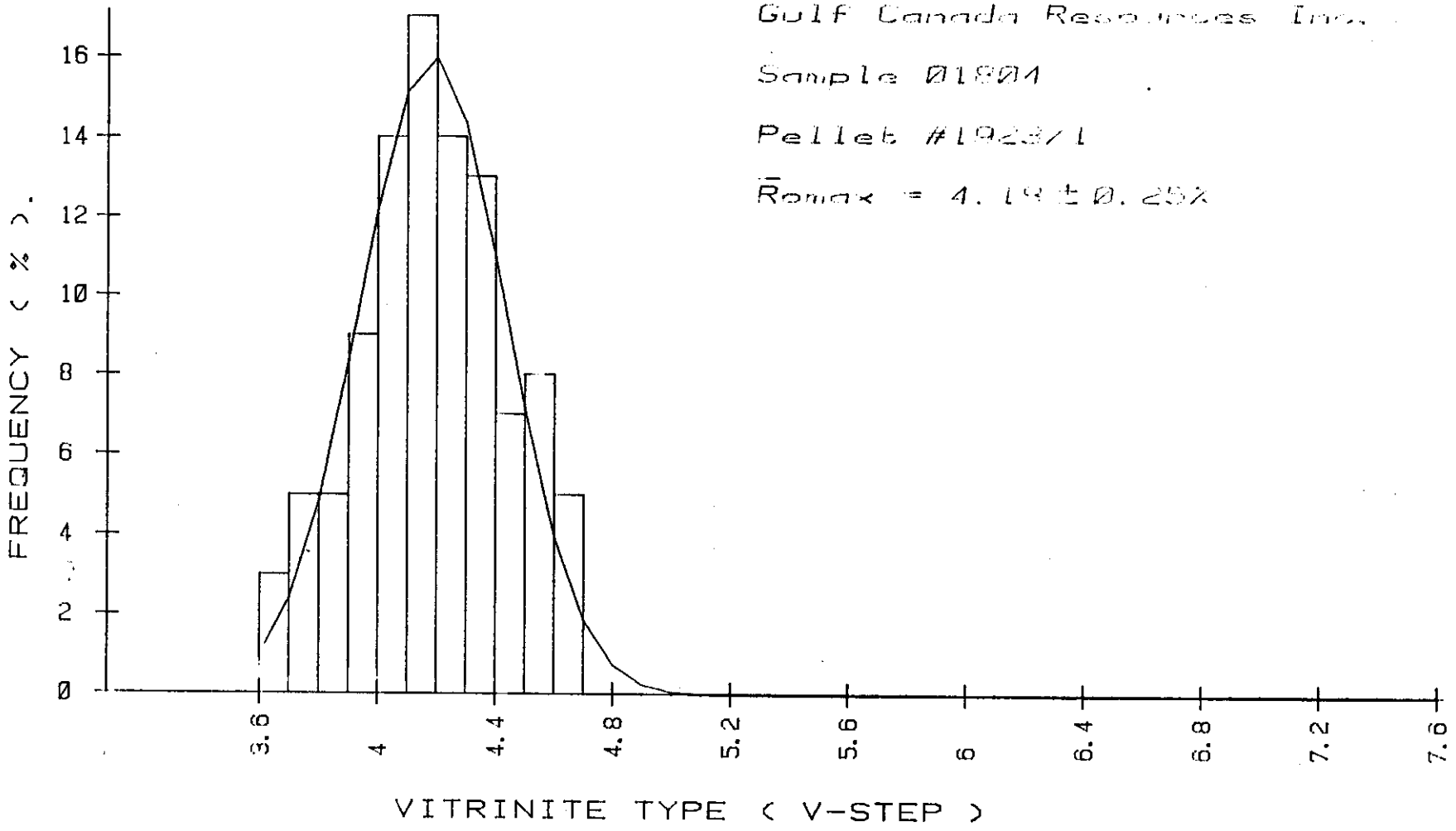
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.18 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 5.96 |
| VARIANCE ..... | 0.0621 |
| STANDARD DEVIATION ..... | 0.2492 |
| SKEWNESS ..... | -0.0845 |
| KURTOSIS ..... | 2.4636 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.60 | 3 | 3.00 |
| 2 | 3.70 | 5 | 5.00 |
| 3 | 3.80 | 5 | 5.00 |
| 4 | 3.90 | 9 | 9.00 |
| 5 | 4.00 | 14 | 14.00 |
| 6 | 4.10 | 17 | 17.00 |
| 7 | 4.20 | 14 | 14.00 |
| 8 | 4.30 | 13 | 13.00 |
| 9 | 4.40 | 7 | 7.00 |
| 10 | 4.50 | 8 | 8.00 |
| 11 | 4.60 | 5 | 5.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

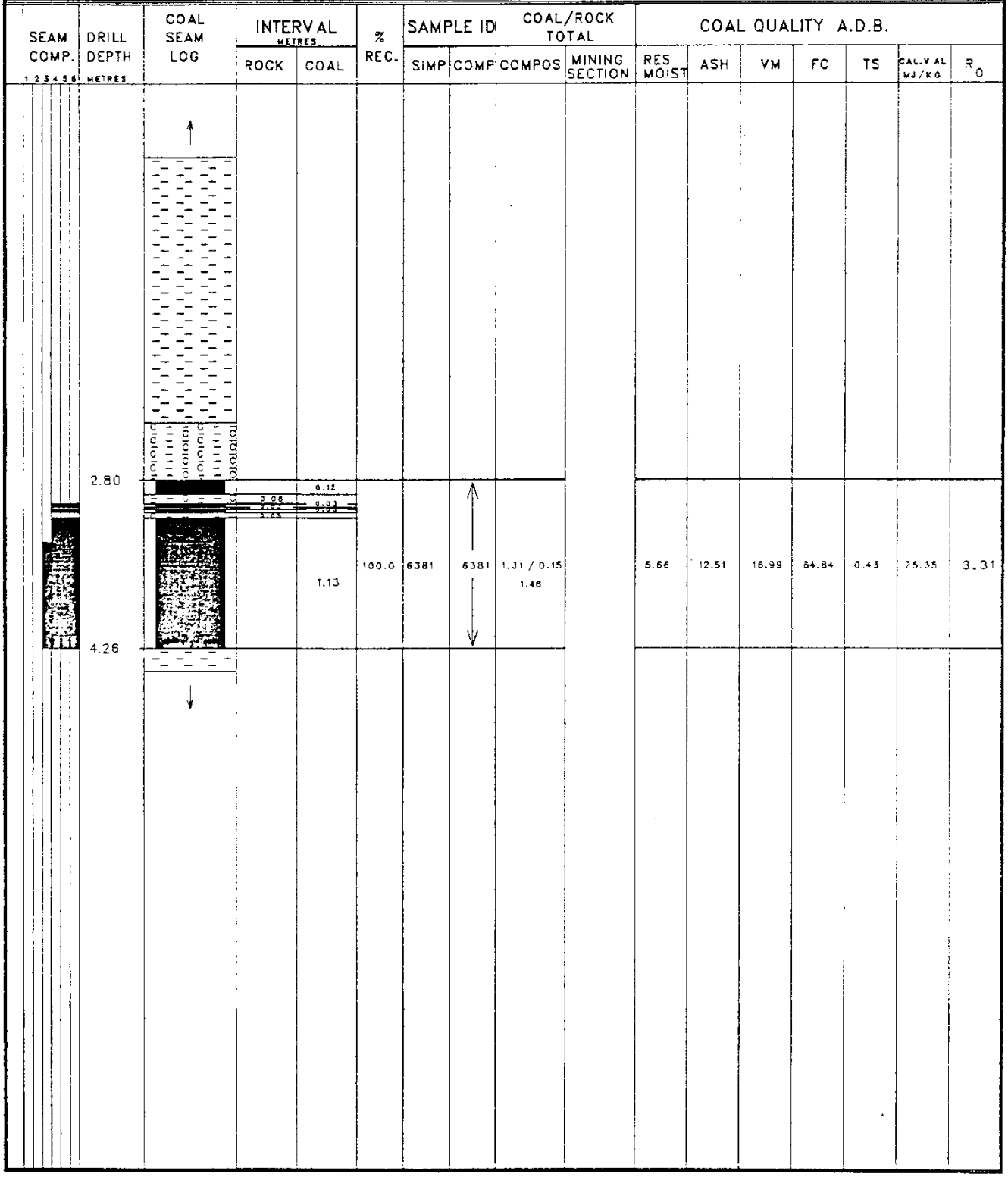
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84006 SEAM : INTERVAL(M) : 2.80 – 4.26 ELEVATION(M) : 1775.0

GEOLOGIST : G. DIX SCALE: 1 : 47 DATE : NOV 30/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_o$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.80 | | | 0.12 | | | | | | | | | | | | |
| | | | 0.08 | 0.93 | | | | | | | | | | | | |
| | | | | 0.05 | | | | | | | | | | | | |
| | | | | 1.13 | 100.0 | 6381 | 6381 | 1.31 / 0.15 1.46 | | 5.66 | 12.51 | 16.99 | 64.84 | 0.43 | 25.35 | 3.31 |
| | 4.26 | | | | | | | | | | | | | | | |

PLOT 1 16.45.47 FRI 30 NOV, 1984 JOB-TSTCE80 GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 06381
# Pellet #1935/1

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 1 | 3.08 |
| 2 | 3.23 |
| 3 | 3.19 |
| 4 | 3.47 |
| 5 | 3.47 |
| 6 | 3.11 |
| 7 | 3.34 |
| 8 | 3.30 |
| 9 | 3.51 |
| 10 | 3.11 |
| 11 | 3.10 |
| 12 | 3.40 |
| 13 | 3.23 |
| 14 | 3.30 |
| 15 | 3.33 |
| 16 | 3.25 |
| 17 | 3.57 |
| 18 | 3.34 |
| 19 | 3.11 |
| 20 | 3.32 |
| 21 | 3.35 |
| 22 | 3.29 |
| 23 | 3.38 |
| 24 | 3.19 |
| 25 | 3.48 |
| 26 | 3.26 |
| 27 | 3.48 |
| 28 | 3.26 |
| 29 | 3.42 |
| 30 | 3.33 |
| 31 | 3.16 |
| 32 | 3.38 |
| 33 | 3.15 |
| 34 | 3.13 |
| 35 | 3.54 |
| 36 | 3.35 |
| 37 | 3.17 |
| 38 | 3.53 |
| 39 | 3.32 |
| 40 | 3.50 |
| 41 | 3.30 |
| 42 | 3.21 |
| 43 | 3.55 |
| 44 | 3.41 |
| 45 | 3.40 |
| 46 | 3.46 |
| 47 | 3.36 |
| 48 | 3.47 |
| 49 | 3.19 |
| 50 | 3.42 |

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 51 | 3.27 |
| 52 | 3.37 |
| 53 | 3.37 |
| 54 | 3.33 |
| 55 | 3.19 |
| 56 | 3.26 |
| 57 | 3.26 |
| 58 | 3.24 |
| 59 | 3.21 |
| 60 | 3.34 |
| 61 | 3.34 |
| 62 | 3.30 |
| 63 | 3.23 |
| 64 | 3.22 |
| 65 | 3.61 |
| 66 | 3.67 |
| 67 | 3.48 |
| 68 | 3.20 |
| 69 | 3.50 |
| 70 | 3.31 |
| 71 | 3.22 |
| 72 | 3.35 |
| 73 | 3.19 |
| 74 | 3.22 |
| 75 | 3.26 |
| 76 | 3.39 |
| 77 | 3.07 |
| 78 | 3.11 |
| 79 | 3.39 |
| 80 | 3.50 |
| 81 | 3.08 |
| 82 | 3.45 |
| 83 | 3.14 |
| 84 | 3.28 |
| 85 | 3.42 |
| 86 | 3.42 |
| 87 | 3.18 |
| 88 | 3.36 |
| 89 | 3.25 |
| 90 | 3.31 |
| 91 | 3.09 |
| 92 | 3.16 |
| 93 | 3.09 |
| 94 | 3.32 |
| 95 | 3.24 |
| 96 | 3.32 |
| 97 | 3.21 |
| 98 | 3.42 |
| 99 | 3.17 |
| 100 | 3.20 |

Gulf Canada Resources Inc.
Sample 06381
Pellet #1935/1

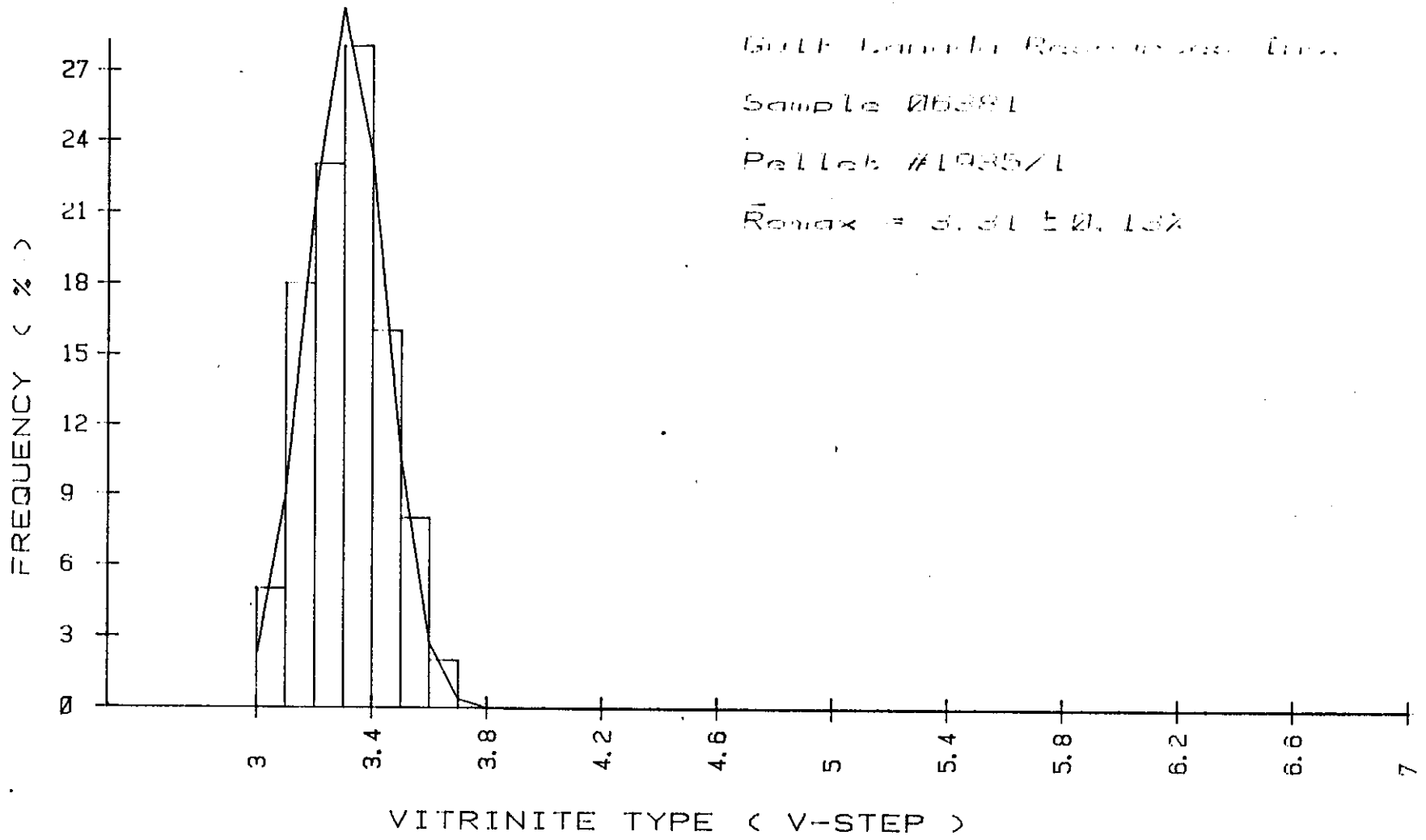
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 3.31 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 4.06 |
| VARIANCE ..... | 0.0180 |
| STANDARD DEVIATION ..... | 0.1343 |
| SKEWNESS ..... | 0.2813 |
| KURTOSIS ..... | 2.4856 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.00 | 5 | 5.00 |
| 2 | 3.10 | 18 | 18.00 |
| 3 | 3.20 | 23 | 23.00 |
| 4 | 3.30 | 28 | 28.00 |
| 5 | 3.40 | 16 | 16.00 |
| 6 | 3.50 | 8 | 8.00 |
| 7 | 3.60 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84007 SEAM : INTERVAL(M) : 0.20 - 1.10 ELEVATION(M) : 1645.0

GEOLOGIST : G. DIX SCALE: 1 : 47 DATE : NOV 30/84 DRAWING NO. :

| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_O$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.20 | | | | | | | | | | | | | | | |
| | | | | 0.90 | 100.0 | 6382 | 6382 | 0.90/ 0.00<br>0.90 | | 2.61 | 16.43 | 12.64 | 68.32 | 0.50 | 25.31 | 3.35 |
| | 1.10 | | | | | | | | | | | | | | | |

PLOT 1 16.45.58 FRI 30 NOV, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 06382
# Pellet #1936/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 3.19 | 51 | 3.45 |
| 2 | 3.46 | 52 | 3.47 |
| 3 | 3.28 | 53 | 3.30 |
| 4 | 3.42 | 54 | 3.42 |
| 5 | 3.47 | 55 | 3.35 |
| 6 | 3.63 | 56 | 3.02 |
| 7 | 3.56 | 57 | 3.37 |
| 8 | 3.35 | 58 | 3.22 |
| 9 | 3.30 | 59 | 3.52 |
| 10 | 3.32 | 60 | 3.38 |
| 11 | 3.32 | 61 | 3.17 |
| 12 | 3.26 | 62 | 3.37 |
| 13 | 3.30 | 63 | 3.40 |
| 14 | 3.31 | 64 | 3.38 |
| 15 | 3.42 | 65 | 3.23 |
| 16 | 3.25 | 66 | 3.36 |
| 17 | 3.42 | 67 | 3.48 |
| 18 | 3.35 | 68 | 3.59 |
| 19 | 3.46 | 69 | 3.49 |
| 20 | 3.25 | 70 | 3.24 |
| 21 | 3.46 | 71 | 3.33 |
| 22 | 3.30 | 72 | 3.84 |
| 23 | 3.39 | 73 | 3.26 |
| 24 | 3.46 | 74 | 3.29 |
| 25 | 3.47 | 75 | 3.21 |
| 26 | 3.30 | 76 | 3.23 |
| 27 | 3.14 | 77 | 3.17 |
| 28 | 3.21 | 78 | 3.40 |
| 29 | 3.45 | 79 | 3.18 |
| 30 | 3.37 | 80 | 3.43 |
| 31 | 3.47 | 81 | 3.44 |
| 32 | 2.98 | 82 | 3.33 |
| 33 | 3.29 | 83 | 3.28 |
| 34 | 3.21 | 84 | 3.40 |
| 35 | 3.27 | 85 | 3.46 |
| 36 | 3.27 | 86 | 3.21 |
| 37 | 3.34 | 87 | 3.40 |
| 38 | 3.48 | 88 | 3.29 |
| 39 | 3.34 | 89 | 3.15 |
| 40 | 3.15 | 90 | 3.27 |
| 41 | 3.12 | 91 | 3.29 |
| 42 | 3.19 | 92 | 3.52 |
| 43 | 3.54 | 93 | 3.42 |
| 44 | 3.39 | 94 | 3.51 |
| 45 | 3.43 | 95 | 3.31 |
| 46 | 3.31 | 96 | 3.36 |
| 47 | 3.42 | 97 | 3.28 |
| 48 | 3.53 | 98 | 3.31 |
| 49 | 3.40 | 99 | 3.41 |
| 50 | 3.31 | 100 | 3.41 |

# Gulf Canada Resources Inc.
# Sample 06382
# Pellet #1936/1

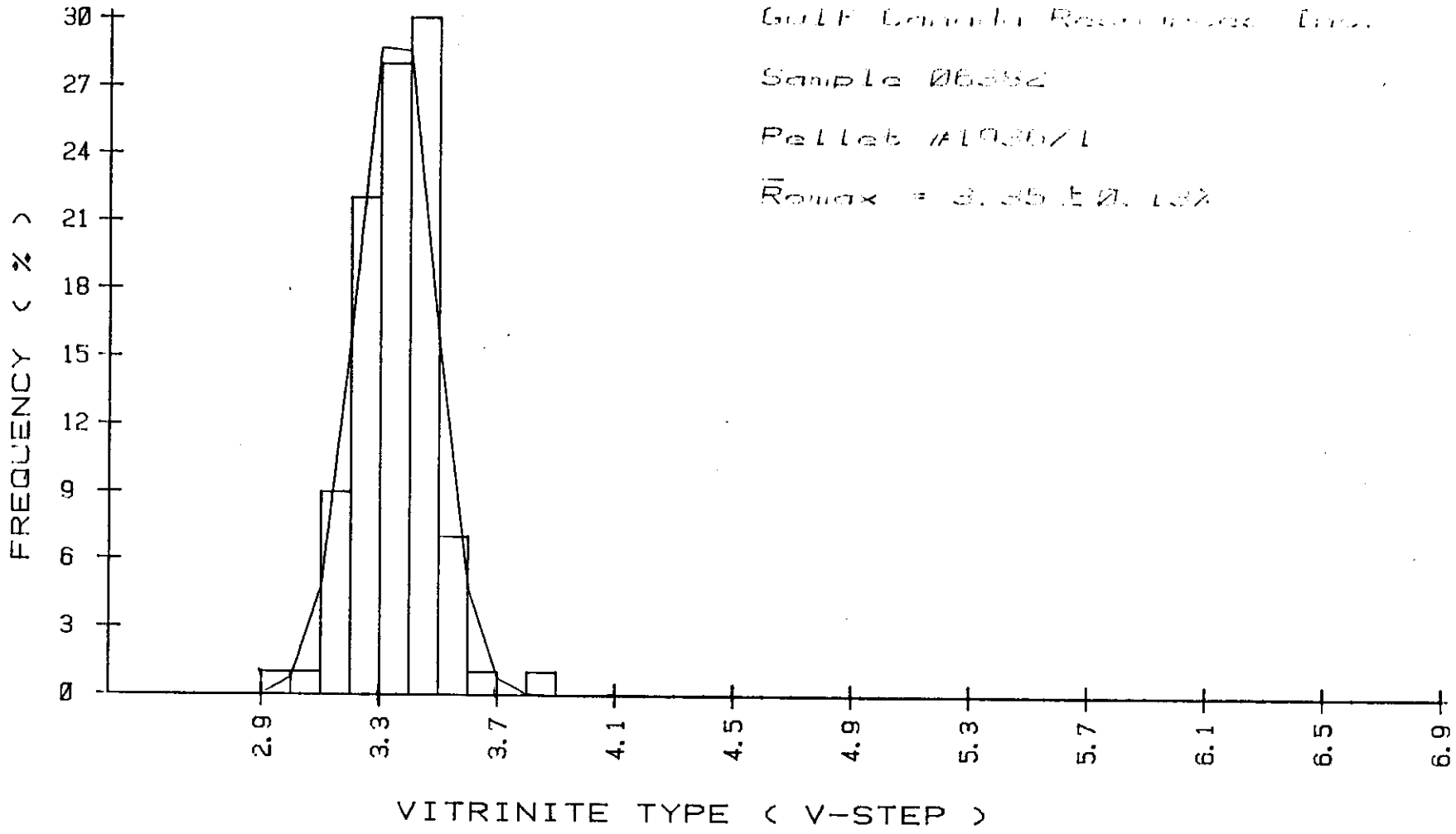
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 3.35 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 3.86 |
| VARIANCE ..... | 0.0167 |
| STANDARD DEVIATION ..... | 0.1292 |
| SKEWNESS ..... | 0.2209 |
| KURTOSIS ..... | 4.5005 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 2.90 | 1 | 1.00 |
| 2 | 3.00 | 1 | 1.00 |
| 3 | 3.10 | 9 | 9.00 |
| 4 | 3.20 | 22 | 22.00 |
| 5 | 3.30 | 28 | 28.00 |
| 6 | 3.40 | 30 | 30.00 |
| 7 | 3.50 | 7 | 7.00 |
| 8 | 3.60 | 1 | 1.00 |
| 10 | 3.80 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

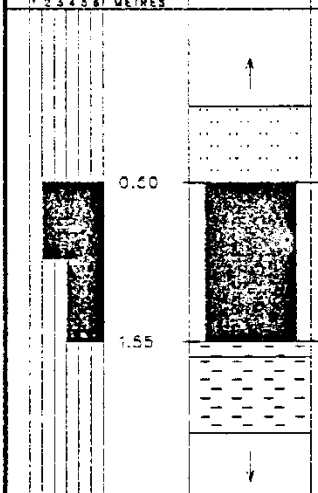
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84010 SEAM : INTERVAL(M) : 0.50 – 1.55 ELEVATION(M) : 1360.0

GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :




| SEAM COMP. 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.50 | | | 1.05 | 100.0 | 4901 | 4901 | 1.05 / 0.00 1.05 | | 1.98 | 2.94 | 9.31 | 85.77 | 0.56 | 32.92 | 3.11 |
| | 1.55 | | | | | | | | | | | | | | | |

PLOT 1 10.03.49 TUES 4 DEC, 1984 JOB-TSTCC60 GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc. Sample 04901 Pellet #1929/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 3.20 | 51 | 3.09 |
| 2 | 2.97 | 52 | 3.10 |
| 3 | 3.19 | 53 | 3.05 |
| 4 | 3.24 | 54 | 2.97 |
| 5 | 3.02 | 55 | 3.12 |
| 6 | 3.19 | 56 | 3.15 |
| 7 | 3.04 | 57 | 3.08 |
| 8 | 3.15 | 58 | 3.09 |
| 9 | 3.27 | 59 | 3.02 |
| 10 | 3.07 | 60 | 3.13 |
| 11 | 3.03 | 61 | 3.06 |
| 12 | 2.97 | 62 | 3.22 |
| 13 | 3.10 | 63 | 3.19 |
| 14 | 3.15 | 64 | 3.10 |
| 15 | 3.05 | 65 | 2.92 |
| 16 | 3.03 | 66 | 2.99 |
| 17 | 3.06 | 67 | 3.15 |
| 18 | 3.18 | 68 | 3.14 |
| 19 | 3.10 | 69 | 2.98 |
| 20 | 3.12 | 70 | 3.42 |
| 21 | 3.10 | 71 | 2.92 |
| 22 | 3.17 | 72 | 2.99 |
| 23 | 3.03 | 73 | 3.06 |
| 24 | 3.00 | 74 | 3.09 |
| 25 | 3.10 | 75 | 3.03 |
| 26 | 3.22 | 76 | 2.89 |
| 27 | 3.09 | 77 | 3.12 |
| 28 | 3.16 | 78 | 3.17 |
| 29 | 3.38 | 79 | 3.22 |
| 30 | 3.03 | 80 | 3.31 |
| 31 | 3.01 | 81 | 3.04 |
| 32 | 3.05 | 82 | 3.23 |
| 33 | 3.09 | 83 | 3.04 |
| 34 | 3.33 | 84 | 3.16 |
| 35 | 2.92 | 85 | 3.12 |
| 36 | 3.07 | 86 | 3.11 |
| 37 | 3.15 | 87 | 3.04 |
| 38 | 3.24 | 88 | 3.40 |
| 39 | 3.19 | 89 | 3.25 |
| 40 | 3.00 | 90 | 3.15 |
| 41 | 3.13 | 91 | 3.18 |
| 42 | 3.21 | 92 | 3.11 |
| 43 | 2.98 | 93 | 3.06 |
| 44 | 3.19 | 94 | 3.09 |
| 45 | 3.09 | 95 | 3.09 |
| 46 | 3.18 | 96 | 3.24 |
| 47 | 2.93 | 97 | 3.13 |
| 48 | 3.09 | 98 | 3.07 |
| 49 | 3.13 | 99 | 2.99 |
| 50 | 3.01 | 100 | 3.14 |

# Gulf Canada Resources Inc.
# Sample 04901
# Pellet #1929/1

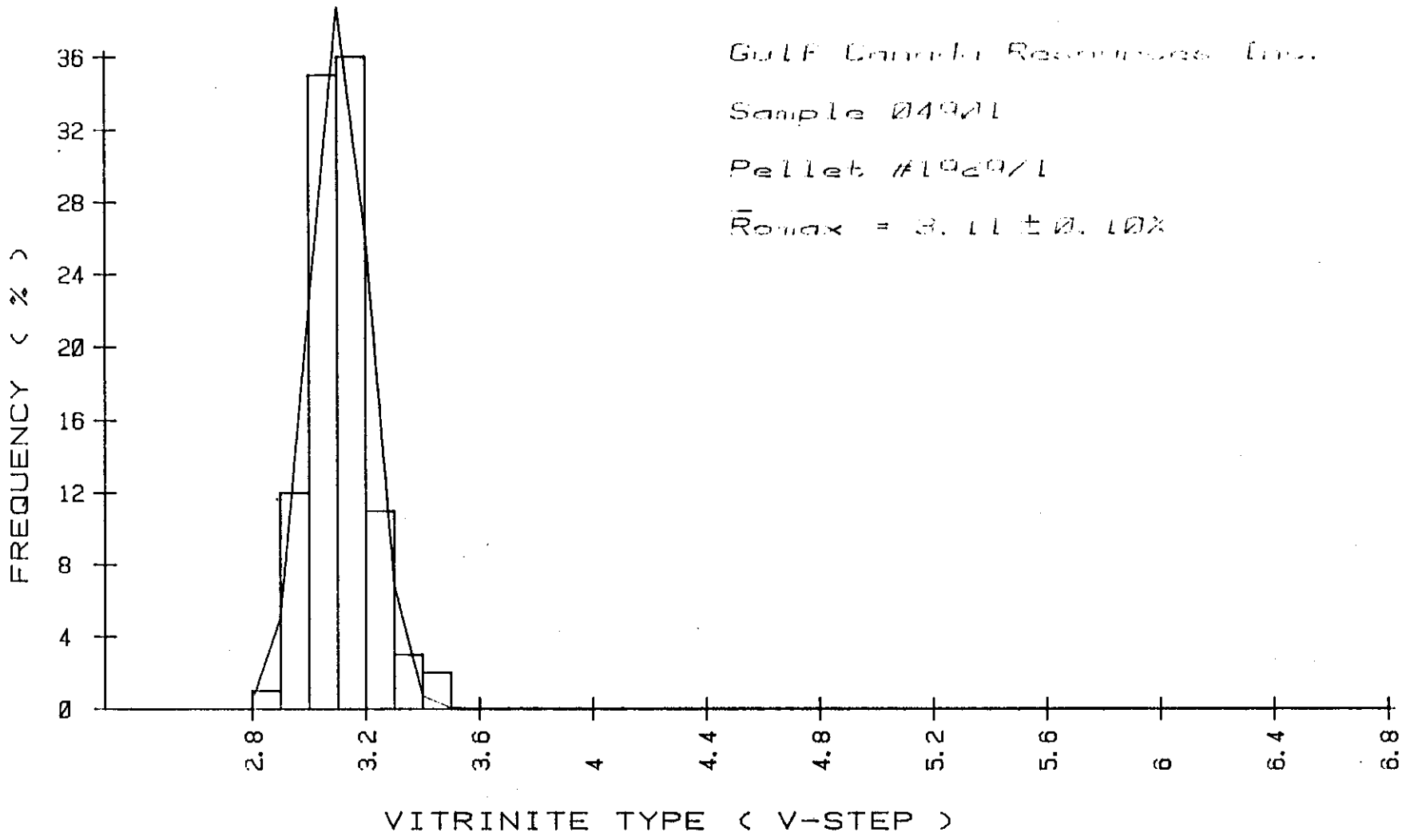
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 3.11 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 3.31 |
| VARIANCE ..... | 0.0106 |
| STANDARD DEVIATION ..... | 0.1028 |
| SKEWNESS ..... | 0.5399 |
| KURTOSIS ..... | 3.6275 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 2.80 | 1 | 1.00 |
| 2 | 2.90 | 12 | 12.00 |
| 3 | 3.00 | 35 | 35.00 |
| 4 | 3.10 | 36 | 36.00 |
| 5 | 3.20 | 11 | 11.00 |
| 6 | 3.30 | 3 | 3.00 |
| 7 | 3.40 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

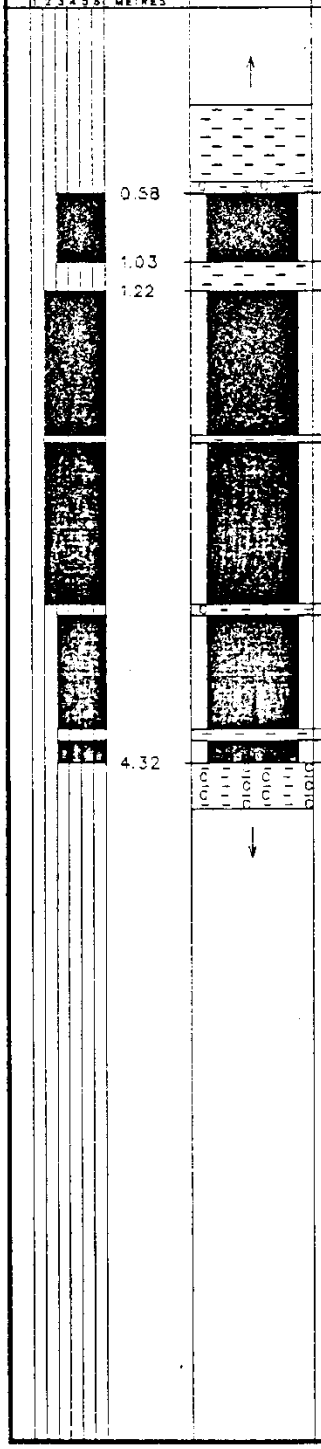
SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84011 SEAM : INTERVAL(M) : 0.58 - 4.32 ELEVATION(M) : 1185.0

GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 04/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.58 | | | 0.45 | 100.0 | 4902 | 4902 | 3.36/0.38 3.74 | | 2.00 | 32.37 | 35.42 | 60.21 | 0.53 | 21.55 | 0.39 |
| | 1.03 | | 0.19 | | 100.0 | 4903 | | | | | | | | | | |
| | 1.22 | | | 0.95 | | | | | | | | | | | | |
| | | | 0.35 | | | | | | | | | | | | | |
| | | | | 1.06 | 100.0 | 4904 | | | | | | | | | | |
| | | | 0.07 | | | | | | | | | | | | | |
| | | | | 0.75 | | | | | | | | | | | | |
| | | | 0.07 | | | | | | | | | | | | | |
| | 4.32 | | | 0.15 | | | | | | | | | | | | |

PLOT 1 10.03.54 TUES 4 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc. Sample 04902-04 composite Pellet #1930D

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.13 | 51 | 4.22 |
| 2 | 4.24 | 52 | 4.35 |
| 3 | 4.42 | 53 | 4.34 |
| 4 | 4.20 | 54 | 4.67 |
| 5 | 4.39 | 55 | 4.11 |
| 6 | 4.30 | 56 | 4.14 |
| 7 | 4.30 | 57 | 4.44 |
| 8 | 4.83 | 58 | 4.28 |
| 9 | 4.31 | 59 | 4.45 |
| 10 | 4.45 | 60 | 4.62 |
| 11 | 4.43 | 61 | 4.45 |
| 12 | 4.36 | 62 | 4.29 |
| 13 | 4.70 | 63 | 4.44 |
| 14 | 3.93 | 64 | 4.25 |
| 15 | 4.49 | 65 | 4.32 |
| 16 | 4.91 | 66 | 3.89 |
| 17 | 4.28 | 67 | 4.08 |
| 18 | 4.26 | 68 | 4.74 |
| 19 | 4.62 | 69 | 4.22 |
| 20 | 4.36 | 70 | 4.12 |
| 21 | 3.96 | 71 | 4.14 |
| 22 | 4.46 | 72 | 4.88 |
| 23 | 4.48 | 73 | 4.39 |
| 24 | 4.42 | 74 | 4.62 |
| 25 | 4.41 | 75 | 4.44 |
| 26 | 4.99 | 76 | 4.65 |
| 27 | 4.44 | 77 | 4.39 |
| 28 | 4.40 | 78 | 4.27 |
| 29 | 4.38 | 79 | 4.38 |
| 30 | 4.10 | 80 | 4.01 |
| 31 | 4.26 | 81 | 4.76 |
| 32 | 4.51 | 82 | 4.43 |
| 33 | 4.23 | 83 | 4.56 |
| 34 | 4.50 | 84 | 3.95 |
| 35 | 4.62 | 85 | 4.47 |
| 36 | 4.18 | 86 | 4.04 |
| 37 | 4.58 | 87 | 4.48 |
| 38 | 4.46 | 88 | 4.35 |
| 39 | 4.56 | 89 | 4.28 |
| 40 | 4.23 | 90 | 4.15 |
| 41 | 4.35 | 91 | 3.99 |
| 42 | 4.37 | 92 | 4.45 |
| 43 | 4.35 | 93 | 4.55 |
| 44 | 4.68 | 94 | 4.22 |
| 45 | 4.43 | 95 | 4.45 |
| 46 | 4.37 | 96 | 4.68 |
| 47 | 4.36 | 97 | 4.47 |
| 48 | 4.16 | 98 | 4.70 |
| 49 | 4.64 | 99 | 4.12 |
| 50 | 3.87 | 100 | 4.15 |

# Gulf Canada Resources Inc.
# Sample 04902-04 composite
# Pellet #1930D

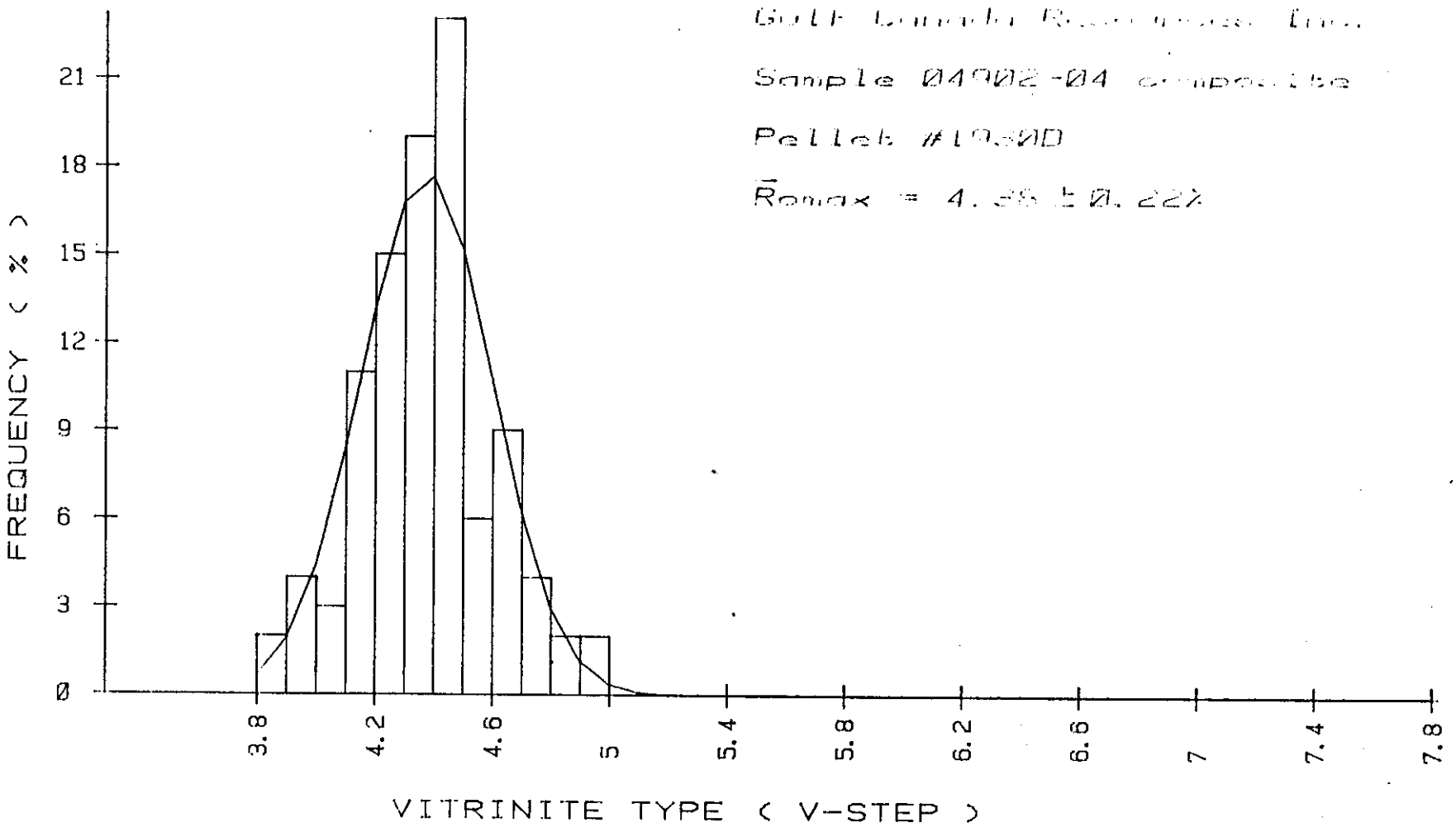
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.38 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 5.14 |
| VARIANCE ..... | 0.0506 |
| STANDARD DEVIATION ..... | 0.2249 |
| SKEWNESS ..... | 0.1500 |
| KURTOSIS ..... | 3.0920 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.80 | 2 | 2.00 |
| 2 | 3.90 | 4 | 4.00 |
| 3 | 4.00 | 3 | 3.00 |
| 4 | 4.10 | 11 | 11.00 |
| 5 | 4.20 | 15 | 15.00 |
| 6 | 4.30 | 19 | 19.00 |
| 7 | 4.40 | 23 | 23.00 |
| 8 | 4.50 | 6 | 6.00 |
| 9 | 4.60 | 9 | 9.00 |
| 10 | 4.70 | 4 | 4.00 |
| 11 | 4.80 | 2 | 2.00 |
| 12 | 4.90 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — TRUE THICKNESS

DATA SOURCE: KPN NR TRC84012 SEAM : INTERVAL(M) : 0.50 – 1.50 ELEVATION(M) : 1190.0

GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 19/84 DRAWING NO. :

| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.V A.: MJ/KG | $R_o$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.50 | | | | | | | | | | | | | | | |
| | | | | 1.00 | 100.0 | 4905 | 4905 | 100/0.00 1.00 | | 1.62 | 25.21 | 6.20 | 66.97 | 0.35 | 24.57 | 4.62 |
| | 1.50 | | | | | | | | | | | | | | | |

PLOT 1 12.09.13 TUES 18 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 04905
# Pellet #1931/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.63 | 51 | 4.69 |
| 2 | 4.67 | 52 | 4.71 |
| 3 | 4.90 | 53 | 4.85 |
| 4 | 4.99 | 54 | 4.89 |
| 5 | 4.68 | 55 | 4.53 |
| 6 | 4.42 | 56 | 4.22 |
| 7 | 4.32 | 57 | 4.58 |
| 8 | 4.16 | 58 | 4.59 |
| 9 | 4.54 | 59 | 4.89 |
| 10 | 4.57 | 60 | 4.65 |
| 11 | 4.58 | 61 | 4.85 |
| 12 | 4.31 | 62 | 4.74 |
| 13 | 4.04 | 63 | 4.38 |
| 14 | 4.55 | 64 | 4.48 |
| 15 | 4.39 | 65 | 4.49 |
| 16 | 4.75 | 66 | 4.76 |
| 17 | 4.41 | 67 | 4.86 |
| 18 | 4.72 | 68 | 4.84 |
| 19 | 4.52 | 69 | 4.70 |
| 20 | 4.15 | 70 | 4.91 |
| 21 | 4.28 | 71 | 4.55 |
| 22 | 4.74 | 72 | 4.80 |
| 23 | 4.47 | 73 | 4.78 |
| 24 | 4.53 | 74 | 4.50 |
| 25 | 5.07 | 75 | 4.49 |
| 26 | 4.53 | 76 | 4.62 |
| 27 | 4.97 | 77 | 4.69 |
| 28 | 4.35 | 78 | 4.34 |
| 29 | 4.92 | 79 | 4.54 |
| 30 | 4.90 | 80 | 4.74 |
| 31 | 4.51 | 81 | 4.52 |
| 32 | 5.06 | 82 | 4.67 |
| 33 | 4.37 | 83 | 4.63 |
| 34 | 4.99 | 84 | 4.73 |
| 35 | 4.71 | 85 | 4.53 |
| 36 | 4.55 | 86 | 4.97 |
| 37 | 4.84 | 87 | 4.35 |
| 38 | 4.96 | 88 | 4.65 |
| 39 | 4.55 | 89 | 4.52 |
| 40 | 4.47 | 90 | 4.70 |
| 41 | 4.47 | 91 | 4.49 |
| 42 | 4.43 | 92 | 4.59 |
| 43 | 4.81 | 93 | 4.34 |
| 44 | 4.72 | 94 | 4.76 |
| 45 | 4.58 | 95 | 4.61 |
| 46 | 4.58 | 96 | 4.64 |
| 47 | 4.58 | 97 | 4.38 |
| 48 | 4.88 | 98 | 4.04 |
| 49 | 4.65 | 99 | 4.90 |
| 50 | 4.81 | 100 | 4.34 |

# Gulf Canada Resources Inc.
# Sample 04905
# Pellet #1931/1

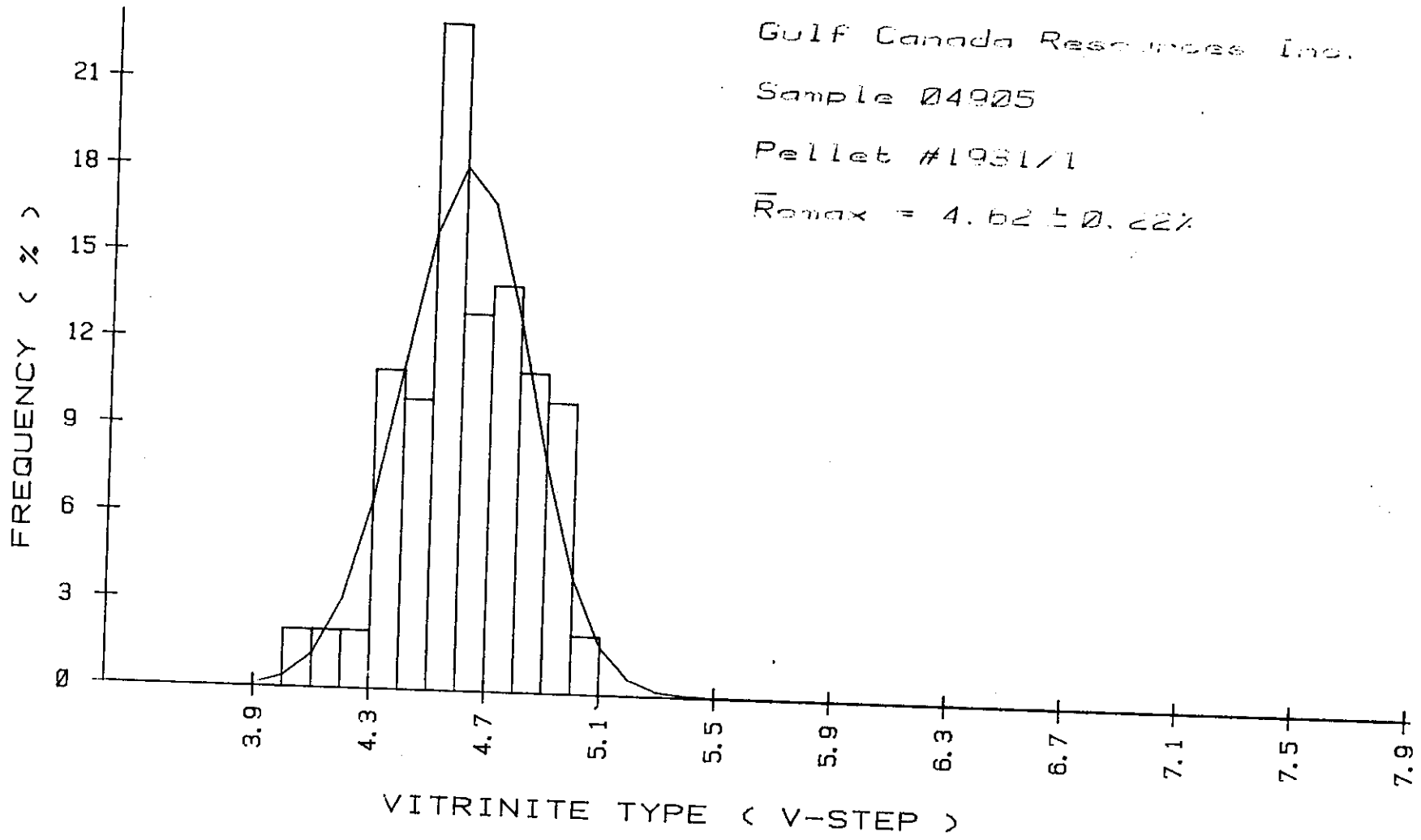
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.62 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.77 |
| VARIANCE ..... | 0.0484 |
| STANDARD DEVIATION ..... | 0.2201 |
| SKEWNESS ..... | -0.2193 |
| KURTOSIS ..... | 2.8346 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 4.00 | 2 | 2.00 |
| 3 | 4.10 | 2 | 2.00 |
| 4 | 4.20 | 2 | 2.00 |
| 5 | 4.30 | 11 | 11.00 |
| 6 | 4.40 | 10 | 10.00 |
| 7 | 4.50 | 23 | 23.00 |
| 8 | 4.60 | 13 | 13.00 |
| 9 | 4.70 | 14 | 14.00 |
| 10 | 4.80 | 11 | 11.00 |
| 11 | 4.90 | 10 | 10.00 |
| 12 | 5.00 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

SEAM DETAIL

COAL DIVISION
MOUNT KLAPPAN PROJECT

TRUE THICKNESS

DATA SOURCE: KPN NR TRC84014 SEAM : INTERVAL(M) : 0.00 – 2.16 ELEVATION(M) : 1420.0

GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 11/84 DRAWING NO. :

| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.V AL MJ/KG | RO |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.00 | | | 0.25 | | | | | | | | | | | | |
| | | | 0.15 | | | | | | | | | | | | | |
| | | | | 1.00 | 100.0 | 4906 | 4906 | 1.85 / 0.21 2.16 | | 5.41 | 21.31 | 17.14 | 56.14 | 0.36 | 21.36 | 4.61 |
| | | | 0.36 | | | | | | | | | | | | | |
| | | | | 0.70 | | | | | | | | | | | | |
| | 2.16 | | | | | | | | | | | | | | | |

PLOT 1 09.25.30 TUES 11 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 04906
# Pellet #1932/1

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 1 | 4.51 |
| 2 | 5.10 |
| 3 | 4.86 |
| 4 | 5.00 |
| 5 | 4.30 |
| 6 | 4.64 |
| 7 | 4.50 |
| 8 | 4.36 |
| 9 | 4.50 |
| 10 | 4.56 |
| 11 | 4.60 |
| 12 | 4.67 |
| 13 | 4.44 |
| 14 | 4.44 |
| 15 | 4.37 |
| 16 | 4.70 |
| 17 | 4.71 |
| 18 | 4.46 |
| 19 | 4.51 |
| 20 | 4.79 |
| 21 | 4.60 |
| 22 | 5.02 |
| 23 | 4.72 |
| 24 | 4.05 |
| 25 | 4.73 |
| 26 | 4.42 |
| 27 | 4.64 |
| 28 | 4.47 |
| 29 | 5.00 |
| 30 | 4.99 |
| 31 | 4.32 |
| 32 | 4.76 |
| 33 | 4.63 |
| 34 | 4.20 |
| 35 | 4.58 |
| 36 | 4.69 |
| 37 | 4.81 |
| 38 | 4.67 |
| 39 | 4.22 |
| 40 | 4.40 |
| 41 | 4.21 |
| 42 | 4.86 |
| 43 | 4.60 |
| 44 | 4.50 |
| 45 | 4.31 |
| 46 | 4.27 |
| 47 | 4.91 |
| 48 | 4.52 |
| 49 | 4.99 |
| 50 | 4.78 |

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 51 | 5.00 |
| 52 | 4.51 |
| 53 | 4.77 |
| 54 | 4.60 |
| 55 | 4.43 |
| 56 | 4.28 |
| 57 | 4.43 |
| 58 | 4.71 |
| 59 | 4.45 |
| 60 | 4.33 |
| 61 | 4.31 |
| 62 | 4.75 |
| 63 | 4.54 |
| 64 | 4.42 |
| 65 | 4.87 |
| 66 | 4.94 |
| 67 | 4.65 |
| 68 | 4.81 |
| 69 | 4.34 |
| 70 | 5.03 |
| 71 | 4.62 |
| 72 | 4.59 |
| 73 | 4.94 |
| 74 | 4.42 |
| 75 | 4.59 |
| 76 | 4.49 |
| 77 | 4.46 |
| 78 | 4.38 |
| 79 | 4.86 |
| 80 | 4.66 |
| 81 | 4.58 |
| 82 | 4.49 |
| 83 | 4.32 |
| 84 | 4.84 |
| 85 | 4.92 |
| 86 | 4.73 |
| 87 | 4.49 |
| 88 | 4.64 |
| 89 | 4.82 |
| 90 | 4.97 |
| 91 | 4.73 |
| 92 | 4.76 |
| 93 | 4.42 |
| 94 | 4.30 |
| 95 | 4.76 |
| 96 | 4.67 |
| 97 | 4.93 |
| 98 | 4.38 |
| 99 | 4.84 |
| 100 | 4.77 |

# Gulf Canada Resources Inc.
# Sample 04906
# Pellet #1932/1

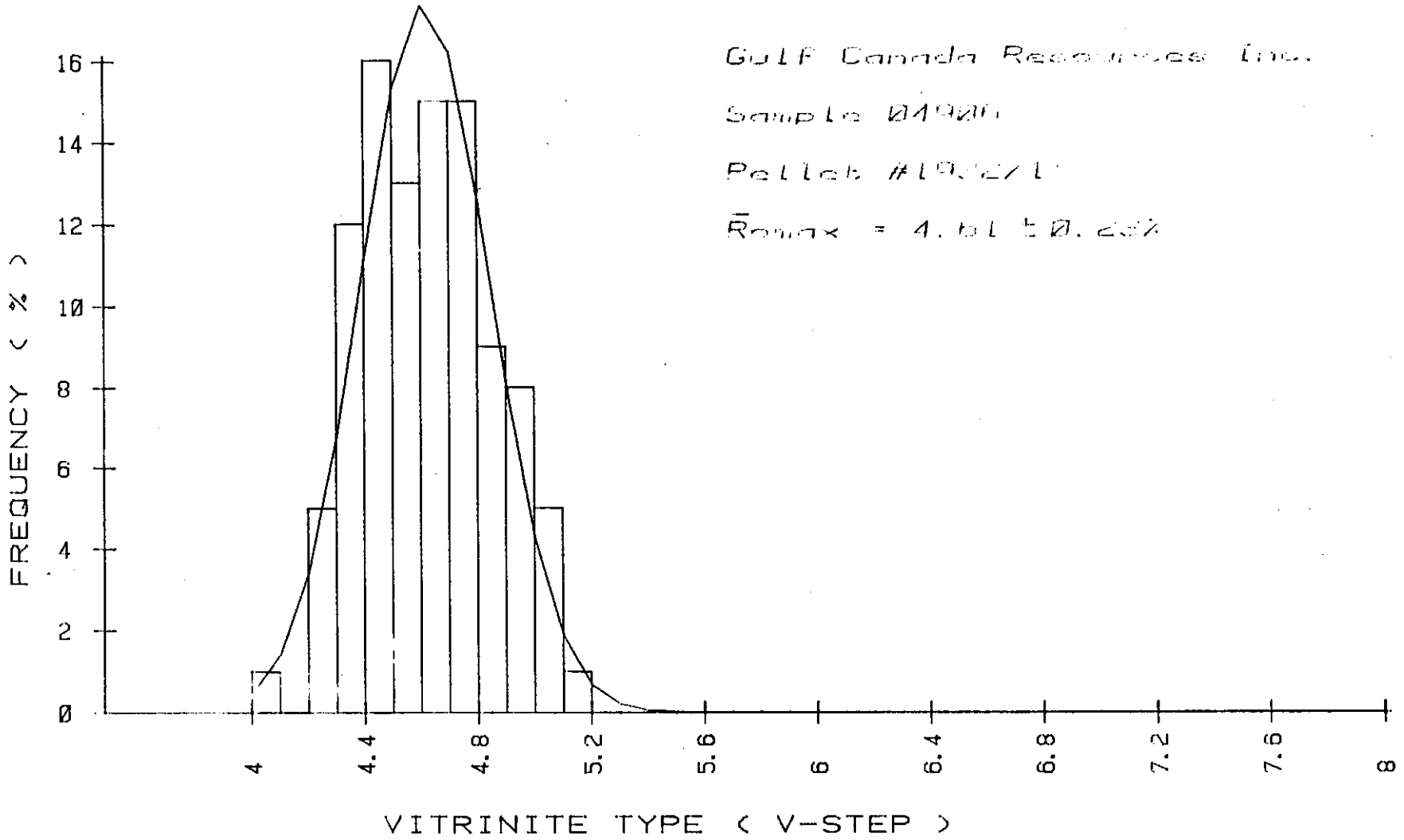
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.61 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.98 |
| VARIANCE ..... | 0.0527 |
| STANDARD DEVIATION ..... | 0.2297 |
| SKEWNESS ..... | 0.0499 |
| KURTOSIS ..... | 2.2602 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 4.00 | 1 | 1.00 |
| 3 | 4.20 | 5 | 5.00 |
| 4 | 4.30 | 12 | 12.00 |
| 5 | 4.40 | 16 | 16.00 |
| 6 | 4.50 | 13 | 13.00 |
| 7 | 4.60 | 15 | 15.00 |
| 8 | 4.70 | 15 | 15.00 |
| 9 | 4.80 | 9 | 9.00 |
| 10 | 4.90 | 8 | 8.00 |
| 11 | 5.00 | 5 | 5.00 |
| 12 | 5.10 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION



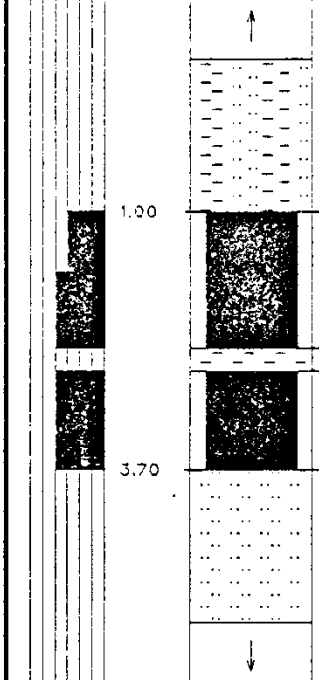

David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

**SEAM DETAIL** — COAL DIVISION — MOUNT KLAPPAN PROJECT — **TRUE THICKNESS**

DATA SOURCE: KPN NR TRC84015 SEAM : INTERVAL(M) : 1.00 – 3.70 ELEVATION(M) : 1341.0

GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 18/84 DRAWING NO. :




| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_o$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.00 | | | 0.90 | 100.0 | 4907 | 4907 | 1.55/0.15<br>1.70 | | 5.93 | 32.31 | 18.23 | 43.53 | 0.25 | 16.76 | 4.27<br>4.33 |
| | | | 0.13 | | | | | | | | | | | | | |
| | 3.70 | | | 0.65 | | | | | | | | | | | | |

PLOT 1 12.04.58 TUES 18 DEC, 1984 JOB-TSTCEGO GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For
# Gulf Canada Resources Inc.
# Sample 04907
# Pellet #1933/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 4.23 | 51 | 4.40 |
| 2 | 4.10 | 52 | 3.95 |
| 3 | 4.43 | 53 | 4.55 |
| 4 | 4.27 | 54 | 4.10 |
| 5 | 4.26 | 55 | 4.82 |
| 6 | 4.23 | 56 | 4.01 |
| 7 | 4.36 | 57 | 4.48 |
| 8 | 4.20 | 58 | 4.30 |
| 9 | 4.30 | 59 | 4.47 |
| 10 | 4.09 | 60 | 4.58 |
| 11 | 4.14 | 61 | 4.33 |
| 12 | 4.18 | 62 | 4.59 |
| 13 | 4.12 | 63 | 4.50 |
| 14 | 4.15 | 64 | 4.27 |
| 15 | 4.36 | 65 | 4.58 |
| 16 | 4.15 | 66 | 4.50 |
| 17 | 4.14 | 67 | 4.40 |
| 18 | 4.24 | 68 | 4.72 |
| 19 | 4.09 | 69 | 4.39 |
| 20 | 4.30 | 70 | 4.52 |
| 21 | 4.61 | 71 | 4.25 |
| 22 | 4.15 | 72 | 4.17 |
| 23 | 4.53 | 73 | 4.65 |
| 24 | 4.59 | 74 | 4.44 |
| 25 | 4.51 | 75 | 4.51 |
| 26 | 4.42 | 76 | 4.27 |
| 27 | 4.58 | 77 | 4.48 |
| 28 | 4.69 | 78 | 4.34 |
| 29 | 4.12 | 79 | 4.32 |
| 30 | 4.63 | 80 | 4.14 |
| 31 | 4.57 | 81 | 4.71 |
| 32 | 4.14 | 82 | 4.30 |
| 33 | 4.13 | 83 | 4.29 |
| 34 | 4.47 | 84 | 4.08 |
| 35 | 4.20 | 85 | 3.99 |
| 36 | 4.30 | 86 | 4.56 |
| 37 | 4.20 | 87 | 4.15 |
| 38 | 4.12 | 88 | 4.37 |
| 39 | 4.27 | 89 | 4.38 |
| 40 | 4.45 | 90 | 4.09 |
| 41 | 4.72 | 91 | 4.06 |
| 42 | 4.49 | 92 | 4.29 |
| 43 | 4.27 | 93 | 4.12 |
| 44 | 4.19 | 94 | 3.96 |
| 45 | 4.11 | 95 | 4.15 |
| 46 | 4.24 | 96 | 4.00 |
| 47 | 4.88 | 97 | 4.20 |
| 48 | 4.28 | 98 | 4.55 |
| 49 | 4.50 | 99 | 4.02 |
| 50 | 4.46 | 100 | 4.48 |

# Gulf Canada Resources Inc.
# Sample 04907
# Pellet #1933/1

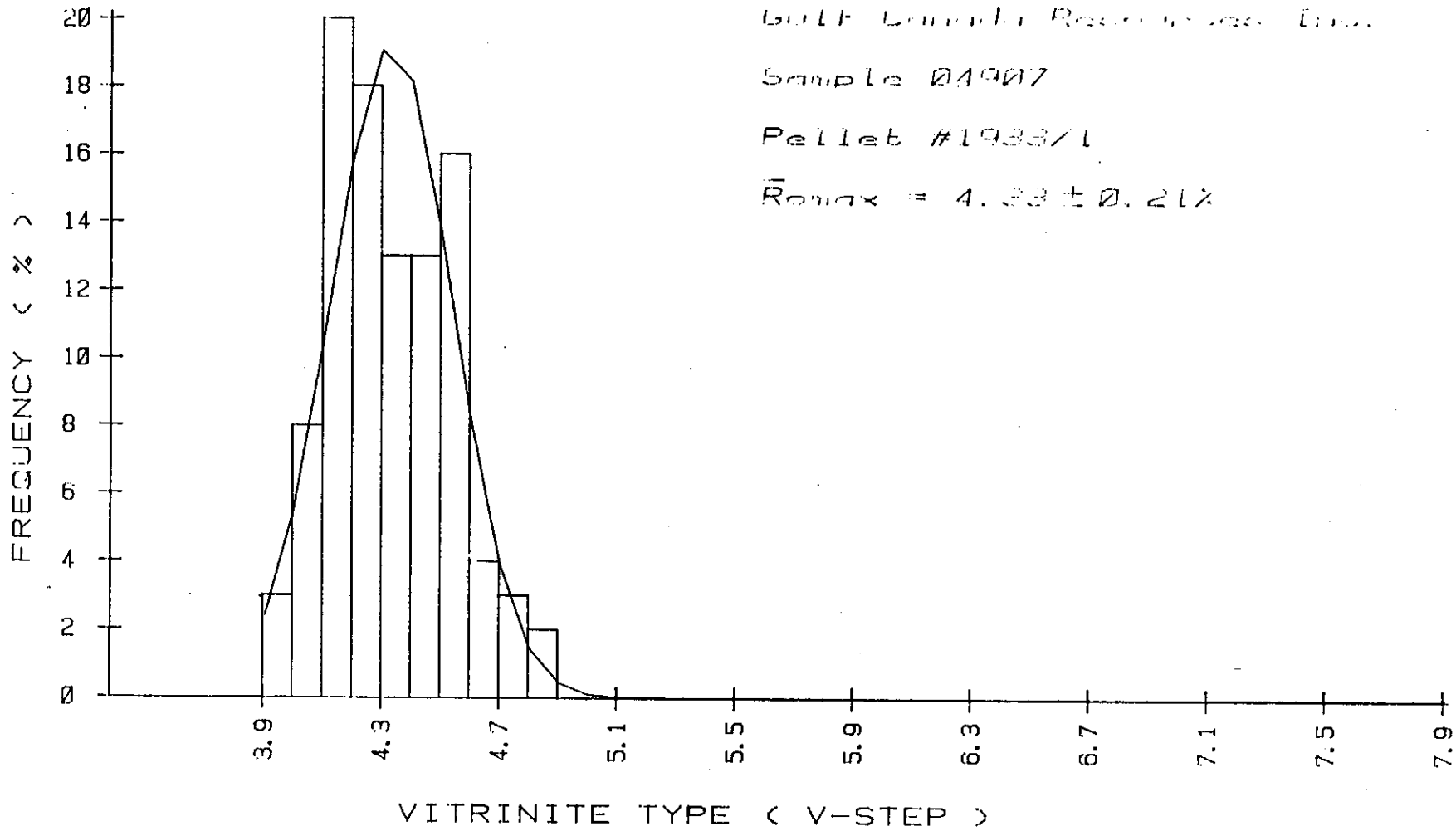
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.33 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.79 |
| VARIANCE ..... | 0.0431 |
| STANDARD DEVIATION ..... | 0.2075 |
| SKEWNESS ..... | 0.3528 |
| KURTOSIS ..... | 2.4002 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 3.90 | 3 | 3.00 |
| 2 | 4.00 | 8 | 8.00 |
| 3 | 4.10 | 20 | 20.00 |
| 4 | 4.20 | 18 | 18.00 |
| 5 | 4.30 | 13 | 13.00 |
| 6 | 4.40 | 13 | 13.00 |
| 7 | 4.50 | 16 | 16.00 |
| 8 | 4.60 | 4 | 4.00 |
| 9 | 4.70 | 3 | 3.00 |
| 10 | 4.80 | 2 | 2.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# Vitrinite Reflectance Data For Gulf Canada Resources Inc. Sample 04907 Pellet #1933/1

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 1 | 4.50 |
| 2 | 4.17 |
| 3 | 4.11 |
| 4 | 4.51 |
| 5 | 4.62 |
| 6 | 3.93 |
| 7 | 4.20 |
| 8 | 4.10 |
| 9 | 4.54 |
| 10 | 4.14 |
| 11 | 4.43 |
| 12 | 4.31 |
| 13 | 4.12 |
| 14 | 3.96 |
| 15 | 4.11 |
| 16 | 4.20 |
| 17 | 4.14 |
| 18 | 4.05 |
| 19 | 4.13 |
| 20 | 4.31 |
| 21 | 4.17 |
| 22 | 4.47 |
| 23 | 4.29 |
| 24 | 4.36 |
| 25 | 4.18 |
| 26 | 4.07 |
| 27 | 4.21 |
| 28 | 4.10 |
| 29 | 4.32 |
| 30 | 4.16 |
| 31 | 4.18 |
| 32 | 4.29 |
| 33 | 4.48 |
| 34 | 4.43 |
| 35 | 4.18 |
| 36 | 4.55 |
| 37 | 4.52 |
| 38 | 4.05 |
| 39 | 4.06 |
| 40 | 4.25 |
| 41 | 4.43 |
| 42 | 4.62 |
| 43 | 4.26 |
| 44 | 4.31 |
| 45 | 4.35 |
| 46 | 3.94 |
| 47 | 4.38 |
| 48 | 4.56 |
| 49 | 4.14 |
| 50 | 4.36 |

| OBSERVATION NUMBER | ROMAX VALUE |
|---|---|
| 51 | 4.23 |
| 52 | 4.49 |
| 53 | 4.68 |
| 54 | 4.20 |
| 55 | 4.16 |
| 56 | 4.49 |
| 57 | 4.24 |
| 58 | 4.42 |
| 59 | 4.29 |
| 60 | 4.39 |
| 61 | 4.21 |
| 62 | 4.12 |
| 63 | 4.28 |
| 64 | 4.20 |
| 65 | 4.26 |
| 66 | 4.20 |
| 67 | 4.05 |
| 68 | 4.41 |
| 69 | 4.48 |
| 70 | 4.43 |
| 71 | 4.27 |
| 72 | 4.40 |
| 73 | 4.47 |
| 74 | 4.12 |
| 75 | 4.18 |
| 76 | 4.20 |
| 77 | 4.18 |
| 78 | 4.00 |
| 79 | 4.40 |
| 80 | 4.07 |
| 81 | 4.41 |
| 82 | 4.08 |
| 83 | 4.44 |
| 84 | 4.34 |
| 85 | 4.22 |
| 86 | 4.07 |
| 87 | 4.50 |
| 88 | 4.37 |
| 89 | 4.26 |
| 90 | 4.12 |
| 91 | 4.12 |
| 92 | 4.01 |
| 93 | 4.30 |
| 94 | 4.48 |
| 95 | 4.17 |
| 96 | 4.01 |
| 97 | 4.48 |
| 98 | 4.07 |
| 99 | 4.46 |
| 100 | 4.06 |

# Gulf Canada Resources Inc.
# Sample 04907
# Pellet #1933/1

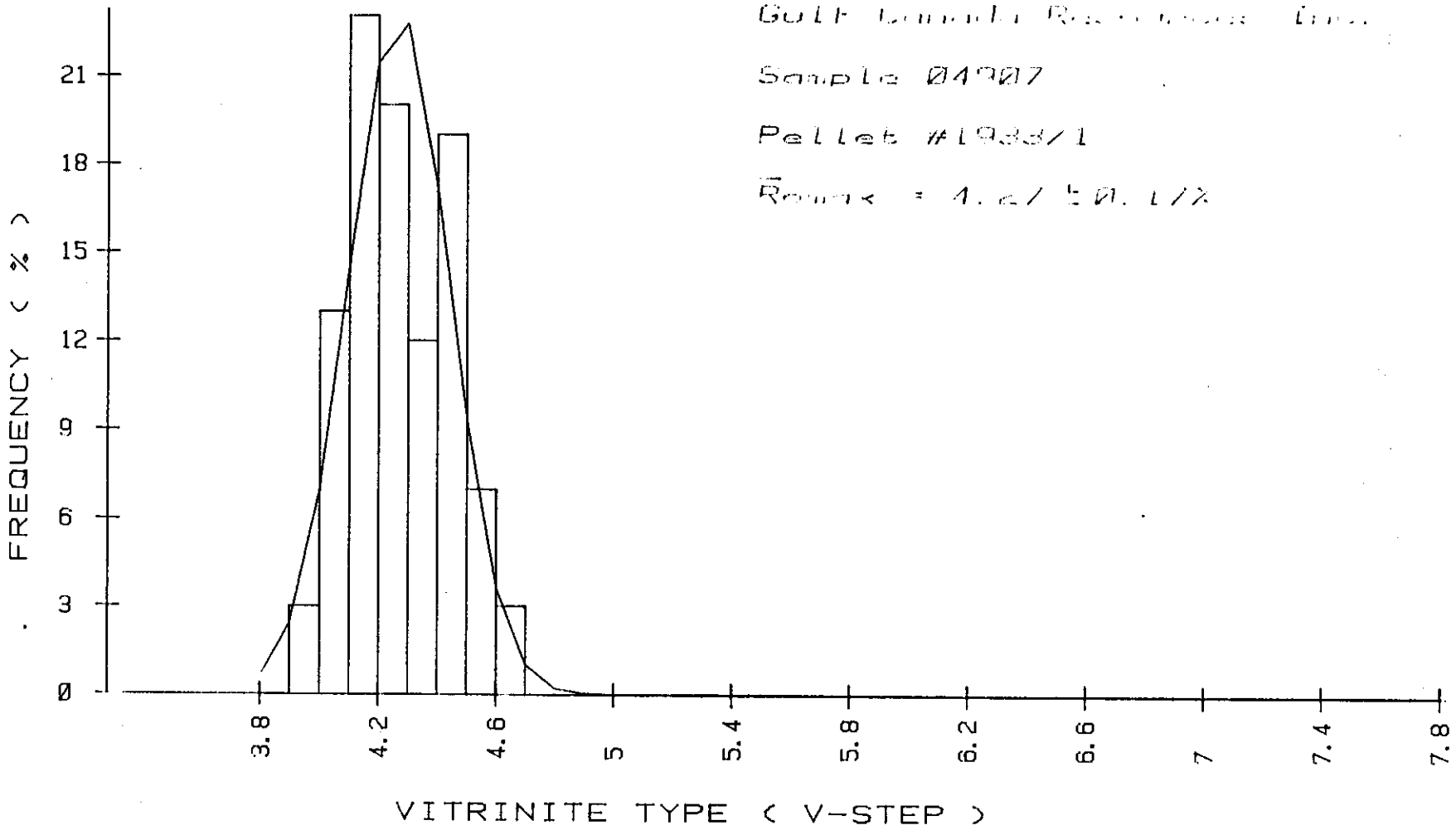
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 4.27 |
| STANDARD ERROR OF THE MEAN ..... | 0.02 |
| COEFFICIENT OF VARIATION .....% | 4.05 |
| VARIANCE ..... | 0.0298 |
| STANDARD DEVIATION ..... | 0.1726 |
| SKEWNESS ..... | 0.2260 |
| KURTOSIS ..... | 2.1715 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 2 | 3.90 | 3 | 3.00 |
| 3 | 4.00 | 13 | 13.00 |
| 4 | 4.10 | 23 | 23.00 |
| 5 | 4.20 | 20 | 20.00 |
| 6 | 4.30 | 12 | 12.00 |
| 7 | 4.40 | 19 | 19.00 |
| 8 | 4.50 | 7 | 7.00 |
| 9 | 4.60 | 3 | 3.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

# GULF CANADA RESOURCES INC.

SEAM DETAIL — COAL DIVISION — MOUNT KLAPPAN PROJECT — TRUE THICKNESS

DATA SOURCE: KPN NR TRC84018 SEAM : INTERVAL(M) : 0.40 - ELEVATION(M) : 1950.0

GEOLOGIST : SWANBERGSON SCALE: 1:47 DATE : DEC 18/84 DRAWING NO. :

| SEAM COMP. 1 2 3 4 5 6 | DRILL DEPTH METRES | COAL SEAM LOG | INTERVAL METRES ROCK | INTERVAL METRES COAL | % REC. | SAMPLE ID SIMP | SAMPLE ID COMP | COAL/ROCK TOTAL COMPOS | COAL/ROCK TOTAL MINING SECTION | COAL QUALITY A.D.B. RES MOIST | ASH | VM | FC | TS | CAL.VAL MJ/KG | $R_o$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.40 | | | 0.15 | | | | | | | | | | | | |
| | | | 0.03 | | | | | | | | | | | | | |
| | | | | 0.10 | | | | | | | | | | | | |
| | | | 0.05 | | | | | | | | | | | | | |
| | | | | 0.15 | | | | | | | | | | | | |
| | | | 0.10 | | | | | | | | | | | | | |
| | | | | 0.70 | 100.0 | 4905 | 4905 | 1.10 / 0.8 1.18 | | 3.09 | 40.90 | 12.71 | 43.30 | 0.35 | 17.31 | 2.61 |
| | 2.18 | | 0.50 | | | | | | | | | | | | | |

PLOT 1 07.39.28 TUES 18 DEC, 1984 JOB-TSACCGSD GULF CANADA DISSPLA 9.0

# Vitrinite Reflectance Data For Gulf Canada Resources Inc.
# Sample 04908
# Pellet #1934/1

| OBSERVATION NUMBER | ROMAX VALUE | OBSERVATION NUMBER | ROMAX VALUE |
|---|---|---|---|
| 1 | 2.66 | 51 | 2.58 |
| 2 | 2.68 | 52 | 2.53 |
| 3 | 2.63 | 53 | 2.61 |
| 4 | 2.65 | 54 | 2.68 |
| 5 | 2.59 | 55 | 2.62 |
| 6 | 2.73 | 56 | 2.61 |
| 7 | 2.55 | 57 | 2.59 |
| 8 | 2.59 | 58 | 2.49 |
| 9 | 2.52 | 59 | 2.73 |
| 10 | 2.64 | 60 | 2.62 |
| 11 | 2.57 | 61 | 2.47 |
| 12 | 2.58 | 62 | 2.49 |
| 13 | 2.69 | 63 | 2.54 |
| 14 | 2.58 | 64 | 2.60 |
| 15 | 2.57 | 65 | 2.67 |
| 16 | 2.85 | 66 | 2.55 |
| 17 | 2.64 | 67 | 2.61 |
| 18 | 2.61 | 68 | 2.55 |
| 19 | 2.79 | 69 | 2.60 |
| 20 | 2.61 | 70 | 2.64 |
| 21 | 2.59 | 71 | 2.75 |
| 22 | 2.57 | 72 | 2.59 |
| 23 | 2.57 | 73 | 2.60 |
| 24 | 2.57 | 74 | 2.56 |
| 25 | 2.60 | 75 | 2.59 |
| 26 | 2.54 | 76 | 2.65 |
| 27 | 2.52 | 77 | 2.63 |
| 28 | 2.59 | 78 | 2.52 |
| 29 | 2.60 | 79 | 2.65 |
| 30 | 2.55 | 80 | 2.68 |
| 31 | 2.47 | 81 | 2.67 |
| 32 | 2.63 | 82 | 2.71 |
| 33 | 2.67 | 83 | 2.59 |
| 34 | 2.62 | 84 | 2.71 |
| 35 | 2.48 | 85 | 2.73 |
| 36 | 2.58 | 86 | 2.64 |
| 37 | 2.54 | 87 | 2.59 |
| 38 | 2.57 | 88 | 2.60 |
| 39 | 2.54 | 89 | 2.70 |
| 40 | 2.56 | 90 | 2.59 |
| 41 | 2.66 | 91 | 2.57 |
| 42 | 2.68 | 92 | 2.70 |
| 43 | 2.49 | 93 | 2.65 |
| 44 | 2.63 | 94 | 2.60 |
| 45 | 2.52 | 95 | 2.63 |
| 46 | 2.56 | 96 | 2.71 |
| 47 | 2.72 | 97 | 2.61 |
| 48 | 2.70 | 98 | 2.62 |
| 49 | 2.59 | 99 | 2.68 |
| 50 | 2.52 | 100 | 2.62 |

# Gulf Canada Resources Inc.
# Sample 04908
# Pellet #1934/1

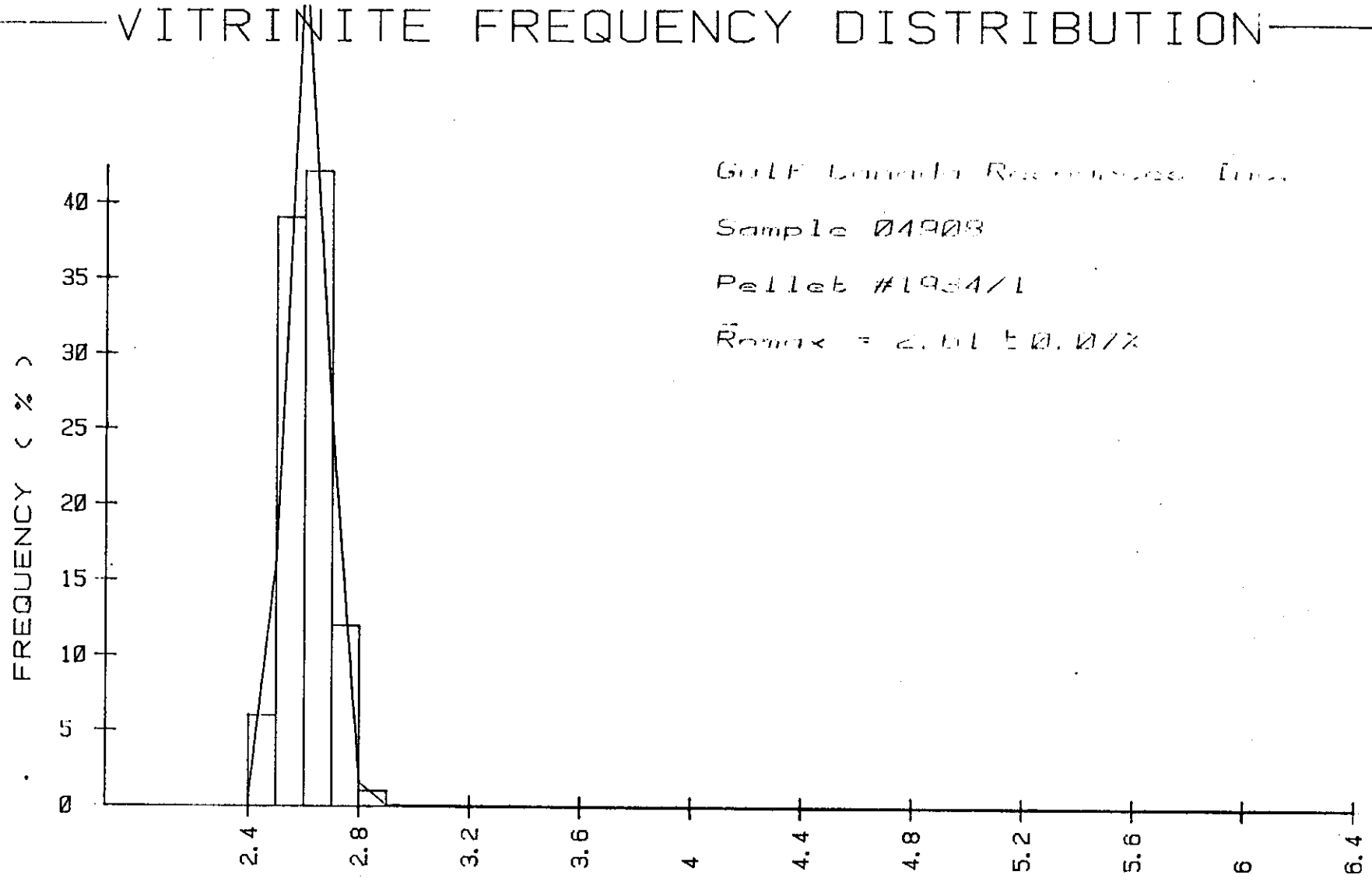
## BASIC STATISTICS

| | |
|---|---|
| NUMBER OF OBSERVATIONS ..... | 100 |
| MEAN MAXIMUM REFLECTANCE OF VITRINITE (Romax).....% | 2.61 |
| STANDARD ERROR OF THE MEAN ..... | 0.01 |
| COEFFICIENT OF VARIATION .....% | 2.68 |
| VARIANCE ..... | 0.0049 |
| STANDARD DEVIATION ..... | 0.0701 |
| SKEWNESS ..... | 0.4777 |
| KURTOSIS ..... | 3.5678 |

## CELL STATISTICS

| CELL NUMBER | LOWER LIMIT | NUMBER OF OBSERVATIONS | FREQUENCY ( % ) |
|---|---|---|---|
| 1 | 2.40 | 6 | 6.00 |
| 2 | 2.50 | 39 | 39.00 |
| 3 | 2.60 | 42 | 42.00 |
| 4 | 2.70 | 12 | 12.00 |
| 5 | 2.80 | 1 | 1.00 |

# VITRINITE FREQUENCY DISTRIBUTION




David E. Pearson & Associates Ltd.

SKEENA AREA

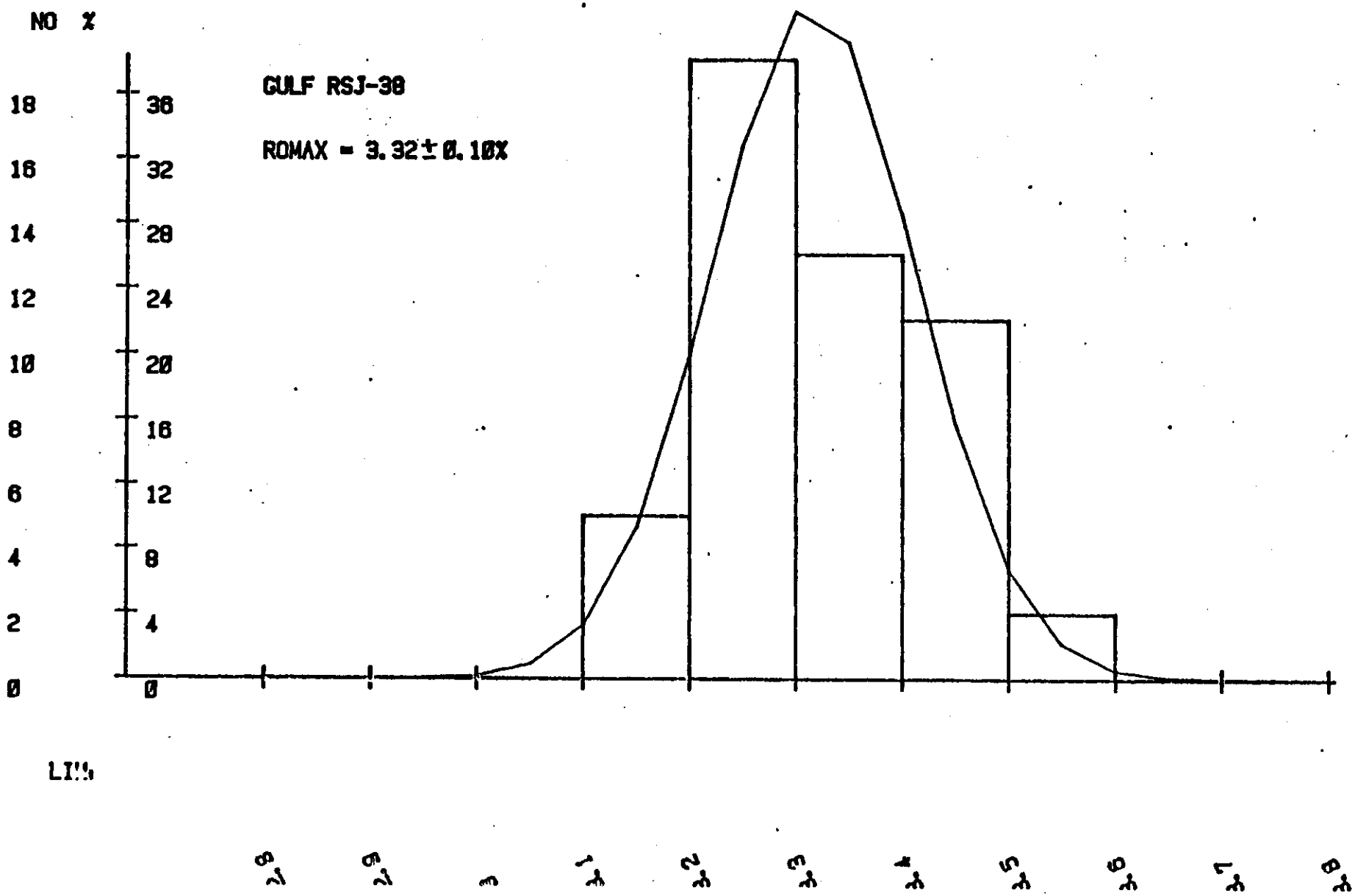
1981

RSJ-38 (02339) (KPNMSOTC81026)

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 3.1400 | 3.4300 |
| 3 | 3.3200 | 3.1900 |
| 5 | 3.4200 | 3.2700 |
| 7 | 3.5200 | 3.3500 |
| 9 | 3.3300 | 3.2100 |
| 11 | 3.2100 | 3.2600 |
| 13 | 3.4200 | 3.2100 |
| 15 | 3.2300 | 3.2300 |
| 17 | 3.3500 | 3.2900 |
| 19 | 3.3400 | 3.2500 |
| 21 | 3.4000 | 3.3200 |
| 23 | 3.2100 | 3.4300 |
| 25 | 3.3800 | 3.2200 |
| 27 | 3.2700 | 3.3400 |
| 29 | 3.2900 | 3.3000 |
| 31 | 3.2400 | 3.2500 |
| 33 | 3.4500 | 3.1600 |
| 35 | 3.4200 | 3.3600 |
| 37 | 3.2100 | 3.1900 |
| 39 | 3.1800 | 3.4500 |
| 41 | 3.4200 | 3.3900 |
| 43 | 3.2900 | 3.2800 |
| 45 | 3.4300 | 3.4200 |
| 47 | 3.2900 | 3.3600 |
| 49 | 3.5200 | 3.3700 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 3.3162
COEF OF VARIATION = 2.89%
VARIANCE = .0092
STANDARD DEVIATION = .0960
SKEWNESS = .1844
KURTOSIS = 2.1190

95.00% C.I. FOR MEAN:
( 3.2889, 3.3435)
ONE-TAIL t( 49 , .025 )=
2.01003450016

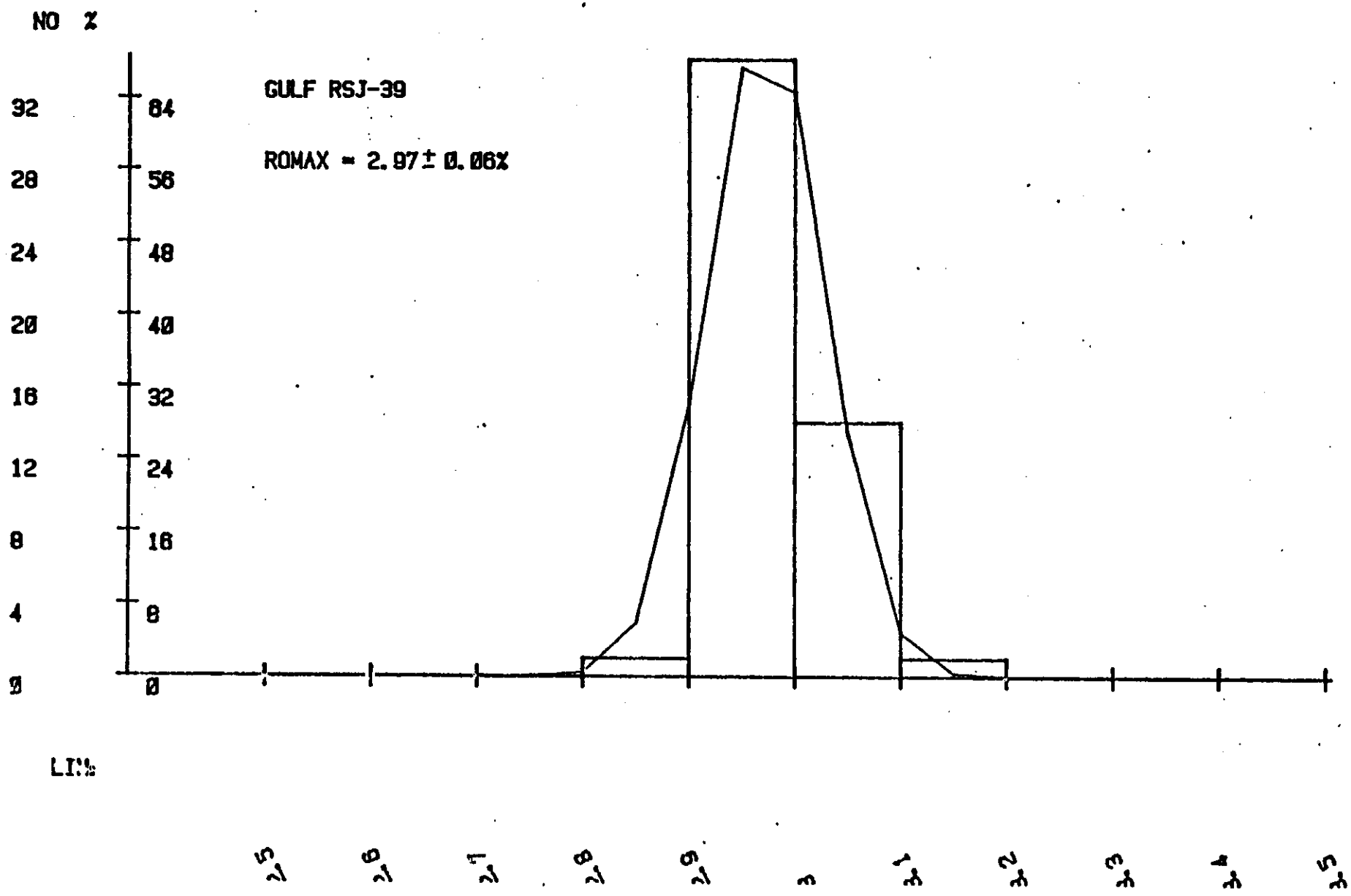

NO %
GULF RSJ-38
ROMAX = 3.32±0.10%
18
16
14
12
10
8
6
4
2
0
36
32
28
24
20
16
12
8
4
0

RSF39 (02340) (KPNMSOTC81027)

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 2.9300 | 3.0300 |
| 3 | 2.9000 | 2.9800 |
| 5 | 3.0200 | 3.0000 |
| 7 | 2.9200 | 2.9600 |
| 9 | 2.9400 | 2.9900 |
| 11 | 3.1200 | 2.9000 |
| 13 | 3.0500 | 2.9200 |
| 15 | 2.8400 | 3.0000 |
| 17 | 3.0300 | 2.9500 |
| 19 | 3.0500 | 2.9100 |
| 21 | 3.0600 | 2.9800 |
| 23 | 2.9800 | 2.9900 |
| 25 | 2.9800 | 2.9600 |
| 27 | 2.9300 | 2.9800 |
| 29 | 2.9800 | 2.9200 |
| 31 | 2.9600 | 2.9200 |
| 33 | 3.0700 | 2.9000 |
| 35 | 2.9400 | 2.9100 |
| 37 | 3.0000 | 2.9800 |
| 39 | 2.9700 | 3.0200 |
| 41 | 2.9600 | 2.9500 |
| 43 | 2.9500 | 3.0500 |
| 45 | 2.9300 | 2.9700 |
| 47 | 3.0200 | 2.9300 |
| 49 | 3.0600 | 2.9400 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 2.9726
COEF OF VARIATION = 1.84%
VARIANCE = .0030
STANDARD DEVIATION = .0546
SKEWNESS = .3319
KURTOSIS = 3.0426

95.00% C.I. FOR MEAN:
( 2.9571, 2.9881)
ONE-TAIL t( 49 , .025 )=
2.01003450016

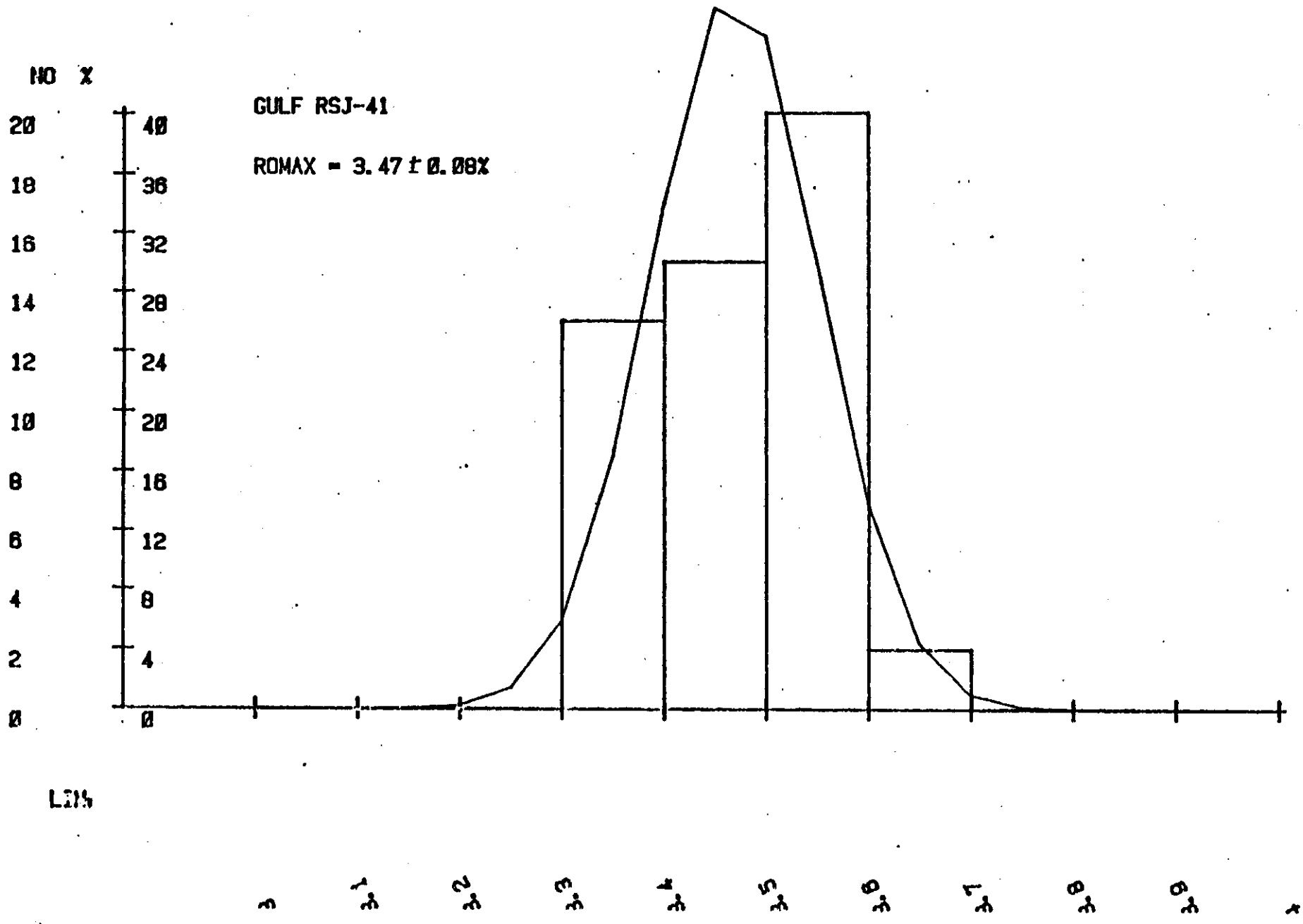

NO %
GULF RSJ-39
ROMAX = 2.97 ± 0.06%
32
28
24
20
16
12
8
4
0
64
56
48
40
32
24
16
8
0
LI%
2.5
2.6
2.7
2.8
2.9
3
3.1
3.2
3.3
3.4
3.5

RSJ-41. (02342) (KPNMSOTC81029)

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 3.3800 | 3.3500 |
| 3 | 3.3700 | 3.5500 |
| 5 | 3.5700 | 3.4200 |
| 7 | 3.5000 | 3.5400 |
| 9 | 3.5400 | 3.5000 |
| 11 | 3.3600 | 3.4800 |
| 13 | 3.3800 | 3.3400 |
| 15 | 3.4600 | 3.4400 |
| 17 | 3.4000 | 3.4200 |
| 19 | 3.5700 | 3.3600 |
| 21 | 3.4400 | 3.5800 |
| 23 | 3.5300 | 3.3800 |
| 25 | 3.3400 | 3.5200 |
| 27 | 3.4200 | 3.4700 |
| 29 | 3.5400 | 3.5300 |
| 31 | 3.5700 | 3.4900 |
| 33 | 3.5700 | 3.4000 |
| 35 | 3.4900 | 3.3600 |
| 37 | 3.4700 | 3.4000 |
| 39 | 3.4400 | 3.6000 |
| 41 | 3.3900 | 3.6000 |
| 43 | 3.3600 | 3.5300 |
| 45 | 3.5400 | 3.5900 |
| 47 | 3.5500 | 3.3600 |
| 49 | 3.5300 | 3.5500 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 3.4694
COEF OF VARIATION = 2.38%
VARIANCE = .0068
STANDARD DEVIATION = .0824
SKEWNESS = -.0714
KURTOSIS = 1.5955

95.00% C.I. FOR MEAN:
( 3.4460, 3.4928)
ONE-TAIL t( 49 , .025 )=
2.01003450016

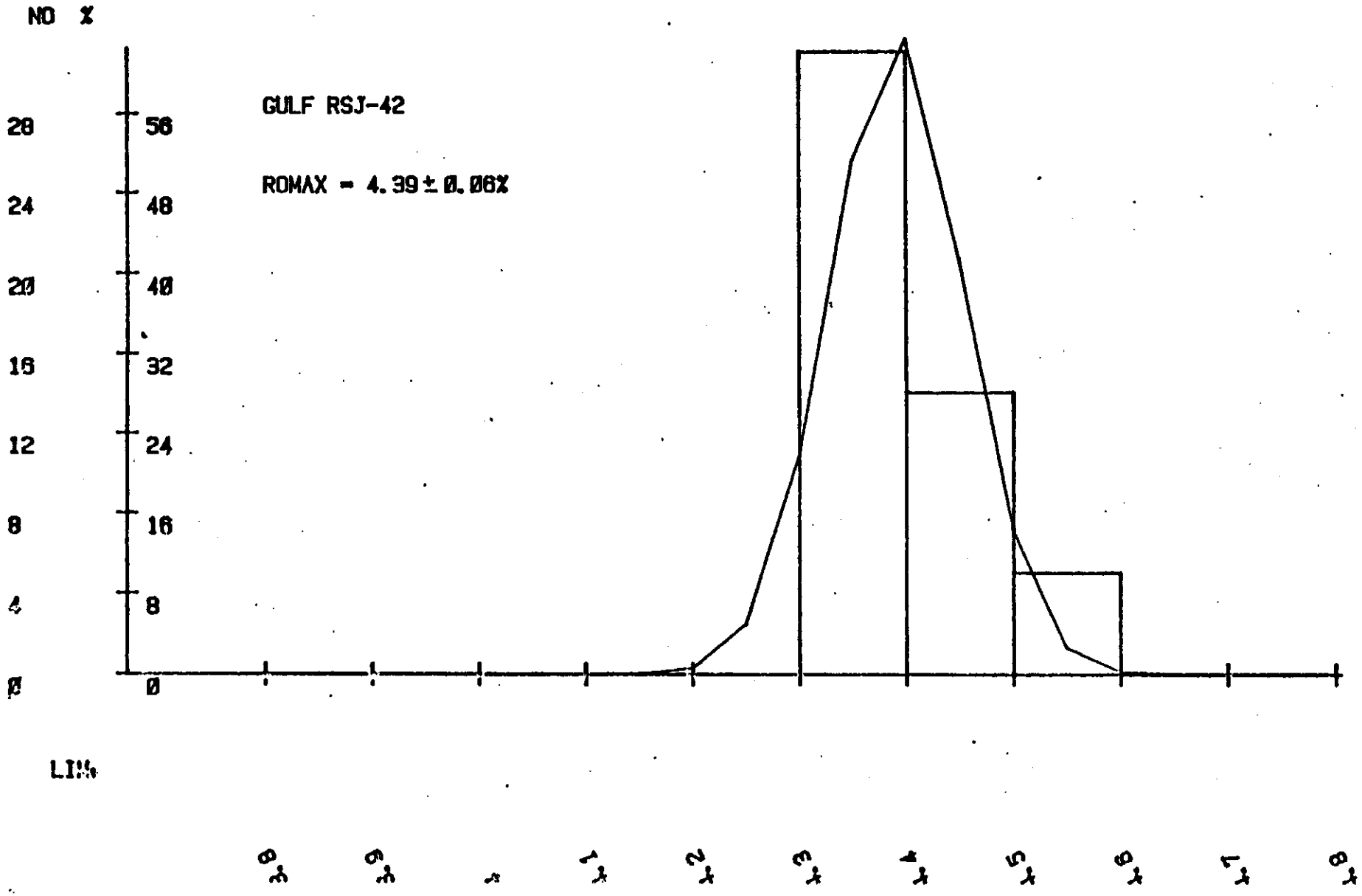

NO X
GULF RSJ-41
ROMAX = 3.47 ± 0.08%
20
18
16
14
12
10
8
6
4
2
0
40
36
32
28
24
20
16
12
8
4
0

RSJ-42. (02343) (KPNMSOTC81030)

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 4.4100 | 4.3500 |
| 3 | 4.3800 | 4.3600 |
| 5 | 4.4500 | 4.3200 |
| 7 | 4.3200 | 4.3700 |
| 9 | 4.4600 | 4.3700 |
| 11 | 4.3200 | 4.3600 |
| 13 | 4.3600 | 4.4300 |
| 15 | 4.3200 | 4.3700 |
| 17 | 4.3700 | 4.4100 |
| 19 | 4.3500 | 4.3100 |
| 21 | 4.3300 | 4.5400 |
| 23 | 4 4200 | 4.4200 |
| 25 | 4.3600 | 4.5000 |
| 27 | 4.4500 | 4.4100 |
| 29 | 4.3400 | 4.3200 |
| 31 | 4.4500 | 4.3300 |
| 33 | 4.3500 | 4.5400 |
| 35 | 4.3800 | 4.3800 |
| 37 | 4.4300 | 4.5300 |
| 39 | 4.3700 | 4.4600 |
| 41 | 4.3700 | 4.4800 |
| 43 | 4.3400 | 4.4200 |
| 45 | 4.3400 | 4.3700 |
| 47 | 4.3800 | 4.5100 |
| 49 | 4.3100 | 4.3600 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 4.7016
COEF OF VARIATION = 1 55%
VARIANCE = .0053
STANDARD DEVIATION = .0730
SKEWNESS = .2561
KURTOSIS = 2.8471

95.00% C.I. FOR MEAN:
( 4.6808, 4.7224)
ONE-TAIL t( 49 , .025 )=
2.0100345001e

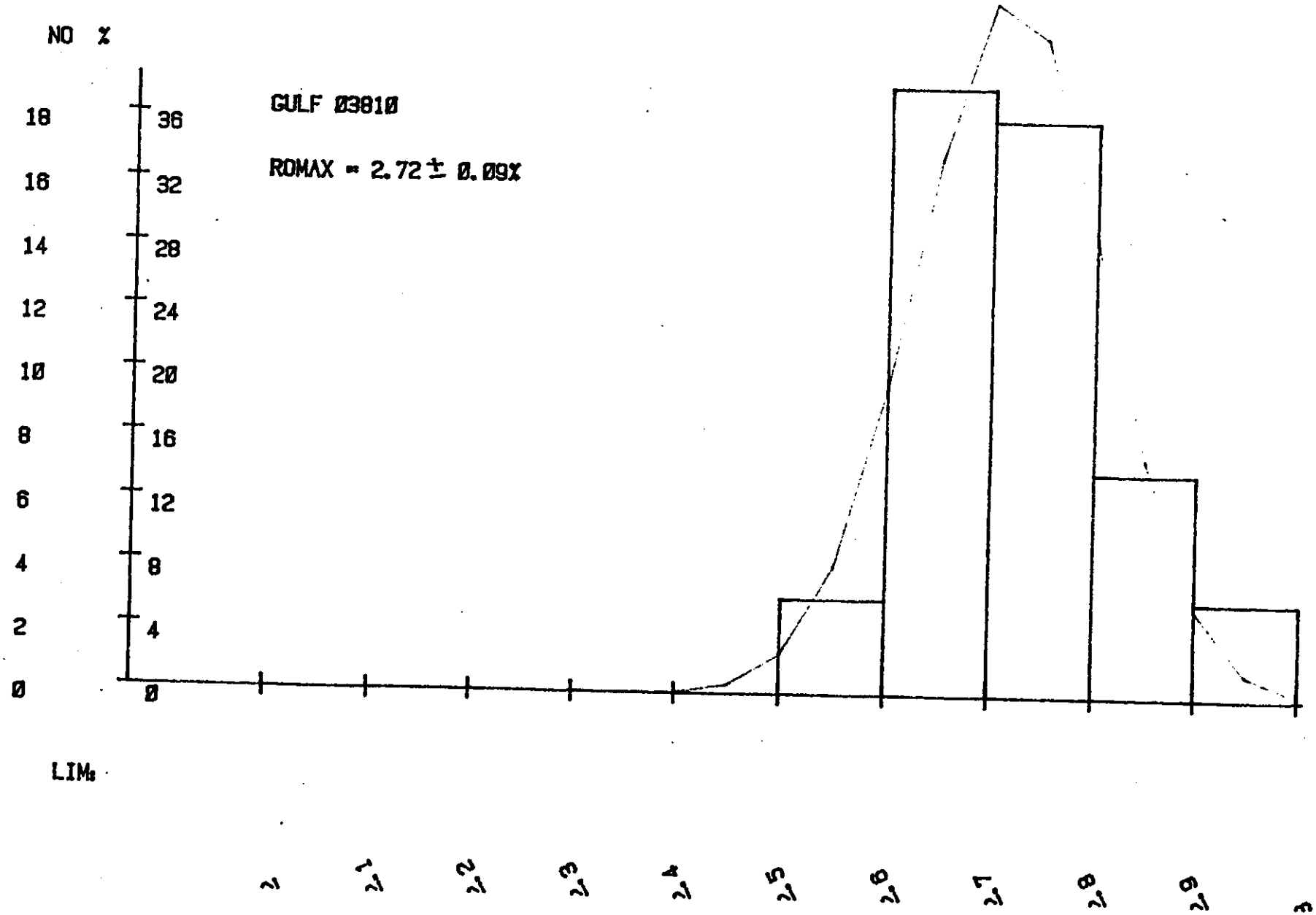

NO %
GULF RSJ-42
ROMAX = 4.39 ± 0.06%
28
24
20
16
12
8
4
0
56
48
40
32
24
16
8
0

03810 (KPNELOTC81063)

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 2.7100 | 2.6500 |
| 2 | 2.7800 | 2.6500 |
| 3 | 2.7200 | 2.7700 |
| 4 | 2.8700 | 2.5600 |
| 5 | 2.6600 | 2.6700 |
| 6 | 2.6800 | 2.7200 |
| 7 | 2.7200 | 2.7100 |
| 8 | 2.6700 | 2.7400 |
| 9 | 2.7300 | 2.9000 |
| 10 | 2.6800 | 2.6000 |
| 11 | 2.7500 | 2.6200 |
| 12 | 2.6800 | 2.6300 |
| 13 | 2.5800 | 2.5000 |
| 14 | 2.6000 | 2.6200 |
| 15 | 2.6800 | 2.7200 |
| 16 | 2.7600 | 2.6200 |
| 17 | 2.6800 | 2.7500 |
| 18 | 2.6500 | 2.6000 |
| 19 | 2.6000 | 2.8000 |
| 20 | 2.8100 | 2.9200 |
| 21 | 2.6300 | 2.8400 |
| 22 | 2.7700 | 2.9200 |
| 23 | 2.8500 | 2.7200 |
| 24 | 2.7600 | 2.7600 |
| 25 | 2.6300 | 2.7200 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 2.7166
COEF OF VARIATION = 3.33%
VARIANCE = .0082
STANDARD DEVIATION = .0904
SKEWNESS = .4611
KURTOSIS = 2.7115

95.00% C.I. FOR MEAN:
( 2.6909, 2.7423)
ONE-TAIL T( 49 , .025 )=
2.M1003450016

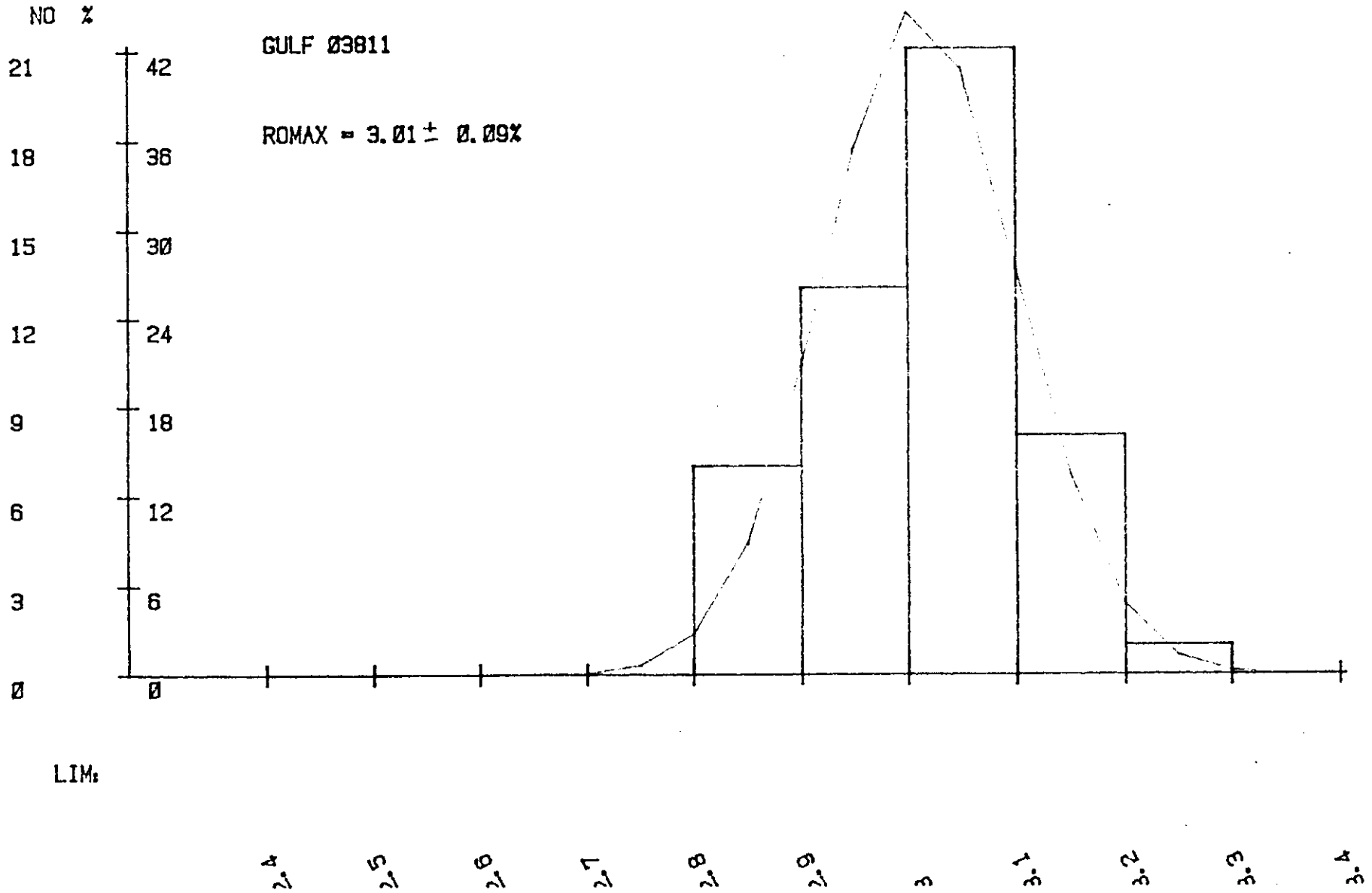

NO %
GULF 03810
ROMAX = 2.72 ± 0.09%
18
16
14
12
10
8
6
4
2
0
36
32
28
24
20
16
12
8
4
0
LIM:

03811 (KPNELOTC81064)

| I | X(I) | X(I+1) |
|---|---|---|
| 1 | 3.0100 | 3.0000 |
| 2 | 3.0500 | 3.0400 |
| 3 | 2.8900 | 2.9100 |
| 4 | 2.8800 | 2.9700 |
| 5 | 2.8900 | 3.0100 |
| 6 | 3.0500 | 3.1500 |
| 7 | 2.9600 | 2.8900 |
| 8 | 2.9000 | 3.0000 |
| 9 | 3.0500 | 3.8700 |
| 10 | 2.9300 | 3.0400 |
| 11 | 3.1400 | 3.1200 |
| 12 | 2.9300 | 3.0300 |
| 13 | 3.0400 | 3.0200 |
| 14 | 3.0800 | 2.9700 |
| 15 | 3.0400 | 3.0500 |
| 16 | 3.1500 | 2.8300 |
| 17 | 3.1600 | 3.0900 |
| 18 | 2.9200 | 2.8900 |
| 19 | 3.0200 | 3.0700 |
| 20 | 3.1100 | 2.9900 |
| 21 | 3.0000 | 3.0600 |
| 22 | 3.1200 | 3.1400 |
| 23 | 2.9500 | 3.0300 |
| 24 | 2.9900 | 3.2200 |
| 25 | 2.9900 | 2.9600 |

BASIC STATISTICS
**********
N = 50
STD ERROR OF THE MEAN= .01
MEAN = 3.0110
COEF OF VARIATION = 2.96%
VARIANCE = .0080
STANDARD DEVIATION = .0892
SKEWNESS = .1082
KURTOSIS = 2.3892

95.00% C.I. FOR MEAN:
( 2.9856, 3.0364)
ONE-TAIL t( 49 , .025 )=
2.01003450016


NO %
GULF 03811
ROMAX = 3.01 ± 0.09%
21
18
15
12
9
6
3
0
42
36
30
24
18
12
6
0
LIM:
2.4
2.5
2.6
2.7
2.8
2.9
3
3.1
3.2
3.3
3.4