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FIGURE 4. DETAILED PLOT OF NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES DIAMOND-DRILL HOLE SYD 82-1, MIRA ROAD NEAR SYDNEY, CAPE BRETON COUNTY, NOVA SCOTIA.

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MINERAL RESOURCES DIVISION

NOVA SCOTIA DEPARTMENT OF NATURAL RESOURCES

HONOURABLE JOHN G. LEEFE, MINISTER

Halifax, Nova Scotia  
1993

DRILLHOLE: SYD 82-1 BY: NOVA SCOTIA DEPARTMENT OF MINES AND ENERGY

LOCATION: MIRA ROAD, CAPE BRETON COUNTY NTS: 11K/01

LATITUDE: 46 06 23 LONGITUDE: 60 07 52

ELEVATION: 297.6 feet (90.7 m) INCLINATION: VERTICAL

TOTAL DEPTH: 1013.0 m DATE DRILLED: March through July 1982

DRILLED BY: NSDNR; E. Standing, J. Hayes and G. MacLeod

CASING: TEMPORARY DIAMOND-DRILL CASING WAS REMOVED, HW SURFACE CASING TO 10.7 M, APPROXIMATELY 28 M OF HQ, 190 M OF NQ AND AN UNCERTAIN SECTION OF BQ RODS WERE LOST IN HOLE. THE OPEN HOLE WAS CEMENTED TO SURFACE

CORE SIZE: HQ 12.0-514.0 m, NQ 514.0-860.2 m, BQ 860.2-1013.0 m

DRILL FLUID: FRESHWATER

0.0 to 12.0	OVERBORED: NOT CORED. Includes some Horton Group sandstone and clay near the base that was not recovered. NOTE: ALL LOG DEPTHS ARE IN METRES
12.0 to 20.2	SANDSTONE: sandstone and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, medium grained sandstone to sandstone fining up cycles, minor ripple cross-lamination, bedding estimated at 85 degrees CA.
20.2 to 20.7	SILTSTONE: siltstone and sandstone, shaly, light grey-green.
20.7 to 23.5	SANDSTONE: sandstone and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, fine to medium sandstone and sandstone fining up cycles, minor ripple cross-lamination.
23.5 to 23.7	SANDSTONE: sandstone, medium grey with minor pale red siltstone and bands, fine to medium sandstone, minor ripple cross-lamination.
23.7 to 29.4	SANDSTONE: sandstone and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, fine to medium sandstone and sandstone fining up cycles, minor ripple cross-lamination.
29.4 to 37.9	SANDSTONE: sandstone, medium grey, fine to medium sandstone, several fining upward cycles, minor ripple cross-lamination, cross-bedding and plant debris, pebbly lag conglomerate and coarse sandstone at base.
37.9 to 59.2	SANDSTONE: sandstone and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, fine to medium sandstone and sandstone fining up cycles, minor ripple cross-lamination.
59.2 to 62.0	SANDSTONE: sandstone, light grey to reddish, medium to coarse grained, 5-7 cm lag conglomerate at base of the two fining upward cycles, bedding estimated at 85 degrees CA.
62.0 to 71.9	SANDSTONE: sandstone and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, fine to medium sandstone and sandstone fining up cycles, minor ripple cross-lamination.
71.9 to 75.9	CONGLOMERATE: conglomerate and pebbly sandstone, light grey to reddish, fine grained, 8 cm max conglomerate, several fining up cycles, bedding estimated at 85 degrees CA.
75.9 to 95.6	SANDSTONE: sandstone and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, fine to medium sandstone and sandstone fining up cycles.
95.6 to 102.5	SANDSTONE: sandstone, medium dusky red, medium to coarse grained with pebbly lag conglomerate at base (3 cm), several fining up cycles.
102.5 to 108.5	SILTSTONE: siltstone and sandstone interbedded, light red with abundant grey-green siltstone, laminated 80 degrees CA.
108.5 to 113.5	SHALE: shale and sandstone, interbedded, minor grey sandstone, few coaly stringers, 4 cm of twisted shaly coal and 25 cm of light grey seatruth mud at base, dips 85 degrees CA.
113.5 to 116.9	SANDSTONE: sandstone, pale red grey, siltstone to fine grained fining up cycle.
116.9 to 132.0	SANDSTONE: sandstone, fine grained and silty sandstone interbedded, medium dusky red with minor pale grey-green siltstone and bands, irregular fining up cycles. BASE: BEDDING FORMATION
132.0 to 134.5	SANDSTONE: sandstone, medium grey, medium to coarse grained with pebbly lag conglomerate at base, fining up cycle into the overlying unit, dips 80 degrees CA. TOP SOUTH BAY FORMATION
134.5 to 151.5	SHALE: shale and sandstone, interbedded, rippled and cross bedded, minor fine grained grey sandstone, few coaly stringers, 20 cm of twisted shaly coal at 141-141.5 and 141.5 and 141.5 to 141.5 cm of light grey seatruth mud underlying, dips 85 degrees CA.
151.5 to 172.3	SANDSTONE: sandstone, medium grey, medium to coarse grained with pebbly lag conglomerate at base, several fining up cycles with thin grey mud and shale interbeds, dips 80 degrees CA.
172.3 to 178.1	SHALE: shale and sandstone, interbedded, rippled and cross bedded, minor fine grained grey sandstone, few coaly stringers and thin bands 2-3 cm of twisted shaly coal, local associated light grey seatruth mud underlying, dips 80-85 degrees CA.
178.1 to 205.5	SANDSTONE: sandstone, medium grey, medium to coarse grained with pebbly lag conglomerate at base, fining up cycles with rare thin grey mud and shale interbeds and coaly stringers, grey siltstone and shale at 180-200 m gradational down to sandstone, dips 80 degrees CA.
205.5 to 211.00	SILTSTONE: siltstone, fine sandstone and shale, pale grey to red, cross bedded, dips 80 degrees CA.
211.0 to 212.92	SHALE: shale and sandstone, interbedded, rippled and cross bedded, minor fine grained grey sandstone, few coaly stringers and thin bands 2-3 cm of twisted shaly coal in middle, local associated light grey seatruth mud underlying, dips 80-85 degrees CA.
212.92 to 220.5	SANDSTONE: sandstone, medium grey, medium to fine grained, fining up cycles, with 20% core recovered in basal 3 m, dips 80 degrees CA.
220.5 to 222.4	SHALE: shale and sandstone, grey, interbedded coal as 5-10 cm beds in middle in, dips 80-85 degrees CA.
222.4 to 253.0	SANDSTONE: sandstone, medium grey, micaceous, fine to medium grained with pebbly lag conglomerate at 245.0-246.3, fining up cycles with rare thin grey mud and shale interbeds and coaly stringers, minor ripple cross lamination near top, gritty at base, generally massive to poorly stratified, dips 75-80 degrees CA.
253.0 to 254.85	SHALE: shale and siltstone, dark grey, ripple cross-lamination, dips 80-85 degrees CA.
254.85 to 264.4	SANDSTONE: sandstone, medium grey, fine to medium grained, micaceous, with minor lag conglomerate, fining up cycles with rare thin mud and shale, 1 cm coaly stringer at 261.0, minor cross lamination near top, gritty at base, generally massive to poorly stratified, dips 75-80 degrees CA.
264.4 to 265.4	CONGLOMERATE: conglomerate and pebbly sandstone, light grey, fine grained with coaly fragment debris, bedding estimated at 85 degrees CA.
265.4 to 330.0	SANDSTONE: sandstone, medium grey, micaceous, medium to coarse grained with minor lag conglomerate, fining up cycles with rare thin grey mud and shale interbeds and coaly stringers at 265.5-266.05, 262.9-263.7, 264.0-264.3, 261.3-263.4, 268.6-269.7, scattered coaly stringers and thin lag conglomerates, minor cross stratification, generally massive to poorly stratified, dips 75-80 degrees CA.

330.0 to 424.0	SANDSTONE: sandstone, medium grey, medium to coarse grained, micaceous with abundant fine gritty conglomerate, fining up cycles with rare thin grey siltstone and shale interbeds at 351.0, 401.6-401.7, 384.2-384.4, 382.9-384.0, 381.6-381.9, 401.2-401.3, 401.6-401.7, 405.6-407.4, 403.8-411.3, 411.35-412.1, 411.9-418.0, 423.4-423.6, scattered pyritic coaly stringers and lag conglomerates, cross stratification, generally vaguely stratified, dips 75-80 degrees CA.
424.0 to 441.9	SHALE: shale and sandstone, medium to dark grey, with interbeds of rippled sandstone at 426.5-429.6, 430.2-435.7, interbedded coal at 426.1-426.15, 429.2-429.4, 436.7-436.8, coals have thin underlying rooted underclay, dips 80-85 degrees CA.
441.9 to 561.6	SANDSTONE: sandstone, medium grey, medium to coarse grained with abundant very coarse micaceous sandstone and fine gritty conglomerate with local intraformational mud chips and siderite fragments (e.g. 453.5, 502.0) fining up cycles and minor thin grey siltstone and shale interbeds at 440.2-441.0, 442.3-443.1, 420.7-421.2, 441.6-443.0, 443.32-443.35, 457.4-458.36, scattered pyritic coaly stringers and lag conglomerates, cross stratification, generally vaguely stratified, dips 75-80 degrees CA.
561.6 to 582.3	SHALE: shale and sandstone, medium to dark grey, with minor rippled fine sandstone, interbedded shaly coal at 561.6-561.9, coal has thin underlying rooted underclay, dips 80-85 degrees CA.
582.3 to 634.5	SANDSTONE: sandstone, medium grey, medium to coarse grained with abundant very coarse micaceous sandstone and fine gritty to pebbly conglomerate with local intraformational mud chips and siderite fragments (e.g. 593.5, 502.0) fining up cycles and minor thin grey siltstone and shale interbeds at 582.0-582.0, 610.65-610.9, 615.8-616.0, scattered pyritic coaly stringers, few lag conglomerates, e.g. 586.7-586.8, cross stratification, generally vaguely stratified, dips 75-80 degrees CA.
634.5 to 636.0	SHALE: shale and sandstone, dark grey, with minor siltstone, dips 80-85 degrees CA.
636.0 to 653.5	SANDSTONE: sandstone, medium grey, medium to coarse grained with abundant very coarse micaceous sandstone and fine gritty to pebbly conglomerate with local intraformational mud chips and siderite fragments, fining up cycles, few pyritic coaly stringers, cross stratification, generally vaguely stratified, dips 75-80 degrees CA.
653.5 to 655.3	SHALE: shale and sandstone, medium grey, with minor siltstone, dips 80-85 degrees CA.
655.3 to 808.9	SANDSTONE: sandstone, medium grey, medium to coarse grained with abundant very coarse micaceous sandstone and fine gritty to pebbly conglomerate with local intraformational mud chips and siderite fragments, fining up cycles, minor thin grey siltstone and shale interbeds at 659.2, 688.5-688.8, 676.0-676.3, 685.2-686.8, 706.7-709.3, 767.6-768.9, few pyritic coaly stringers, cross stratification, generally vaguely stratified, dips 75-80 degrees CA.

808.9 to 810.0	SHALE: shale and sandstone, dark grey, with minor siltstone, fines up, dips 80-85 degrees CA.
810.0 to 890.2	SANDSTONE: sandstone, medium grey, medium to coarse grained with abundant to dominant very coarse micaceous sandstone and fine gritty to pebbly conglomerate with local intraformational mud chips and siderite fragments, fining up cycles, minor thin grey siltstone and shale interbeds at 822.5-823.6, 837.1-837.45, 853.0-854.17, 856.2-856.0, 870.2-870.5, few pyritic coaly stringers, cross stratification, generally vaguely stratified, dips 75-80 degrees CA. UNCONFORMITY: BASE OF SOUTH BAY FORMATION
890.2 to 898.5	SILTSTONE: siltstone, green grey and pale red, interbedded, thin pisolitic and nodular limestone at 896.0-896.5, upper contact is sharp, dips 85-90 degrees CA.
898.5 to 899.2	SHALE: shale, dark grey becoming grey green upwards, scattered carbonaceous debris, lower contact is sharp.
899.2 to 900.3	CLAYSTONE: claystone, dark grey, highly pyritic, soft and poorly indurated.
900.30 to 903.00	CLAYSTONE: claystone, yellow, upper 30 cm is red, soft and poorly indurated.
903.00 to 906.35	CLAYSTONE: claystone, purplish red, variegated red to green, soft and poorly indurated.
906.35 to 911.5	SILTSTONE: siltstone and shale grading down into fine sandstone, red, single fining upward cycle, dips 85-90 degrees CA.
911.5 to 919.9	SILTSTONE: siltstone and shale grading down into fine sandstone, grey, single fining upward cycle, dips 85-90 degrees CA.
919.9 to 922.5	SILTSTONE: siltstone and shale grading down into fine sandstone, red, single fining upward cycle, dips 85-90 degrees CA.
922.5 to 923.5	SANDSTONE: sandstone, light grey, slightly calcareous, cross-laminated, interbedded of red and green siltstone at base, dips 85-90 degrees CA.
923.5 to 924.05	LIMESTONE: limestone, dark grey brown, dips 85-90 degrees CA.
924.05 to 925.9	SILTSTONE: siltstone and shale grading down into fine sandstone, red, single fining upward cycle, dips 85-90 degrees CA.
925.9 to 930.0	SHALE: shale and siltstone, medium grey, dips 85 degrees CA.
930.00 to 938.90	SILTSTONE: siltstone and shale grading down into fine sandstone, red, single fining upward cycle, dips 85-90 degrees CA.
938.9 to 938.97	LIMESTONE: limestone, medium grey brown to grey green, scattered fossiliferous debris (ostracods?), sharp top and gradational base, dips 85-90 degrees CA.
938.97 to 943.18	SILTSTONE: siltstone and shale grading down into fine sandstone, red, single fining upward cycle, dips 85-90 degrees CA.
943.18 to 943.28	LIMESTONE: limestone, medium grey brown to grey green, scattered fossiliferous debris (ostracods?), sharp top and gradational base, dips 85-90 degrees CA.
943.28 to 965.74	SILTSTONE: siltstone and shale grading down into fine sandstone, red, several distinct fining upward cycles, dips 85-90 degrees CA.
965.74 to 970.1	SILTSTONE: siltstone and shale, red, with scattered irregular nodules of reddish anhydrite, upper 24 cm is grey shaly siltstone, dips 85-90 degrees CA.
970.1 to 981.63	SILTSTONE: siltstone and sandstone, minor shale, medium red with minor grey to greenish grey mottled, dips 85 degrees CA.
981.63 to 982.3	SILTSTONE: siltstone and shale, red with minor grey to greenish grey mottled, variably calcareous, few irregular nodules of white to red limestone, upper 27 cm is grey and sandy, dips 85-90 degrees CA.
982.3 to 993.07	CONGLOMERATE: conglomerate and sandstone, light grey, medium grained, 2 cm max conglomerate, well rounded, dominantly varicoloured limestone, silty limestone and calcareous siltstone fragments, minor interstitial anhydrite, bedding estimated at 85-90 degrees CA.
993.07 to 1010.86	SHALE: shale and claystone, dark grey changing down into greenish grey, variably calcareous, shaly laminated at top, minor fine plant debris, dips 85 degrees CA.
1010.86 to 1013.0	SILTSTONE: siltstone and shale, red with minor grey to greenish grey mottled, variably calcareous, shaly laminated, few thin interbeds of pale grey silty limestone and irregular nodules of white limestone, rare sharp surfaces and fractures, basal 15 cm is convoluted, minor anhydrite, dips 85 degrees CA. MINA DEPTH: 1013.0 m