K-FLATHEAD RIDGE 80(4) B

304

pt. 2 of 2

TABLE I

COAL QUALITY SUMMARY
DIAMOND DRILLHOLE F.H.-1

| Seam Intercepts (m) | Seam No. | True Thickness | Core Recovery % | Raw Coal | | Clean Coal | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Ash | FSI | Ash | V.M. | V.M. (daf) | F.C. | FSI | S | Yield | DDM's | Btu (d.b) | Ro |
| 280.16-284.04 | | 1.64 | 49.0 | 47.0 | 6 | 9.8 | 24.4 | 27.1 | 65.8 | 8 | 0.49 | 40.8 | 539.8 | 13,970 | 1.13 |
| 398.88-299.66 | | 0.20 | 81.0 | 26.8 | 6 | 4.6 | 24.0 | 25.2 | 71.4 | 7½ | 0.48 | 60.4 | 375.0 | 14,990 | 1.13 |
| 550.91-566.16 | 7 | 11.68 | 61.1 | 17.9 | 2½ | 6.6 | 21.6 | 23.1 | 71.8 | 4 | 0.39 | 68.3 | 0.20 | 14,260 | 1.33 |
| 609.03-617.07 | 3 | 3.01 | 70.3 | 18.3 | 1 | 6.9 | 17.7 | 19.0 | 75.4 | 1 | 0.34 | 66.4 | -- | 14,216 | 1.48 |
| 632.19-637.87 | | 3.65 | 41.8 | 28.5 | 1 | 7.1 | 18.9 | 20.3 | 74.0 | 1 | 0.40 | 49.1 | -- | 14,145 | 1.50 |
| 749.02-649.82 | | 0.46 | 72.0 | 57.3 | N.C. | 12.0 | 17.1 | 19.4 | 70.9 | 2½ | 0.46 | 19.2 | -- | 13,470 | -- |

# A P P E N D I X  II

The proximate analyses, washability tests and petrographic examinations of the coal seams sampled from diamond drillhole F.H.-1 were performed in the B.C. Coal Ltd. Laboratory located in Sparwood, British Columbia.

A Giesler Plastometer was used in conducting fluidity tests on the samples. A Ruhr dilatometer was used for the dilatation tests.

PRINTED 05/08/81

DRILL HOLE: FH001 ( CORE ) SEAM INTERCEPT 280.16- 284.04 INTCPT THICKNESS 3.88 TRUE THICKNESS 1.3 M

DIP ANGLE 70 LATITUDE 5465381.313 M DEPARTURE 658432.641 M ELEVATION 1720.217 M

RECEIVED: 9/22/80 WEIGHT 8.676 KG MOISTURE 1.1 % COMPLETE: 3/ 9/80

MM DD YY RECOVERY 49.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

| | RAW | *CLEAN |
|---|---|---|
| % OF 1/8" X 0 | 100.00 | 40.80 |
| ASH % | 47.00 | 9.80 |
| V.M. % | 17.20 | 24.40 |
| F.C. % | 35.80 | 65.80 |
| F.S.I. | 6 | 8 |
| % TOTAL SULF. | 0.39 | 0.49 |
| % P205 (PHOSPHATE) | 0. | 0. |
| GROSS CAL. VALUE BTU/LB | 0. | 13970. |

* (-1/8"+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 1/22/81

| | | |
|---|---|---|
| START | OC | 385.0 |
| FUSION TEMP. | OC | 410.0 |
| MAX FLUID TEMP. | OC | 453.0 |
| FINAL FLUID TEMP. | OC | 481.0 |
| SOLIDIFICATION TEMP. | OC | 488.0 |
| MELTING RANGE | OC | 71.0 |
| MAXIMUM FLUIDITY DD/M | | 539.8 |

DILATATION (RUHR) DATE RUN 1/21/81

| | | |
|---|---|---|
| TI - SOFT. TEMP. | OC | 398.0 |
| TII - MAX. CONTRACTION TEMP. | OC | 441.0 |
| TIII - MAX. DILATATION TEMP. | OC | 484.0 |
| CONTRACTION | % | 18.0 |
| DILATATION | % | 115.0 |

PETROGRAPHIC DATA DATE COMPLETED 0/ 0/ 0 PELLET NUMBER 1276

V-TYPES

| TYPE | % |
|---|---|
| 9 | 0.9 |
| 10 | 25.7 |
| 11 | 54.9 |
| 12 | 7.1 |

| REACTIVE COMPONENTS | |
|---|---|
| TOTAL VITRINOID | 88.6 |
| REACTIVE SF. (1/2) | 2.0 |
| EXINOID & RESIN | 0.3 |
| TOTAL REACTIVES | 90.9 |

| INERT COMPONENTS | |
|---|---|
| INERT SF. (1/2) | 2.0 |
| MICRINOIDS | 1.0 |
| FUSINOIDS | 0.5 |
| MINERAL MATTER | 5.6 |
| TOTAL INERTS | 9.1 |

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.13

BAL. INDEX 0.39 STRENGTH INDEX 4.01 PRED. COKE STAB. INDEX 47.80

SCREEN ANALYSIS (COAL CRUSHED TO 1/4")

| SIZE | WT.% | ASH% | CUMULATIVE WT.% | CUMULATIVE ASH% |
|---|---|---|---|---|
| -1/4"+ 28M | 75.0 | 53.4 | 75.0 | 53.4 |
| -28M + 60M | 13.9 | 29.2 | 88.9 | 49.6 |
| -60M + 0 | 11.1 | 21.4 | 100.0 | 46.5 |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| ( 75.0) -1/4"+28M | FLT. | 1.30 | 7.9 | 5.4 | 8-1/2 | 7.9 | 5.4 | 60.8 |
| | | 1.40 | 14.9 | 11.7 | 8 | 22.8 | 9.5 | 66.4 |
| | | 1.50 | 10.0 | 15.5 | 7 | 32.8 | 11.3 | 35.5 |
| | | 1.60 | 3.3 | 25.2 | 7 | 36.1 | 12.6 | 12.5 |
| | | 1.70 | 1.4 | 39.7 | 6-1/2 | 37.5 | 13.6 | |
| | SINK | 1.70 | 62.5 | 77.3 | NC | 100.0 | 53.4 | |
| ( 13.9) -28M+60M | FLT. | 1.30 | 31.7 | 3.2 | 8 | 31.7 | 3.2 | 77.6 |
| | | 1.40 | 21.5 | 8.9 | 7-1/2 | 53.2 | 5.5 | 42.9 |
| | | 1.50 | 7.9 | 17.4 | 7 | 61.1 | 7.0 | 17.3 |
| | | 1.60 | 4.0 | 25.5 | 3-1/2 | 65.1 | 8.2 | 10.9 |
| | | 1.70 | 3.5 | 33.1 | 1-1/2 | 68.6 | 9.4 | |
| | SINK | 1.70 | 31.4 | 72.5 | NC | 100.0 | 29.2 | |
| ( 11.1) -60M+ 0 | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.40 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.50 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.60 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.70 | 0. | 0. | | 0. | 0. | |
| | SINK | 1.70 | 0. | 0. | | 0. | 0. | |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| (100.0) -1/8"+ 0 | FLT. | 1.30 | 21.6 | 4.5 | 8-1/2 | 21.6 | 4.5 | 65.8 |
| | | 1.40 | 10.0 | 9.4 | 7-1/2 | 31.6 | 6.1 | 41.0 |
| | | 1.50 | 9.7 | 20.3 | 7 | 41.3 | 9.4 | 29.0 |
| | | 1.60 | 4.2 | 27.6 | 7 | 45.5 | 11.1 | 14.0 |
| | | 1.70 | 2.5 | 35.6 | 3-1/2 | 48.0 | 12.4 | |
| | SINK | 1.70 | 52.0 | 78.4 | NC | 100.0 | 46.7 | |
| FROTH CELL TEST ( 13.9) -28M+60M | FROTH | | 0. | 0. | | 0. | 0. | |
| | TAILINGS | | 0. | 0. | | 0. | 0. | |
| FROTH CELL TEST ( 11.1) -60M + 0 | FROTH | | 94.0 | 17.5 | 7-1/2 | 94.0 | 17.5 | |
| | TAILINGS | | 6.0 | 82.8 | NC | 100.0 | 21.4 | |

NOTES:

PRINTED 05/08/8

DRILL HOLE: FH001 ( CORE ) SEAM INTERCEPT 398.88- 399.66 INTCPT THICKNESS 0.78 TRUE THICKNESS 0.3

DIP ANGLE 67 LATITUDE 5465374.688 M DEPARTURE 658430.977 M ELEVATION 1601.719

RECEIVED: 9/22/80 WEIGHT 2.930 KG MOISTURE 0.9 % COMPLETE: 3/ 9/80

MM DD YY RECOVERY 81.0 % MM DD YY

| PROXIMATE ANALYSIS (DRY BASIS) | RAW | *CLEAN |
|---|---|---|
| % OF 1/8" X 0 | 100.00 | 60.40 |
| ASH % | 26.80 | 4.60 |
| V.M. % | 19.30 | 24.00 |
| F.C. % | 53.90 | 71.40 |
| F.S.I. | 6 | 7-1/2 |
| % TOTAL SULF. | 0.49 | 0.48 |
| % P205 (PHOSPHATE) | 0. | 0. |
| GROSS CAL. VALUE BTU/LB | 0. | 14990. |

* (-1/8"+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 1/16/81

| | | |
|---|---|---|
| START | OC | 393.0 |
| FUSION TEMP. | OC | 420.0 |
| MAX FLUID TEMP. | OC | 457.0 |
| FINAL FLUID TEMP. | OC | 482.0 |
| SOLIDIFICATION TEMP. | OC | 489.0 |
| MELTING RANGE | OC | 62.0 |
| MAXIMUM FLUIDITY DD/M | | 375.0 |

DILATATION (RUHR) DATE RUN 1/21/81

| | | |
|---|---|---|
| TI - SOFT. TEMP. | OC | 397.0 |
| TII - MAX. CONTRACTION TEMP. | OC | 443.0 |
| TIII - MAX. DILATATION TEMP. | OC | 484.0 |
| CONTRACTION | % | 17.0 |
| DILATATION | % | 71.0 |

PETROGRAPHIC DATA DATE COMPLETED 2/17/81 PELLET NUMBER 1277

SCREEN ANALYSIS (COAL CRUSHED TO 1/4")

| SIZE | WT.% | ASH% | CUMULATIVE WT.% | CUMULATIVE ASH% |
|---|---|---|---|---|
| -1/4"+ 28M | 78.6 | 31.3 | 78.6 | 31.3 |
| -28M + 60M | 12.5 | 17.8 | 91.1 | 29.4 |
| -60M + 0 | 8.9 | 18.3 | 100.0 | 28.5 |

| V-TYPES TYPE | % | REACTIVE COMPONENTS | | INERT COMPONENTS | |
|---|---|---|---|---|---|
| | | TOTAL VITRINOID | 72.5 | INERT SF. (1/2) | 10.2 |
| 9 | 0.7 | REACTIVE SF. (1/2) | 10.2 | MICRINOIDS | 2.5 |
| 10 | 12.3 | EXINOID & RESIN | 0.5 | FUSINOIDS | 1.5 |
| 11 | 55.1 | | | MINERAL MATTER | 2.6 |
| 12 | 4.4 | TOTAL REACTIVES | 83.2 | TOTAL INERTS | 16.8 |

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.13

BAL. INDEX 0.54 STRENGTH INDEX 4.33 PRED. COKE STAB. INDEX 56.70

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| ( 78.6) | FLT. | 1.30 | 50.5 | 1.4 | 7-1/2 | 50.5 | 1.4 | 96.3 |
| -1/4"+28M | | 1.40 | 6.7 | 5.0 | 3-1/2 | 57.2 | 1.8 | 14.1 |
| | | 1.50 | 1.7 | 9.8 | 1-1/2 | 58.9 | 2.1 | 3.5 |
| | | 1.60 | 0.4 | 15.2 | 1 | 59.3 | 2.1 | 0.8 |
| | | 1.70 | 0.1 | 19.9 | 1 | 59.4 | 2.2 | |
| | SINK | 1.70 | 40.6 | 74.0 | NC | 100.0 | 31.3 | |
| ( 12.5) | FLT. | 1.30 | 67.1 | 1.9 | 7-1/2 | 67.1 | 1.9 | 95.4 |
| -28M+60M | | 1.40 | 10.0 | 8.2 | 6-1/2 | 77.1 | 2.7 | 15.7 |
| | | 1.50 | 2.7 | 20.0 | 2 | 79.8 | 3.3 | 4.2 |
| | | 1.60 | 0.7 | 26.0 | 1 | 80.5 | 3.5 | 1.2 |
| | | 1.70 | 0.3 | 36.2 | 1 | 80.8 | 3.6 | |
| | SINK | 1.70 | 19.2 | 72.2 | NC | 100.0 | 16.8 | |
| ( 8.9) | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 0. |
| -60M+ 0 | | 1.40 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.50 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.60 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.70 | 0. | 0. | | 0. | 0. | |
| | SINK | 1.70 | 0. | 0. | | 0. | 0. | |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| (100.0) | FLT. | 1.30 | 44.5 | 2.0 | 7-1/2 | 44.5 | 2.0 | 88.2 |
| -1/8"+ 0 | | 1.40 | 11.7 | 4.4 | 6-1/2 | 56.2 | 2.5 | 25.4 |
| | | 1.50 | 4.5 | 18.9 | 2-1/2 | 60.7 | 3.7 | 10.2 |
| | | 1.60 | 2.0 | 34.9 | 1-1/2 | 62.7 | 4.7 | 4.7 |
| | | 1.70 | 1.0 | 49.5 | 1 | 63.7 | 5.4 | |
| | SINK | 1.70 | 36.3 | 75.4 | NC | 100.0 | 30.8 | |
| FROTH CELL TEST | | | | | | | | |
| ( 12.5) | FROTH | | 0. | 0. | | 0. | 0. | |
| -28M+60M | TAILINGS | | 0. | 0. | | 0. | 0. | |
| FROTH CELL TEST | | | | | | | | |
| ( 8.9) | FROTH | | 89.3 | 11.5 | 6-1/2 | 89.3 | 11.5 | |
| -60M + 0 | TAILINGS | | 10.7 | 75.4 | NC | 100.0 | 18.3 | |

NOTES:

PRINTED 05/08/81

DRILL HOLE: FH001 ( CORE ) SEAM 7 INTERCEPT 550.91- 566.16 INTCPT THICKNESS 15.25 TRUE THICKNESS 3.2 M
DIP ANGLE 78 LATITUDE 5465364.563 M DEPARTURE 658431.023 M ELEVATION 1450.053 M
RECEIVED: 9/22/80 WEIGHT 25.309 KG MOISTURE 9.2 % COMPLETE: 3/ 9/80
MM DD YY RECOVERY 61.1 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

| | RAW | *CLEAN |
|---|---|---|
| % OF 1/8" X 0 | 100.00 | 68.30 |
| ASH % | 17.90 | 6.60 |
| V.M. % | 19.60 | 21.60 |
| F.C. % | 62.50 | 71.80 |
| F.S.I. | 2-1/2 | 4 |
| % TOTAL SULF. | 0.42 | 0.39 |
| % P205 (PHOSPHATE) | 0. | 0. |
| GROSS CAL. VALUE BTU/LB | 12380. | 14260. |

* (-1/8"+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 0/ 0/ 0

| | | |
|---|---|---|
| START | OC | 438.0 |
| FUSION TEMP. | OC | 0. |
| MAX FLUID TEMP. | OC | 464.0 |
| FINAL FLUID TEMP. | OC | 0. |
| SOLIDIFICATION TEMP. | OC | 484.0 |
| MELTING RANGE | OC | 0. |
| MAXIMUM FLUIDITY DD/M | | 0.2 |

DILATATION (RUHR) DATE RUN 1/22/81

| | | |
|---|---|---|
| TI - SOFT. TEMP. | OC | 450.0 |
| TII - MAX. CONTRACTION TEMP. | OC | 498.0 |
| TIII - MAX. DILATATION TEMP. | OC | 498.0 |
| CONTRACTION | % | 7.0 |
| DILATATION | % | -7.0 |

PETROGRAPHIC DATA DATE COMPLETED 2/17/81 PELLET NUMBER 1278

| V-TYPES TYPE | % | REACTIVE COMPONENTS | | INERT COMPONENTS | |
|---|---|---|---|---|---|
| | | TOTAL VITRINOID | 69.8 | INERT SF. (1/2) | 10.4 |
| 11 | 7.7 | REACTIVE SF. (1/2) | 10.5 | MICRINOIDS | 3.7 |
| 12 | 11.9 | EXINOID & RESIN | 0. | FUSINOIDS | 1.9 |
| 13 | 30.7 | | | MINERAL MATTER | 3.7 |
| 14 | 19.5 | TOTAL REACTIVES | 80.3 | TOTAL INERTS | 19.7 |

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.33
BAL. INDEX 0.95 STRENGTH INDEX 5.85 PRED. COKE STAB. INDEX 65.00

SCREEN ANALYSIS (COAL CRUSHED TO 1/4")

| SIZE | WT.% | ASH% | CUMULATIVE WT.% | CUMULATIVE ASH% |
|---|---|---|---|---|
| -1/4"+ 28M | 43.2 | 22.8 | 43.2 | 22.8 |
| -28M + 60M | 24.8 | 16.6 | 68.0 | 20.5 |
| -60M + 0 | 32.0 | 13.3 | 100.0 | 18.2 |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| ( 43.2) | FLT. | 1.30 | 21.8 | 4.7 | 6 | 21.8 | 4.7 | 63.0 |
| -1/4"+28M | | 1.40 | 21.7 | 8.0 | 1-1/2 | 43.5 | 6.3 | 46.5 |
| | | 1.50 | 10.4 | 15.5 | 1 | 53.9 | 8.1 | 26.8 |
| | | 1.60 | 8.1 | 21.4 | 1 | 62.0 | 9.8 | 21.9 |
| | | 1.70 | 7.0 | 28.2 | 1 | 69.0 | 11.7 | |
| | SINK | 1.70 | 31.0 | 47.6 | NC | 100.0 | 22.8 | |
| ( 24.8) | FLT. | 1.30 | 28.5 | 2.7 | 6-1/2 | 28.5 | 2.7 | 59.3 |
| -28M+60M | | 1.40 | 23.3 | 5.2 | 3 | 51.8 | 3.8 | 50.3 |
| | | 1.50 | 20.6 | 11.7 | 1 | 72.4 | 6.1 | 32.6 |
| | | 1.60 | 7.9 | 23.8 | 1 | 80.3 | 7.8 | 17.1 |
| | | 1.70 | 7.0 | 34.1 | 1 | 87.3 | 9.9 | |
| | SINK | 1.70 | 12.7 | 62.4 | NC | 100.0 | 16.6 | |
| ( 32.0) | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 0. |
| -60M+ 0 | | 1.40 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.50 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.60 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.70 | 0. | 0. | | 0. | 0. | |
| | SINK | 1.70 | 0. | 0. | | 0. | 0. | |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| (100.0) | FLT. | 1.30 | 27.5 | 2.3 | 6-1/2 | 27.5 | 2.3 | 60.5 |
| -1/8"+ 0 | | 1.40 | 21.6 | 5.3 | 3 | 49.1 | 3.6 | 47.5 |
| | | 1.50 | 16.9 | 11.3 | 1-1/2 | 66.0 | 5.6 | 30.0 |
| | | 1.60 | 7.4 | 19.6 | 1 | 73.4 | 7.0 | 18.6 |
| | | 1.70 | 7.7 | 34.5 | 1 | 81.1 | 9.6 | |
| | SINK | 1.70 | 18.9 | 57.1 | NC | 100.0 | 18.6 | |

FROTH CELL TEST

| | | | | | |
|---|---|---|---|---|---|
| ( 24.8) -28M+60M | FROTH | 0. | 0. | 0. | 0. |
| | TAILINGS | 0. | 0. | 0. | 0. |
| ( 32.0) -60M + 0 | FROTH | 97.7 | 12.0 | 97.7 | 12.0 |
| | TAILINGS | 2.3 | 68.4 | 100.0 | 13.3 |

NOTES:

PRINTED 05/08/8

DRILL HOLE: FH001 ( CORE ) SEAM 3 INTERCEPT 609.03- 617.07 INTCPT THICKNESS 8.04 TRUE THICKNESS 4.0 f

DIP ANGLE 60 LATITUDE 5465360.625 M DEPARTURE 658431.570 M ELEVATION 1392.080 f

RECEIVED: 9/22/80 WEIGHT 16.695 KG MOISTURE 3.9 % COMPLETE: 3/ 9/80

MM DD YY RECOVERY 70.3 % MM DD YY

| PROXIMATE ANALYSIS (DRY BASIS) | RAW | *CLEAN |
|---|---|---|
| % OF 1/8" X 0 | 100.00 | 66.40 |
| ASH % | 18.30 | 6.90 |
| V.M. % | 17.90 | 17.70 |
| F.C. % | 63.80 | 75.40 |
| F.S.I. | 1 | 1 |
| % TOTAL SULF. | 0.37 | 0.34 |
| % P2O5 (PHOSPHATE) | 0. | 0. |
| GROSS CAL. VALUE BTU/LB | 12200. | 14216. |

* (-1/8"+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 0/ 0/ 0

| | | |
|---|---|---|
| START | OC | 0. |
| FUSION TEMP. | OC | 0. |
| MAX FLUID TEMP. | OC | 0. |
| FINAL FLUID TEMP. | OC | 0. |
| SOLIDIFICATION TEMP. | OC | 0. |
| MELTING RANGE | OC | 0. |
| MAXIMUM FLUIDITY DD/M | | |

DILATATION (RUHR) DATE RUN 1/22/81

| | | |
|---|---|---|
| TI - SOFT. TEMP. | OC | 407.0 |
| TII - MAX. CONTRACTION TEMP. | OC | 504.0 |
| TIII - MAX. DILATATION TEMP. | OC | 504.0 |
| CONTRACTION | % | 4.0 |
| DILATATION | % | -4.0 |

PETROGRAPHIC DATA DATE COMPLETED 2/23/81 PELLET NUMBER 1279

SCREEN ANALYSIS (COAL CRUSHED TO 1/4")

| SIZE | WT.% | ASH% | CUMULATIVE WT.% | CUMULATIVE ASH% |
|---|---|---|---|---|
| -1/4"+ 28M | 61.9 | 23.4 | 61.9 | 23.4 |
| -28M + 60M | 24.1 | 18.5 | 86.0 | 22.0 |
| -60M + 0 | 14.0 | 13.3 | 100.0 | 20.8 |

| V-TYPES TYPE | % |
|---|---|
| 13 | 2.9 |
| 14 | 25.3 |
| 15 | 18.1 |
| 16 | 1.4 |

| REACTIVE COMPONENTS | |
|---|---|
| TOTAL VITRINOID | 47.7 |
| REACTIVE SF. (1/2) | 19.1 |
| EXINOID & RESIN | 0. |
| TOTAL REACTIVES | 66.8 |

| INERT COMPONENTS | |
|---|---|
| INERT SF. (1/2) | 19.0 |
| MICRINOIDS | 7.1 |
| FUSINOIDS | 3.3 |
| MINERAL MATTER | 3.8 |
| TOTAL INERTS | 33.2 |

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.48

BAL. INDEX 2.85 STRENGTH INDEX 6.78 PRED. COKE STAB. INDEX 56.90

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| ( 61.9) | FLT. | 1.30 | 5.6 | 3.3 | 2-1/2 | 5.6 | 3.3 | 44.4 |
| -1/4"+28M | | 1.40 | 27.0 | 6.1 | 1 | 32.6 | 5.6 | 71.0 |
| | | 1.50 | 25.1 | 13.5 | 1 | 57.7 | 9.0 | 49.5 |
| | | 1.60 | 11.2 | 20.0 | 1 | 68.9 | 10.8 | 21.4 |
| | | 1.70 | 4.5 | 30.1 | 1 | 73.4 | 12.0 | |
| | SINK | 1.70 | 26.6 | 54.9 | NC | 100.0 | 23.4 | |
| ( 24.1) | FLT. | 1.30 | 18.5 | 2.2 | 4 | 18.5 | 2.2 | 59.4 |
| -28M+60M | | 1.40 | 29.7 | 5.0 | 2 | 48.2 | 3.9 | 63.1 |
| | | 1.50 | 21.5 | 11.0 | 1 | 69.7 | 6.1 | 35.5 |
| | | 1.60 | 7.3 | 20.6 | 1 | 77.0 | 7.5 | 14.2 |
| | | 1.70 | 4.2 | 29.2 | 1 | 81.2 | 8.6 | |
| | SINK | 1.70 | 18.8 | 61.4 | NC | 100.0 | 18.5 | |
| ( 14.0) | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 0. |
| -60M+ 0 | | 1.40 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.50 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.60 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.70 | 0. | 0. | | 0. | 0. | |
| | SINK | 1.70 | 0. | 0. | | 0. | 0. | |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| (100.0) | FLT. | 1.30 | 11.2 | 2.0 | 5-1/2 | 11.2 | 2.0 | 56.6 |
| -1/8"+ 0 | | 1.40 | 32.3 | 5.1 | 2 | 43.5 | 4.3 | 69.7 |
| | | 1.50 | 21.3 | 11.6 | 1-1/2 | 64.8 | 6.7 | 37.3 |
| | | 1.60 | 7.4 | 20.0 | 1 | 72.2 | 8.1 | 15.7 |
| | | 1.70 | 4.7 | 30.3 | 1 | 76.9 | 9.4 | |
| | SINK | 1.70 | 23.1 | 56.4 | NC | 100.0 | 20.3 | |
| FROTH | | | | | | | | |
| CELL TEST | | | | | | | | |
| ( 24.1) | FROTH | | 0. | 0. | | 0. | 0. | |
| -28M+60M | TAILINGS | | 0. | 0. | | 0. | 0. | |
| FROTH | | | | | | | | |
| CELL TEST | | | | | | | | |
| ( 14.0) | FROTH | | 97.7 | 12.0 | 6-1/2 | 97.7 | 12.0 | |
| -60M + 0 | TAILINGS | | 2.3 | 68.4 | NC | 100.0 | 13.3 | |

NOTES:

PRINTED 05/08/81

DRILL HOLE: FH001 ( CORE ) SEAM
DIP ANGLE 50
RECEIVED: 9/22/80
MM DD YY

INTERCEPT 632.19- 637.87 INTCPT THICKNESS 5.68 TRUE THICKNESS 3.7 M
LATITUDE 5465360.250 M DEPARTURE 658431.625 M ELEVATION 1368.934 M
WEIGHT 10.123 KG MOISTURE 3.2 % COMPLETE: 3/ 9/81
RECOVERY 41.8 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

| | RAW | *CLEAN |
|---|---|---|
| % OF 1/8" X 0 | 100.00 | 49.10 |
| ASH % | 28.50 | 7.10 |
| V.M. % | 15.30 | 18.90 |
| F.C. % | 56.20 | 74.00 |
| F.S.I. | I | I |
| % TOTAL SULF. | 0.34 | 0.40 |
| % P2O5 (PHOSPHATE) | 0. | 0. |
| GROSS CAL. VALUE BTU/LB | 0. | 14145. |

* (-1/8"+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 0/ 0/ 0

| | | |
|---|---|---|
| START | OC | 0. |
| FUSION TEMP. | OC | 0. |
| MAX FLUID TEMP. | OC | 0. |
| FINAL FLUID TEMP. | OC | 0. |
| SOLIDIFICATION TEMP. | OC | 0. |
| MELTING RANGE | OC | 0. |
| MAXIMUM FLUIDITY DD/M | | |

DILATATION (RUHR) DATE RUN 1/22/81

| | | |
|---|---|---|
| TI - SOFT. TEMP. | OC | 0. |
| TII - MAX. CONTRACTION TEMP. | OC | 0. |
| TIII - MAX. DILATATION TEMP. | OC | 0. |
| CONTRACTION | % | 0. |
| DILATATION | % | 0. |

PETROGRAPHIC DATA DATE COMPLETED 2/24/81 PELLET NUMBER 1280

V-TYPES

| TYPE | % |
|---|---|
| 13 | 3.2 |
| 14 | 16.2 |
| 15 | 18.3 |
| 16 | 2.8 |

REACTIVE COMPONENTS

| | |
|---|---|
| TOTAL VITRINOID | 40.5 |
| REACTIVE SF. (1/2) | 21.8 |
| EXINOID & RESIN | 0. |
| TOTAL REACTIVES | 62.3 |

INERT COMPONENTS

| | |
|---|---|
| INERT SF. (1/2) | 21.8 |
| MICRINOIDS | 5.7 |
| FUSINOIDS | 6.2 |
| MINERAL MATTER | 4.0 |
| TOTAL INERTS | 37.7 |

MAX. MEAN REFL. OF VITRINOIDS (RO) 1.50
BAL. INDEX 3.59 STRENGTH INDEX 6.67 PRED. COKE STAB. INDEX 51.90

SCREEN ANALYSIS (COAL CRUSHED TO 1/4")

| SIZE | WT.% | ASH% | CUMULATIVE WT.% | CUMULATIVE ASH% |
|---|---|---|---|---|
| -1/4"+ 28M | 45.5 | 43.5 | 45.5 | 43.5 |
| -28M + 60M | 22.0 | 24.4 | 67.5 | 37.3 |
| -60M + 0 | 32.5 | 18.5 | 100.0 | 31.2 |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| ( 45.5) | FLT. | 1.30 | 2.0 | 4.7 | 5-1/2 | 2.0 | 4.7 | 30.1 |
| -1/4"+28M | | 1.40 | 8.5 | 5.9 | 1 | 10.5 | 5.7 | 53.0 |
| | | 1.50 | 10.0 | 10.7 | 1 | 20.5 | 8.1 | 49.6 |
| | | 1.60 | 7.3 | 14.4 | 1 | 27.8 | 9.8 | 41.3 |
| | | 1.70 | 7.1 | 20.8 | 1 | 34.9 | 12.0 | |
| | SINK | 1.70 | 65.1 | 60.4 | NC | 100.0 | 43.5 | |
| ( 22.0) | FLT. | 1.30 | 4.5 | 2.2 | 6 | 4.5 | 2.2 | 27.8 |
| -28M+60M | | 1.40 | 16.1 | 4.2 | 2 | 20.6 | 3.8 | 55.8 |
| | | 1.50 | 25.3 | 8.0 | 1 | 45.9 | 6.1 | 55.1 |
| | | 1.60 | 15.6 | 16.8 | 1 | 61.5 | 8.8 | 38.1 |
| | | 1.70 | 12.7 | 28.3 | 1 | 74.2 | 12.1 | |
| | SINK | 1.70 | 25.8 | 59.8 | NC | 100.0 | 24.4 | |
| ( 32.5) | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 0. |
| -60M+ 0 | | 1.40 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.50 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.60 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.70 | 0. | 0. | | 0. | 0. | |
| | SINK | 1.70 | 0. | 0. | | 0. | 0. | |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| (100.0) | FLT. | 1.30 | 5.0 | 2.3 | 6-1/2 | 5.0 | 2.3 | 42.3 |
| -1/8"+ 0 | | 1.40 | 22.4 | 4.7 | 1-1/2 | 27.4 | 4.3 | 67.7 |
| | | 1.50 | 21.4 | 9.8 | 1 | 48.8 | 6.7 | 48.1 |
| | | 1.60 | 9.7 | 18.0 | 1 | 58.5 | 8.6 | 24.6 |
| | | 1.70 | 6.2 | 27.5 | 1 | 64.7 | 10.4 | |
| | SINK | 1.70 | 35.3 | 63.8 | NC | 100.0 | 29.2 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| FROTH CELL TEST | | | | | | |
| ( 22.0) -28M+60M | FROTH | 0. | 0. | | 0. | 0. |
| | TAILINGS | 0. | 0. | | 0. | 0. |
| FROTH CELL TEST | | | | | | |
| ( 32.5) -60M + 0 | FROTH | 95.9 | 15.9 | 1-1/2 | 95.9 | 15.9 |
| | TAILINGS | 4.1 | 78.2 | NC | 100.0 | 18.5 |

NOTES:

PRINTED 05/08/81

DRILL HOLE: FH001 ( CORE ) SEAM INTERCEPT 649.02- 649.82 INTCPT THICKNESS 0.80 TRUE THICKNESS 0.4 M

DIP ANGLE 57 LATITUDE 5465360.250 M DEPARTURE 658431.625 M ELEVATION 1352.104 M

RECEIVED: 9/22/80 WEIGHT 4.479 KG MOISTURE 1.6 % COMPLETE: 1/22/81

MM DD YY RECOVERY 72.0 % MM DD YY

PROXIMATE ANALYSIS (DRY BASIS)

| | RAW | *CLEAN |
|---|---|---|
| % OF 1/8" X 0 | 100.00 | 19.20 |
| ASH % | 57.30 | 12.00 |
| V.M. % | 11.30 | 17.10 |
| F.C. % | 31.40 | 70.90 |
| F.S.I. | NC | 2-1/2 |
| % TOTAL SULF. | 0.38 | 0.46 |
| % P205 (PHOSPHATE) | 0. | 0. |
| GROSS CAL. VALUE BTU/LB | 0. | 13470. |

* (-1/8"+0 COAL FLOATED AT 1.50 S.G.)

GIESELER PLASTICITY, DATE RUN 0/ 0/ 0

| | | |
|---|---|---|
| START | OC | 0. |
| FUSION TEMP. | OC | 0. |
| MAX FLUID TEMP. | OC | 0. |
| FINAL FLUID TEMP. | OC | 0. |
| SOLIDIFICATION TEMP. | OC | 0. |
| MELTING RANGE | OC | 0. |
| MAXIMUM FLUIDITY DD/M | | |

DILATATION (RUHR) DATE RUN 1/22/81

| | | |
|---|---|---|
| TI - SOFT. TEMP. | OC | 467.0 |
| TII - MAX. CONTRACTION TEMP. | OC | 500.0 |
| TIII - MAX. DILATATION TEMP. | OC | 500.0 |
| CONTRACTION | % | 1.0 |
| DILATATION | % | -1.0 |

PETROGRAPHIC DATA DATE COMPLETED 2/24/81 PELLET NUMBER 1280

| V-TYPES TYPE | % | REACTIVE COMPONENTS | | INERT COMPONENTS | |
|---|---|---|---|---|---|
| | | TOTAL VITRINOID | 0. | INERT SF. (1/2) | 0. |
| 0 | 0. | REACTIVE SF. (1/2) | 0. | MICRINOIDS | 0. |
| 0 | 0. | EXINOID & RESIN | 0. | FUSINOIDS | 0. |
| 0 | 0. | | | MINERAL MATTER | 0. |
| 0 | 0. | TOTAL REACTIVES | 0. | TOTAL INERTS | 0. |

MAX. MEAN REFL. OF VITRINOIDS (RO) 0.

BAL. INDEX 0. STRENGTH INDEX 0. PRED. COKE STAB. INDEX 0.

SCREEN ANALYSIS (COAL CRUSHED TO 1/4")

| SIZE | WT.% | ASH% | CUMULATIVE WT.% | CUMULATIVE ASH% |
|---|---|---|---|---|
| -1/4"+ 28M | 62.3 | 59.9 | 62.3 | 59.9 |
| -28M + 60M | 20.0 | 51.5 | 82.3 | 57.9 |
| -60M + 0 | 17.7 | 41.5 | 100.0 | 55.0 |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| ( 62.3) | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 31.2 |
| -1/4"+28M | | 1.40 | 10.3 | 8.9 | 2 | 10.3 | 8.9 | 57.9 |
| | | 1.50 | 8.8 | 16.3 | 1 | 19.1 | 12.3 | 44.5 |
| | | 1.60 | 5.9 | 24.5 | 1 | 25.0 | 15.2 | 42.1 |
| | | 1.70 | 8.0 | 48.5 | 1 | 33.0 | 23.3 | |
| | SINK | 1.70 | 67.0 | 77.9 | NC | 100.0 | 59.9 | |
| ( 20.0) | FLT. | 1.30 | 5.3 | 3.9 | 7-1/2 | 5.3 | 3.9 | 33.5 |
| -28M+60M | | 1.40 | 7.4 | 6.5 | 7 | 12.7 | 5.4 | 46.4 |
| | | 1.50 | 10.2 | 12.6 | 2 | 22.9 | 8.6 | 47.0 |
| | | 1.60 | 7.6 | 20.9 | 1 | 30.5 | 11.7 | 39.6 |
| | | 1.70 | 7.4 | 27.6 | 1 | 37.9 | 14.8 | |
| | SINK | 1.70 | 62.1 | 73.9 | NC | 100.0 | 51.5 | |
| ( 17.7) | FLT. | 1.30 | 0. | 0. | | 0. | 0. | 0. |
| -60M+ 0 | | 1.40 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.50 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.60 | 0. | 0. | | 0. | 0. | 0. |
| | | 1.70 | 0. | 0. | | 0. | 0. | |
| | SINK | 1.70 | 0. | 0. | | 0. | 0. | |

WASHABILITY DATE RUN 0/ 0/ 0

| (WT.%) AND SIZE | | S.G. | DIRECT % WT. | DIRECT % ASH | FSI | CUM. % WT. | CUM. % ASH | +/- .1 S.G. |
|---|---|---|---|---|---|---|---|---|
| (100.0) | FLT. | 1.30 | 3.2 | 2.5 | 7-1/2 | 3.2 | 2.5 | 20.3 |
| -1/8"+ 0 | | 1.40 | 4.2 | 5.9 | 6-1/2 | 7.4 | 4.4 | 32.7 |
| | | 1.50 | 7.7 | 12.5 | 1-1/2 | 15.1 | 8.5 | 43.1 |
| | | 1.60 | 8.0 | 20.6 | 1 | 23.1 | 12.7 | 58.2 |
| | | 1.70 | 13.2 | 44.2 | 1 | 36.3 | 24.2 | |
| | SINK | 1.70 | 63.6 | 78.2 | NC | 99.9 | 58.6 | |
| FROTH CELL TEST | | | | | | | | |
| ( 20.0) | FROTH | | 0. | 0. | | 0. | 0. | |
| -28M+60M | TAILINGS | | 0. | 0. | | 0. | 0. | |
| FROTH CELL TEST | | | | | | | | |
| ( 17.7) | FROTH | | 74.5 | 29.1 | 2-1/2 | 74.5 | 29.1 | |
| -60M + 0 | TAILINGS | | 25.5 | 77.8 | NC | 100.0 | 41.5 | |

NOTES: