



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering

COMPANY ATLANTIC RICHFIELD COMPANY. FILE NO. RP-4-OSA-135
WELL EVACUATION #1 DATE 6/19/67 SNIPS GOOSEY
FIELD _____ FORMATION _____ ELEV _____
COUNTY _____ STATE _____ DRUG FLD _____ CORES _____
LOCATION 36-163-245 REMARKS _____

OIL SHALE ASSAY

| Sample Number | Depth, Feet | OIL | | Oil Specific Gravity | WATER | | Smoother Shale Wt % | Gas Plus Loss Wt % | Tendency to Coke | REMARKS |
|---------------|-------------|---------|-------|----------------------|---------|-------|---------------------|--------------------|------------------|---------|
| | | Gal/Ton | Wt. % | | Gal/Ton | Wt. % | | | | |
| 1 | 447-48 | 5.6 | 2.2 | 0.926 | 2.9 | 1.2 | 96.0 | 0.6 | NIL | |
| 2 | 448-49 | 6.1 | 2.3 | 0.922 | 2.9 | 1.2 | 95.7 | 0.8 | NIL | |
| 3 | 449-50 | 6.4 | 2.5 | 0.917 | 3.6 | 1.5 | 95.4 | 0.6 | NIL | |
| 4 | 450-51 | 10.3 | 4.0 | 0.926 | 2.9 | 1.2 | 93.9 | 0.9 | NIL | |
| 5 | 451-52 | 21.1 | 8.1 | 0.917 | 3.3 | 1.6 | 88.8 | 1.5 | NIL | |
| 6 | 452-53 | 9.8 | 3.7 | 0.917 | 3.4 | 1.4 | 93.7 | 1.2 | NIL | |
| 7 | 453-54 | 7.4 | 2.8 | 0.914 | 3.8 | 1.6 | 94.9 | 0.7 | NIL | |
| 8 | 454-55 | 8.4 | 3.2 | 0.917 | 3.6 | 1.5 | 91.5 | 0.8 | NIL | |
| 9 | 455-56 | 9.7 | 3.7 | 0.919 | 2.9 | 1.2 | 94.2 | 0.9 | NIL | |
| 10 | 456-57 | 27.1 | 10.4 | 0.918 | 4.8 | 2.0 | 85.6 | 2.0 | NIL | |
| 11 | 457-58 | 10.9 | 4.2 | 0.934 | 2.9 | 1.2 | 93.7 | 0.9 | NIL | |
| 12 | 458-59 | 8.1 | 3.1 | 0.932 | 3.1 | 1.3 | 94.8 | 0.8 | NIL | |
| 13 | 459-60 | 8.1 | 3.2 | 0.934 | 3.1 | 1.3 | 94.6 | 0.9 | NIL | |
| 14 | 460-61 | 10.2 | 4.0 | 0.937 | 2.9 | 1.2 | 93.9 | 0.9 | NIL | |
| 15 | 461-62 | 11.7 | 4.6 | 0.934 | 2.6 | 1.1 | 93.4 | 0.9 | NIL | |
| 16 | 462-63 | 11.7 | 4.5 | 0.924 | 2.6 | 1.1 | 93.5 | 0.9 | NIL | |
| 17 | 463-64 | 13.3 | 5.1 | 0.915 | 3.4 | 1.4 | 92.5 | 1.0 | NIL | |
| 18 | 464-65 | 17.3 | 6.6 | 0.915 | 3.6 | 1.5 | 90.6 | 1.3 | NIL | |
| 19 | 465-66 | 11.5 | 4.4 | 0.923 | 2.4 | 1.0 | 93.2 | 1.4 | NIL | |
| 20 | 466-67 | 13.7 | 5.3 | 0.923 | 1.9 | 0.8 | 92.9 | 1.0 | NIL | |
| 21 | 467-68 | 12.8 | 5.0 | 0.929 | 2.2 | 0.9 | 93.2 | 0.9 | NIL | |
| 22 | 468-69 | 13.0 | 5.1 | 0.929 | 1.9 | 0.8 | 93.1 | 1.0 | NIL | |
| 23 | 469-70 | 10.4 | 4.0 | 0.927 | 2.4 | 1.0 | 94.2 | 0.8 | NIL | |
| 24 | 470-71 | 12.9 | 5.0 | 0.923 | 1.9 | 0.8 | 93.3 | 0.9 | NIL | |
| 25 | 471-72 | 14.0 | 5.4 | 0.925 | 2.6 | 1.1 | 92.5 | 1.0 | NIL | |

| Sample Number | Depth, Feet | CHL | | Specific Gravity | WATER | | Moisture Content, % | Dry Weight, % | Remarks |
|------------------|----------------|-------|-------|---------------------|-------|-------|---------------------------|---------------------|-----------------------------|
| | | Grain | Wt. % | | Grain | Wt. % | | | |
| 26 | 472-73 | 12.6 | 4.9 | 0.927 | 2.4 | 1.0 | 93.3 | 0.8 | NIL |
| 27 | 473-74 | 11.2 | 4.3 | 0.918 | 2.9 | 1.2 | 93.5 | 1.0 | NIL |
| 28 | 474-75 | 11.0 | 4.2 | 0.905 | 3.4 | 1.4 | 93.5 | 0.9 | NIL |
| 29 | 475-76 | 11.7 | 4.4 | 0.908 | 3.8 | 1.6 | 92.9 | 1.1 | NIL |
| 30 | 476-77 | 10.5 | 4.0 | 0.903 | 4.3 | 1.8 | 93.1 | 1.1 | NIL |
| 31 | 477-78 | 11.0 | 4.2 | 0.903 | 3.6 | 1.5 | 93.4 | 0.9 | NIL |
| 32 | 478-79 | 11.2 | 4.2 | 0.903 | 3.8 | 1.6 | 93.1 | 1.1 | NIL |
| 33 | 479-80 | 11.3 | 4.3 | 0.914 | 2.9 | 1.2 | 93.6 | 0.9 | NIL |
| 34 | 480-81 | 10.7 | 4.1 | 0.907 | 2.9 | 1.2 | 93.4 | 1.3 | NIL |
| 35 | 481-82 | 13.7 | 5.2 | 0.905 | 3.1 | 1.3 | 92.3 | 1.1 | NIL |
| 36 | 482-83 | 15.7 | 5.9 | 0.905 | 3.4 | 1.4 | 91.2 | 1.5 | NIL |
| 37 | 483-84 | 14.5 | 5.4 | 0.903 | 3.8 | 1.6 | 91.6 | 1.4 | NIL |
| 38 | 484-85 | 12.9 | 4.9 | 0.914 | 4.3 | 1.8 | 92.0 | 1.3 | NIL |
| 39 | 485-86 | 25.9 | 10.5 | 0.923 | 3.8 | 1.6 | 86.0 | 1.9 | NIL |
| 40 | 486-87 | 18.6 | 7.1 | 0.920 | 4.1 | 1.7 | 89.7 | 1.5 | NIL |
| 41 | 487-88 | 22.5 | 8.5 | 0.904 | 3.6 | 1.5 | 88.3 | 1.7 | NIL |
| 42 | 488-89 | 21.6 | 8.1 | 0.905 | 3.8 | 1.6 | 88.7 | 1.6 | NIL |
| 43 | 489-90 | 15.2 | 5.8 | 0.908 | 4.1 | 1.7 | 91.2 | 1.3 | NIL |
| 44 | 490-91 | 13.2 | 5.0 | 0.904 | 3.8 | 1.6 | 92.3 | 1.1 | NIL |
| 45 | 491-92 | 9.0 | 3.5 | 0.928 | 5.0 | 2.1 | 93.5 | 0.9 | NIL |
| 46 | 492-93 | 9.8 | 3.7 | 0.916 | 3.1 | 1.3 | 94.1 | 0.9 | NIL |
| 47 | 493-94 | 9.5 | 3.6 | 0.898 | 3.8 | 1.6 | 93.8 | 1.0 | NIL WAXY DEPOSIT AFTER HEAT |
| 48 | 494-95 | 6.2 | 2.4 | 0.905 | 4.8 | 2.0 | 94.8 | 0.8 | NIL " |
| 49 | 495-96 | 5.5 | 2.1 | 0.896 | 3.1 | 1.3 | 95.8 | 0.8 | NIL " |
| 50 | 496-97 | 9.4 | 3.5 | 0.884 | 3.1 | 1.3 | 94.3 | 0.9 | NIL " |
| 51 | 497-98 | 8.2 | 3.1 | 0.893 | 3.6 | 1.5 | 94.5 | 0.9 | NIL " |
| 52 | 498-99 | 19.5 | 7.3 | 0.895 | 3.8 | 1.6 | 89.3 | 1.3 | MEDIUM " |
| 53 | 499-500 | 12.0 | 4.5 | 0.903 | 3.6 | 1.5 | 92.8 | 1.2 | NIL |
| 54 | 500-01 | 8.3 | 3.1 | 0.902 | 4.6 | 1.9 | 94.0 | 1.0 | NIL |
| 55 | 501-02 | 5.6 | 2.1 | 0.894 | 4.6 | 1.9 | 95.2 | 0.8 | NIL |
| 56 | 502-03 | 6.6 | 2.5 | 0.909 | 3.6 | 1.5 | 94.3 | 0.7 | NIL |
| 57 | 503-04 | 11.6 | 4.4 | 0.917 | 3.6 | 1.5 | 93.1 | 1.0 | NIL |

| No. | Date | OIL | | S. G. Density | Viscosity | | S. G. 15° | O. V. as 15° | S. G. 15° | Remarks |
|-----|--------|-------|-------|------------------|-----------|---------|--------------|-----------------|--------------|---------|
| | | Color | wt. % | | 60° F. | 100° F. | | | | |
| 58 | 504-05 | 9.4 | 3.6 | 0.904 | 4.8 | 2.0 | 93.5 | 0.9 | NIL | |
| 59 | 505-06 | 3.8 | 1.5 | 0.917 | 6.7 | 2.8 | 95.0 | 0.7 | NIL | |
| 60 | 506-07 | 5.2 | 2.0 | 0.914 | 6.2 | 2.7 | 94.7 | 0.6 | NIL | |
| 61 | 507-08 | 7.8 | 2.9 | 0.906 | 6.0 | 2.5 | 93.7 | 0.9 | NIL | |
| 62 | 508-09 | 8.1 | 3.1 | 0.914 | 4.8 | 2.0 | 94.0 | 0.9 | NIL | |
| 63 | 509-10 | 5.7 | 2.2 | 0.913 | 4.8 | 2.0 | 95.1 | 0.7 | NIL | |
| 64 | 510-11 | 8.0 | 3.1 | 0.916 | 3.6 | 1.5 | 94.5 | 0.9 | NIL | |
| 65 | 511-12 | 20.8 | 7.8 | 0.904 | 4.6 | 1.9 | 88.8 | 1.5 | NIL | |
| 66 | 512-13 | 8.3 | 2.2 | 0.914 | 5.0 | 2.1 | 93.9 | 0.8 | NIL | |
| 67 | 513-14 | 7.1 | 2.7 | 0.924 | 6.2 | 2.6 | 94.0 | 0.7 | NIL | |
| 68 | 514-15 | 7.6 | 2.9 | 0.908 | 4.8 | 2.0 | 94.3 | 0.8 | NIL | |
| 69 | 515-16 | 7.8 | 3.0 | 0.913 | 5.3 | 2.2 | 94.0 | 0.8 | NIL | |
| 70 | 516-17 | 5.8 | 2.2 | 0.914 | 5.5 | 2.3 | 94.7 | 0.8 | NIL | |
| 71 | 517-18 | 5.8 | 2.2 | 0.924 | 4.6 | 1.9 | 95.2 | 0.7 | NIL | |
| 72 | 518-19 | 18.7 | 7.1 | 0.914 | 4.8 | 2.0 | 89.4 | 1.5 | NIL | |
| 73 | 519-20 | 9.4 | 3.6 | 0.926 | 4.1 | 1.7 | 93.8 | 0.9 | NIL | |
| 74 | 520-21 | 8.4 | 3.3 | 0.933 | 3.8 | 1.6 | 94.4 | 0.7 | NIL | |
| 75 | 521-22 | 6.3 | 2.4 | 0.928 | 5.0 | 2.1 | 94.8 | 0.7 | NIL | |
| 76 | 522-23 | 4.6 | 1.8 | 0.934 | 5.5 | 2.3 | 95.2 | 0.7 | NIL | |
| 77 | 523-24 | 7.4 | 2.8 | 0.923 | 4.1 | 1.7 | 94.6 | 0.9 | NIL | |
| 78 | 524-25 | 24.1 | 9.3 | 0.925 | 4.8 | 2.0 | 86.8 | 1.9 | NIL | |
| 79 | 525-26 | 12.0 | 4.6 | 0.928 | 5.5 | 2.3 | 92.0 | 1.1 | NIL | |
| 80 | 526-27 | 7.1 | 2.7 | 0.926 | 4.8 | 2.0 | 94.5 | 0.8 | NIL | |
| 81 | 527-28 | 7.6 | 2.9 | 0.914 | 4.8 | 2.0 | 94.3 | 0.8 | NIL | |
| 82 | 528-29 | 9.8 | 3.7 | 0.912 | 4.6 | 1.9 | 93.3 | 1.1 | NIL | |
| 83 | 529-30 | 11.8 | 4.5 | 0.914 | 5.0 | 2.1 | 92.3 | 1.1 | NIL | |
| 84 | 530-31 | 30.8 | 11.7 | 0.915 | 6.0 | 2.5 | 93.7 | 2.1 | NIL | |
| 85 | 531-32 | 21.4 | 8.2 | 0.918 | 4.6 | 1.9 | 89.7 | 0.2 | NIL | |
| 86 | 532-33 | 6.5 | 2.5 | 0.924 | 4.6 | 1.9 | 94.9 | 0.7 | NIL | |
| 87 | 533-34 | 6.6 | 2.6 | 0.927 | 4.8 | 2.0 | 94.7 | 0.7 | NIL | |
| 88 | 534-35 | 5.8 | 2.2 | 0.925 | 4.3 | 1.8 | 95.2 | 0.8 | NIL | |

| Sample Number | Sample Test | GR | | Oil Density | n _D 15 | | S. G. 15.6 | S. G. 15.6 | T. C. % | Remarks |
|------------------|----------------|-------|--------|----------------|-------------------|--------|---------------|---------------|------------|---------|
| | | G./Cm | Vol. % | | G./Cm | Vol. % | | | | |
| 89 | 535-36 | 5.8 | 2.3 | 0.923 | 3.8 | 1.6 | 95.5 | 0.6 | NIL | |
| 90 | 536-37 | 9.2 | 3.5 | 0.921 | 3.4 | 1.4 | 94.2 | 0.9 | NIL | |
| 91 | 537-38 | 12.0 | 4.6 | 0.923 | 3.1 | 1.3 | 93.1 | 1.0 | NIL | |
| 92 | 538-39 | 12.7 | 4.8 | 0.913 | 3.4 | 1.4 | 92.8 | 1.0 | NIL | |
| 93 | 539-40 | 10.6 | 4.1 | 0.917 | 3.6 | 1.5 | 93.5 | 0.9 | NIL | |
| 94 | 540-41 | 8.4 | 3.2 | 0.917 | 4.8 | 2.0 | 94.0 | 0.8 | NIL | |
| 95 | 541-42 | 10.0 | 3.8 | 0.914 | 3.6 | 1.5 | 93.7 | 1.0 | NIL | |
| 96 | 542-43 | 11.4 | 4.3 | 0.915 | 3.4 | 1.4 | 93.1 | 1.2 | NIL | |
| 97 | 543-44 | 34.2 | 13.0 | 0.913 | 4.8 | 2.0 | 82.4 | 2.6 | NIL | |
| 98 | 544-45 | 10.9 | 4.2 | 0.922 | 2.6 | 1.1 | 93.5 | 1.2 | NIL | |
| 99 | 545-46 | 8.8 | 3.4 | 0.924 | 3.6 | 1.5 | 93.9 | 1.2 | NIL | |
| 100 | 546-47 | 2.6 | 1.0 | 0.92* | 2.6 | 1.1 | 97.1 | 0.8 | NIL | |
| 101 | 547-48 | 3.1 | 1.1 | 0.92* | 3.1 | 1.3 | 96.2 | 1.4 | NIL | |
| 102 | 548-49 | 8.6 | 3.3 | 0.928 | 3.6 | 1.5 | 94.0 | 1.2 | NIL | |
| 103 | 549-50 | 20.1 | 7.7 | 0.923 | 2.9 | 1.2 | 89.3 | 1.8 | SLIGHT | |
| 104 | 550-51 | 10.5 | 4.1 | 0.933 | 3.4 | 1.4 | 93.5 | 1.0 | NIL | |
| 105 | 551-52 | 8.7 | 3.4 | 0.932 | 3.6 | 1.5 | 94.2 | 0.9 | NIL | |
| 106 | 552-53 | 8.8 | 3.4 | 0.923 | 3.8 | 1.6 | 94.1 | 0.9 | NIL | |
| 107 | 553-54 | 9.9 | 3.8 | 0.933 | 3.6 | 1.5 | 93.7 | 1.0 | NIL | |
| 108 | 554-55 | 12.3 | 4.7 | 0.918 | 5.5 | 2.3 | 92.0 | 1.0 | NIL | |
| 109 | 555-56 | 12.8 | 4.9 | 0.922 | 3.9 | 1.2 | 92.7 | 1.2 | NIL | |
| 110 | 556-57 | 10.5 | 4.1 | 0.939 | 2.2 | 0.9 | 94.0 | 1.0 | NIL | |
| 111 | 557-58 | 9.8 | 3.8 | 0.926 | 4.6 | 1.9 | 93.4 | 0.9 | NIL | |
| 112 | 558-59 | 8.8 | 3.4 | 0.939 | 2.4 | 1.0 | 94.6 | 1.0 | NIL | |
| 113 | 559-60 | 8.3 | 3.2 | 0.936 | 2.4 | 1.0 | 94.8 | 1.0 | NIL | |
| 114 | 560-61 | 10.0 | 3.9 | 0.933 | 2.6 | 1.0 | 94.0 | 1.0 | NIL | |
| 115 | 561-62 | 11.3 | 4.4 | 0.936 | 2.9 | 1.2 | 93.2 | 1.2 | NIL | |
| 116 | 562-63 | 15.1 | 5.8 | 0.916 | 5.0 | 2.1 | 91.0 | 1.1 | NIL | |
| 117 | 563-64 | 11.0 | 4.2 | 0.923 | 2.4 | 1.0 | 93.9 | 0.9 | NIL | |

* INSUFFICIENT OIL RECOVERED TO TEST.
 AVERAGE OIL DENSITY USED

| Station Location | Date Test | CS | | CS Gravelly | V _{max} | | V _{max} 100% | C _u /C _m 100% | T _{max} 7.5 | Remarks |
|---------------------|--------------|----------|------|----------------|------------------|------|--------------------------|--|-------------------------|---------|
| | | G.M./ton | Wt % | | G.M./ton | Wt % | | | | |
| 118 | 564-65 | 10.2 | 4.0 | 0.925 | 2.2 | 0.9 | 94.3 | 0.8 | NIL | |
| 119 | 565-66 | 11.2 | 4.3 | 0.924 | 1.7 | 0.7 | 94.2 | 0.8 | NIL | |
| 120 | 566-67 | 9.1 | 3.5 | 0.933 | 1.9 | 0.8 | 94.9 | 0.8 | NIL | |
| 121 | 567-68 | 12.0 | 4.7 | 0.937 | 1.7 | 0.7 | 93.8 | 0.8 | NIL | |
| 122 | 568-69 | 10.8 | 4.2 | 0.925 | 1.9 | 0.8 | 94.3 | 0.7 | NIL | |
| 123 | 569-70 | 10.6 | 4.1 | 0.926 | 2.2 | 0.9 | 94.1 | 0.9 | NIL | |
| 124 | 570-71 | 11.7 | 4.5 | 0.917 | 1.7 | 0.7 | 94.1 | 0.7 | NIL | |
| 125 | 571-72 | 12.8 | 4.9 | 0.914 | 3.6 | 1.5 | 92.8 | 0.8 | NIL | |
| 126 | 572-73 | 9.6 | 3.7 | 0.927 | 2.9 | 1.2 | 94.2 | 0.9 | NIL | |
| 127 | 573-74 | 10.9 | 4.2 | 0.923 | 1.7 | 0.7 | 94.4 | 0.7 | NIL | |
| 128 | 574-75 | 10.9 | 4.2 | 0.920 | 2.6 | 1.1 | 93.9 | 0.8 | NIL | |
| 129 | 575-76 | 10.7 | 4.1 | 0.917 | 2.2 | 0.9 | 94.3 | 0.7 | NIL | |
| 130 | 576-77 | 8.2 | 3.1 | 0.916 | 2.4 | 1.0 | 95.2 | 0.7 | NIL | |
| 131 | 577-78 | 11.9 | 4.5 | 0.917 | 2.4 | 1.0 | 93.2 | 1.3 | NIL | |
| 132 | 578-79 | 13.9 | 5.3 | 0.913 | 2.2 | 0.9 | 92.7 | 1.1 | NIL | |
| 133 | 579-80 | 9.3 | 3.6 | 0.925 | 2.4 | 1.0 | 94.7 | 0.7 | NIL | |
| 134 | 580-81 | 7.5 | 2.9 | 0.919 | 2.4 | 1.0 | 95.4 | 0.7 | NIL | |
| 135 | 581-82 | 4.7 | 1.8 | 0.914 | 1.4 | 0.6 | 97.1 | 0.5 | NIL | |
| 136 | 582-83 | 7.9 | 3.0 | 0.918 | 1.9 | 0.8 | 95.5 | 0.7 | NIL | |
| 137 | 583-84 | 14.9 | 5.7 | 0.917 | 1.9 | 0.8 | 92.5 | 1.0 | NIL | |
| 138 | 584-85 | 12.0 | 4.6 | 0.915 | 1.9 | 0.8 | 93.7 | 0.9 | NIL | |
| 139 | 585-86 | 9.4 | 3.6 | 0.916 | 2.2 | 0.9 | 94.6 | 0.9 | NIL | |
| 140 | 586-87 | 9.2 | 3.5 | 0.917 | 1.9 | 0.8 | 94.8 | 0.9 | NIL | |
| 141 | 587-88 | 8.5 | 3.3 | 0.927 | 2.2 | 0.9 | 95.0 | 0.8 | NIL | |
| 142 | 588-89 | 15.4 | 5.9 | 0.915 | 2.4 | 1.0 | 92.1 | 1.0 | NIL | |
| 143 | 589-90 | 12.3 | 4.7 | 0.908 | 6.0 | 2.5 | 92.2 | 0.6 | NIL | |
| 144 | 590-91 | 5.8 | 2.2 | 0.917 | 7.2 | 3.0 | 94.4 | 0.4 | NIL | |
| 145 | 591-92 | 9.8 | 3.8 | 0.930 | 4.6 | 1.9 | 93.6 | 0.7 | NIL | |
| 146 | 592-93 | 13.1 | 5.0 | 0.910 | 1.9 | 0.8 | 93.3 | 0.9 | NIL | |
| 147 | 593-94 | 13.7 | 5.2 | 0.917 | 1.9 | 0.8 | 93.1 | 0.9 | NIL | |
| 148 | 594-95 | 14.3 | 5.5 | 0.917 | 1.9 | 0.8 | 92.7 | 1.0 | NIL | |

| Sample No. 1-1 | Depth, feet | Gravel | | Clay Specific Gravity | WATER | | Sand Loss Vol. % | Silt & Clay Loss Vol. % | Remarks |
|-------------------|----------------|------------------|-----------------|-----------------------------|------------------|-----------------|------------------------|-------------------------------|---------|
| | | Gravel Vol. % | Gravel Wt. % | | Gravel Vol. % | Gravel Wt. % | | | |
| 149 | 595-96 | 14.1 | 5.4 | 0.915 | 2.2 | 0.9 | 92.9 | 0.8 | NIL |
| 150 | 596-97 | 18.5 | 7.0 | 0.913 | 2.6 | 1.1 | 89.6 | 1.3 | NIL |
| 151 | 597-98 | 10.1 | 3.9 | 0.922 | 2.4 | 1.0 | 94.1 | 1.0 | NIL |
| 152 | 598-99 | 11.7 | 4.5 | 0.915 | 2.4 | 1.0 | 93.6 | 0.9 | NIL |
| 153 | 599-600 | 8.0 | 3.1 | 0.915 | 2.9 | 1.2 | 94.9 | 0.8 | NIL |
| 154 | 600-01 | 6.5 | 2.5 | 0.934 | 3.6 | 1.5 | 95.1 | 0.9 | NIL |
| 155 | 6 01-02 | 11.4 | 4.4 | 0.913 | 2.9 | 1.2 | 93.5 | 0.9 | NIL |
| 156 | 602-03 | 12.0 | 4.6 | 0.923 | 2.6 | 1.1 | 93.2 | 1.1 | NIL |
| 157 | 603-04 | 6.2 | 2.4 | 0.928 | 3.9 | 1.2 | 95.6 | 0.8 | NIL |
| 158 | 604-05 | 9.6 | 3.7 | 0.927 | 2.4 | 1.0 | 94.4 | 0.9 | NIL |
| 159 | 605-06 | 10.9 | 4.2 | 0.928 | 2.6 | 1.1 | 94.7 | 1.0 | NIL |
| 160 | 606-07 | 12.7 | 4.8 | 0.919 | 2.4 | 1.0 | 93.2 | 1.0 | NIL |
| 161 | 607-08 | 7.0 | 2.7 | 0.922 | 2.9 | 1.2 | 95.3 | 0.8 | NIL |
| 162 | 608-09 | 7.6 | 3.0 | 0.933 | 2.9 | 1.2 | 95.0 | 0.8 | NIL |
| 163 | 609-10 | 9.2 | 3.6 | 0.917 | 2.6 | 1.1 | 94.3 | 1.0 | NIL |
| 164 | 610-11 | 15.1 | 5.8 | 0.922 | 2.4 | 1.0 | 92.0 | 1.2 | NIL |
| 165 | 611-12 | 8.4 | 3.2 | 0.918 | 2.4 | 1.0 | 94.7 | 1.1 | NIL |
| 166 | 612-13 | 26.8 | 10.2 | 0.918 | 2.6 | 1.1 | 86.8 | 1.9 | SLIGHT |
| 167 | 613-14 | 24.0 | 9.2 | 0.915 | 2.4 | 1.0 | 88.0 | 1.8 | NIL |
| 168 | 614-15 | 4.9 | 1.9 | 0.921 | 2.4 | 1.0 | 96.2 | 1.0 | NIL |
| 169 | 615-16 | 12.3 | 4.7 | 0.921 | 2.4 | 1.0 | 93.2 | 1.1 | NIL |
| 170 | 616-17 | 13.4 | 5.1 | 0.905 | 2.4 | 1.0 | 92.8 | 1.1 | NIL |
| 171 | 617-18 | 14.3 | 5.4 | 0.905 | 1.9 | 0.8 | 92.6 | 1.2 | NIL |
| 172 | 618-19 | 34.4 | 13.1 | 0.912 | 2.4 | 1.0 | 83.7 | 2.2 | SLIGHT |
| 173 | 619-20 | 14.6 | 5.5 | 0.907 | 2.4 | 1.0 | 92.2 | 1.3 | NIL |
| 174 | 620-21 | 14.6 | 5.6 | 0.905 | 1.7 | 0.7 | 92.5 | 1.2 | NIL |
| 175 | 621-22 | 30.8 | 11.4 | 0.894 | 2.6 | 1.1 | 85.5 | 2.0 | SLIGHT |
| 176 | 622-23 | 18.4 | 7.0 | 0.915 | 2.4 | 1.0 | 90.5 | 1.5 | NIL |
| 177 | 623-24 | 6.5 | 2.5 | 0.919 | 1.7 | 0.7 | 95.9 | 0.9 | NIL |
| 178 | 624-25 | 4.6 | 1.8 | 0.926 | 1.9 | 0.8 | 96.5 | 0.9 | NIL |

OIL SHALE ASSAY

| Sample Number | Depth, Feet | OIL | | Oil Specific Gravity | WATER | | Spend Shale Wt. % | Gas Flux Loss Wt. % | Tendency to Coke | REMARKS |
|------------------|----------------|---------|-------|----------------------------|---------|-------|-------------------------|---------------------------|------------------------|---------|
| | | Cal/Ton | Wt. % | | Cal/Ton | Wt. % | | | | |
| 179 | 625-26 | 4.4 | 1.7 | 0.926 | 1.7 | 0.7 | 96.8 | 0.8 | NIL | |
| 180 | 626-27 | 2.5 | 1.0 | 0.92* | 1.4 | 0.6 | 97.6 | 0.8 | NIL | |
| 181 | 627-28 | 6.9 | 2.7 | 0.928 | 1.7 | 0.7 | 95.6 | 1.0 | NIL | |
| 182 | 628-29 | 4.3 | 1.7 | 0.933 | 1.4 | 0.6 | 96.7 | 1.0 | NIL | |
| 183 | 629-30 | 4.1 | 1.6 | 0.92* | 1.9 | 0.8 | 96.8 | 0.8 | NIL | |
| 184 | 630-31 | 3.3 | 1.3 | 0.92* | 1.9 | 0.8 | 97.4 | 0.5 | NIL | |
| 185 | 631-32 | 1.4 | 0.5 | 0.92* | 2.4 | 1.0 | 97.8 | 0.7 | NIL | |
| 186 | 632-33 | 1.4 | 0.6 | 0.92* | 2.4 | 1.0 | 97.8 | 0.6 | NIL | |
| 187 | 633-33½ | 2.2 | 0.8 | 0.92* | 2.4 | 1.0 | 97.6 | 0.6 | NIL | |
| 188 | 635-36 | 8.6 | 3.3 | 0.903 | 3.4 | 1.4 | 94.3 | 1.0 | NIL | |
| 189 | 636-37 | 15.1 | 5.7 | 0.901 | 2.2 | 0.9 | 92.2 | 1.1 | NIL | |
| 190 | 637-38 | 19.9 | 7.5 | 0.903 | 2.6 | 1.1 | 89.8 | 1.6 | NIL | |
| 191 | 638-39 | 41.3 | 14.0 | 0.899 | 2.6 | 1.1 | 82.6 | 2.3 | NIL | |
| 192 | 639-40 | 18.0 | 6.2 | 0.905 | 3.1 | 1.3 | 91.1 | 1.4 | NIL | |
| 193 | 640-41 | 13.9 | 5.2 | 0.905 | 2.4 | 1.0 | 92.7 | 1.1 | NIL | |
| 194 | 641-42 | 11.5 | 4.4 | 0.907 | 3.1 | 1.3 | 93.3 | 1.0 | NIL | |
| 195 | 642-43 | 18.0 | 6.9 | 0.913 | 4.1 | 1.7 | 90.3 | 1.1 | NIL | |
| 196 | 643-44 | 28.1 | 10.6 | 0.905 | 2.4 | 1.0 | 86.6 | 1.8 | SLIGHT | |
| 197 | 644-45 | 31.0 | 11.7 | 0.907 | 2.4 | 1.0 | 85.3 | 2.0 | SLIGHT | |
| 198 | 645-46 | 22.8 | 8.6 | 0.903 | 2.4 | 1.0 | 88.9 | 1.1 | SLIGHT | |
| 199 | 646-47 | 40.6 | 15.0 | 0.885 | 2.4 | 1.0 | 82.0 | 2.0 | MEDIUM | |
| 200 | 647-48 | 40.8 | 15.3 | 0.897 | 4.3 | 1.8 | 80.3 | 2.6 | MEDIUM | |
| 201 | 648-49 | 27.4 | 10.2 | 0.889 | 2.6 | 1.1 | 87.2 | 1.5 | SLIGHT | |
| 202 | 649-50 | 19.7 | 7.4 | 0.899 | 2.9 | 1.2 | 90.0 | 1.4 | NIL | |
| 203 | 650-51 | 17.5 | 6.6 | 0.909 | 2.9 | 1.2 | 90.8 | 1.4 | NIL | |
| 204 | 651-52 | 10.8 | 4.1 | 0.915 | 1.9 | 0.8 | 94.0 | 1.1 | NIL | |
| 205 | 652-53 | 19.4 | 7.3 | 0.903 | 2.9 | 1.2 | 90.1 | 1.4 | NIL | |
| 206 | 653-54 | 16.8 | 6.3 | 0.905 | 3.6 | 1.5 | 92.0 | 0.2 | NIL | |
| 207 | 654-55 | 11.3 | 4.2 | 0.903 | 2.2 | 0.9 | 93.9 | 1.0 | NIL | |

* INSUFFICIENT OIL RECOVERED TO TEST.
AVERAGE OIL DENSITY USED.

| Sample Number | Depth, Feet | GR | | GR Specific Gravity | WATER | | Pore Water Pressure | GR Specific Gravity | Grain Size Class |
|------------------|----------------|-------------|--------|---------------------------|------------------------|--------|---------------------------|---------------------------|------------------------|
| | | Calculated | Vol. % | | Grain Size Class | Vol. % | | | |
| 208 | 655-56 | 11.5 | 4.4 | 0.905 | 1.9 | 0.8 | 93.8 | 1.0 | NIL |
| 209 | 656-57 | 10.6 | 3.9 | 0.903 | 6.0 | 2.5 | 92.0 | 1.6 | NIL |
| 210 | 657-58 | 10.8 | 4.1 | 0.905 | 1.7 | 0.7 | 94.2 | 1.0 | NIL |
| 211 | 658-59 | 10.3 | 3.8 | 0.895 | 1.2 | 0.5 | 94.8 | 0.9 | NIL |
| 212 | 659-60 | <u>12.2</u> | 4.6 | 0.901 | 4.6 | 1.9 | 93.4 | 0.1 | NIL |
| 213 | 660-61 | 23.0 | 8.7 | 0.905 | 1.9 | 0.8 | 89.1 | 1.4 | SLIGHT |
| 214 | 661-62 | 45.1 | 16.9 | 0.899 | 3.6 | 1.5 | 78.6 | 3.0 | MEDIUM |
| 215 | 662-63 | 22.8 | 8.5 | 0.895 | 1.9 | 0.8 | 89.1 | 1.6 | SLIGHT |
| 216 | 663-64 | 23.5 | 8.8 | 0.893 | 1.4 | 0.6 | 89.0 | 1.6 | SLIGHT |
| 217 | 664-65 | 17.0 | 6.3 | 0.899 | 1.4 | 0.6 | 91.6 | 1.5 | NIL |
| 218 | 665-66 | 36.7 | 13.6 | 0.893 | 1.9 | 0.8 | 82.2 | 3.4 | MEDIUM |
| 219 | 666-67 | 38.2 | 14.2 | 0.893 | 2.4 | 1.0 | 82.5 | 2.3 | MEDIUM |
| 220 | 667-68 | 36.0 | 13.5 | 0.899 | 2.4 | 1.0 | 83.4 | 2.1 | MEDIUM |
| 221 | 668-69 | 49.7 | 18.7 | 0.905 | 2.2 | 0.9 | 77.1 | 3.3 | HIGH |
| 222 | 669-70 | 71.8 | 26.5 | 0.897 | 3.5 | 1.3 | 64.2 | 4.4 | HIGH |
| 223 | 670-71 | 65.5 | 24.3 | 0.891 | 4.0 | 1.5 | 66.6 | 4.3 | HIGH |
| 224 | 671-72 | 45.1 | 16.8 | 0.889 | 3.8 | 1.4 | 76.7 | 2.9 | MEDIUM |
| 225 | 672-73 | 50.9 | 18.9 | 0.893 | 3.6 | 1.5 | 76.5 | 3.1 | HIGH |
| 226 | 673-74 | 46.6 | 17.7 | 0.915 | 4.8 | 2.0 | 77.4 | 2.9 | HIGH |
| 227 | 674-75 | 21.8 | 8.3 | 0.903 | 2.2 | 0.9 | 89.3 | 1.5 | SLIGHT |
| 228 | 675-76 | 20.9 | 7.9 | 0.903 | 1.9 | 0.8 | 90.0 | 1.3 | NIL |
| 229 | 676-77 | 35.3 | 13.2 | 0.897 | 1.9 | 0.8 | 84.0 | 2.0 | MEDIUM |
| 230 | 677-78 | 44.4 | 16.8 | 0.907 | 3.6 | 1.5 | 78.7 | 3.0 | MEDIUM |
| 231 | 678-79 | 18.5 | 7.0 | 0.907 | 2.4 | 1.0 | 90.6 | 1.4 | NIL |
| 232 | 679-80 | 15.6 | 5.9 | 0.907 | 2.6 | 1.1 | 91.7 | 1.3 | NIL |
| 233 | 680-81 | 30.5 | 11.4 | 0.899 | 2.4 | 1.0 | 85.7 | 1.9 | SLIGHT |
| 234 | 681-82 | 27.1 | 10.1 | 0.895 | 2.2 | 0.9 | 87.3 | 1.7 | SLIGHT |
| 235 | 682-83 | 30.0 | 11.2 | 0.895 | 3.1 | 1.3 | 85.5 | 2.0 | SLIGHT |
| 236 | 683-84 | 47.0 | 17.4 | 0.891 | 2.6 | 1.1 | 78.7 | 2.8 | HIGH |
| 237 | 684-85 | 35.8 | 13.2 | 0.887 | 2.2 | 0.9 | 84.2 | 1.7 | MEDIUM |
| 238 | 685-86 | 25.0 | 9.2 | 0.881 | 1.4 | 0.6 | 88.9 | 1.3 | SLIGHT |

ORIGINAL RECORD

| Sample No. | Depth, feet | GRAV | | Oil Specific Gravity | WATER | | Spent Solids Wt % | Gravimetric Loss | | Filtrate R (%) | Remarks |
|---------------|----------------|-------------|-------|----------------------------|-------------|-------|-------------------------|---------------------|-------|----------------------|---------|
| | | Gravimetric | Vol % | | Gravimetric | Vol % | | Vol % | Vol % | | |
| 239 | 686-87 | 43.4 | 16.0 | 0.885 | 2.9 | 1.2 | 80.3 | 2.5 | | MEDIUM | |
| 240 | 687-88 | 19.2 | 7.2 | 0.899 | 2.4 | 1.0 | 90.6 | 1.2 | | NIL | |
| 241 | 688-89 | 18.2 | 6.8 | 0.895 | 3.6 | 1.5 | 90.2 | 1.5 | | NIL | |
| 242 | 689-90 | 13.2 | 4.9 | 0.903 | 2.9 | 1.2 | 92.5 | 1.4 | | NIL | |
| 243 | 690-91 | 15.8 | 5.9 | 0.895 | 2.9 | 1.2 | 91.6 | 1.3 | | NIL | |
| 244 | 691-92 | 35.8 | 13.5 | 0.903 | 3.6 | 1.5 | 82.7 | 2.3 | | MEDIUM | |
| 245 | 692-93 | 15.4 | 5.8 | 0.903 | 4.8 | 2.0 | 90.8 | 1.4 | | NIL | |
| 246 | 693-94 | 8.2 | 3.1 | 0.905 | 2.9 | 1.2 | 94.6 | 1.2 | | NIL | |
| 247 | 694-95 | 13.7 | 5.1 | 0.899 | 2.9 | 1.2 | 92.5 | 1.2 | | NIL | |
| 248 | 695-96 | 10.1 | 3.8 | 0.901 | 2.4 | 1.0 | 94.2 | 1.0 | | NIL | |
| 249 | 696-97 | 17.3 | 6.4 | 0.891 | 2.9 | 1.2 | 91.2 | 1.2 | | NIL | |
| 250 | 697-98 | 33.1 | 12.3 | 0.891 | 2.2 | 0.9 | 84.9 | 1.9 | | SLIGHT | |
| 251 | 698-99 | 33.4 | 14.2 | 0.889 | 2.4 | 1.0 | 82.6 | 2.2 | | MEDIUM | |
| 252 | 699-700 | 27.6 | 10.2 | 0.887 | 1.9 | 0.8 | 87.5 | 1.5 | | SLIGHT | |
| 253 | 700-01 | 23.0 | 8.6 | 0.895 | 2.4 | 1.0 | 89.0 | 1.4 | | NIL | |
| 254 | 701-02 | 35.0 | 12.9 | 0.883 | 2.6 | 1.1 | 84.0 | 2.0 | | SLIGHT | |
| 255 | 702-03 | 29.5 | 10.9 | 0.887 | 2.4 | 1.0 | 86.4 | 1.7 | | SLIGHT | |
| 256 | 703-04 | 17.3 | 6.5 | 0.899 | 2.6 | 1.1 | 91.0 | 1.4 | | NIL | |
| 257 | 704-05 | 12.5 | 4.7 | 0.905 | 2.4 | 1.0 | 93.1 | 1.2 | | NIL | |
| 258 | 705-06 | 14.4 | 5.4 | 0.893 | 4.6 | 1.9 | 91.5 | 1.2 | | NIL | |
| 259 | 706-07 | 10.1 | 3.8 | 0.905 | 2.6 | 1.1 | 94.1 | 1.0 | | NIL | |
| 260 | 707-08 | 15.4 | 5.7 | 0.899 | 3.1 | 1.3 | 91.5 | 1.5 | | NIL | |
| 261 | 708-09 | 26.6 | 10.1 | 0.915 | 2.9 | 1.2 | 86.8 | 1.9 | | SLIGHT | |
| 262 | 709-10 | 9.4 | 3.5 | 0.909 | 2.4 | 1.0 | 94.4 | 1.1 | | NIL | |
| 263 | 710-11 | 8.6 | 3.3 | 0.911 | 3.4 | 1.4 | 94.2 | 1.1 | | NIL | |
| 264 | 711-12 | 7.0 | 2.6 | 0.915 | 3.1 | 1.3 | 95.1 | 1.0 | | NIL | |
| 265 | 712-13 | 4.6 | 1.8 | 0.917 | 2.4 | 1.0 | 96.6 | 0.6 | | NIL | |
| 266 | 713-14 | 13.2 | 4.9 | 0.893 | 2.4 | 1.0 | 93.1 | 1.0 | | NIL | |
| 267 | 714-15 | 15.6 | 5.8 | 0.889 | 2.4 | 1.0 | 92.2 | 1.0 | | NIL | |

| Sample No. | Date Test | Oil | | Oil Type Gravity | Water | | Sulfur % | Copper % | Total % Solids |
|---------------|--------------|-------------|--------|------------------------|-------------|--------|-------------|-------------|----------------------|
| | | Gravimetric | Vol. % | | Gravimetric | Vol. % | | | |
| 268 | 715-16 | 3.8 | 1.5 | 0.92* | 6.0 | 2.5 | 95.4 | 0.6 | NIL |
| 269 | 716-17 | 11.8 | 4.4 | 0.901 | 2.4 | 1.0 | 93.7 | 0.9 | NIL |
| 270 | 717-18 | 33.4 | 12.6 | 0.907 | 2.9 | 1.2 | 84.2 | 2.0 | SLIGHT |
| 271 | 718-19 | 10.8 | 4.1 | 0.905 | 1.9 | 0.8 | 93.9 | 1.2 | NIL |
| 272 | 719-20 | 7.2 | 2.7 | 0.897 | 1.9 | 0.8 | 95.6 | 0.9 | NIL |
| 273 | 720-21 | 15.8 | 5.9 | 0.897 | 2.9 | 1.2 | 91.7 | 1.2 | NIL |
| 274 | 721-22 | 45.8 | 17.2 | 0.899 | 3.6 | 1.5 | 78.6 | 2.7 | MEDIUM |
| 275 | 722-23 | 8.6 | 3.3 | 0.909 | 2.9 | 1.2 | 94.7 | 0.7 | NIL |
| 276 | 723-24 | 4.8 | 1.8 | 0.907 | 3.1 | 1.3 | 96.1 | 0.8 | NIL |
| 277 | 724-25 | 2.2 | 0.9 | 0.92* | 2/9 | 1.2 | 97.3 | 0.6 | NIL |
| 278 | 725-26 | 3.6 | 1.4 | 0.92* | 3.4 | 1.4 | 96.7 | 0.5 | NIL |
| 279 | 726-27a | 10.1 | 3.9 | 0.909 | 3.4 | 1.4 | 93.9 | 0.8 | NIL |
| 280 | 727-28 | 15.8 | 6.0 | 0.915 | 6.5 | 2.7 | 90.3 | 1.0 | NIL |
| 281 | 728-29 | 13.7 | 7.1 | 0.915 | 7.2 | 3.0 | 89.0 | 0.9 | NIL |
| 282 | 729-30 | 16.1 | 6.1 | 0.909 | 3.6 | 1.5 | 91.1 | 1.3 | NIL |
| 283 | 730-31 | 10.1 | 3.9 | 0.911 | 3.6 | 1.5 | 93.7 | 0.9 | NIL |