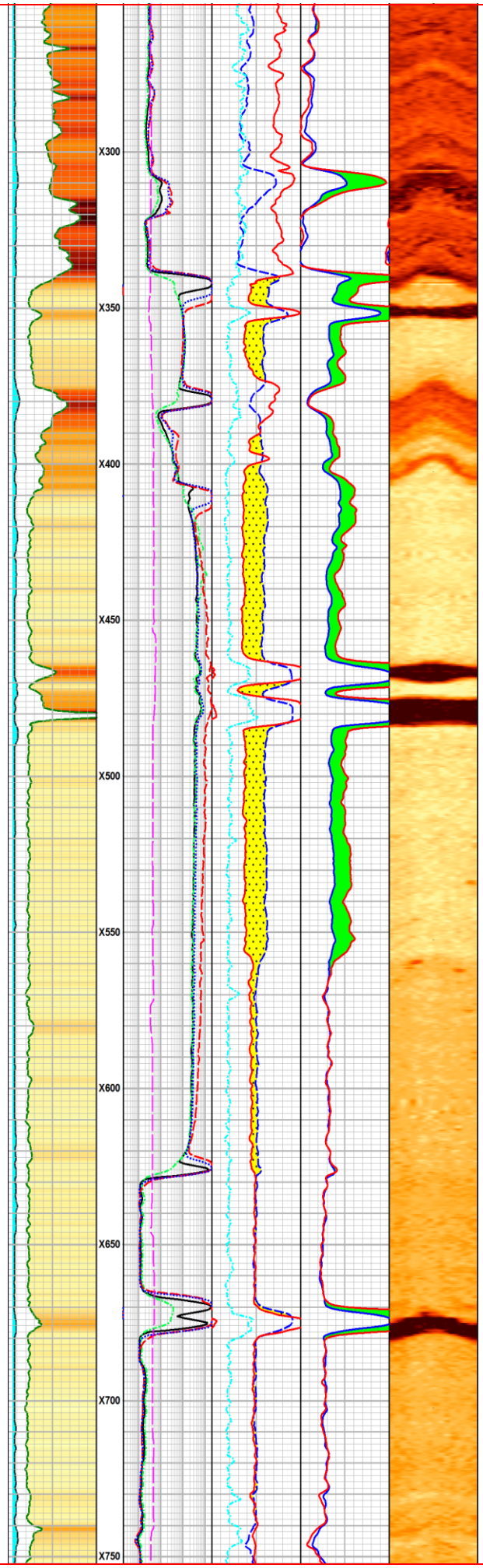

LWD Log Interpretation Charts

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Sperry Drilling

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6¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.10 g/cc *301*
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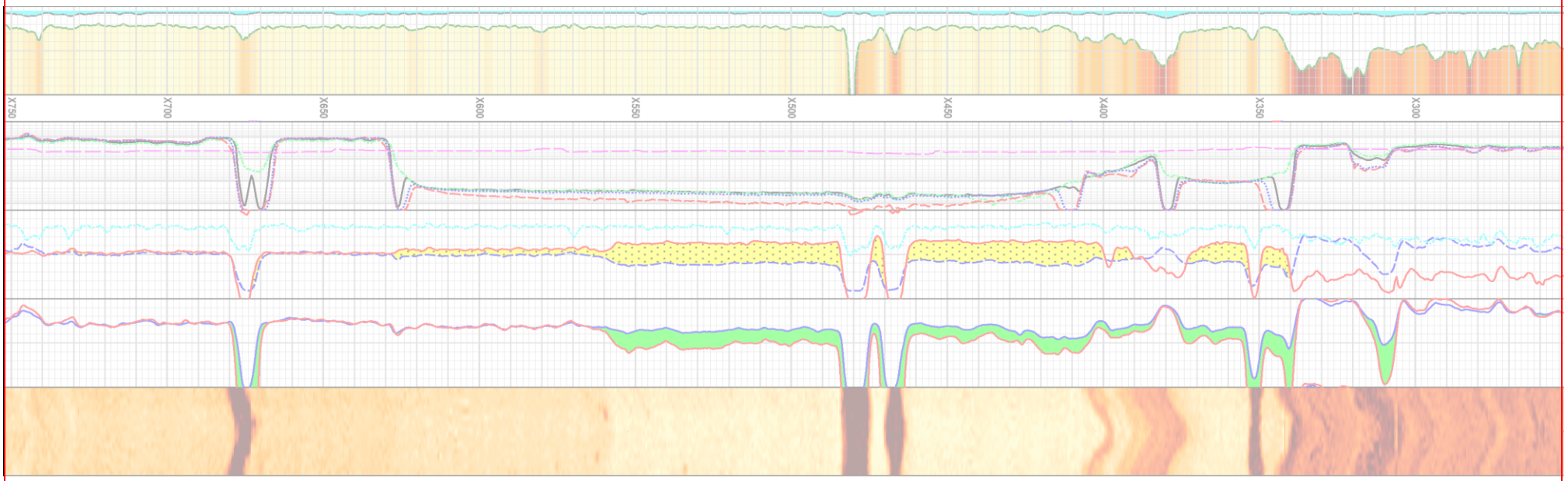
Foreword

When interpreting well logs, regardless of the method by which they were acquired, it is important to understand not only how their response is affected by the properties of the surrounding rock formations, but also how those responses are affected by the borehole environment. In contrast with the conditions typically associated with wireline logging, the conditions in which Logging While Drilling (LWD) logs are acquired are constantly changing, as a result of circulation of the borehole fluid, invasion of that fluid into the formation, variations in the drilling speed and speed of rotation of the drill-string, and changes in the shape and size of the borehole over time. The charts presented here provide an insight into the sensitivity of LWD measurements to changes in the borehole environment, providing the user with a greater understanding of the impact that those changes may have on the evaluation of a reservoir.

LWD tools exist in a wide variety of designs and sizes, each suited to a particular application or a particular borehole diameter. Different designs and sizes of tool typically respond to the borehole environment in different ways, giving rise to a much larger set of environmental charts than exist for equivalent wireline tools. In order to keep the published set of charts to a manageable size, we have presented only a subset of possible borehole conditions here, which represent a few commonly-encountered cases. For cases not represented here, we recommend the use of the Halliburton online eChartBook™, which can be used to generate charts and corrections for any combination of conditions, for both LWD and wireline tools. The eChartBook™ can be accessed using any standard web browser at the following link: http://eChartBook.Halliburton.com.

Where applicable, the charts presented here reflect the corrections which are applied in version 9.0 of the InSite™ field data acquisition software.



General

Formation Parameters

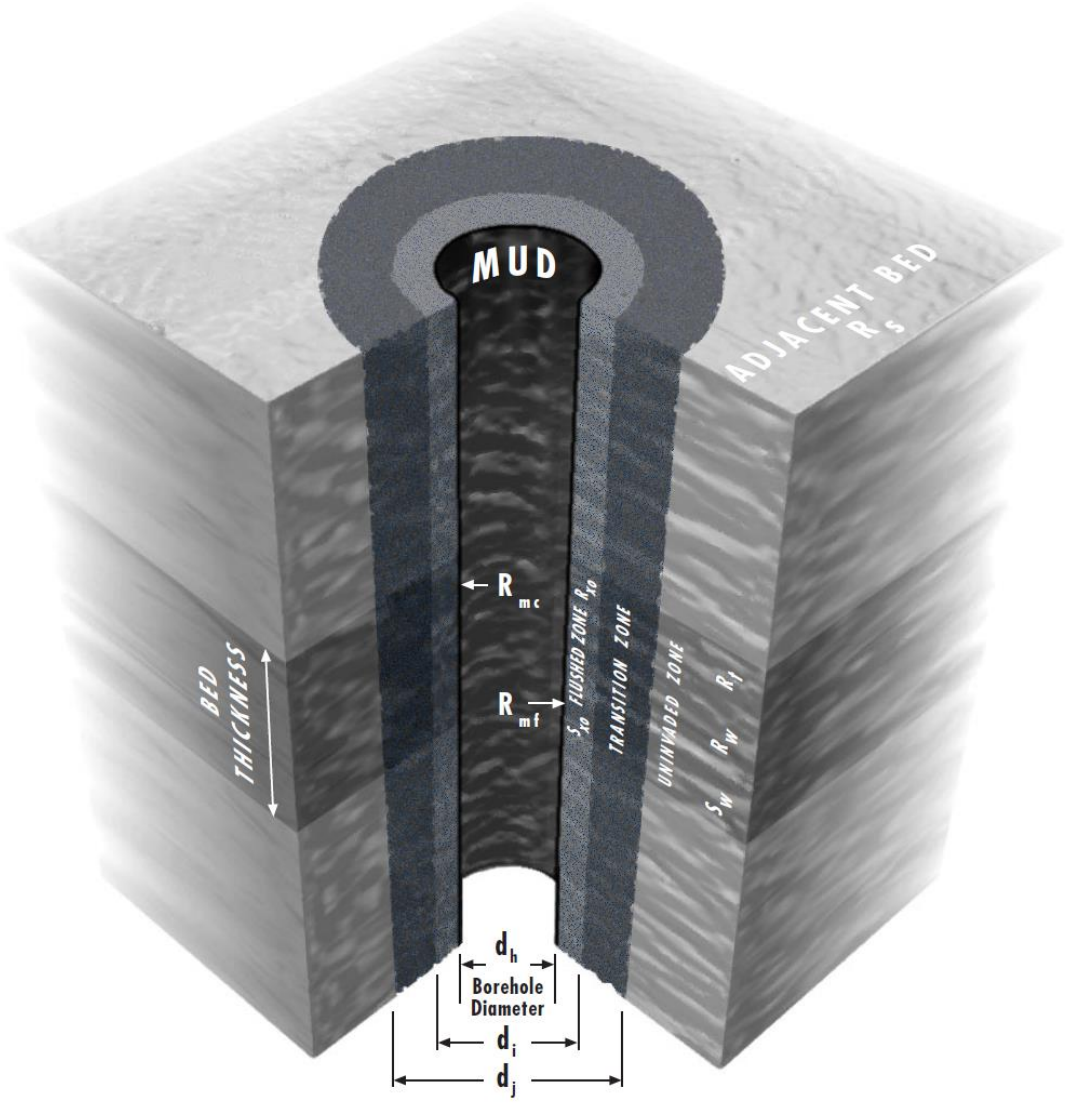


Chart 1-1

Symbol	Meaning
d_h	Borehole diameter
d_i	Diameter of flushed (fully invaded) zone
d_j	Diameter of transition (partially invaded) zone
R_{mc}	Resistivity of mud cake
R_{mf}	Resistivity of mud filtrate
R_s	Resistivity of shoulder bed
R_t	True resistivity of uninvaded zone
R_w	Resistivity of formation water
R_{xo}	Resistivity of flushed (fully invaded) zone
S_w	Water saturation of uninvaded zone
S_{xo}	Water saturation of flushed (fully invaded) zone

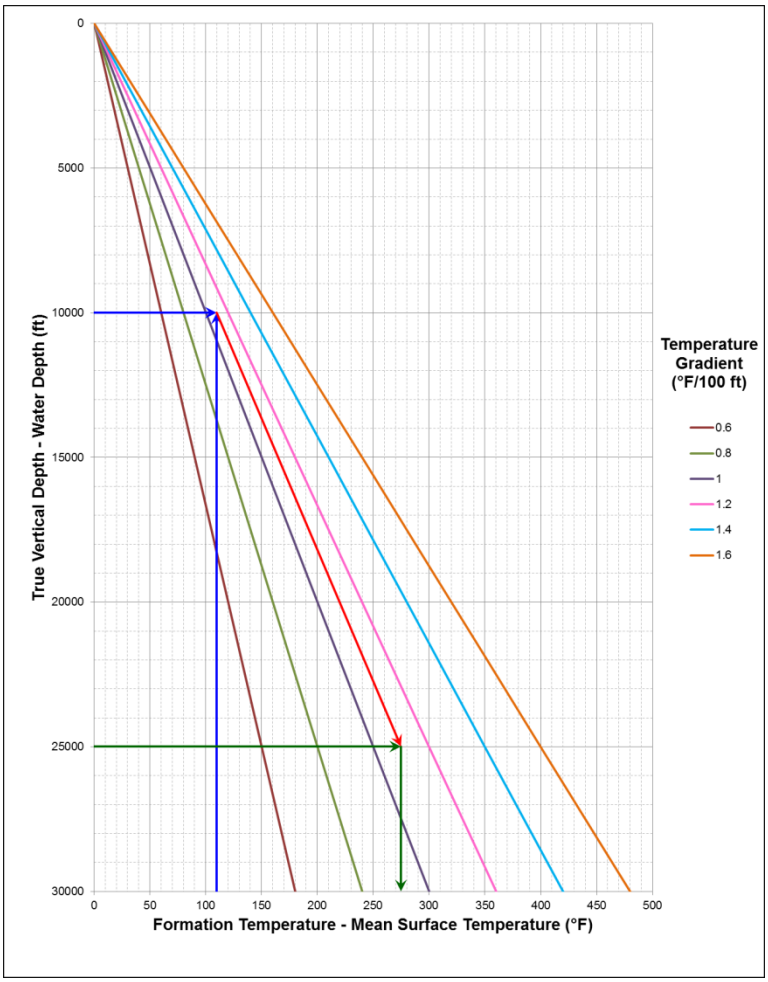
Estimation of Formation Temperature

The temperature at a particular depth may be estimated if the temperature gradient is known or if the temperature at a reference depth is known. The mean surface temperature or sea floor temperature at the geographical location is also required.

Example

Determine the temperature at 26,000 ft. TVD, given that the measured temperature at 11,000 ft. TVD is 160°F, the water depth is 1000 ft., and the sea floor temperature is 50°F.

- Select the appropriate chart for the desired units, in this case English units (see figure below).
- Enter the horizontal axis at the measured temperature minus the sea floor temperature (160 – 50 = 110°F) and draw a vertical line at that temperature.
- Enter the vertical axis at the depth of the measured temperature below the sea floor (11,000 – 1,000 = 10,000 ft.) and draw a horizontal line at that depth.
- From the intersection of the two lines (blue arrows in the figure below), project a geothermal gradient line to the desired depth, interpolating between the plotted geothermal gradient lines if necessary (red arrow).
- At the desired depth below the sea floor (26,000 – 1,000 = 25,000 ft.), draw a vertical line to the x-axis at 275°F (green arrows).
- Add the sea floor temperature to obtain the final estimated temperature (275 + 50 = 325°F).



For onshore locations, use the mean surface temperature rather than the sea floor temperature. The mean surface temperature varies according to the geographical location.

Estimation of Formation Temperature
English Units

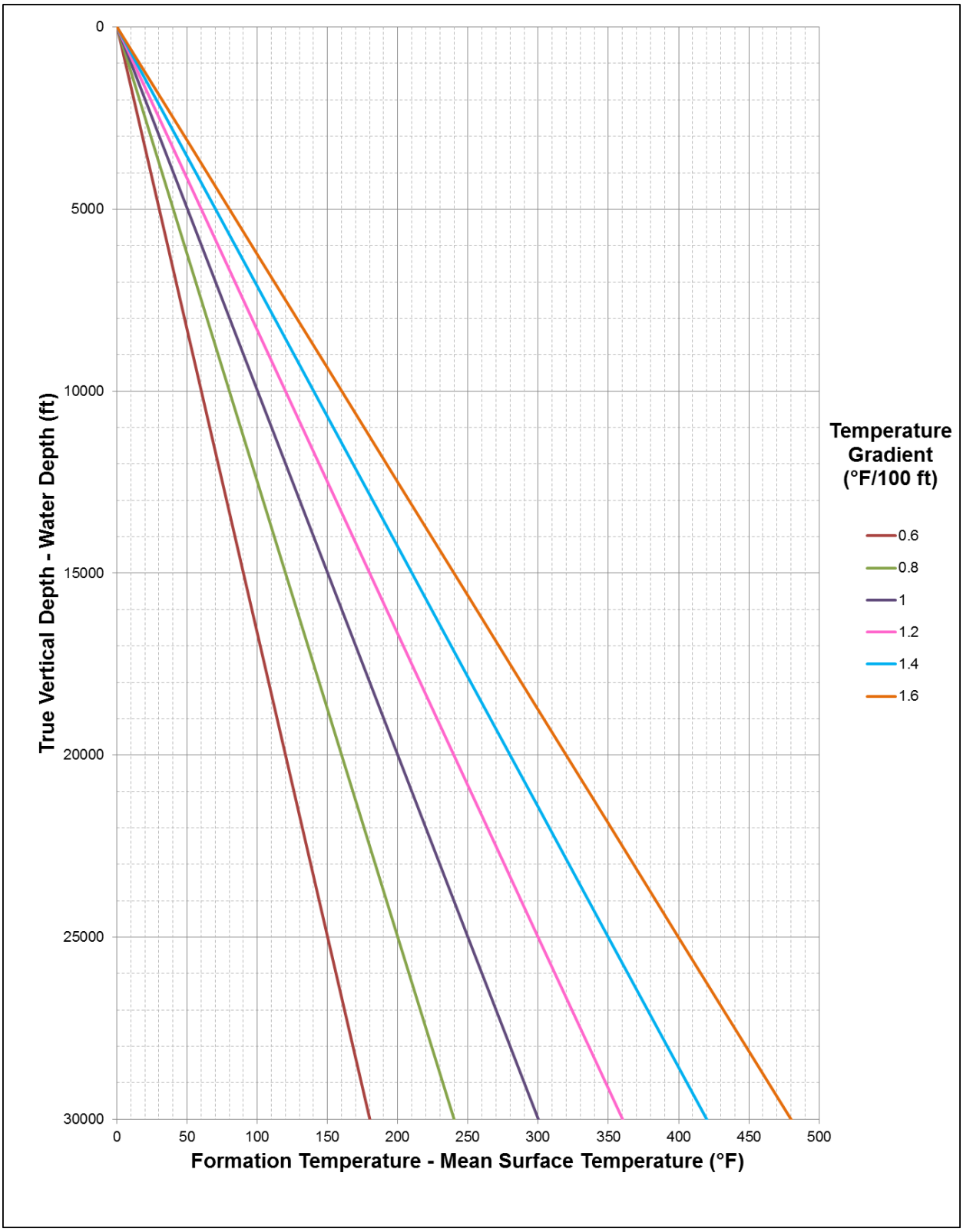


Chart 1-2

Estimation of Formation Temperature
Metric Units

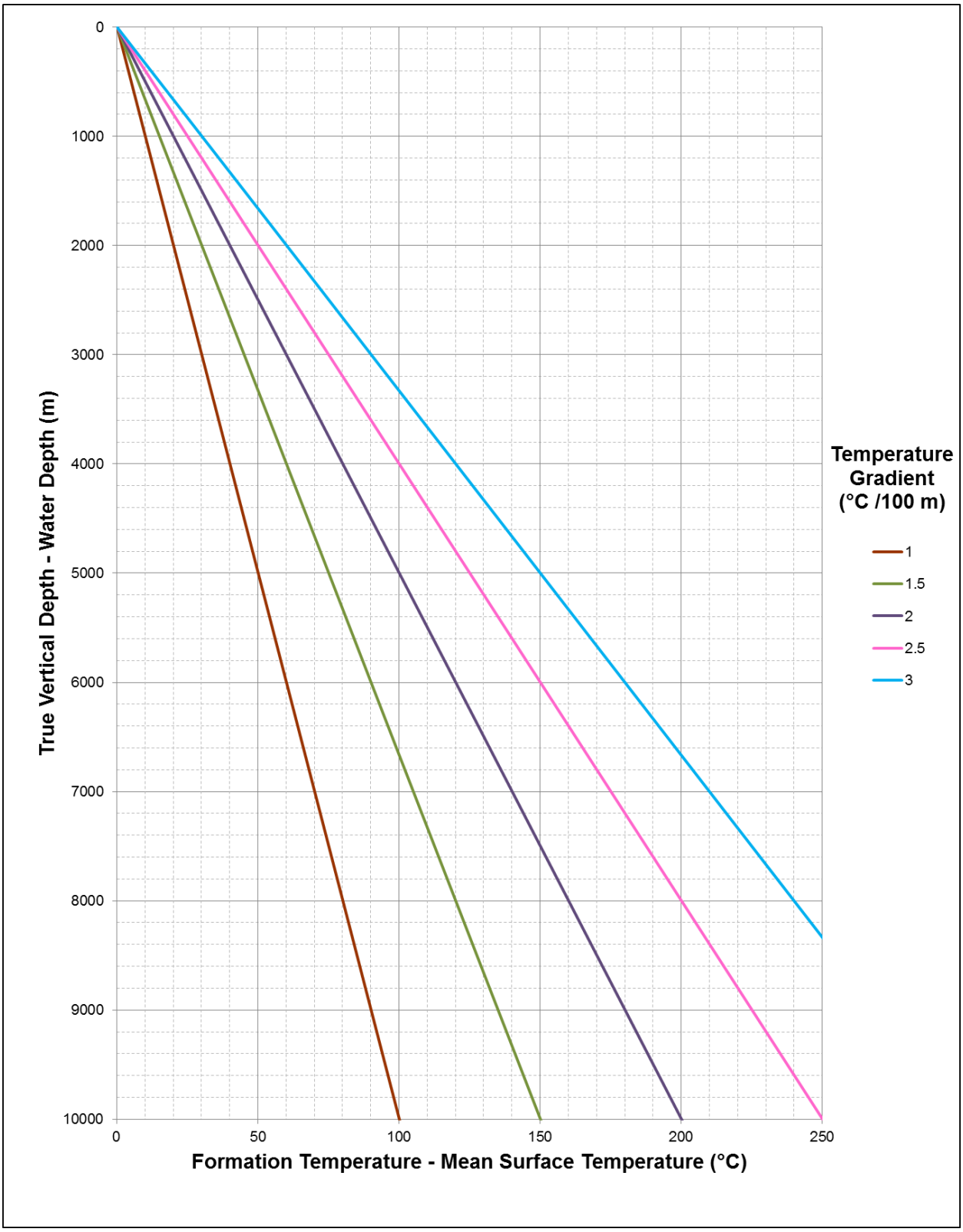


Chart 1-3

LWD Data Density vs. Drilling Rate and Sample Period

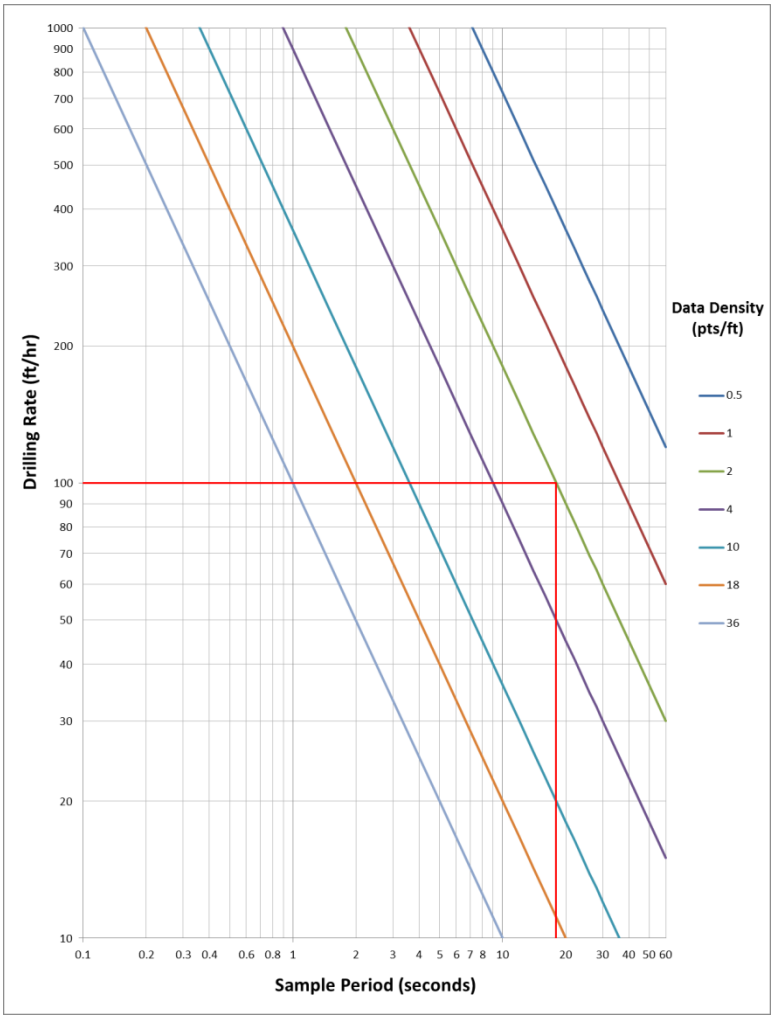
The data density is the number of data samples acquired per depth unit. It is a function of the drilling rate and the time interval between samples. The time interval, which is programmed into the LWD tools prior to each run, is normally selected such that the data density will be sufficient to provide a good quality log at the expected maximum drilling or wiping rate. The charts below may be used to determine the sample period that will meet this requirement.

Example

Determine the required sample period in order to obtain a data density of 2 points per foot at a drilling rate of 100 ft/hr.

- Select the appropriate chart for the chosen units, in this case English units (see chart below).
- Enter the vertical axis at the expected maximum drilling rate of 100 ft/hr and draw a horizontal line.
- Find the point where the horizontal line intersects the desired data density line of 2 points per foot (green line) and draw a vertical line through that point.
- Read the required sample period from the horizontal axis, where it is intersected by the vertical line, in this case 18 seconds.

The charts may also be used to determine the maximum drilling rate, given a known sample period and desired data density, or to estimate the data density that will result from a given sample period and drilling rate.



LWD Data Density vs. Drilling Rate and Sample Period
English Units

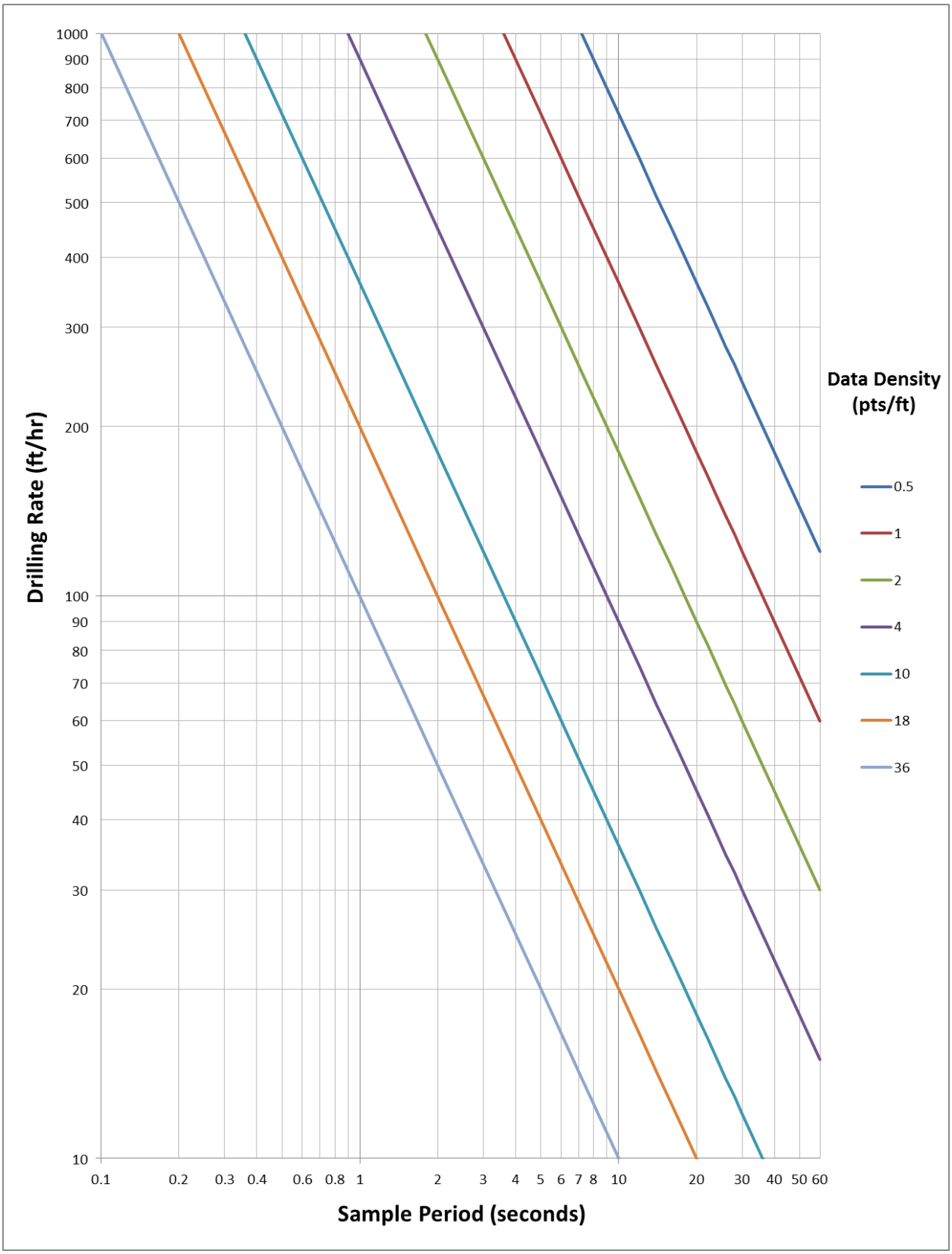


Chart 1-4

LWD Data Density vs. Drilling Rate and Sample Period
Metric Units

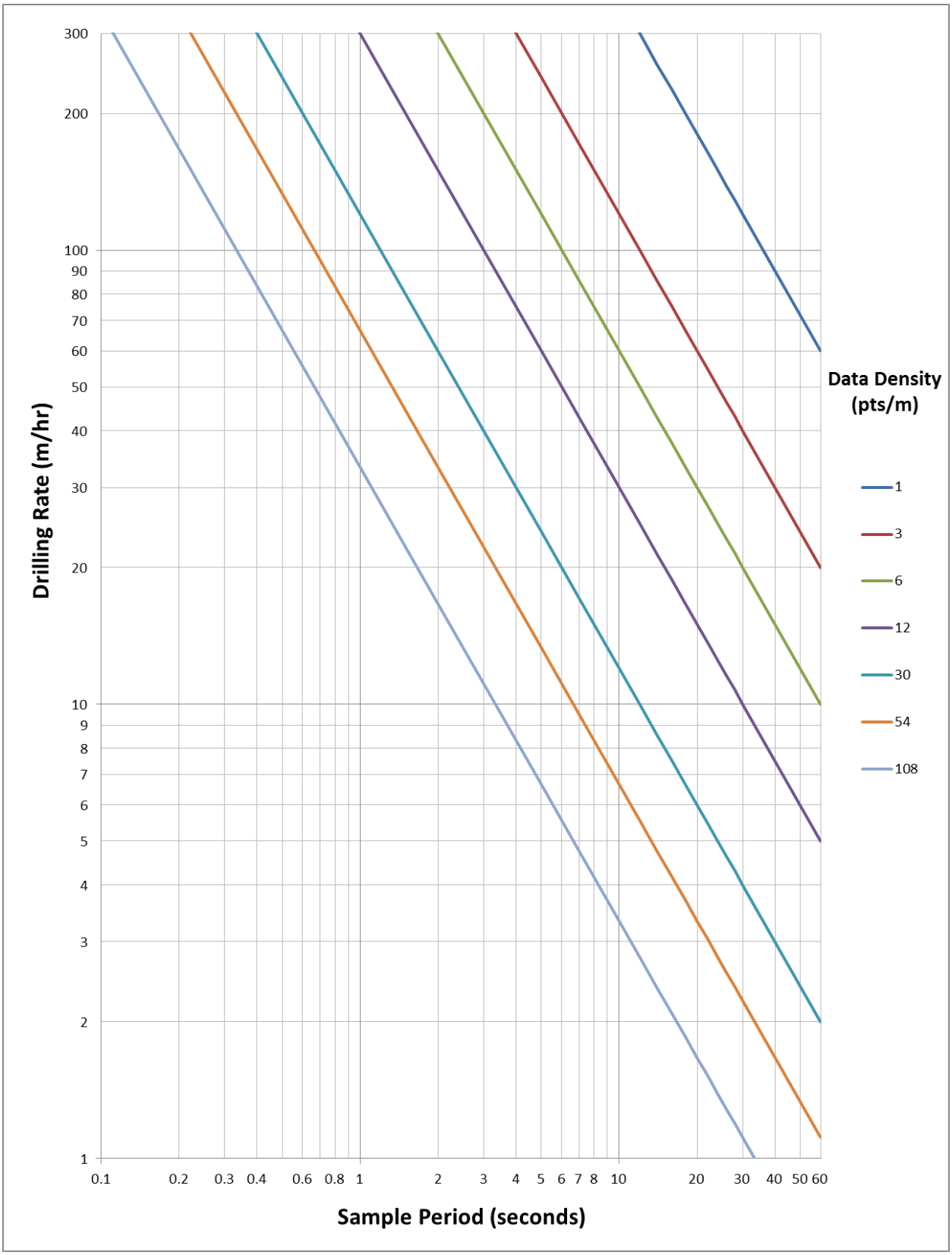


Chart 1-5

Resistivity of NaCl Solution vs. Temperature and Salinity

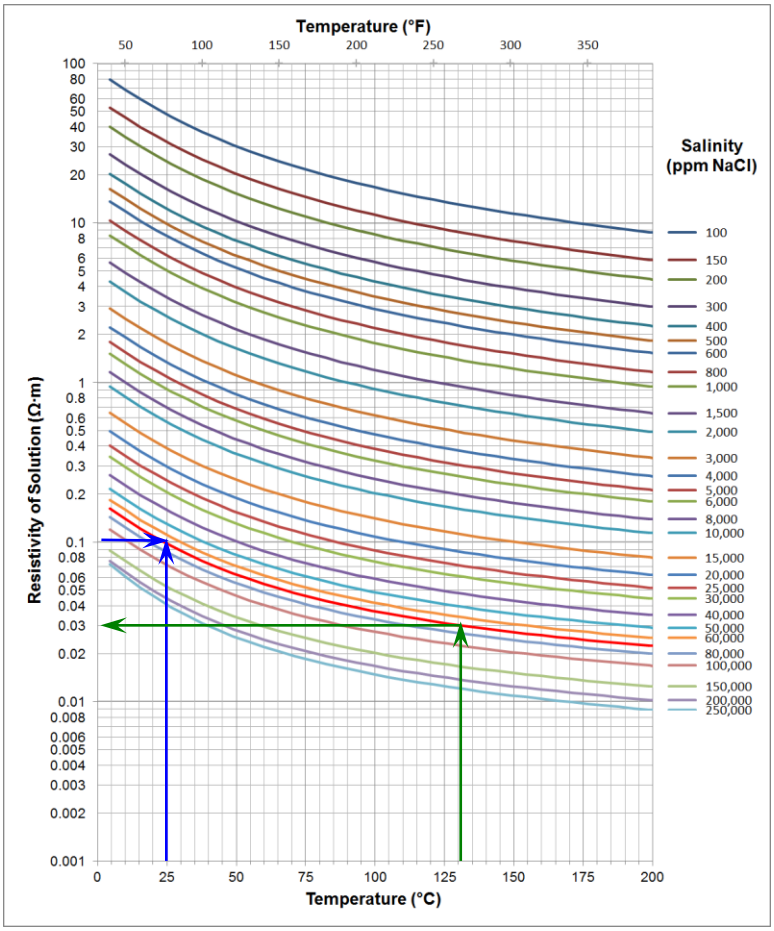
The resistivity of a sodium chloride (NaCl) solution varies with temperature and with concentration. The charts below may be used to estimate the resistivity of the solution at any temperature, if either the concentration is known, or the resistivity of the solution at a given temperature is known.

Example

Estimate the salinity and resistivity of a sodium chloride solution at 130°C, given that its measured resistivity at 24°C is 0.1 Ω·m.

- Choose the appropriate chart, depending on whether the salinity is desired in units of ppm NaCl or ppm Cl^- (see figure below).
- Enter the horizontal axis at the measured temperature of 24°C and the vertical axis at the measured resistivity of 0.1 Ω·m and find the intersection point (blue arrows).
- Interpolate between the constant salinity lines to estimate the salinity of the solution.
- Follow the constant salinity lines, interpolating if necessary (red line) to the desired temperature and read off the corresponding resistivity on the vertical axis (green arrows).

If the salinity is already known, only the final step, above, is required.



Resistivity of NaCl Solution vs. Temperature and Salinity
Salinity in ppm NaCl

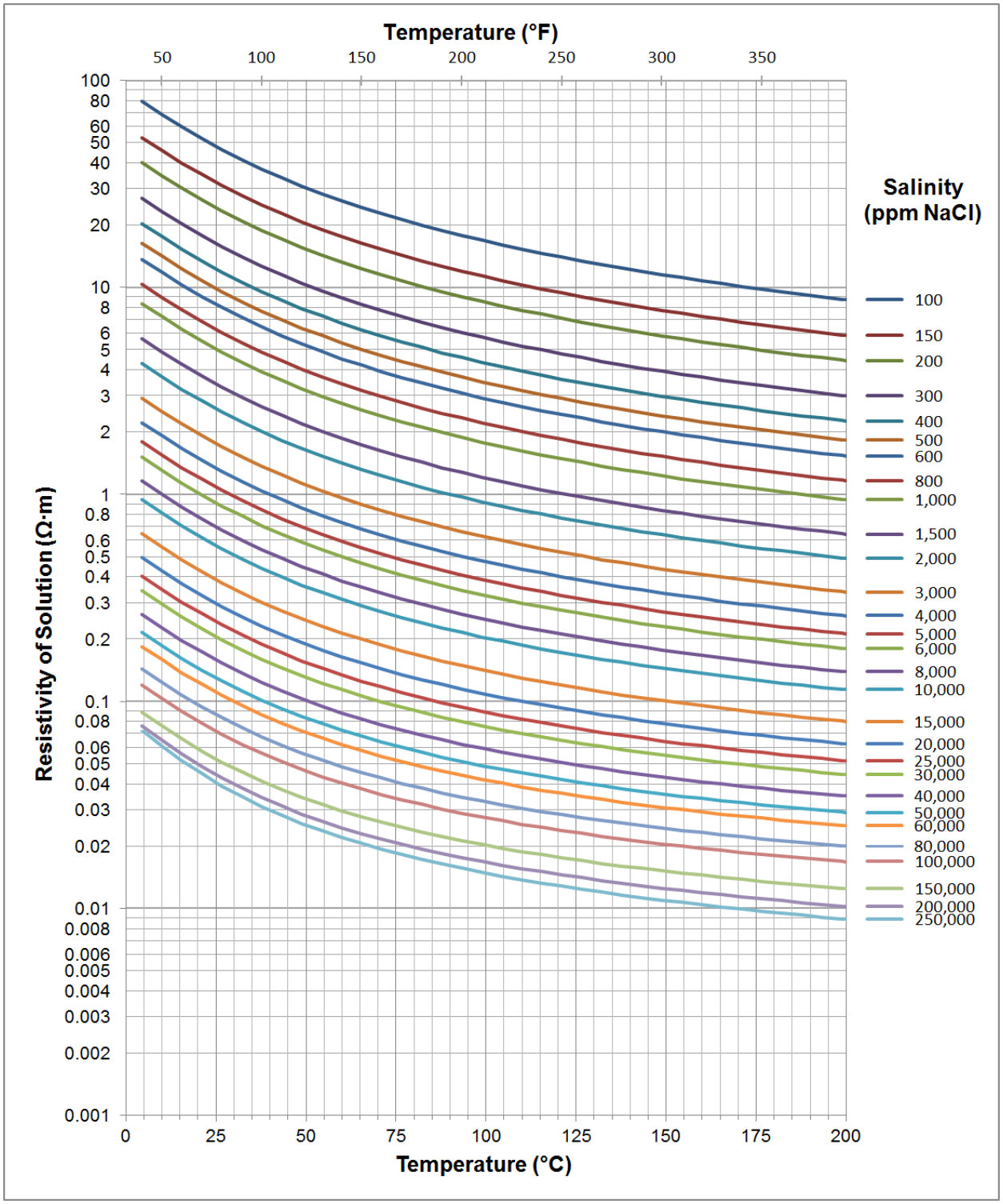


Chart 1-6

Resistivity of NaCl Solution vs. Temperature and Salinity
Salinity in ppm Cl^-

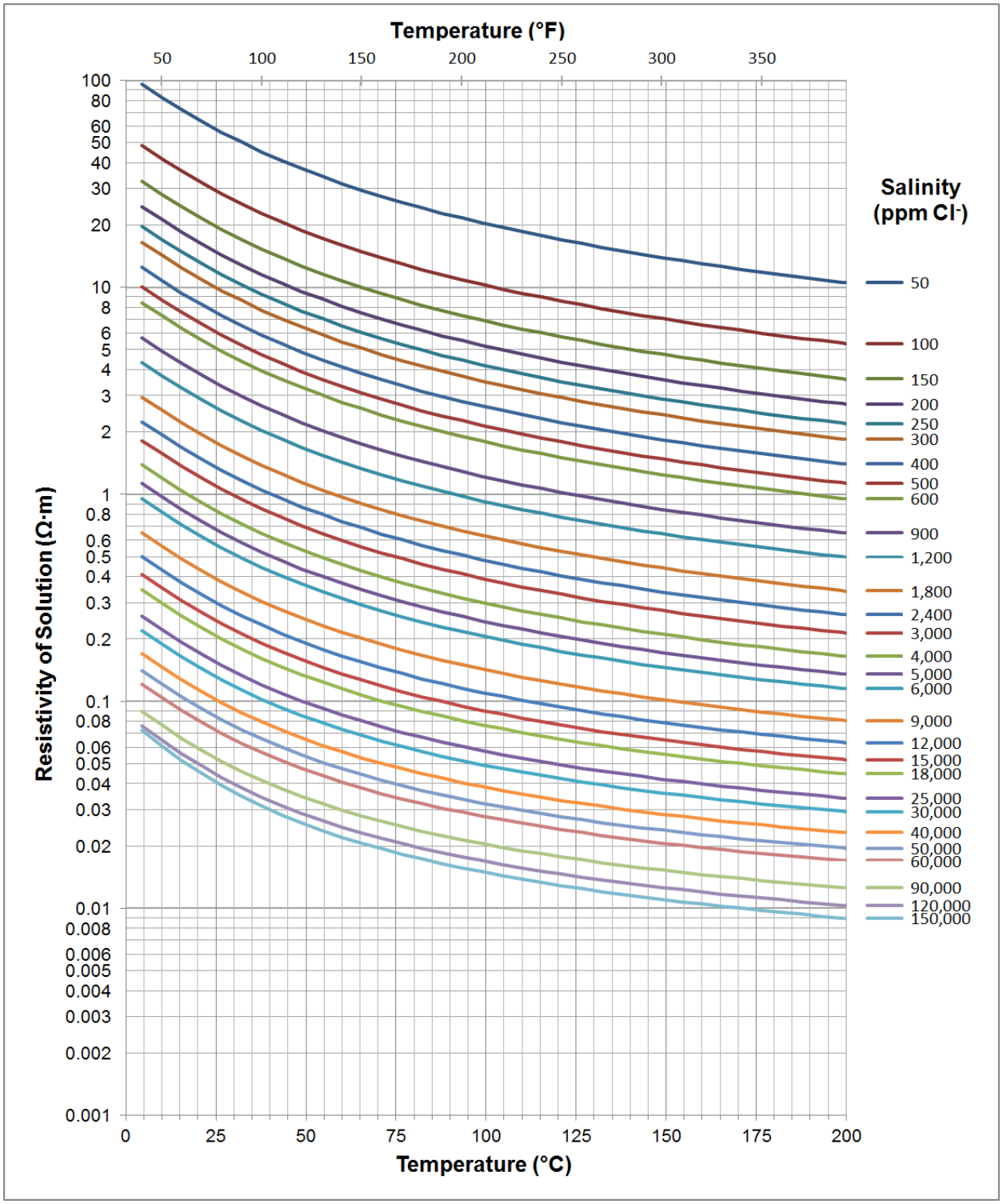
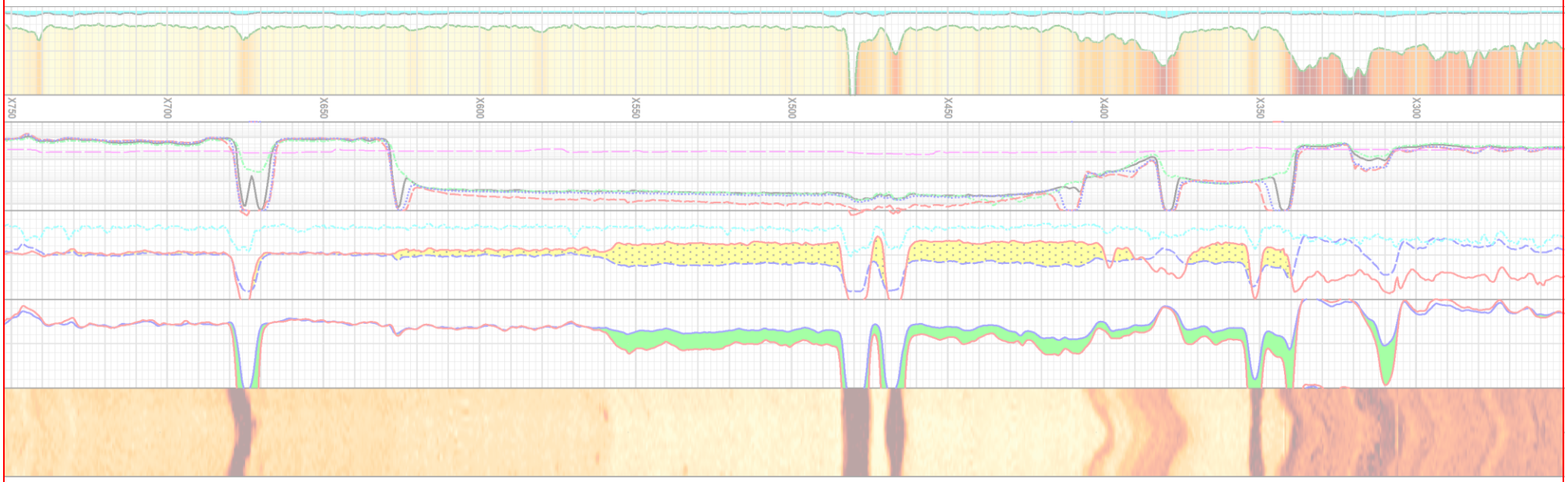


Chart 1-7



Gamma Ray

2 Gamma Ray

The gamma ray correction charts contained in this section were generated from a combination of computer modelling and experimental data taken in test pits at Halliburton's facilities in Houston, Texas with varying mud weights, borehole sizes and potassium concentrations. These test pits and associated computer models are referenced to the API gamma ray test pit located at the University of Houston in Houston, Texas. Gamma ray sensors which are represented in this section include:

- ABG™ (At Bit Gamma Ray) – An azimuthal gamma ray sensor incorporated into the Geo-Pilot® rotary steerable system. The ABG is currently available in the 9600, 7600 and 5200 series Geo-Pilot®.
- AGR™ (Azimuthal Gamma Ray) – An azimuthal gamma ray sensor incorporated into the M5™ integrated LWD tool, available in collar sizes of 6¾, 8 and 9½ inches.
- DGR™ (Dual Gamma Ray) – The standard gamma ray used in most LWD systems, existing in collar sizes of 4¾, 6¾, 8 and 9½ inches. A high-flow variant is available, consisting of a standard 9½-inch size DGR insert fitted inside a modified 8-inch collar for utilization in high flow-rate conditions.
- GABI™ (Gamma and At Bit Inclination) – A combined gamma ray and inclination sensor, incorporated into specially modified Sperry drilling motors and available in collar sizes of 4¾ and 6¾ inches.
- GM (Gamma Module) – A high-temperature sonde-based sensor, typically used as part of the SOLAR® system, capable of operating at up to 175°C. It may be run in collar sizes ranging from 3⅜ to 9½ inches.
- PCG (Pressure Case Gamma) – A sonde-based sensor, capable of operating at up to 150°C. It may be run in collar sizes ranging from 3⅜ to 9½ inches.
- Quasar Pulse™ – An integrated tool, featuring gamma ray, directional, pressure and drill-string dynamics sensors, designed for operation in temperatures up to 200°C. It is available in 4¾ or 6¾-inch collar sizes.
- Radian® - A combined gamma ray and inclination sensor, mounted in a stand-alone collar, capable of operating at up to 175°C. It is available only in a 4¾-inch collar size.

The charts in this section provide the capability to correct the measurements made by the above-listed sensors for varying borehole size, mud weight and mud potassium concentration. It should be noted that when potassium is present in the mud, then the potassium correction should be applied before using the mud weight and borehole size correction charts.

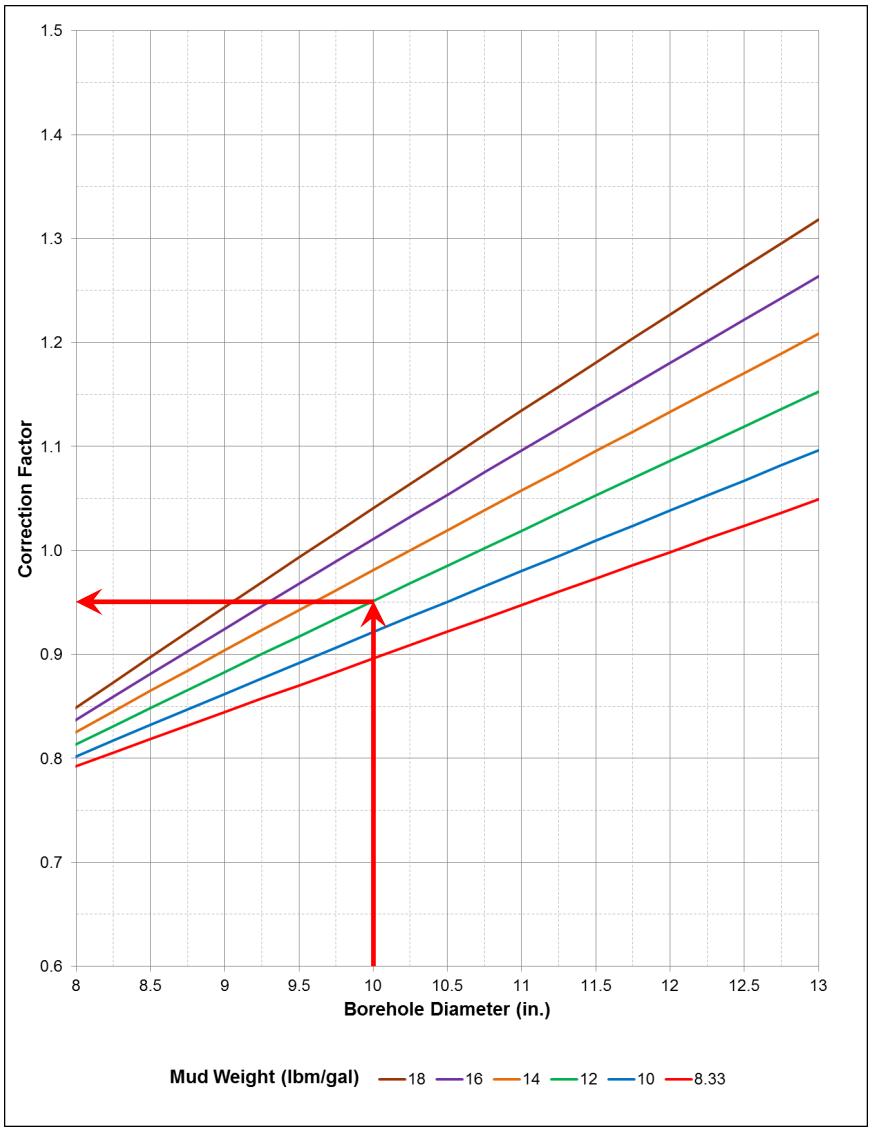
Gamma Ray Mud Weight and Hole Size Correction

The presence of borehole fluid (mud) around the tool attenuates the gamma ray signal from the formation, causing the gamma ray sensor response to be suppressed. These charts indicate the scale factor that is required in order to correct the raw gamma ray measurement to reference conditions. The reference conditions consist of a reference tool type in a borehole with a fixed, nominal diameter, filled with fresh water. The reference conditions which are applicable for a particular tool type and size are noted on the relevant chart.

Example

Determine the correction required for a 6¾" DGR™ in a 10-inch diameter borehole filled with 12 lbm/gal mud.

- Select the chart for the 6¾" DGR™ (see figure below).
- Enter the horizontal axis at 10 inches.
- Draw a line vertically to the 12 lbm/gal mud weight curve.
- Draw a line horizontally to intersect the vertical axis at 0.95.
- Multiply the raw gamma ray value by 0.95 to obtain the borehole-corrected value in reference conditions.



If the mud contains potassium (K^+), the potassium contribution must first be subtracted from the raw gamma ray, using the appropriate potassium correction chart, before the above hole-size and mud weight correction is applied.

Gamma Ray Mud Weight and Hole Size Correction
4¾-in. DGR™ Tool

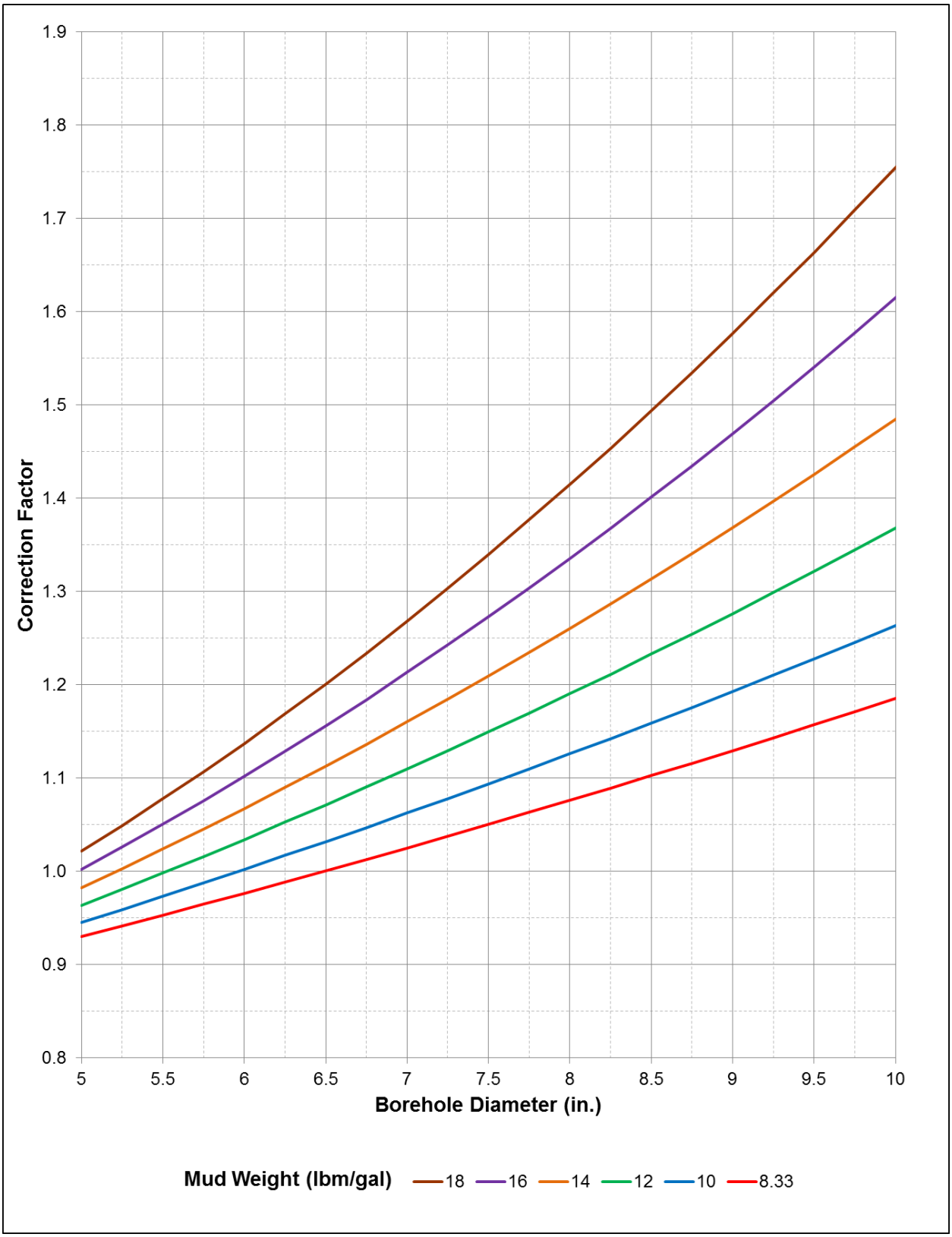


Chart 2-1

Reference condition is a centred tool in a 6½-inch diameter borehole, filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
6¾-in. DGR™ Tool

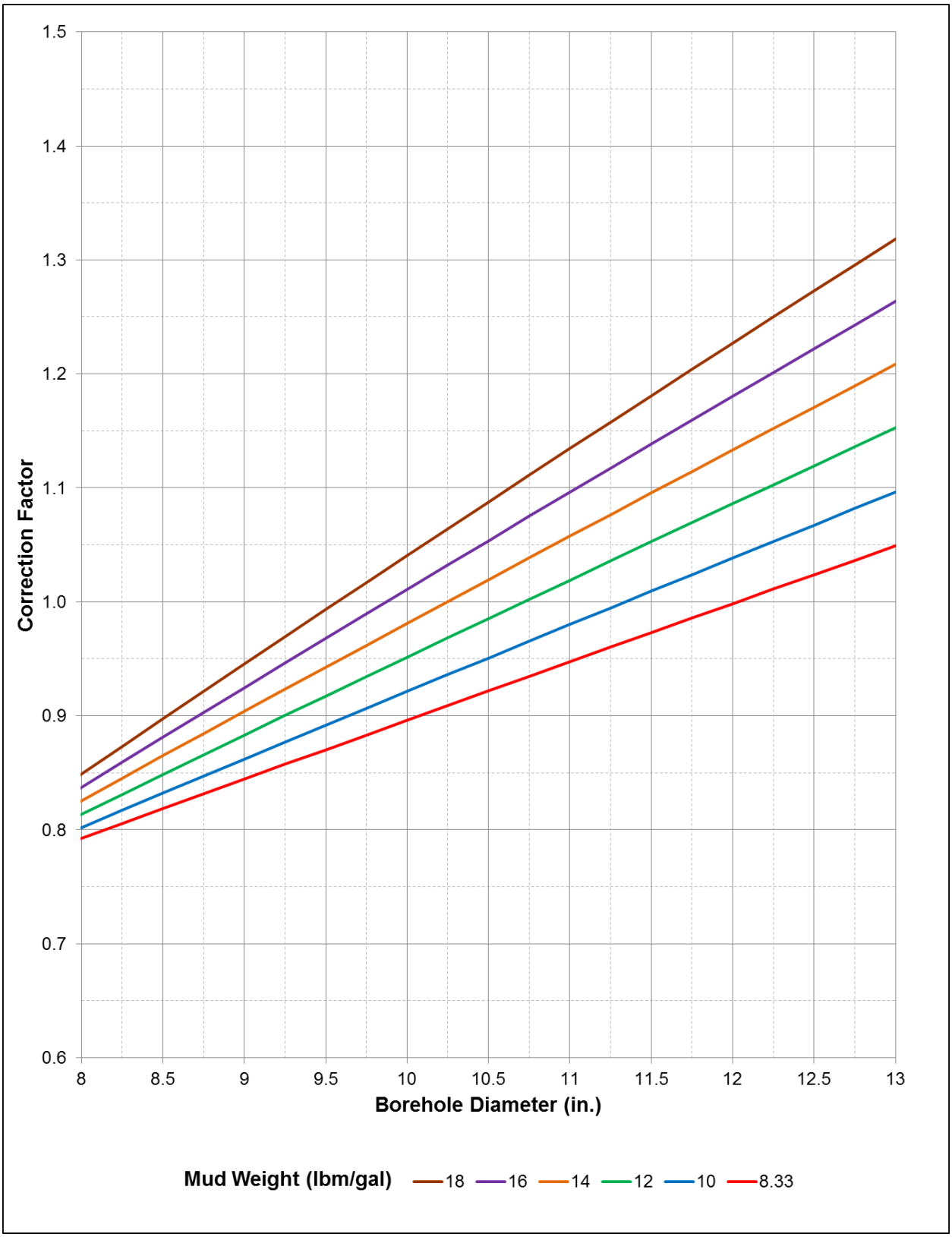


Chart 2-2

Reference condition is a centred GM probe in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
8-in. DGR™ Tool

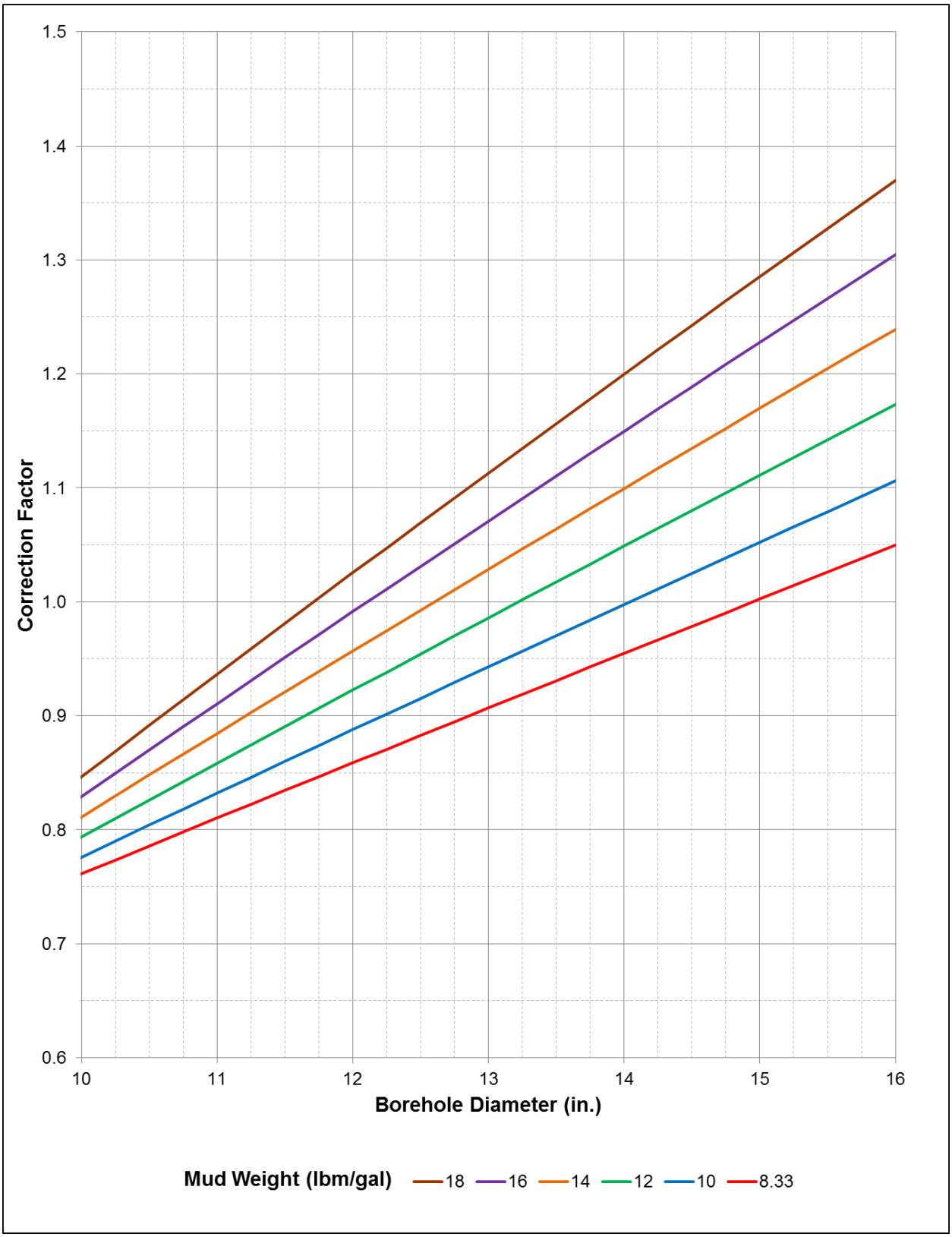


Chart 2-3

Reference condition is a centred GM probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
8-in. High-Flow DGR™ Tool

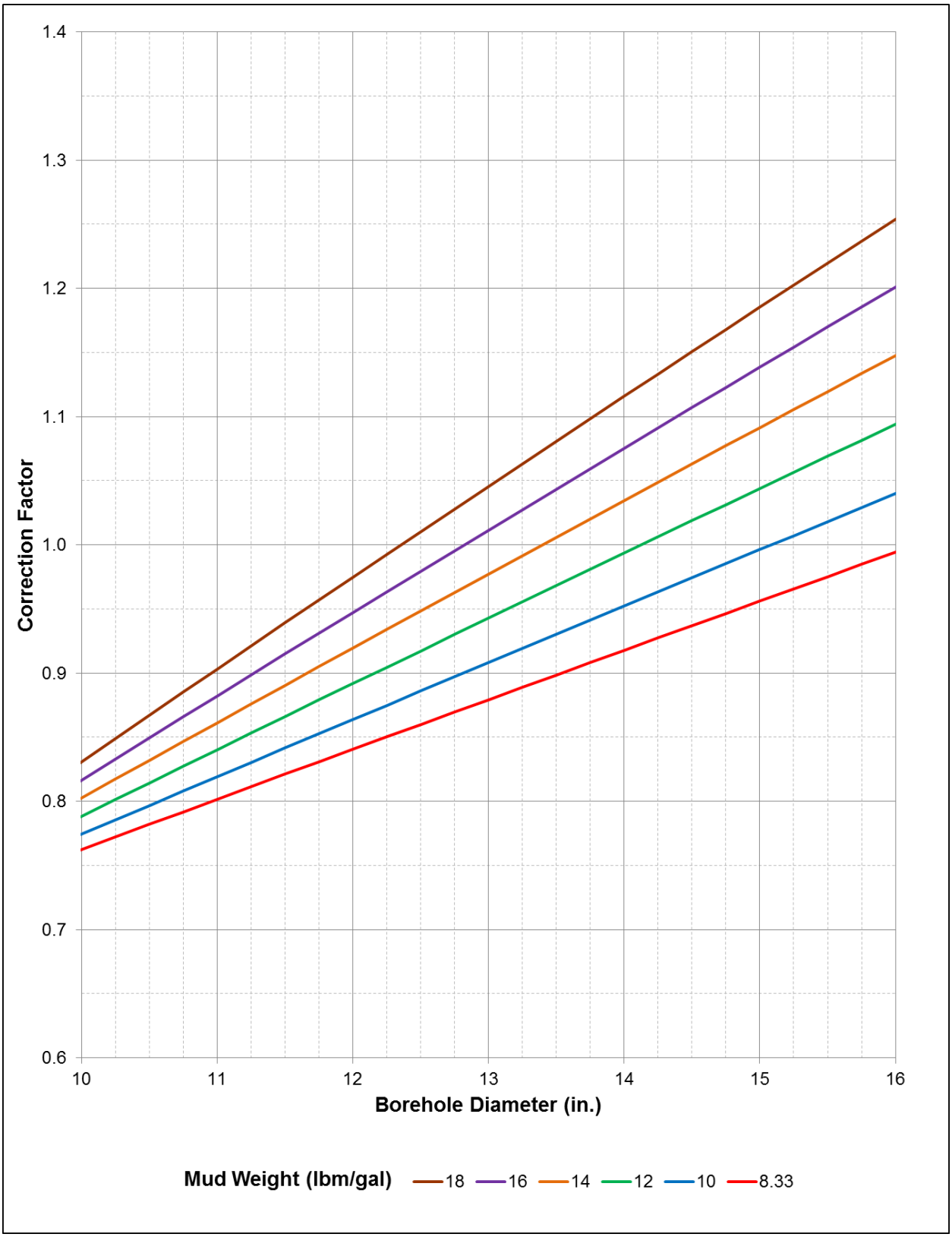


Chart 2-4

Reference condition is a centred GM probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
9½-in. DGR™ Tool

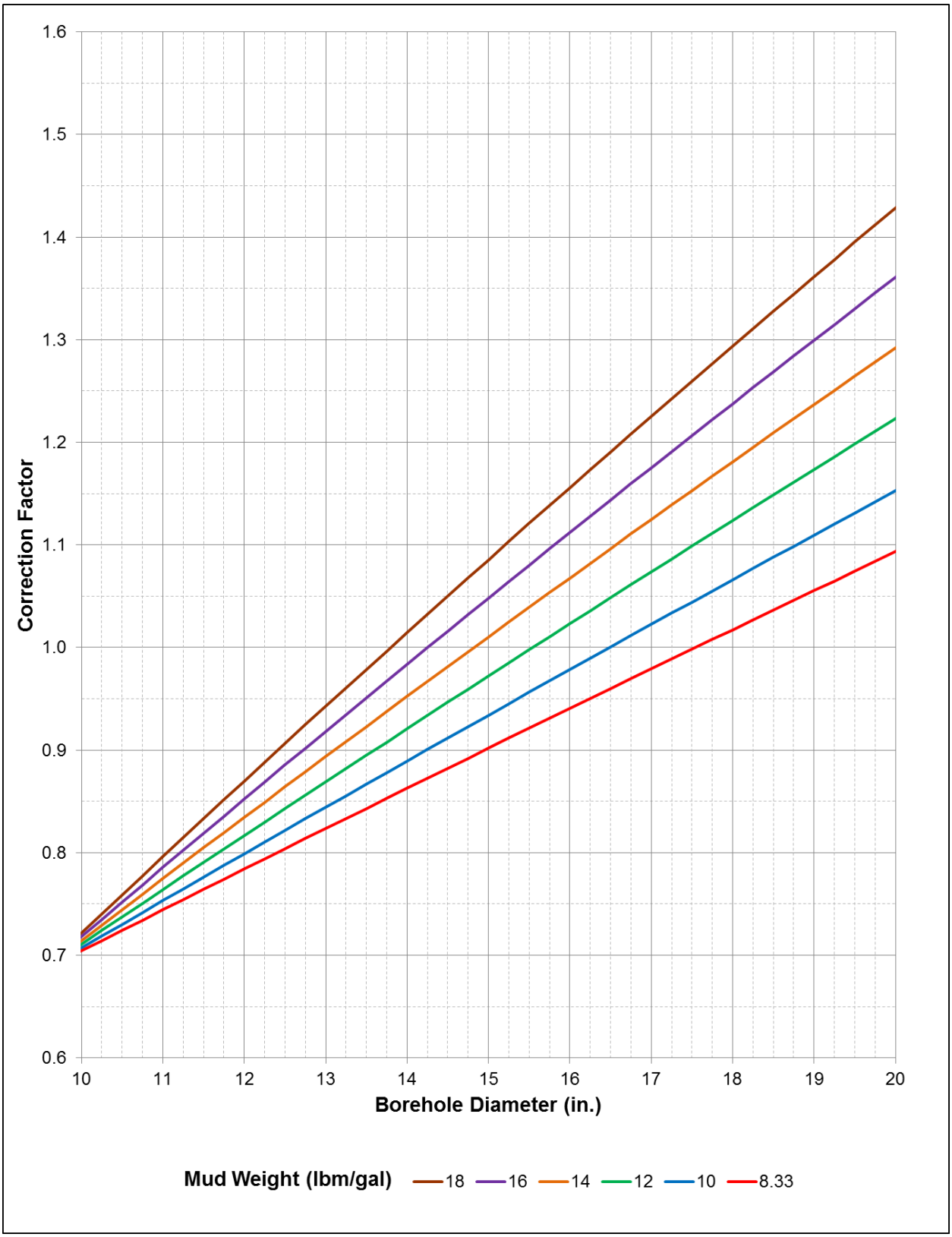


Chart 2-5

Reference condition is a centred GM probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
6¾-in. AGR™ Tool

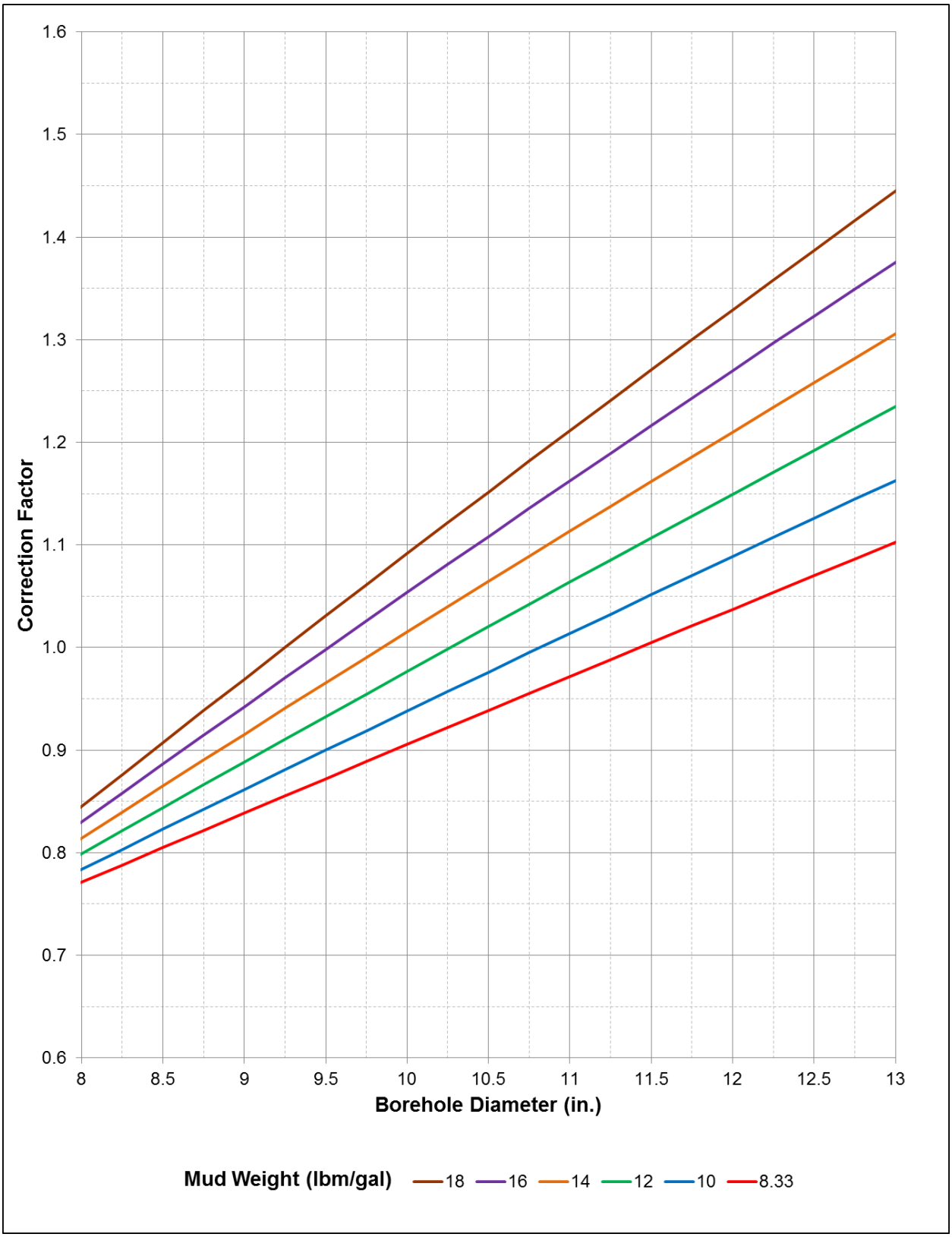


Chart 2-6

Reference condition is a centred PCG probe in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
8-in. AGR™ Tool

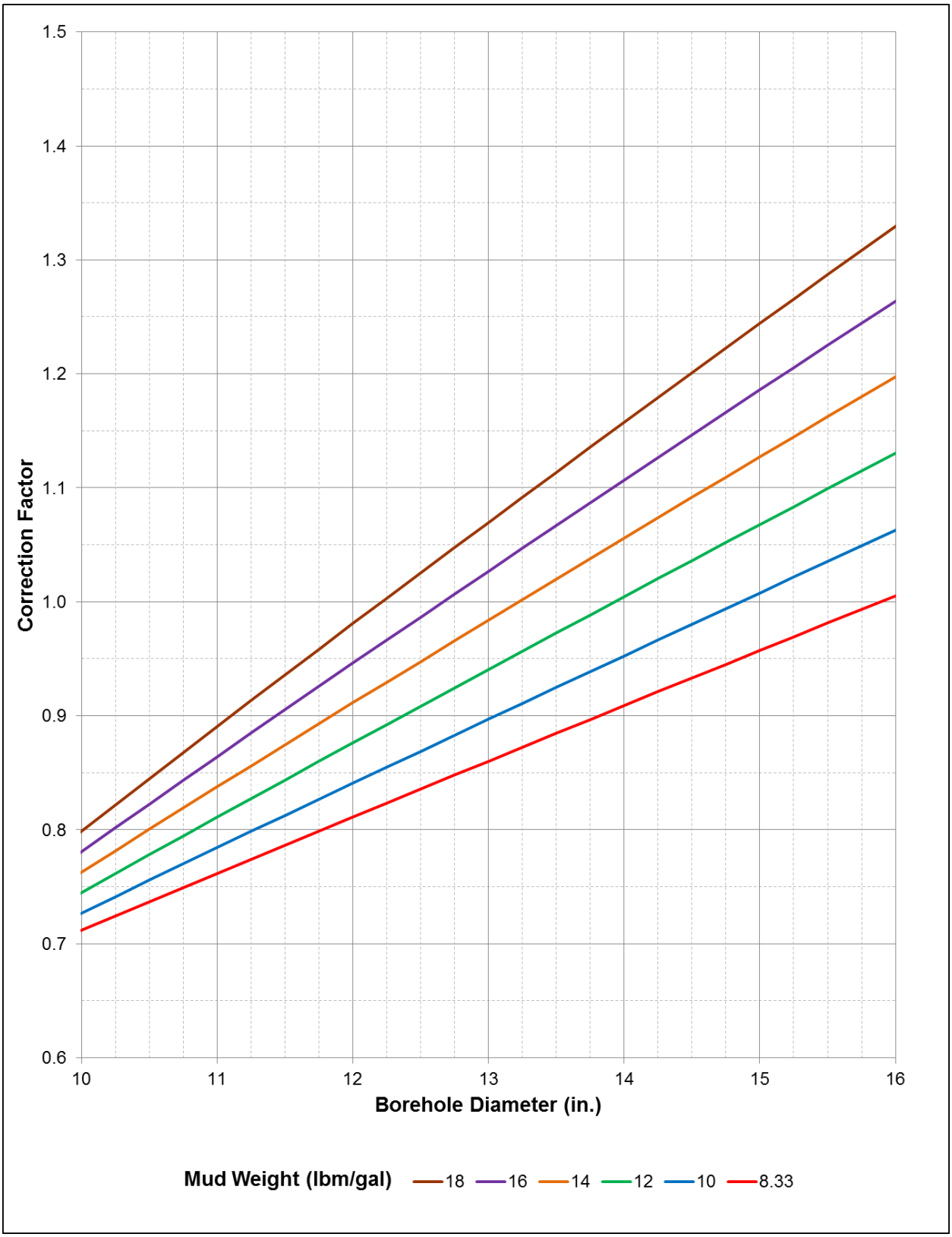


Chart 2-7

Reference condition is a centred PCG probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
9½-in. AGR™ Tool

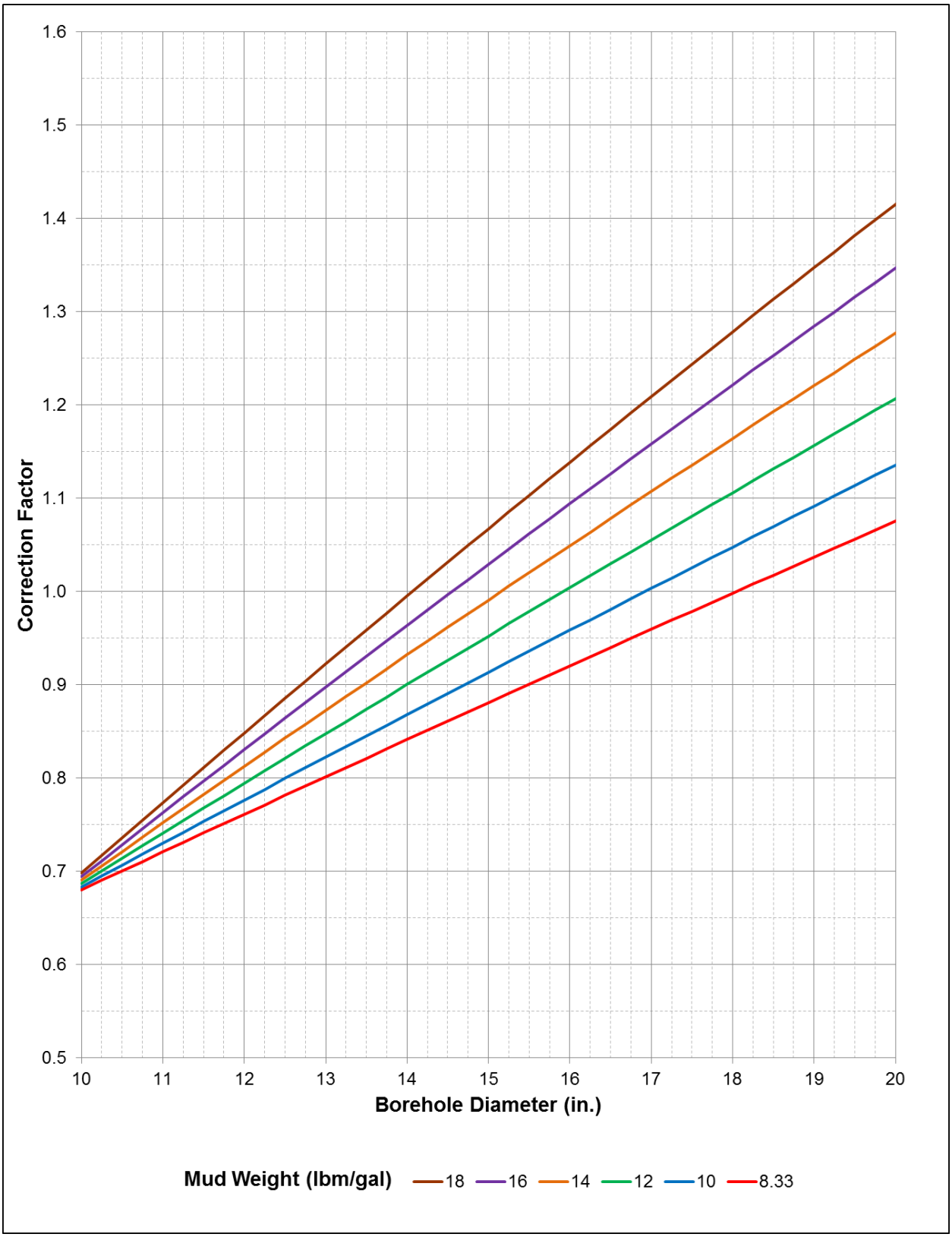


Chart 2-8

Reference condition is a centred PCG probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
4¾-in. ABG™ Tool (5200 Geo-Pilot® RSS)

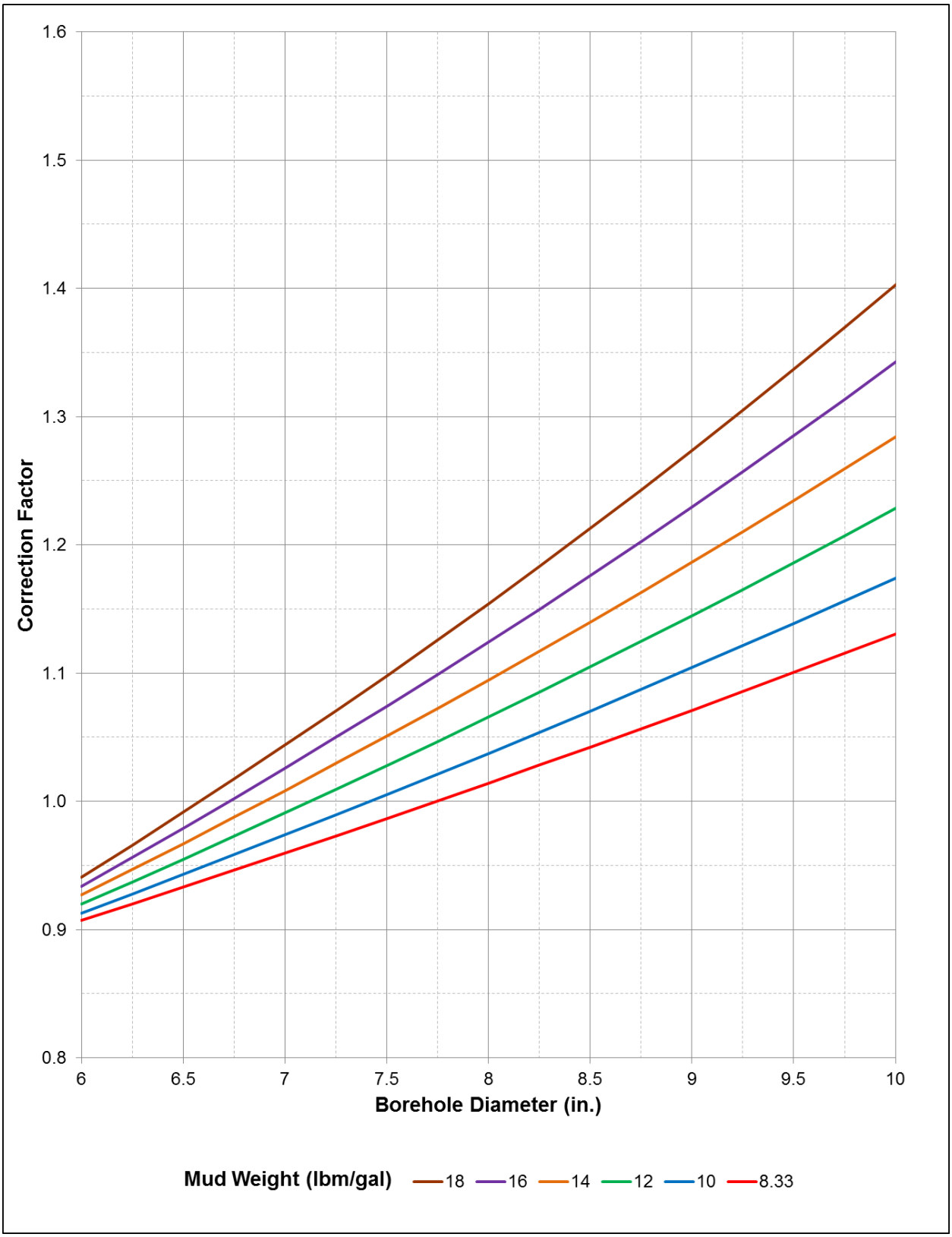


Chart 2-9

Reference condition is a centred tool in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
6¾-in. ABG™ Tool (7600 Geo-Pilot® RSS)

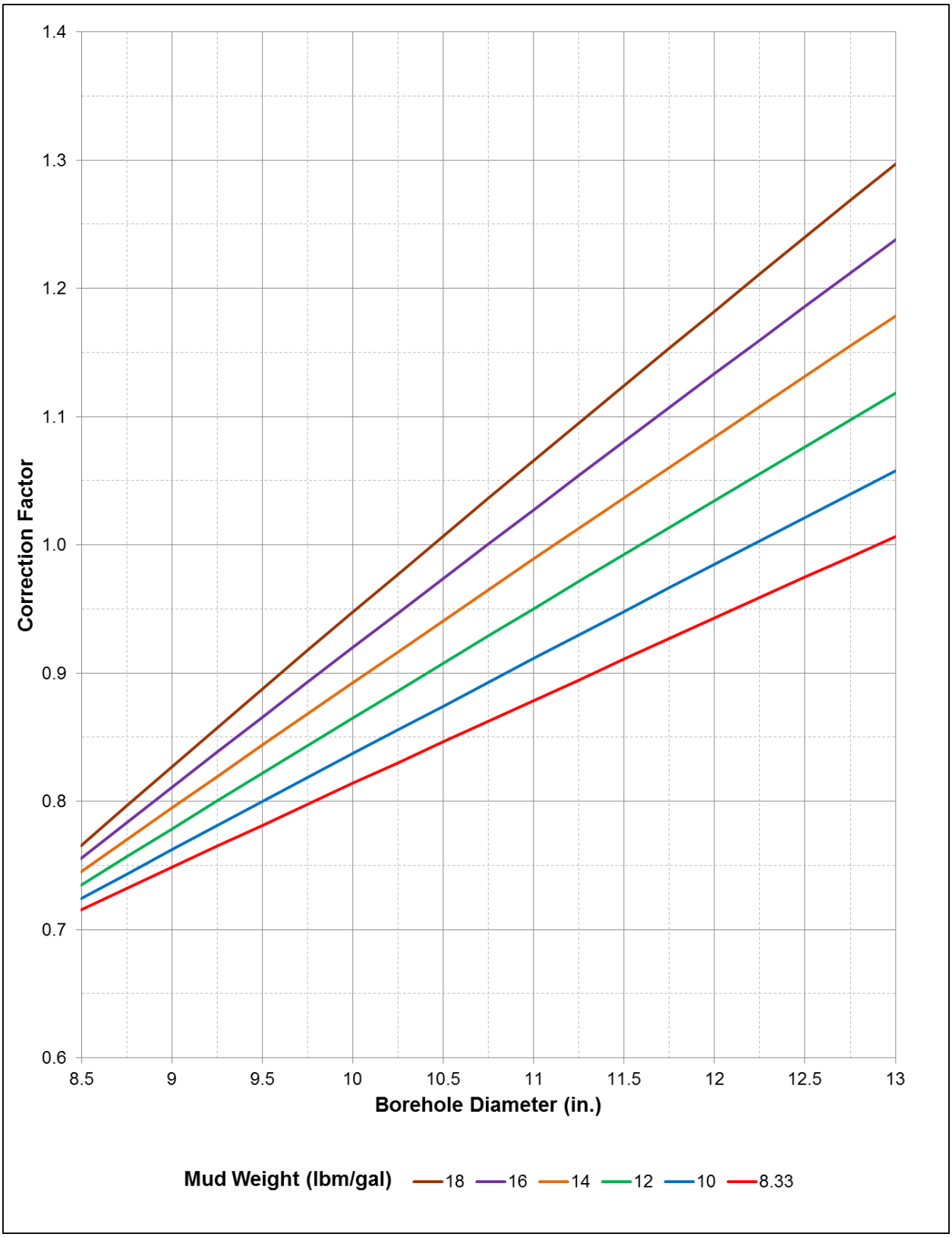


Chart 2-10

Reference condition is a centred PCG probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
8-in. ABG™ Tool (9600 Geo-Pilot® RSS)

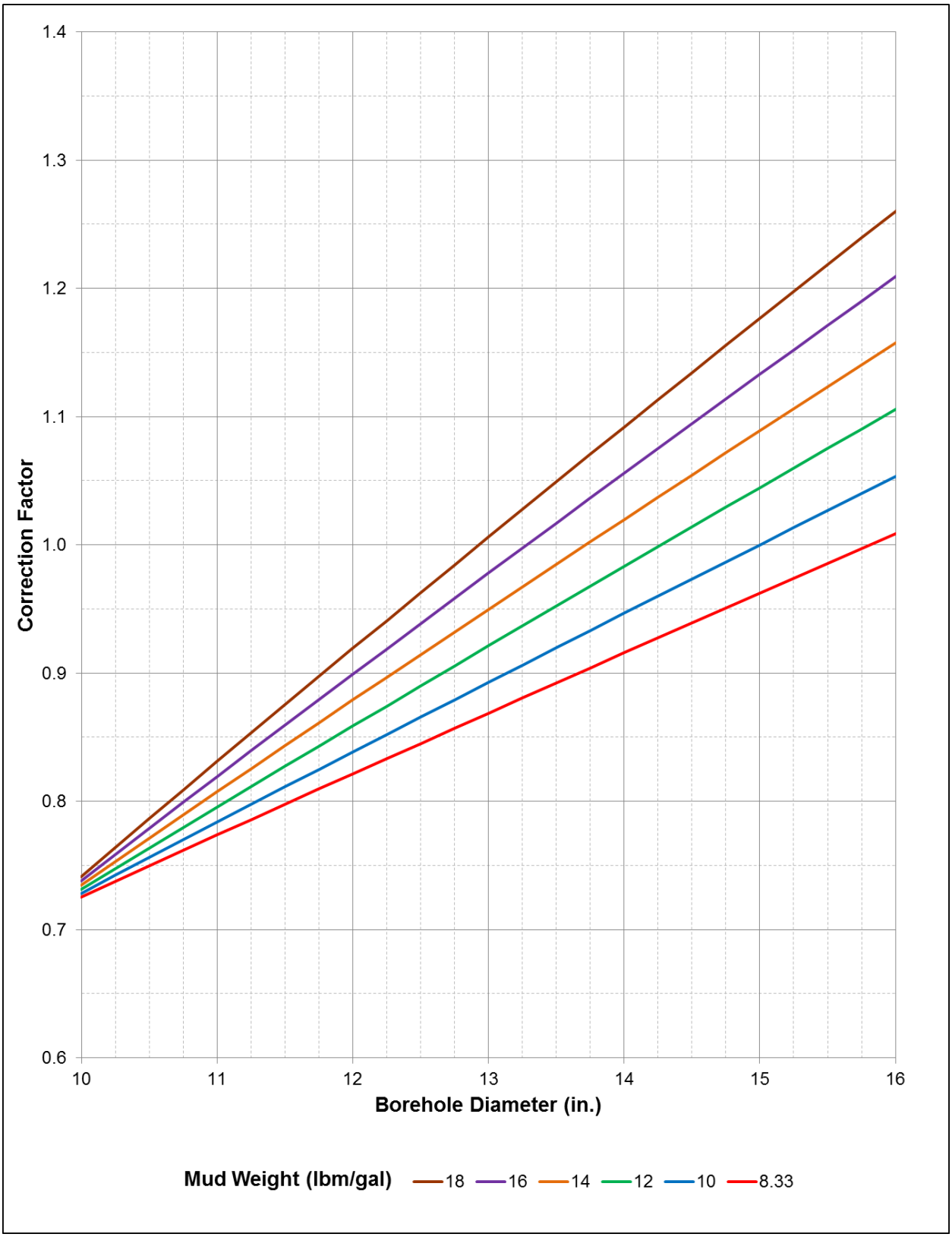


Chart 2-11

Reference condition is a centred PCG probe in a 10-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
4¾-in. GABI™ Tool

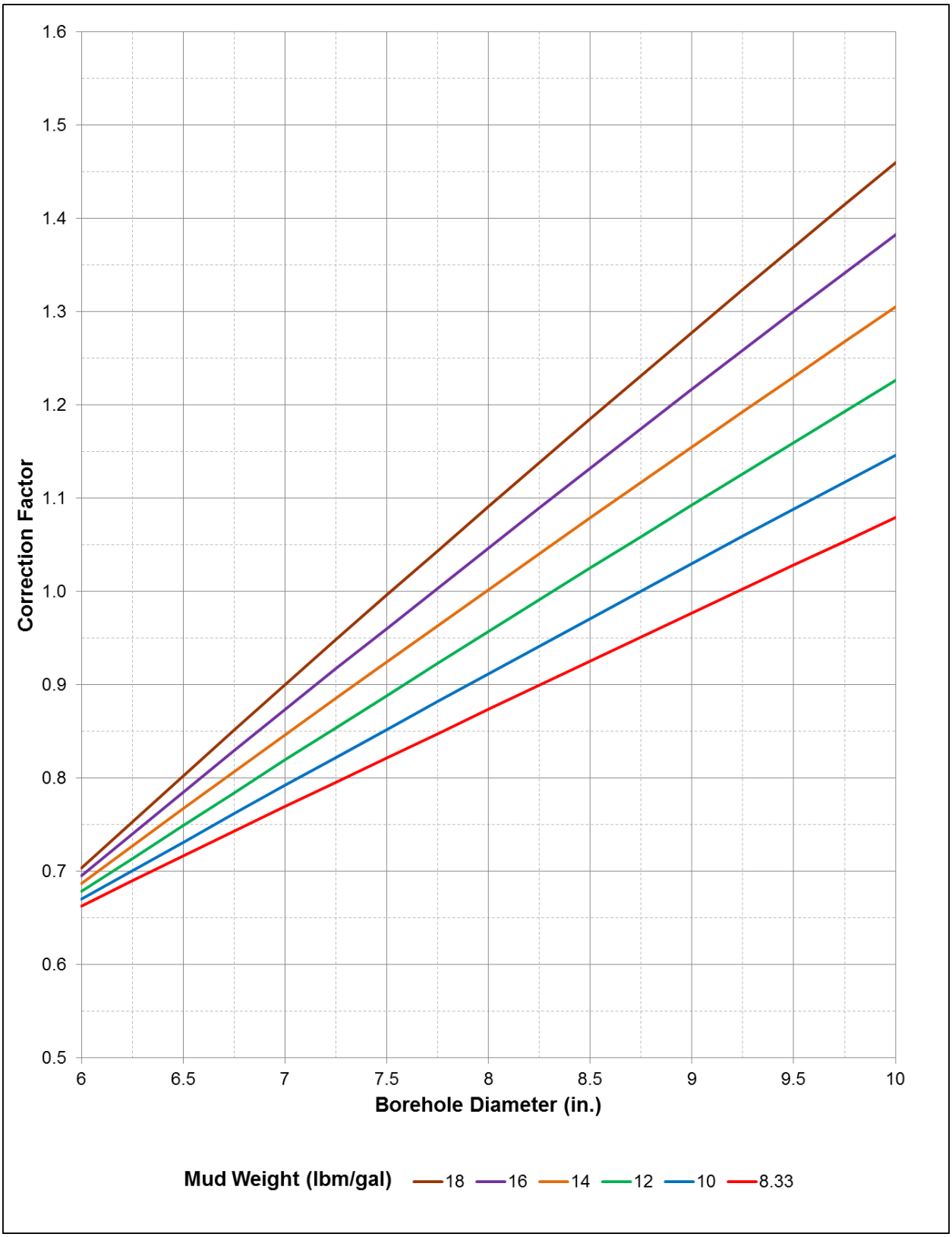


Chart 2-12

Reference condition is a centred PCG probe in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
6¾-in. GABI™ Tool

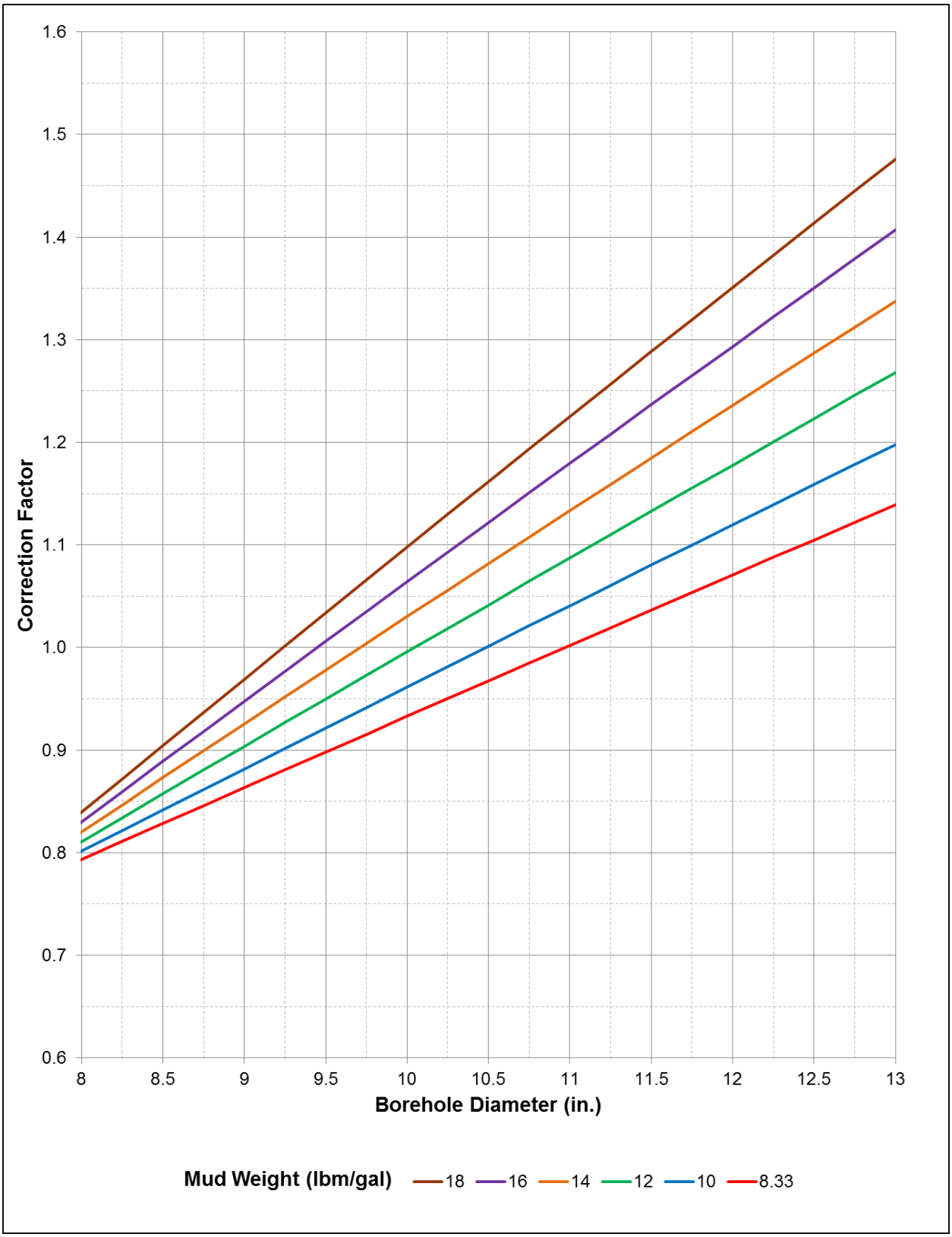


Chart 2-13

Reference condition is a centred PCG probe in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
4¾-in. Quasar Pulse™ Tool

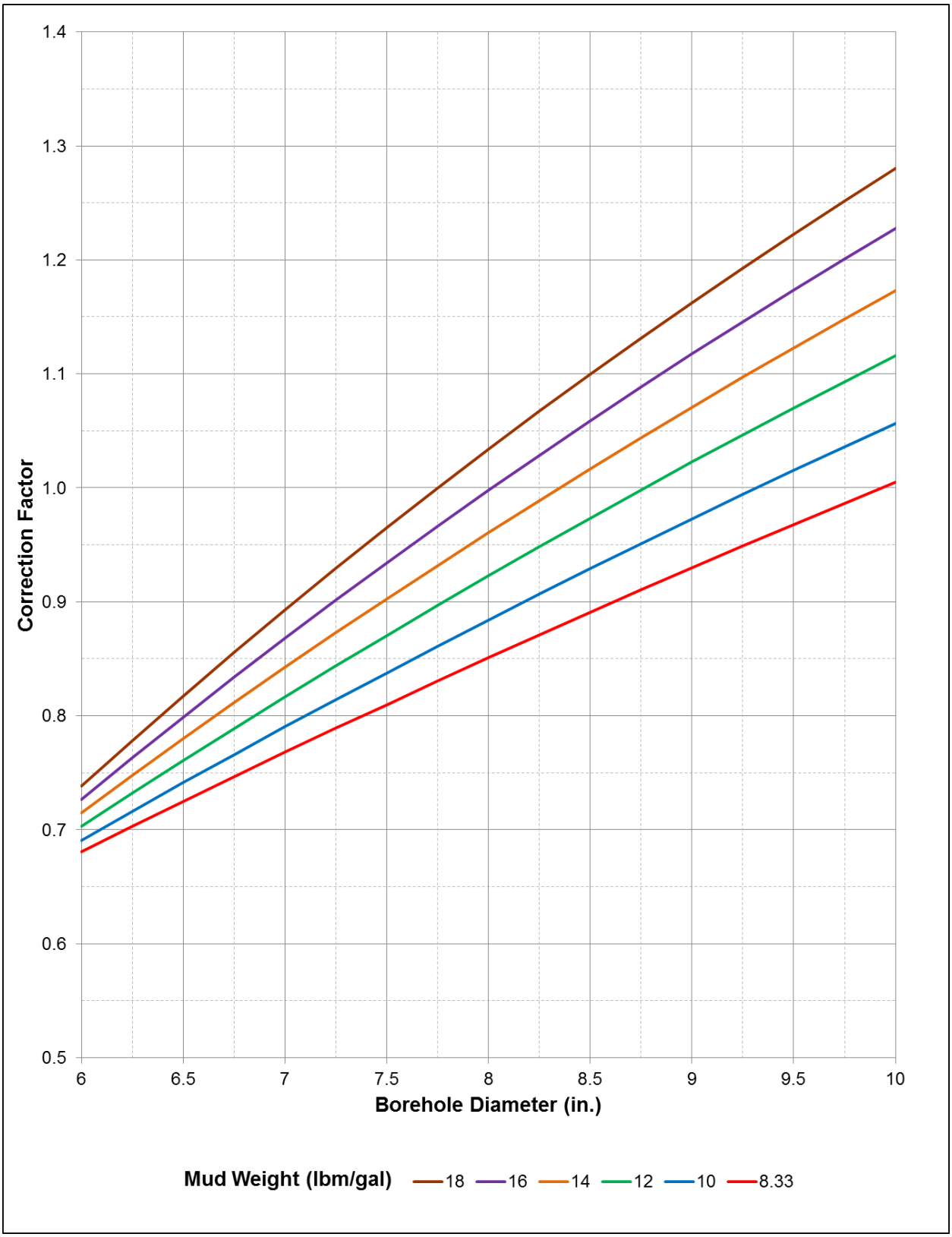


Chart 2-14

Reference condition is a centred GM probe in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
6¾-in. Quasar Pulse™ Tool

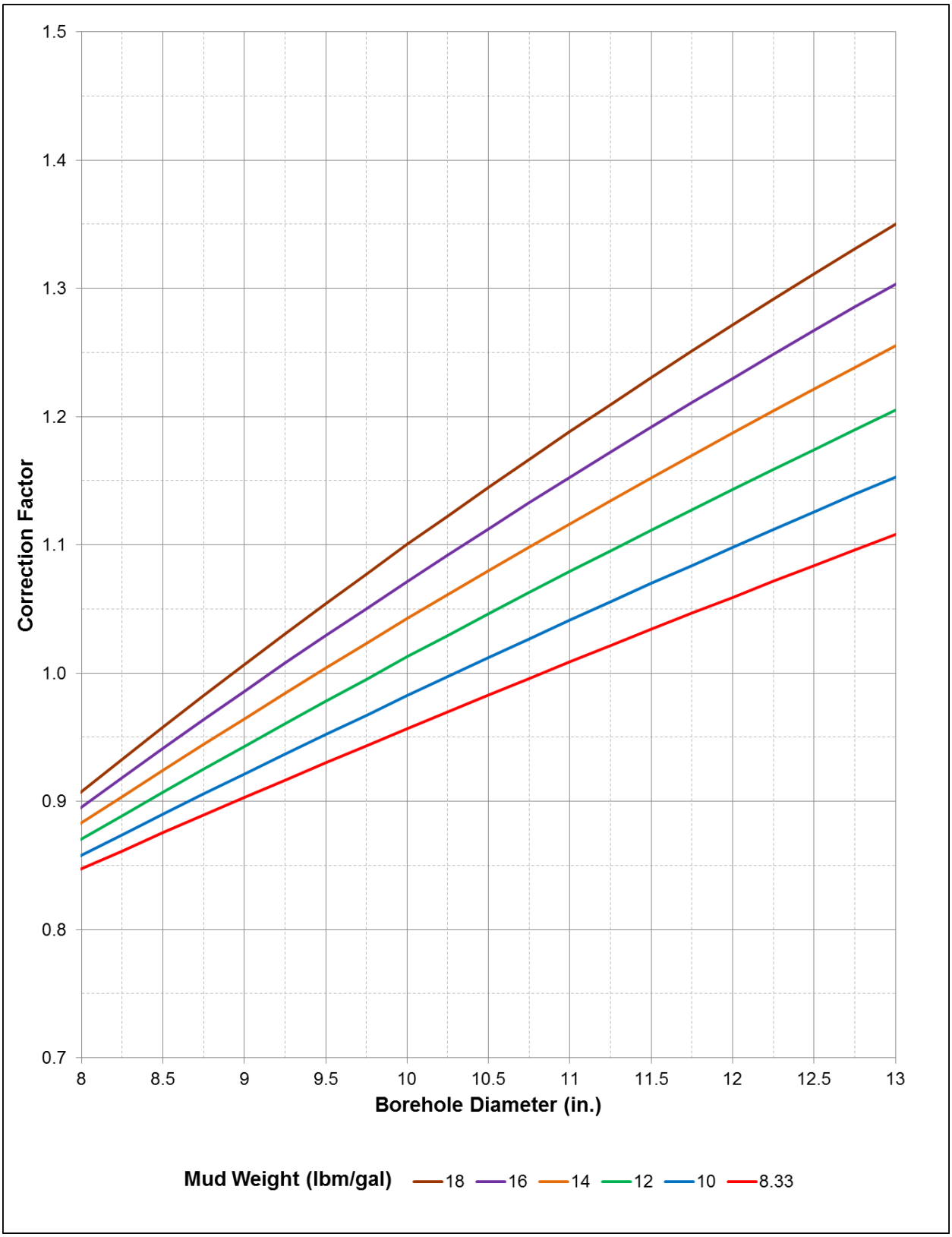


Chart 2-15

Reference condition is a centred GM probe in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
GM Probe in 4¾-in. Collar with 2.81-in. ID

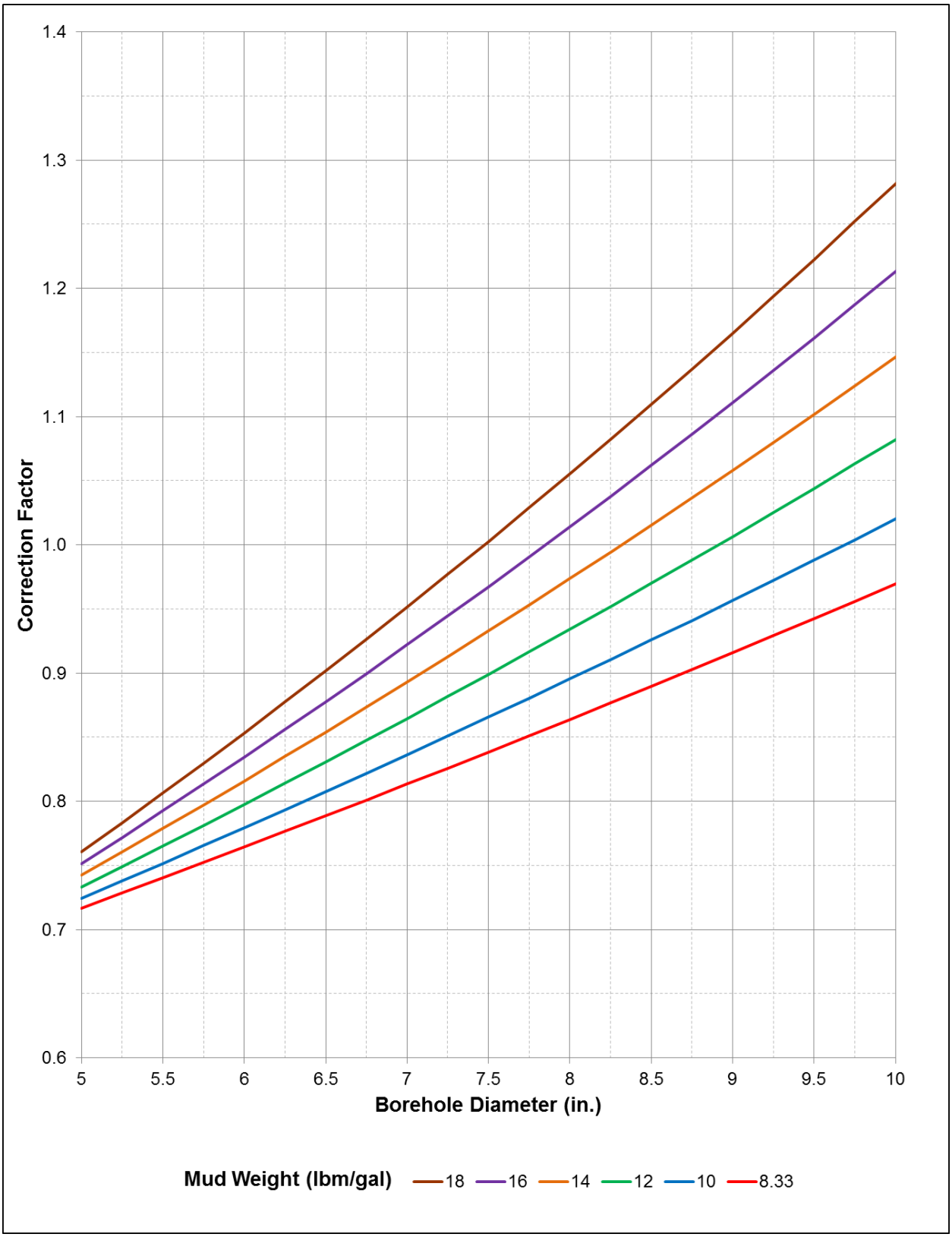


Chart 2-16

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
GM Probe in 6¾-in. Collar with 2.81-in. ID

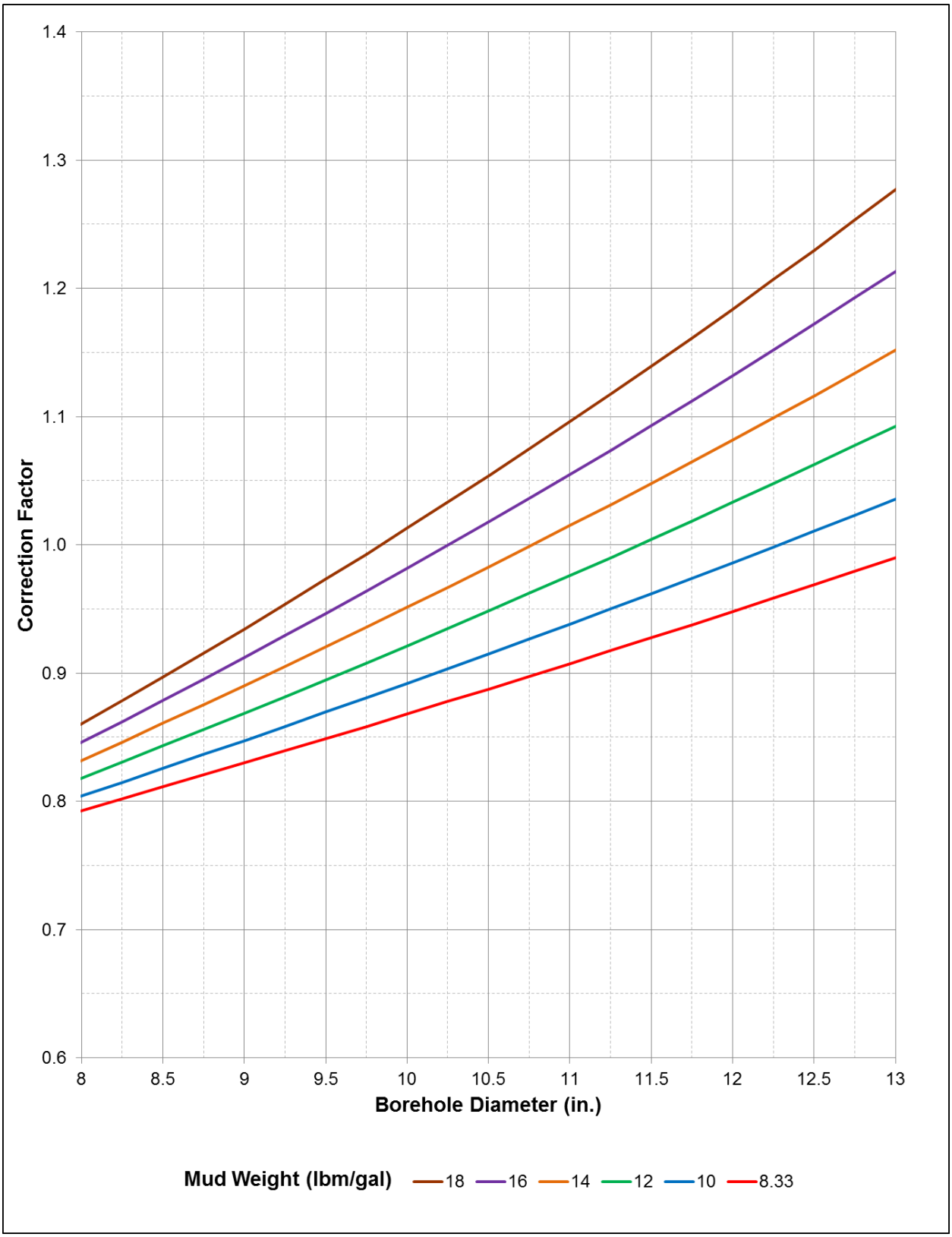


Chart 2-17

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
GM Probe in 8-in. Collar with 2.81-in. ID

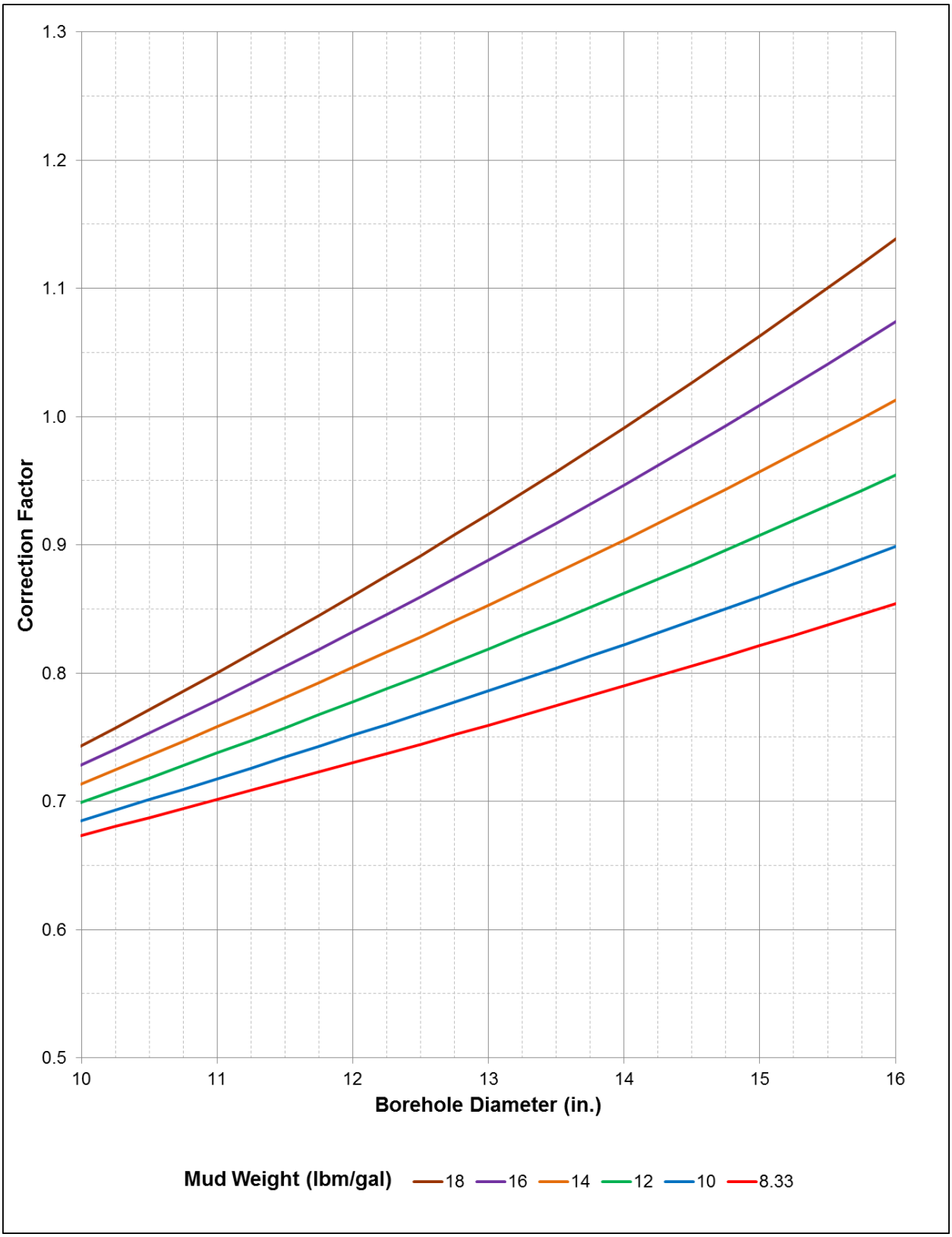


Chart 2-18

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
GM Probe in 9½-in. Collar with 4.00-in. ID

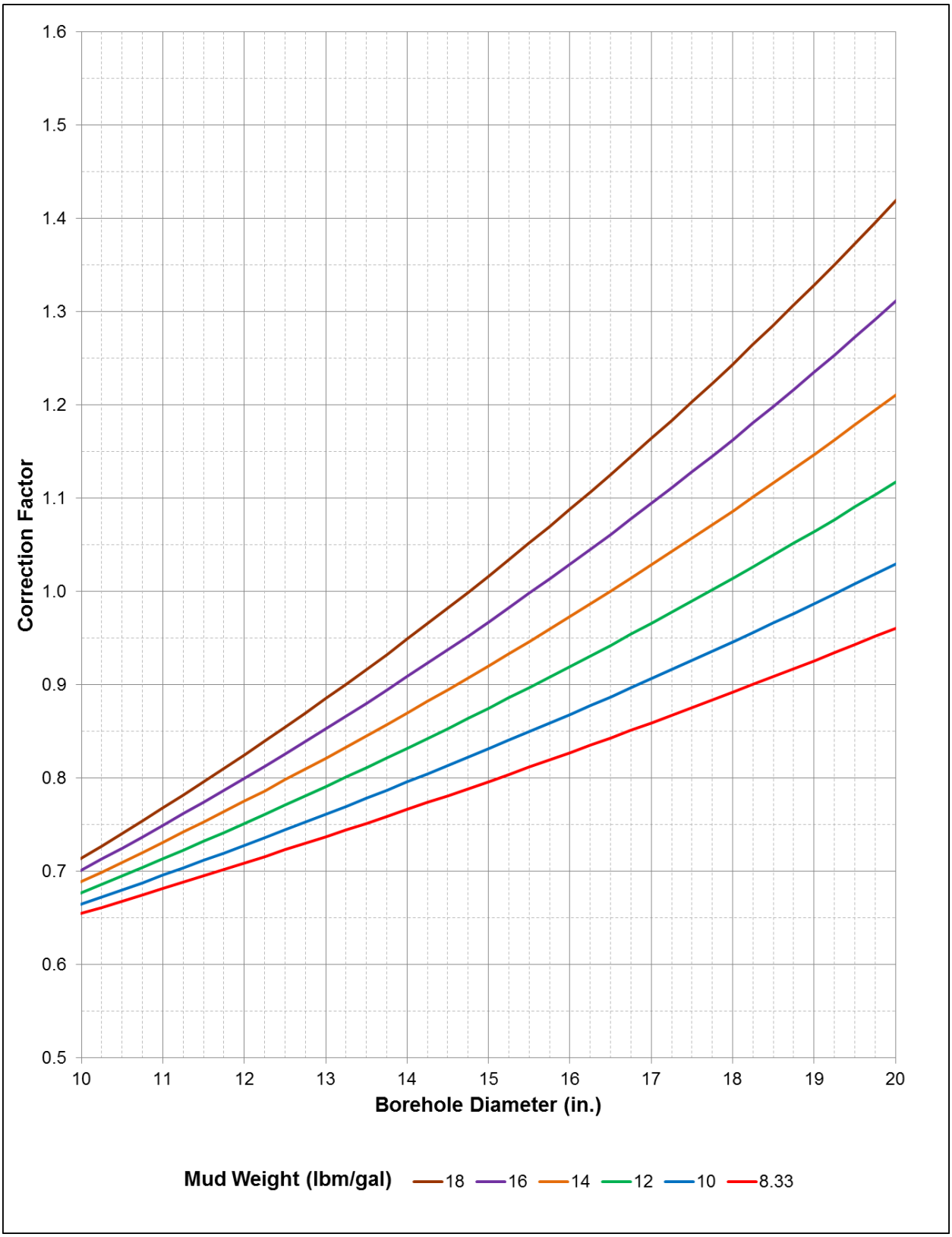


Chart 2-19

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
PCG Probe in 4¾-in. Collar with 2.81-in. ID

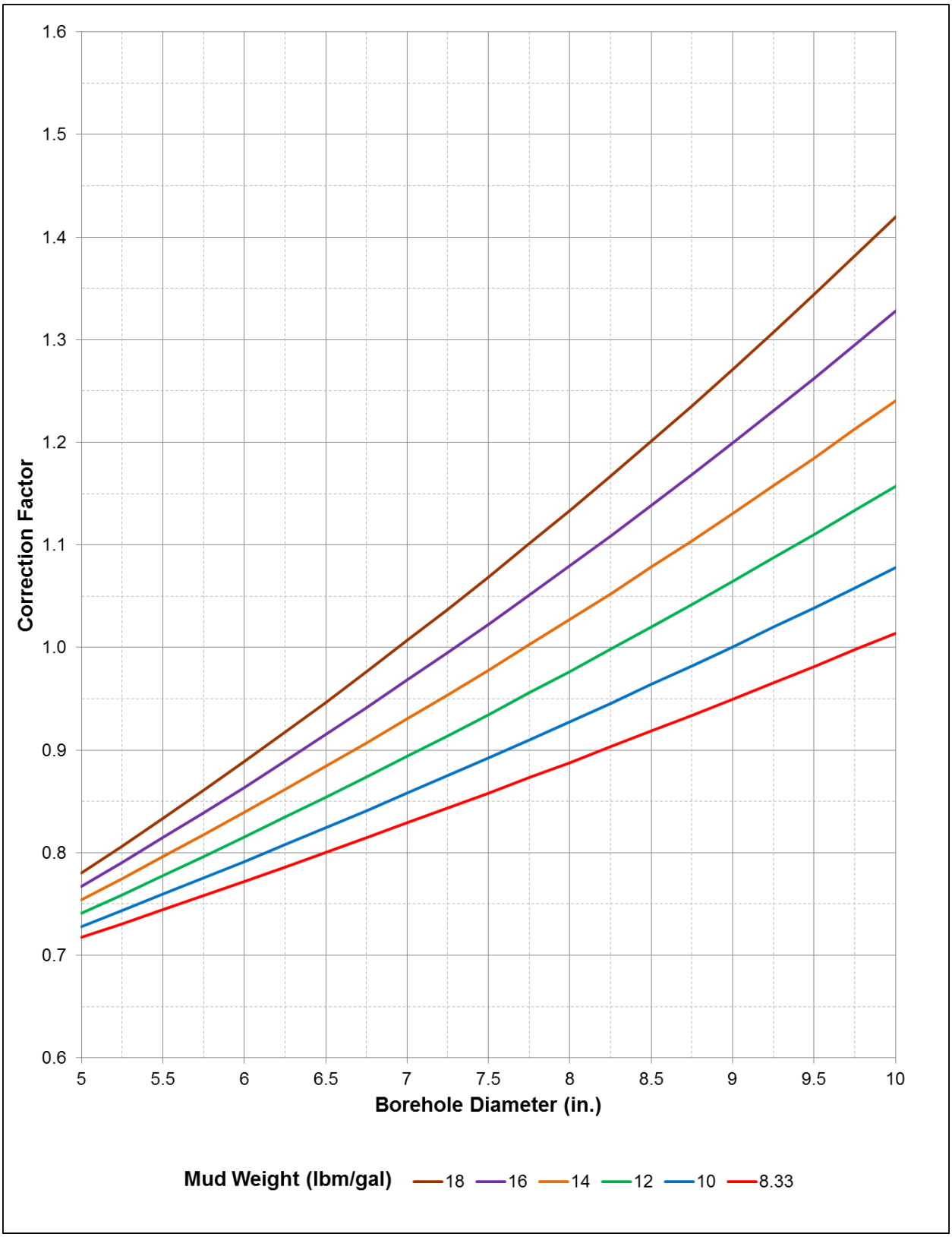


Chart 2-20

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
PCG Probe in 6¾-in. Collar with 2.81-in. ID

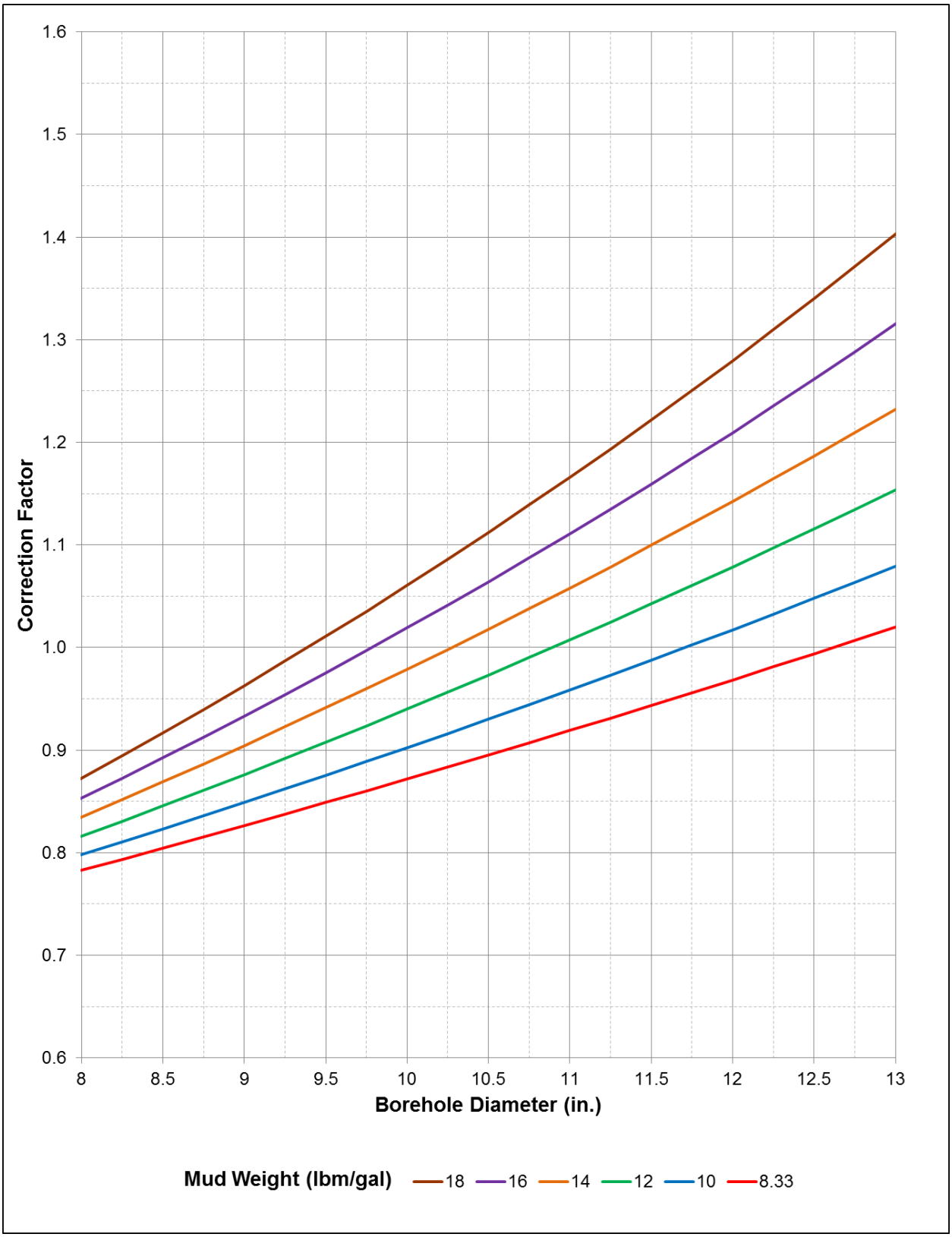


Chart 2-21

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
PCG Probe in 8-in. Collar with 2.81-in. ID

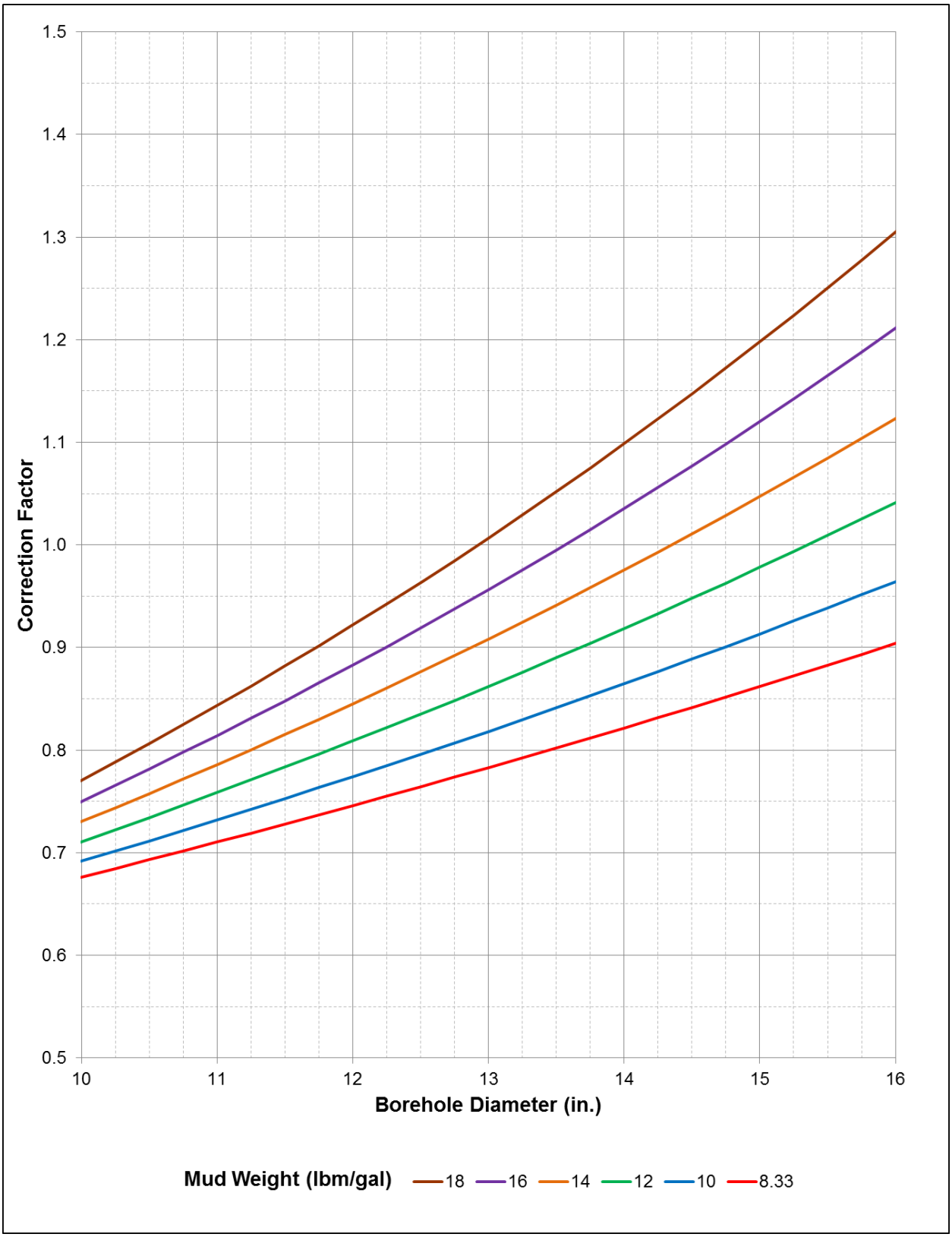


Chart 2-22

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
PCG Probe in 9½-in. Collar with 4.00-in. ID

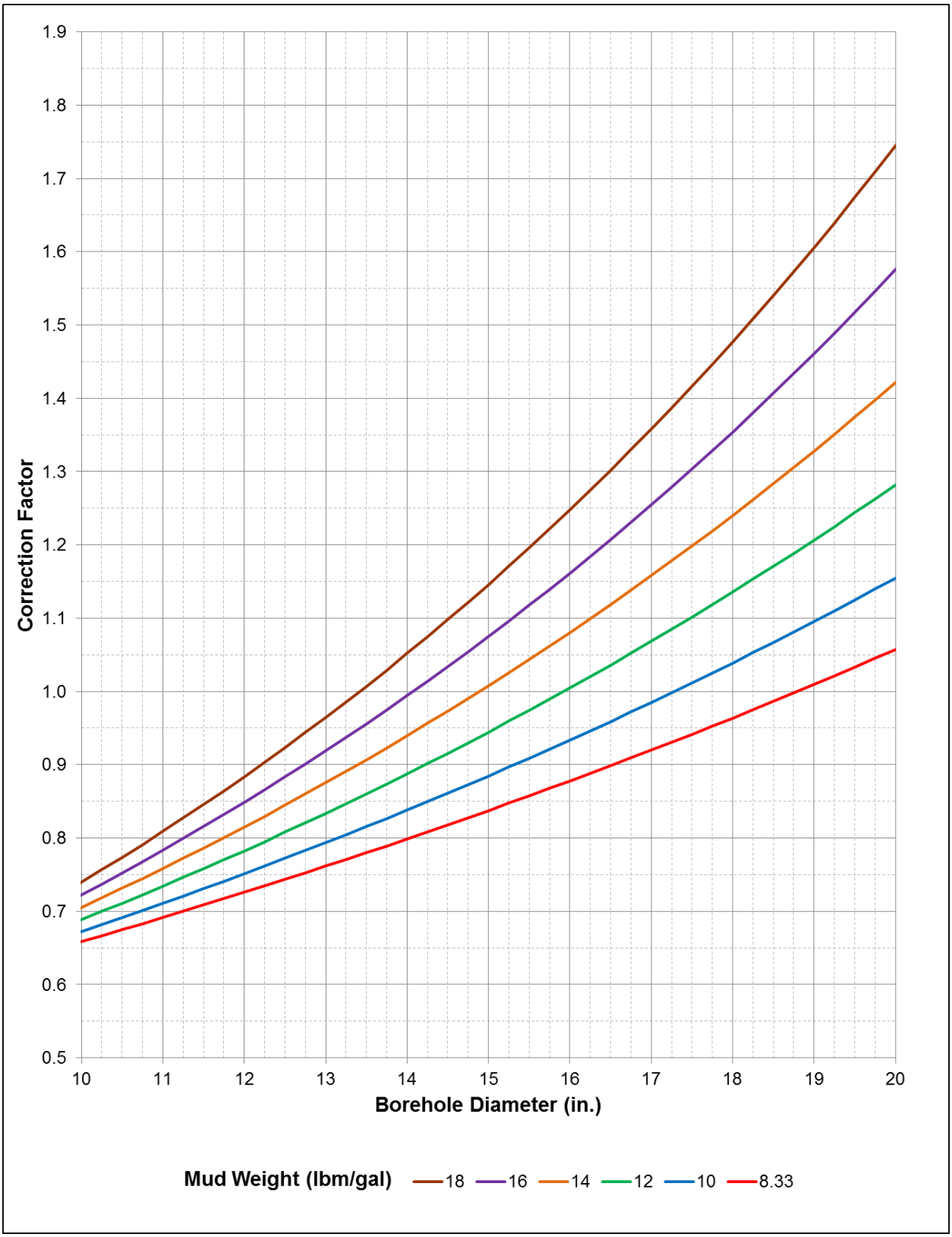


Chart 2-23

Reference condition is a bare probe, centred in an 8-inch diameter borehole filled with fresh water.

Gamma Ray Mud Weight and Hole Size Correction
4¾-in. Radian® Tool

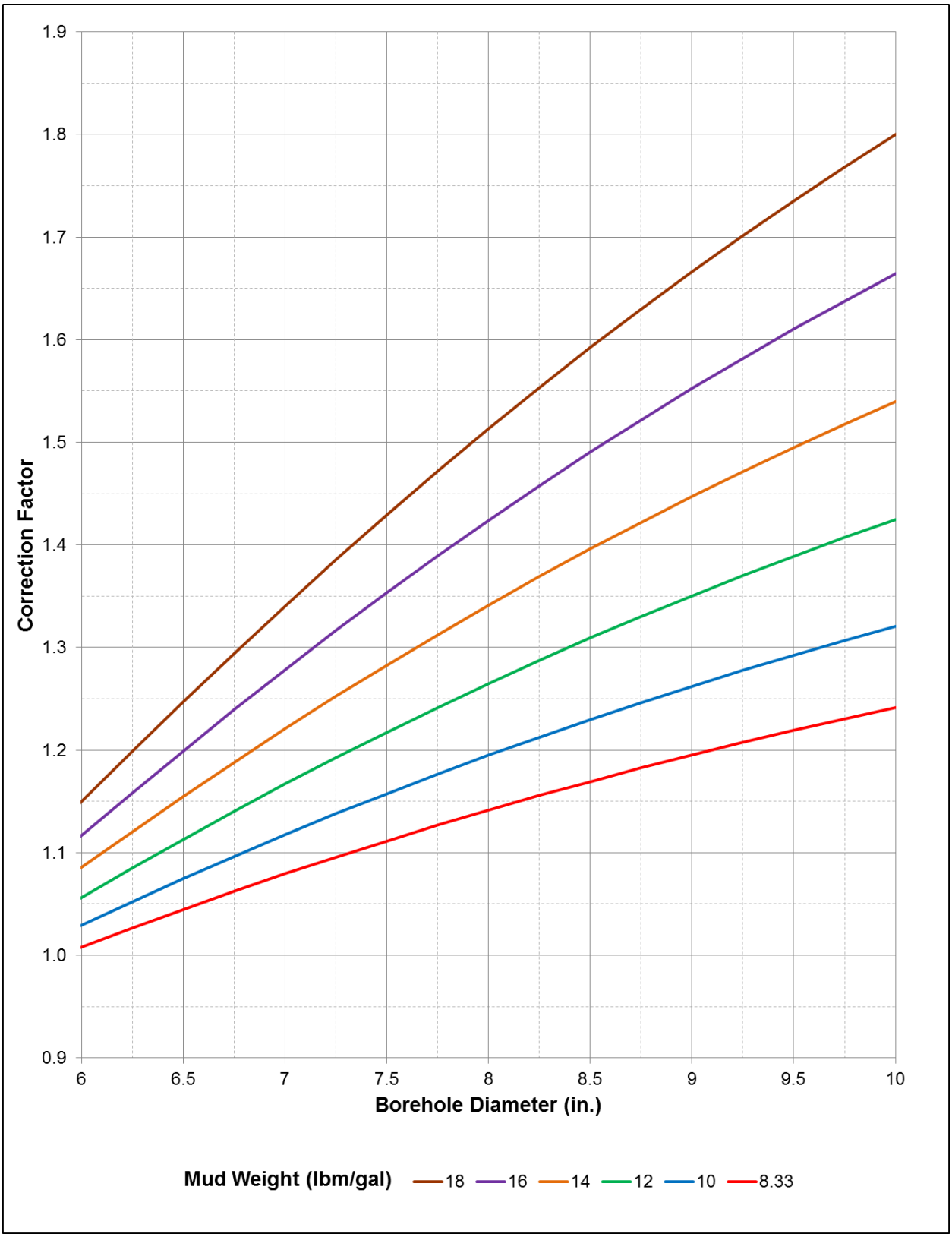


Chart 2-24

Reference condition is a centred tool in a 6-inch diameter borehole filled with fresh water.

Gamma Ray Potassium Correction

The naturally-occurring isotope potassium-40 (^{40}K) is radioactive, and is present in potassium salts such as potassium chloride (KCl) or potassium formate (KCOOH), which are common additives in borehole fluids. A gamma ray sensor will be influenced by gamma rays originating in the ^{40}K in the mud, as well as in the formation. These charts indicate the correction, in API units, that must be subtracted from the raw measurement, to remove the effect of the potassium in the mud.

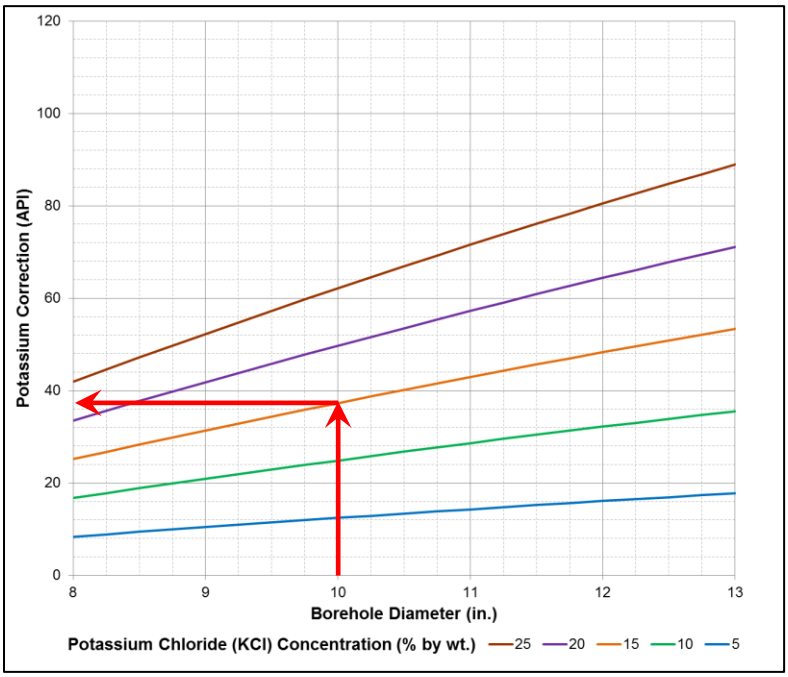
In the following charts, the concentration of potassium is expressed in terms of a concentration of potassium chloride (KCl), as this is the most common potassium salt found in borehole fluids. In cases where potassium is present in a different salt, an equivalent concentration of KCl must be calculated before using the chart, by multiplying the salt concentration by the factor shown in the table below.

Salt Name	Chemical Formula	Molecular Weight	Multiplier
Potassium Chloride	KCl	74.551	-
Potassium Ion	K^+	39.098	1.907
Potassium Formate	$CHKO_2$	84.1157	0.886
Potassium Acetate	CH_3KO_2	98.1425	0.760
Potassium Carbonate	K_2CO_3	138.205	1.079
Potassium Hydroxide	KOH	56.1053	1.329

Example

Determine the correction required for a 6¾-in. DGR™ tool in a 10-inch diameter borehole filled with 11 lbm/gal mud, which has a potassium chloride (KCl) concentration of 15% by weight.

- Select the chart for the 6¾-in. DGR™ tool in 11 lbm/gal mud (see figure below).
- Enter the horizontal axis at 10 inches.
- Draw a line vertically to the 15% concentration curve.
- Draw a line horizontally to intersect the vertical axis at 37 API.
- Subtract 37 API from the raw gamma ray measurement to remove the effect of potassium in the borehole.



A further correction is then required for borehole size and mud weight, in order to obtain a measurement referenced to standard conditions. Please refer to the charts in the previous section.

Gamma Ray Potassium Correction
4¾-in. DGR™ Tool

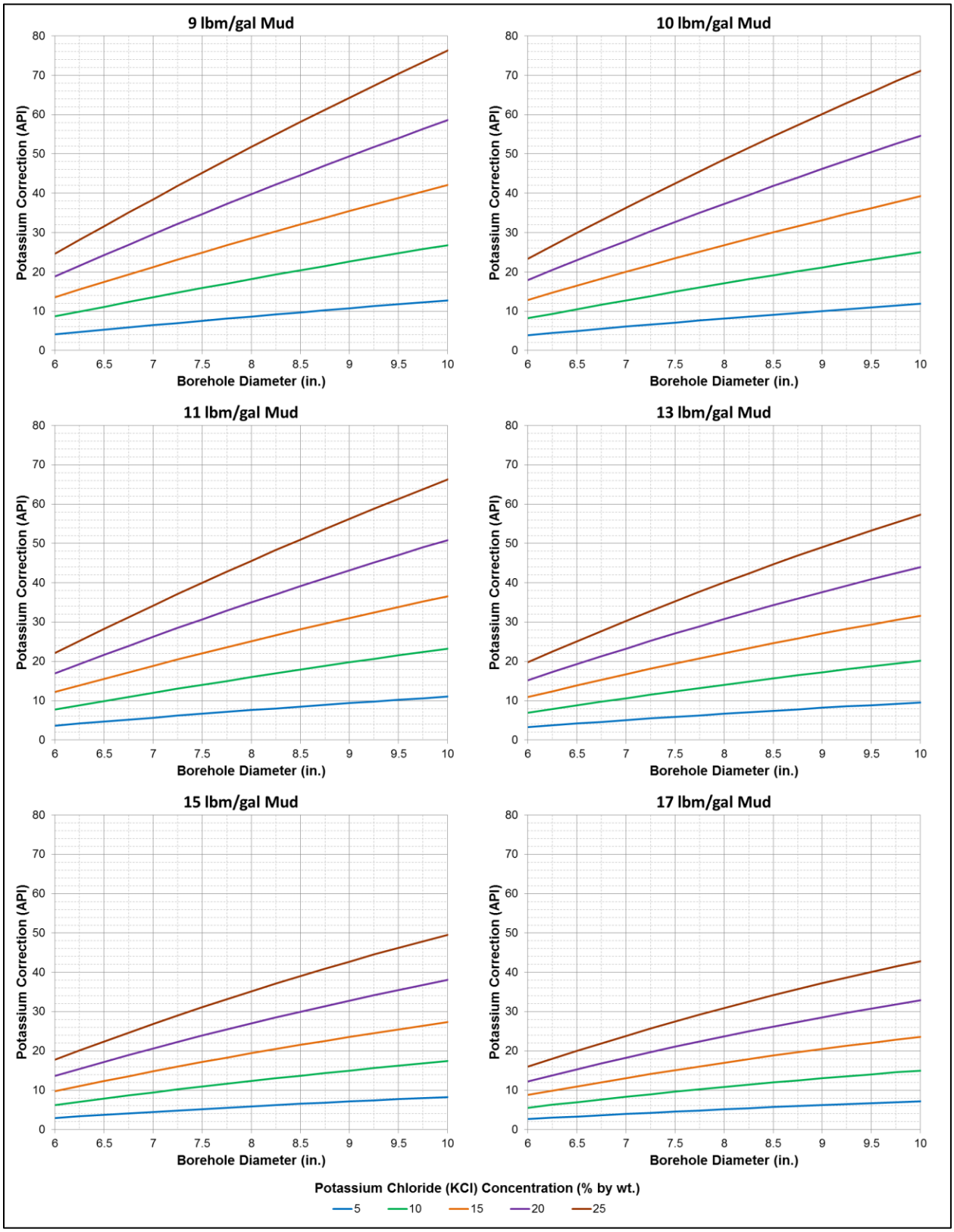


Chart 2-25

Gamma Ray Potassium Correction
6¾-in. DGR™ Tool

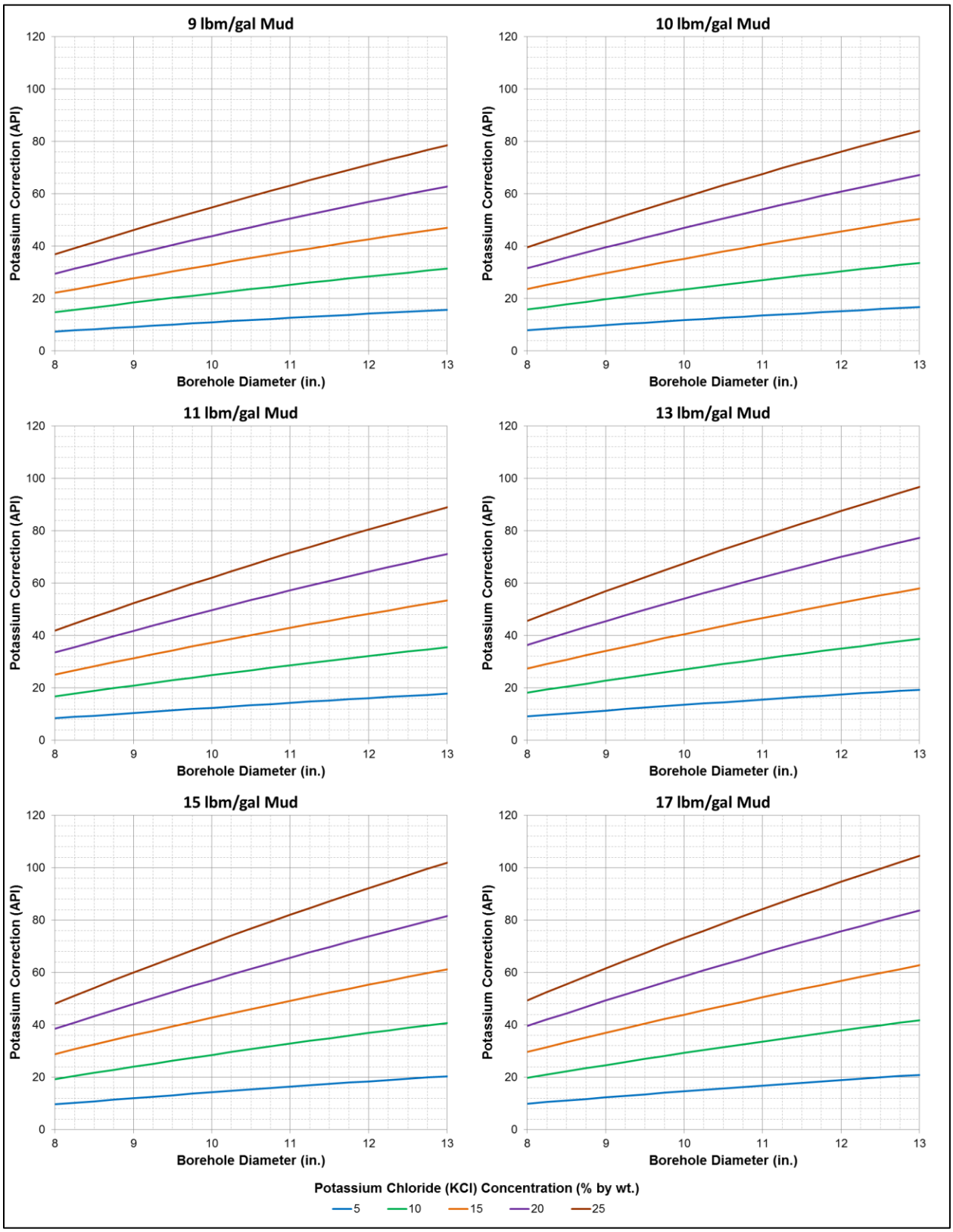


Chart 2-26

Gamma Ray Potassium Correction
8-in. DGR™ Tool

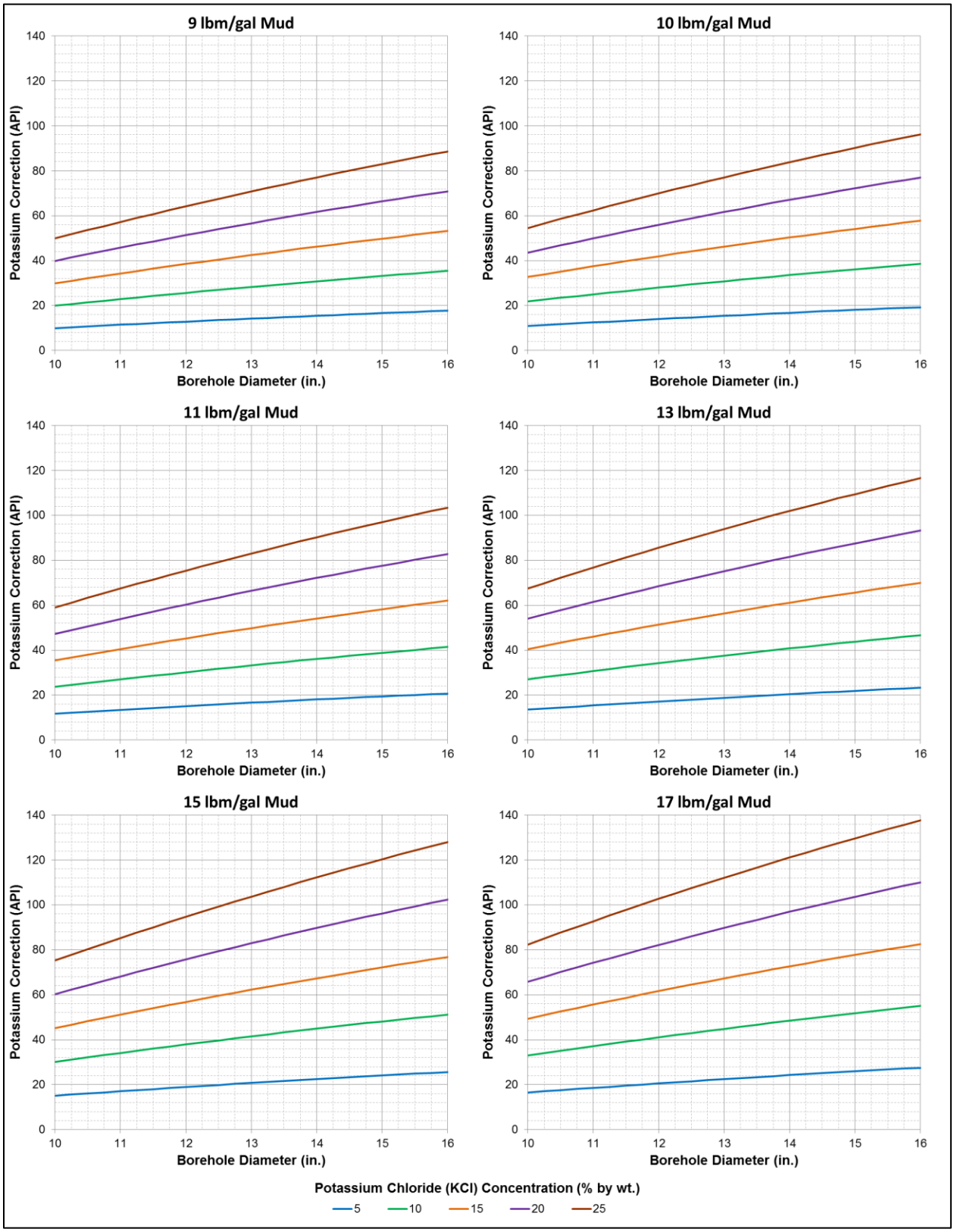


Chart 2-27

Gamma Ray Potassium Correction
8-in. High-Flow DGR™ Tool

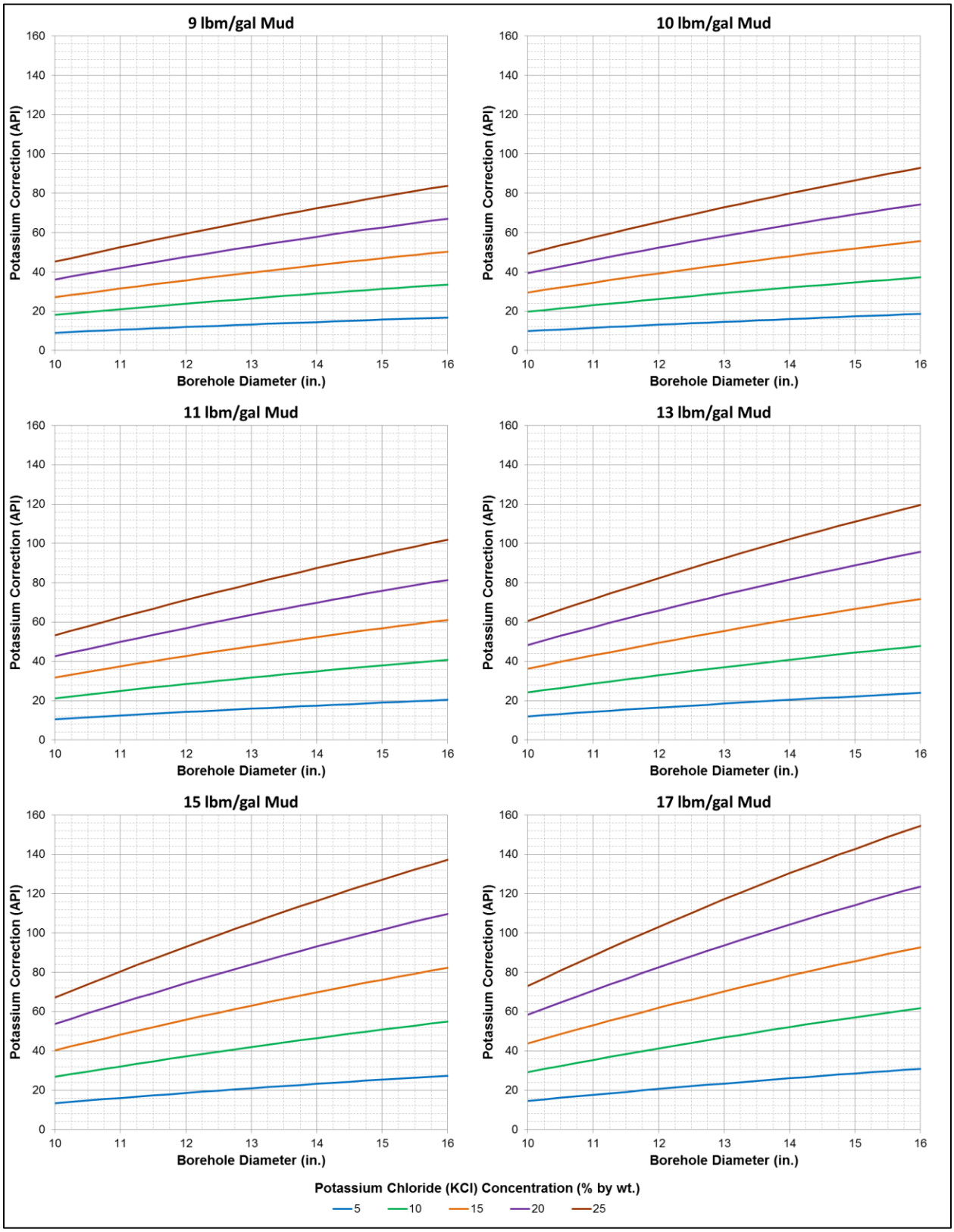


Chart 2-28

Gamma Ray Potassium Correction
9½-in. DGR™ Tool

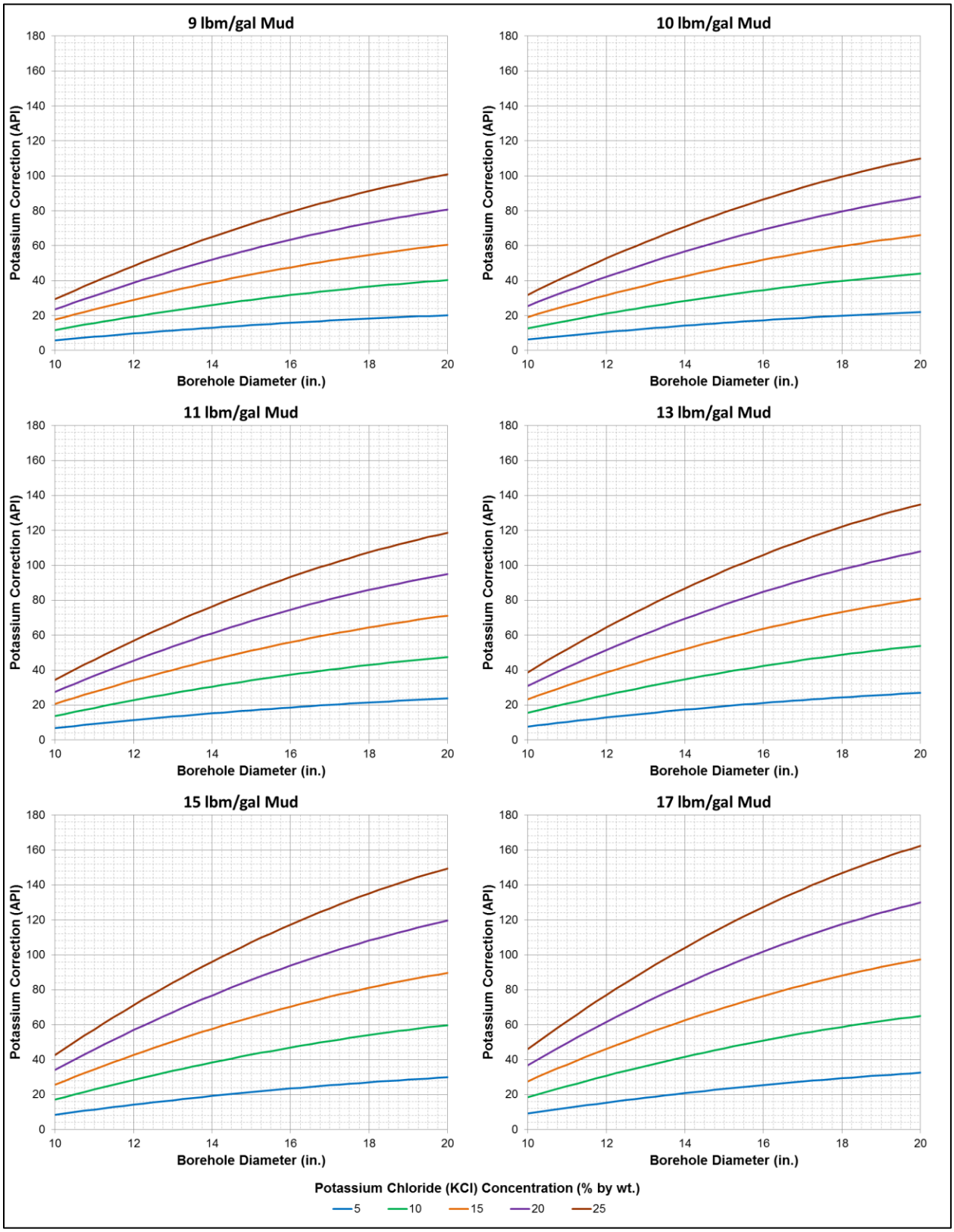


Chart 2-29

Gamma Ray Potassium Correction
6¾-in. AGR™ Tool

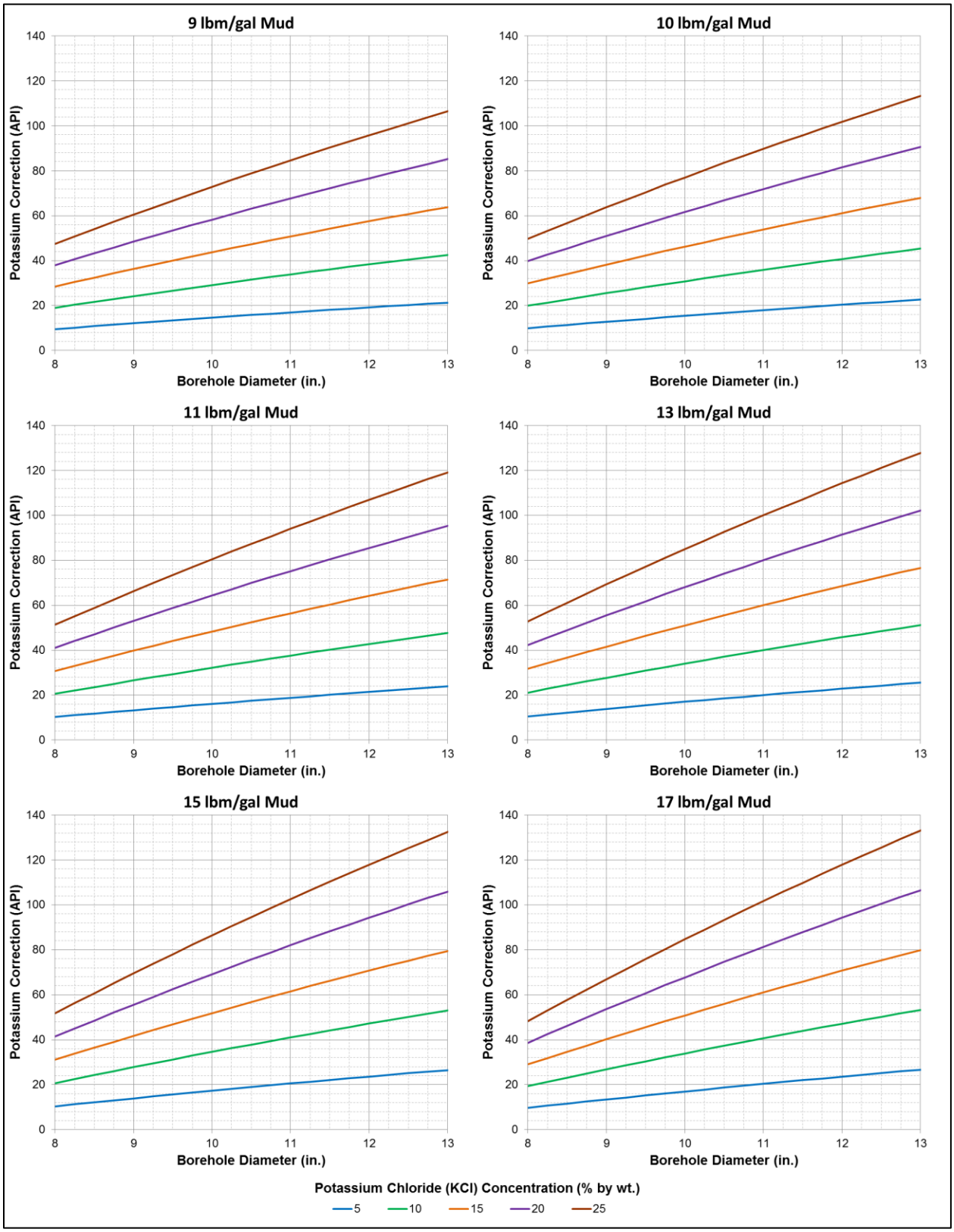


Chart 2-30

Gamma Ray Potassium Correction
8-in. AGR™ Tool

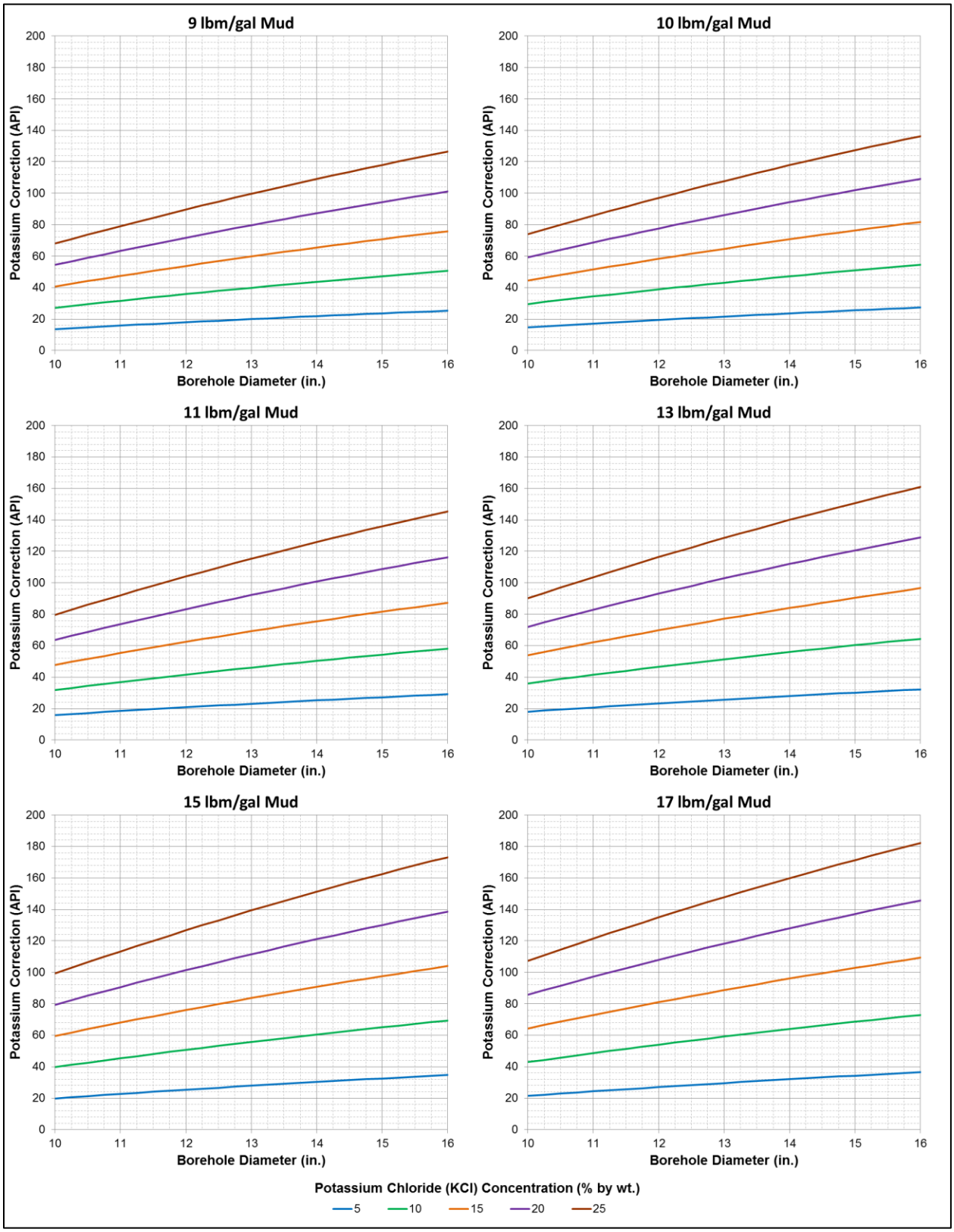


Chart 2-31

Gamma Ray Potassium Correction
9½-in. AGR™ Tool

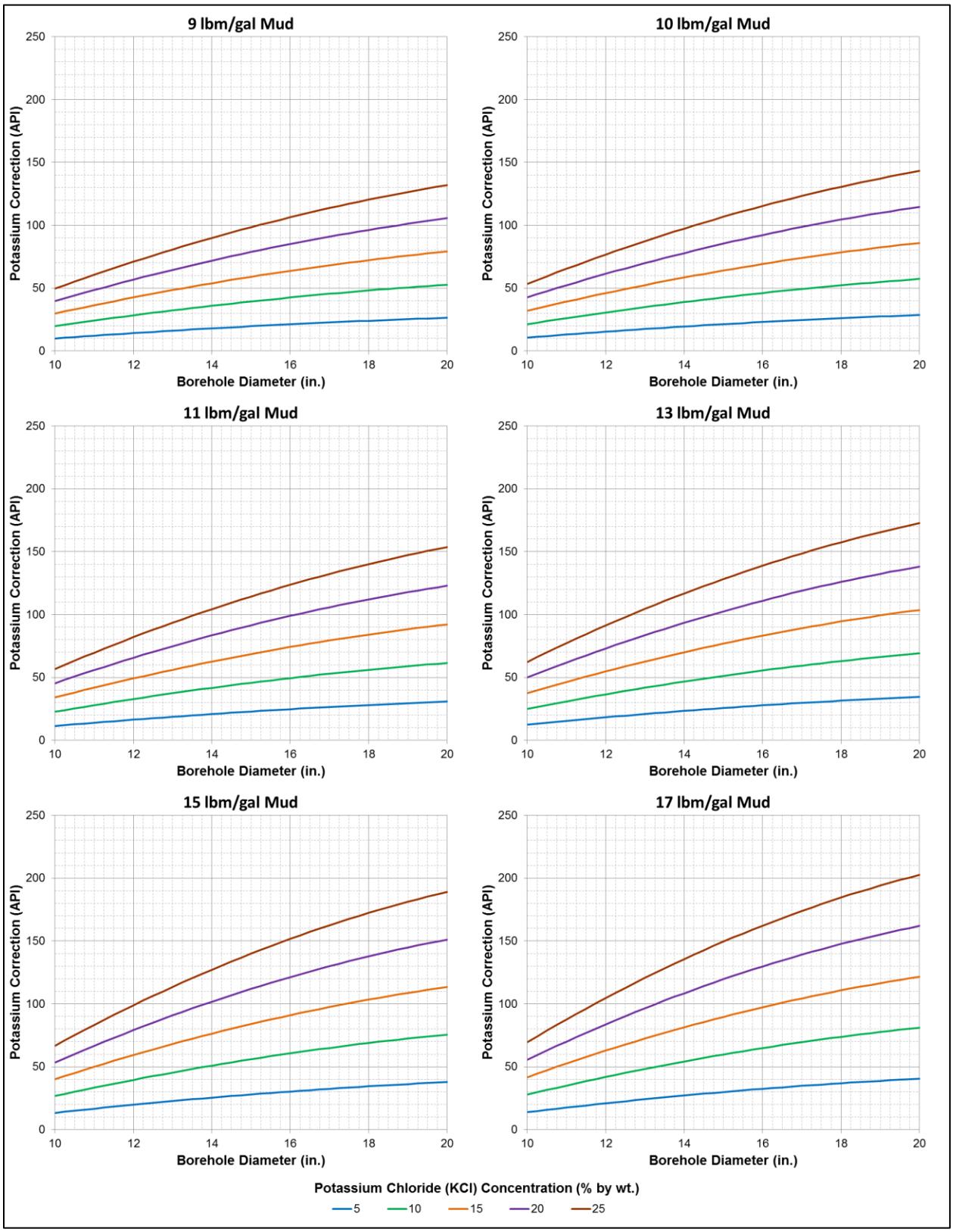


Chart 2-32

Gamma Ray Potassium Correction
4¾-in. ABG™ Tool (5200 Geo-Pilot® RSS)

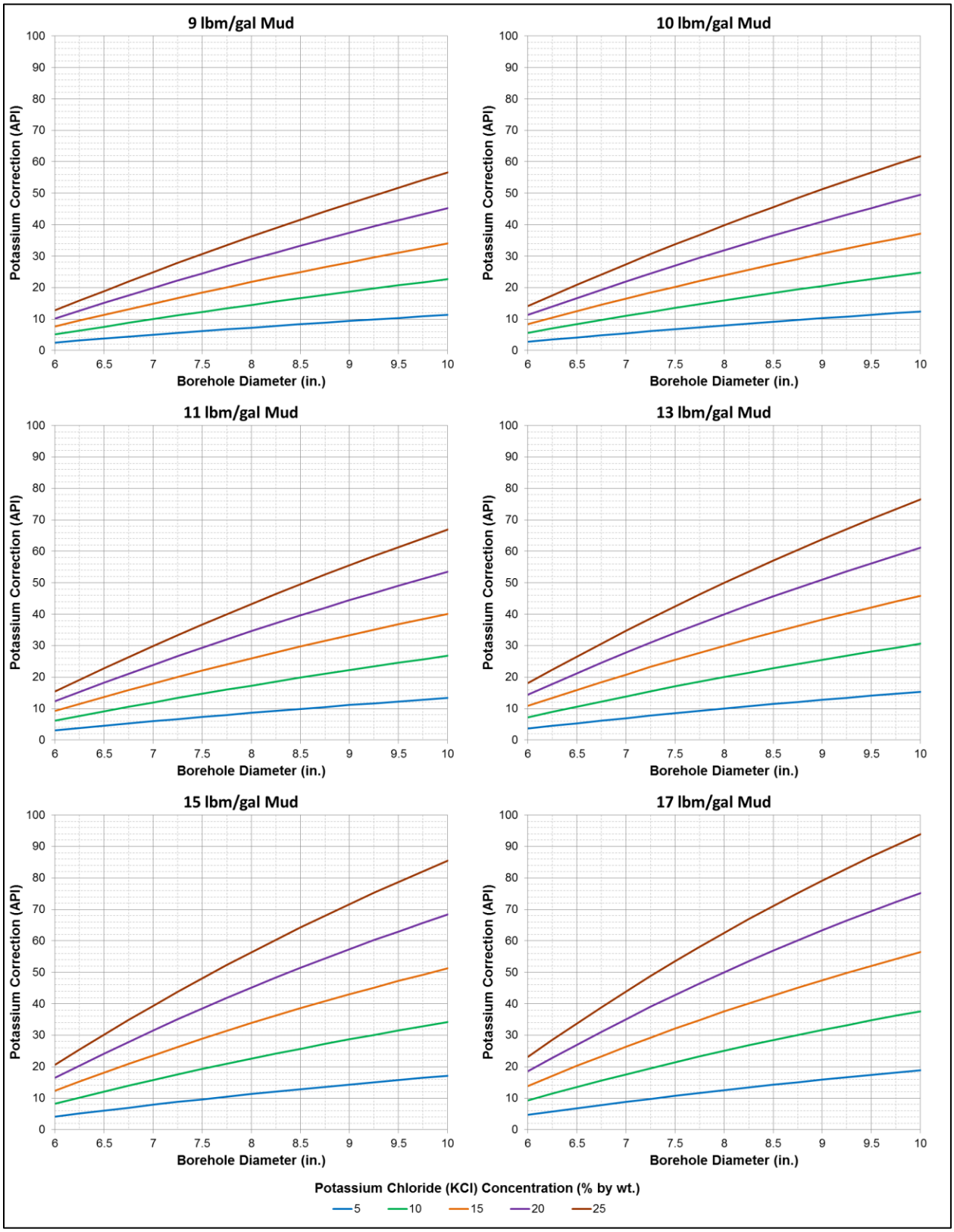


Chart 2-33

Gamma Ray Potassium Correction
6¾-in. ABG™ Tool (7600 Geo-Pilot® RSS)

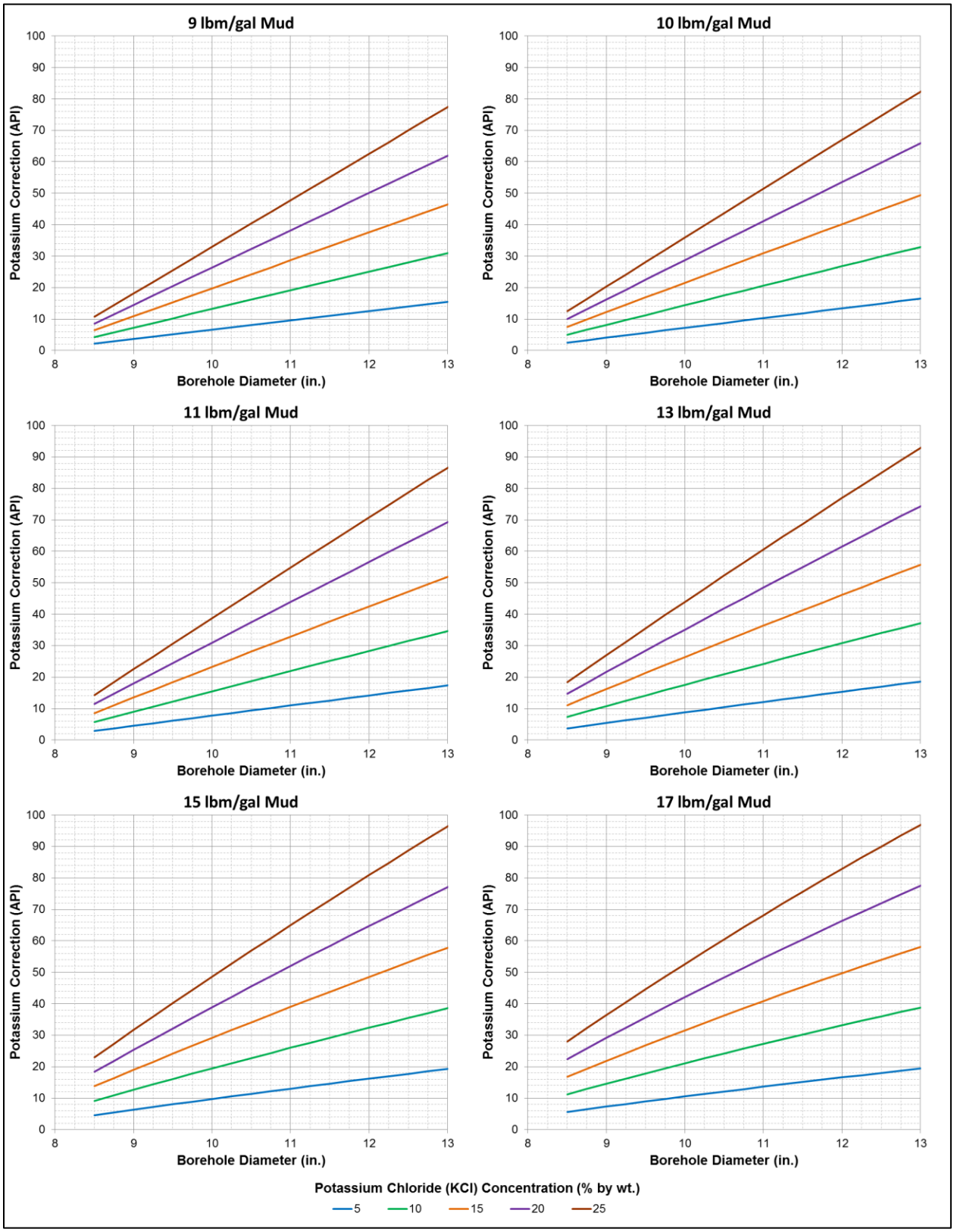


Chart 2-34

Gamma Ray Potassium Correction
8-in. ABG™ Tool (9600 Geo-Pilot® RSS)

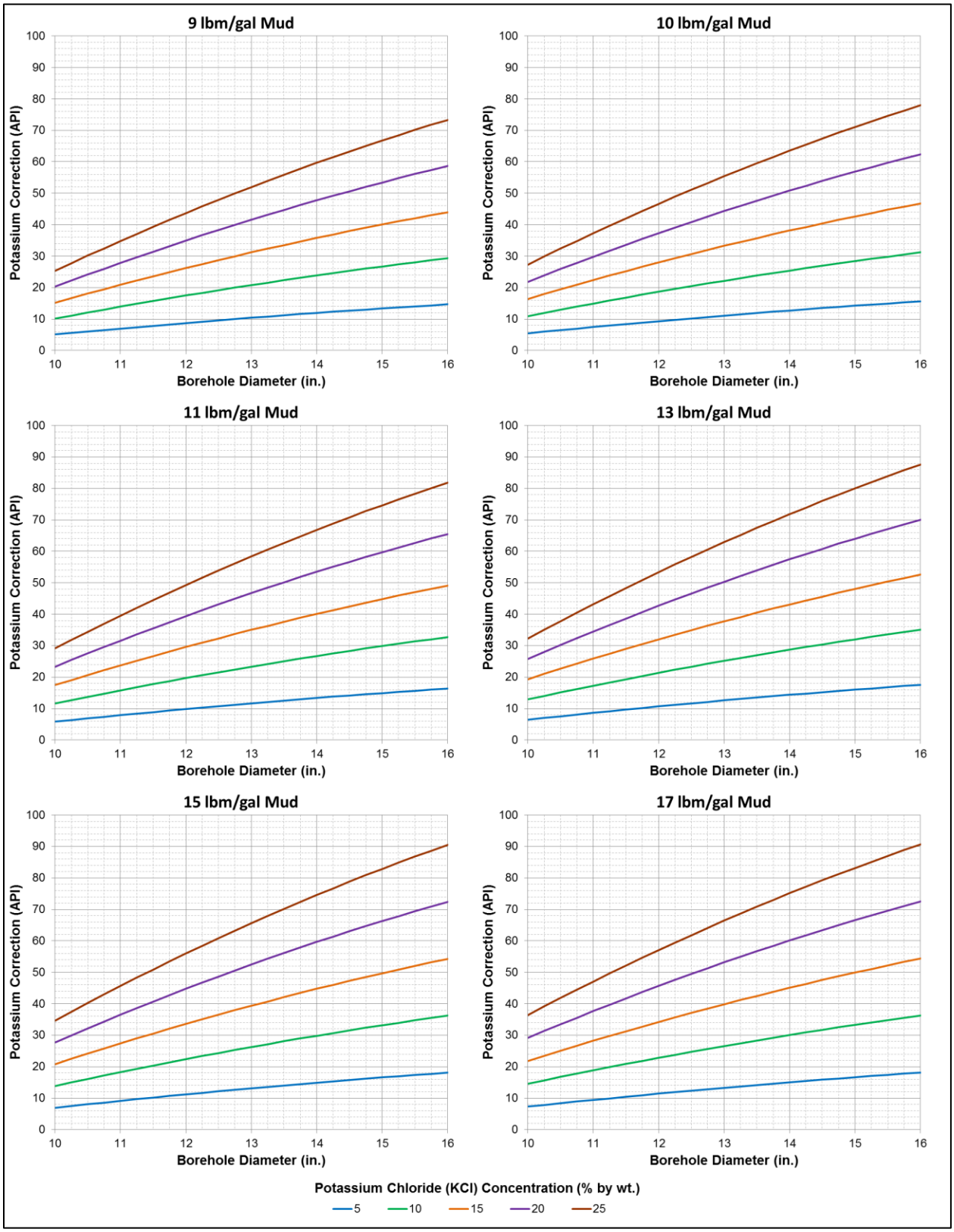


Chart 2-35

Gamma Ray Potassium Correction
4¾-in. GABI™ Tool

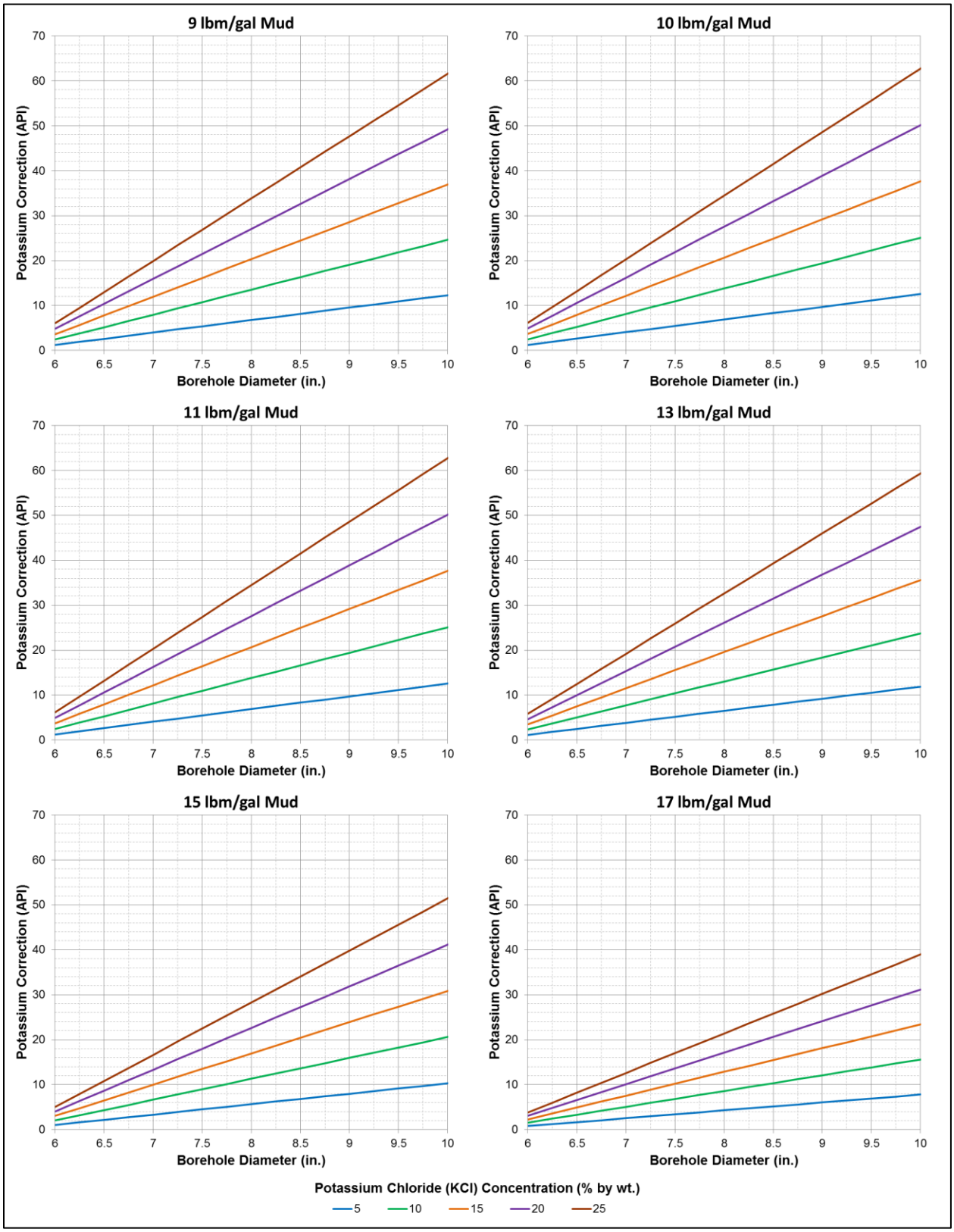


Chart 2-36

Gamma Ray Potassium Correction
6¾-in. GABI™ Tool

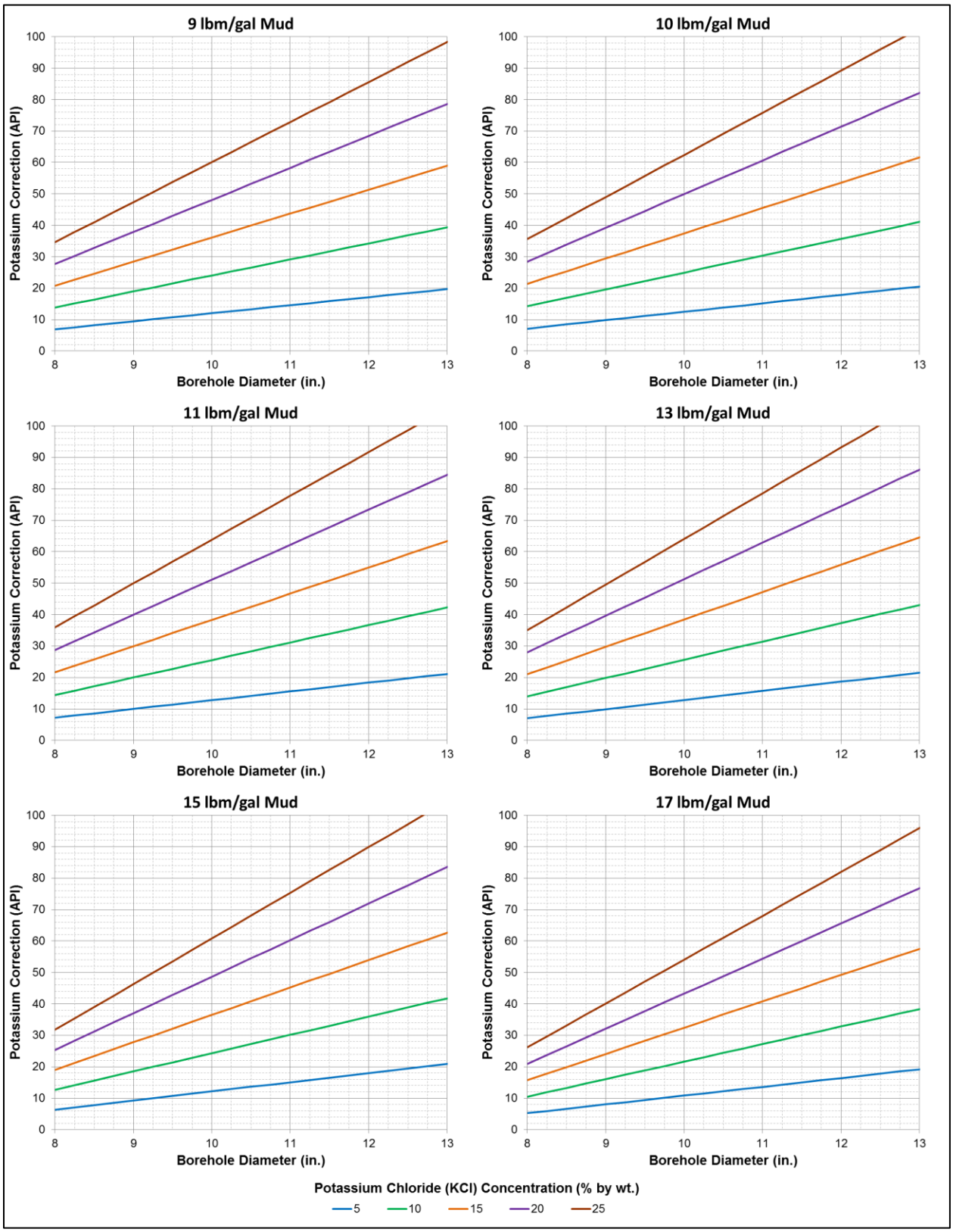


Chart 2-37

Gamma Ray Potassium Correction
4¾-in. Quasar Pulse™ Tool

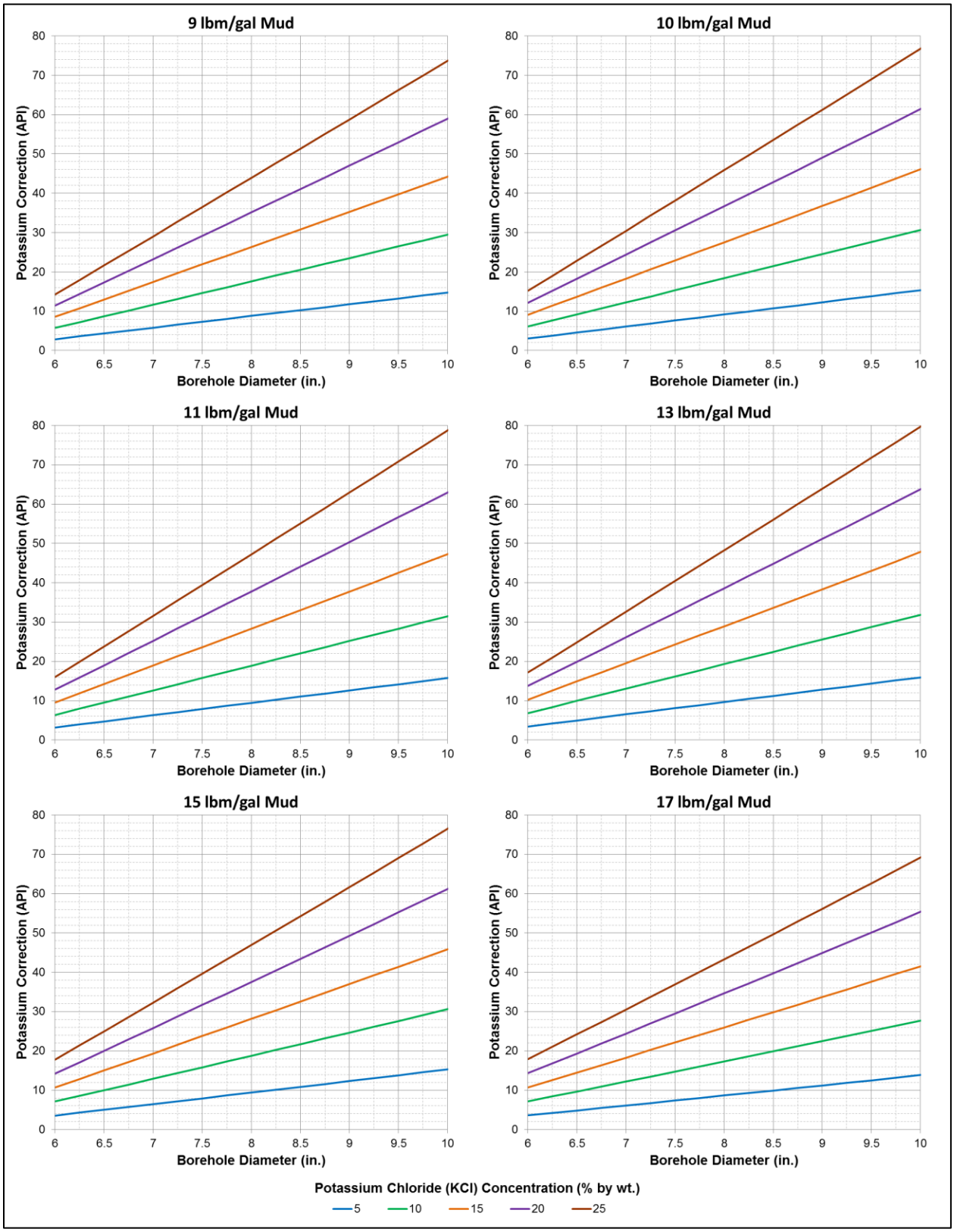


Chart 2-38

Gamma Ray Potassium Correction
6¾-in. Quasar Pulse™ Tool

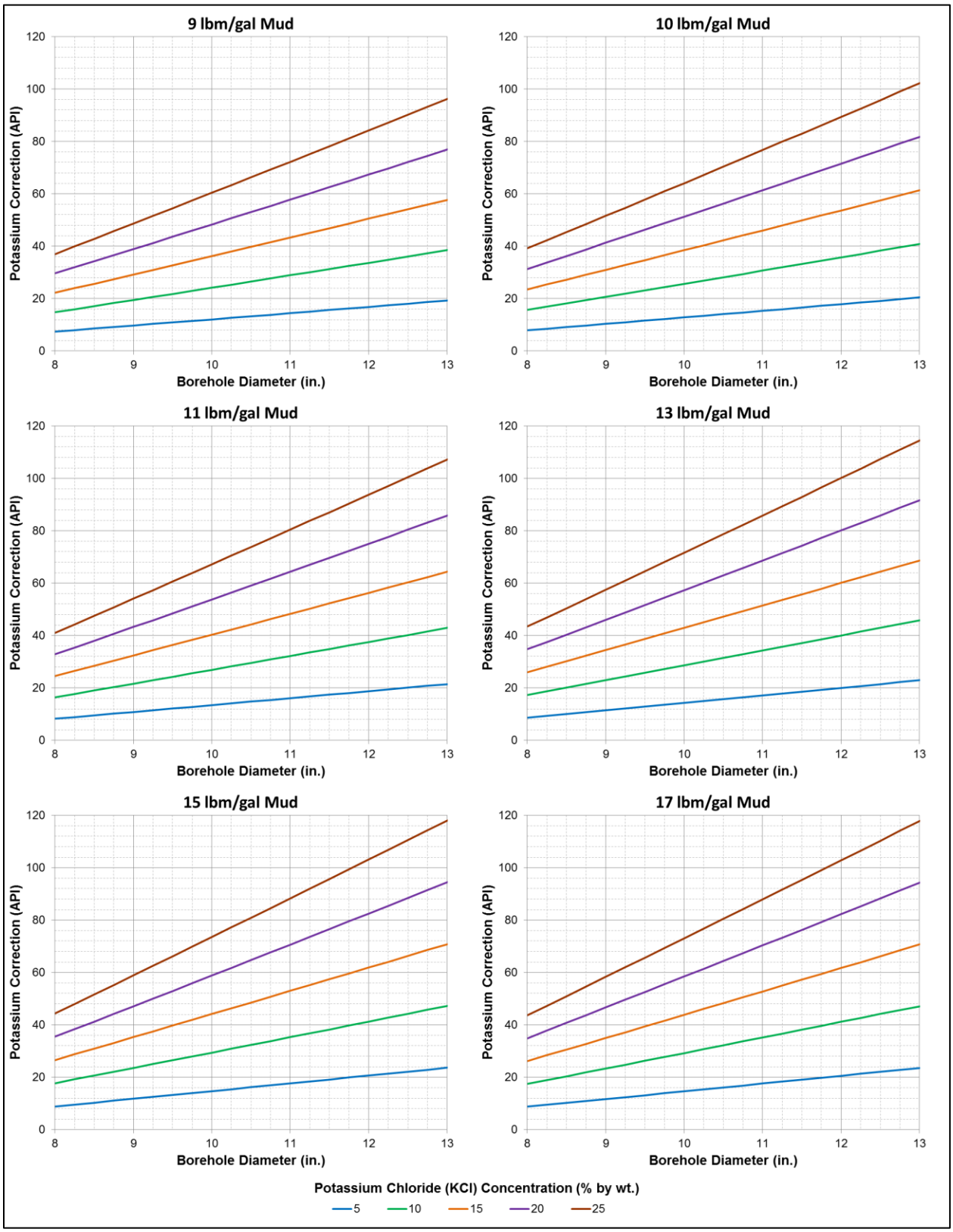


Chart 2-39

Gamma Ray Potassium Correction
GM Probe in 4¾-in. Collar with 2.81-in. ID

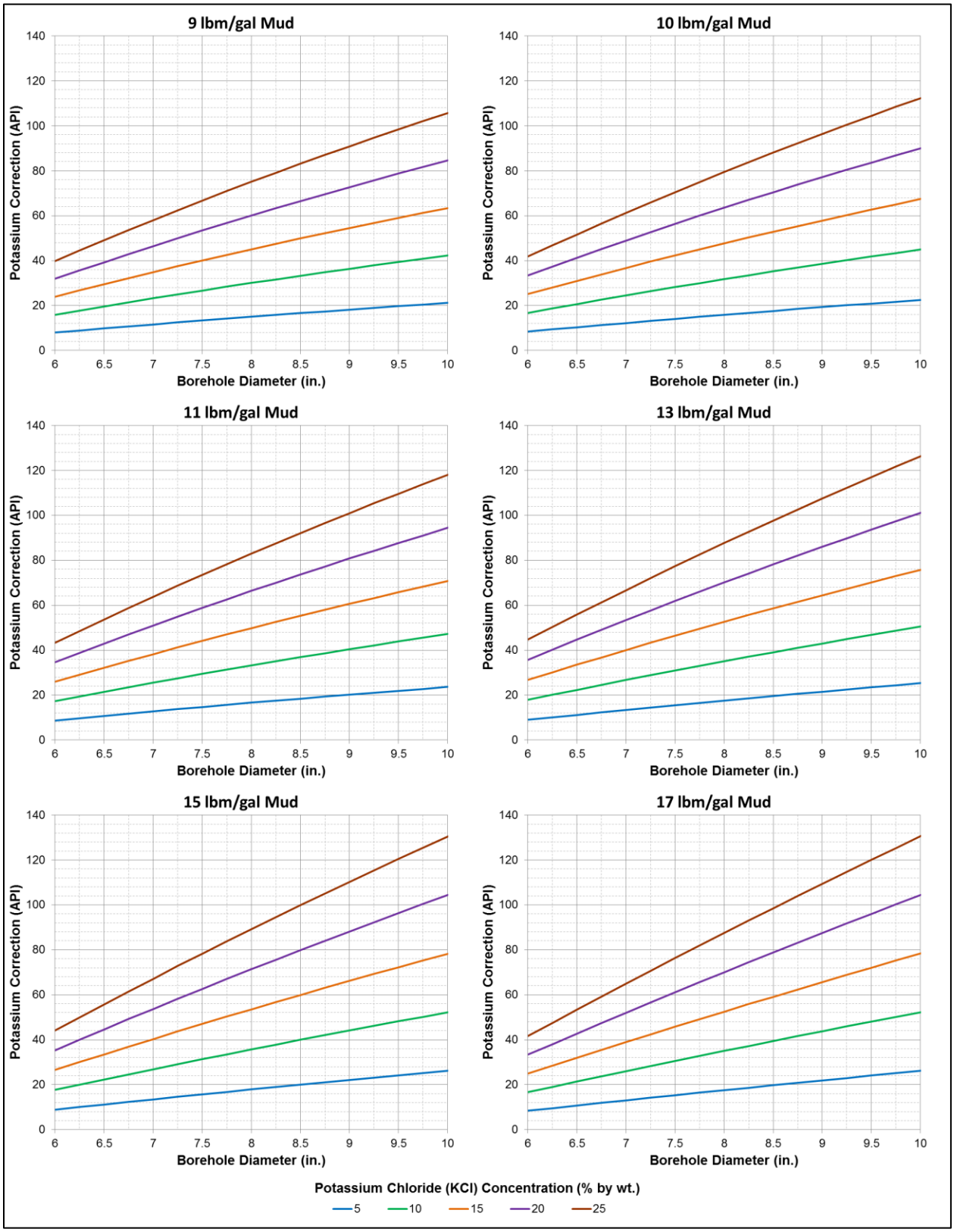


Chart 2-40

Gamma Ray Potassium Correction
GM Probe in 6¾-in. Collar with 2.81-in. ID

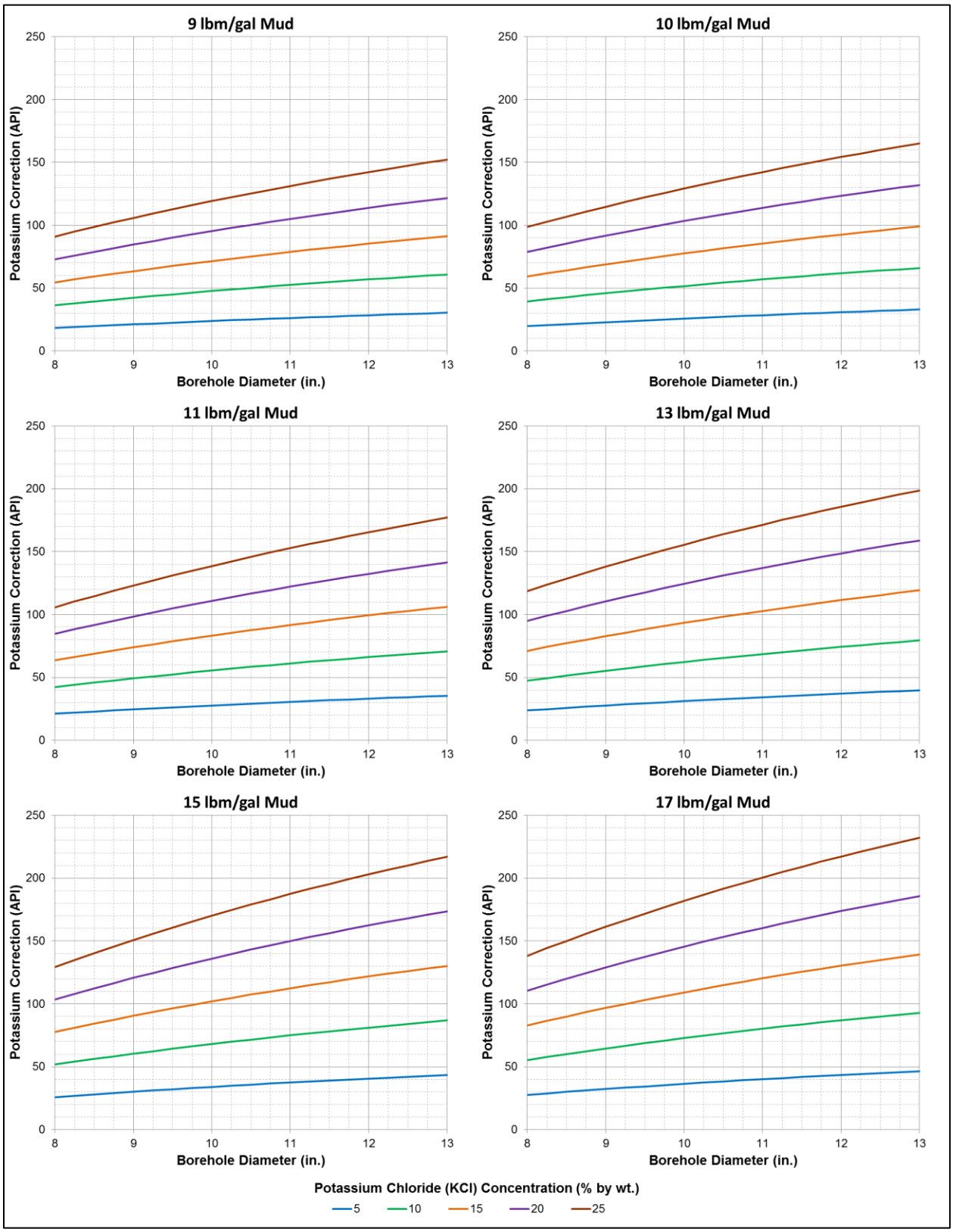


Chart 2-41

Gamma Ray Potassium Correction
GM Probe in 8-in. Collar with 2.81-in. ID

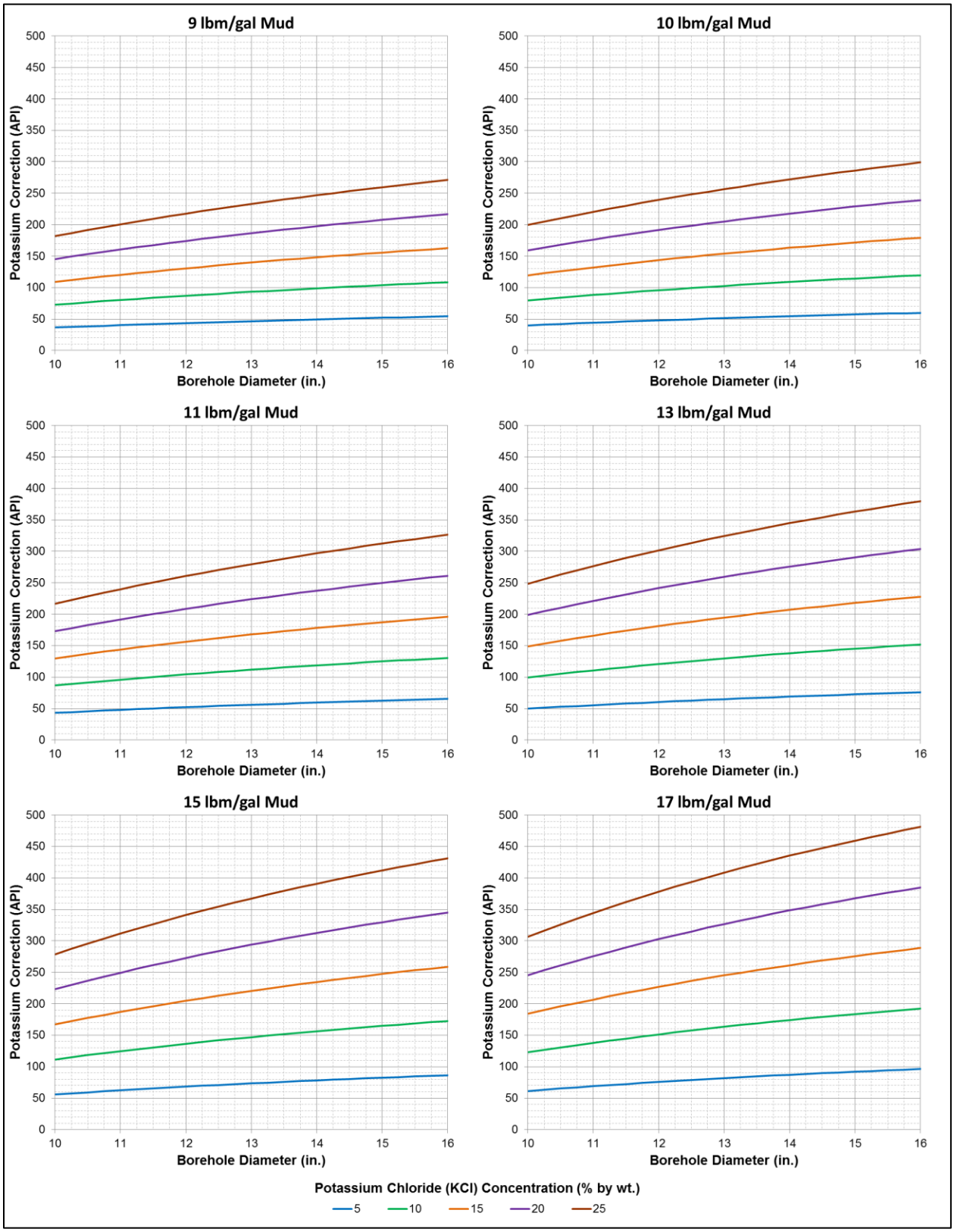


Chart 2-42

Gamma Ray Potassium Correction
GM Probe in 9½-in. Collar with 4.00-in. ID

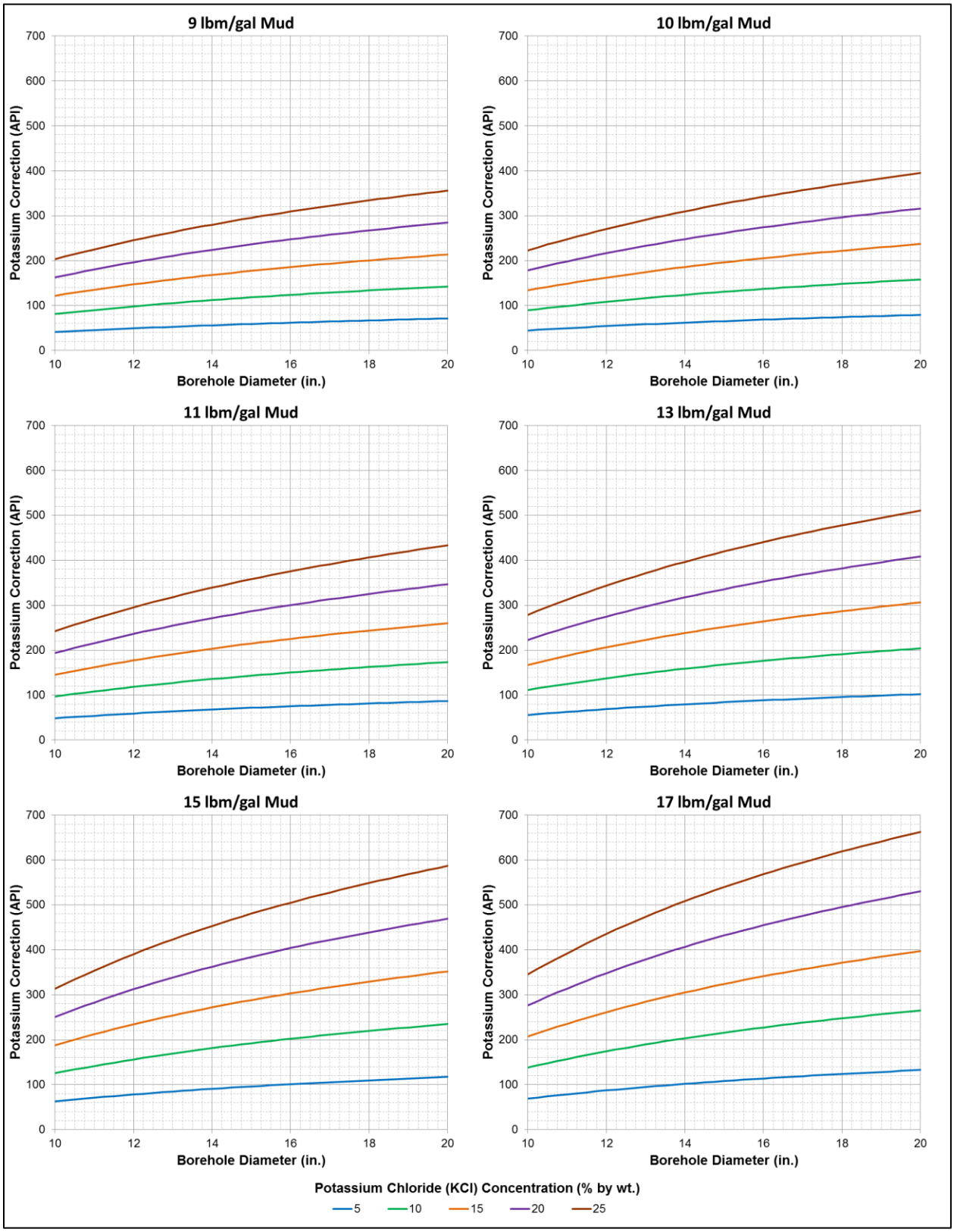


Chart 2-43

Gamma Ray Potassium Correction
PCG Probe in 4¾-in. Collar with 2.81-in. ID

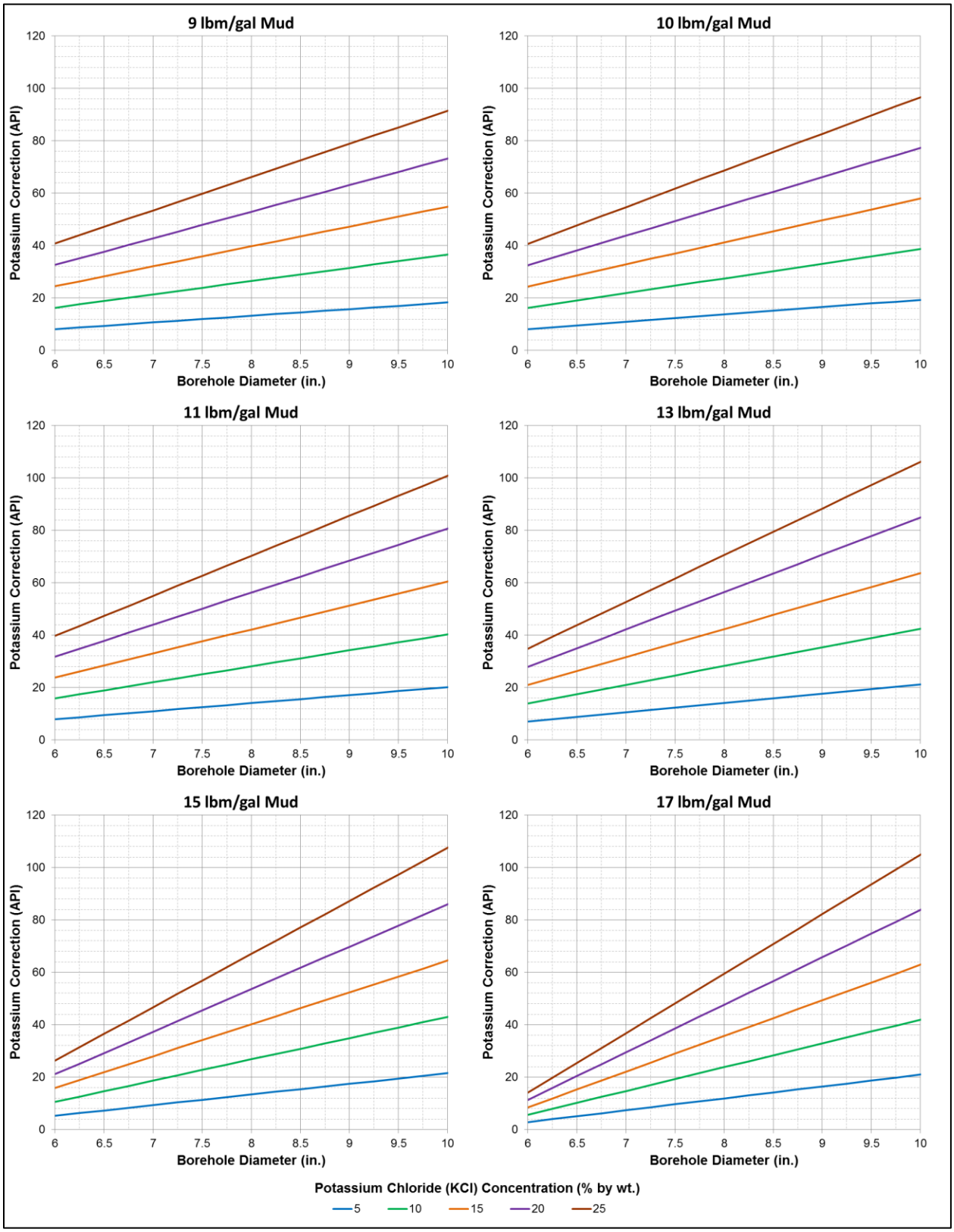


Chart 2-44

Gamma Ray Potassium Correction
PCG Probe in 6¾-in. Collar with 2.81-in. ID

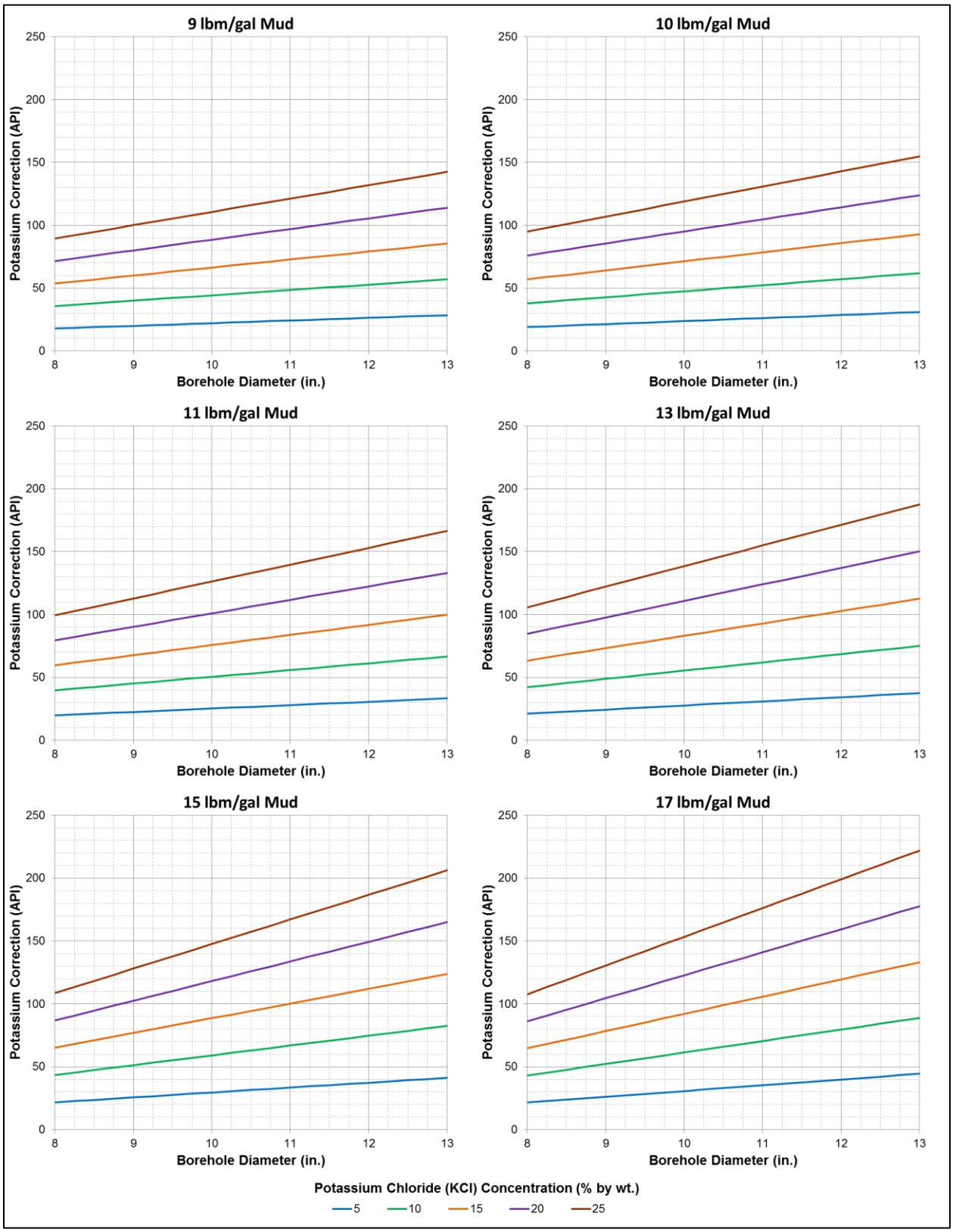


Chart 2-45

Gamma Ray Potassium Correction
PCG Probe in 8-in. Collar with 2.81-in. ID

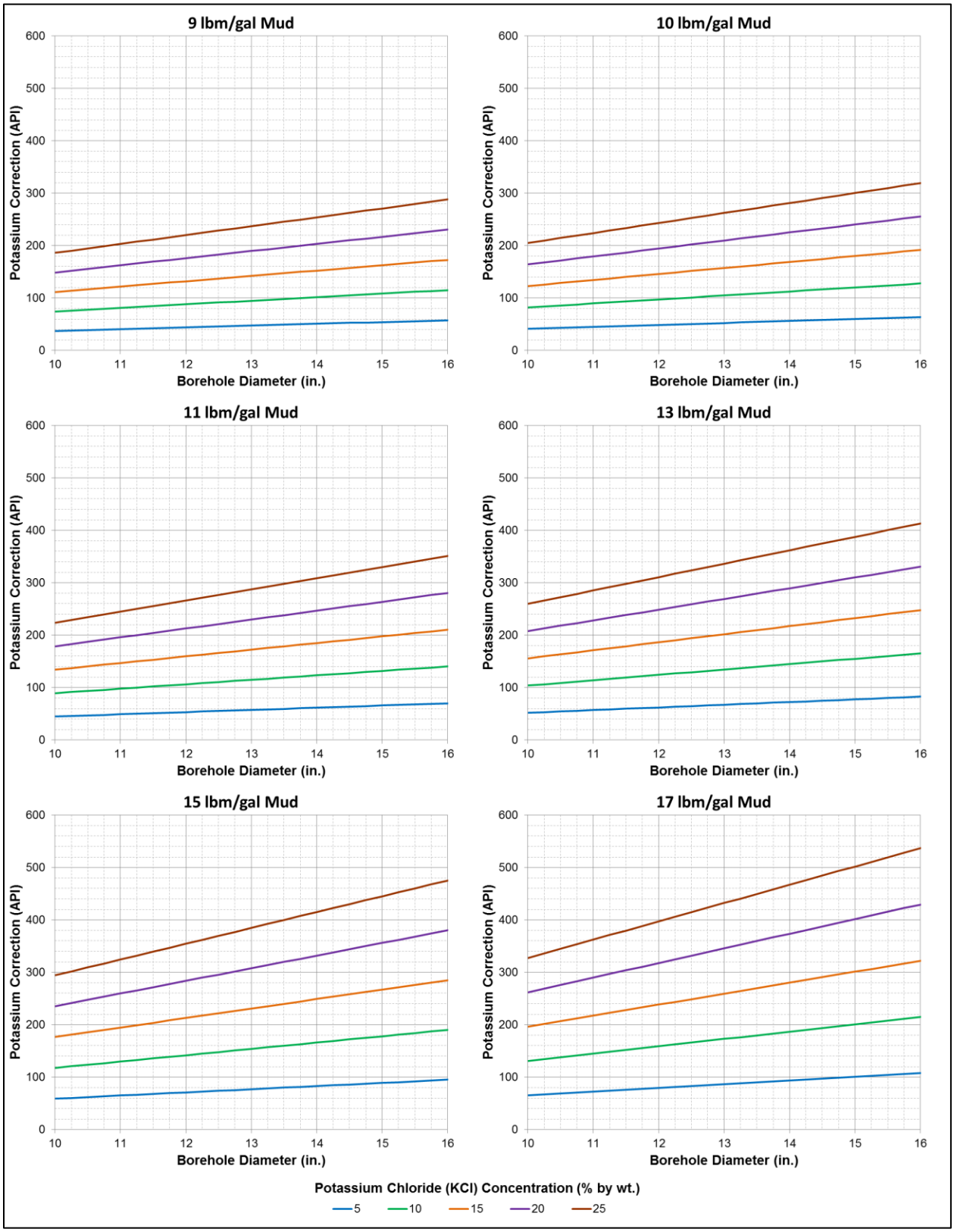


Chart 2-46

Gamma Ray Potassium Correction
PCG Probe in 9½-in. Collar with 4.00-in. ID

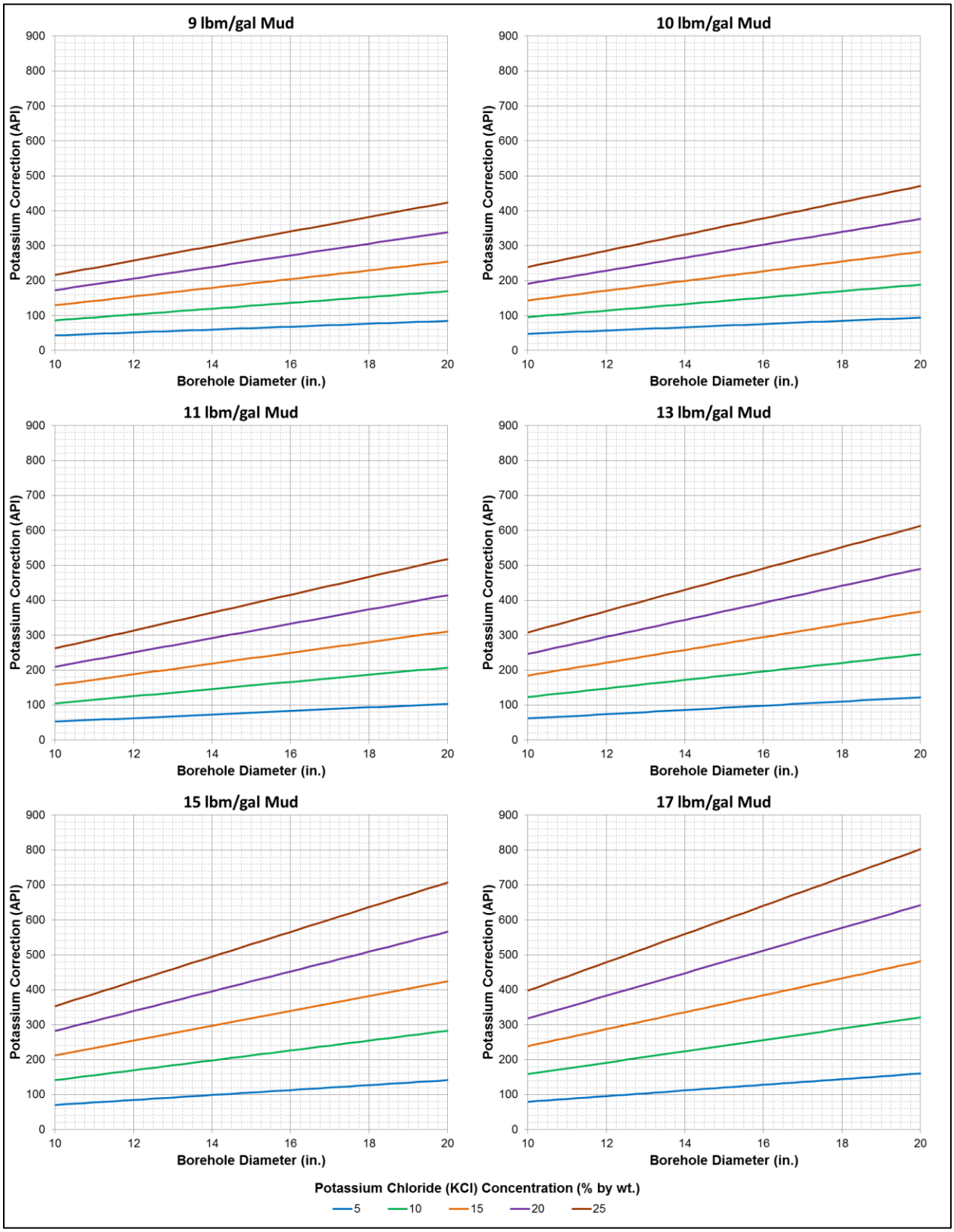


Chart 2-47

Gamma Ray Potassium Correction
4¾-in. Radian® Tool

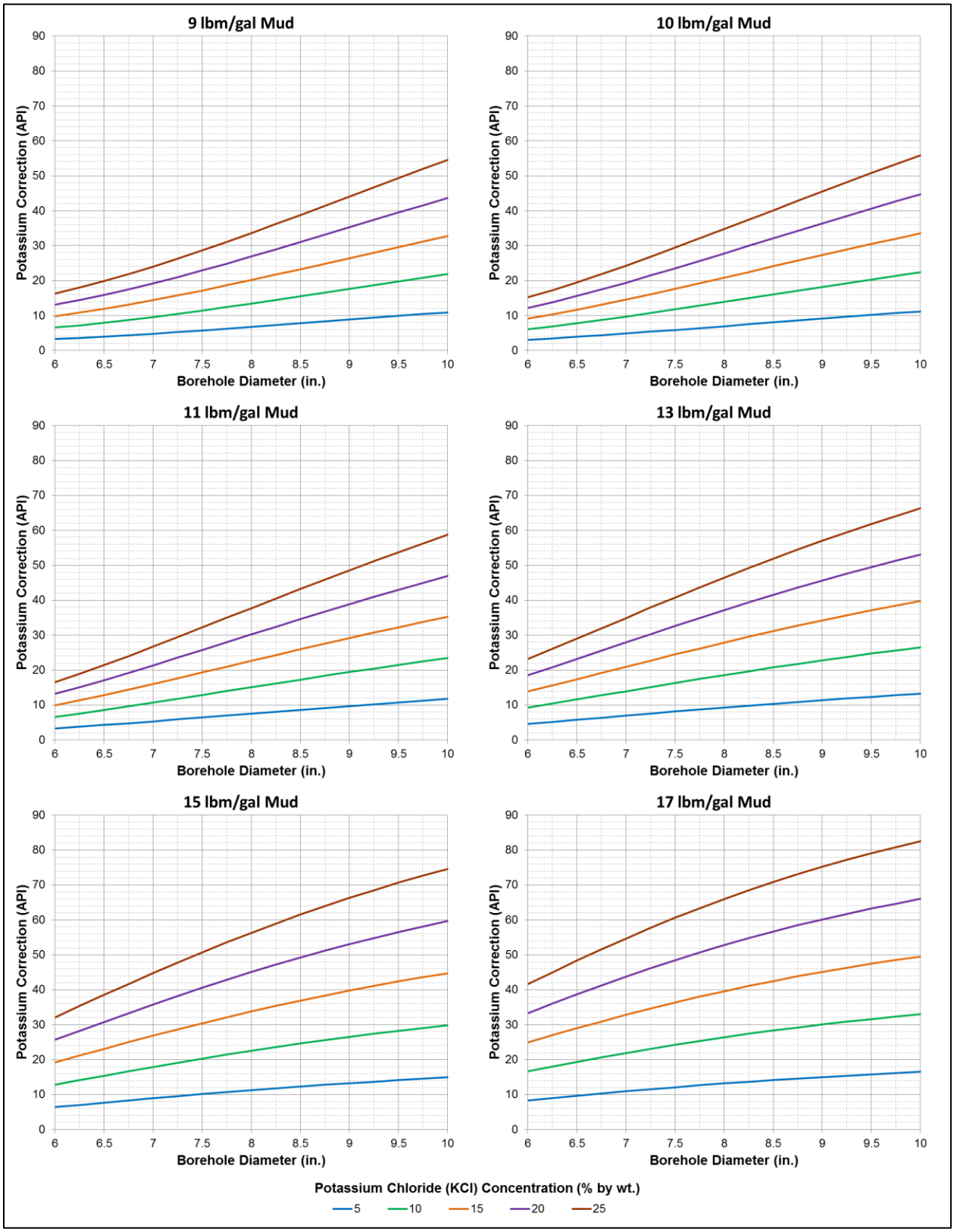
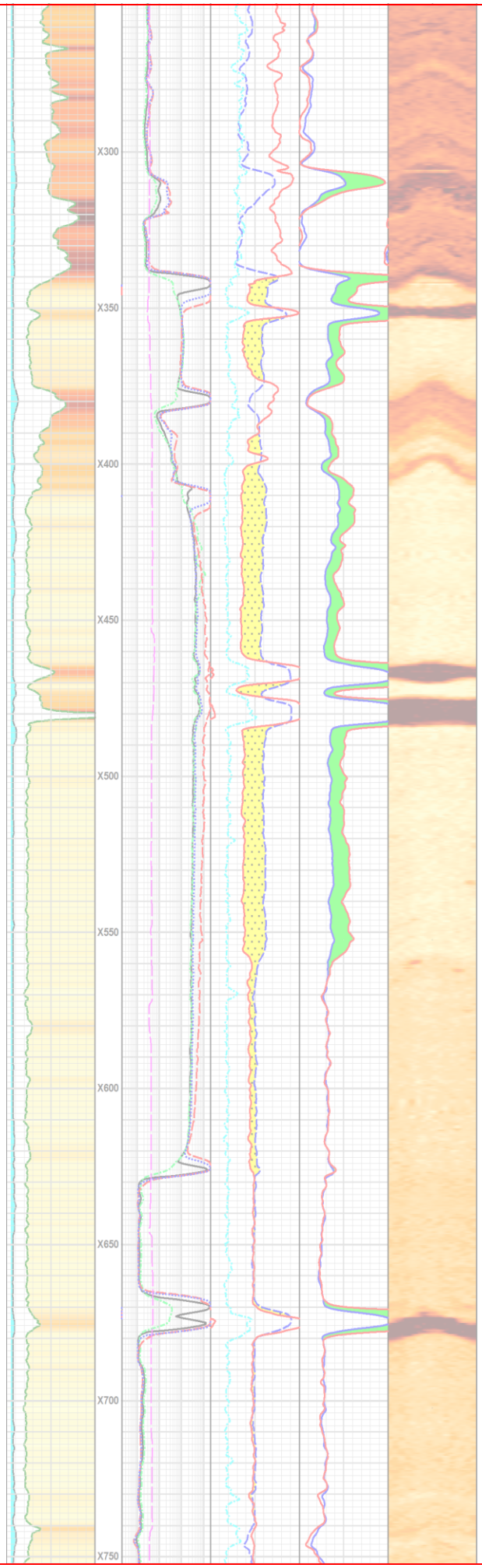


Chart 2-48



Resistivity

3 Resistivity

The charts contained in this section relate to the current fleet of LWD resistivity sensors, including the following:

- ADR™ Tool (Azimuthal Deep Resistivity) – An azimuthal resistivity tool, available in 4¾-in. and 6¾-in. collar sizes, providing naturally-compensated azimuthal resistivity measurements at three different transmitter-receiver spacings, and at three different frequencies. The tool also provides deep-reading geosignal measurements for remote bed-boundary detection during geosteering operations. The charts presented here cover only the resistivity measurements.

- M5™ Integrated Service – An integrated sensor, available in 6¾-in., 8-in. and 9½-in. collar sizes, featuring resistivity, azimuthal gamma ray, pressure and vibration sensors. The resistivity sensor (EWR-M5™) provides naturally-compensated measurements at five different transmitter-receiver spacings and at three different frequencies.

- EWR™-Phase 4 Tool (Electromagnetic Wave Resistivity) – A resistivity sensor, available in 4¾-in., 6¾-in. and 8-in. collar sizes, providing uncompensated measurements at four different transmitter-receiver spacings. Each transmitter operates at a single frequency.

- EWR™-Phase 4D Tool – A 9½-in. version of the EWR™-Phase 4 tool, designed for large boreholes. It provides uncompensated measurements at four different transmitter-receiver spacings, which are longer than those on the standard EWR™-Phase 4 tool. Each transmitter operates at a single frequency.

- Super-Slim EWR™-Phase 4 Tool – A small-diameter version of the EWR™-Phase 4 tool, available in 3⅛-in. and 3 ⅝-in. diameters. It provides uncompensated measurements at four different transmitter-receiver spacings, which are longer than those on the EWR™-Phase 4 tool. Each transmitter operates at a single frequency.

Resistivity Borehole Correction

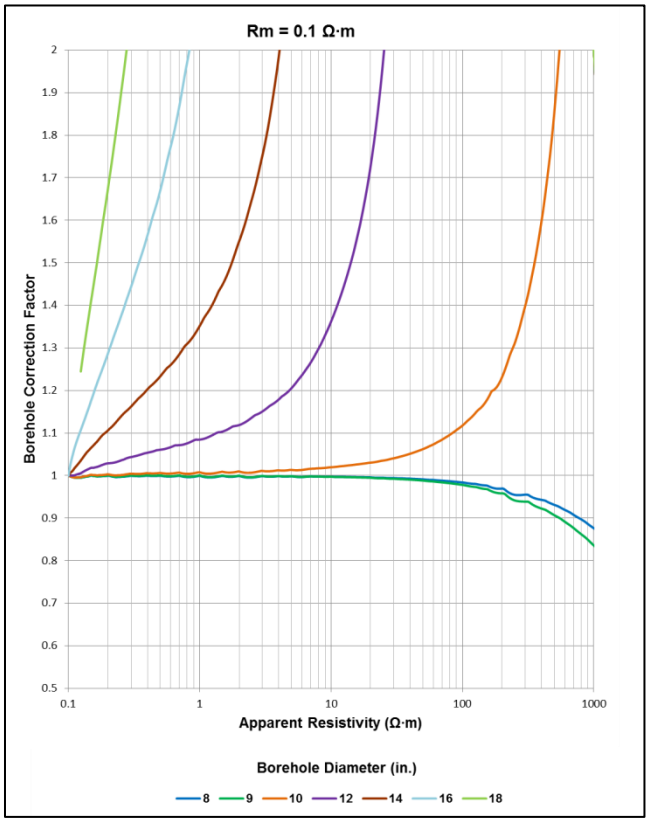
Wave-propagation resistivity tools work by measuring the speed and amplitude of electromagnetic waves as they travel through the rock formation surrounding the tool. Both the speed (often expressed in terms of a phase shift between two receivers) and the amplitude of the travelling wave are influenced by the resistivity of the formation. Since the wave must also travel through the borehole fluid between the tool and the formation, a correction for the influence of that fluid must be applied to the tool measurements to obtain an accurate measurement of the formation resistivity. The magnitude of the correction is a function of the resistivity of the fluid and the diameter of the borehole. The magnitude of the correction is also a function of the transmitter-receiver spacing, the frequency of the electromagnetic wave, the diameter of the tool and whether the resistivity measurement is based on phase-shift or amplitude measurements. The charts in this section illustrate the correction required for selected combinations of these parameters.

Not every situation can be represented in a set of printed charts, such as those presented here. For conditions which are not shown in the following pages, please refer to the online eChartBook, at http://eChartBook.Halliburton.com, where customized charts are available for any combination of parameters.

Example

Determine the correction required for phase-shift resistivity from the 16-inch transmitter-receiver spacing of a 6¾-in. EWR-M5™ tool, operating at a frequency of 2 MHz in a 10-inch borehole filled with mud with a resistivity of 0.1 Ω·m, assuming an apparent (measured) formation resistivity of 100 Ω·m.

- Select the appropriate set of charts: 6¾-inch EWR-M5™ Tool, 16-inch spacing, 2 MHz, phase-shift resistivity.
- Select the sub-chart for a mud resistivity (Rm) of 0.1 Ω·m (see figure below).
- Enter the horizontal axis at the apparent formation resistivity of 100 Ω·m.
- Draw a line vertically to the 10-inch diameter curve.
- Draw a line horizontally to intersect the vertical axis at 1.12.
- Multiply the apparent resistivity value by 1.12 to obtain a corrected value of 112 Ω·m.



Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 16-in. Spacing, 2 MHz, Phase-Shift Resistivity

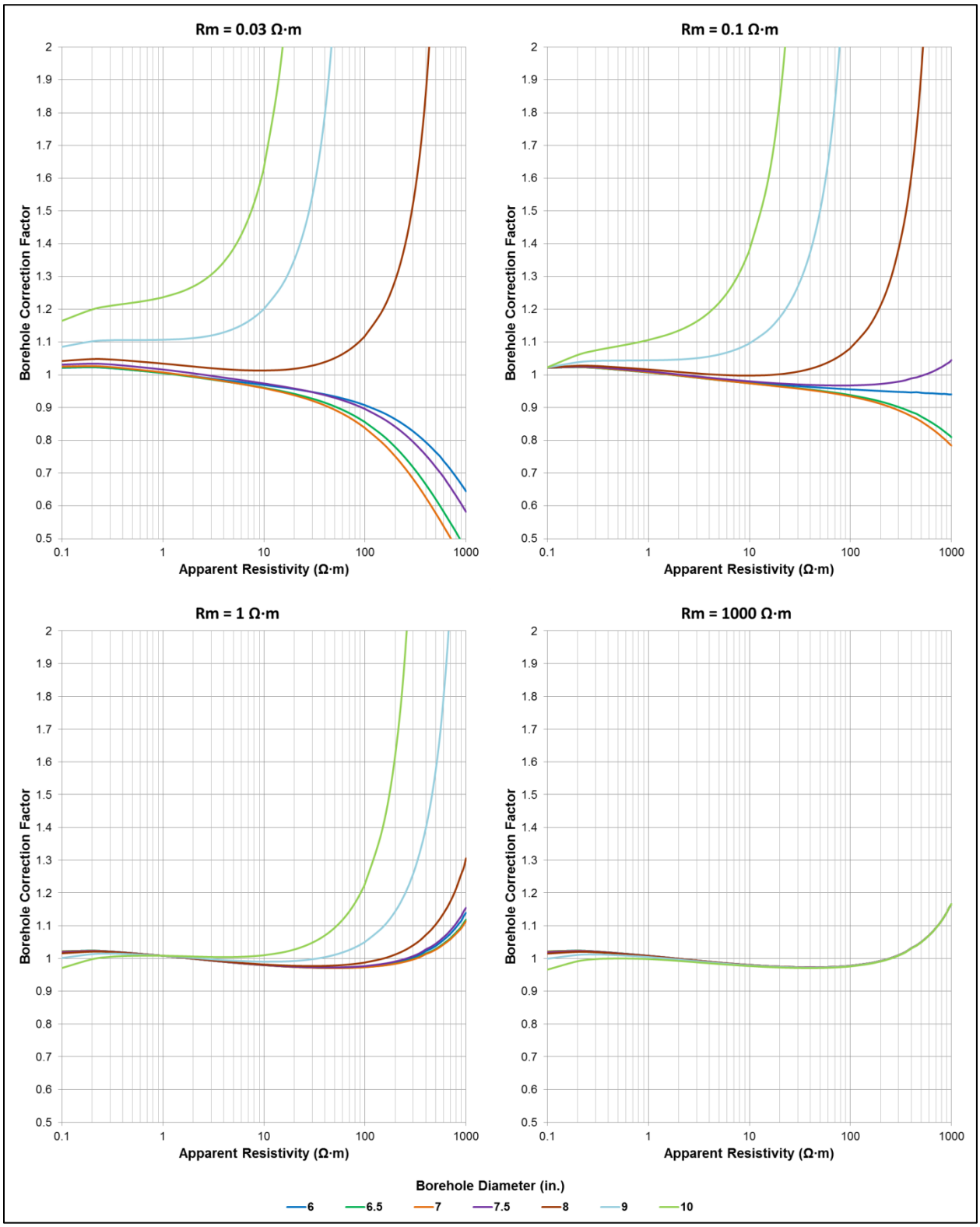


Chart 3-1

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 16-in. Spacing, 2 MHz, Attenuation Resistivity

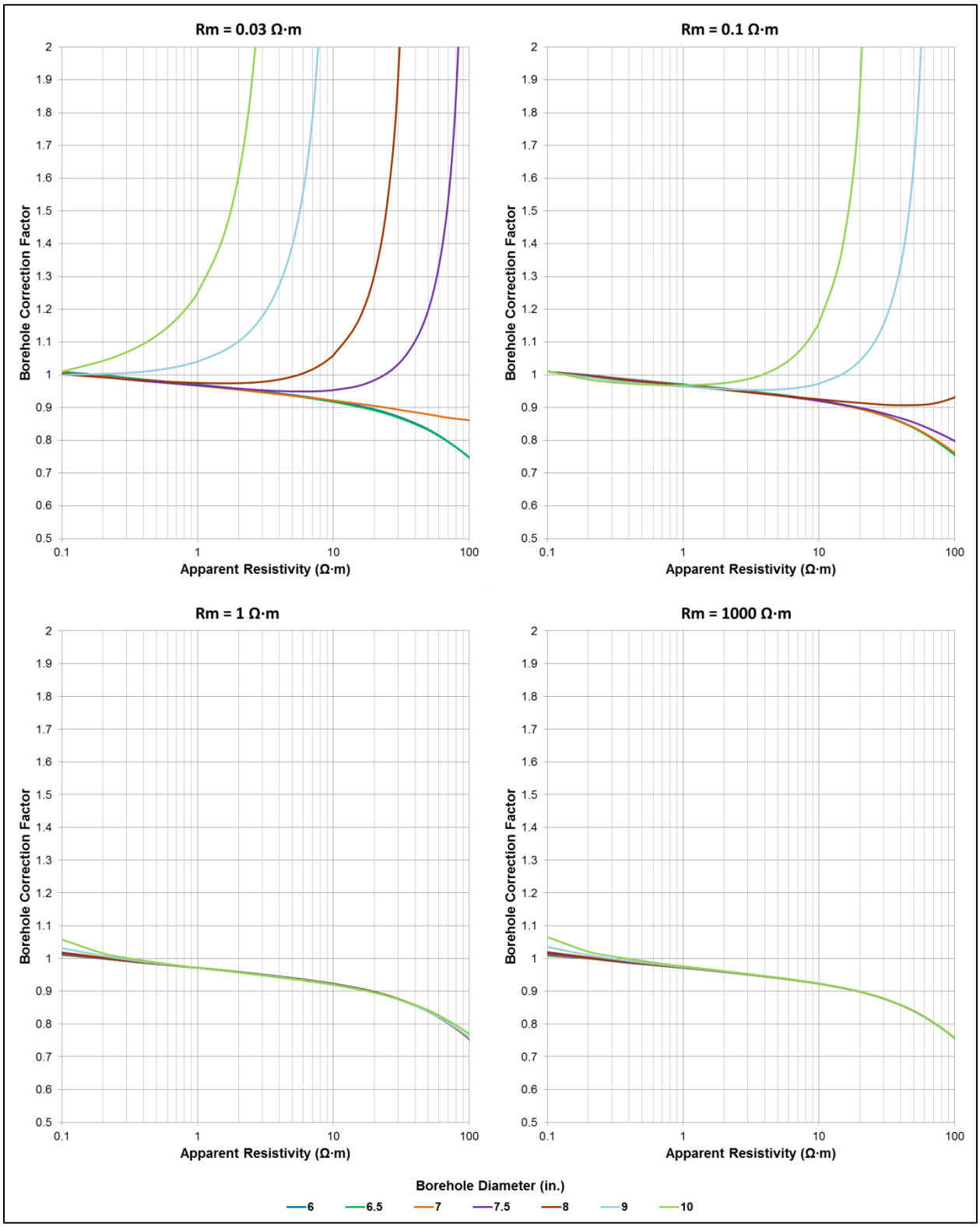


Chart 3-2

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 16-in. Spacing, 500 kHz, Phase-Shift Resistivity

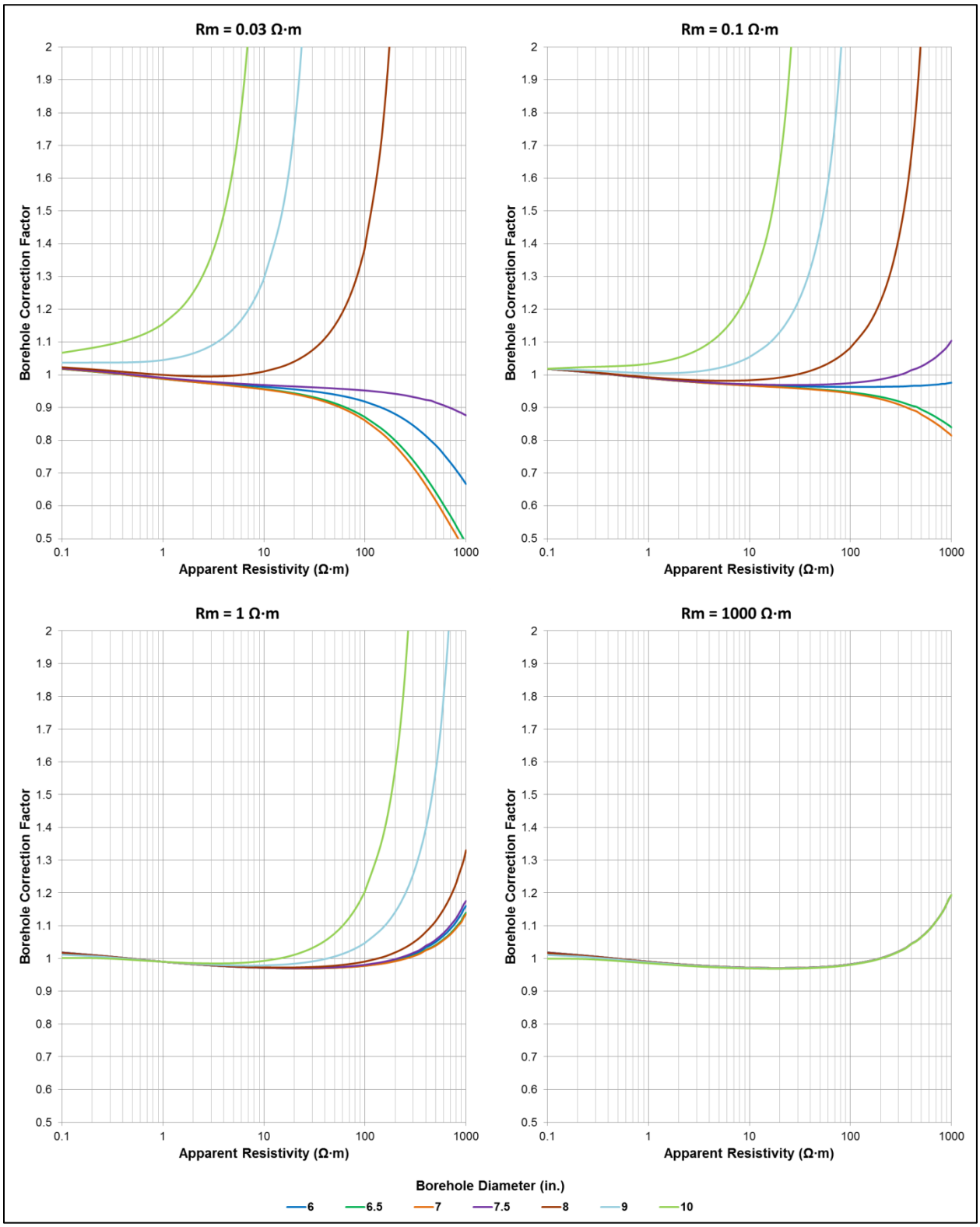


Chart 3-3

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 16-in. Spacing, 500 kHz, Attenuation Resistivity

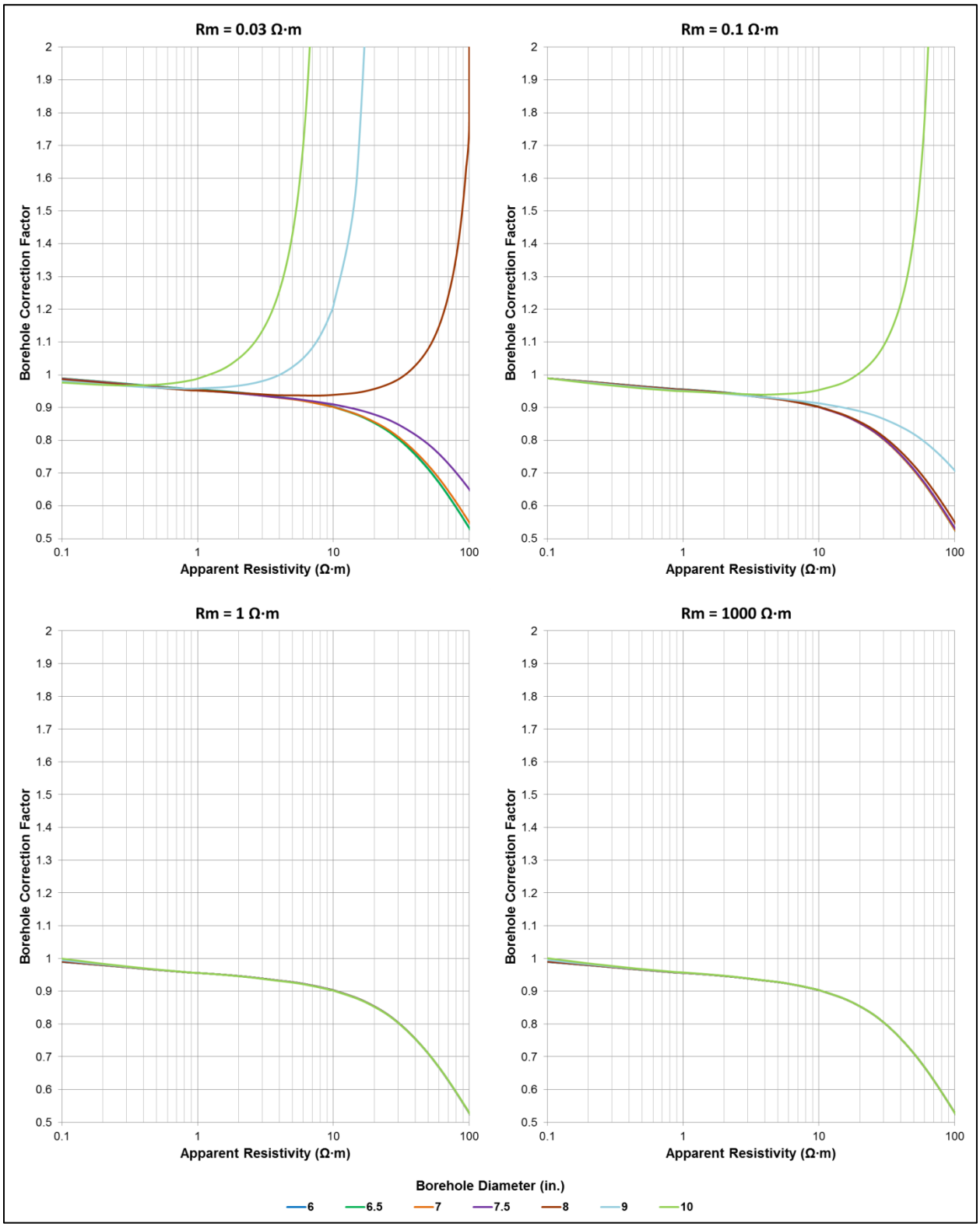


Chart 3-4

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 32-in. Spacing, 2 MHz, Phase-Shift Resistivity

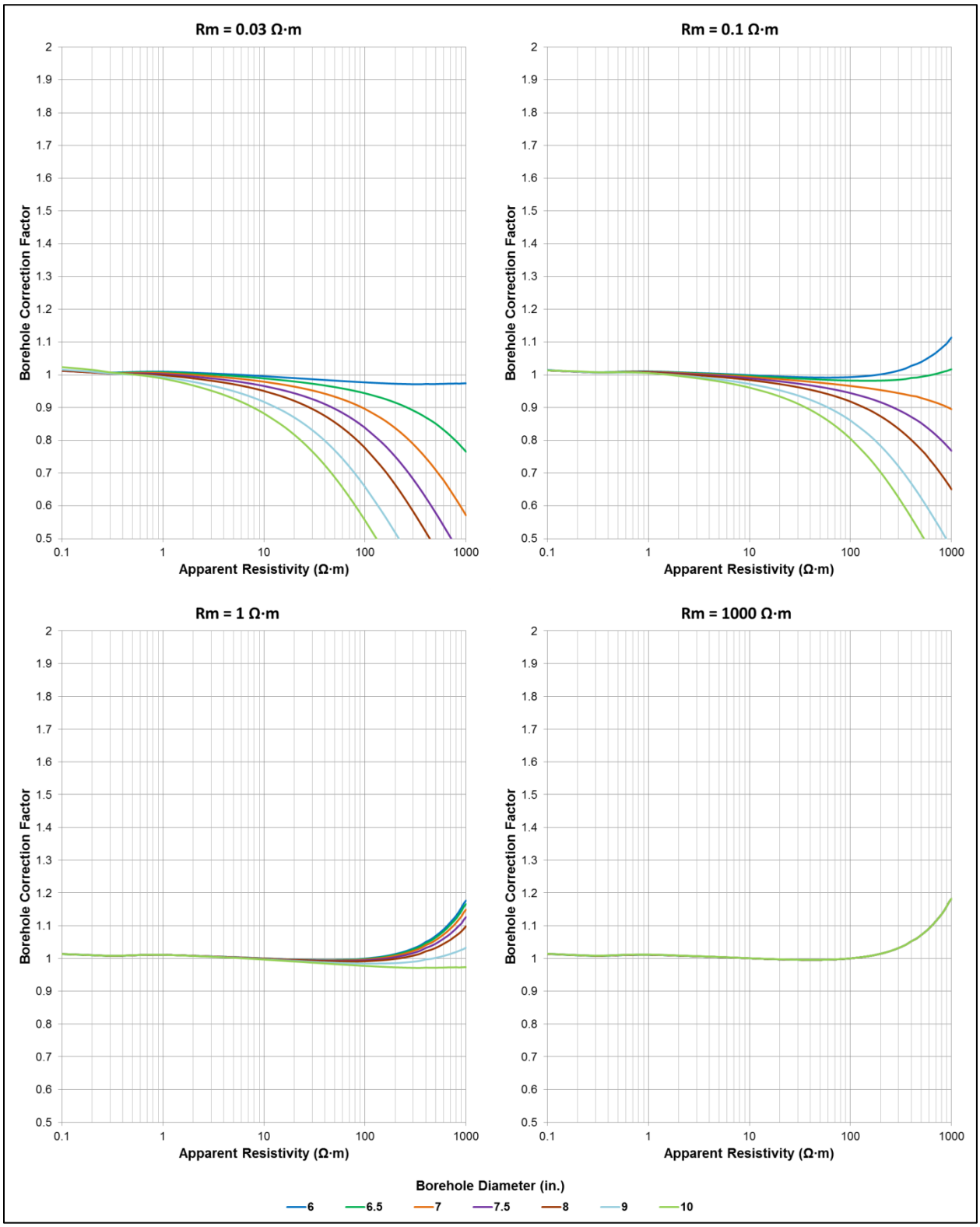


Chart 3-5

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 32-in. Spacing, 2 MHz, Attenuation Resistivity

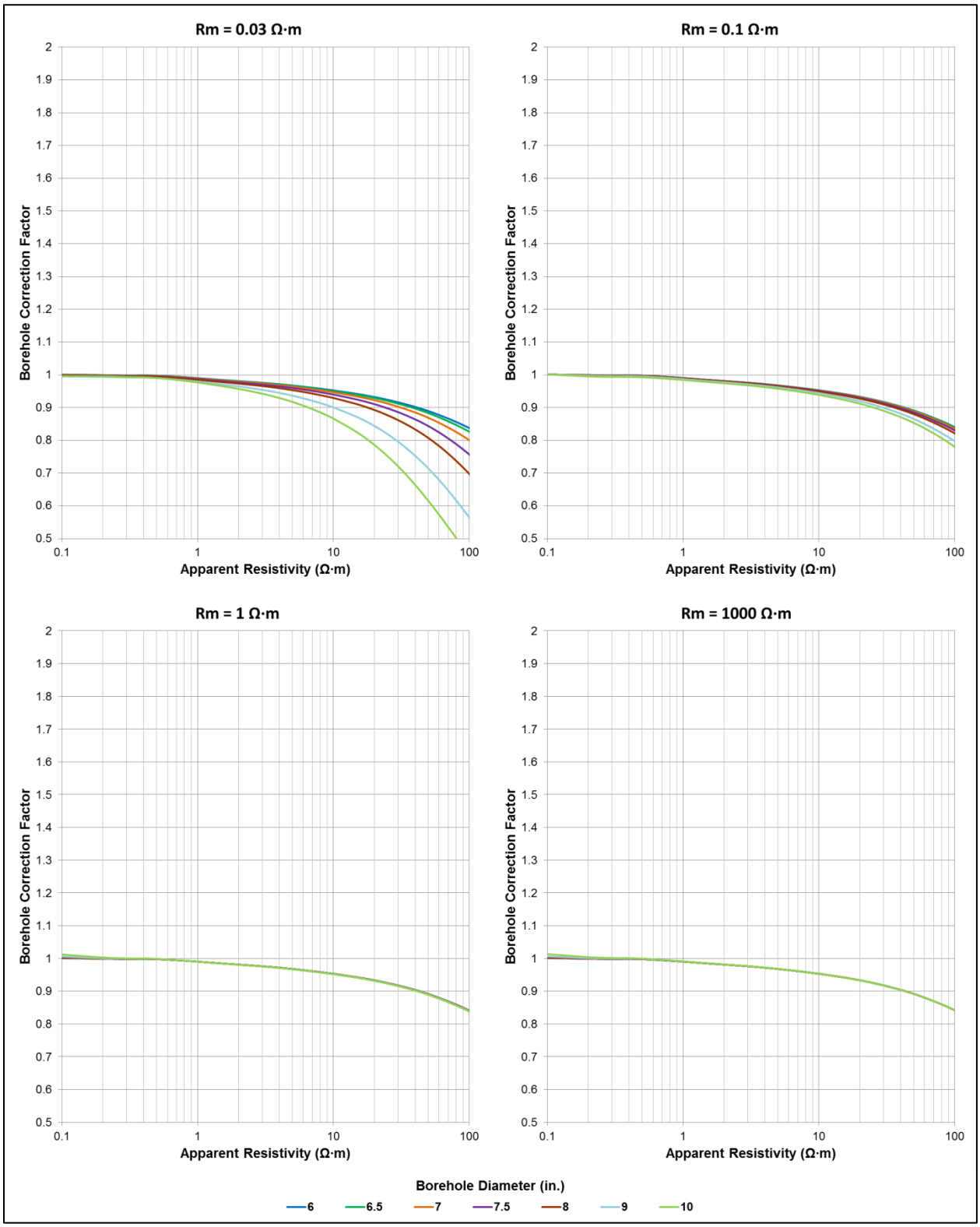


Chart 3-6

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 32-in. Spacing, 500 kHz, Phase-Shift Resistivity

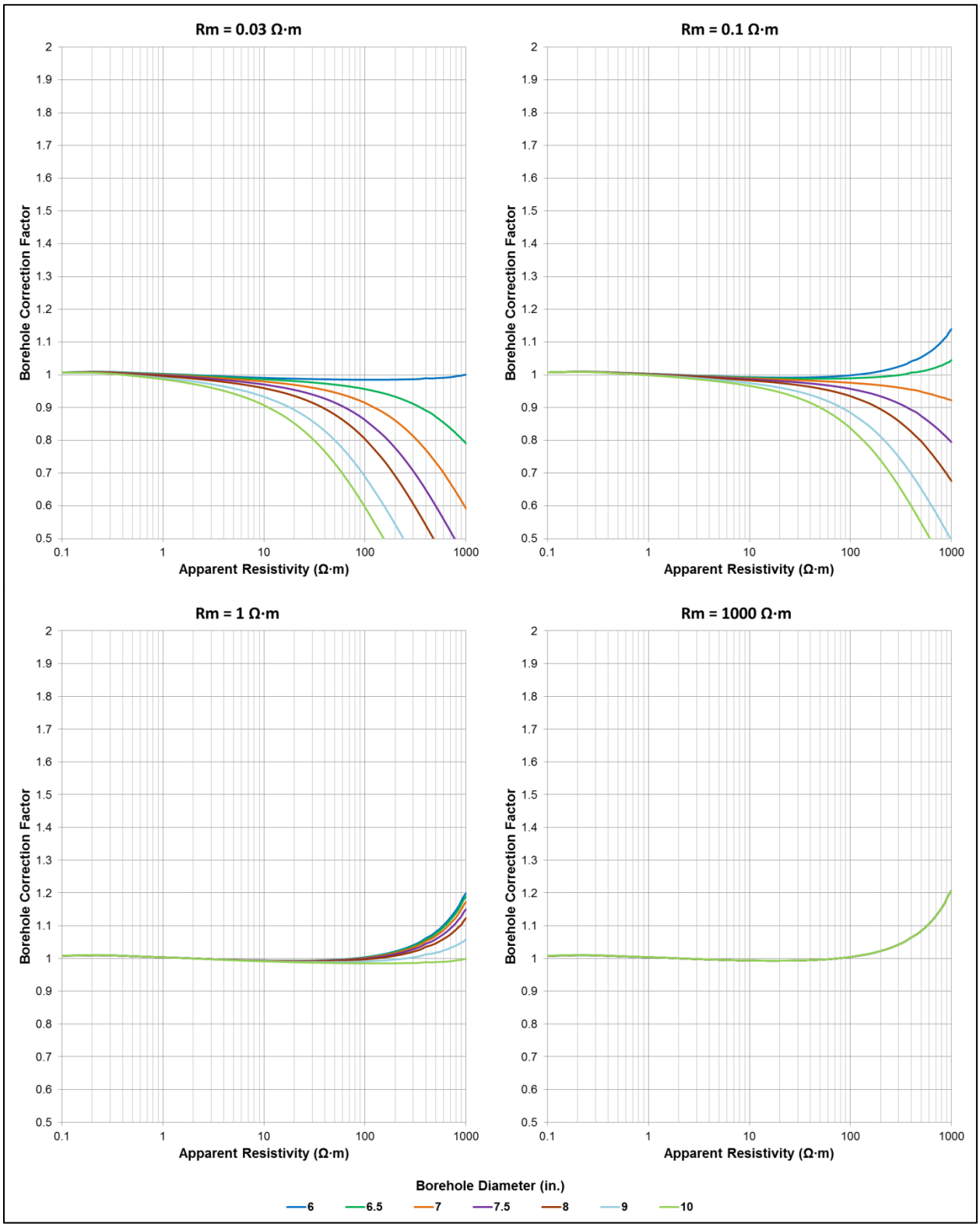


Chart 3-7

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 32-in. Spacing, 500 kHz, Attenuation Resistivity

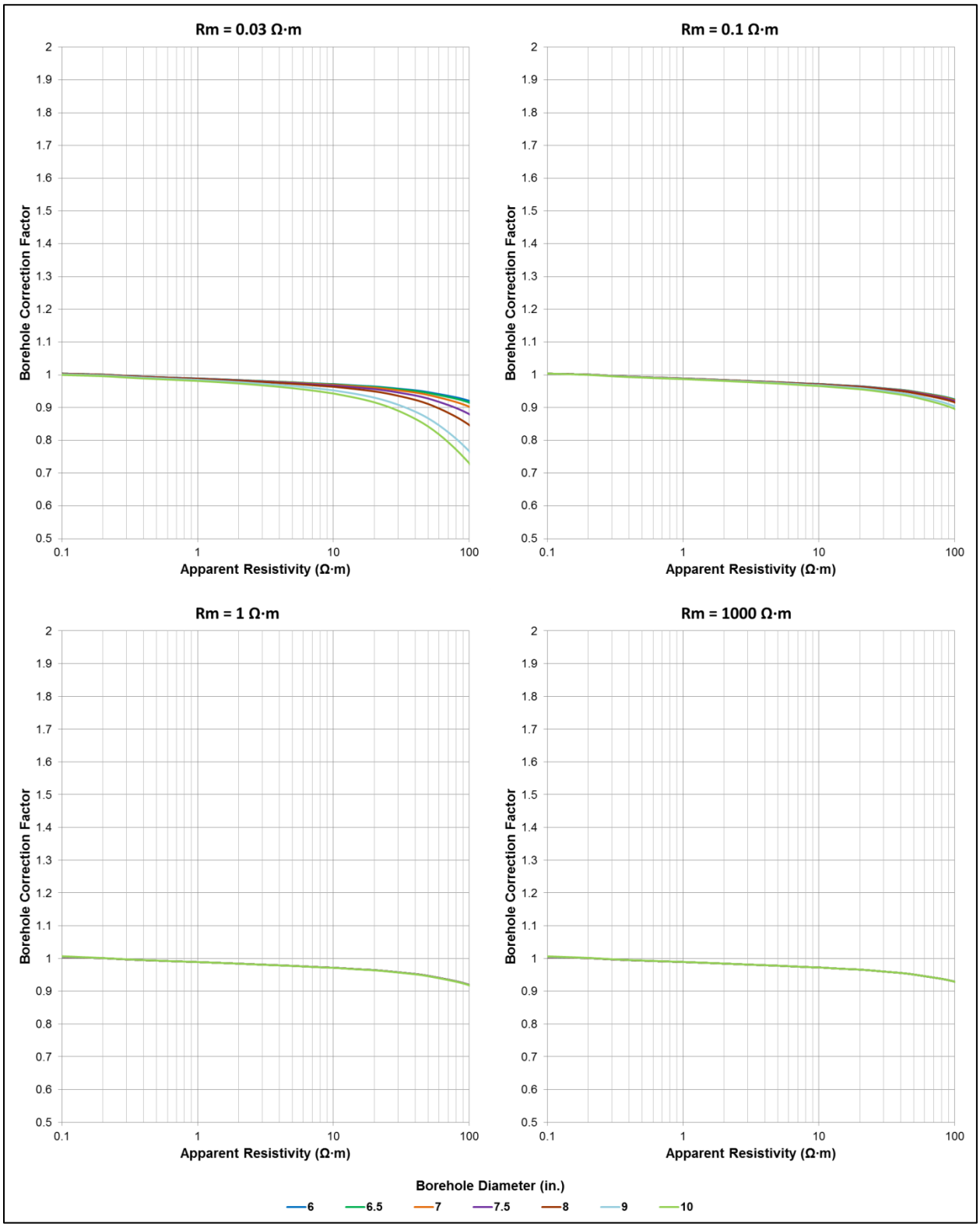


Chart 3-8

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 48-in. Spacing, 2 MHz, Phase-Shift Resistivity

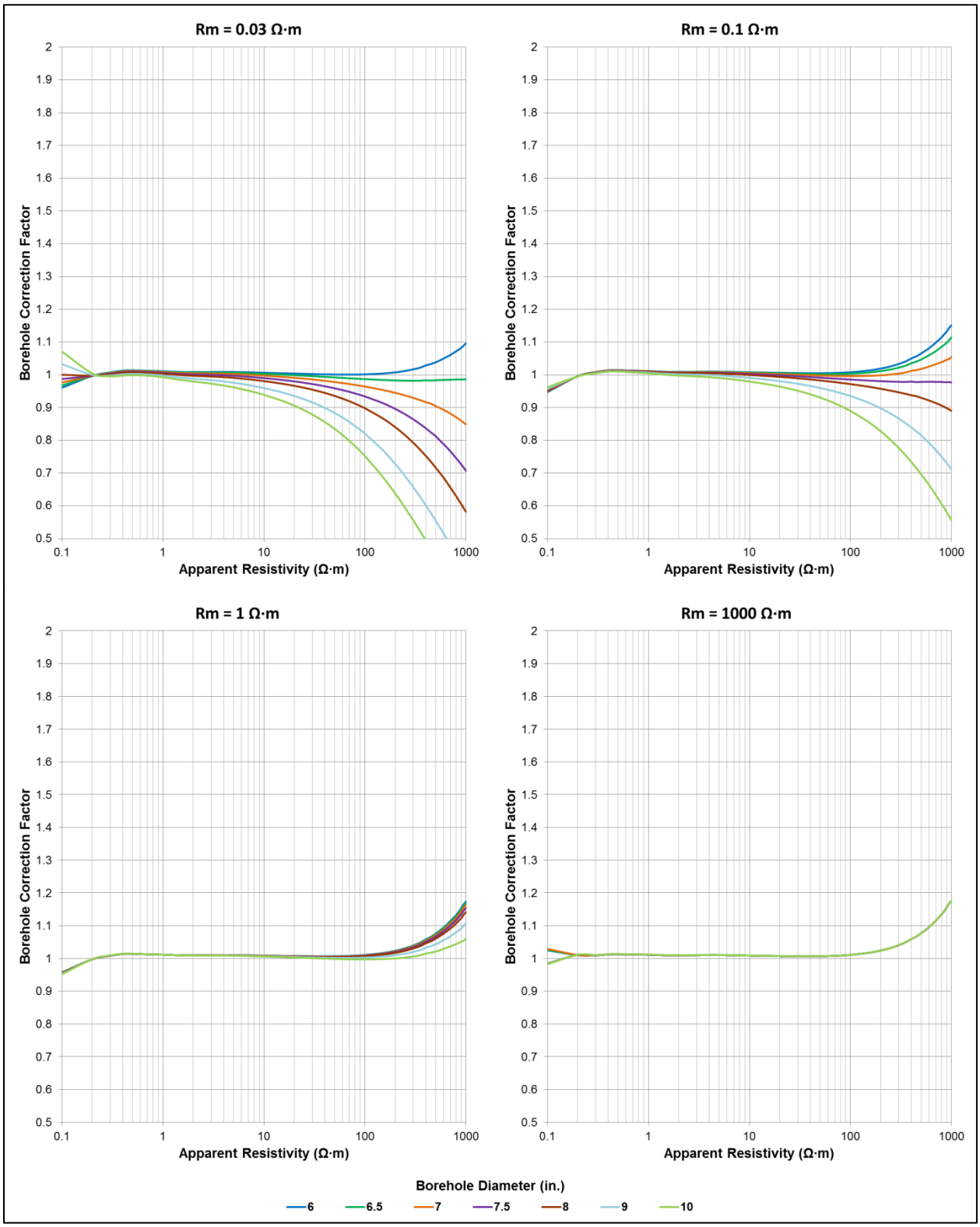


Chart 3-9

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 48-in. Spacing, 2 MHz, Attenuation Resistivity

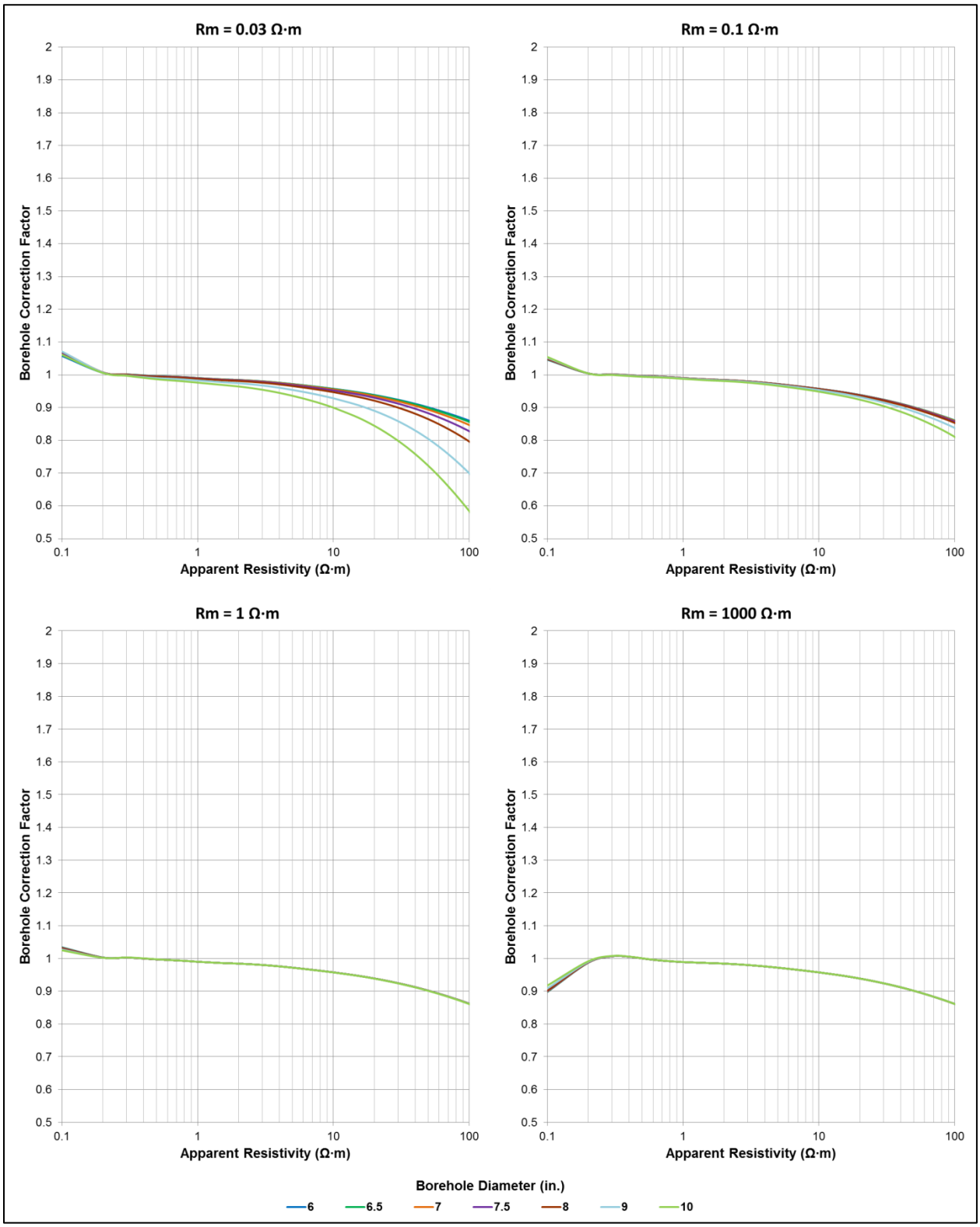


Chart 3-10

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 48-in. Spacing, 500 kHz, Phase-Shift Resistivity

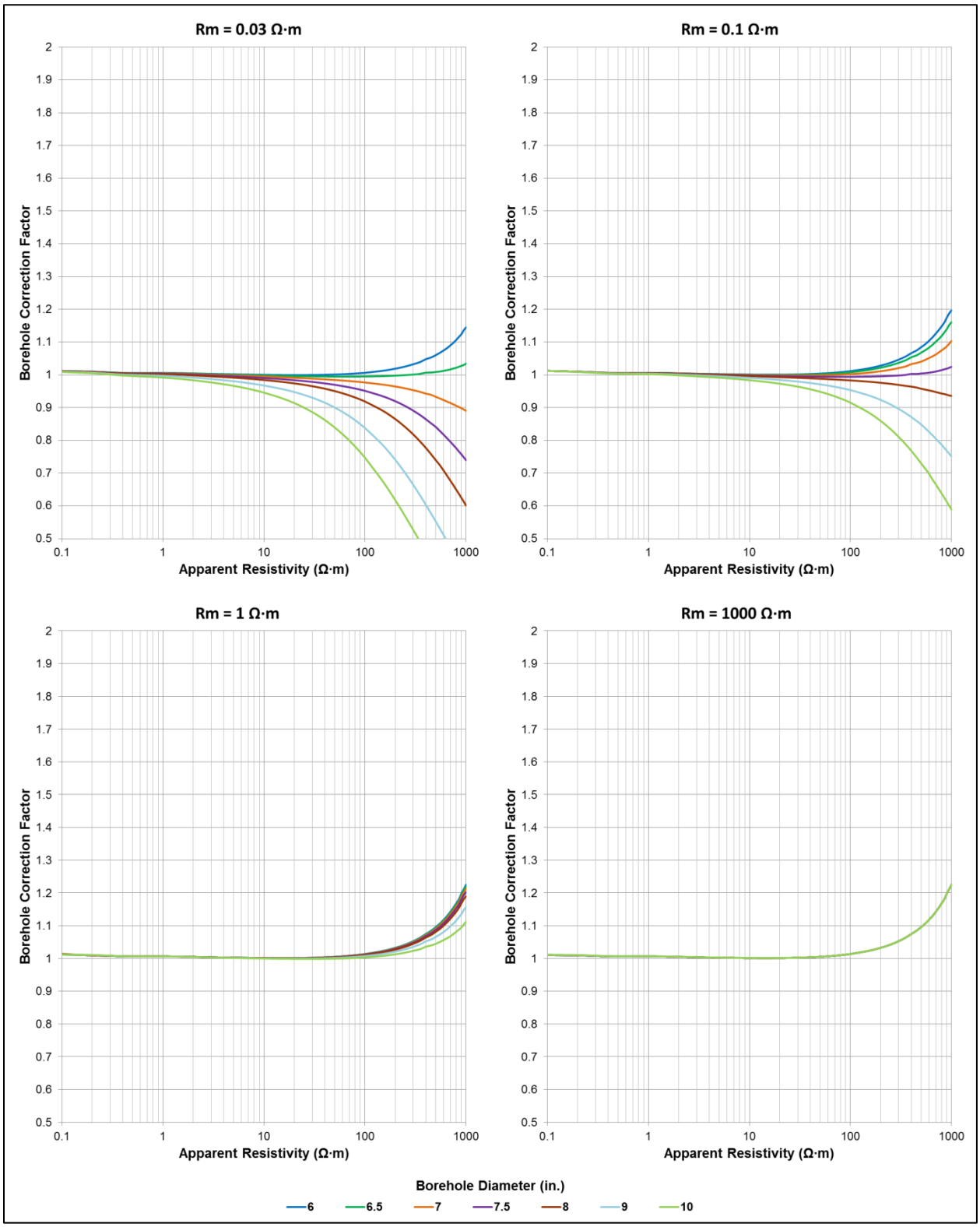


Chart 3-11

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 48-in. Spacing, 500 kHz, Attenuation Resistivity

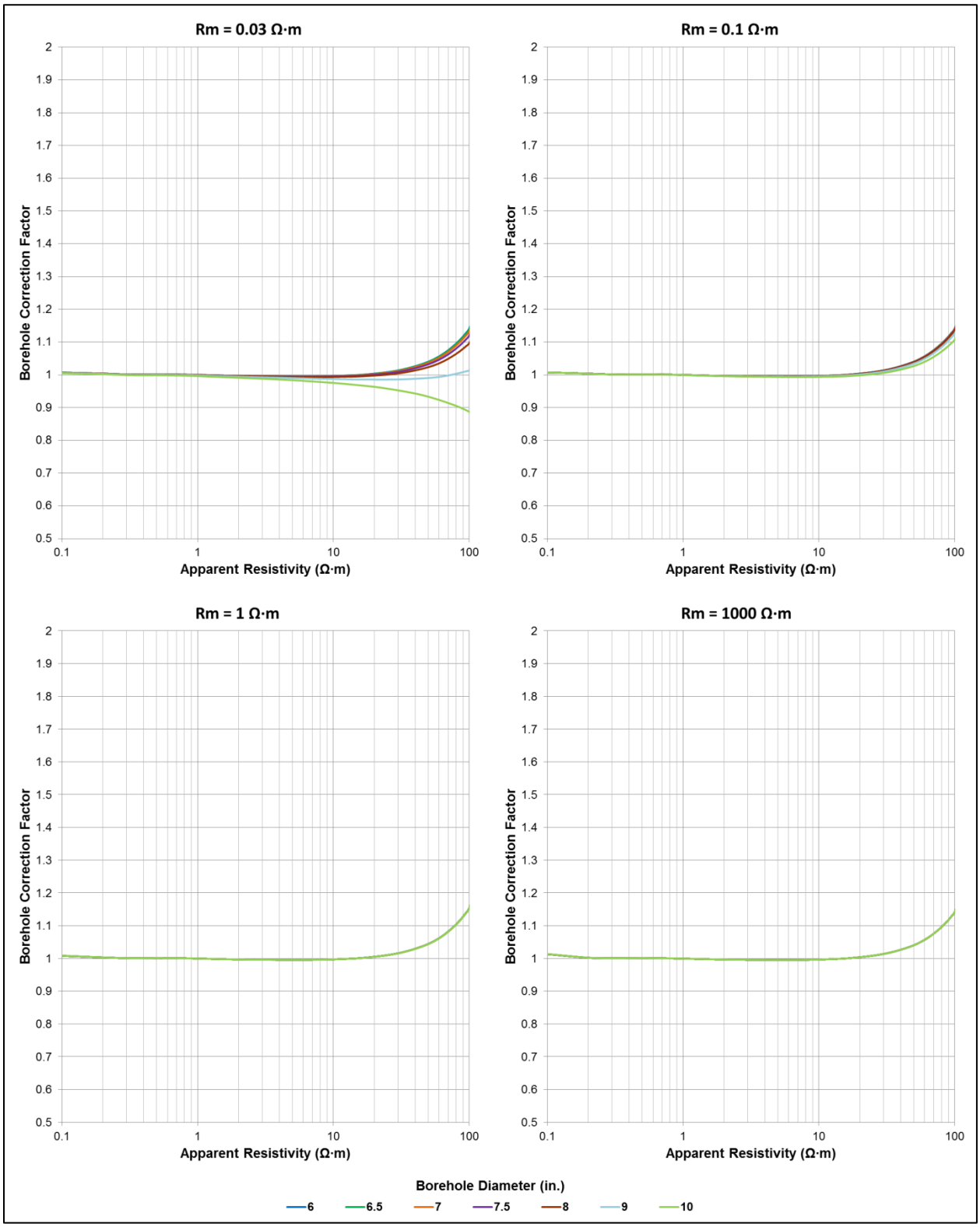


Chart 3-12

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 48-in. Spacing, 125 kHz, Phase-Shift Resistivity

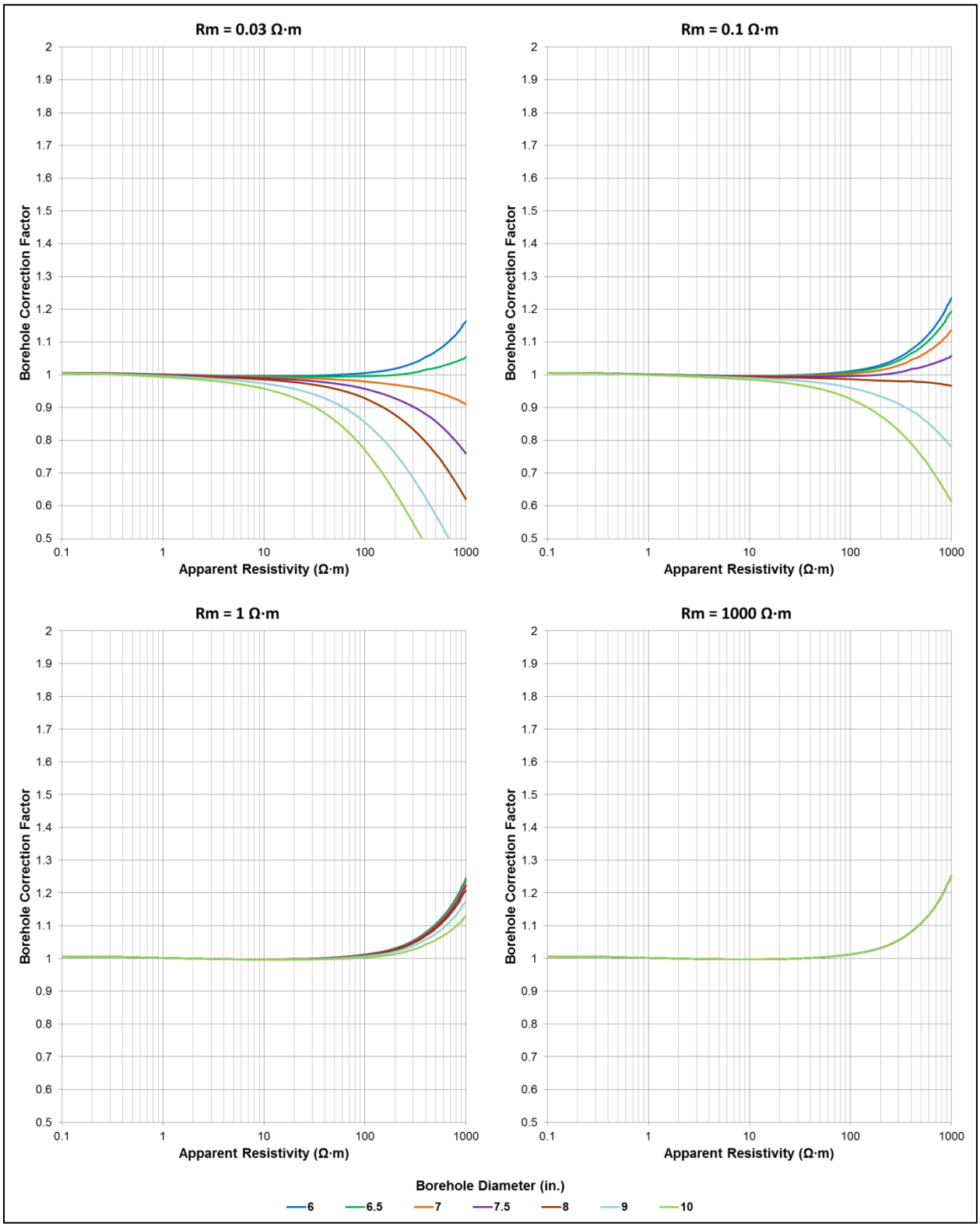


Chart 3-13

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. ADR™ Tool, 48-in. Spacing, 125 kHz, Attenuation Resistivity

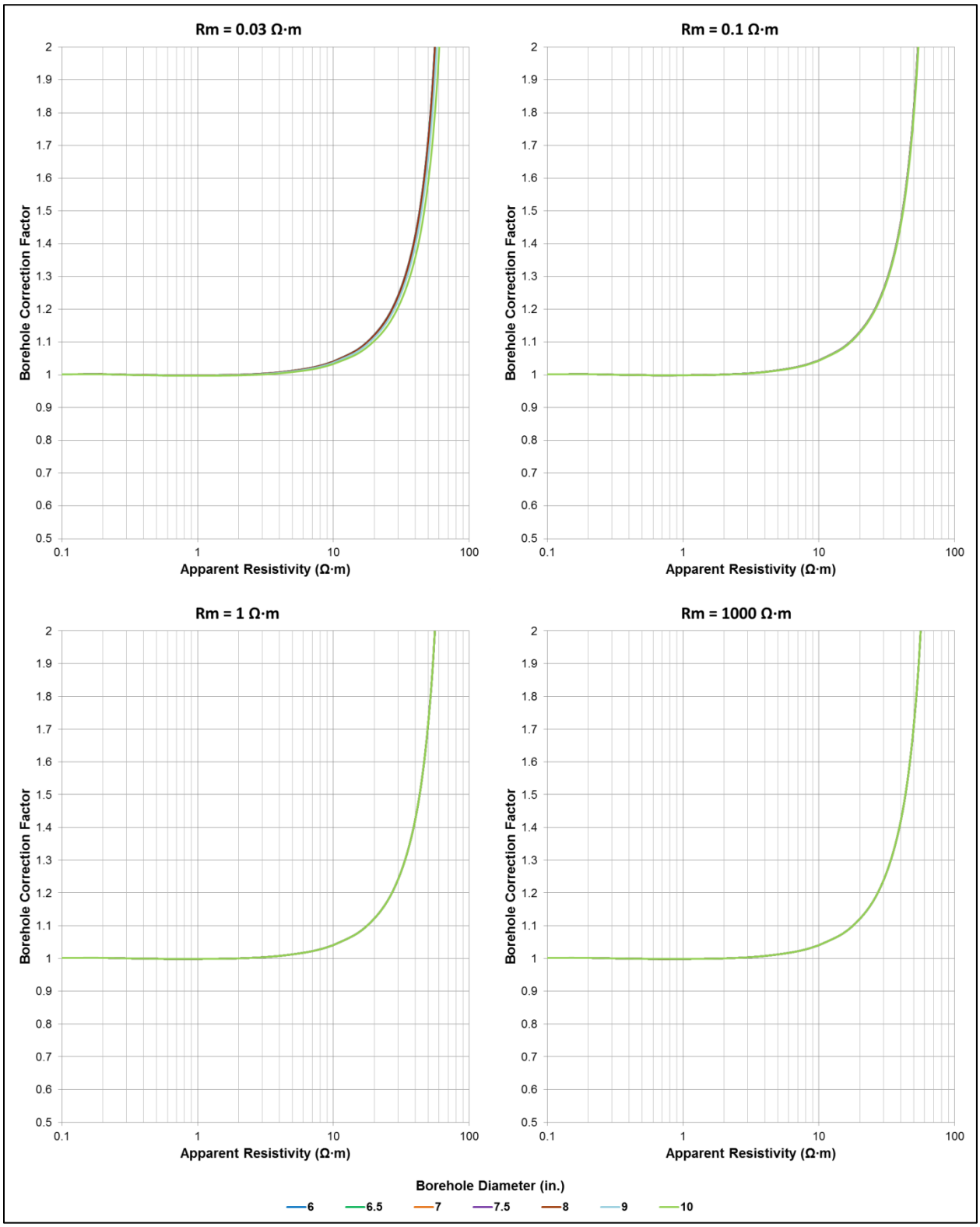


Chart 3-14

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 16-in. Spacing, 2 MHz, Phase-Shift Resistivity

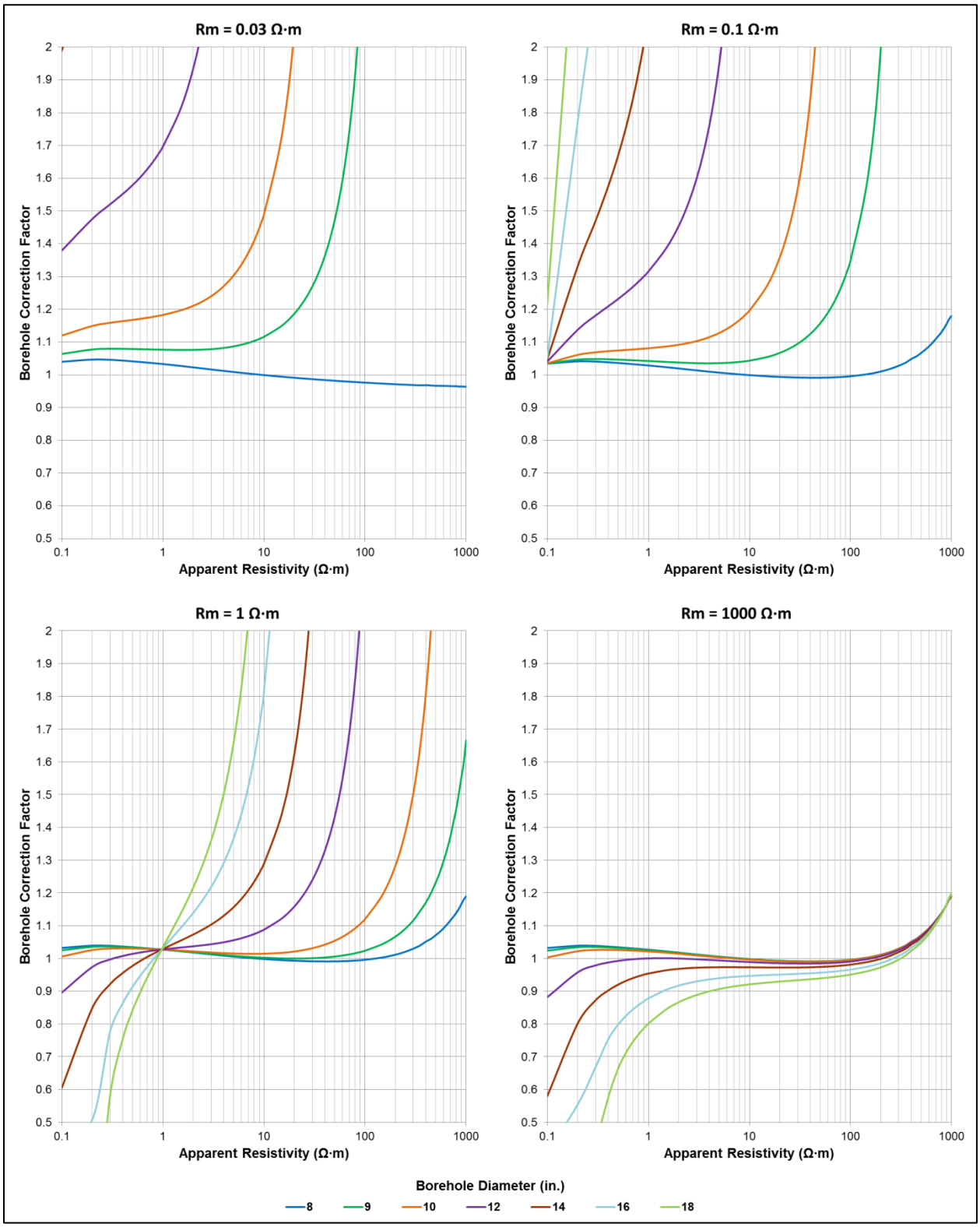


Chart 3-15

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 16-in. Spacing, 2 MHz, Attenuation Resistivity

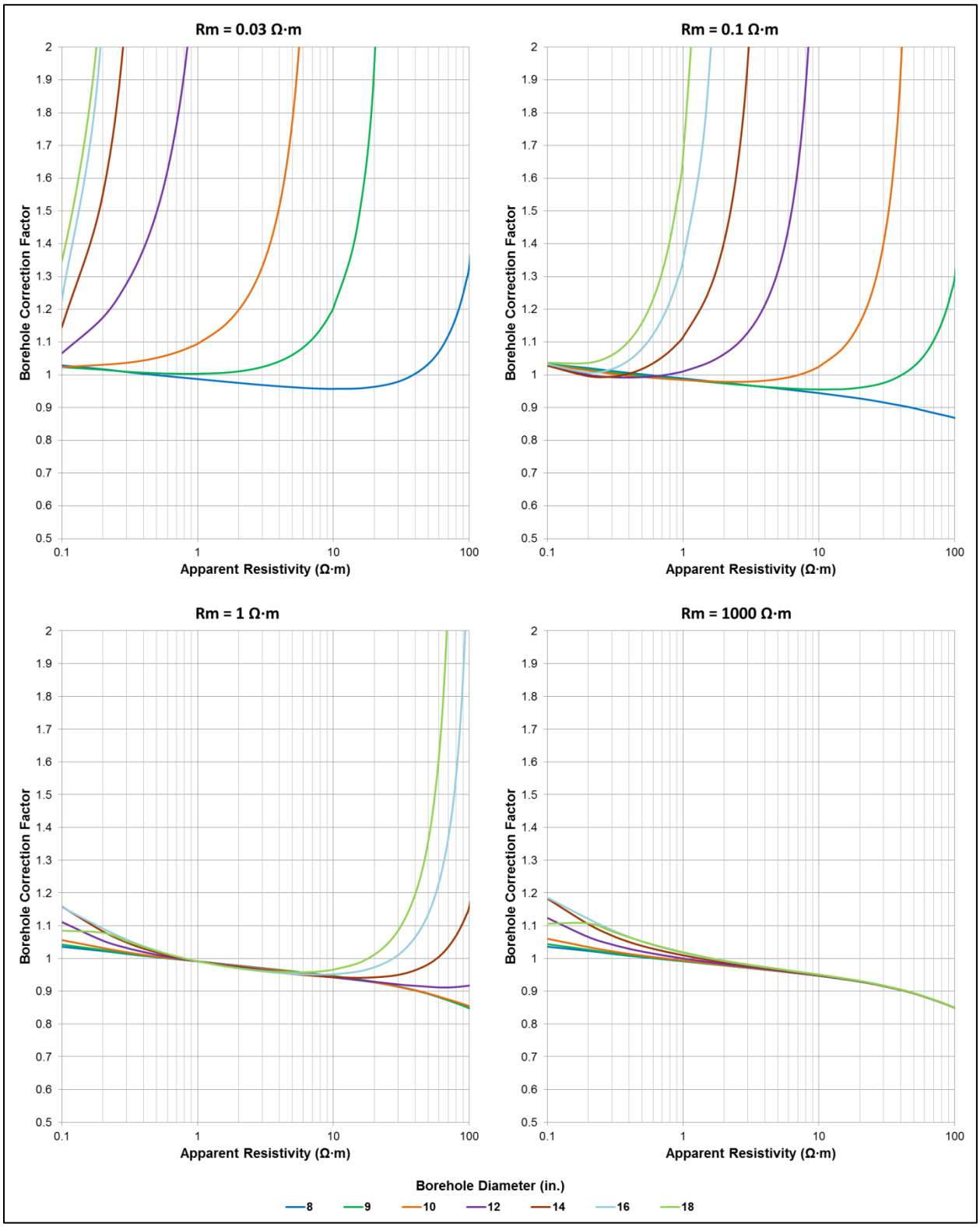


Chart 3-16

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 16-in. Spacing, 500 kHz, Phase-Shift Resistivity

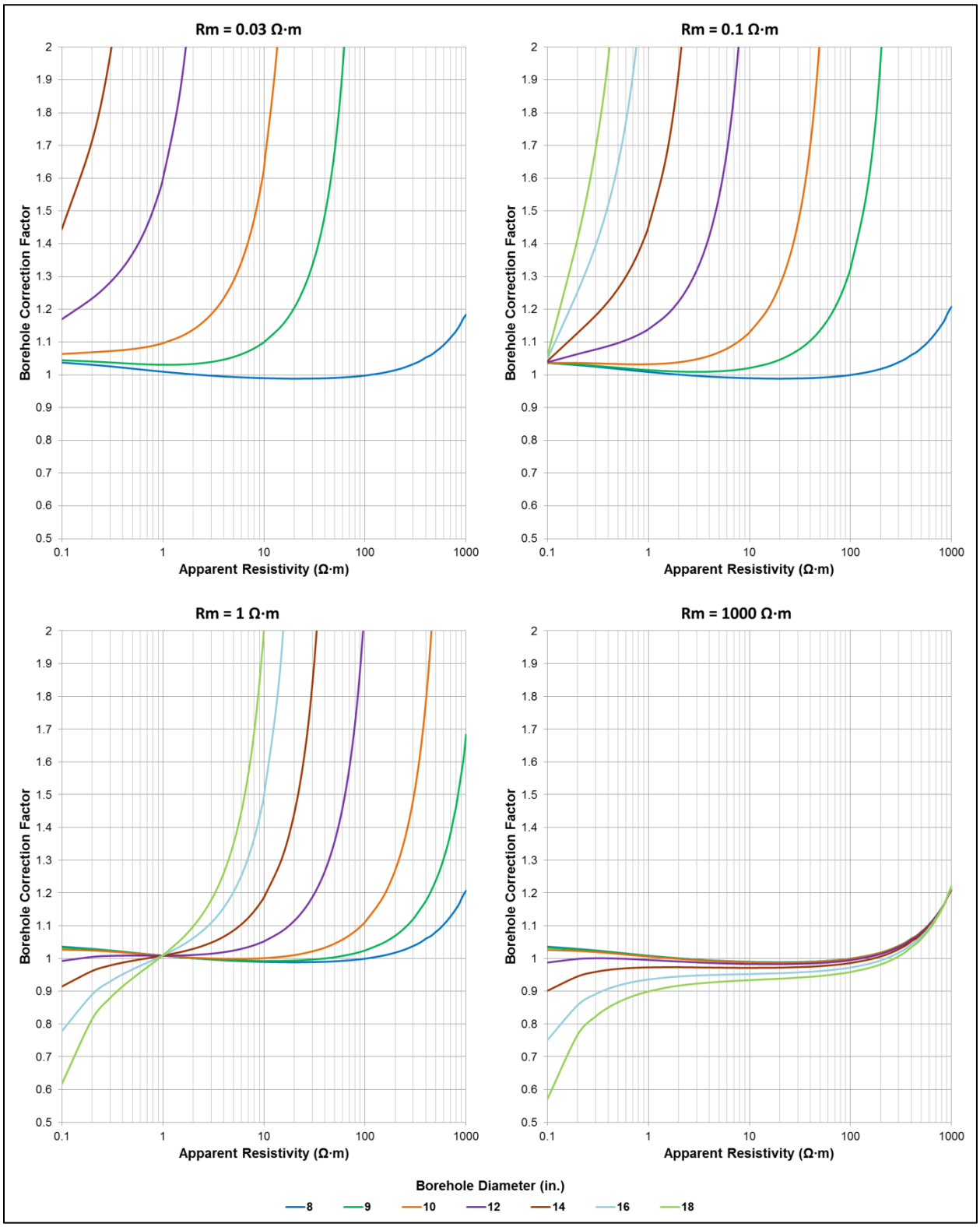


Chart 3-17

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 16-in. Spacing, 500 kHz, Attenuation Resistivity

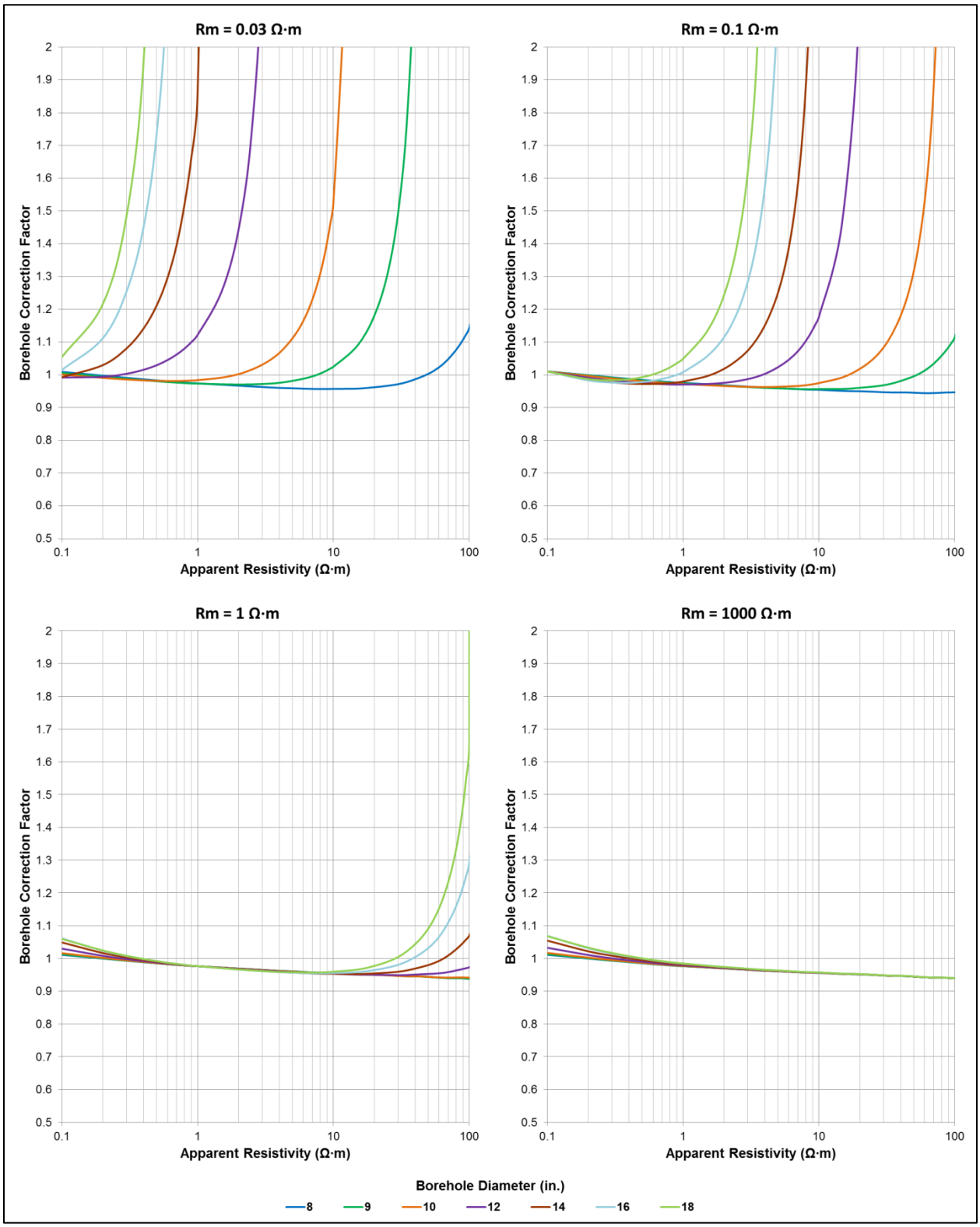


Chart 3-18

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 32-in. Spacing, 2 MHz, Phase-Shift Resistivity

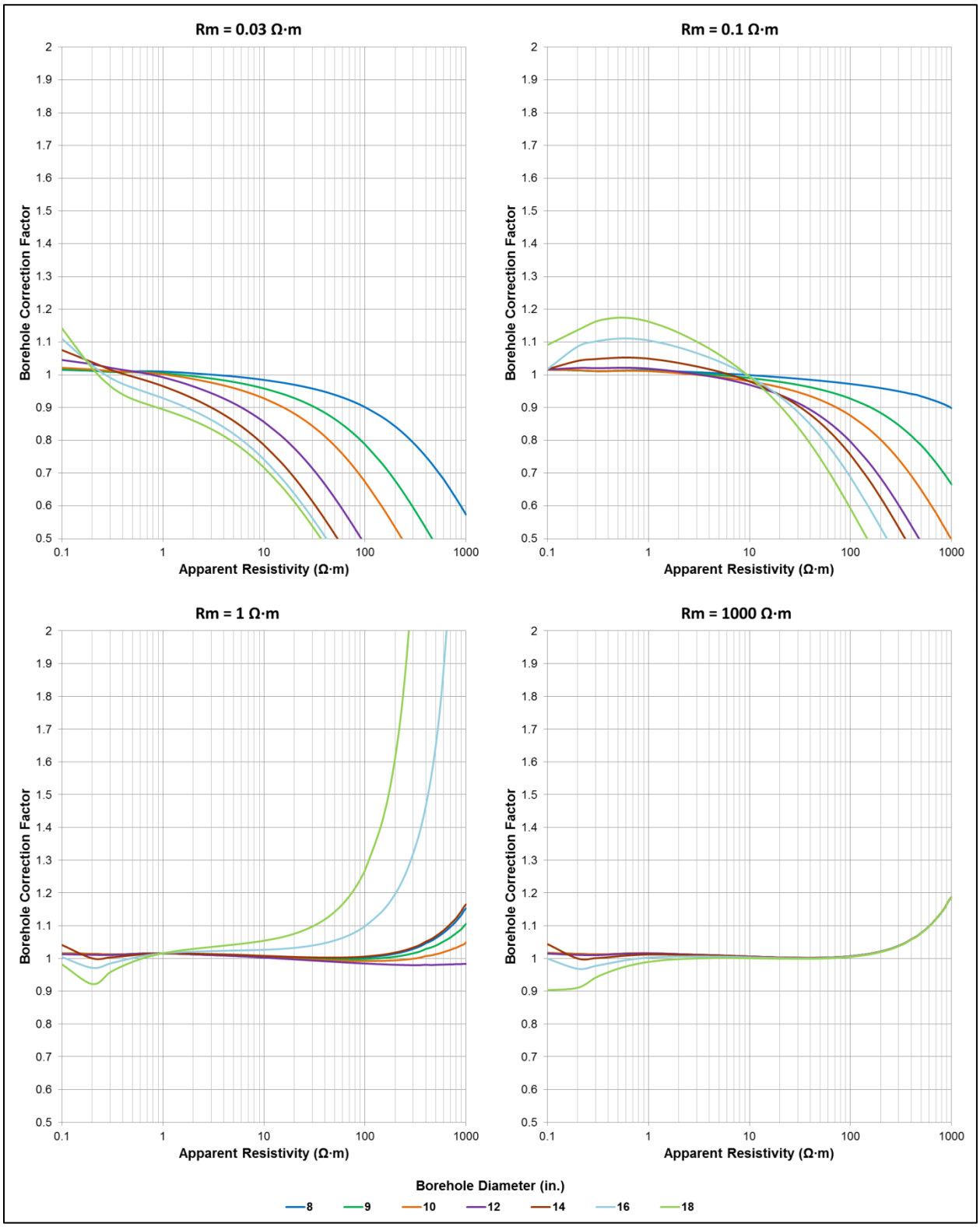


Chart 3-19

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 32-in. Spacing, 2 MHz, Attenuation Resistivity

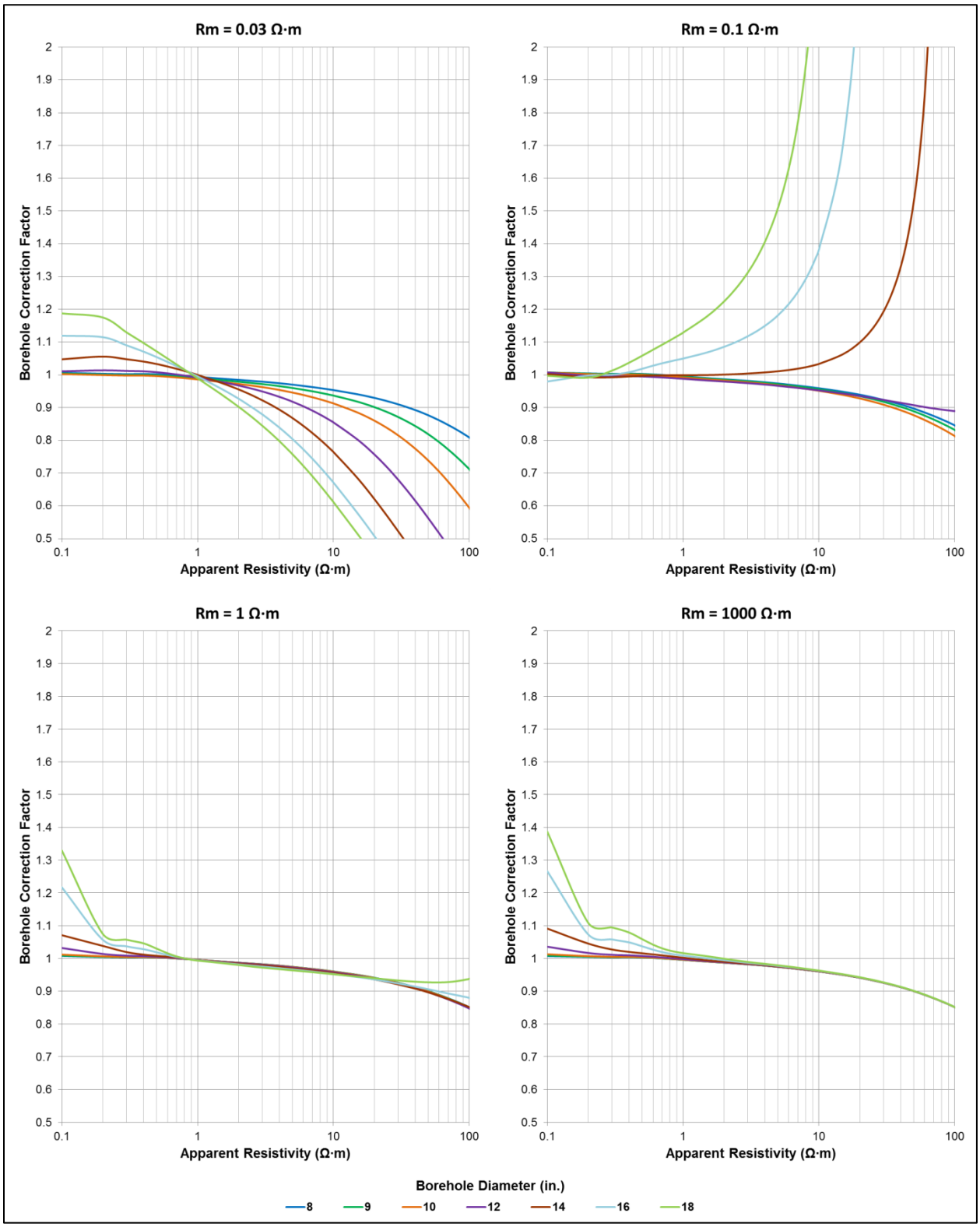


Chart 3-20

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 32-in. Spacing, 500 kHz, Phase-Shift Resistivity

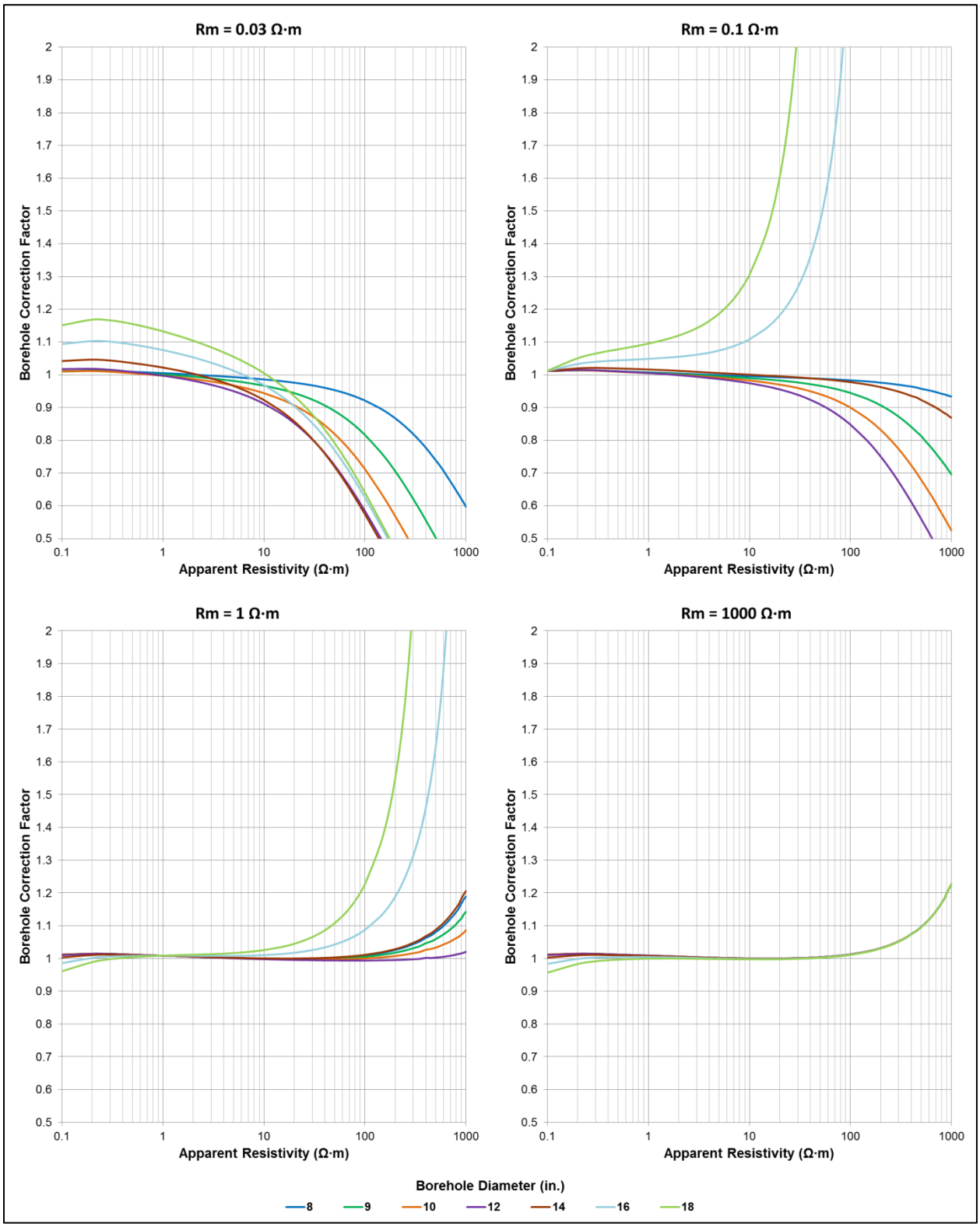


Chart 3-21

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 32-in. Spacing, 500 kHz, Attenuation Resistivity

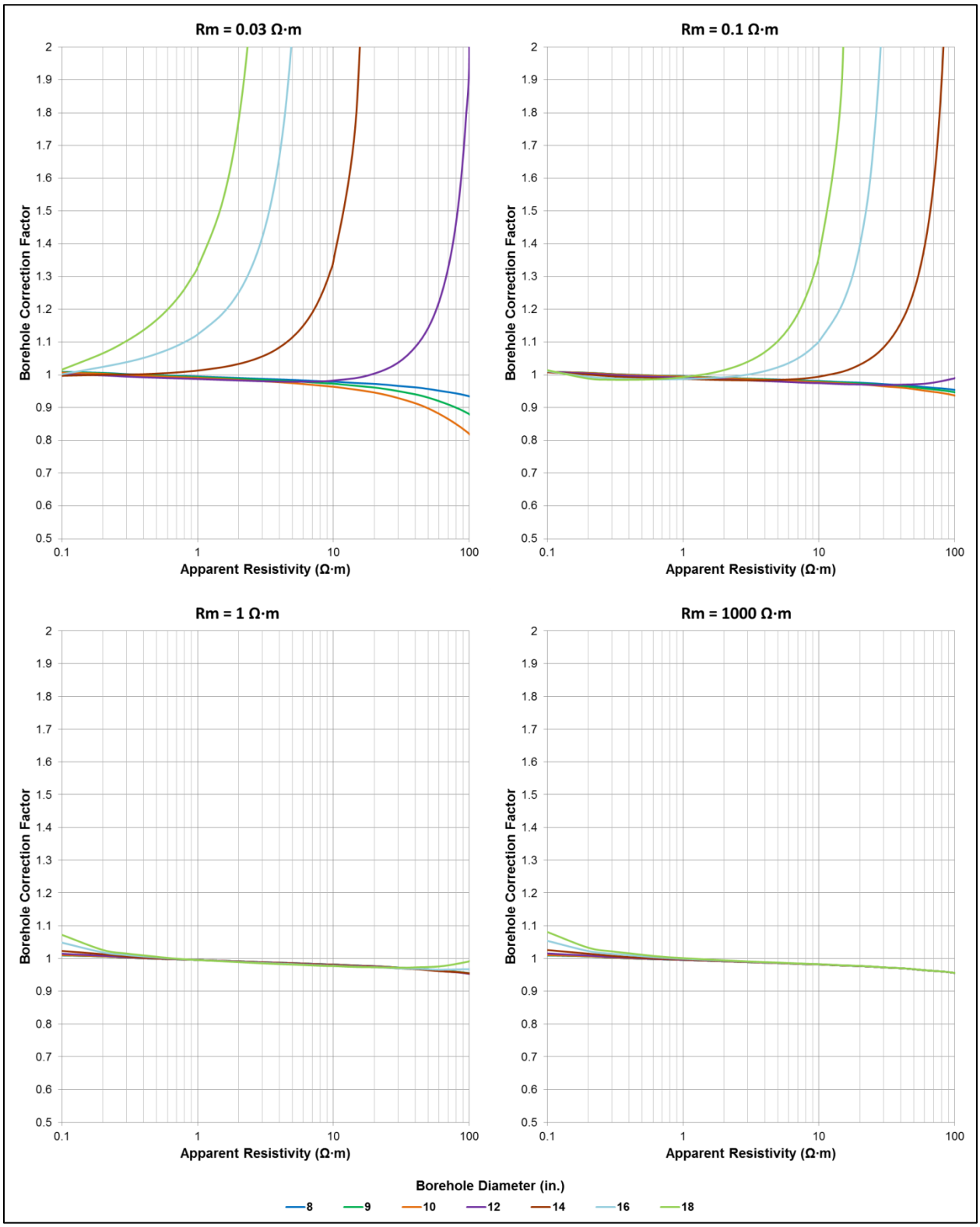


Chart 3-22

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 48-in. Spacing, 2 MHz, Phase-Shift Resistivity

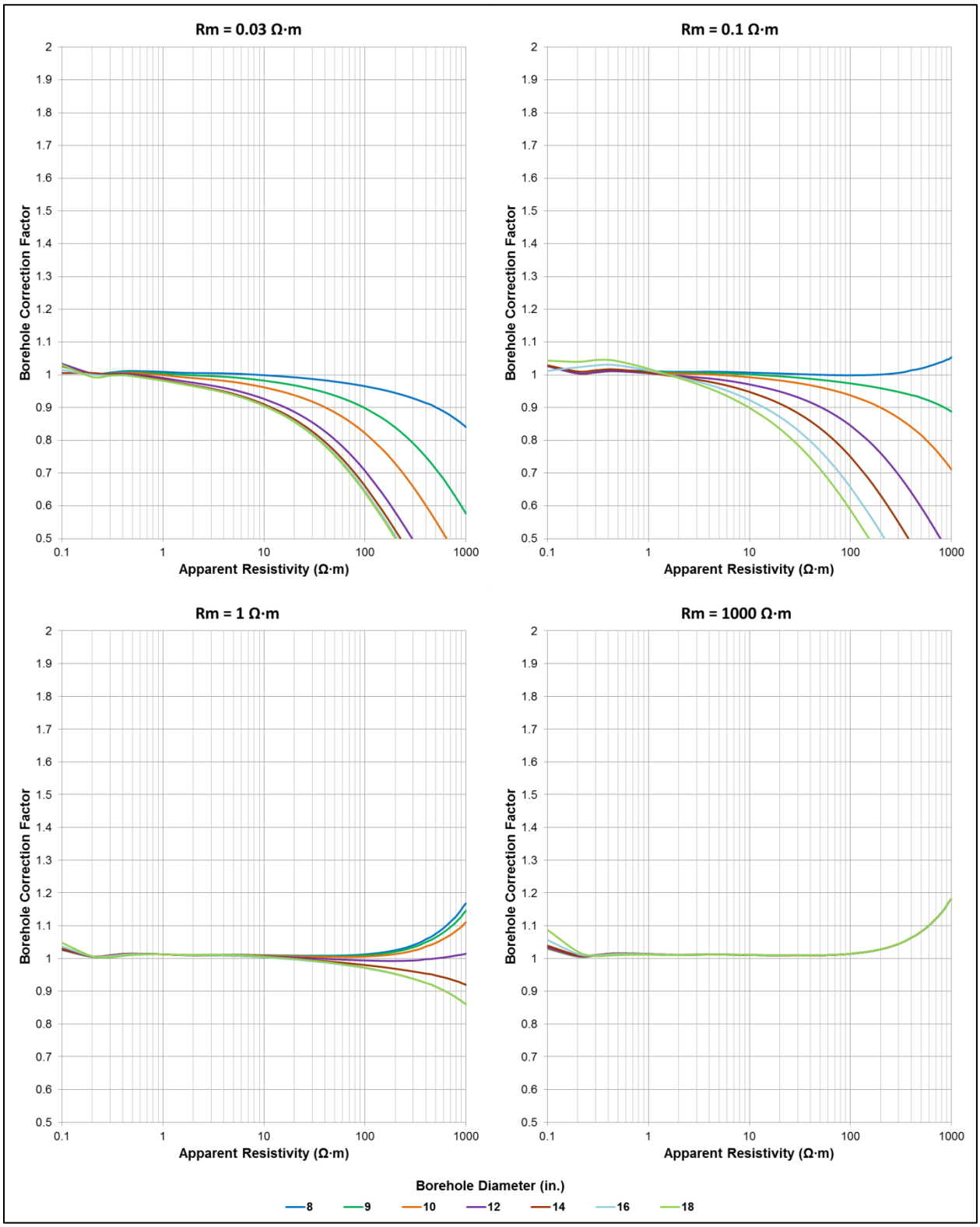


Chart 3-23

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 48-in. Spacing, 2 MHz, Attenuation Resistivity

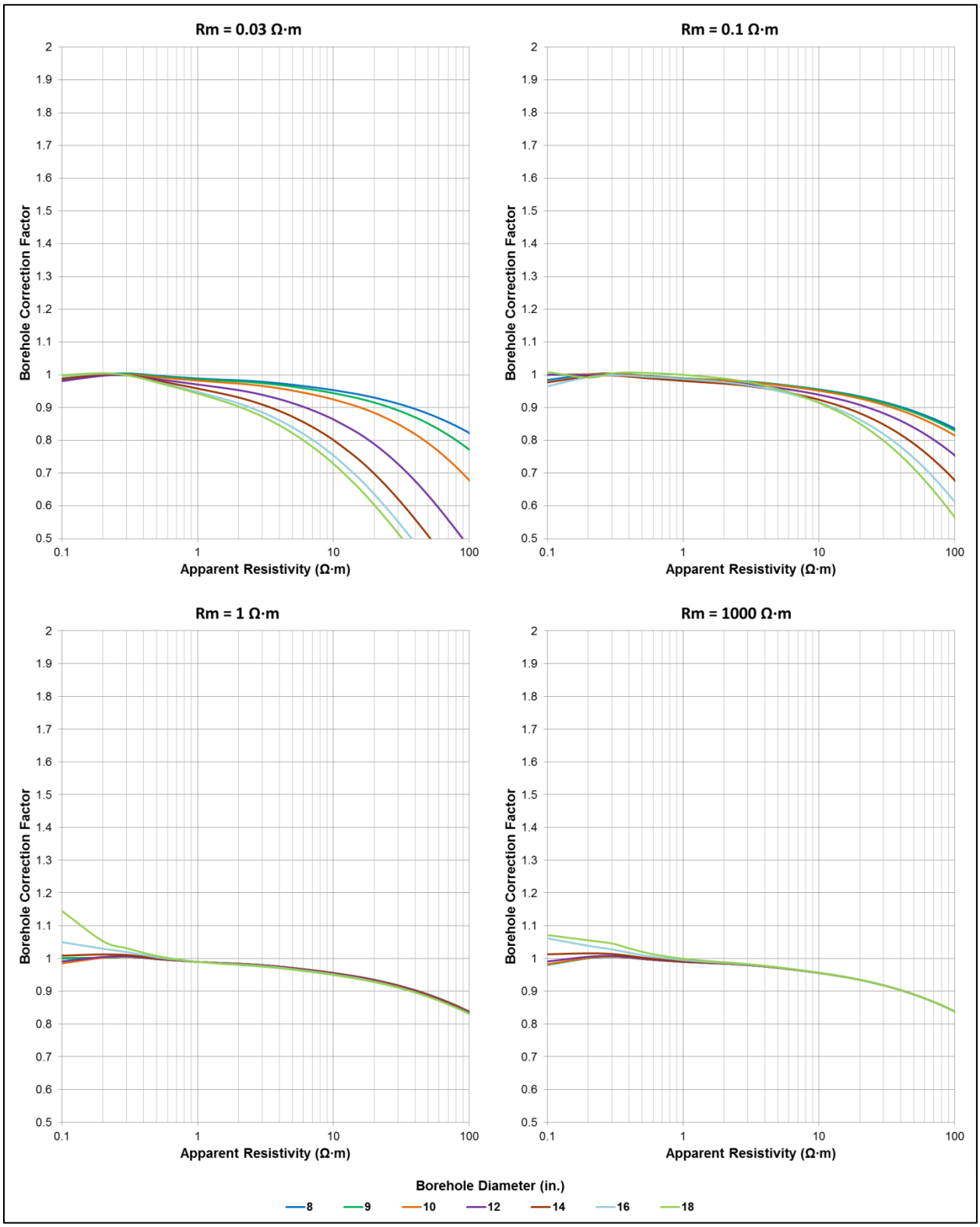


Chart 3-24

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 48-in. Spacing, 500 kHz, Phase-Shift Resistivity

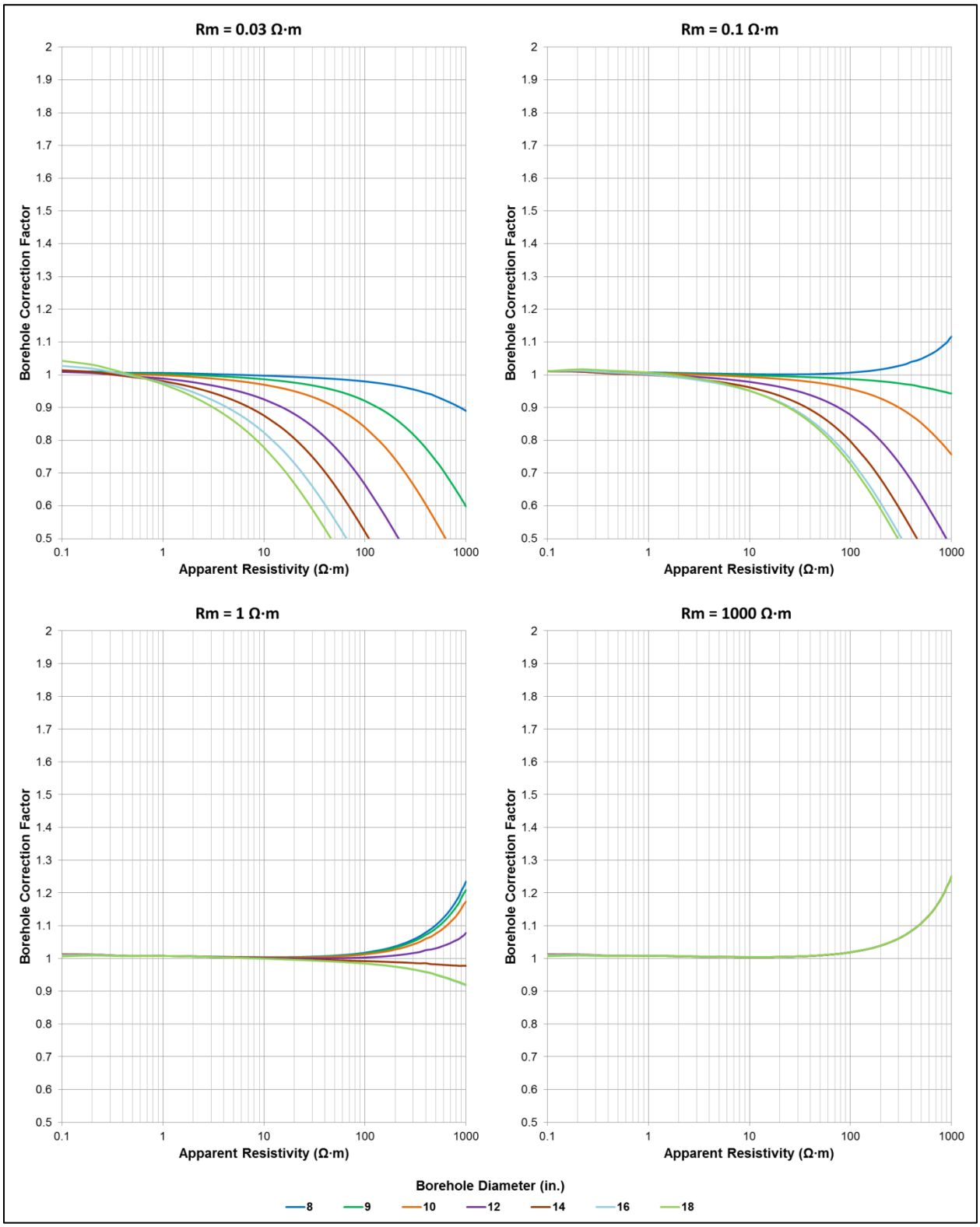


Chart 3-25

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 48-in. Spacing, 500 kHz, Attenuation Resistivity

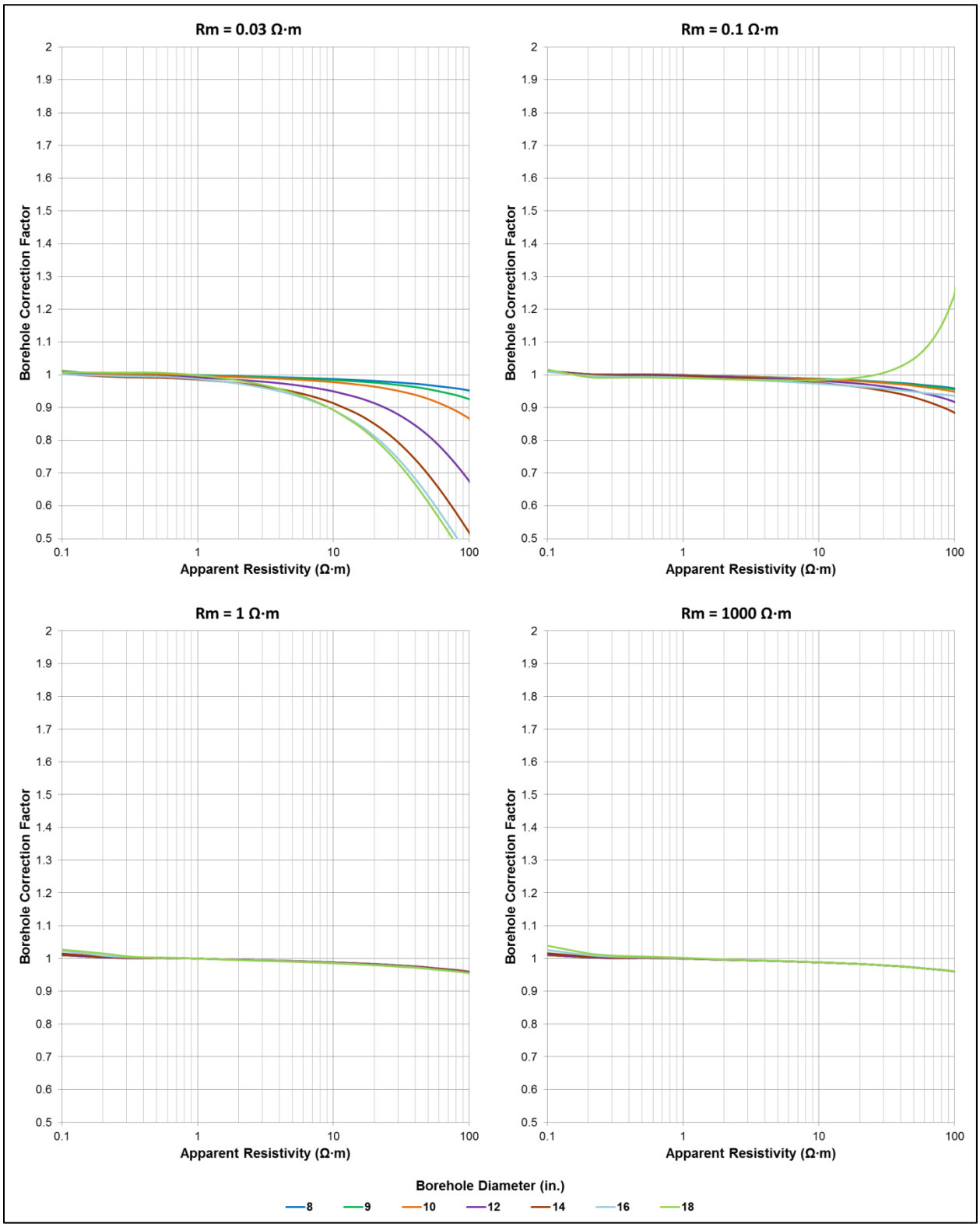


Chart 3-26

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 48-in. Spacing, 125 kHz, Phase-Shift Resistivity

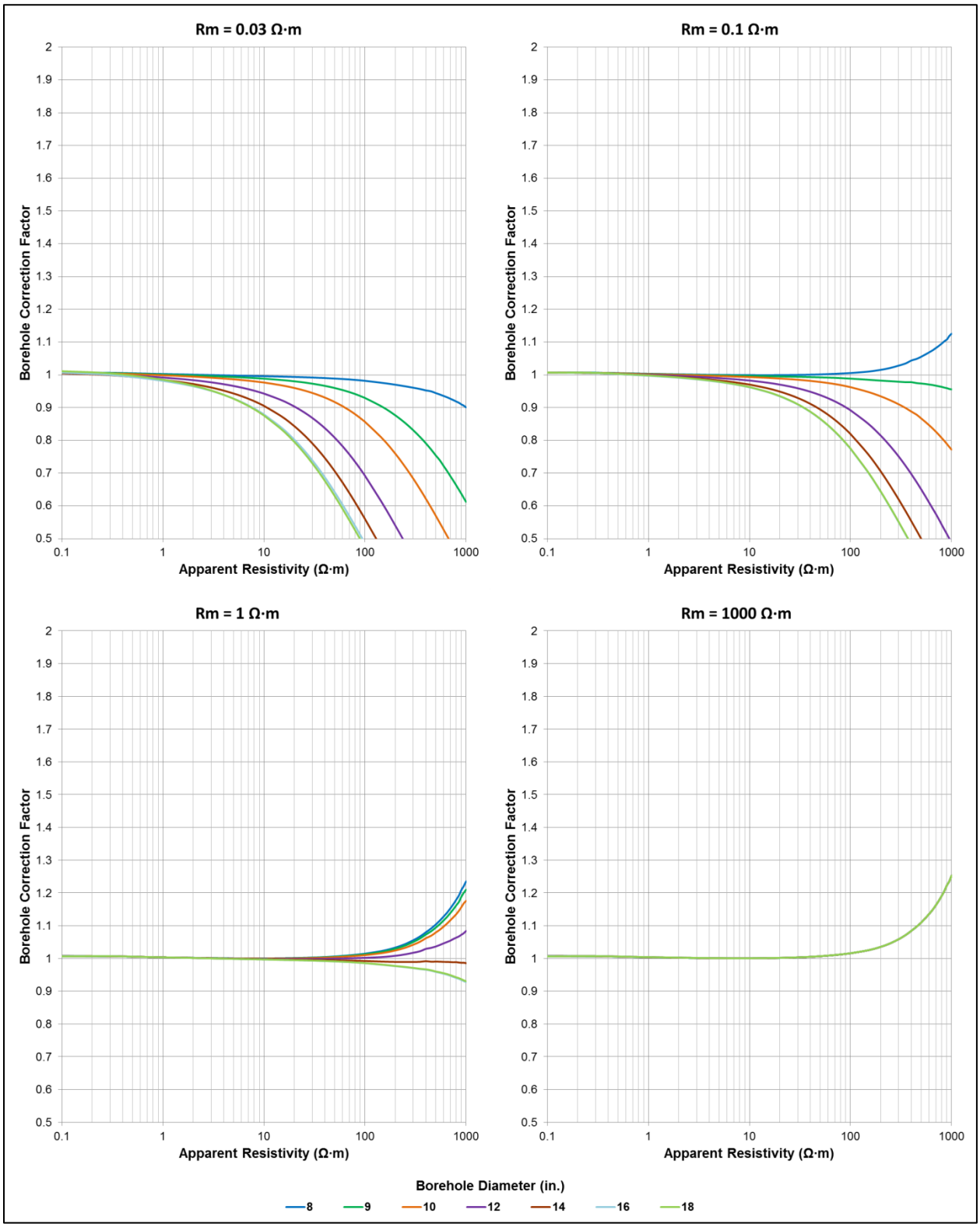


Chart 3-27

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. ADR™ Tool, 48-in. Spacing, 125 kHz, Attenuation Resistivity

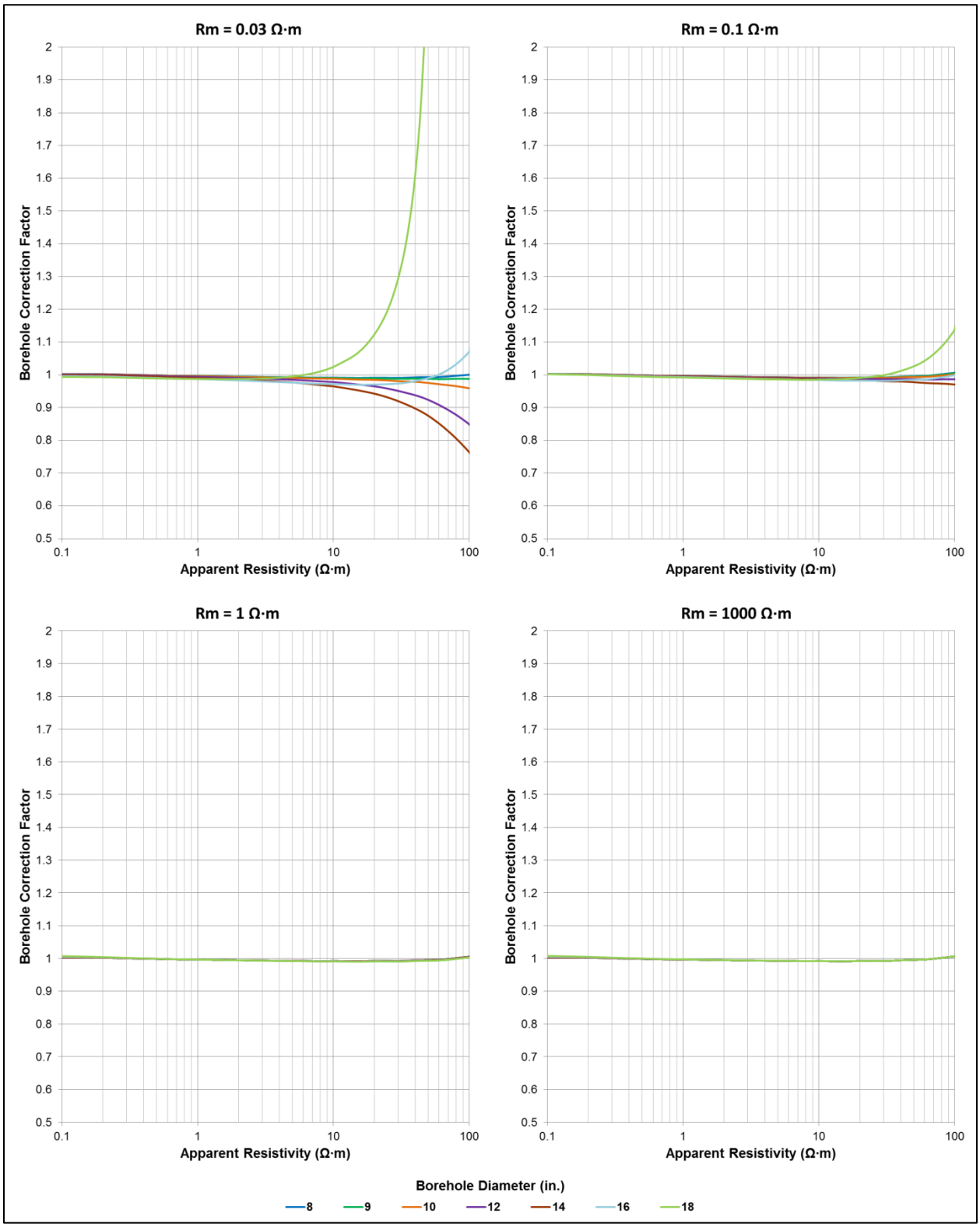


Chart 3-28

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 16-in. Spacing, 2 MHz, Phase-Shift Resistivity

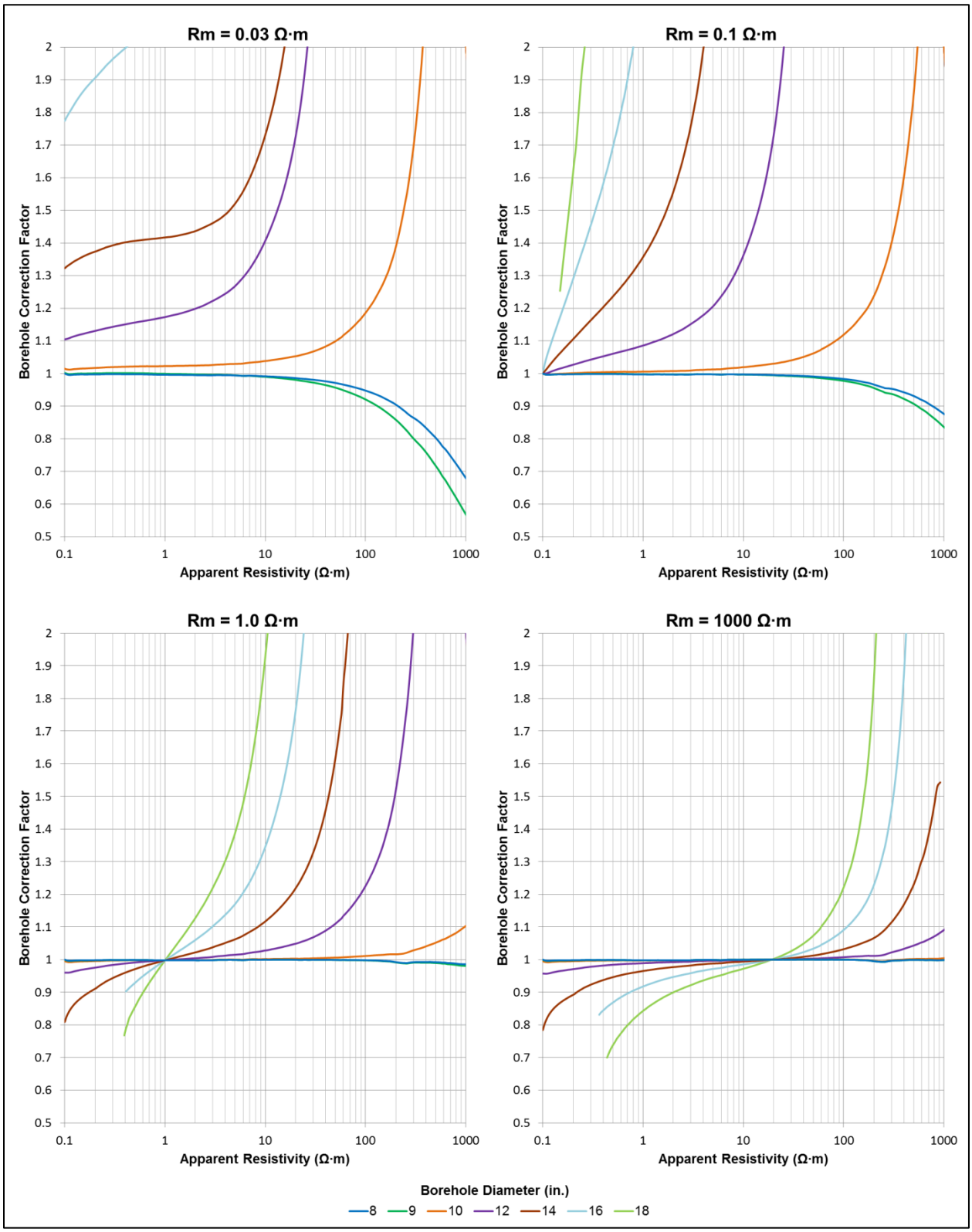


Chart 3-29

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 16-in. Spacing, 2 MHz, Attenuation Resistivity

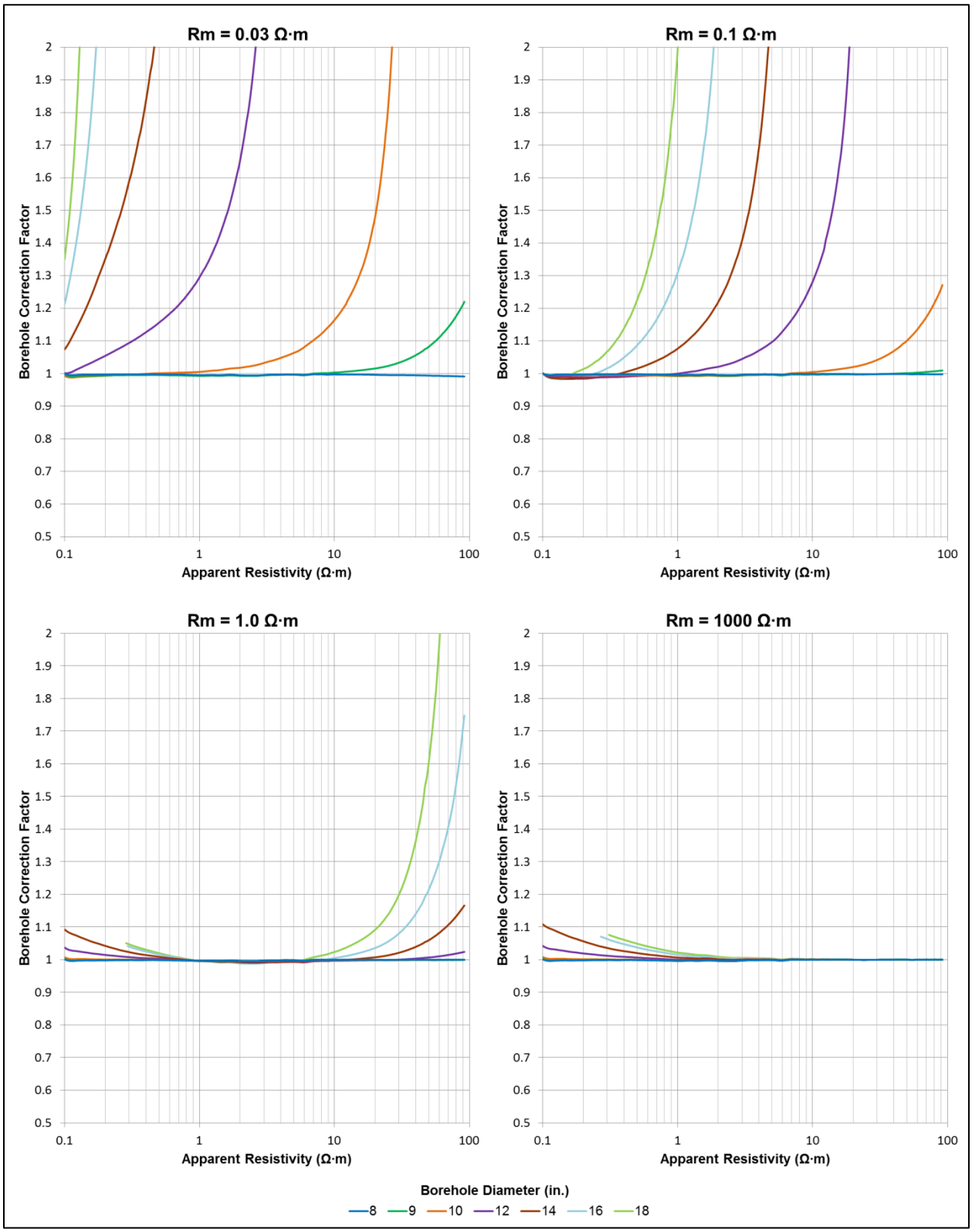


Chart 3-30

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 16-in. Spacing, 500 kHz, Phase-Shift Resistivity

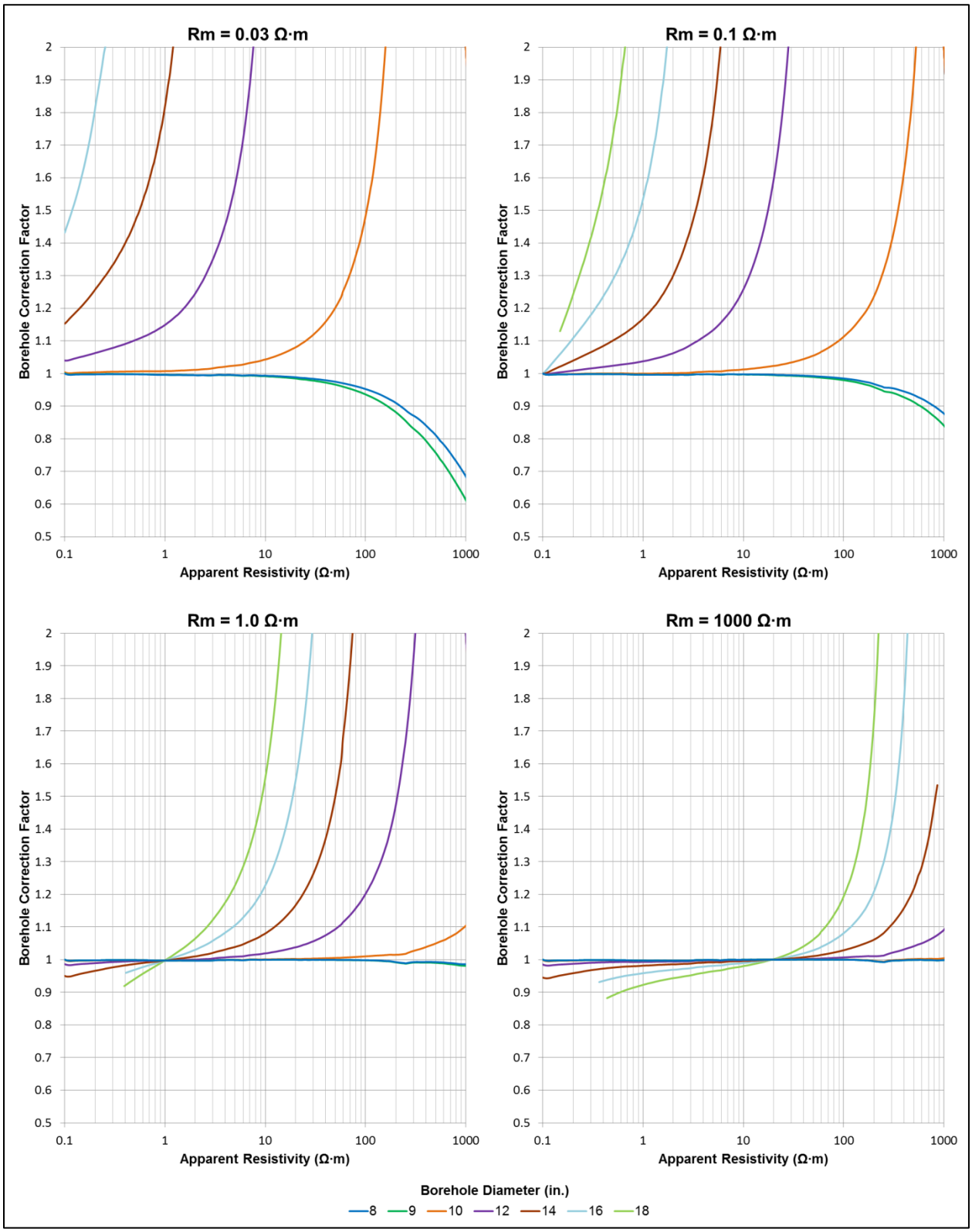


Chart 3-31

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 16-in. Spacing, 500 kHz, Attenuation Resistivity

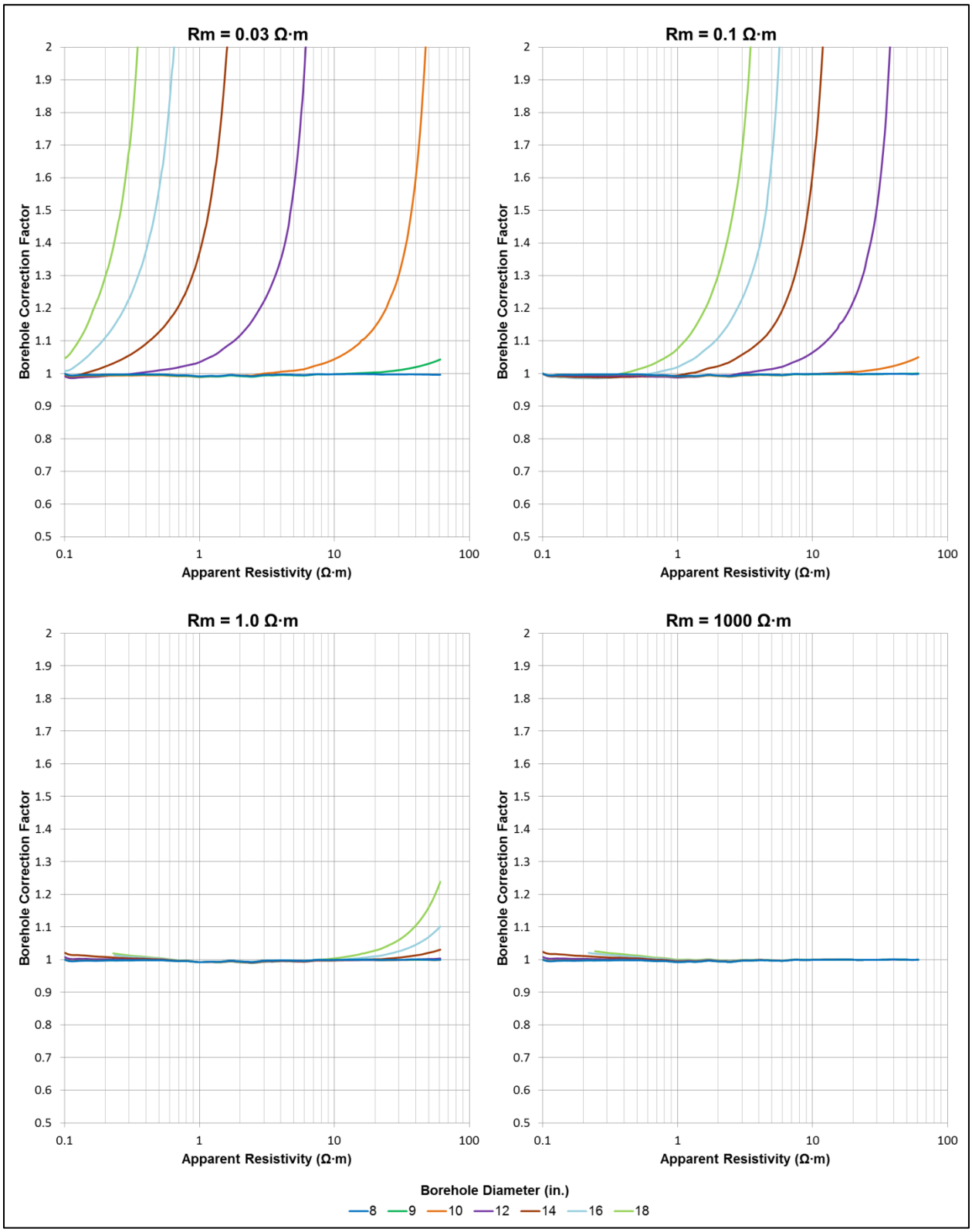


Chart 3-32

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 16-in. Spacing, 250 kHz, Phase-Shift Resistivity

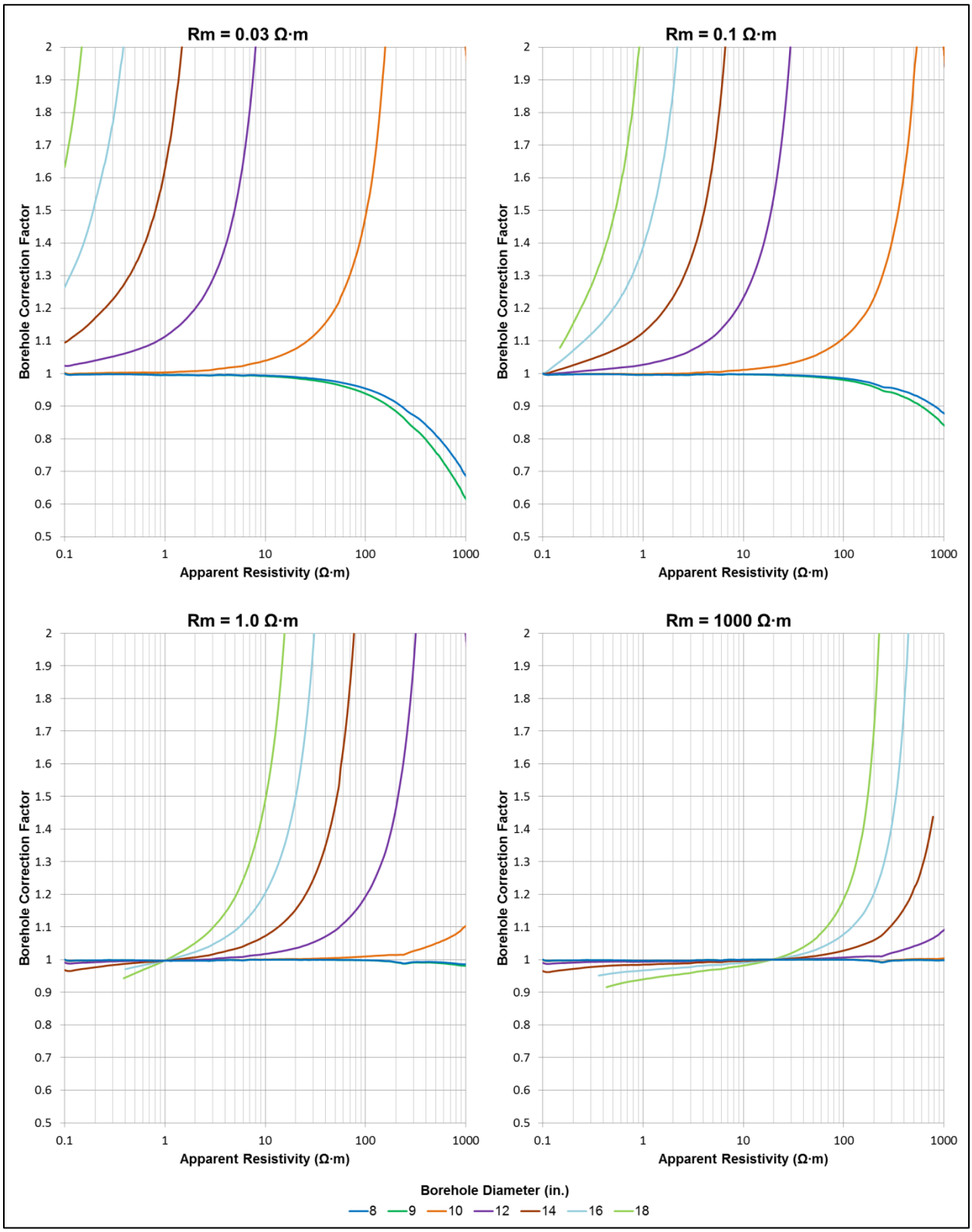


Chart 3-33

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 16-in. Spacing, 250 kHz, Attenuation Resistivity

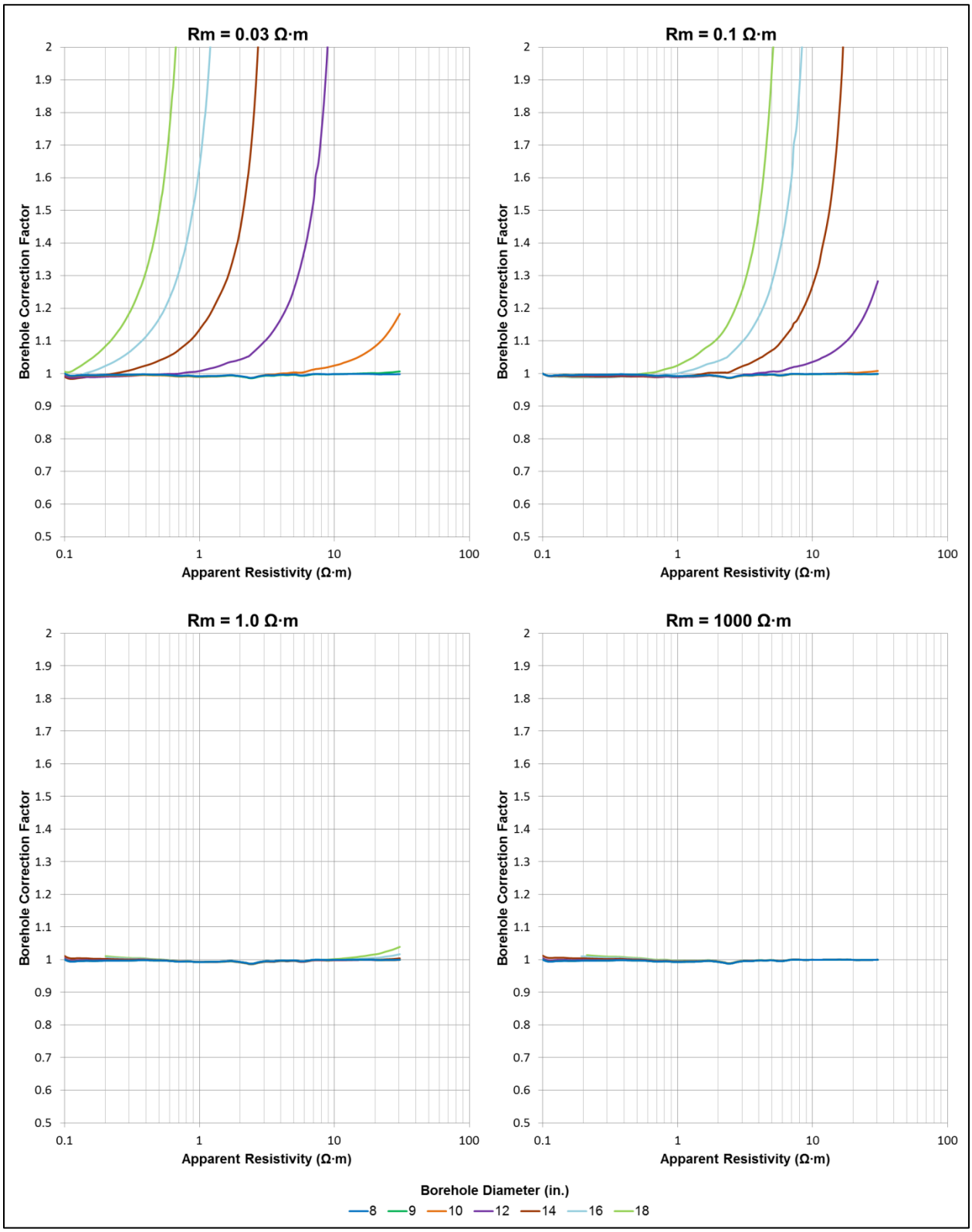


Chart 3-34

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 24-in. Spacing, 2 MHz, Phase-Shift Resistivity

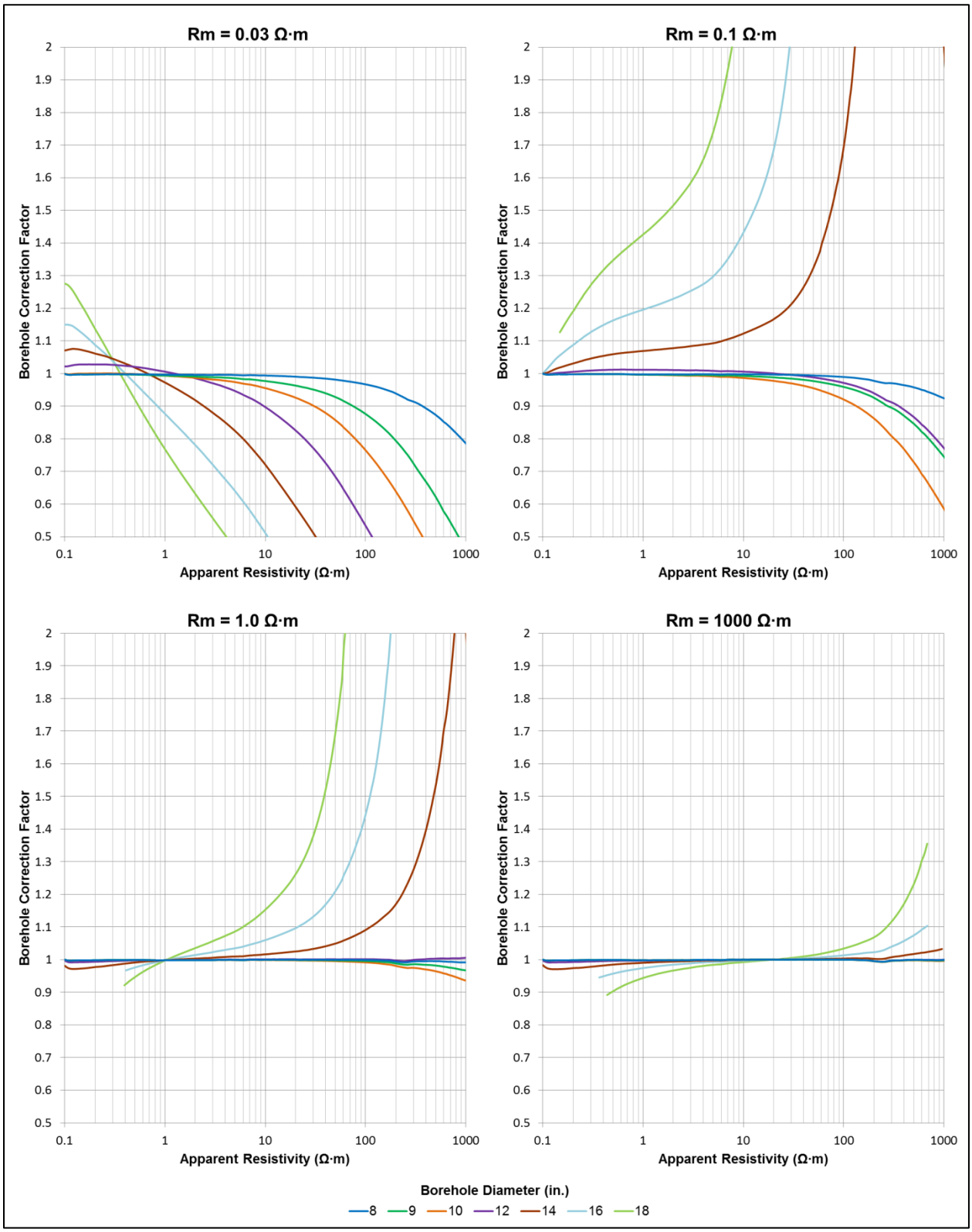


Chart 3-35

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 24-in. Spacing, 2 MHz, Attenuation Resistivity

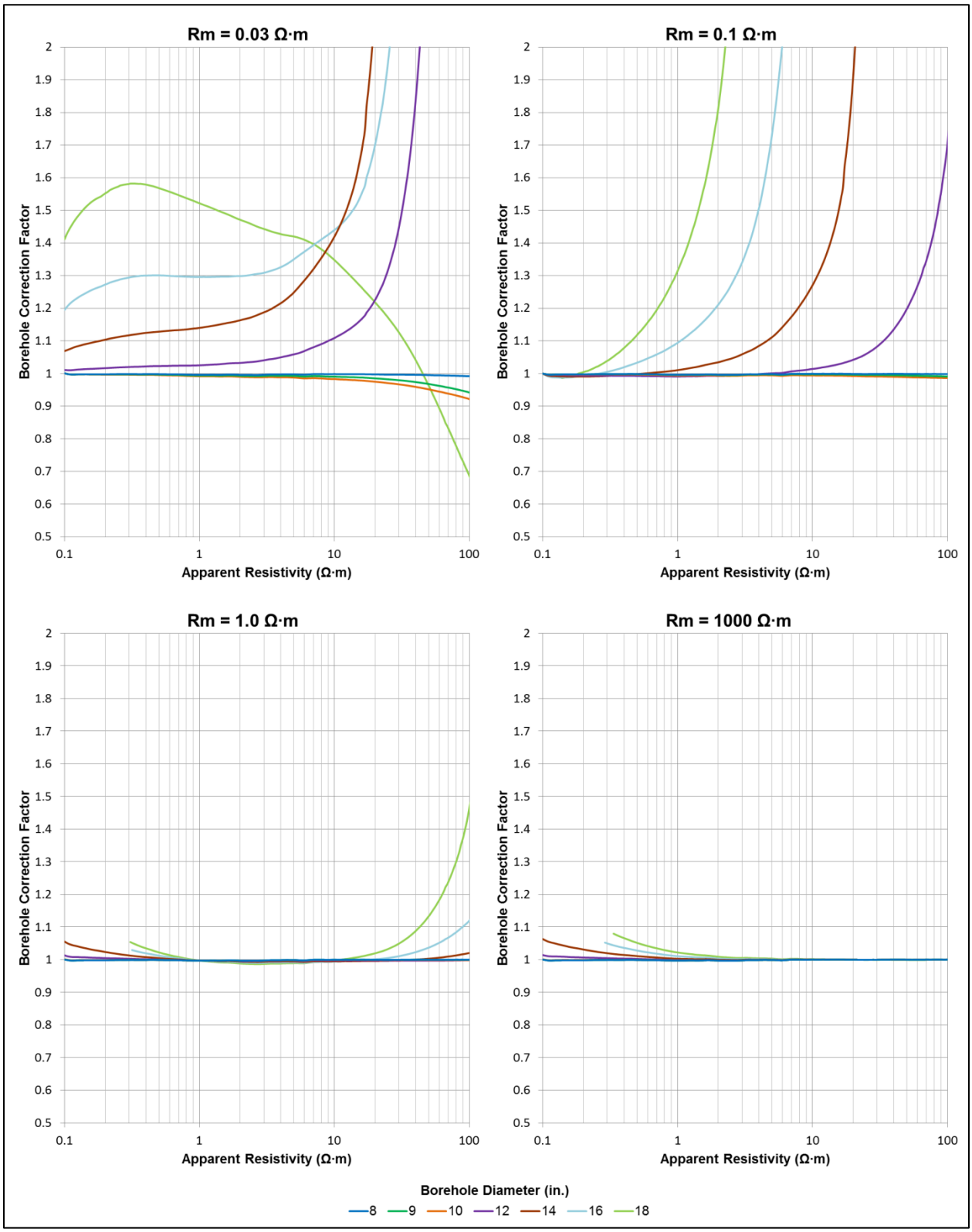


Chart 3-36

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 24-in. Spacing, 500 kHz, Phase-Shift Resistivity

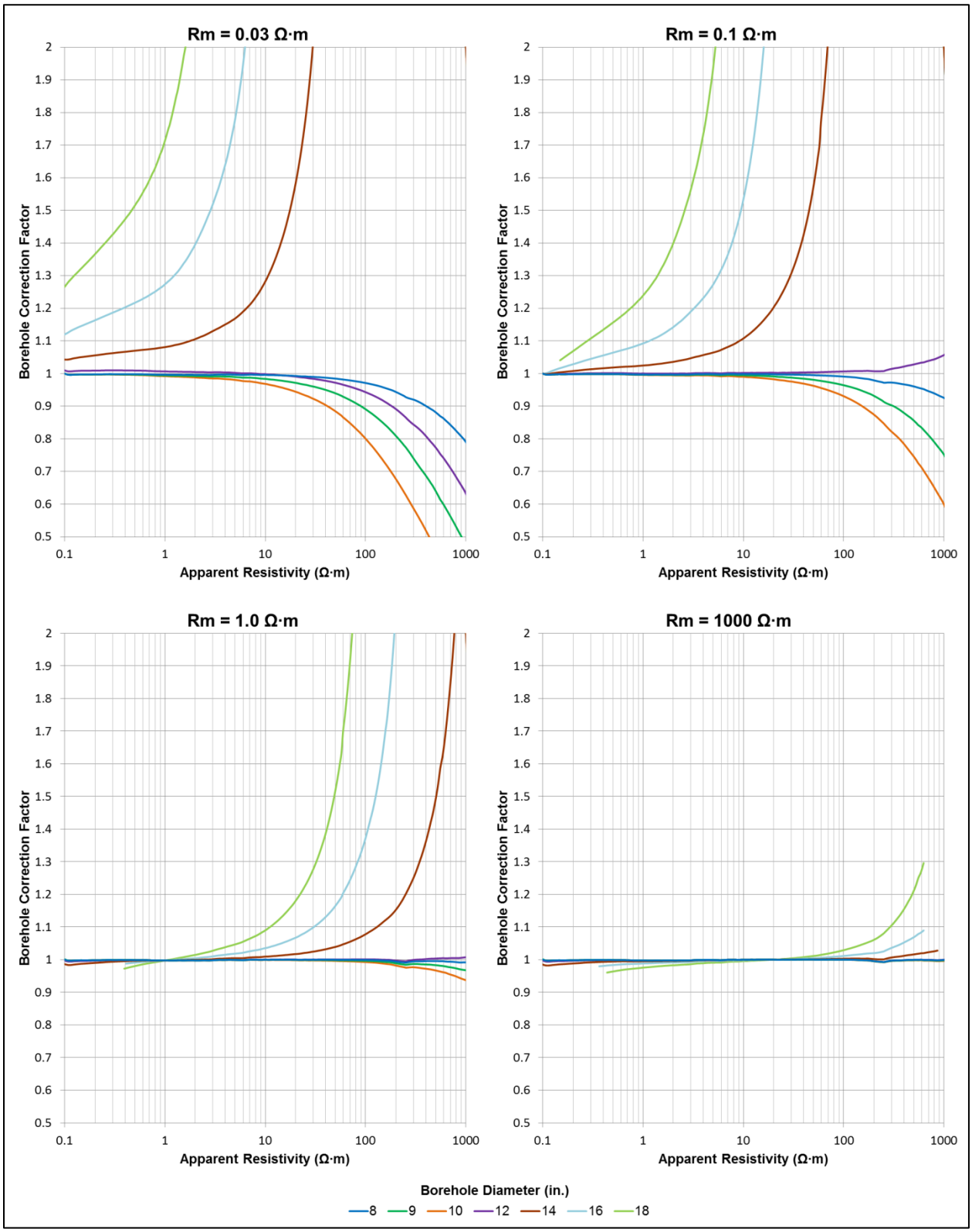


Chart 3-37

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 24-in. Spacing, 500 kHz, Attenuation Resistivity

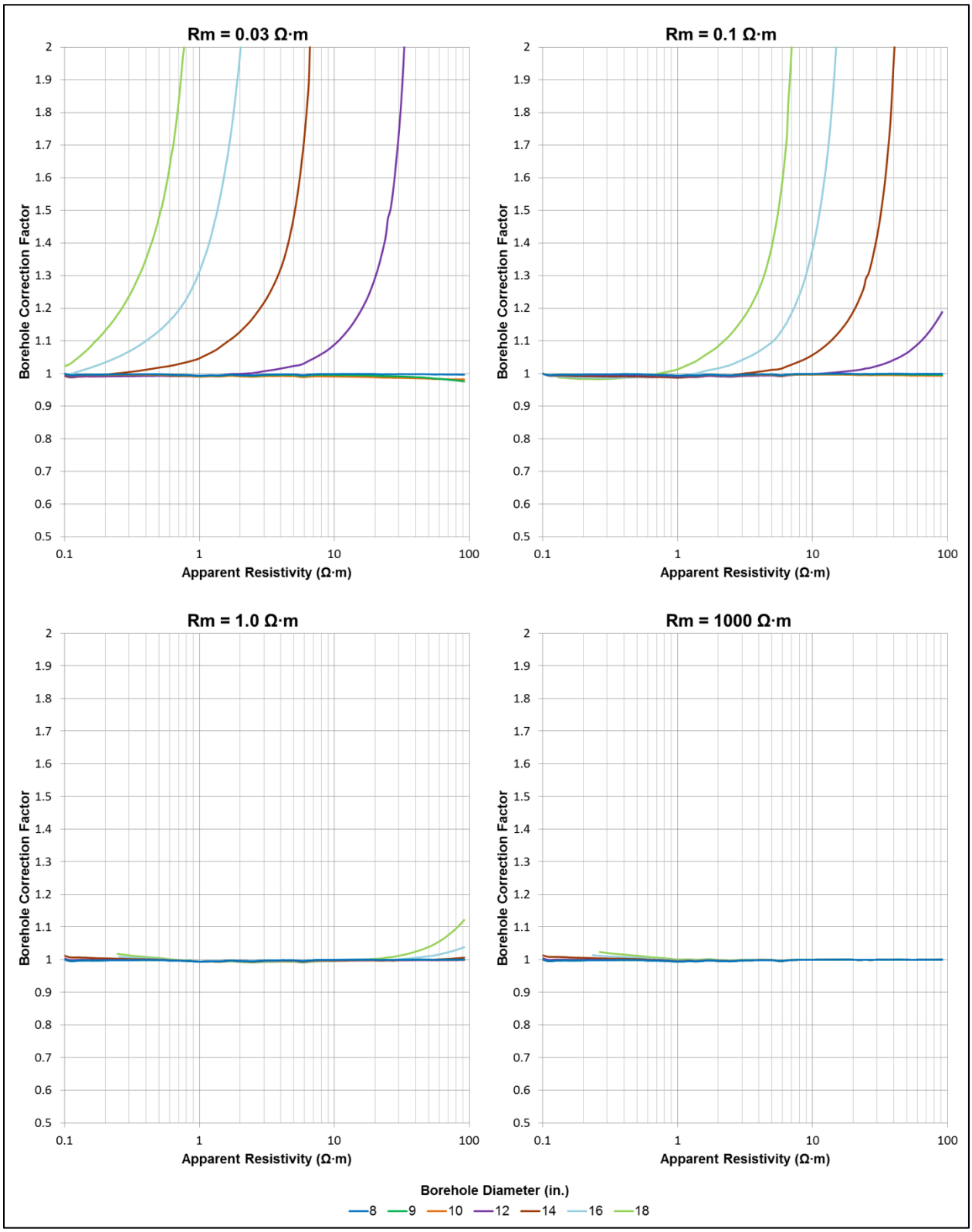


Chart 3-38

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 24-in. Spacing, 250 kHz, Phase-Shift Resistivity

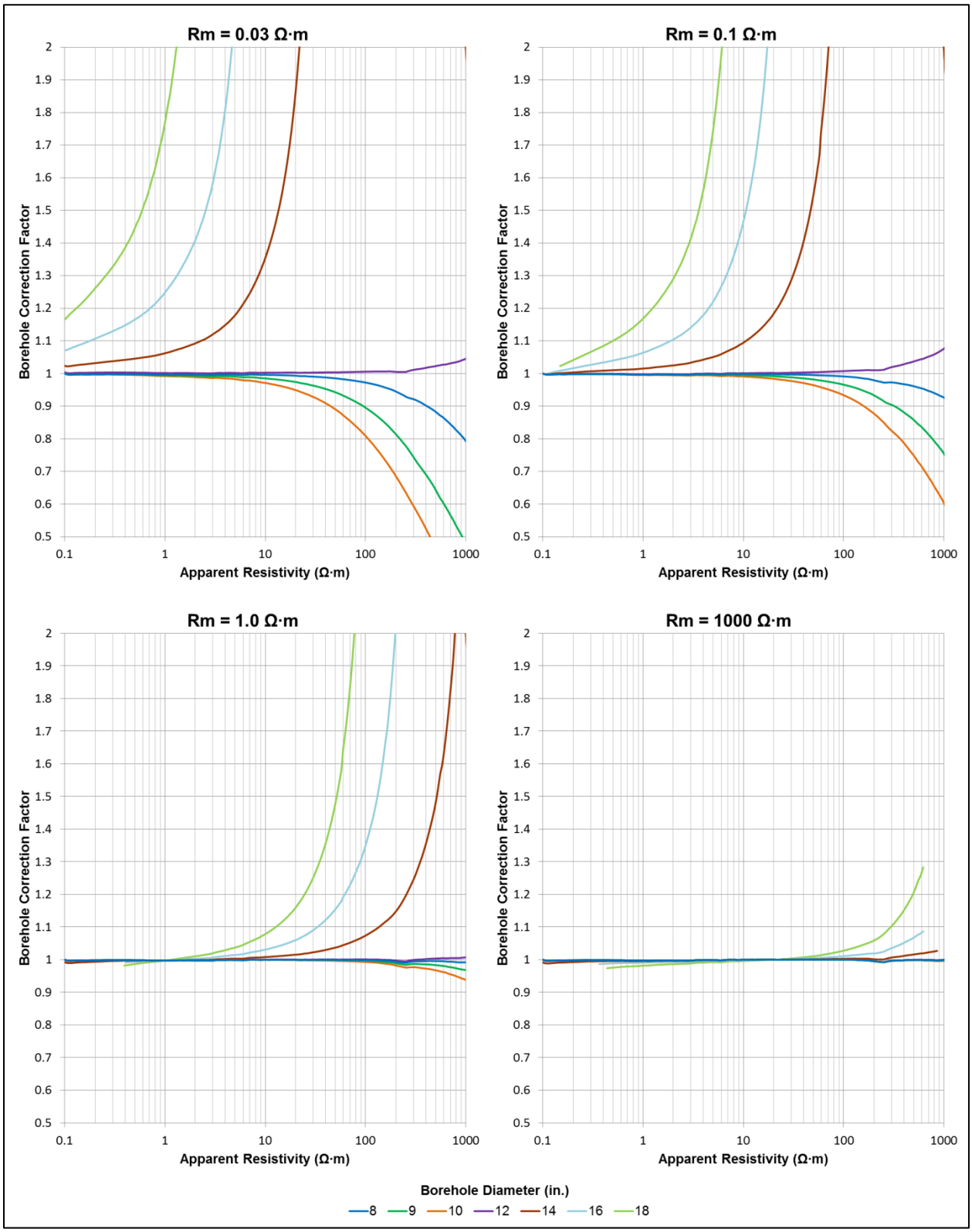


Chart 3-39

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 24-in. Spacing, 250 kHz, Attenuation Resistivity

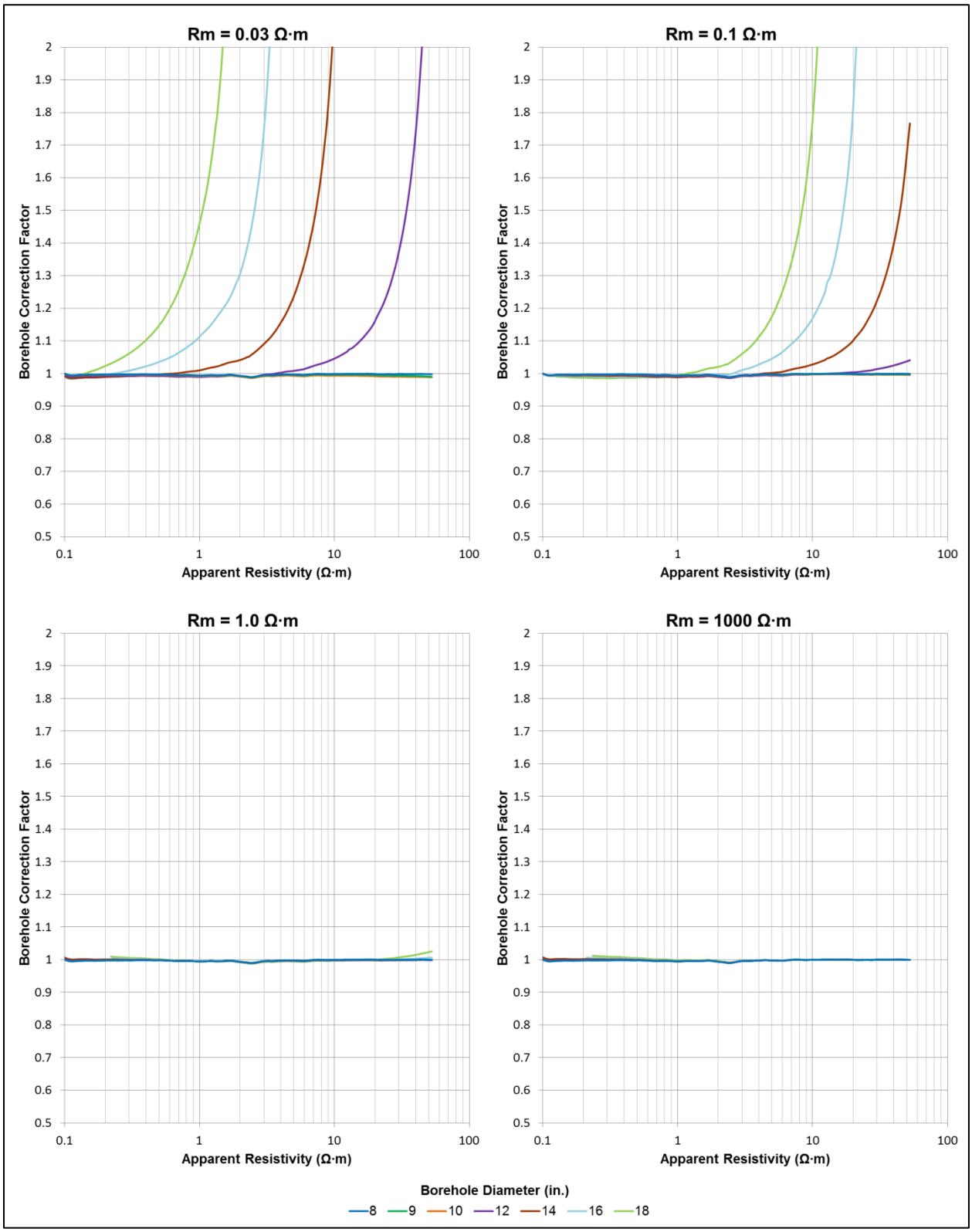


Chart 3-40

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 32-in. Spacing, 2 MHz, Phase-Shift Resistivity

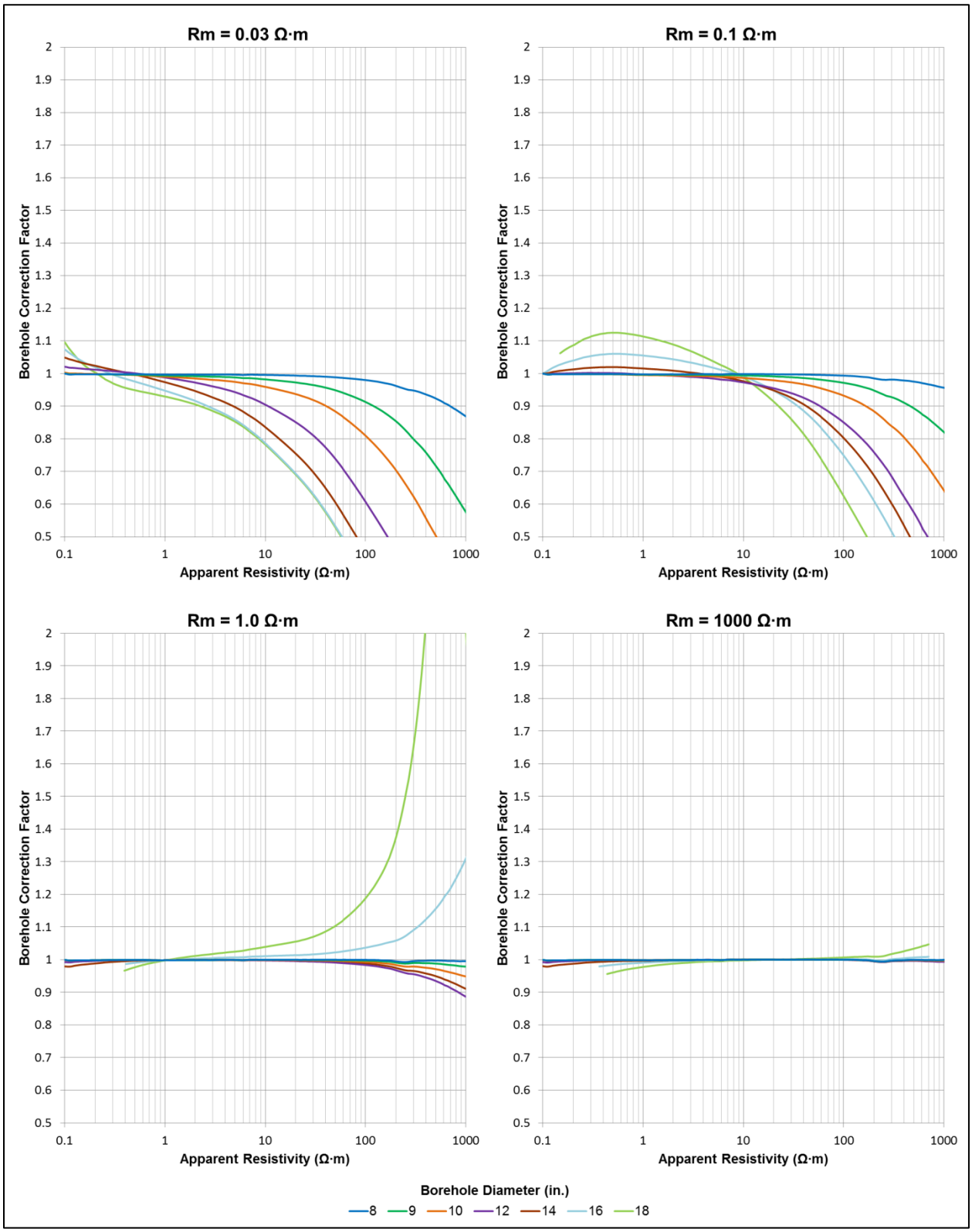


Chart 3-41

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 32-in. Spacing, 2 MHz, Attenuation Resistivity

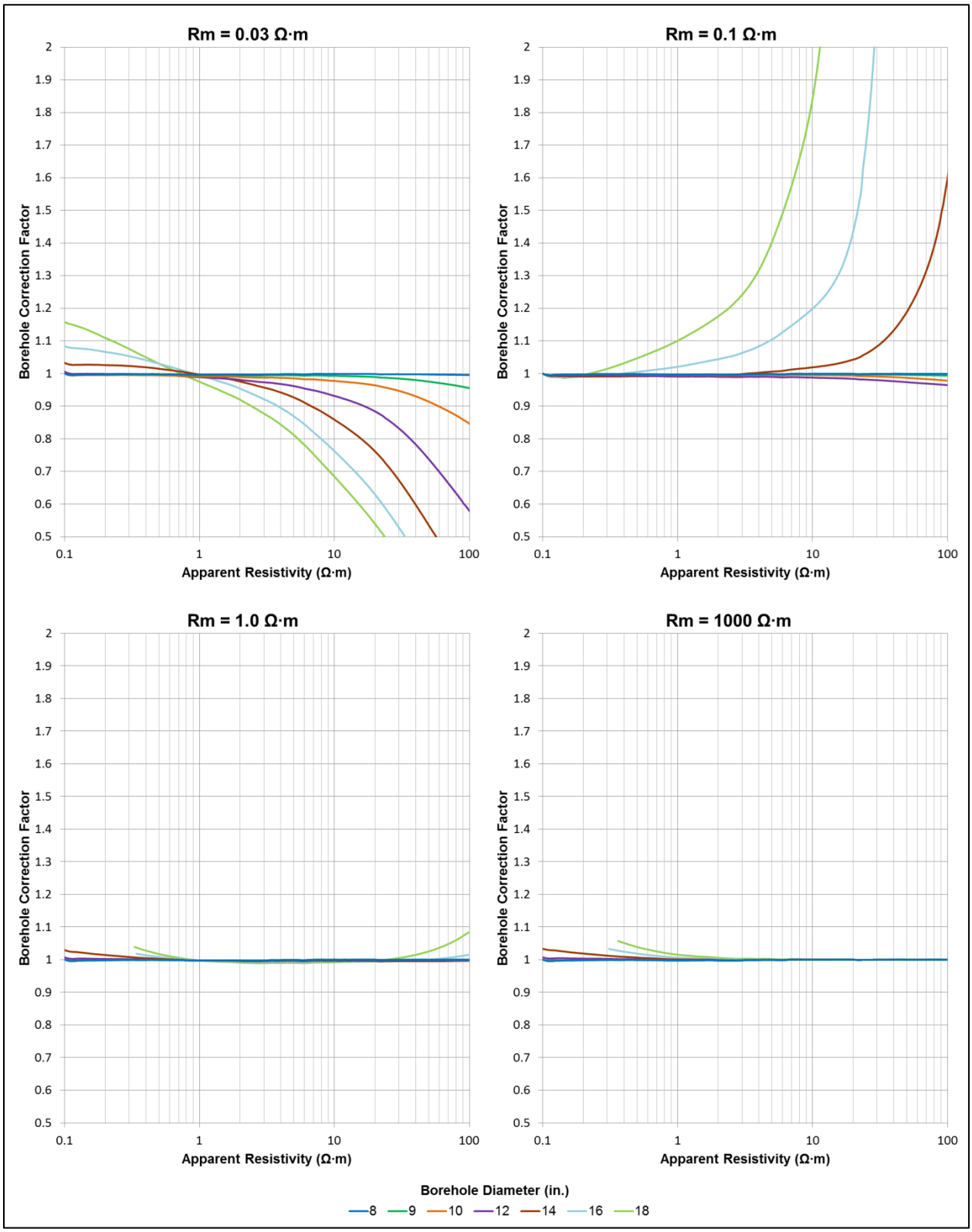


Chart 3-42

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 32-in. Spacing, 500 kHz, Phase-Shift Resistivity

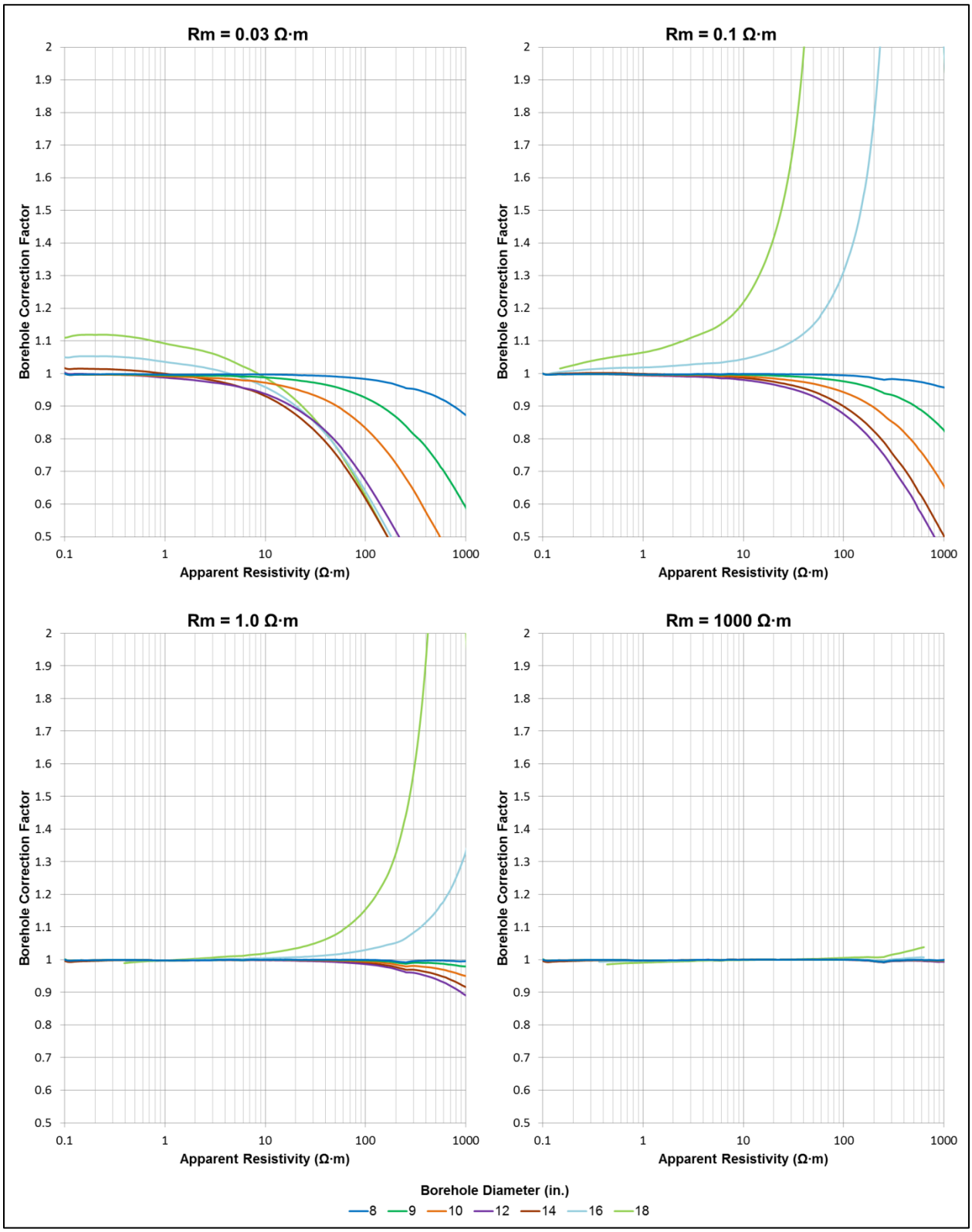


Chart 3-43

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 32-in. Spacing, 500 kHz, Attenuation Resistivity

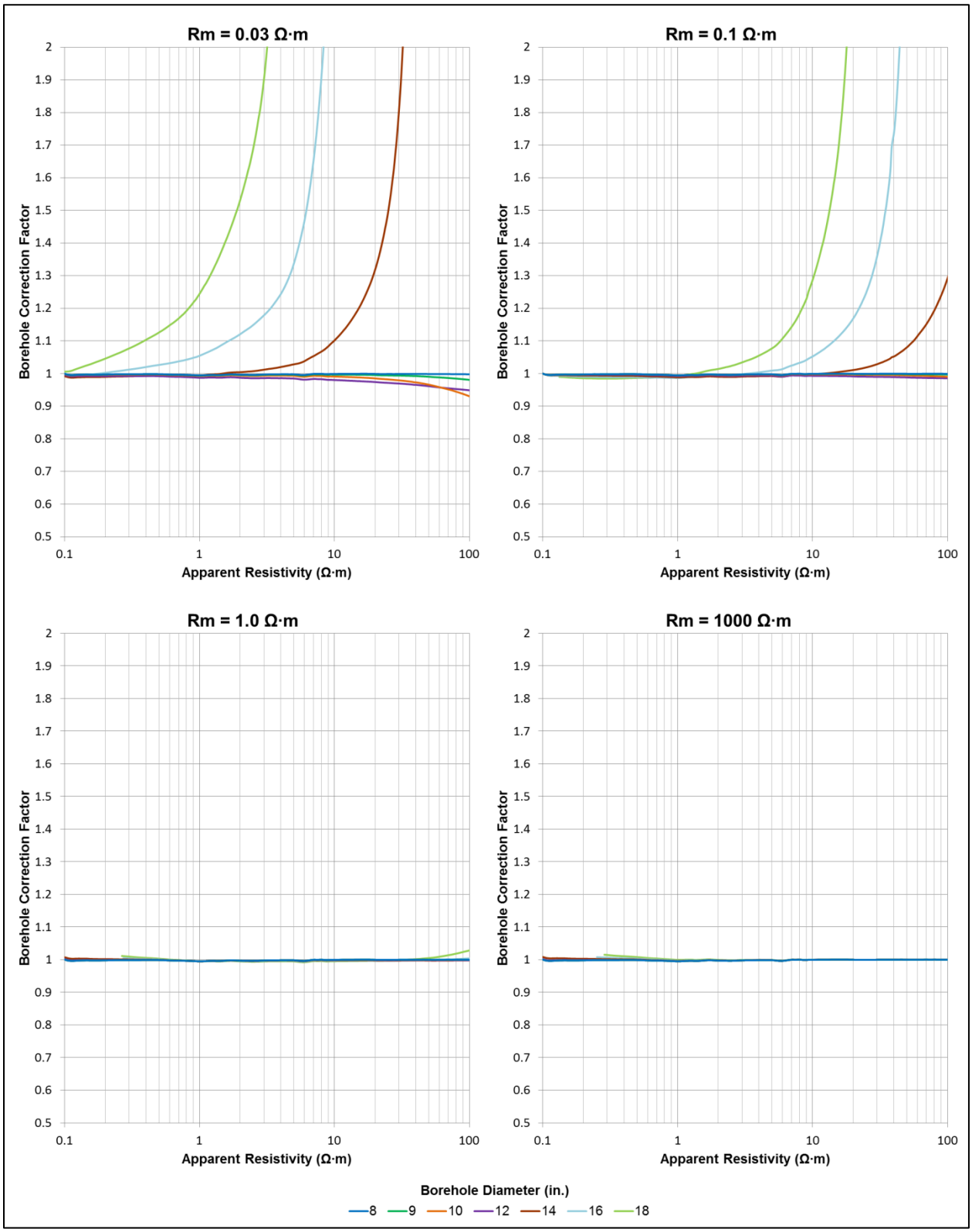


Chart 3-44

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 32-in. Spacing, 250 kHz, Phase-Shift Resistivity

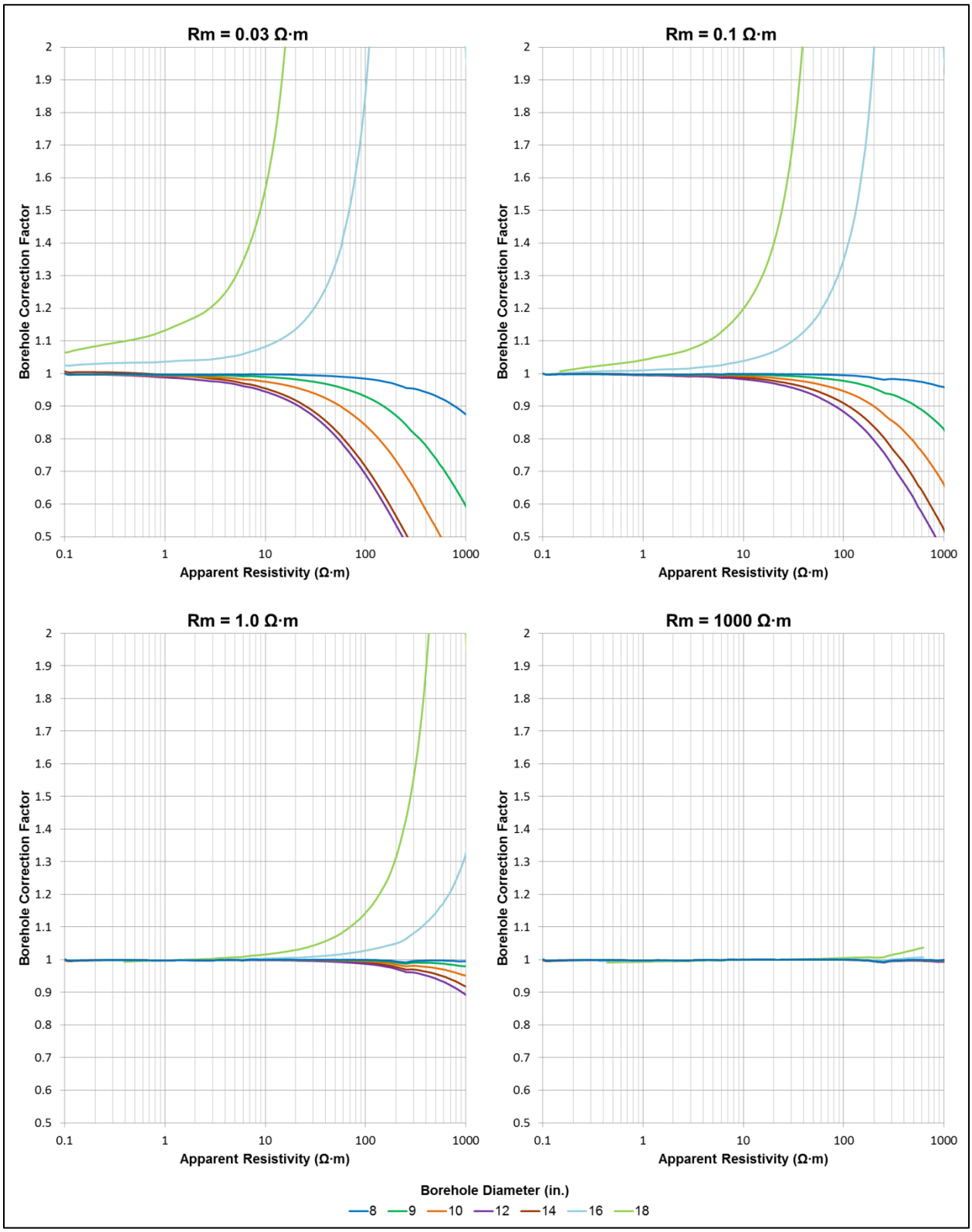


Chart 3-45

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 32-in. Spacing, 250 kHz, Attenuation Resistivity

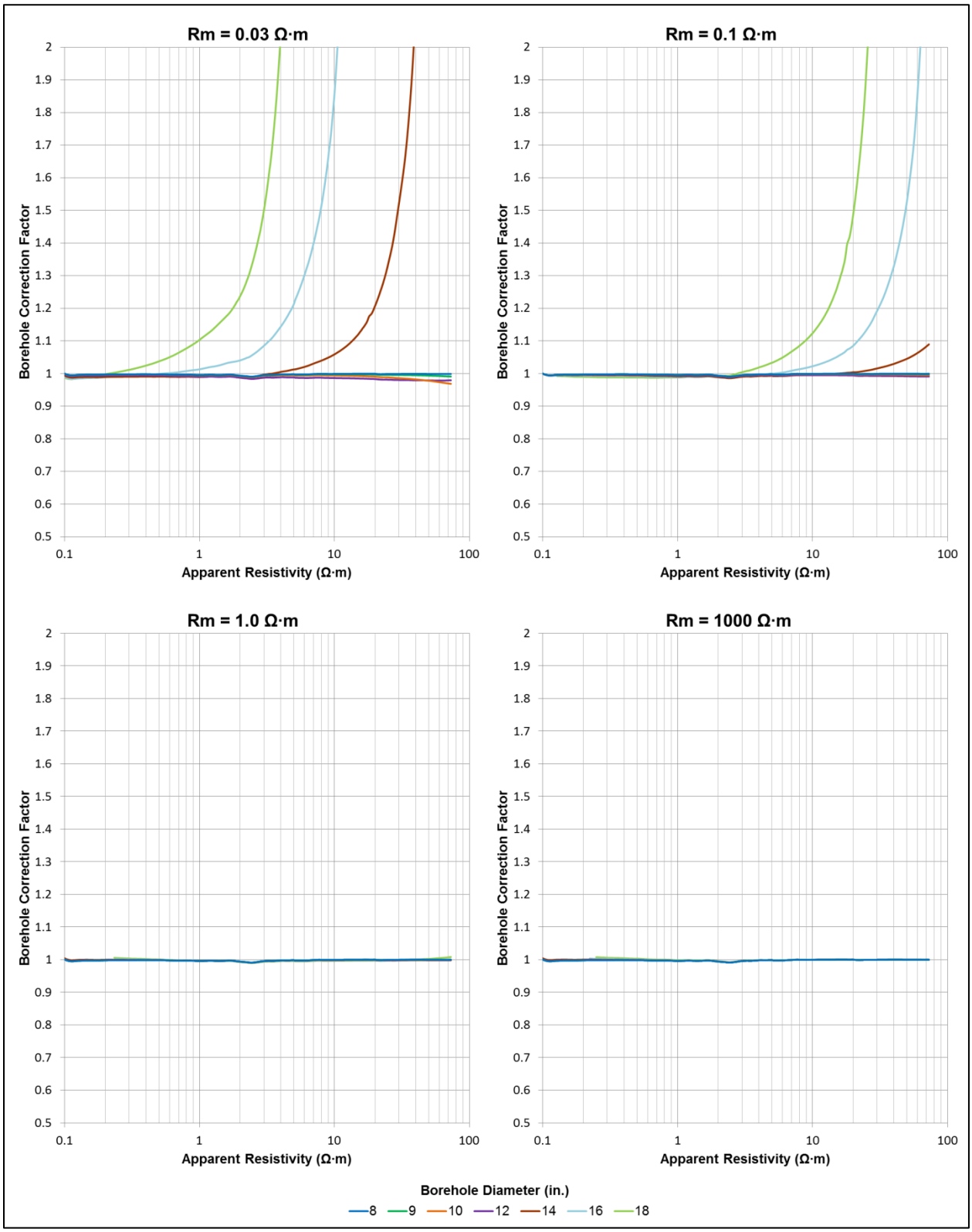


Chart 3-46

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 40-in. Spacing, 2 MHz, Phase-Shift Resistivity

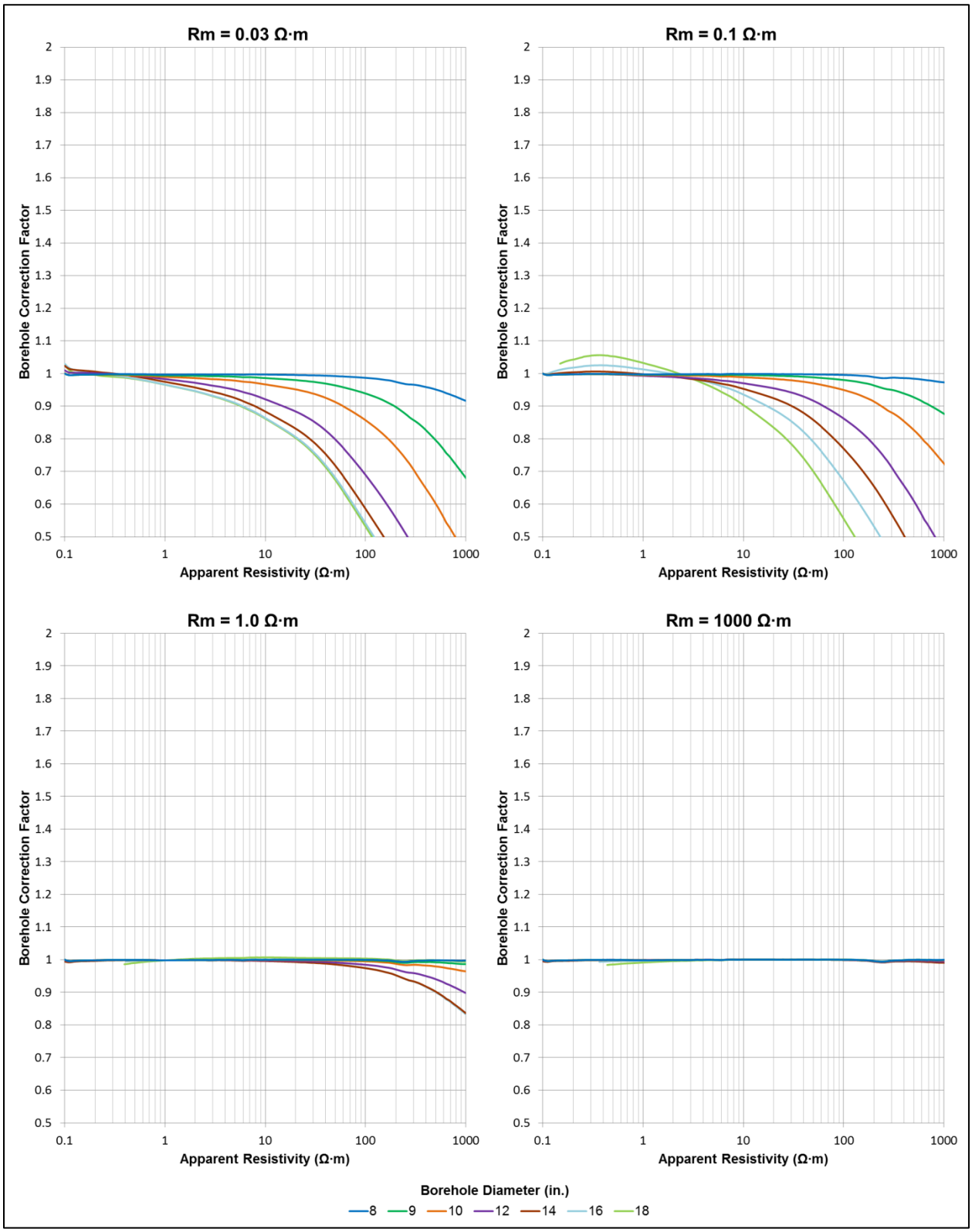


Chart 3-47

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 40-in. Spacing, 2 MHz, Attenuation Resistivity

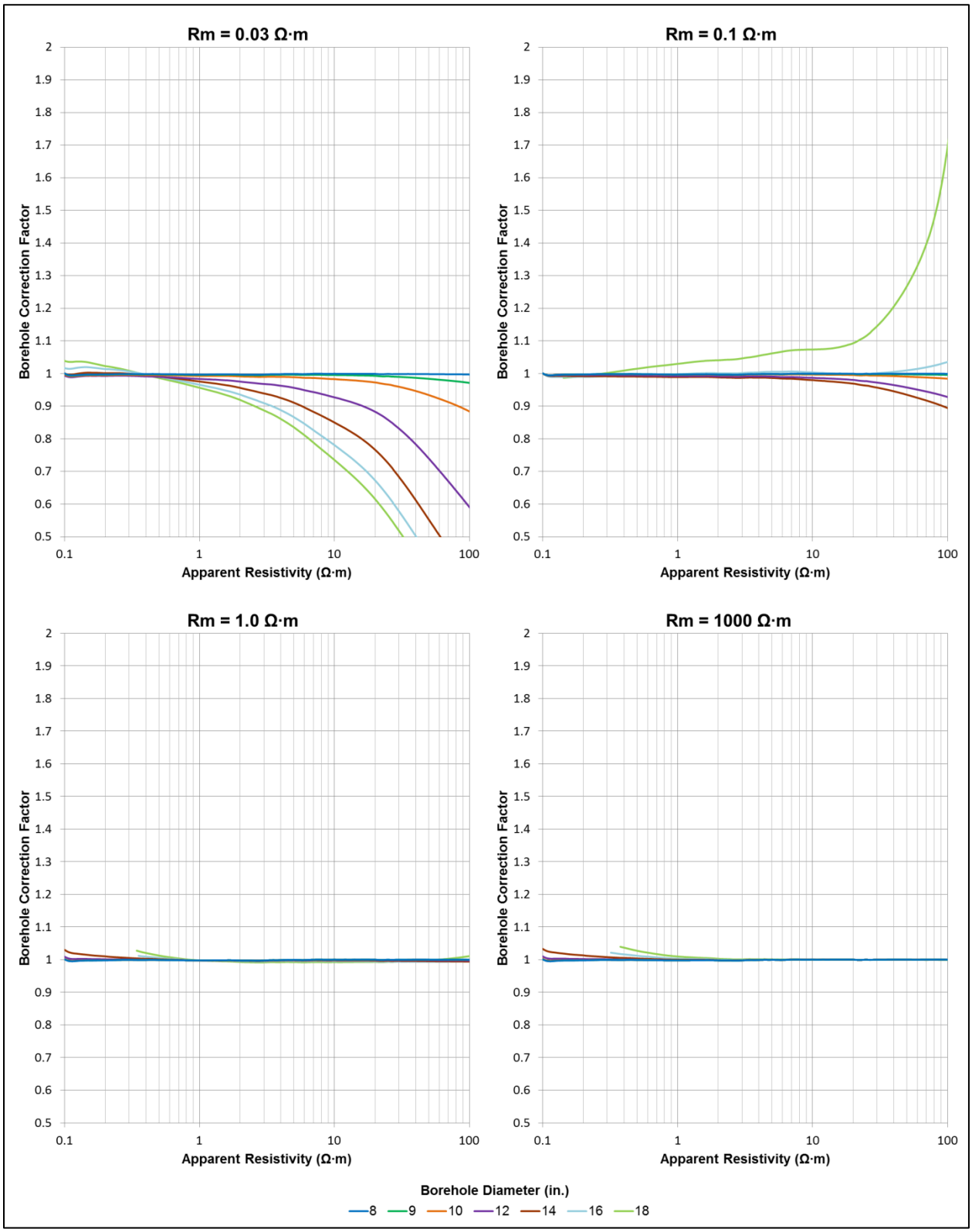


Chart 3-48

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 40-in. Spacing, 500 kHz, Phase-Shift Resistivity

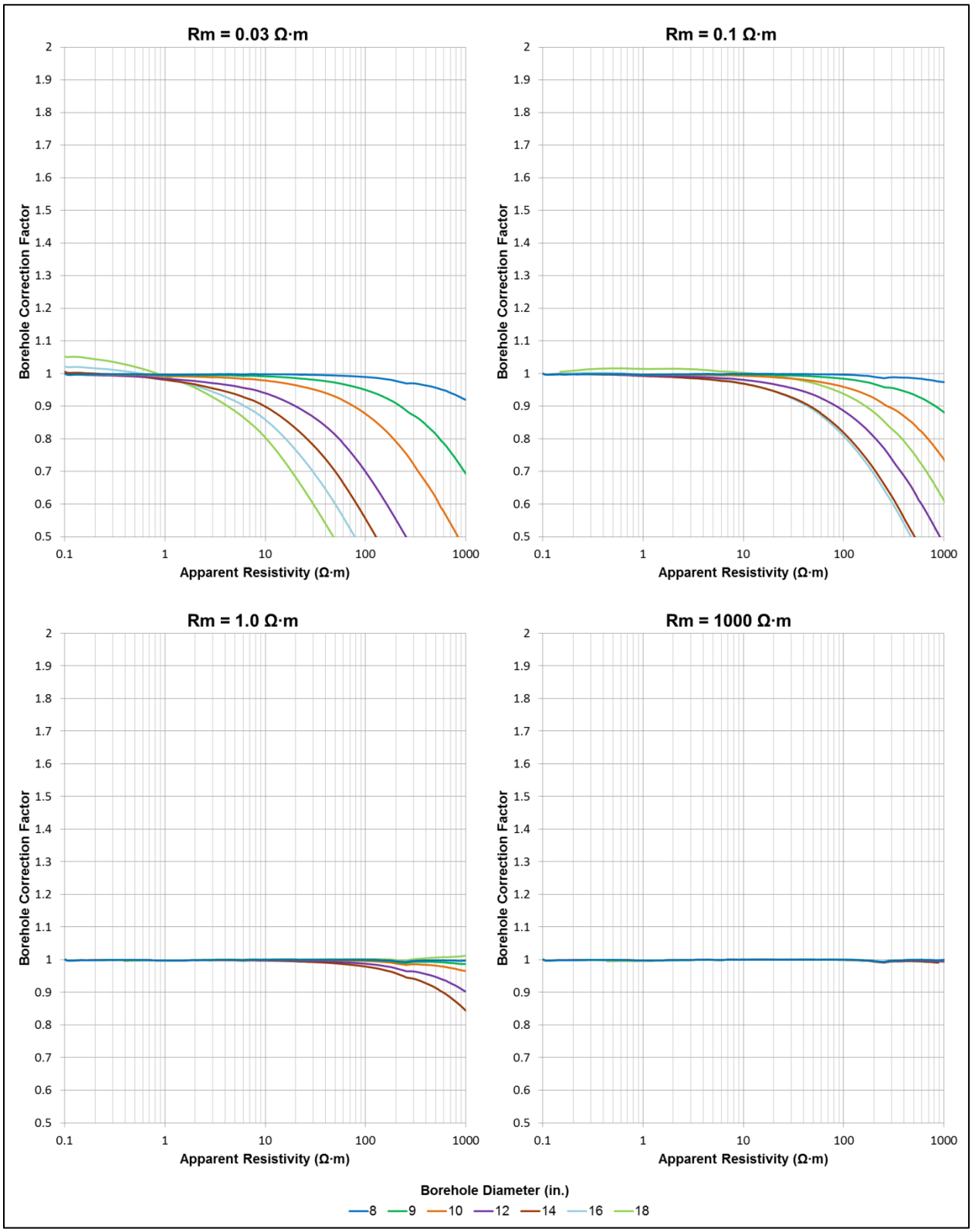


Chart 3-49

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 40-in. Spacing, 500 kHz, Attenuation Resistivity

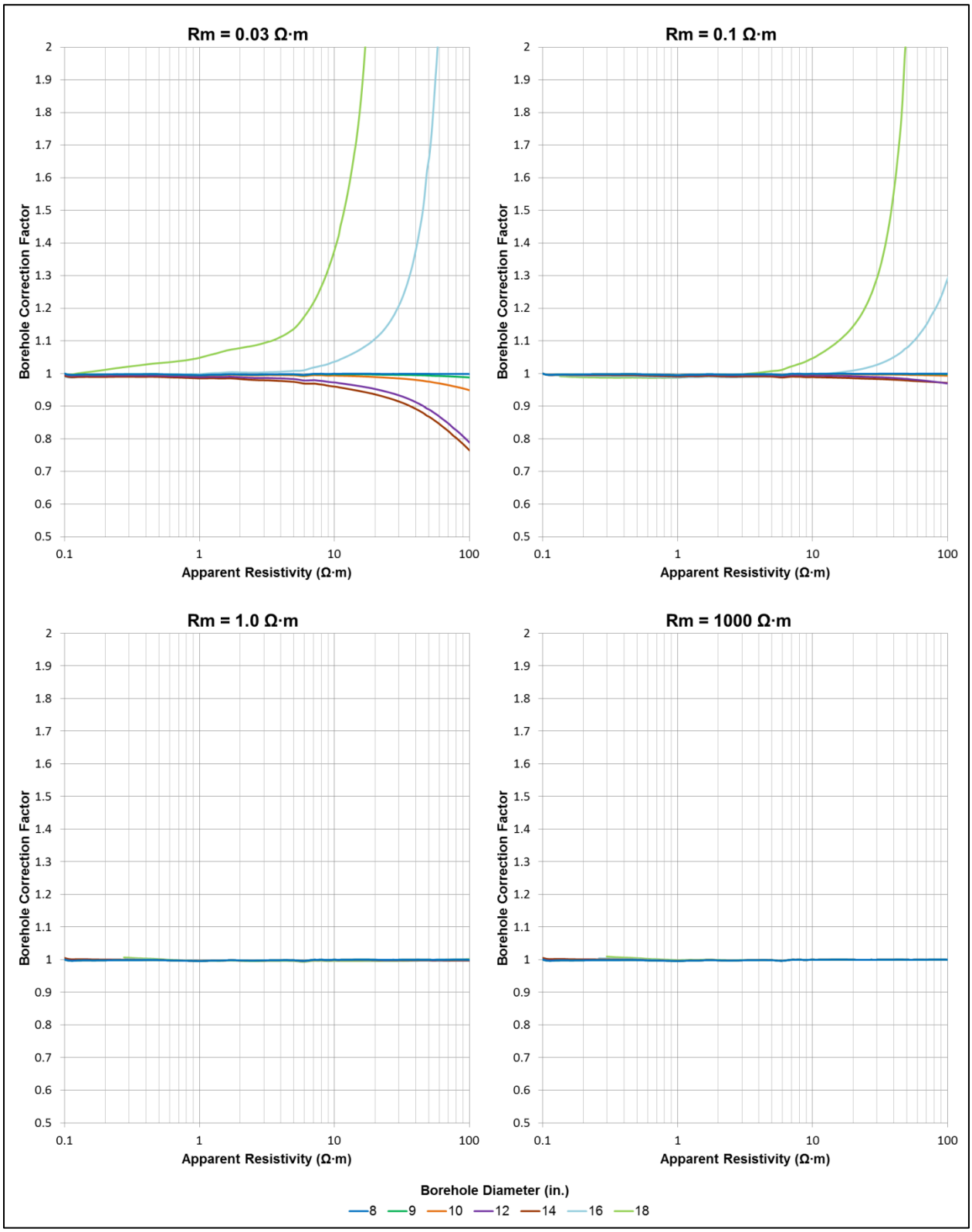


Chart 3-50

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 40-in. Spacing, 250 kHz, Phase-Shift Resistivity

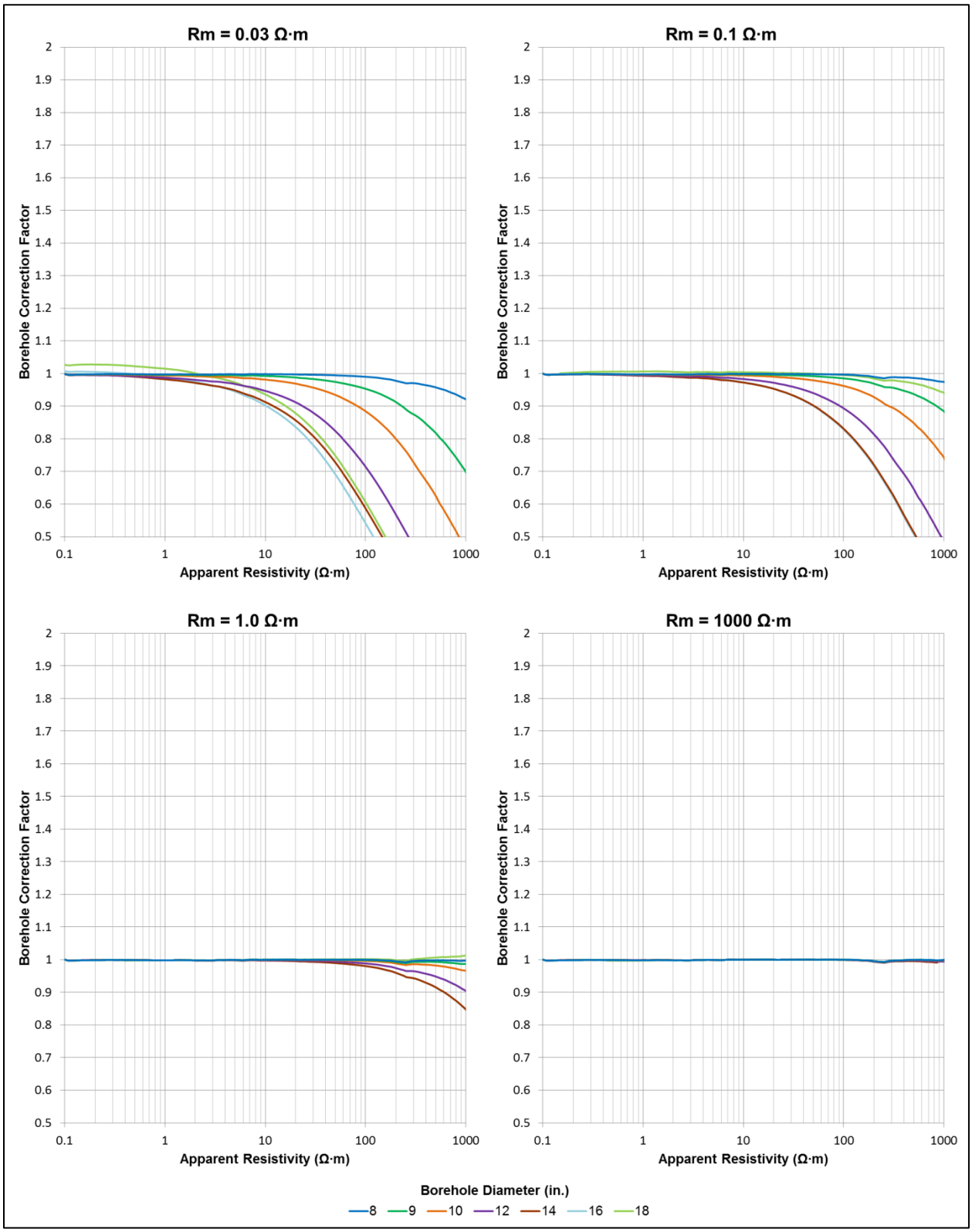


Chart 3-51

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 40-in. Spacing, 250 kHz, Attenuation Resistivity

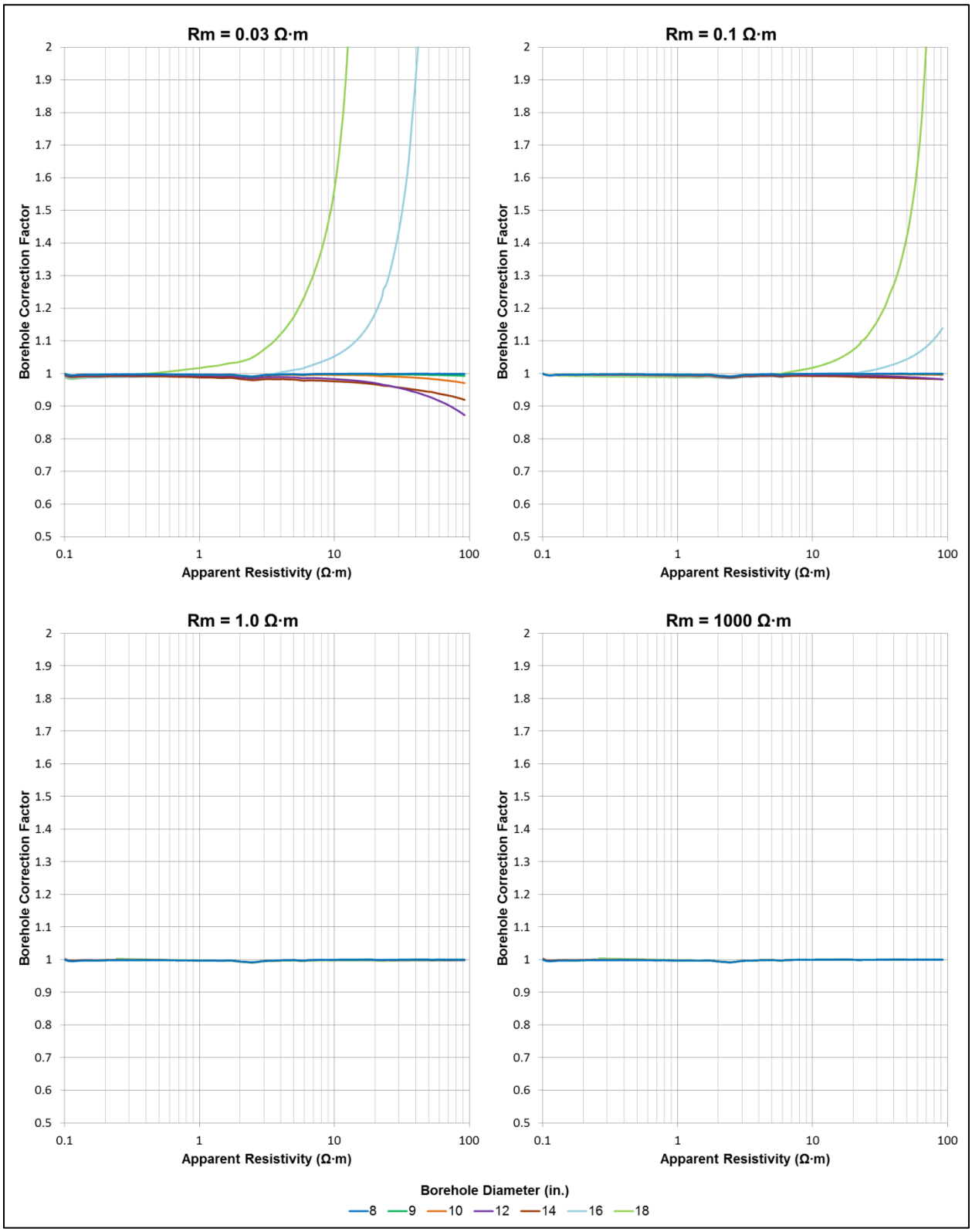


Chart 3-52

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 48-in. Spacing, 2 MHz, Phase-Shift Resistivity

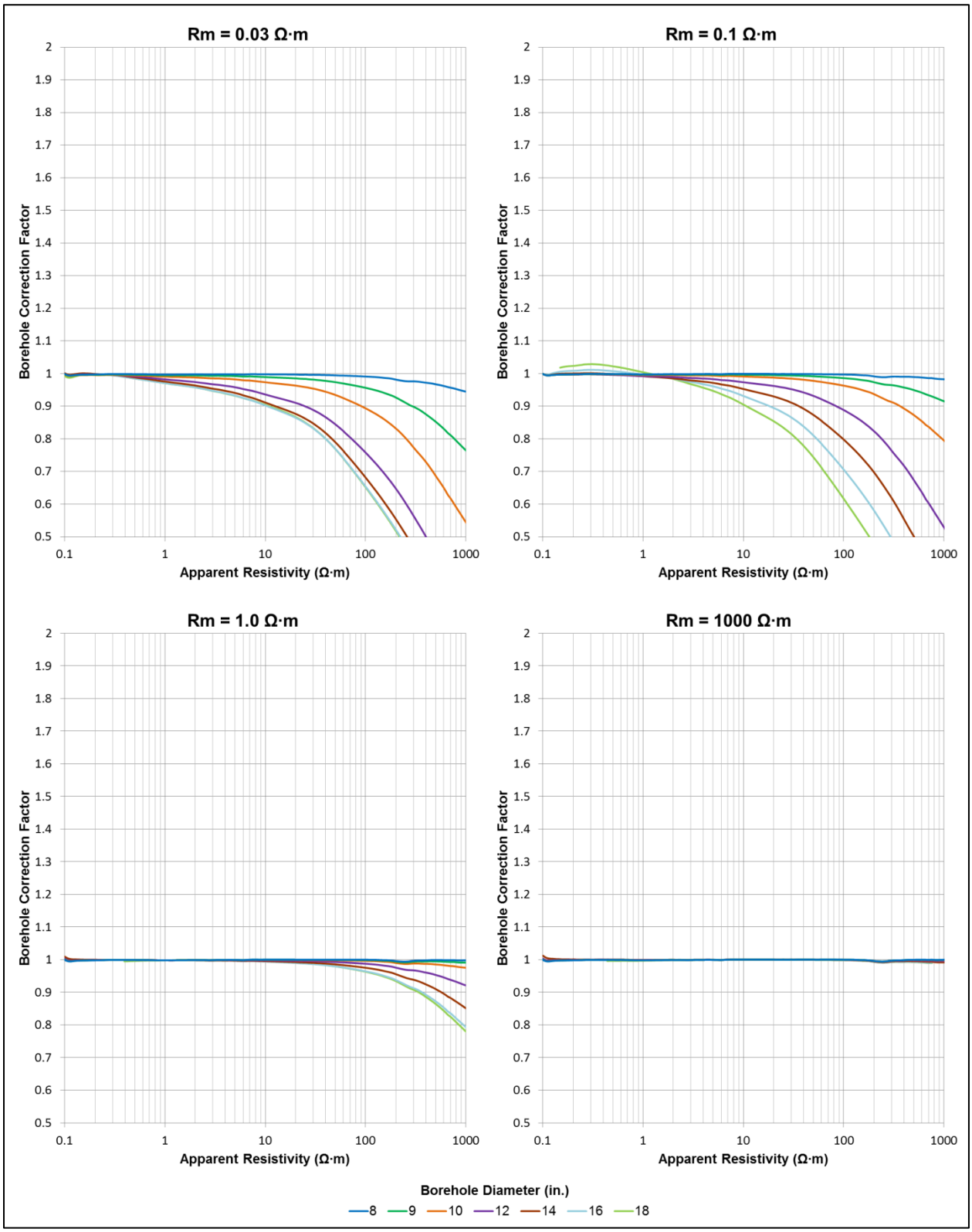


Chart 3-53

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 48-in. Spacing, 2 MHz, Attenuation Resistivity

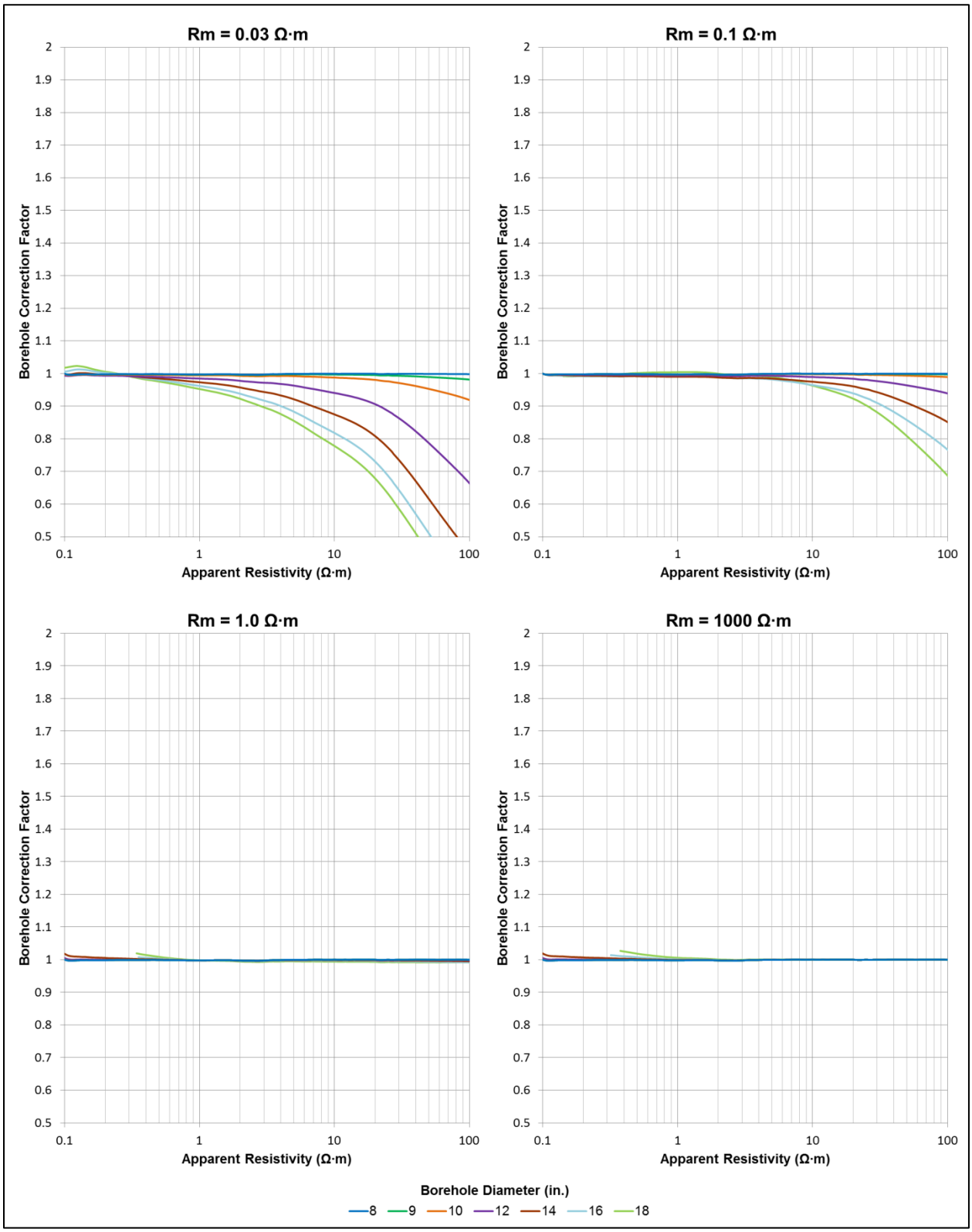


Chart 3-54

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 48-in. Spacing, 500 kHz, Phase-Shift Resistivity

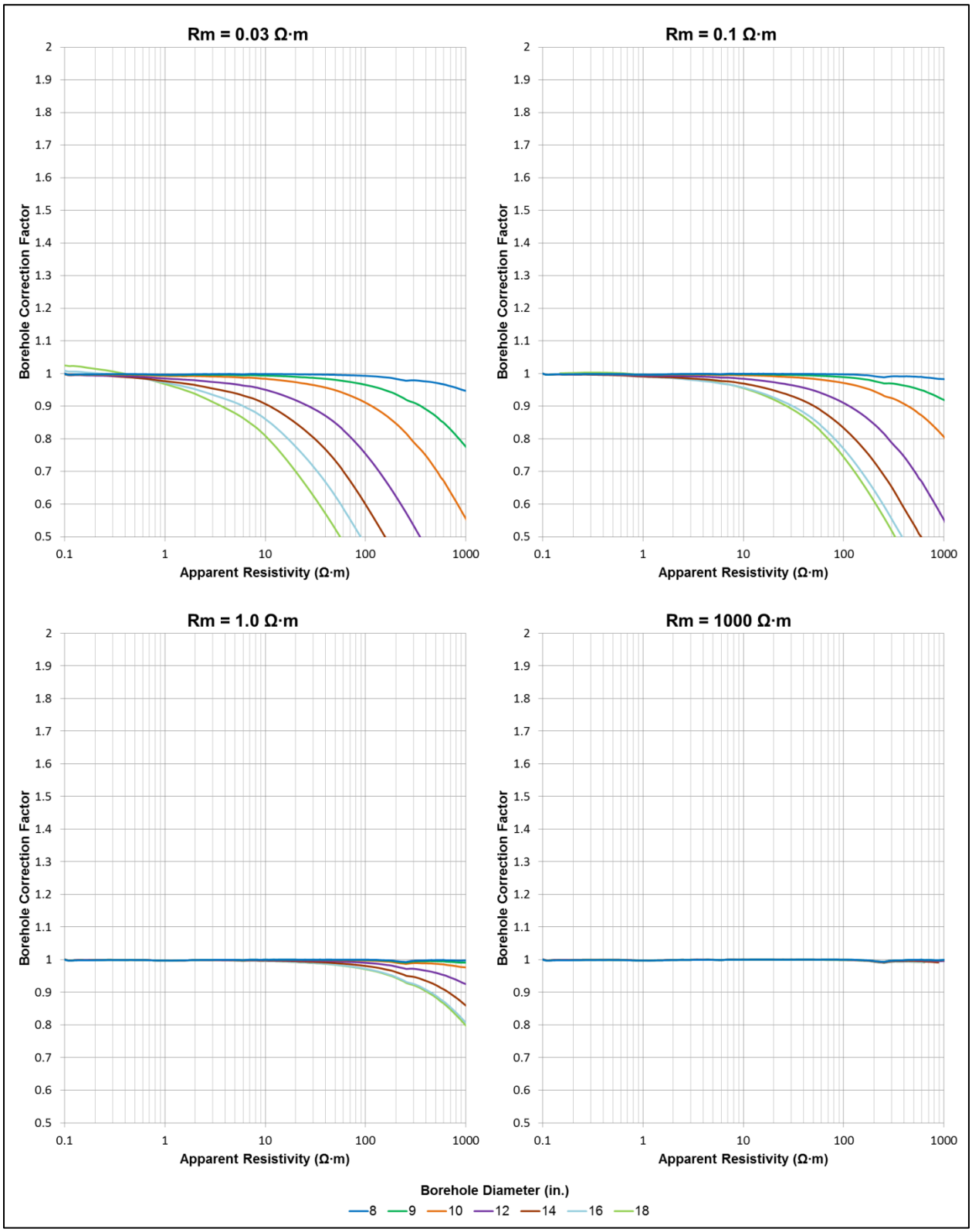


Chart 3-55

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 48-in. Spacing, 500 kHz, Attenuation Resistivity

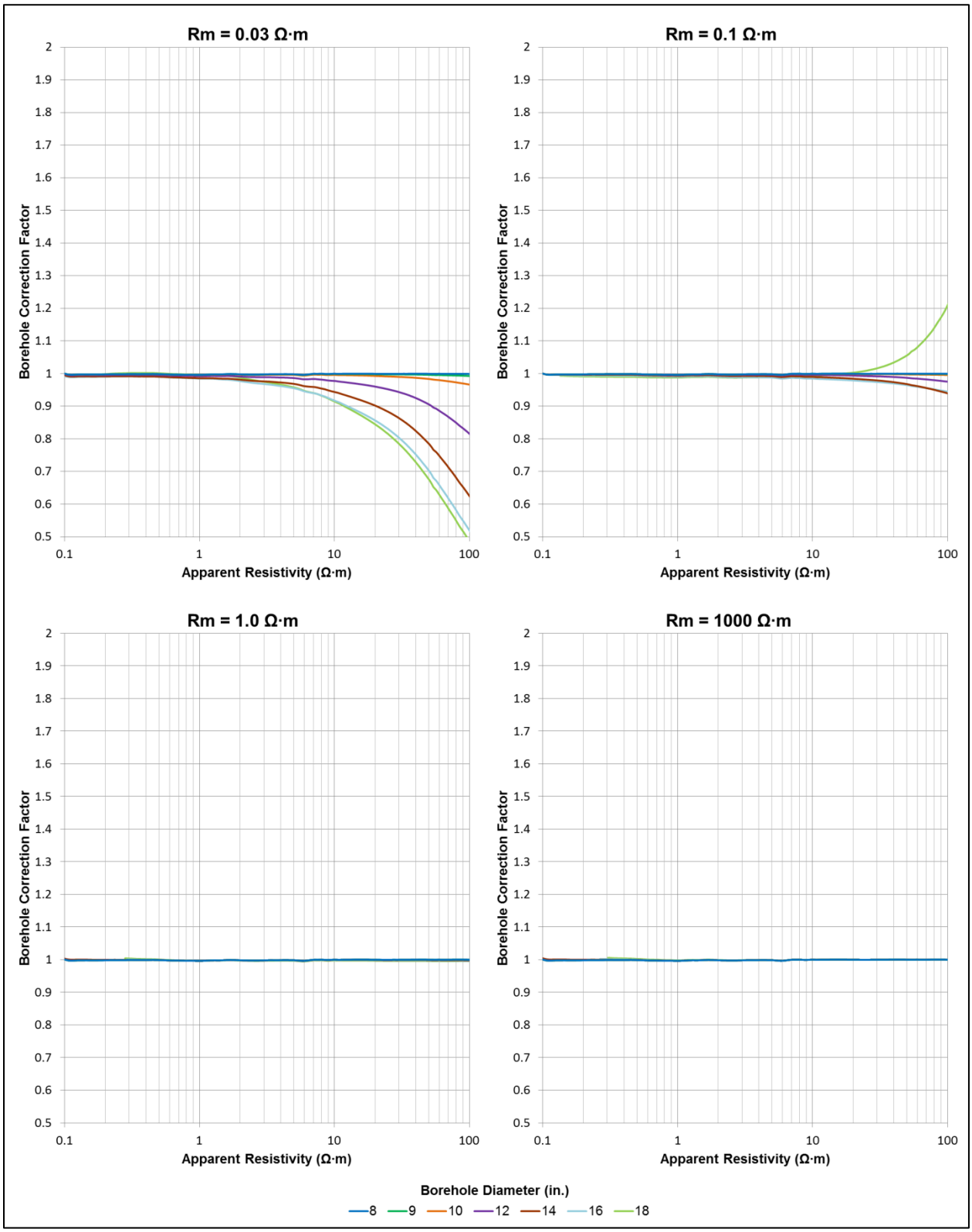


Chart 3-56

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 48-in. Spacing, 250 kHz, Phase-Shift Resistivity

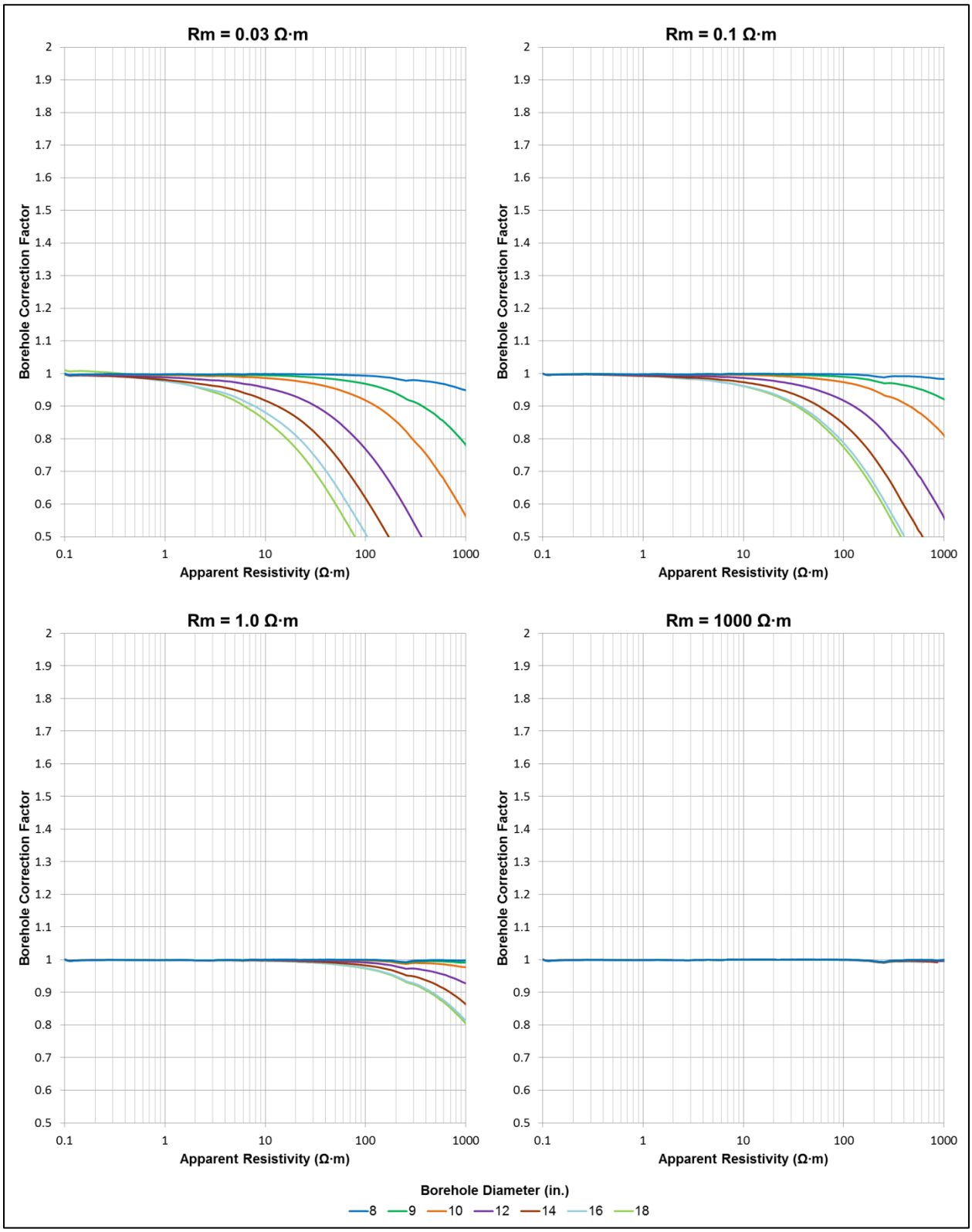


Chart 3-57

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR-M5™ Tool, 48-in. Spacing, 250 kHz, Attenuation Resistivity

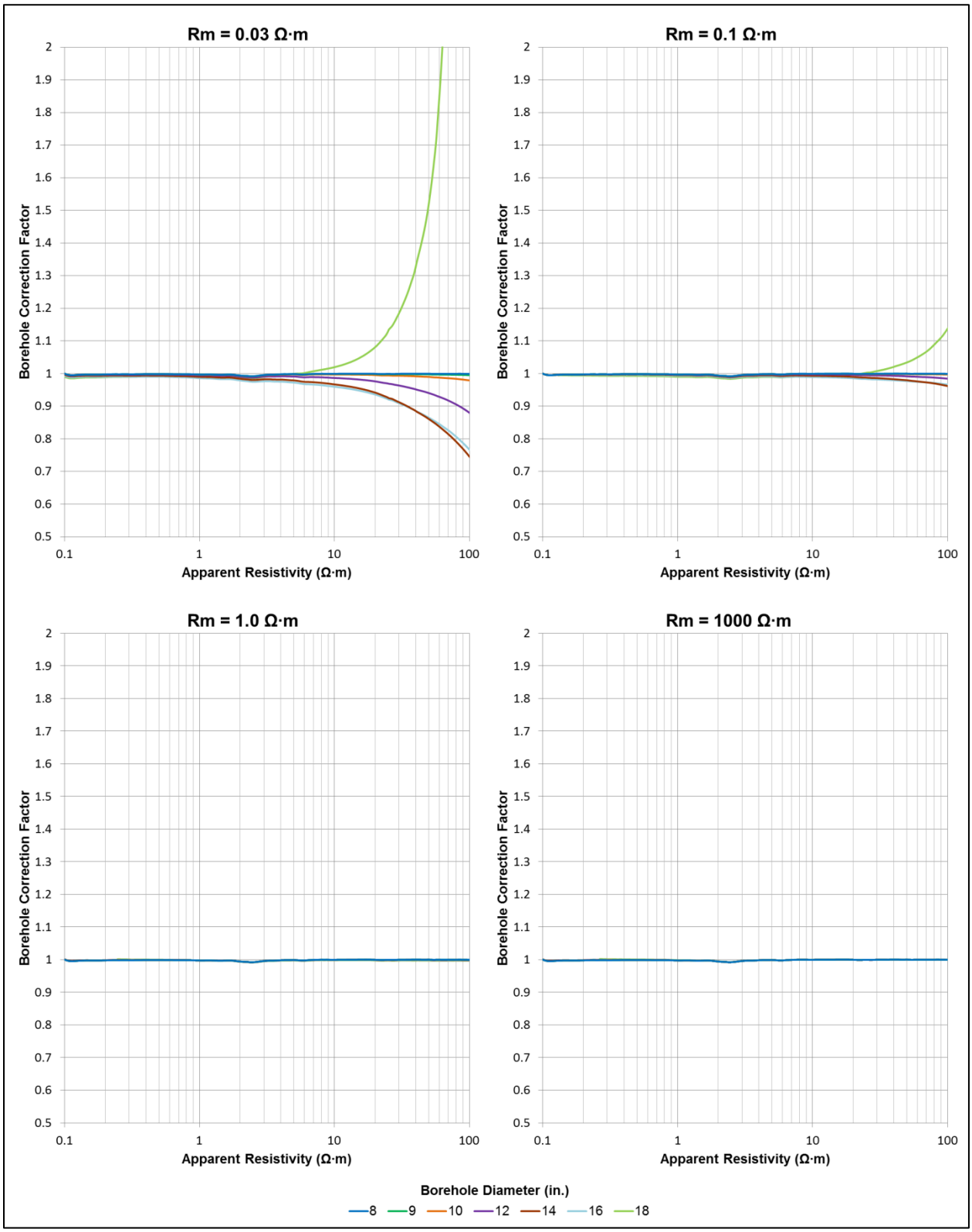


Chart 3-58

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 16-in. Spacing, 2 MHz, Phase-Shift Resistivity

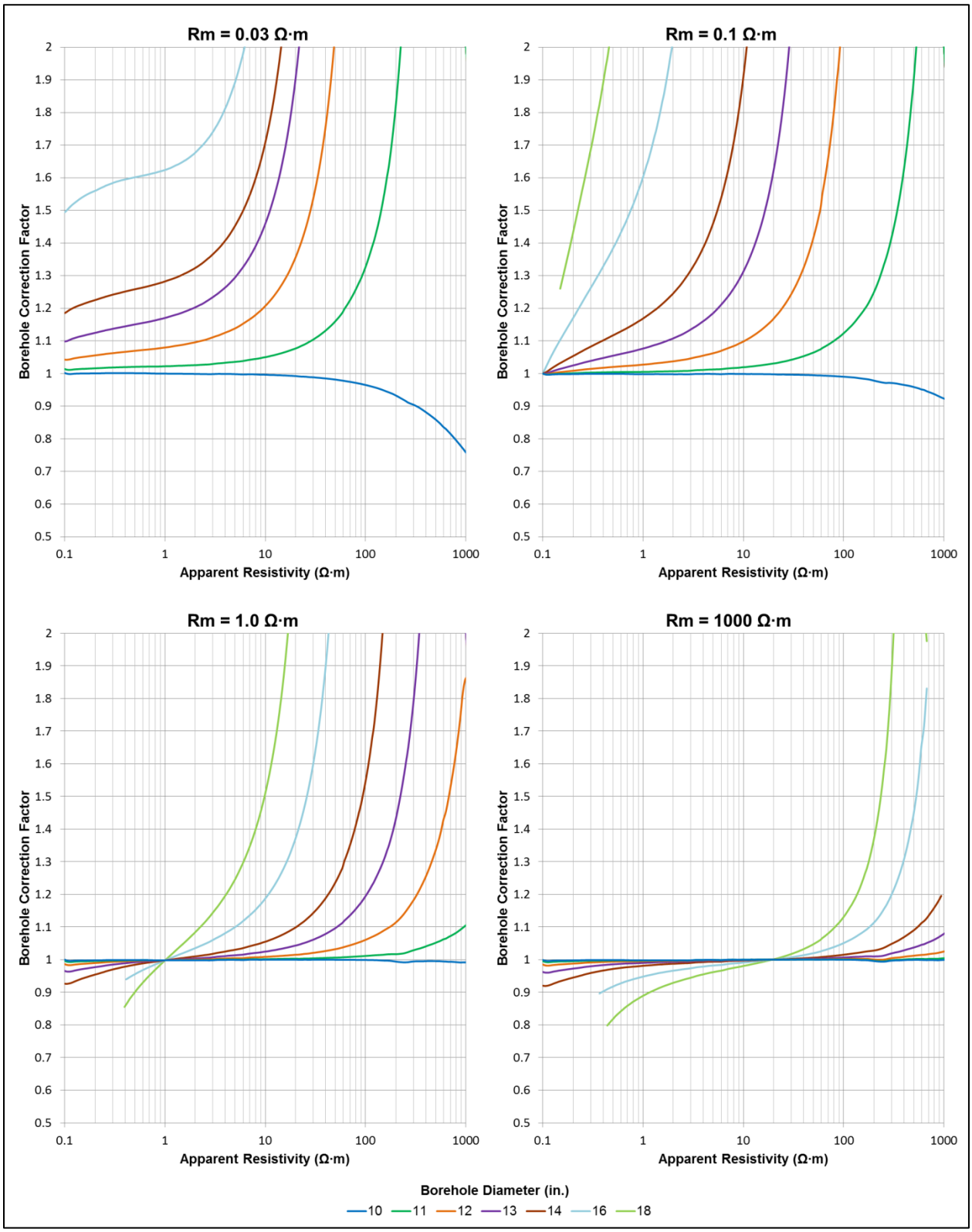


Chart 3-59

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 16-in. Spacing, 2 MHz, Attenuation Resistivity

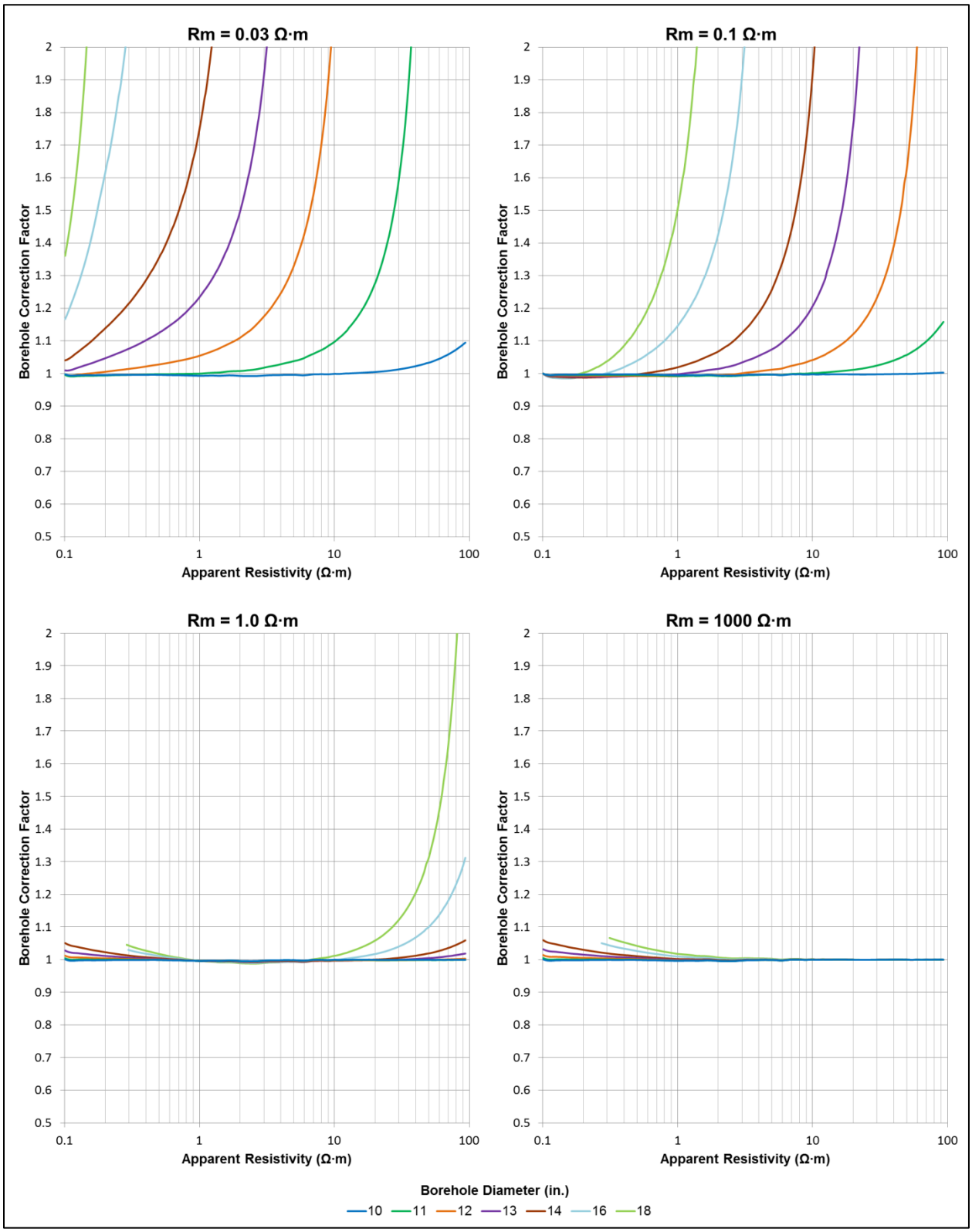


Chart 3-60

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 16-in. Spacing, 500 kHz, Phase-Shift Resistivity

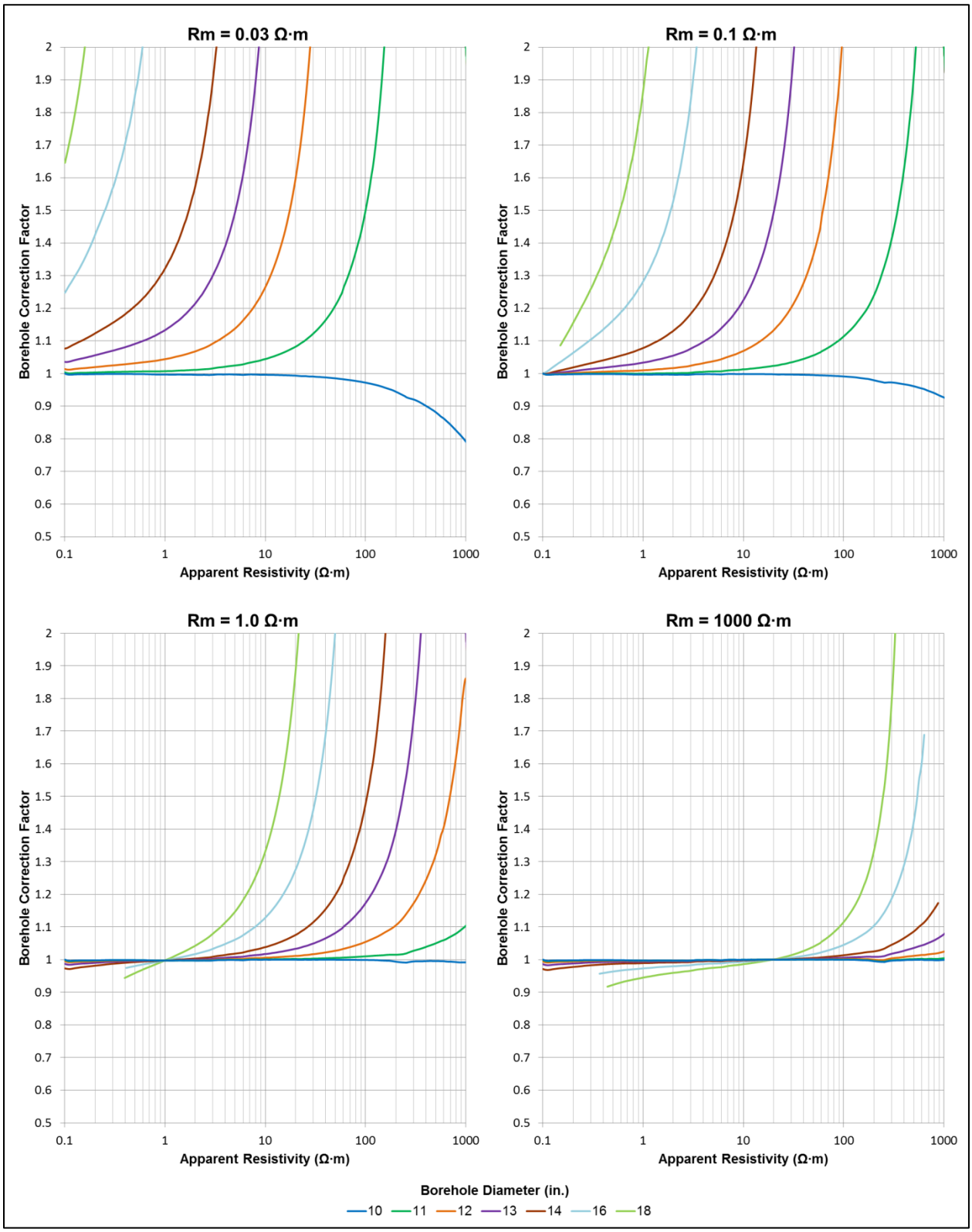


Chart 3-61

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 16-in. Spacing, 500 kHz, Attenuation Resistivity

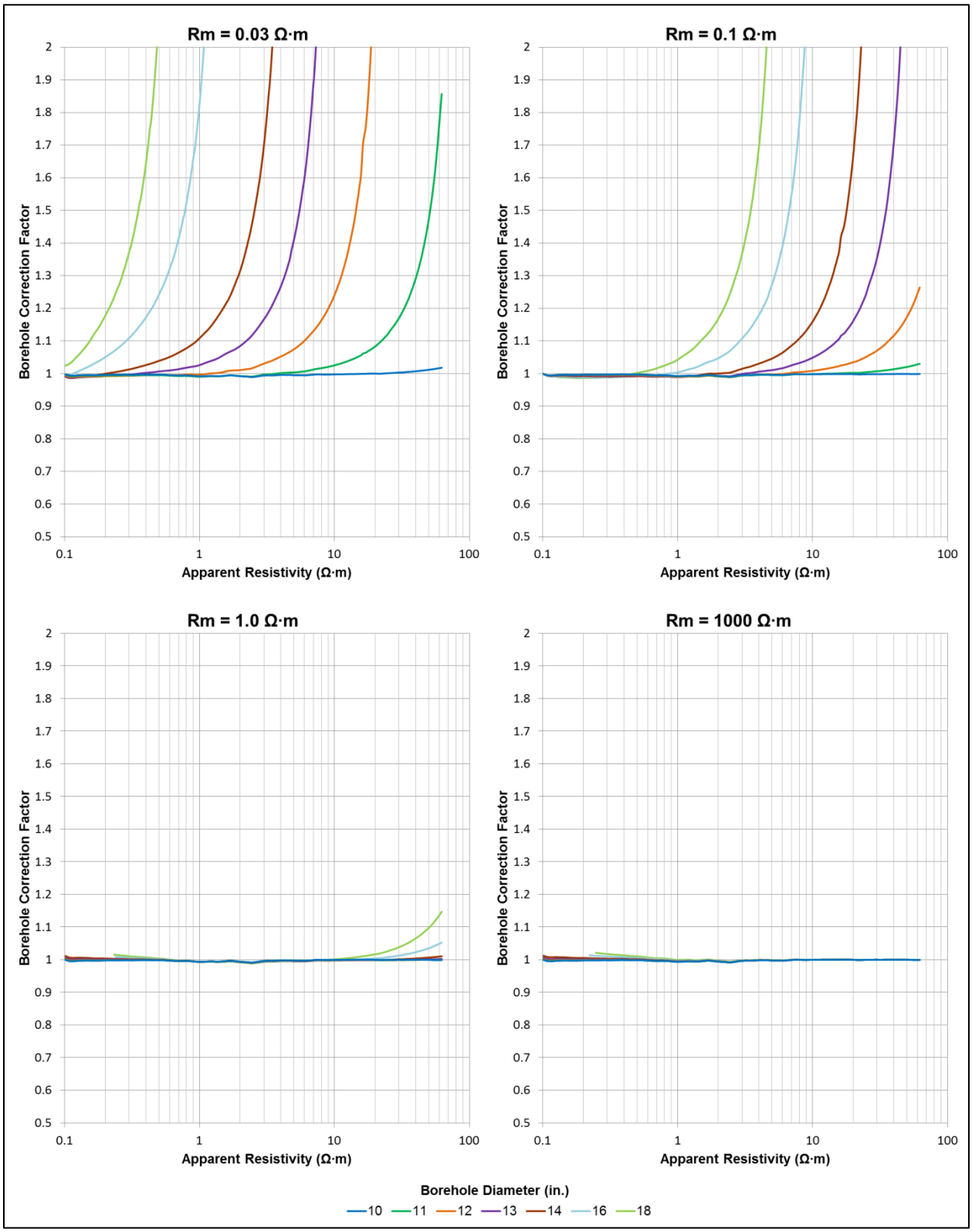


Chart 3-62

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 16-in. Spacing, 250 kHz, Phase-Shift Resistivity

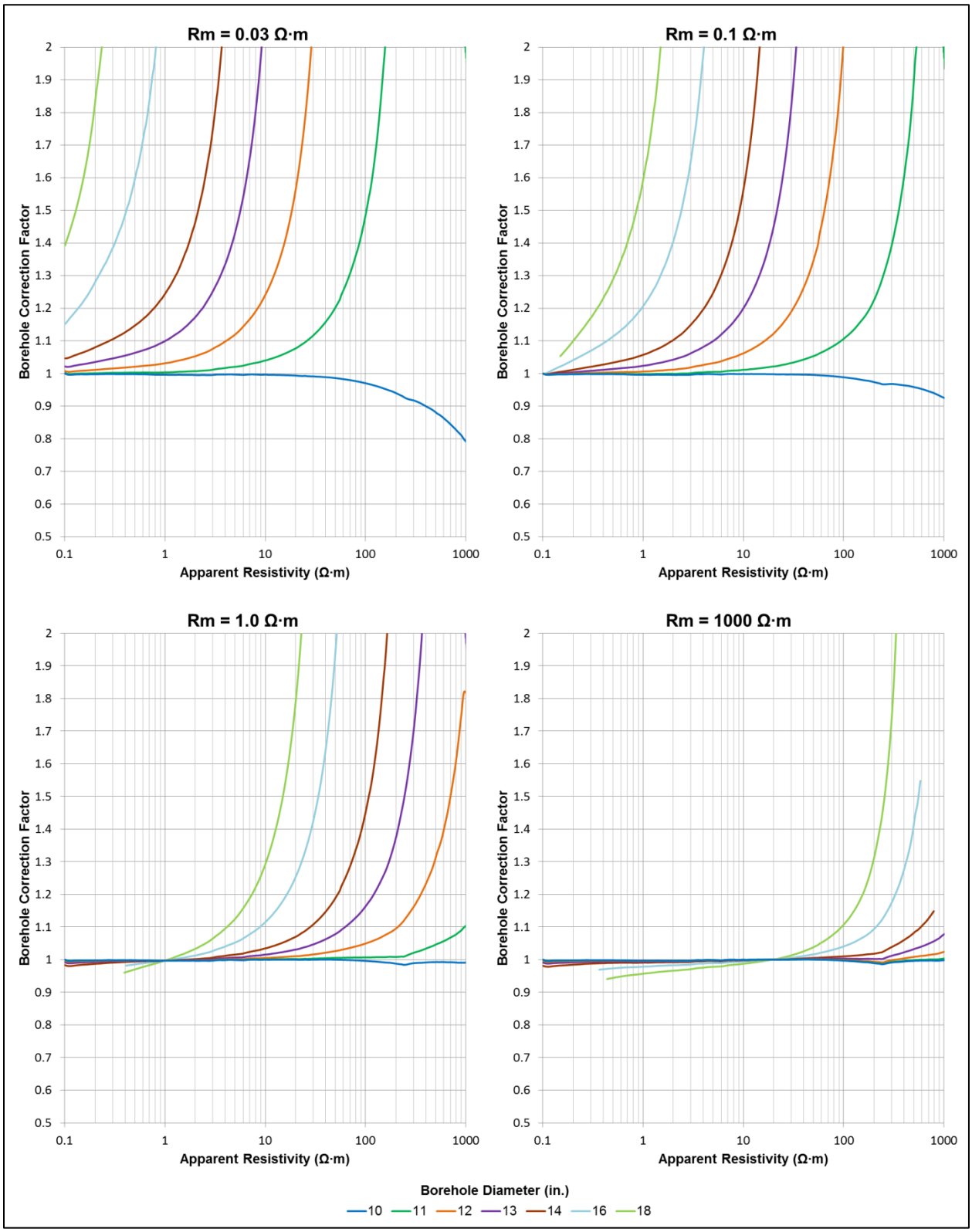


Chart 3-63

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 16-in. Spacing, 250 kHz, Attenuation Resistivity

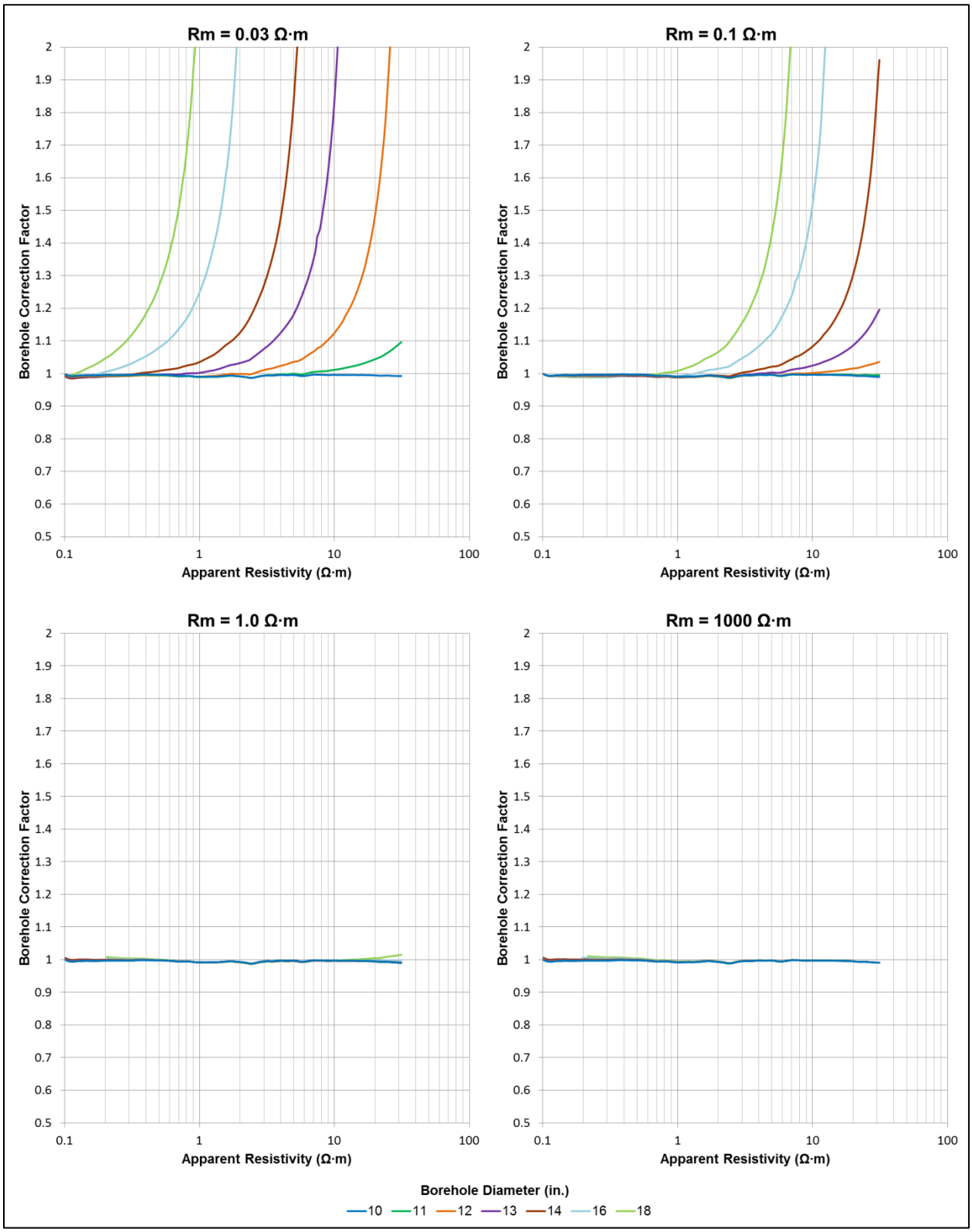


Chart 3-64

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 24-in. Spacing, 2 MHz, Phase-Shift Resistivity

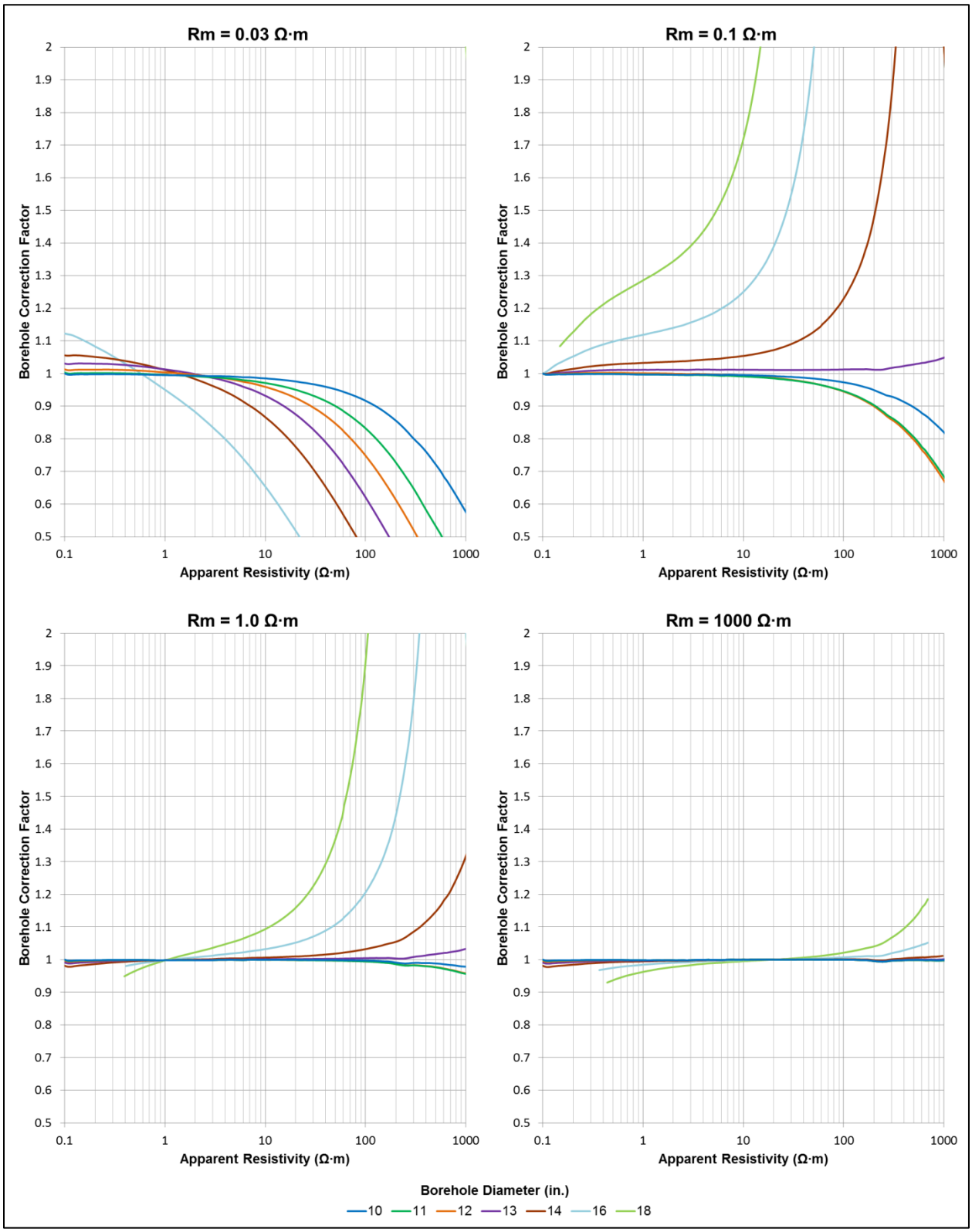


Chart 3-65

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 24-in. Spacing, 2 MHz, Attenuation Resistivity

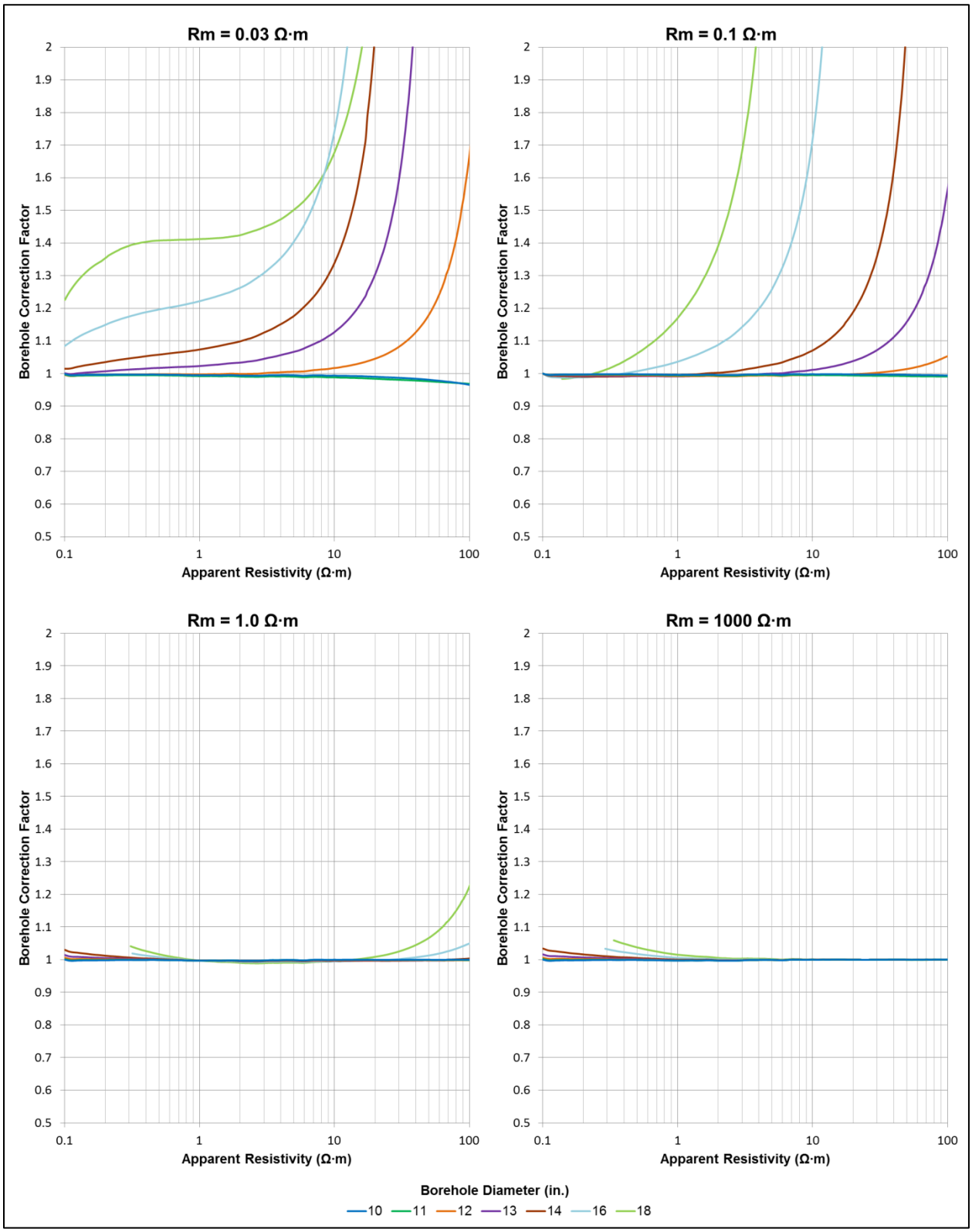


Chart 3-66

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 24-in. Spacing, 500 kHz, Phase-Shift Resistivity

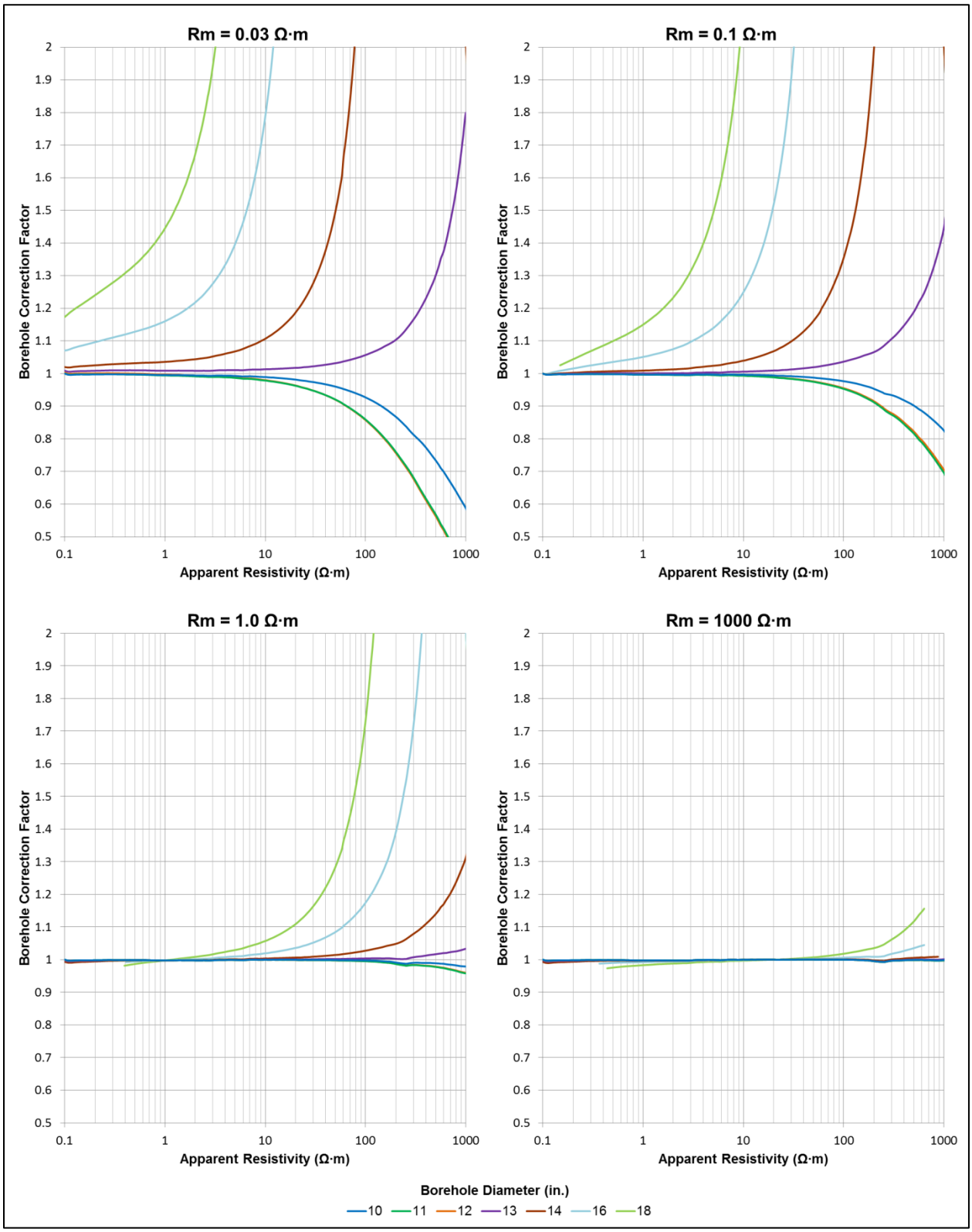


Chart 3-67

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 24-in. Spacing, 500 kHz, Attenuation Resistivity

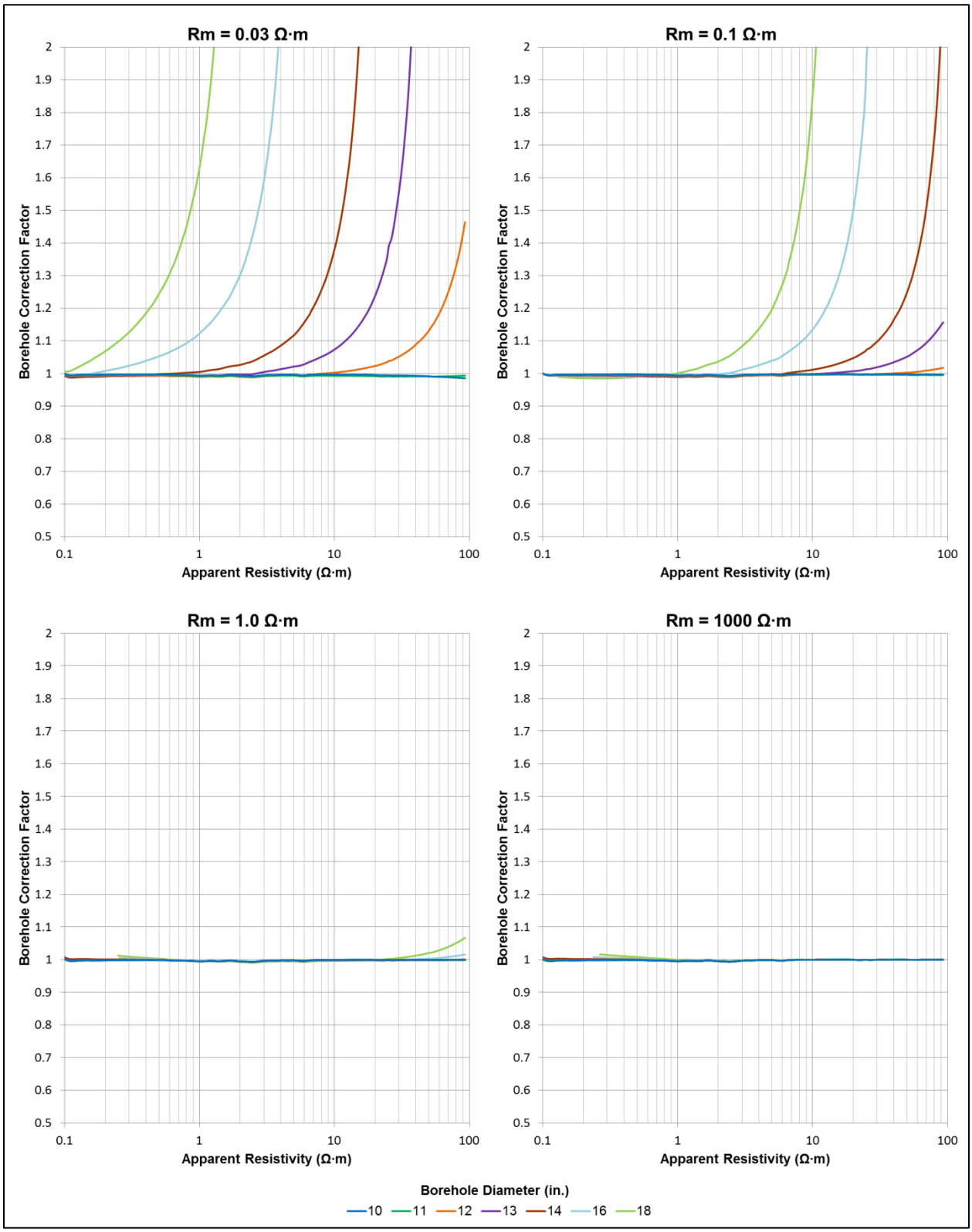


Chart 3-68

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 24-in. Spacing, 250 kHz, Phase-Shift Resistivity

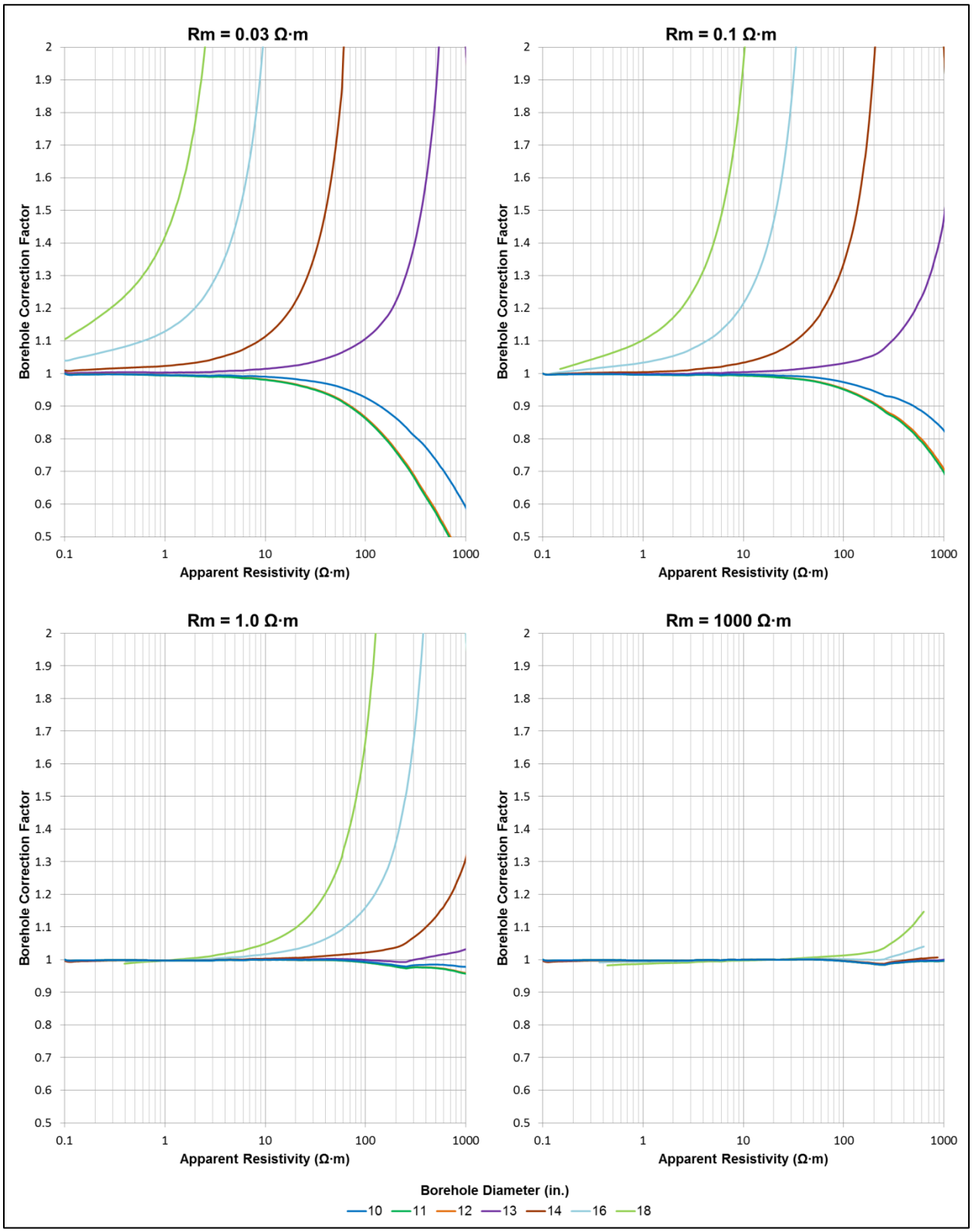


Chart 3-69

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 24-in. Spacing, 250 kHz, Attenuation Resistivity

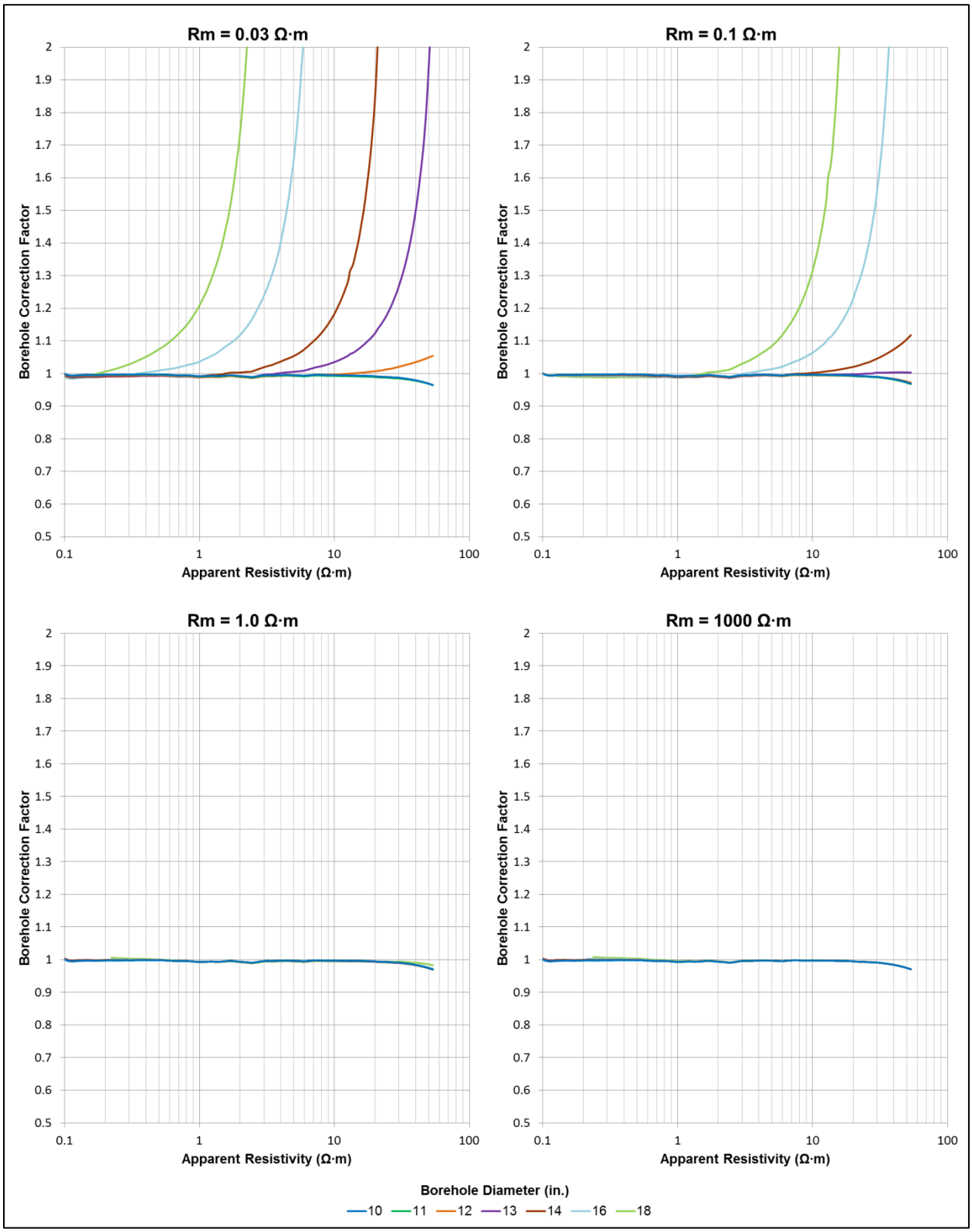


Chart 3-70

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 32-in. Spacing, 2 MHz, Phase-Shift Resistivity

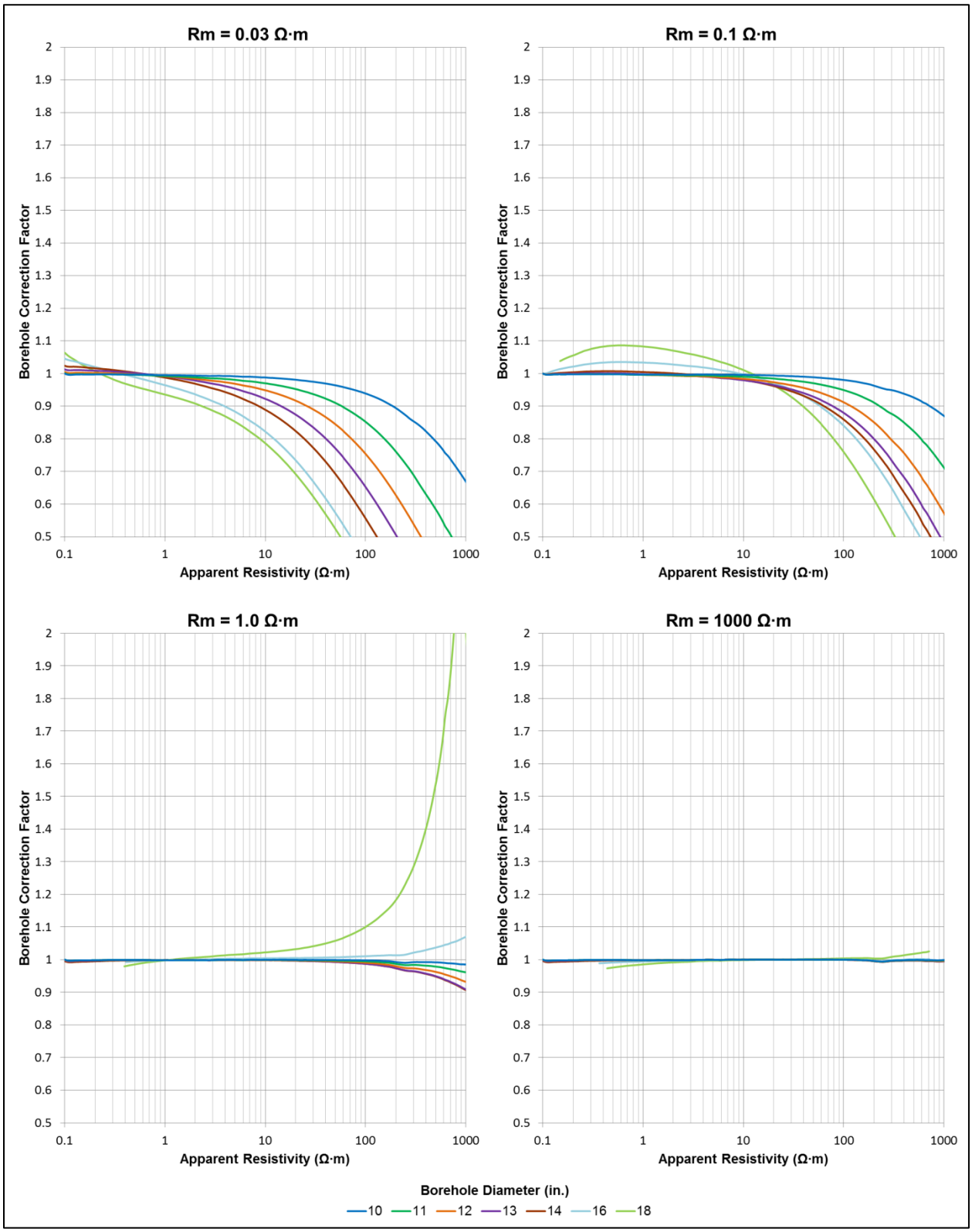


Chart 3-71

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 32-in. Spacing, 2 MHz, Attenuation Resistivity

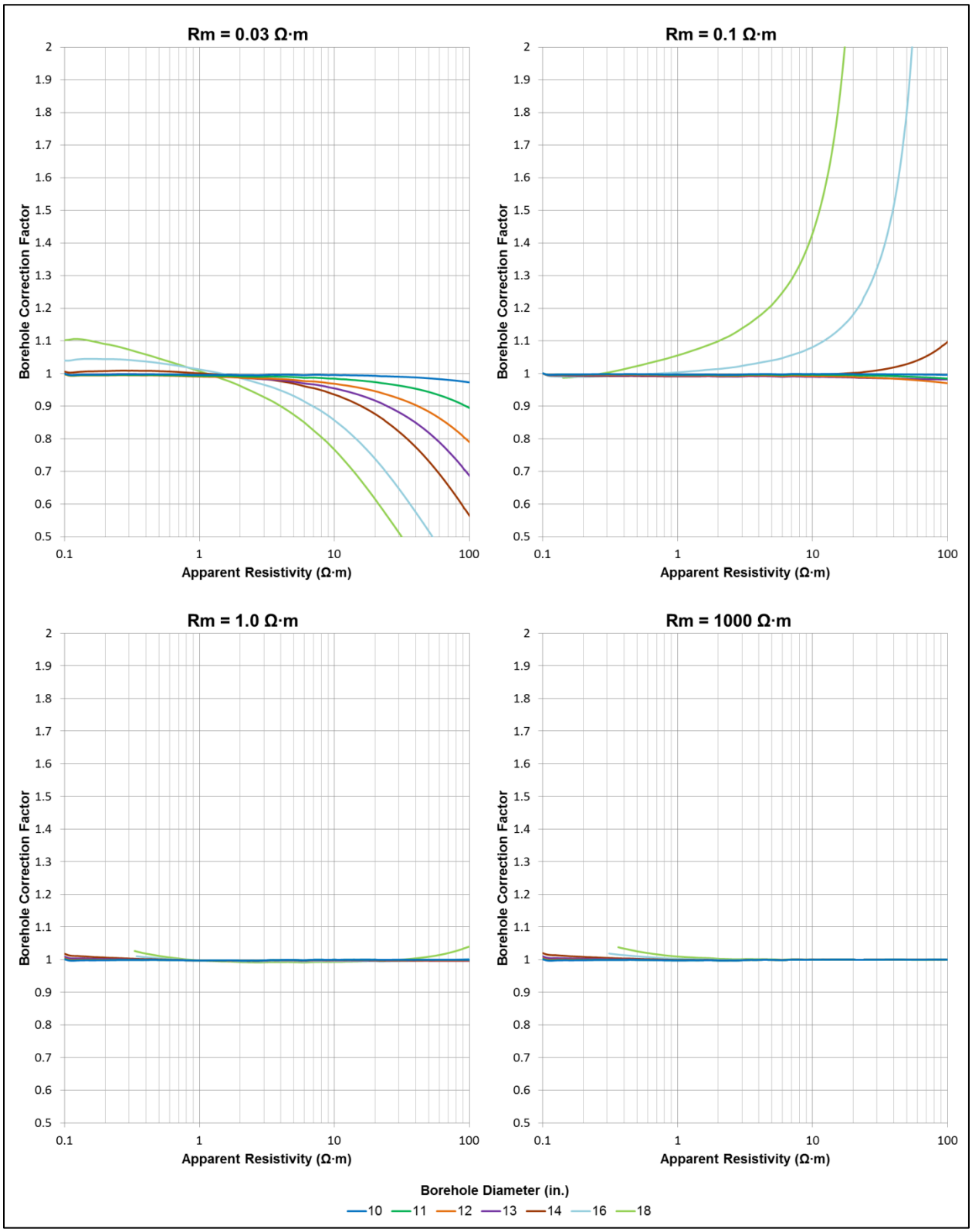


Chart 3-72

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 32-in. Spacing, 500 kHz, Phase-Shift Resistivity

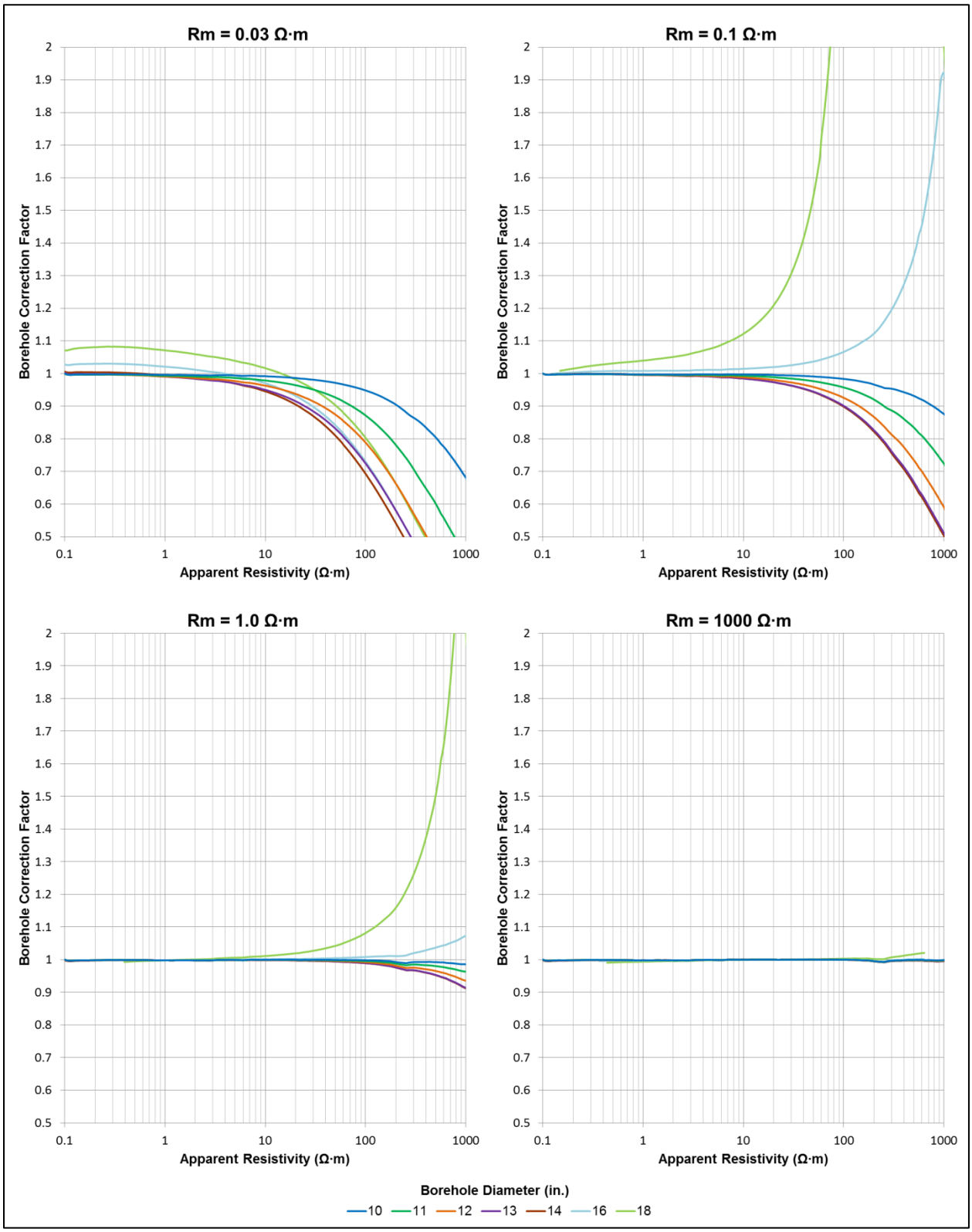


Chart 3-73

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 32-in. Spacing, 500 kHz, Attenuation Resistivity

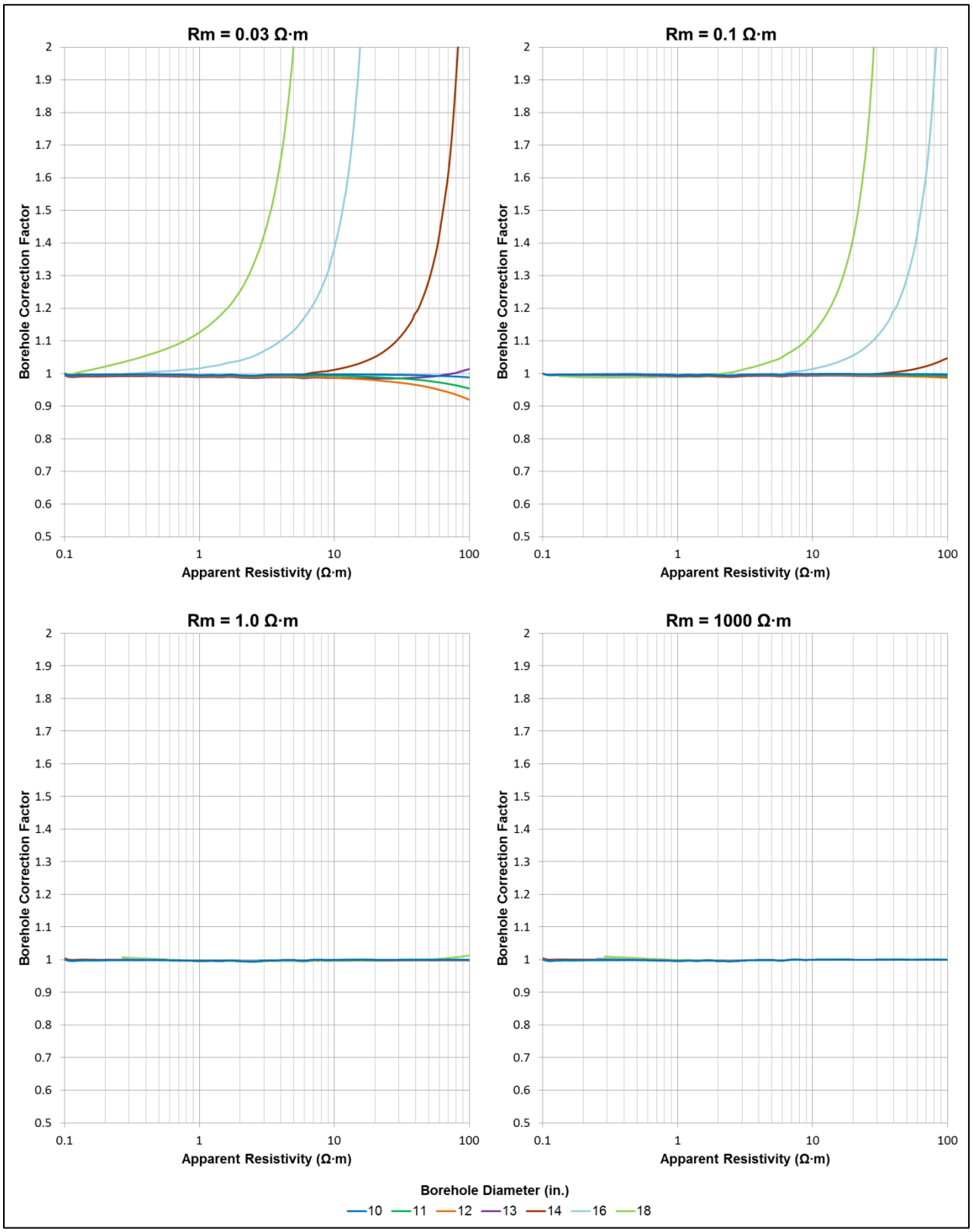


Chart 3-74

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 32-in. Spacing, 250 kHz, Phase-Shift Resistivity

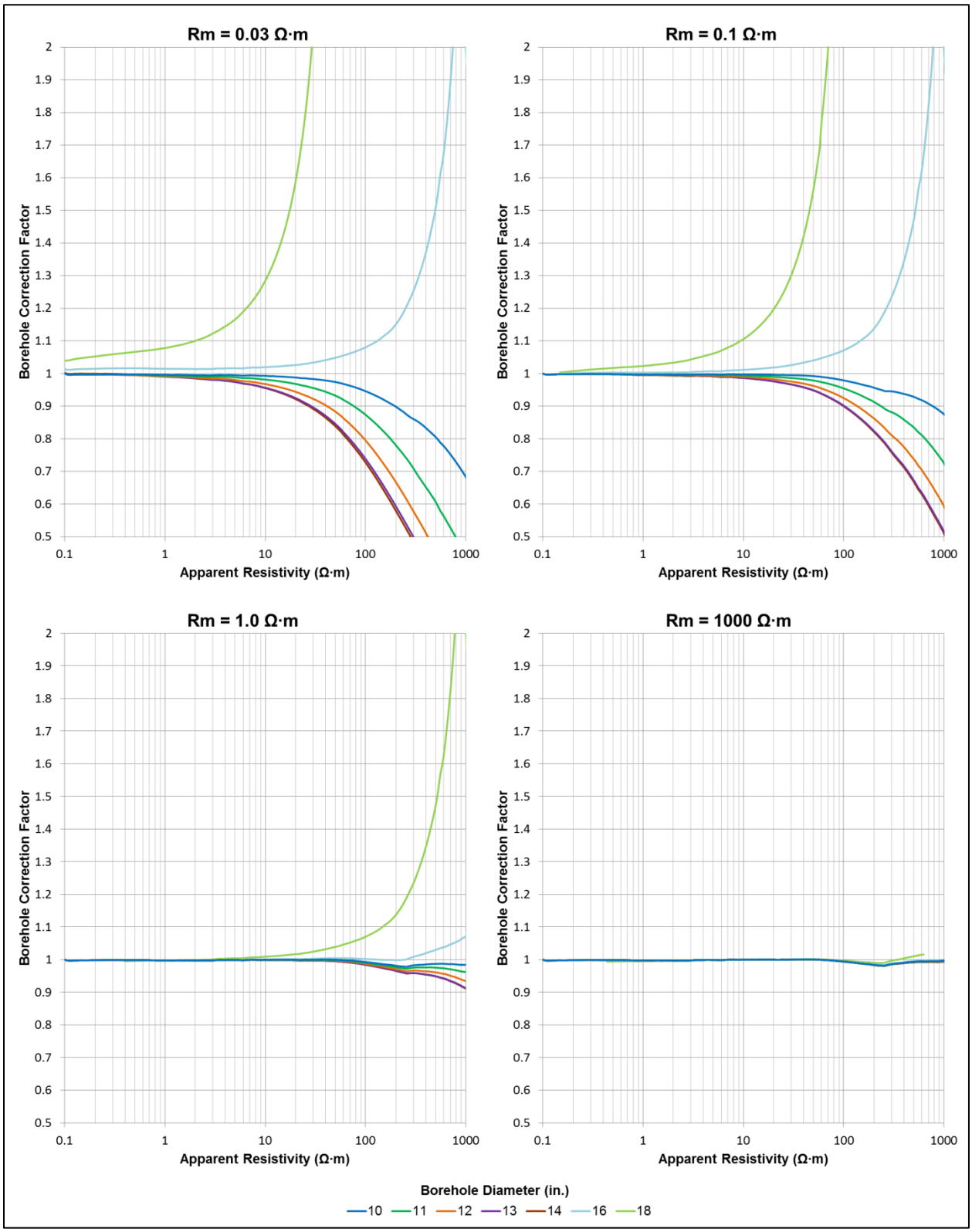


Chart 3-75

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 32-in. Spacing, 250 kHz, Attenuation Resistivity

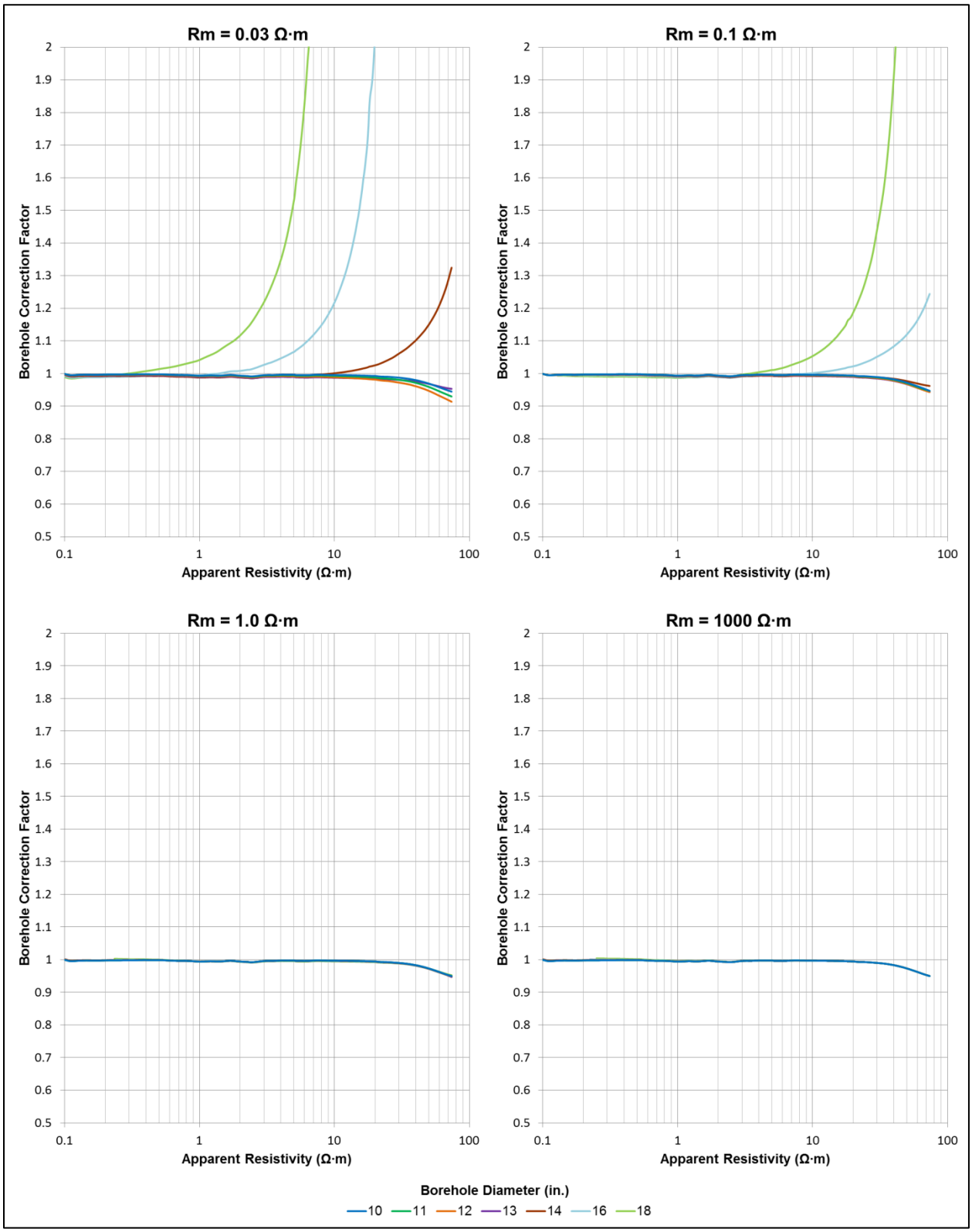


Chart 3-76

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 40-in. Spacing, 2 MHz, Phase-Shift Resistivity

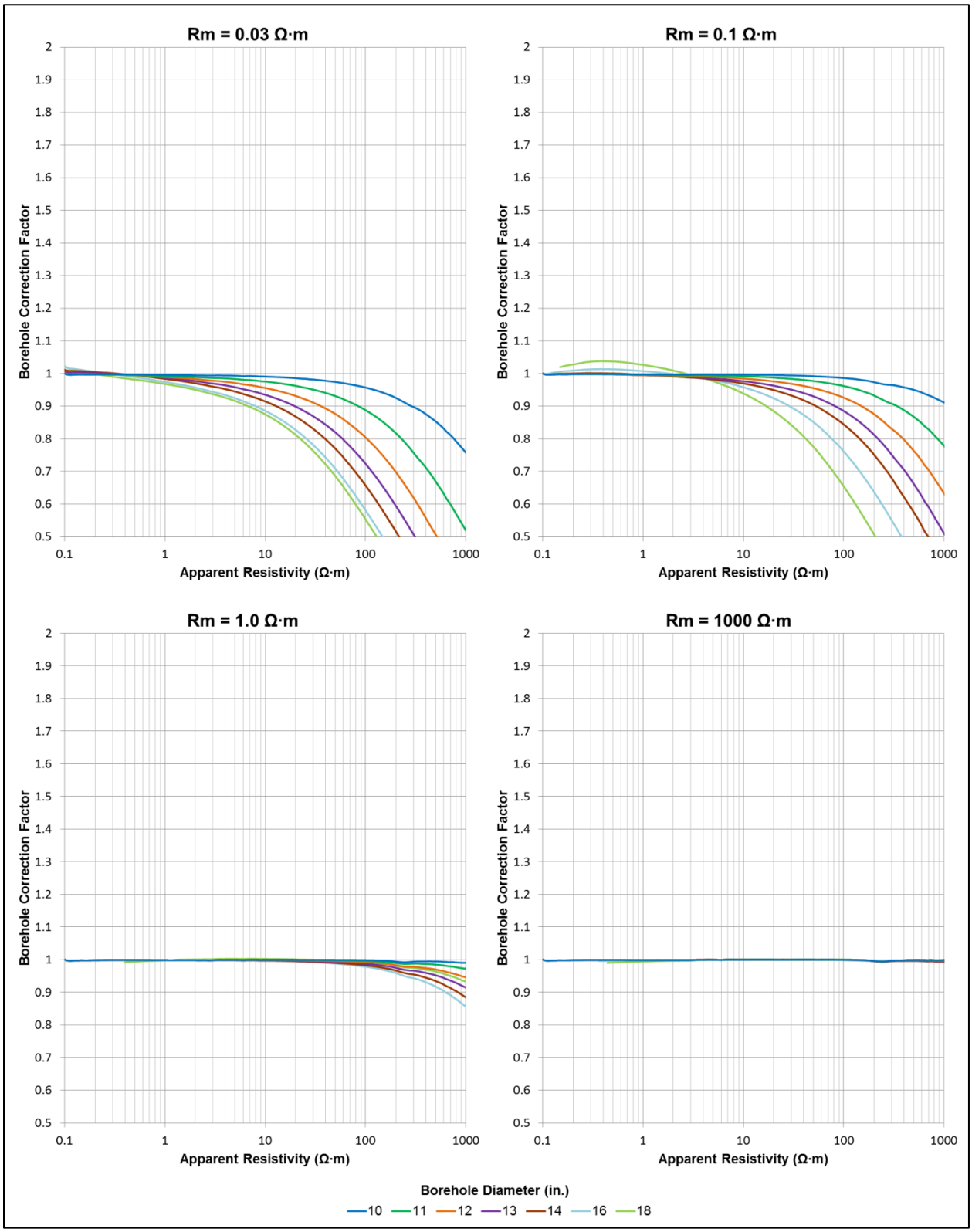


Chart 3-77

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 40-in. Spacing, 2 MHz, Attenuation Resistivity

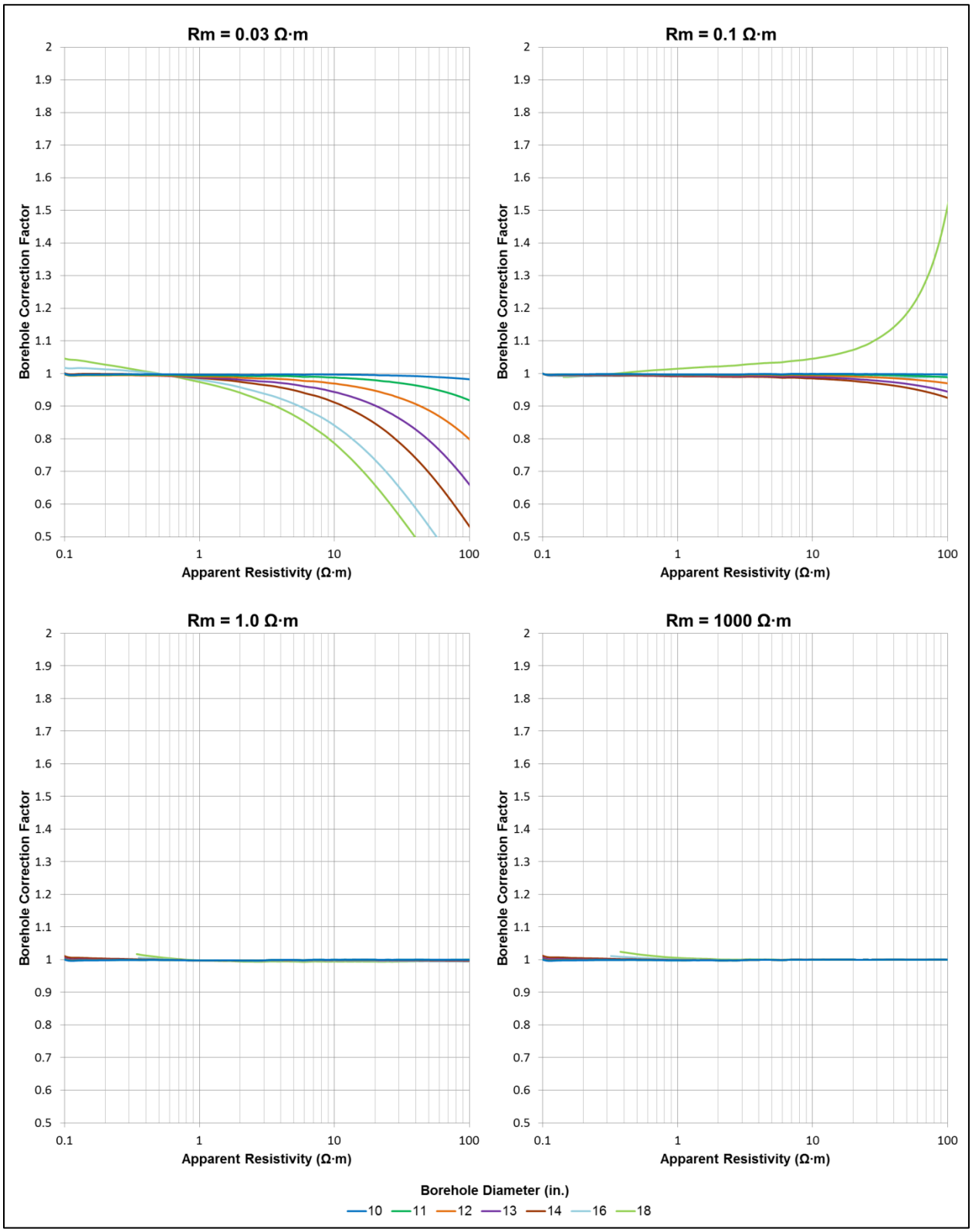


Chart 3-78

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 40-in. Spacing, 500 kHz, Phase-Shift Resistivity

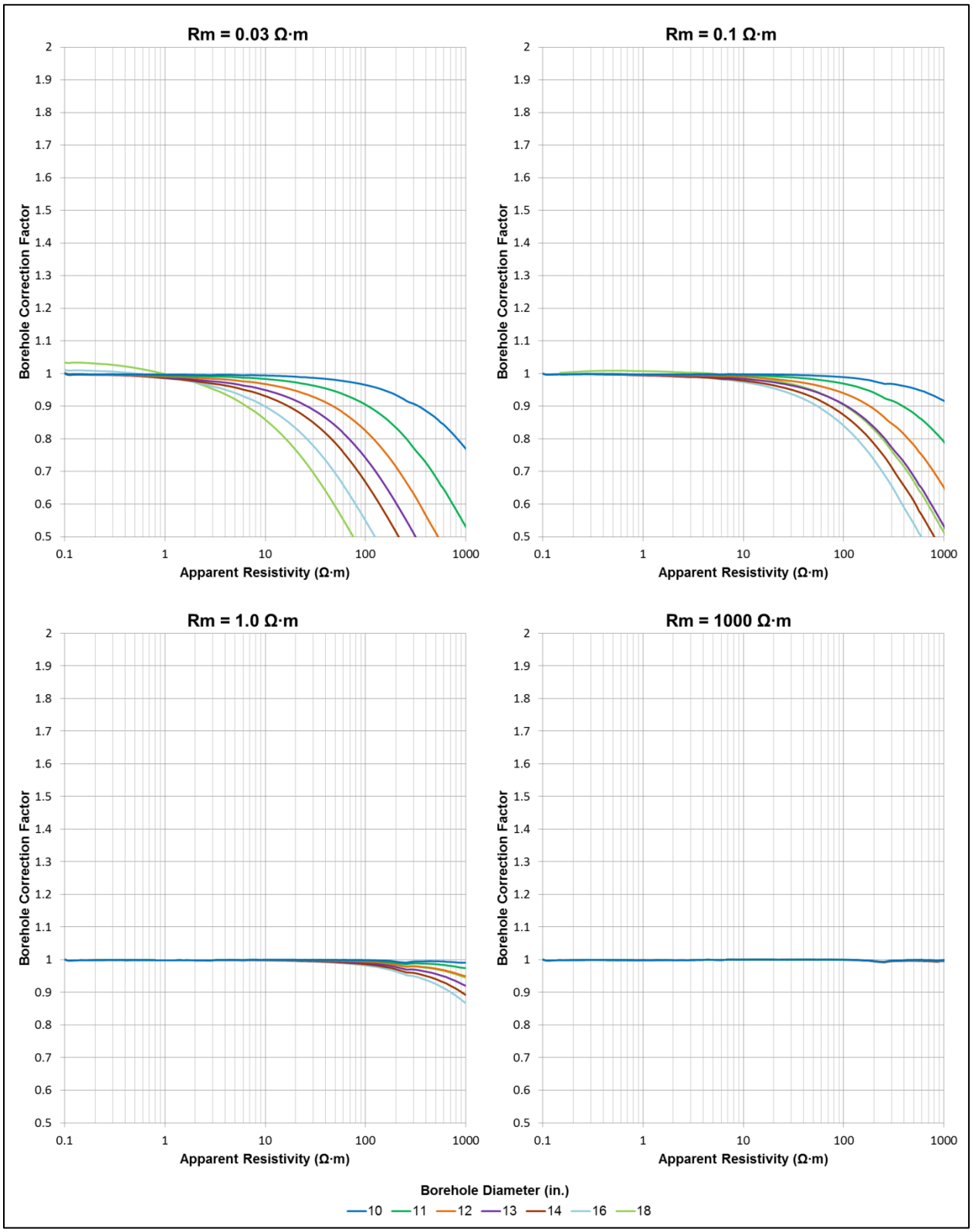


Chart 3-79

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 40-in. Spacing, 500 kHz, Attenuation Resistivity

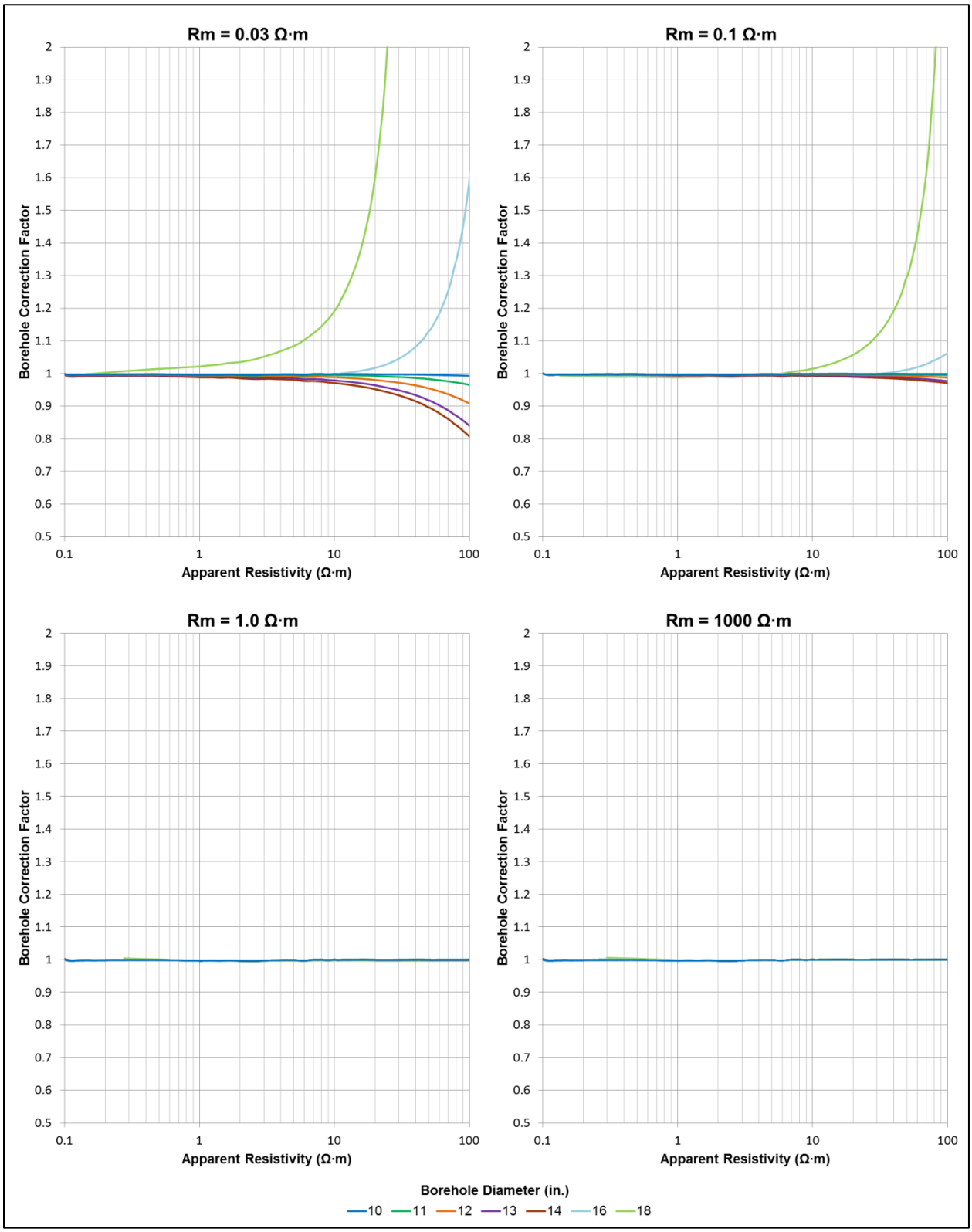


Chart 3-80

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 40-in. Spacing, 250 kHz, Phase-Shift Resistivity

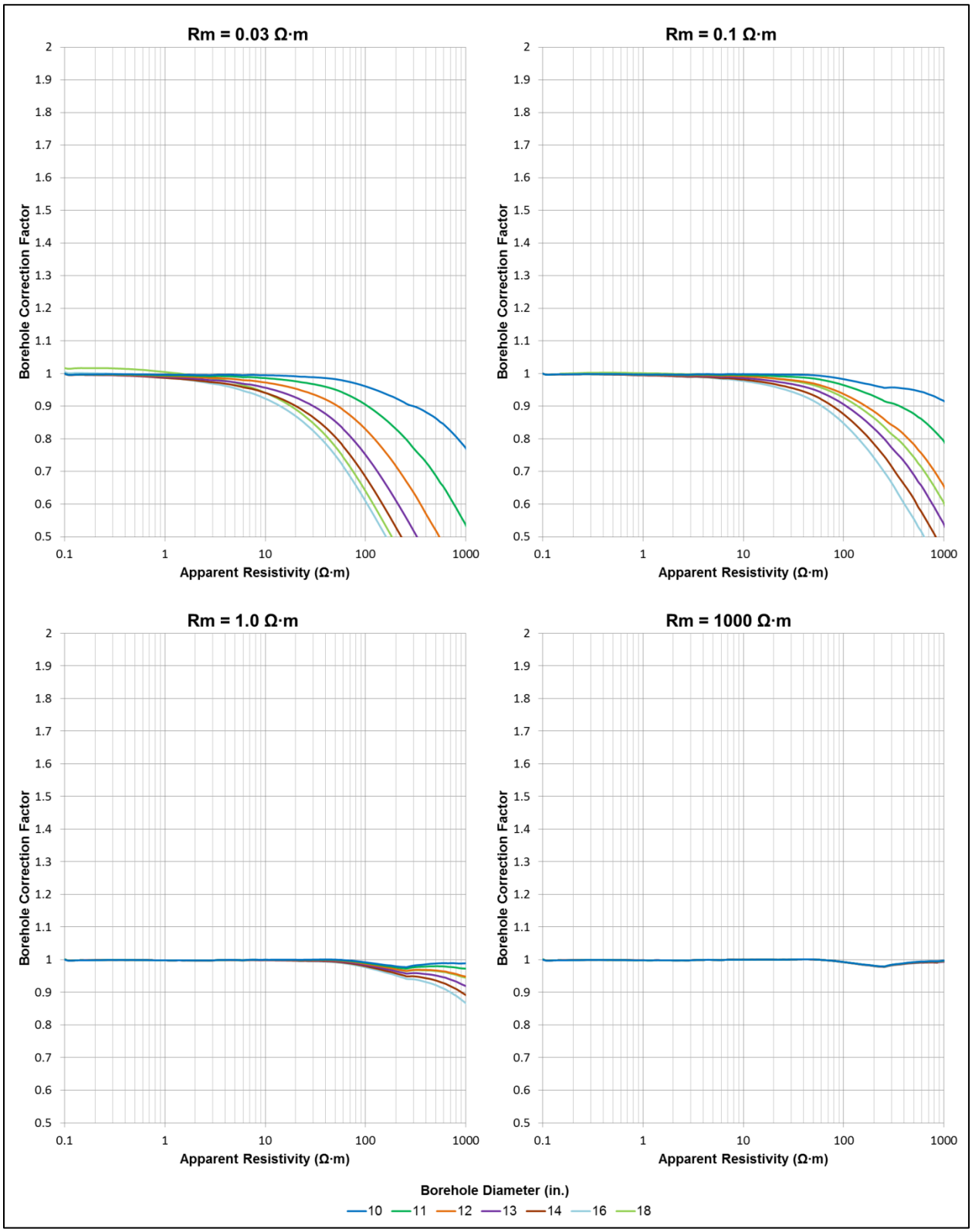


Chart 3-81

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 40-in. Spacing, 250 kHz, Attenuation Resistivity

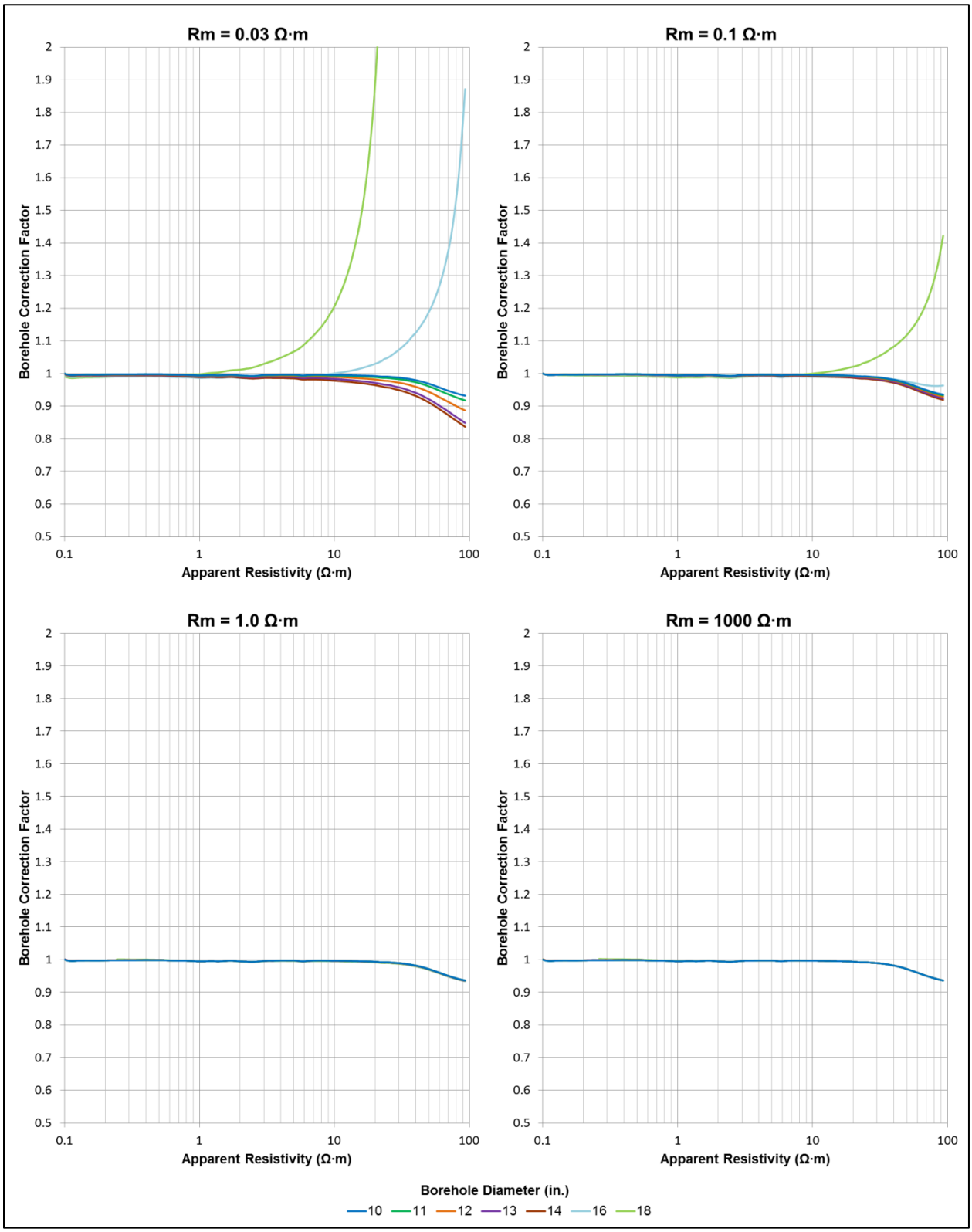


Chart 3-82

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 48-in. Spacing, 2 MHz, Phase-Shift Resistivity

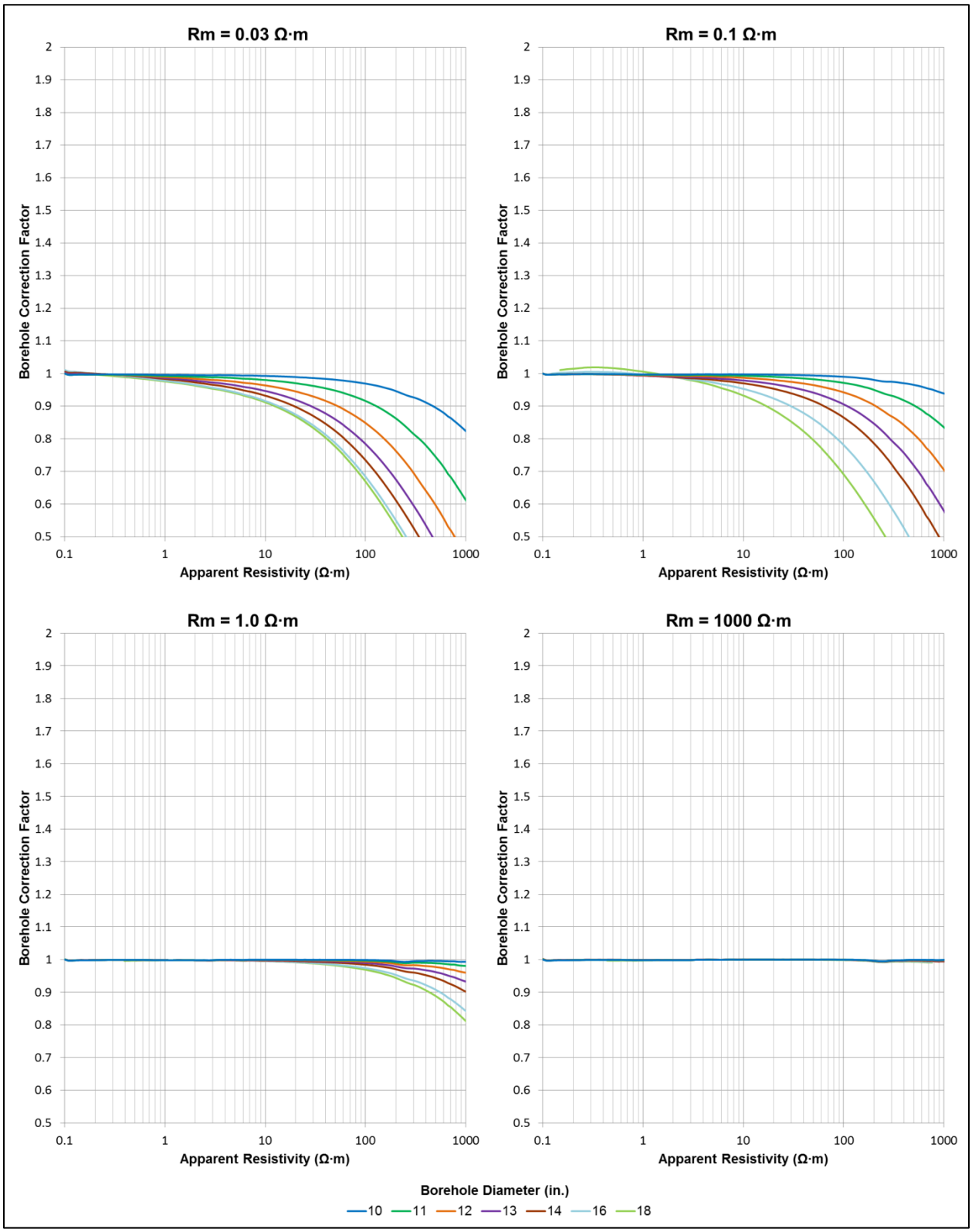


Chart 3-83

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 48-in. Spacing, 2 MHz, Attenuation Resistivity

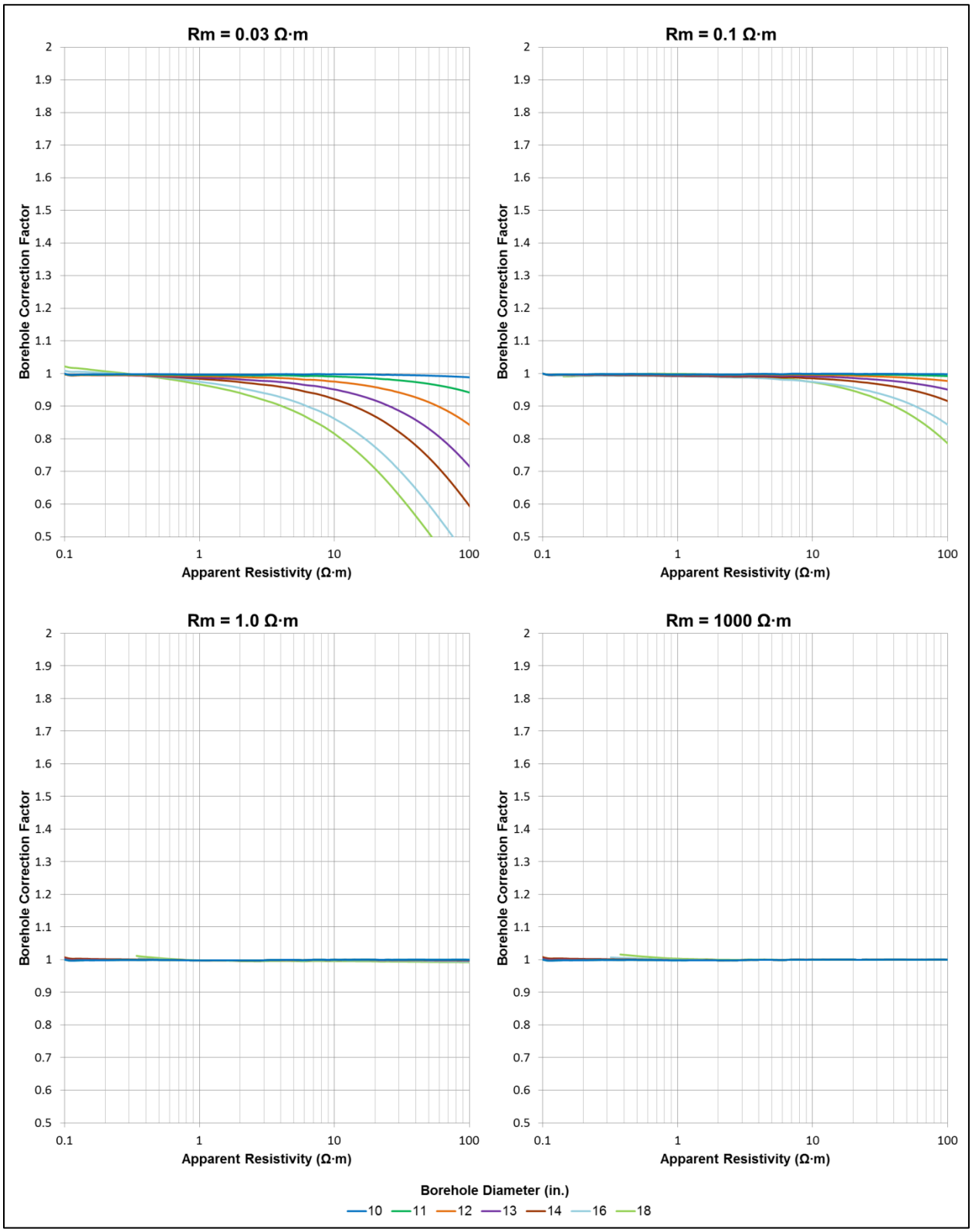


Chart 3-84

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 48-in. Spacing, 500 kHz, Phase-Shift Resistivity

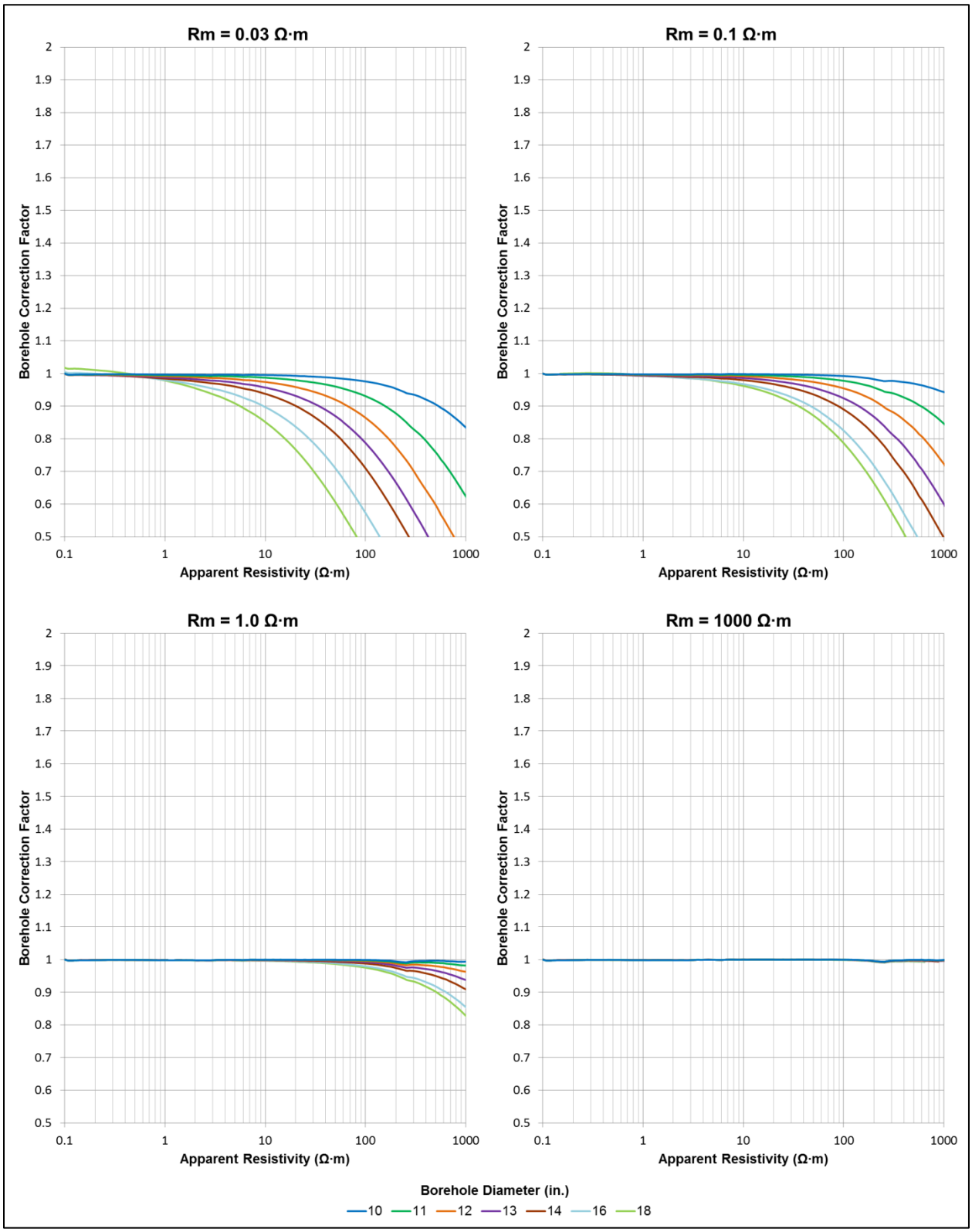


Chart 3-85

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 48-in. Spacing, 500 kHz, Attenuation Resistivity

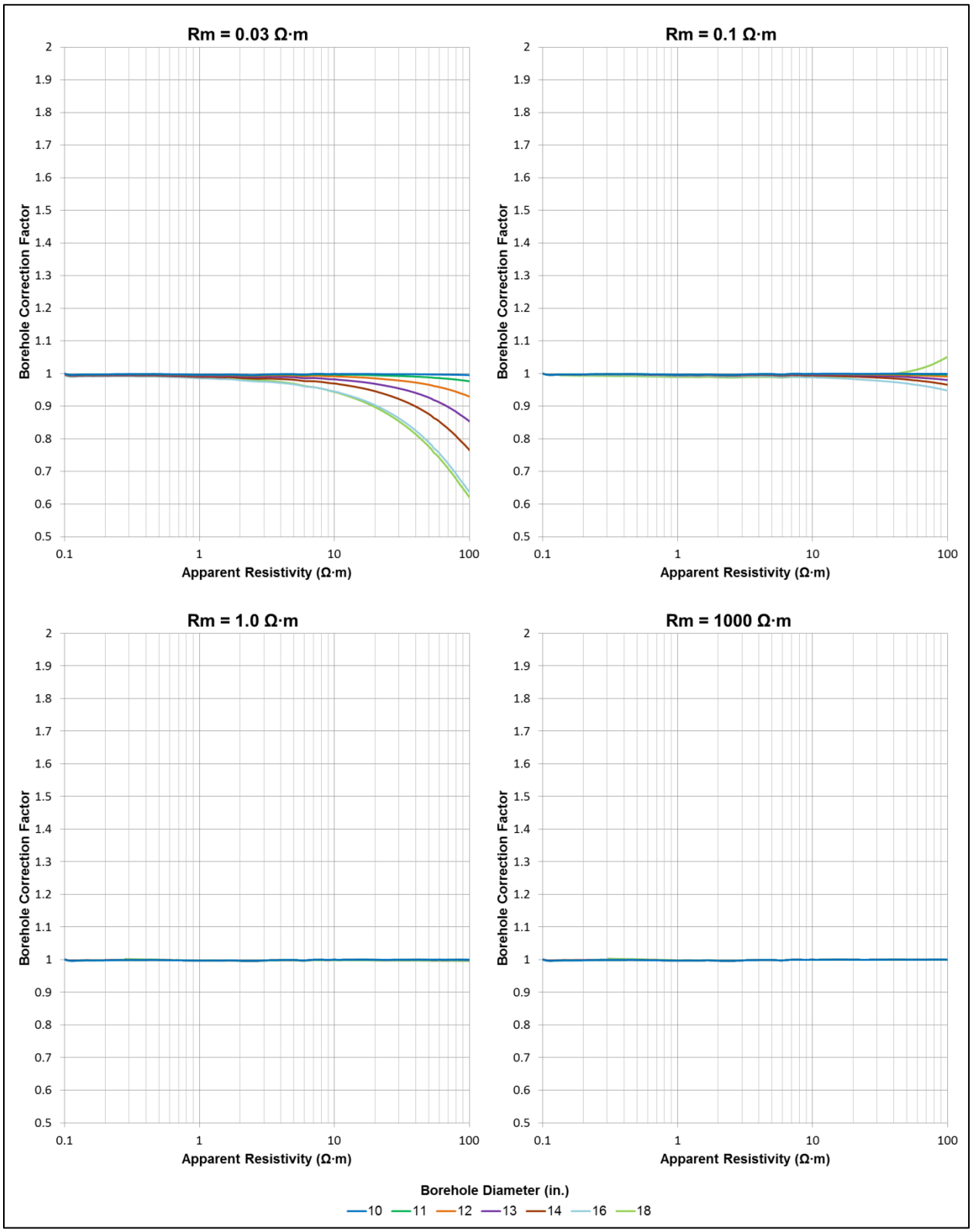


Chart 3-86

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 48-in. Spacing, 250 kHz, Phase-Shift Resistivity

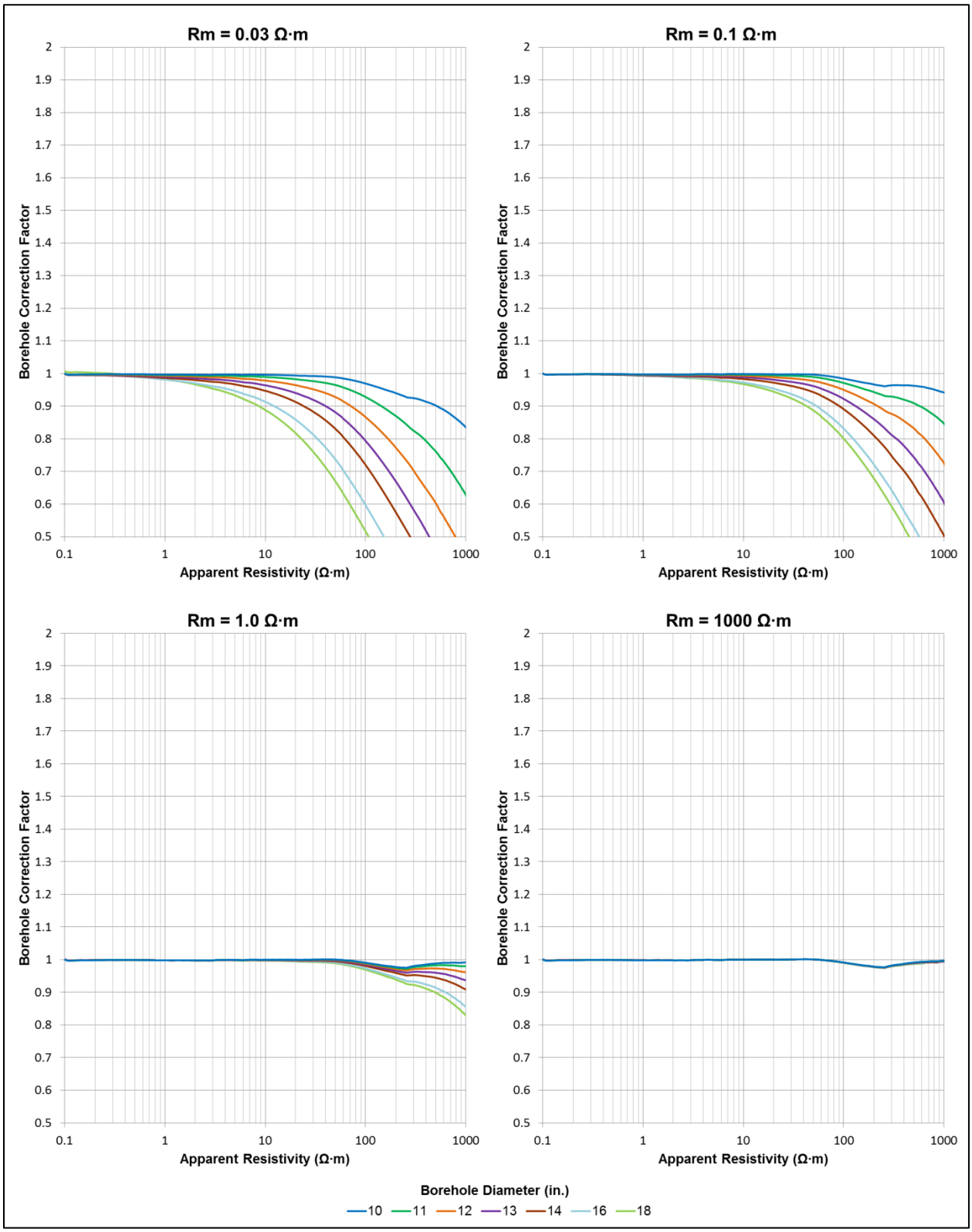


Chart 3-87

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR-M5™ Tool, 48-in. Spacing, 250 kHz, Attenuation Resistivity

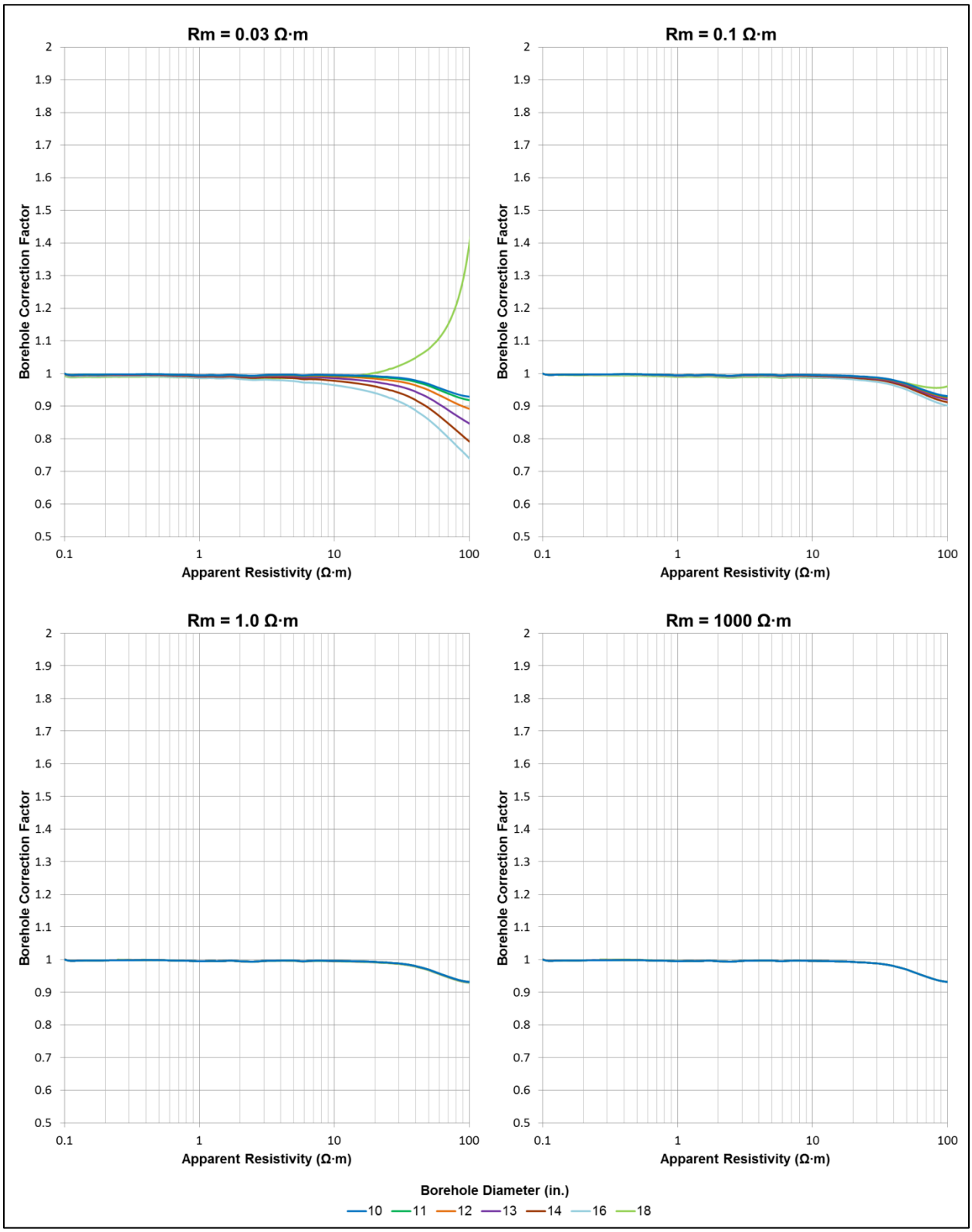


Chart 3-88

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 16-in. Spacing, 2 MHz, Phase-Shift Resistivity

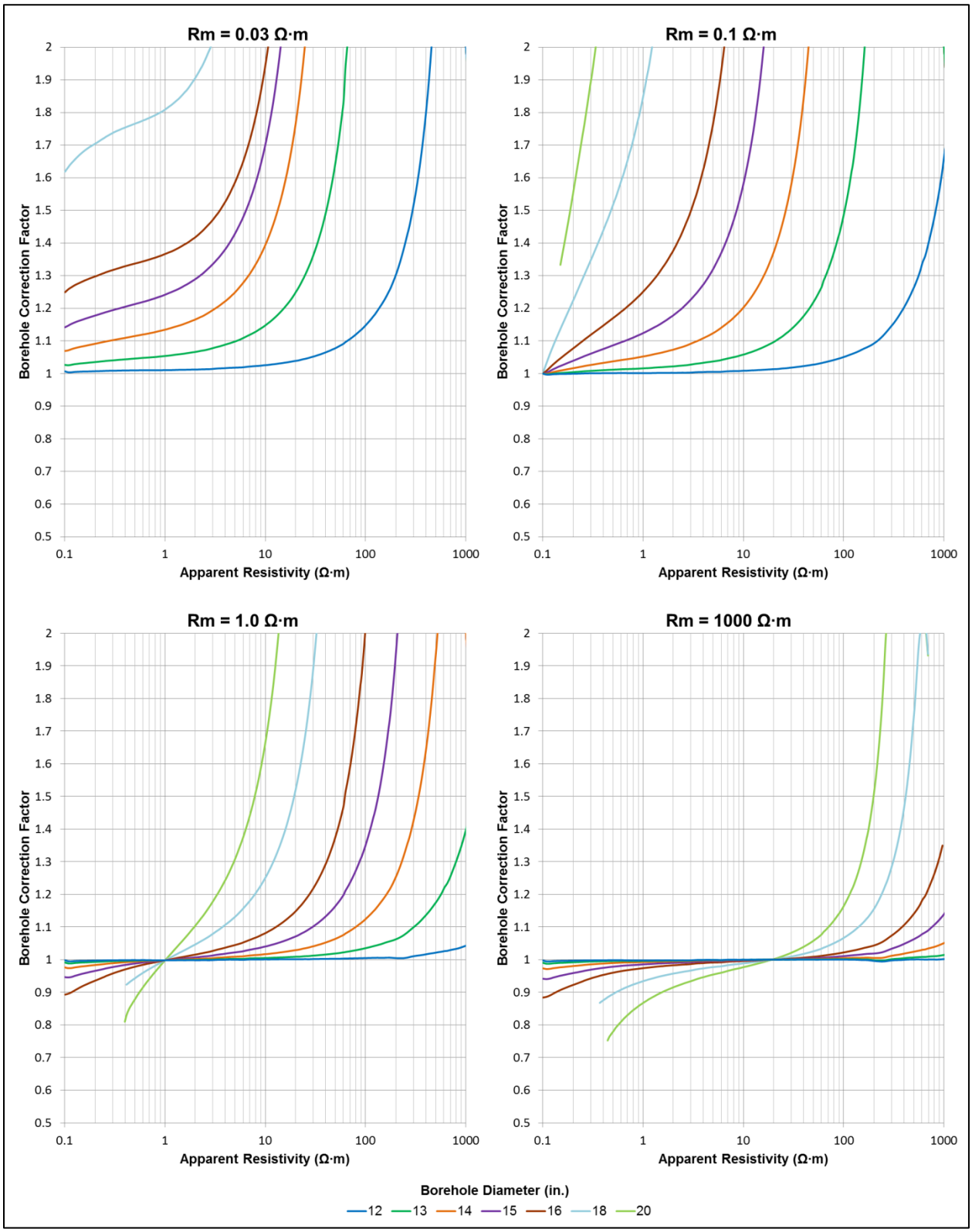


Chart 3-89

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 16-in. Spacing, 2 MHz, Attenuation Resistivity

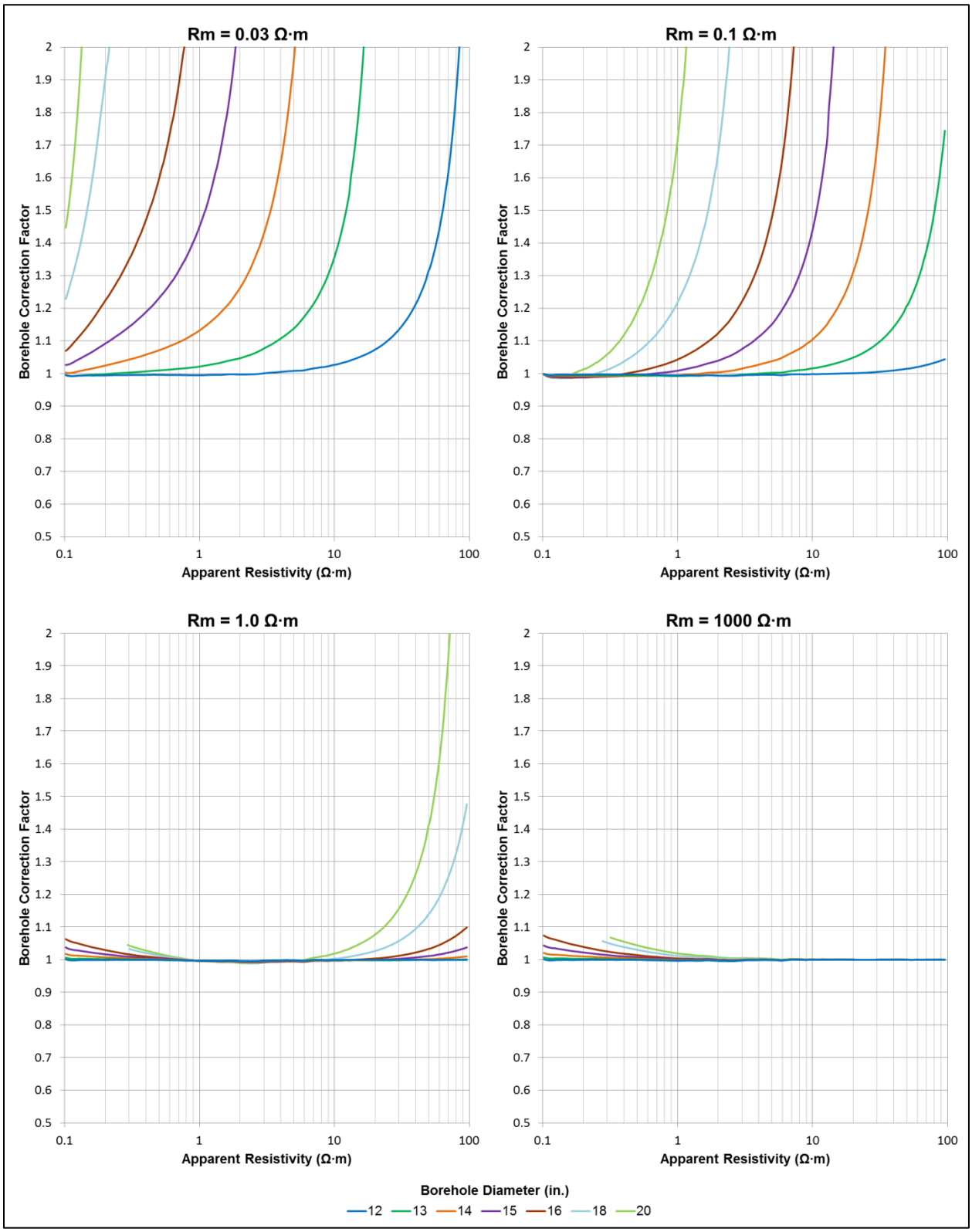


Chart 3-90

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 16-in. Spacing, 500 kHz, Phase-Shift Resistivity

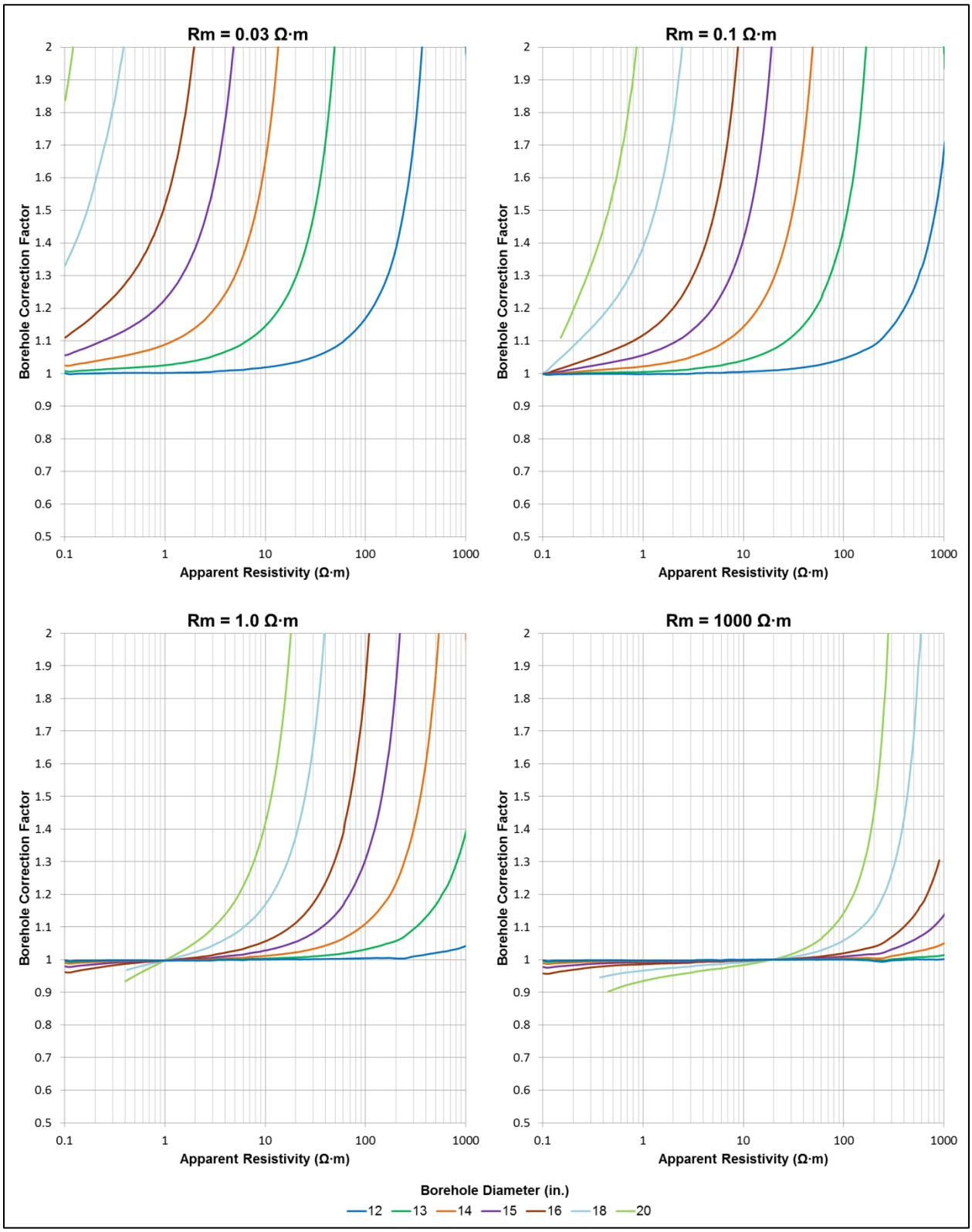


Chart 3-91

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 16-in. Spacing, 500 kHz Attenuation Resistivity

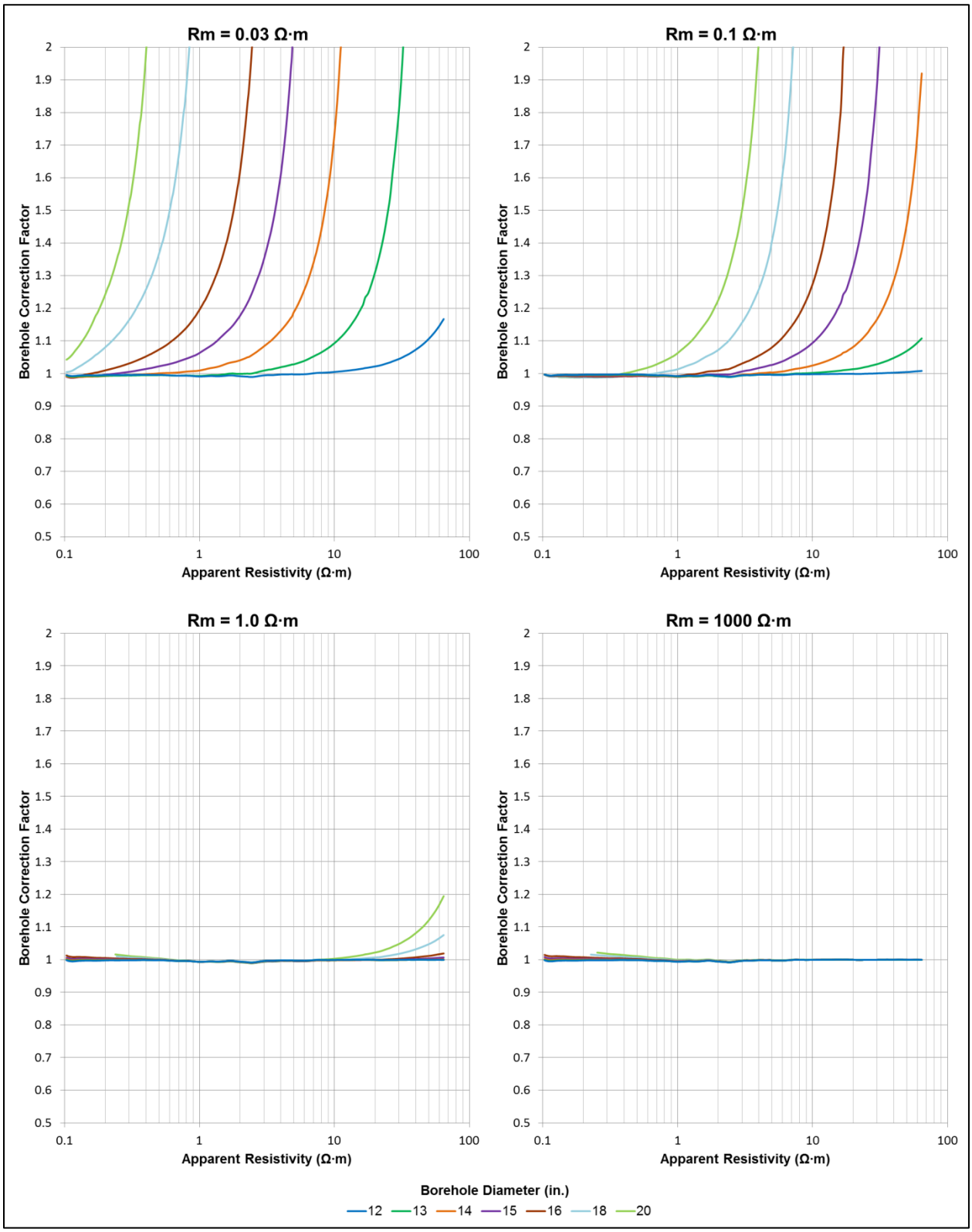


Chart 3-92

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 16-in. Spacing, 250 kHz, Phase-Shift Resistivity

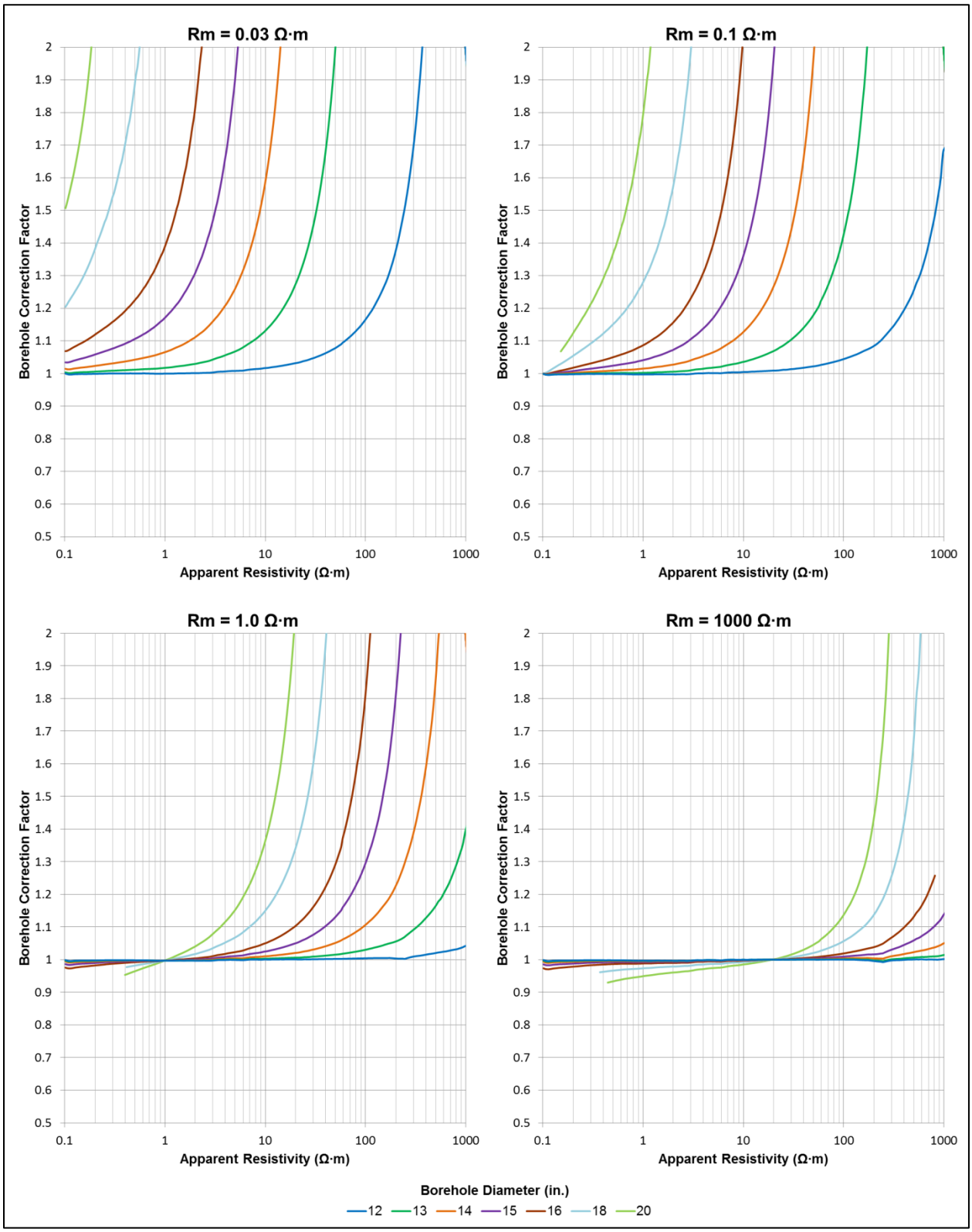


Chart 3-93

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 16-in. Spacing, 250 kHz Attenuation Resistivity

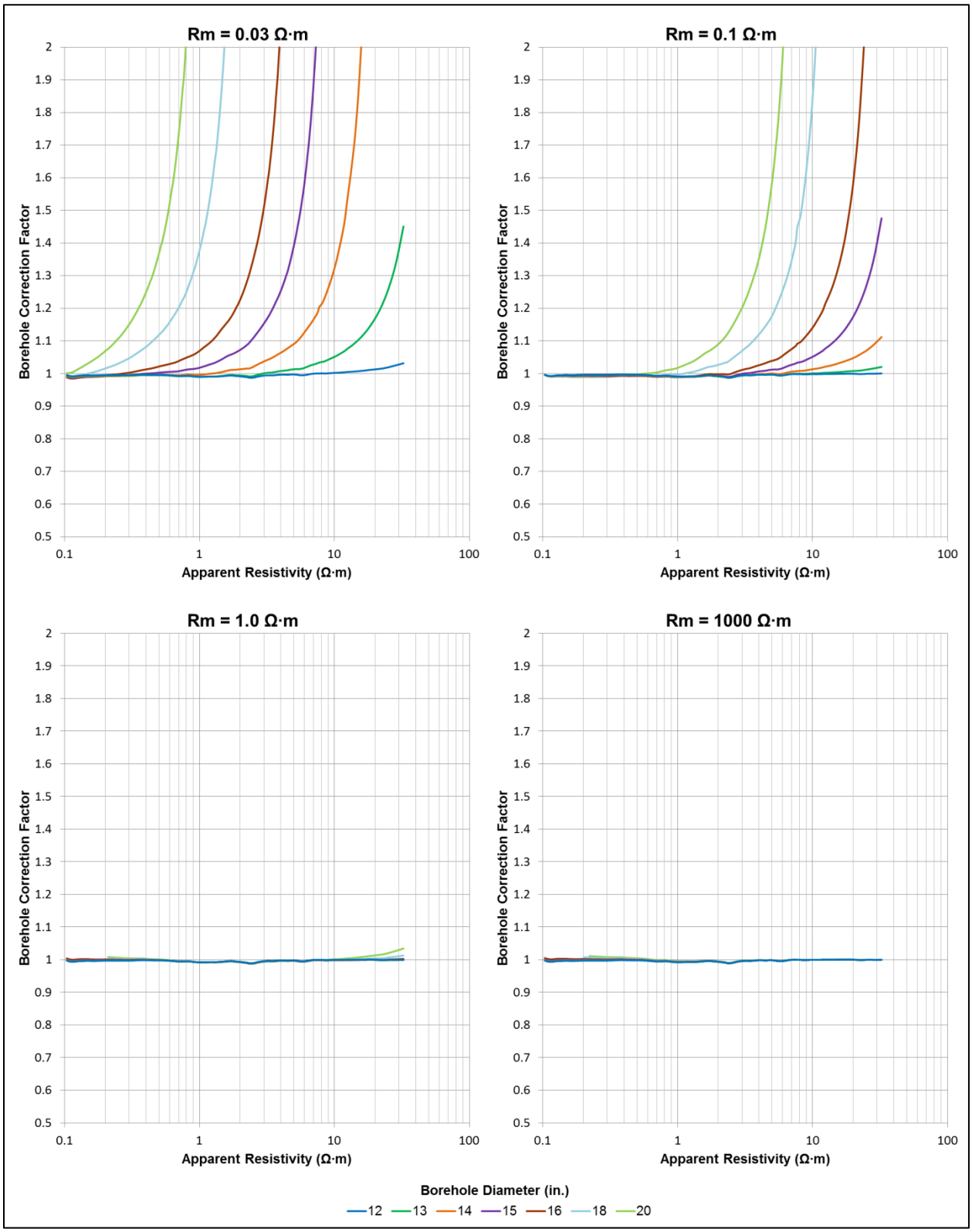


Chart 3-94

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 24-in. Spacing, 2 MHz, Phase-Shift Resistivity

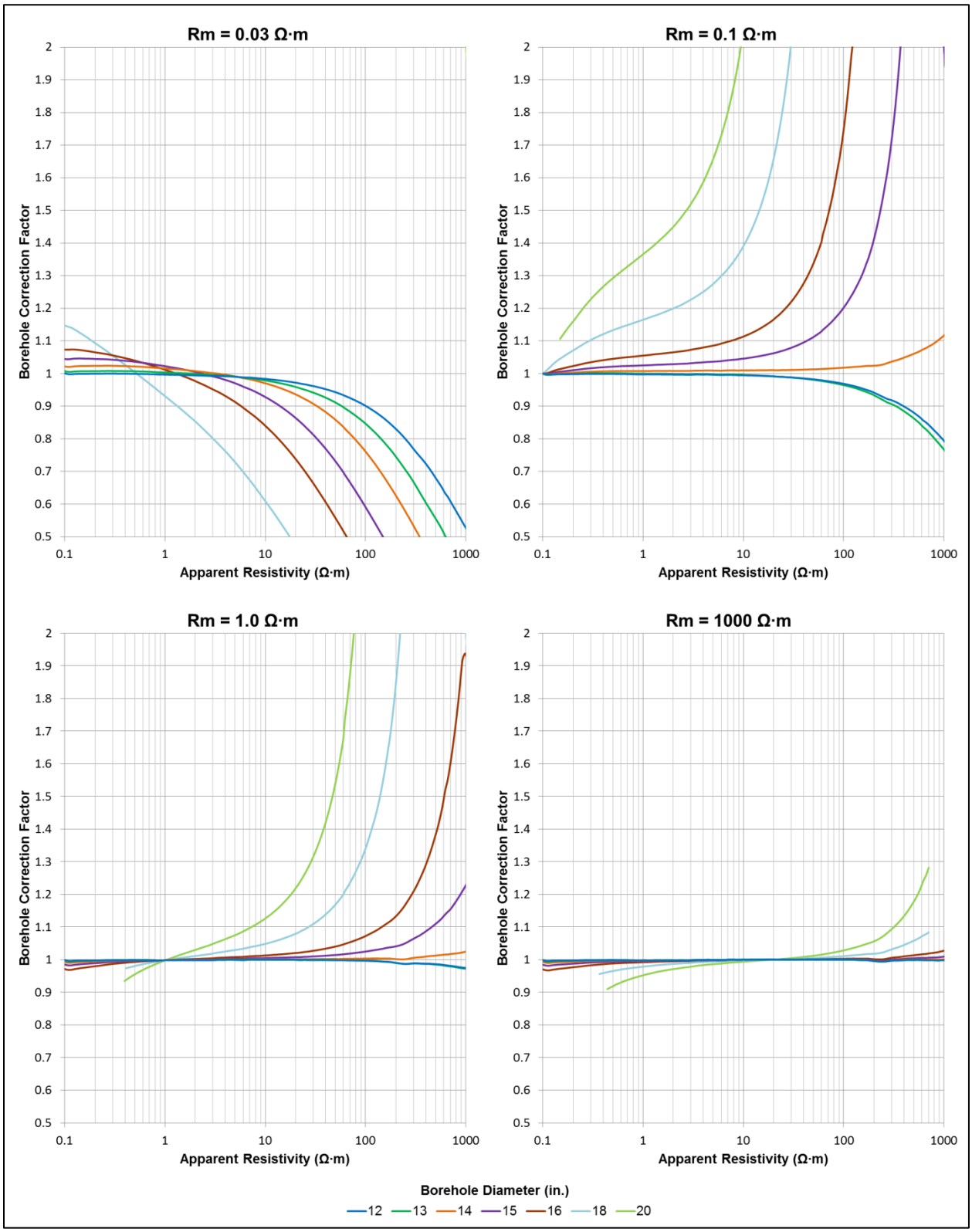


Chart 3-95

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 24-in. Spacing, 2 MHz, Attenuation Resistivity

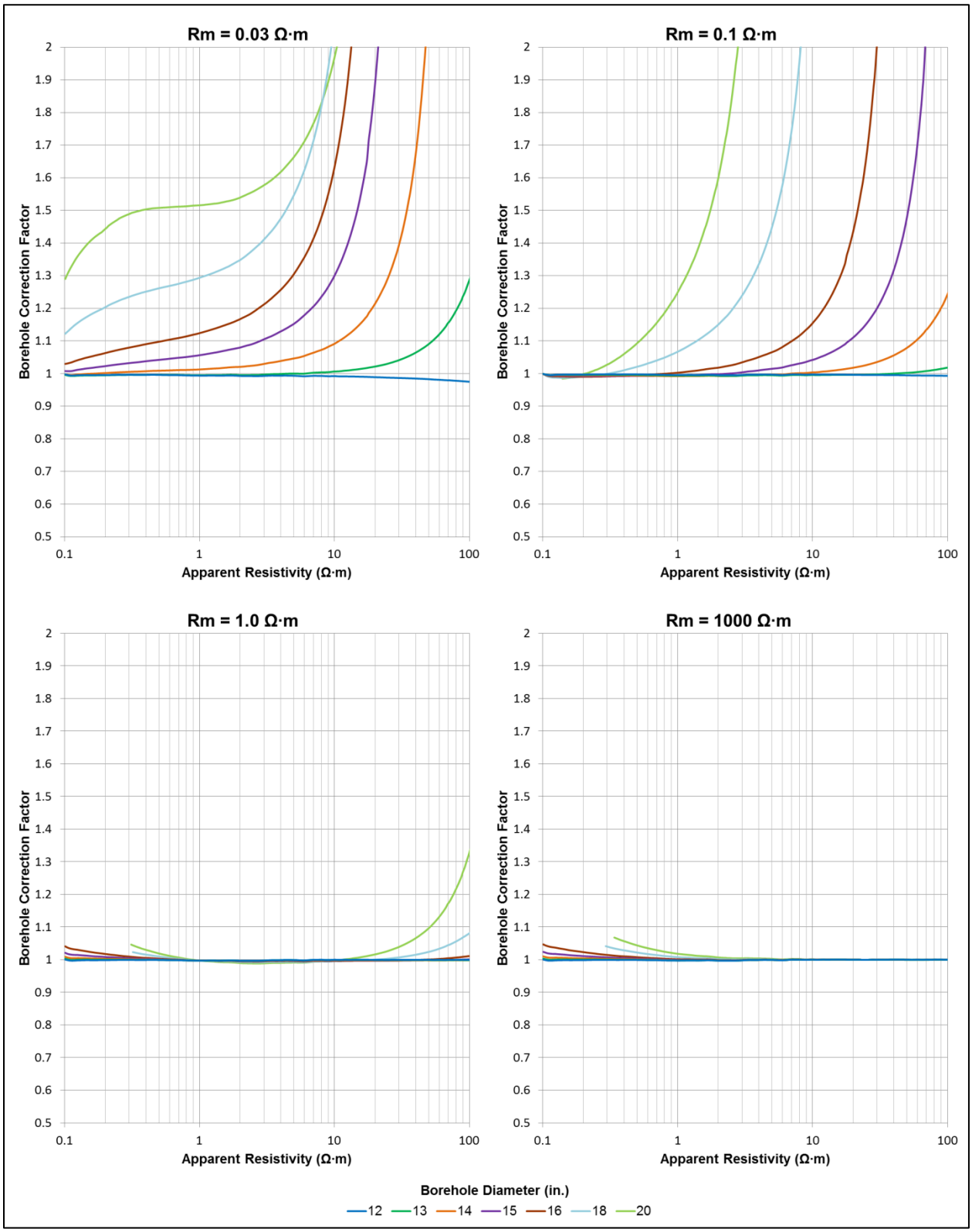


Chart 3-96

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 24-in. Spacing, 500 kHz, Phase-Shift Resistivity

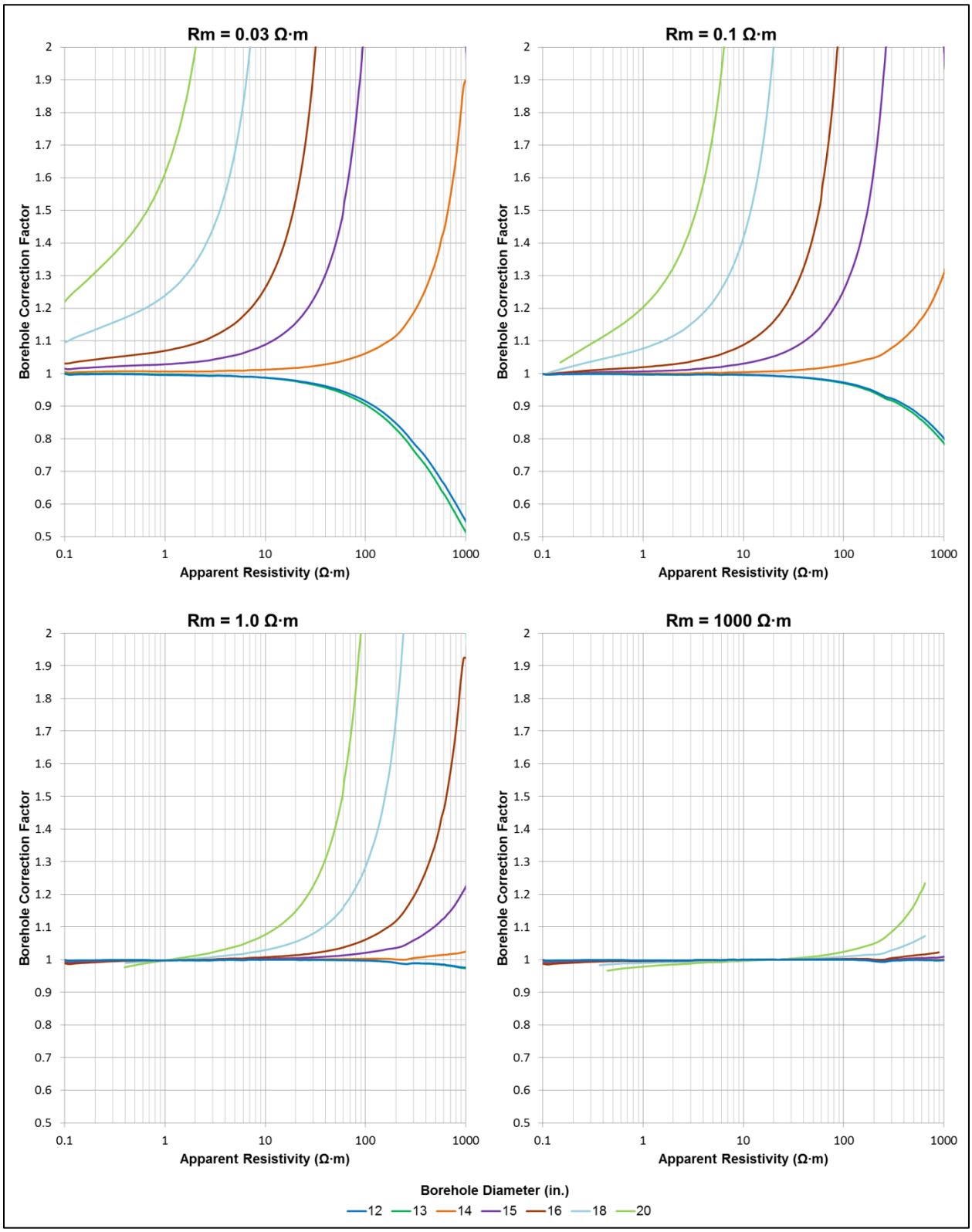


Chart 3-97

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 24-in. Spacing, 500 kHz Attenuation Resistivity

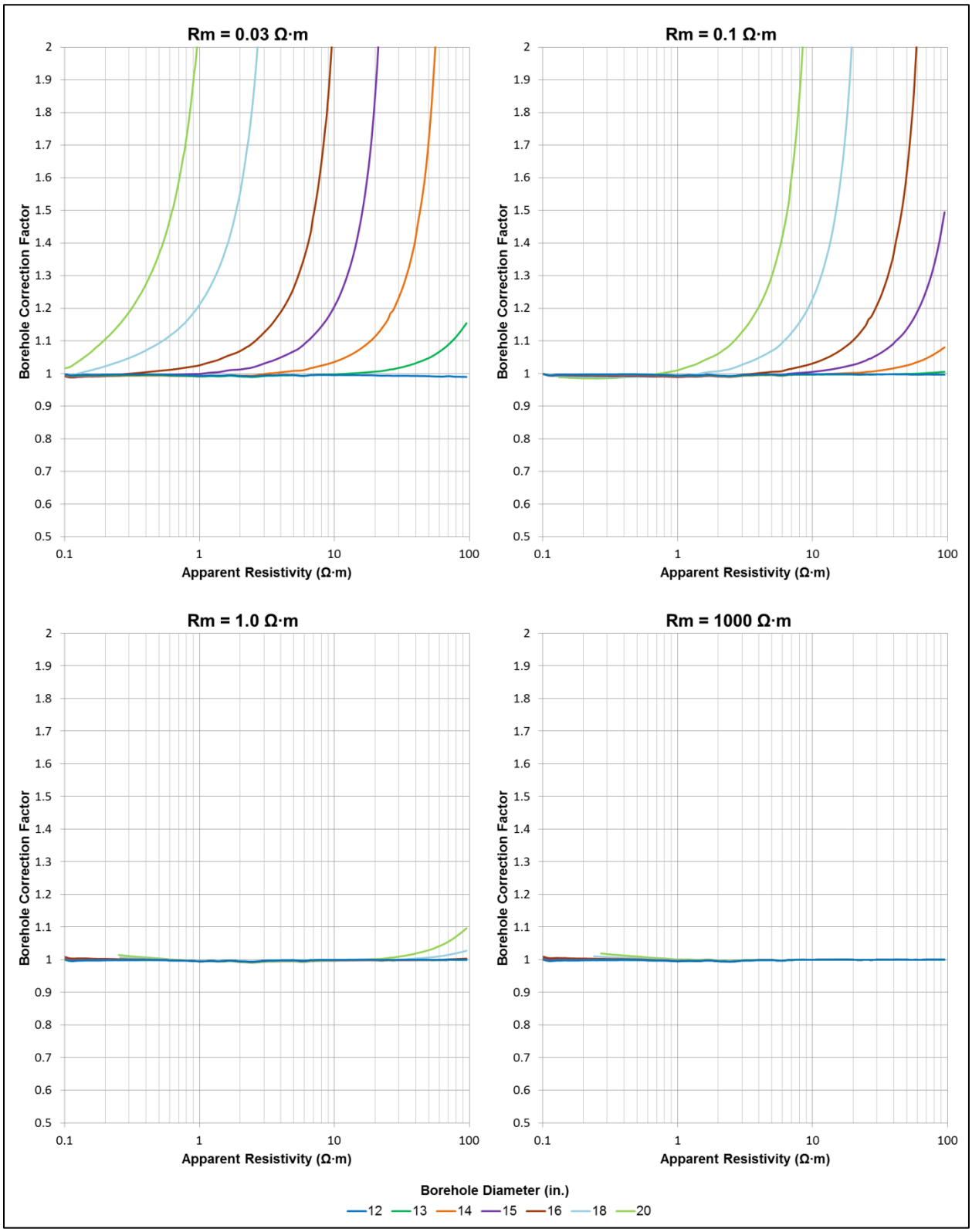


Chart 3-98

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 24-in. Spacing, 250 kHz, Phase-Shift Resistivity

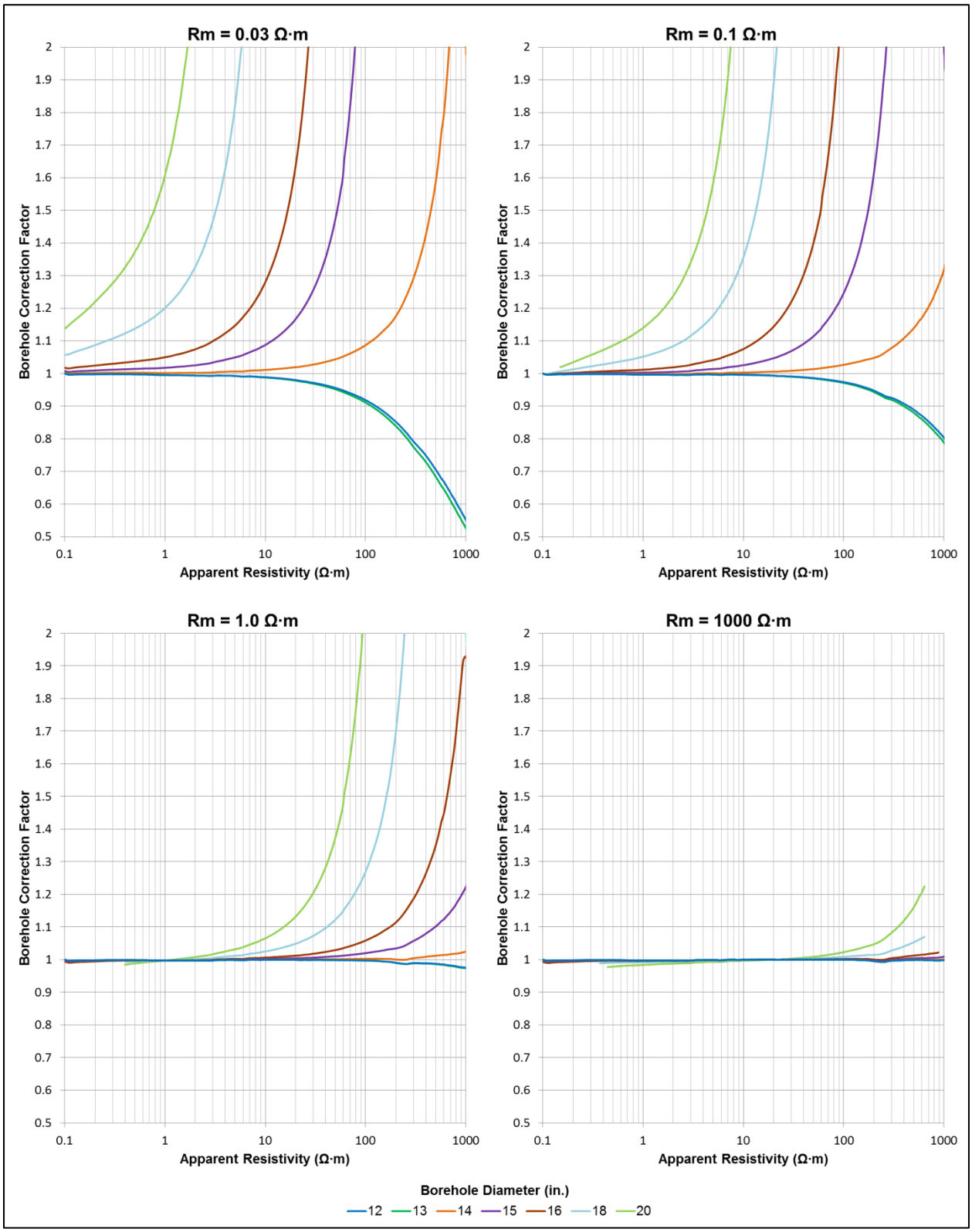


Chart 3-99

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 24-in. Spacing, 250 kHz Attenuation Resistivity

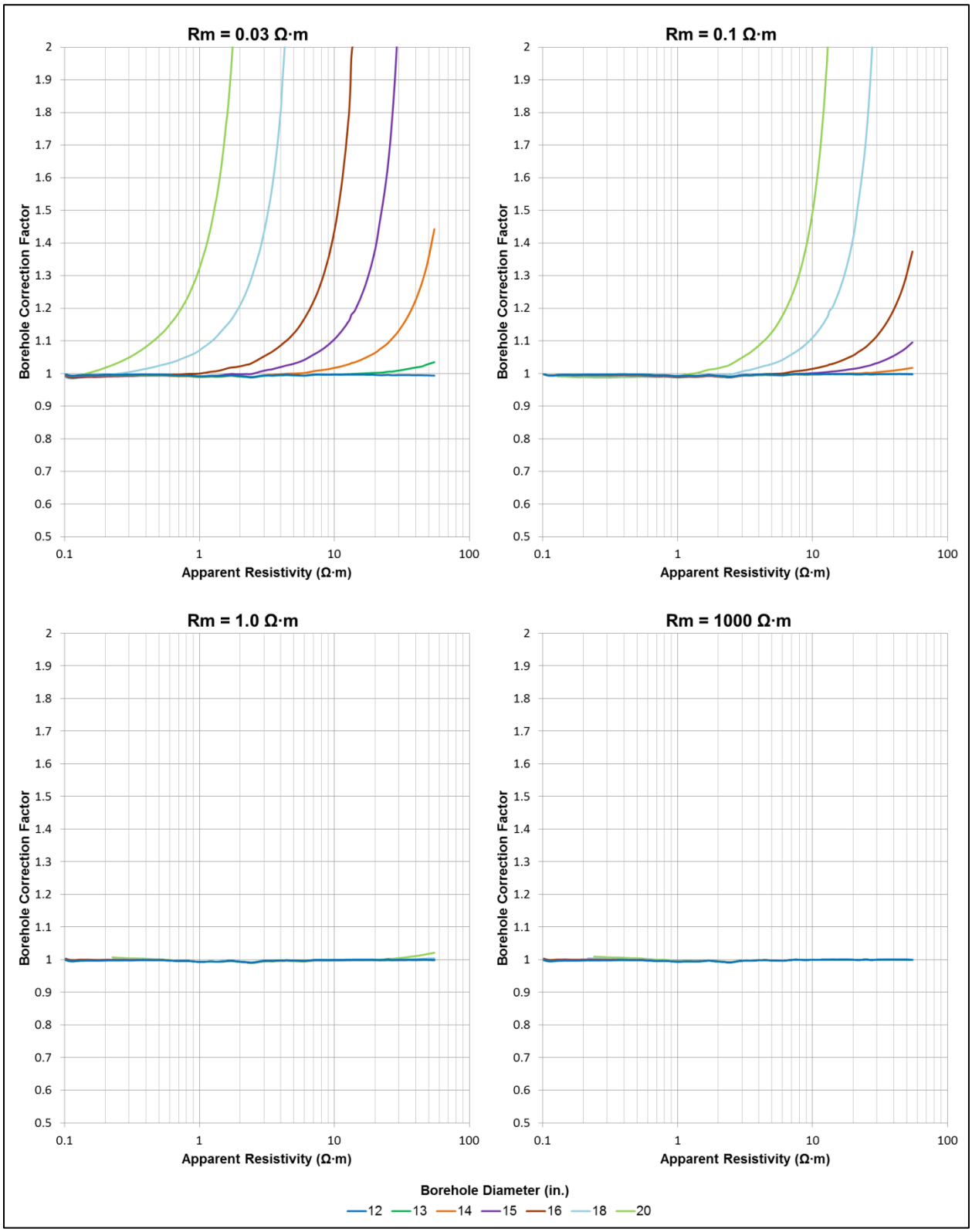


Chart 3-100

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 32-in. Spacing, 2 MHz, Phase-Shift Resistivity

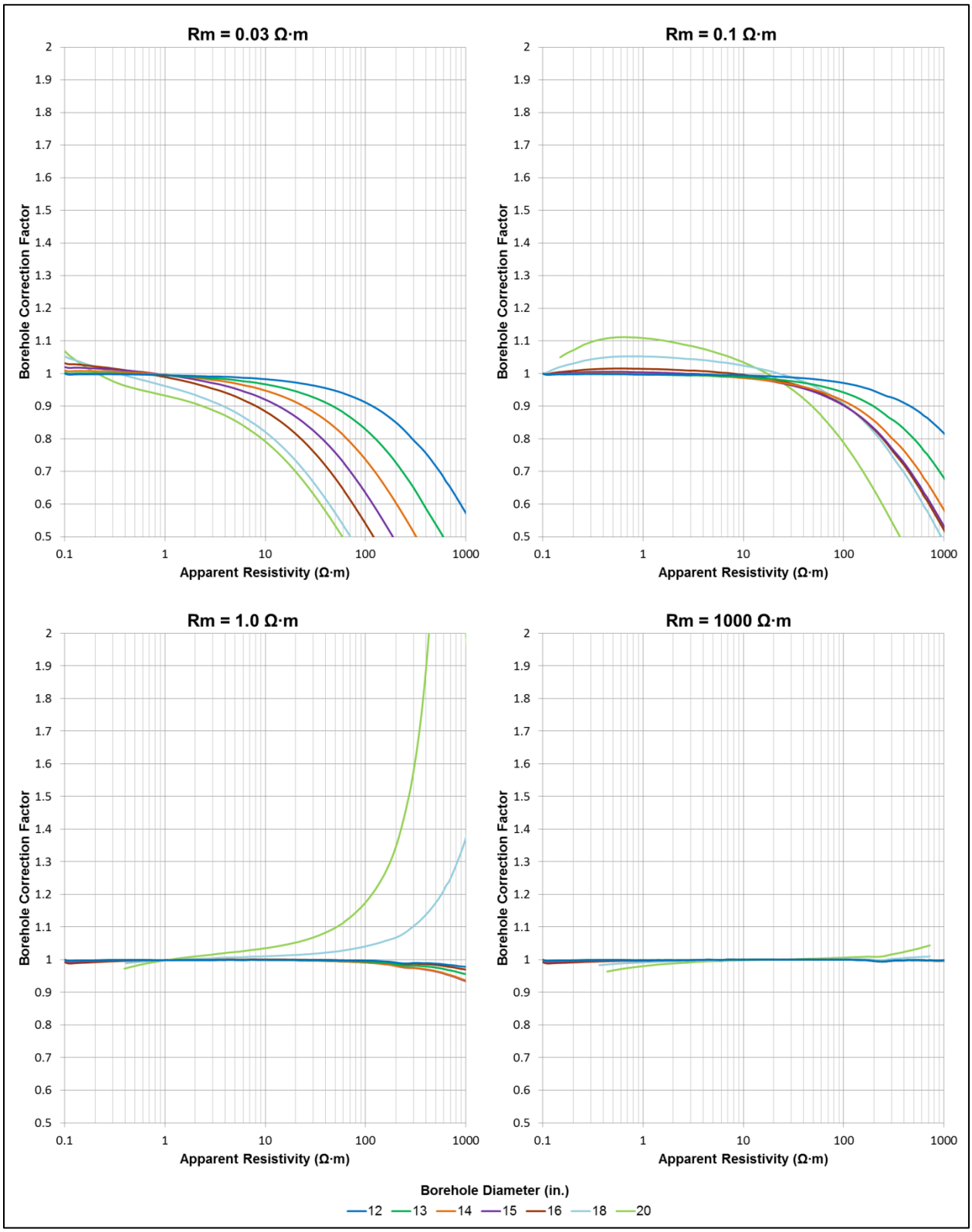


Chart 3-101

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 32-in. Spacing, 2 MHz, Attenuation Resistivity

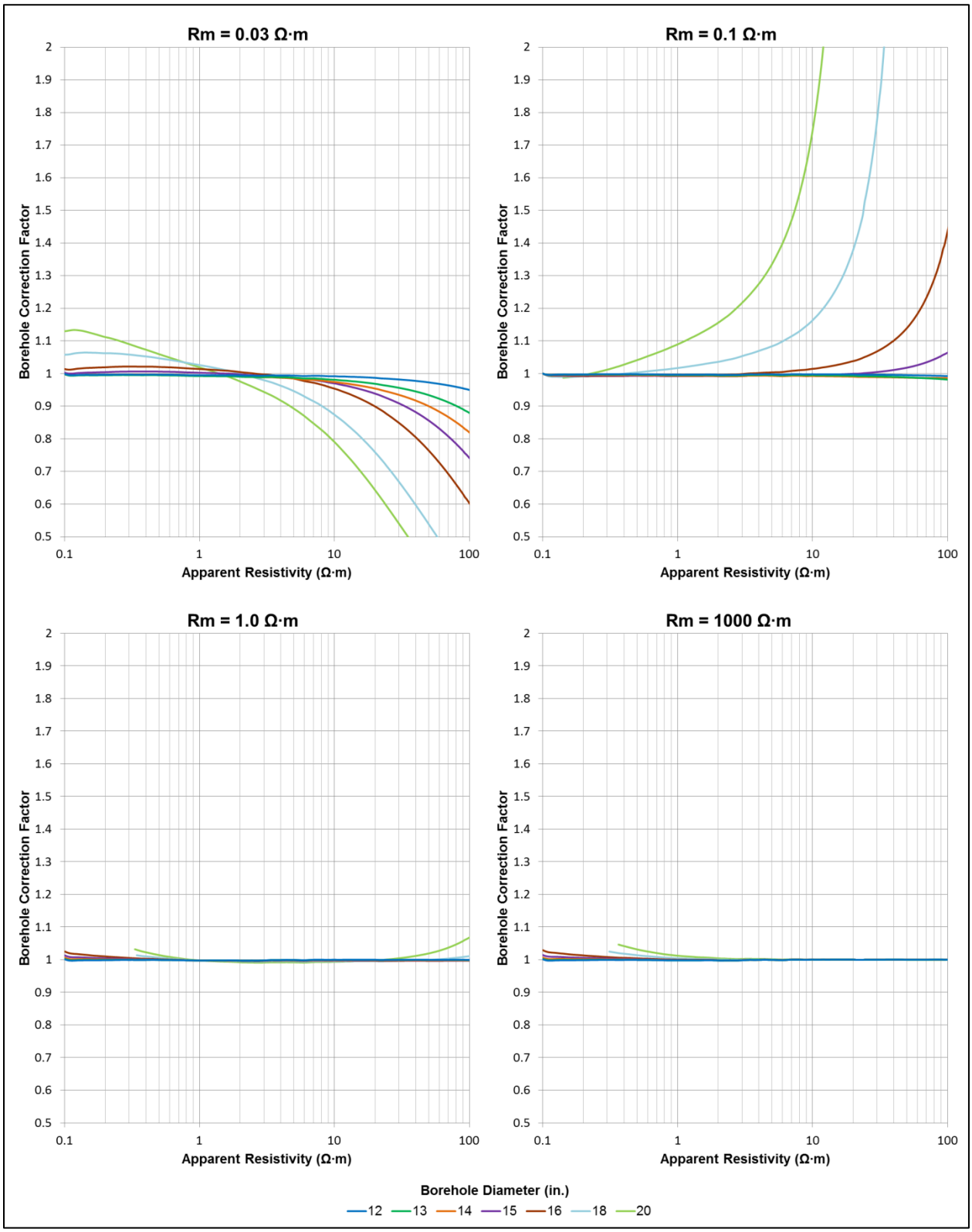


Chart 3-102

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 32-in. Spacing, 500 kHz, Phase-Shift Resistivity

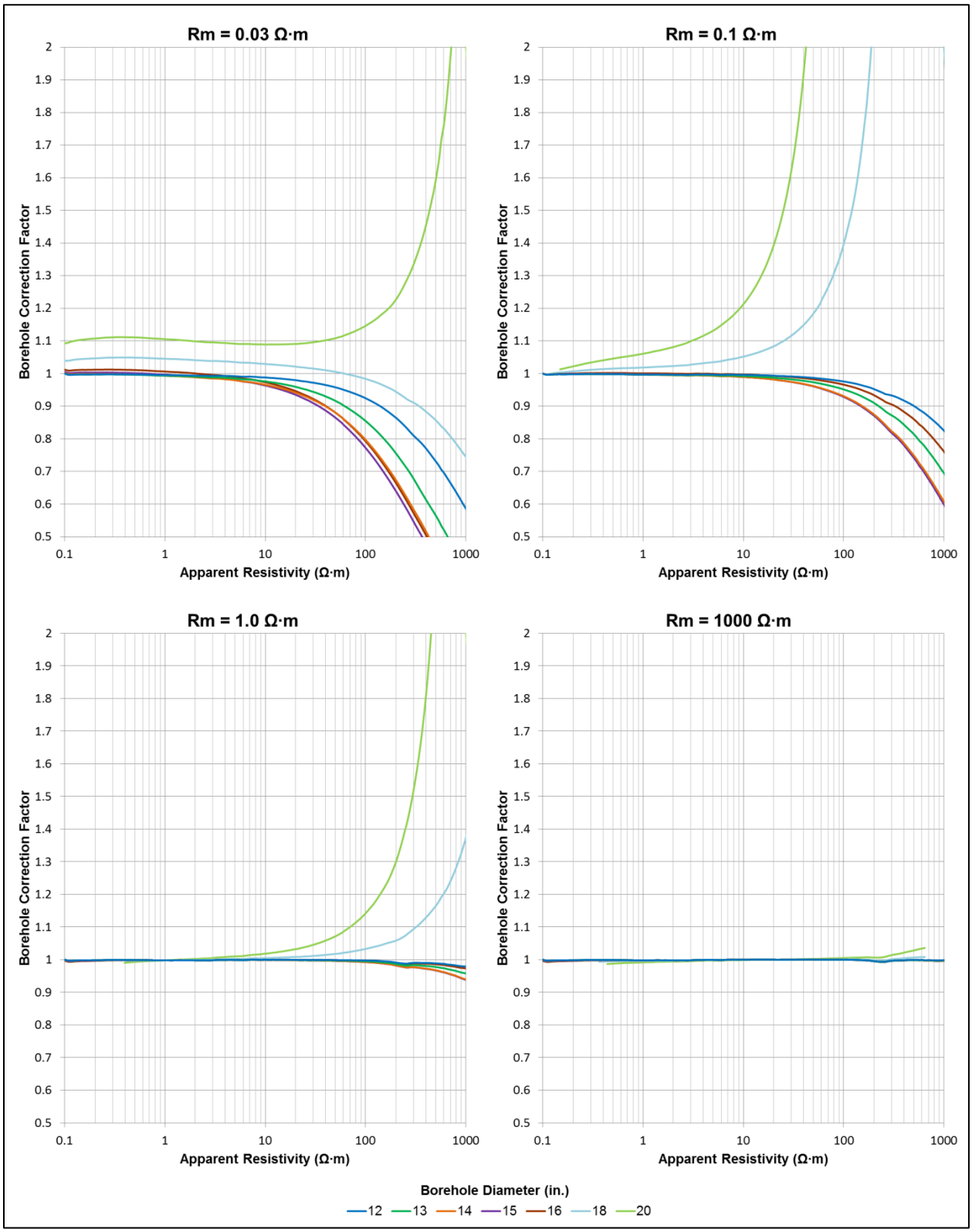


Chart 3-103

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 32-in. Spacing, 500 kHz Attenuation Resistivity

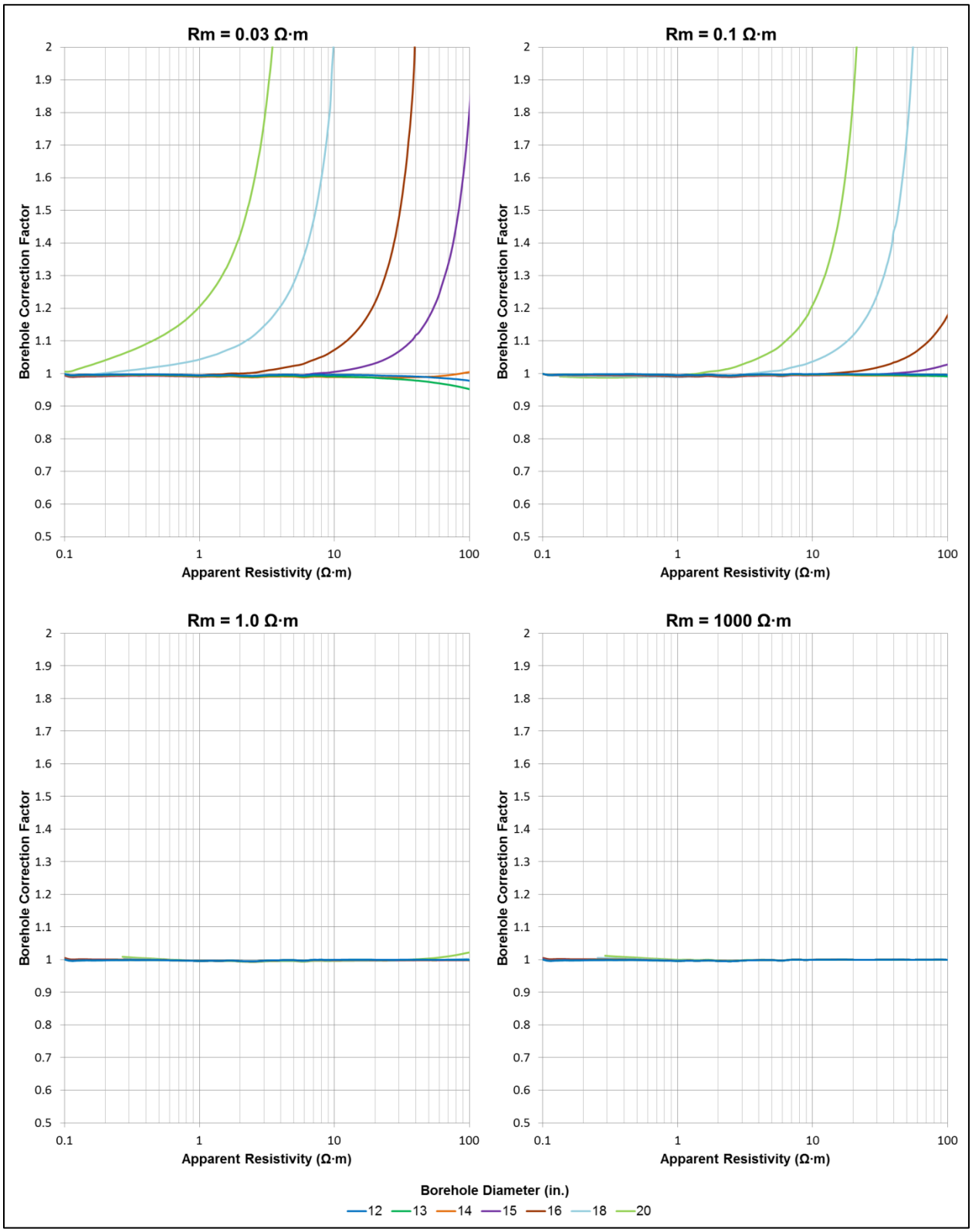


Chart 3-104

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 32-in. Spacing, 250 kHz, Phase-Shift Resistivity

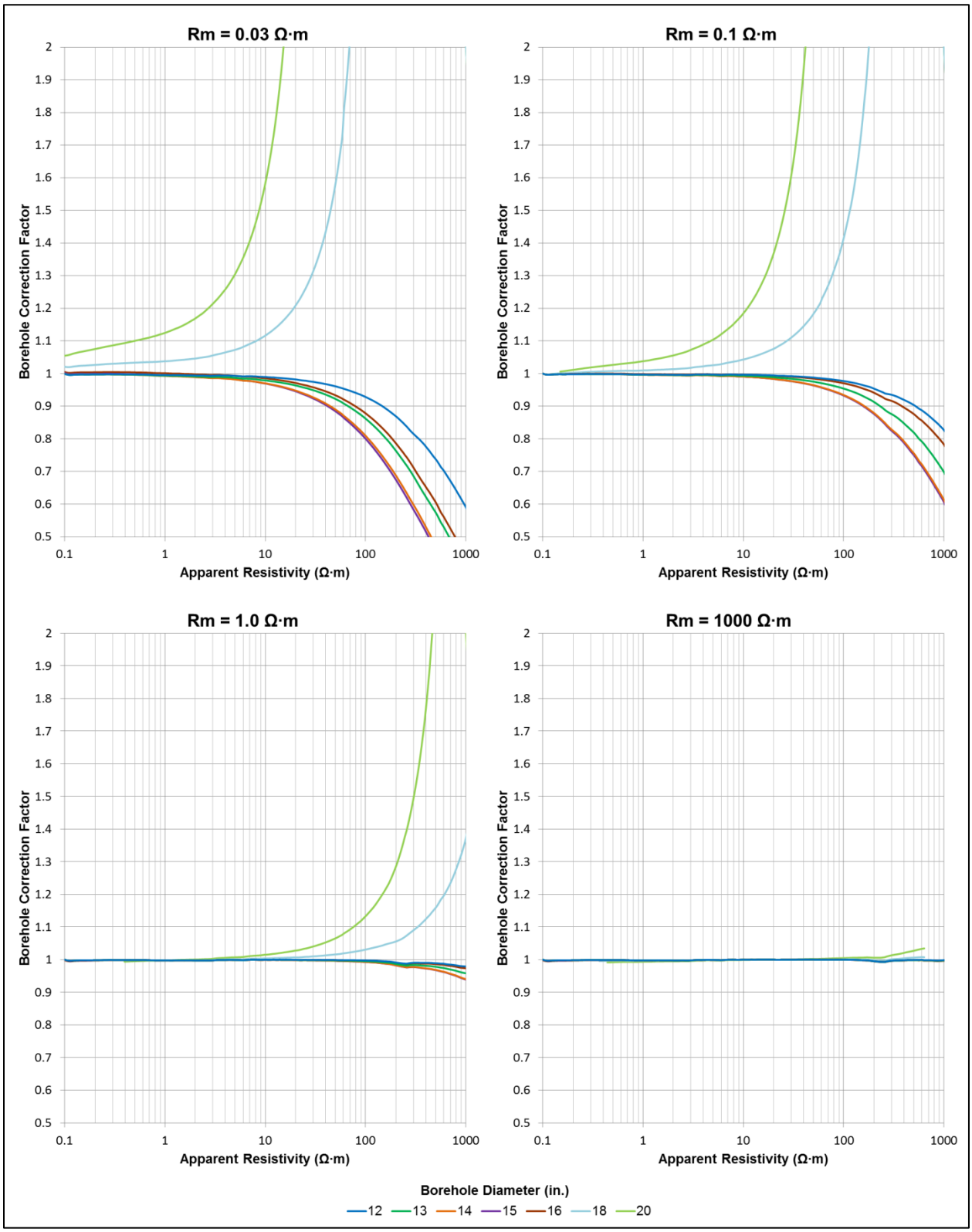


Chart 3-105

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 32-in. Spacing, 250 kHz Attenuation Resistivity

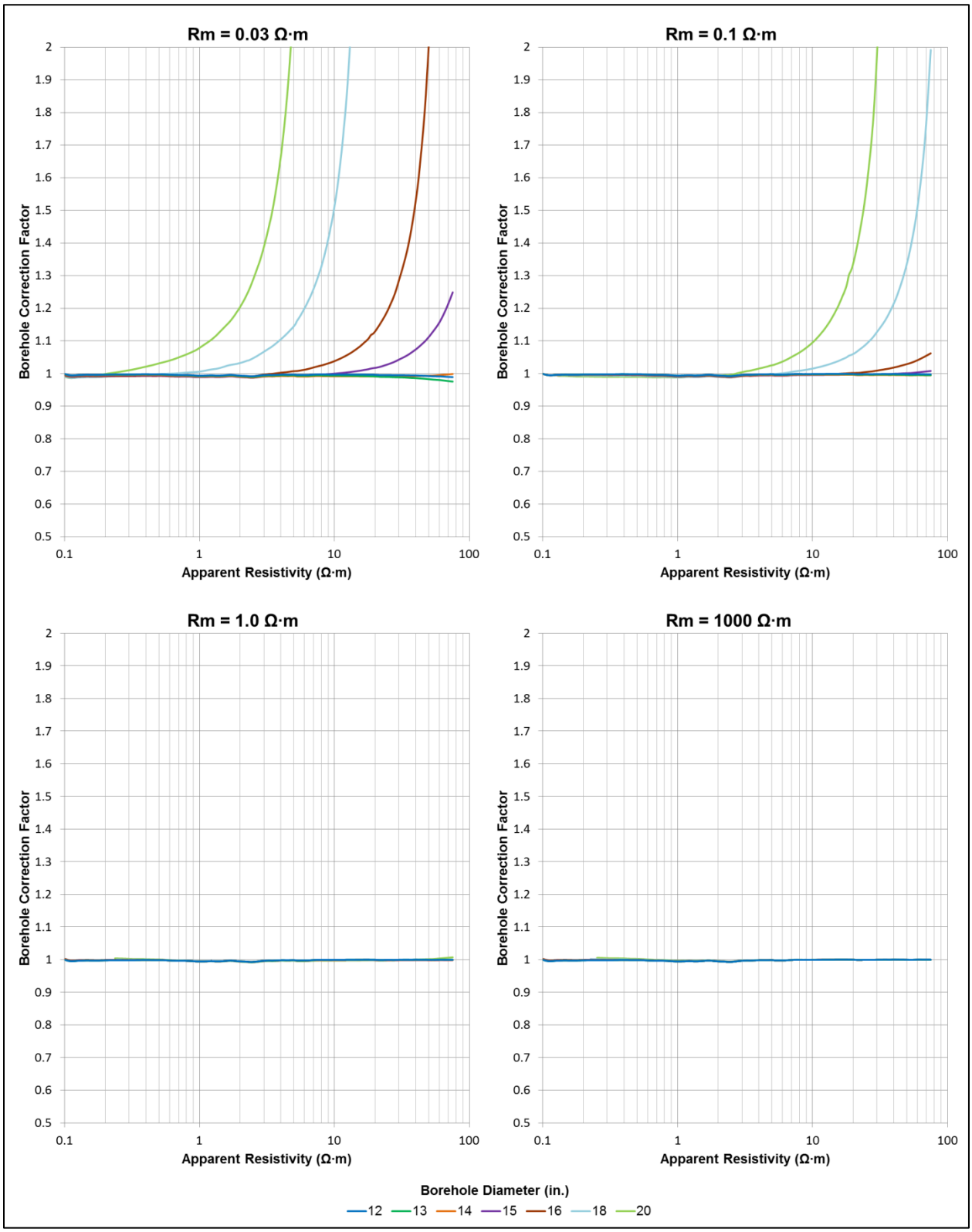


Chart 3-106

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 40-in. Spacing, 2 MHz, Phase-Shift Resistivity

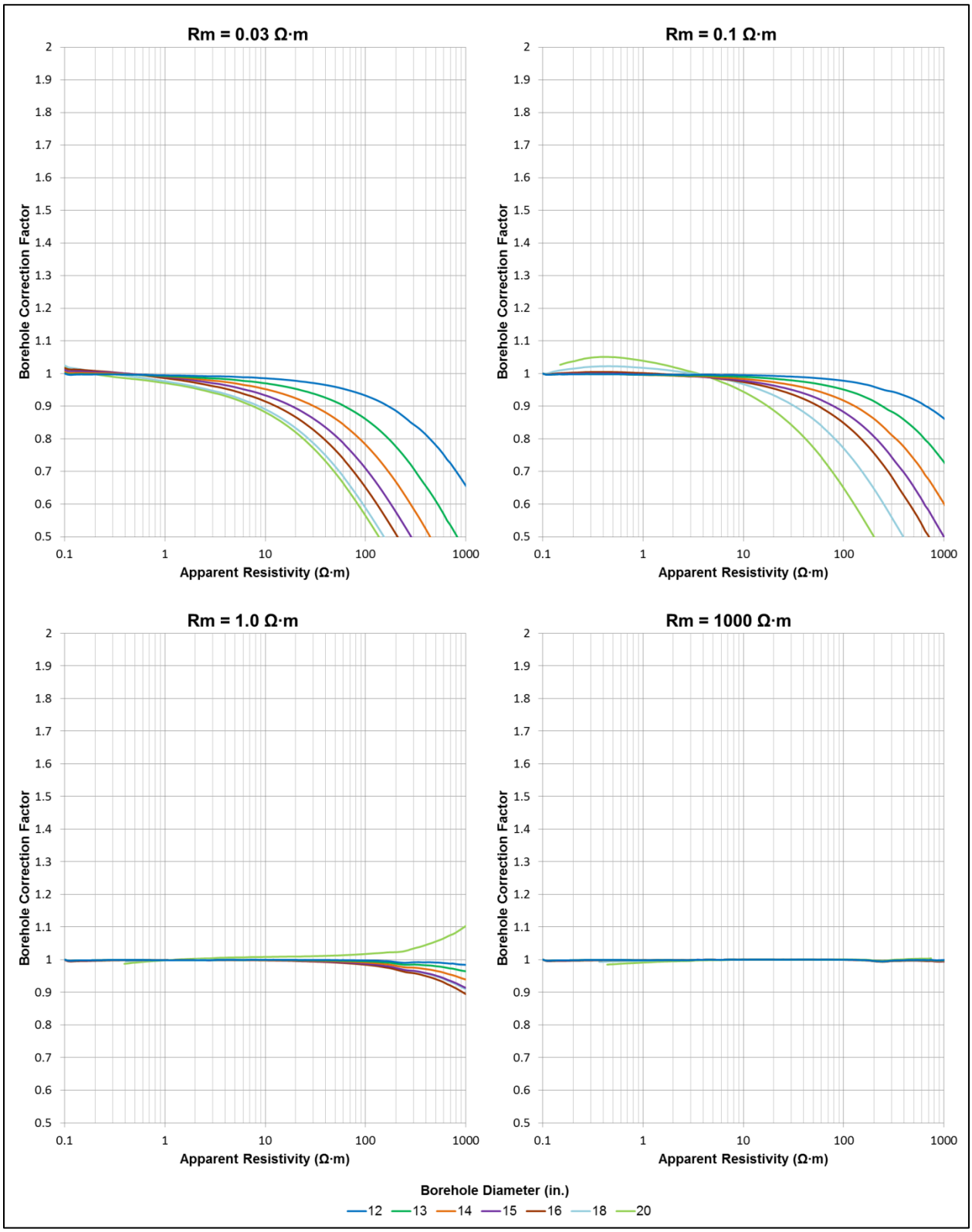


Chart 3-107

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 40-in. Spacing, 2 MHz, Attenuation Resistivity

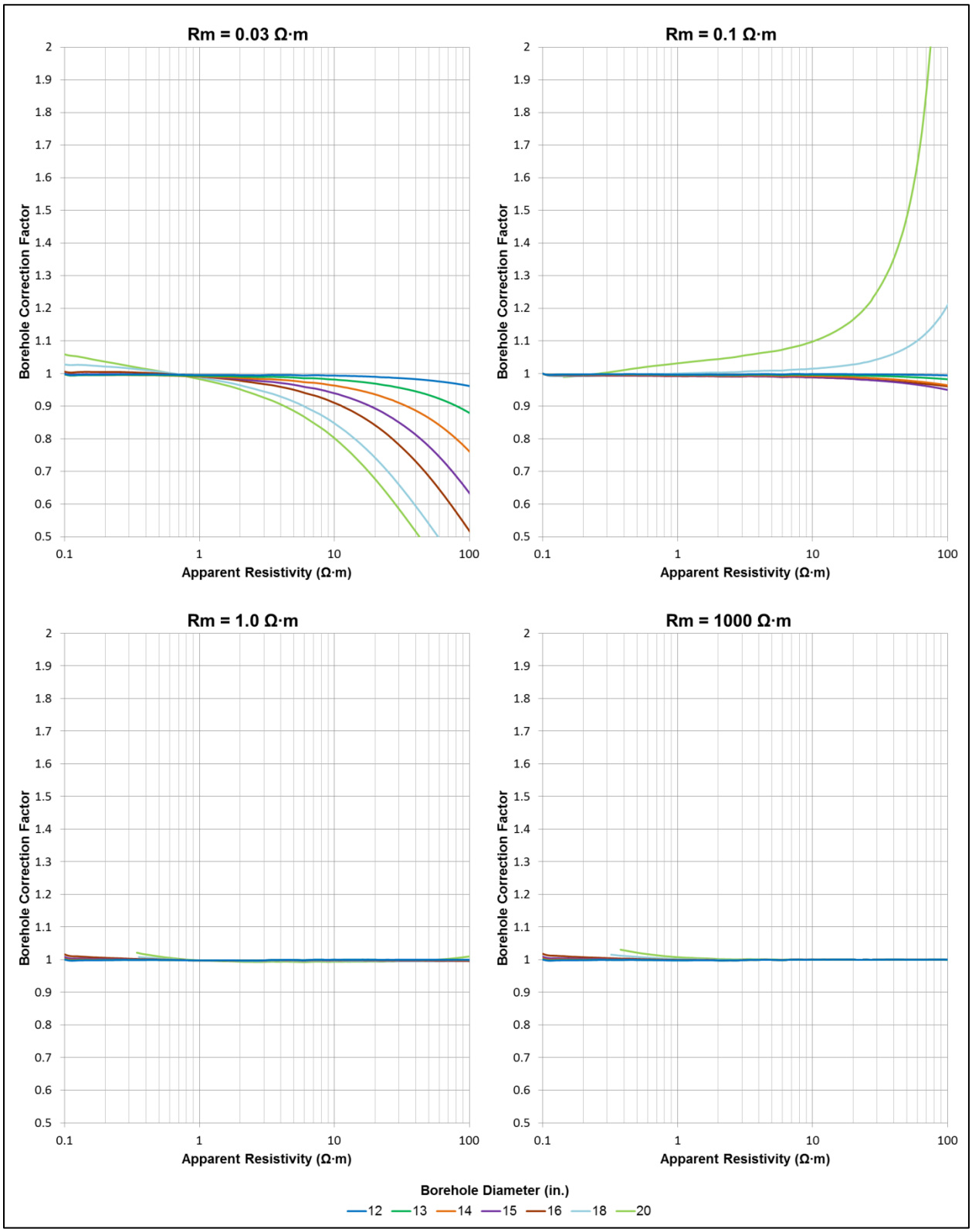


Chart 3-108

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 40-in. Spacing, 500 kHz, Phase-Shift Resistivity

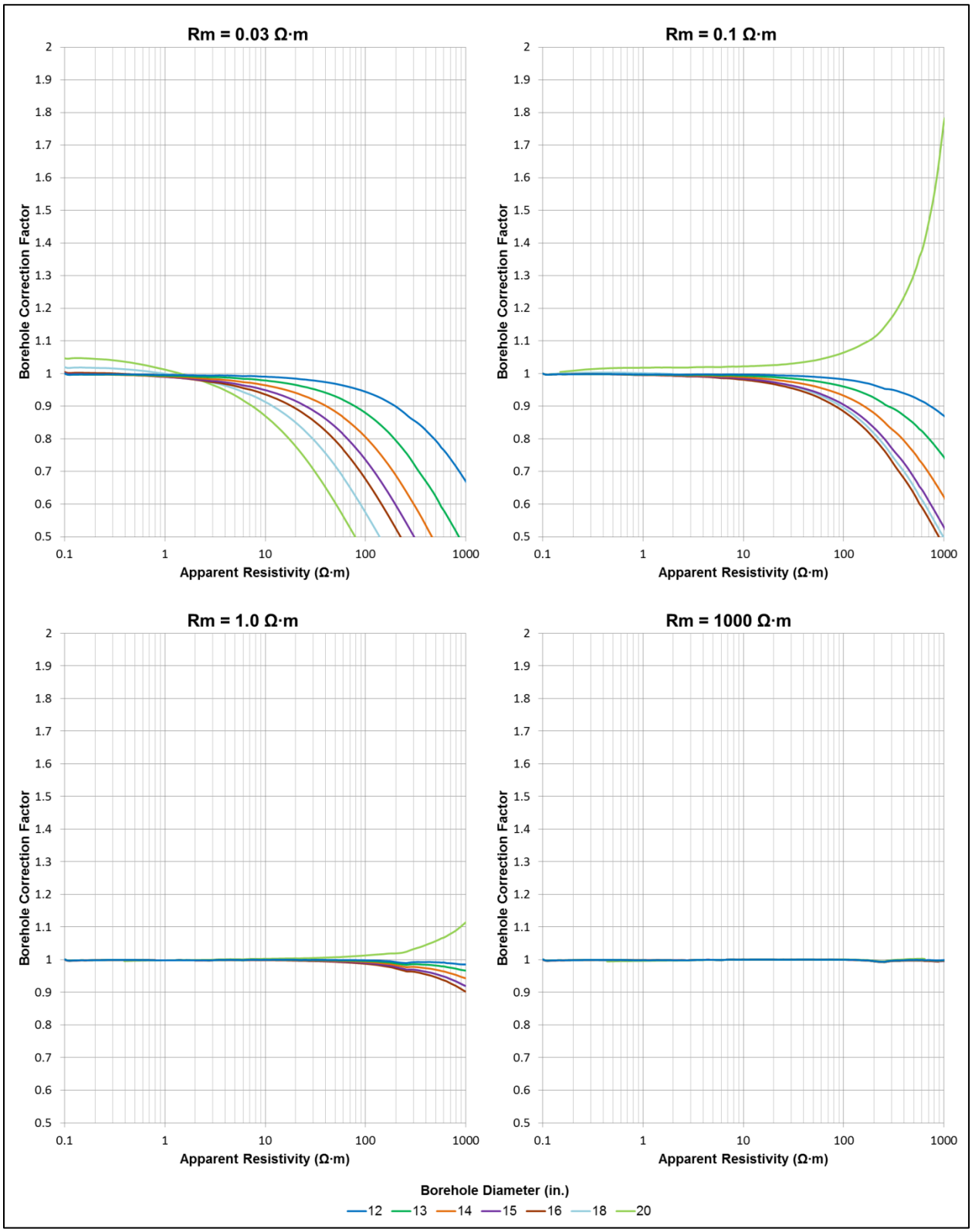


Chart 3-109

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 40-in. Spacing, 500 kHz Attenuation Resistivity

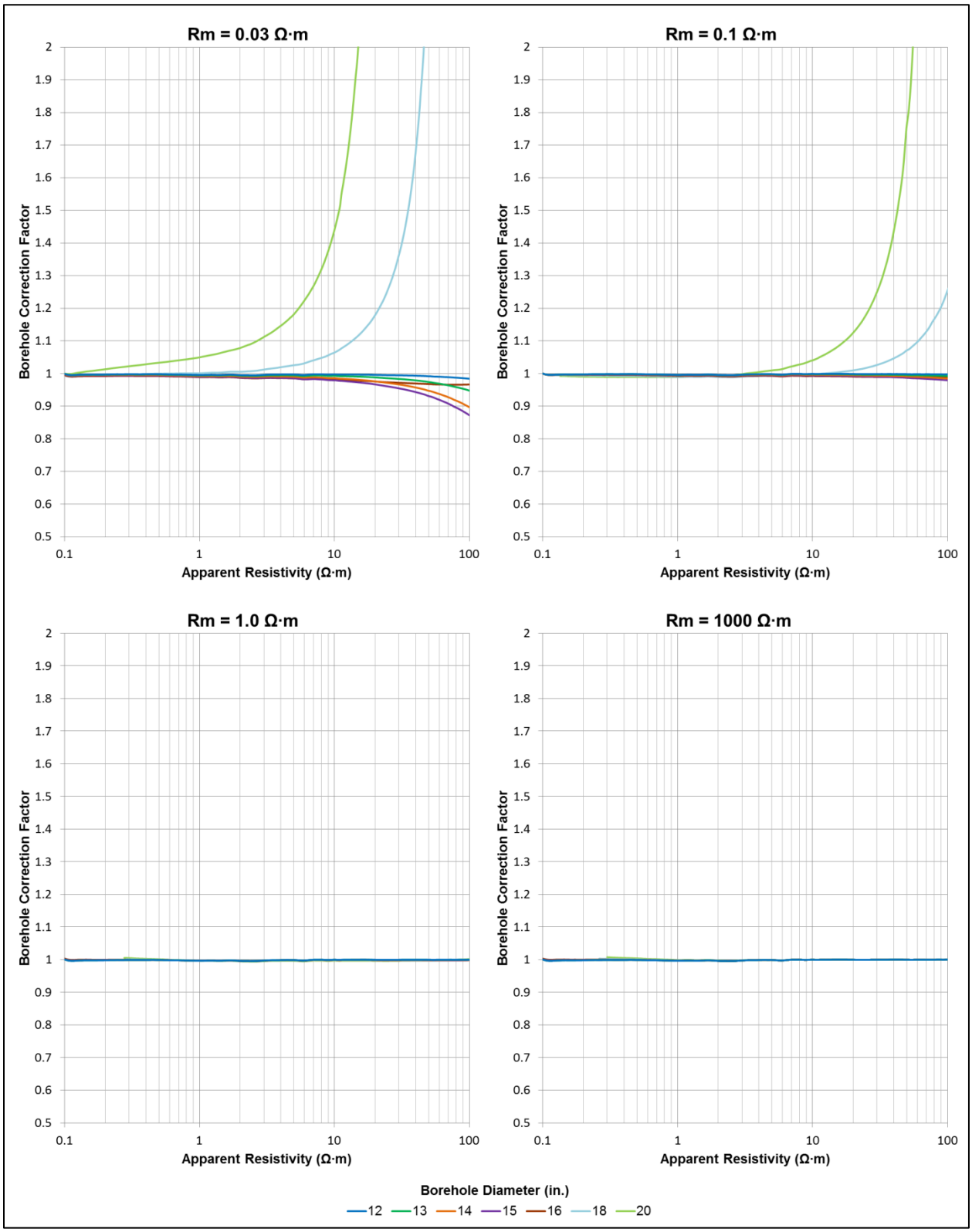


Chart 3-110

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 40-in. Spacing, 250 kHz, Phase-Shift Resistivity

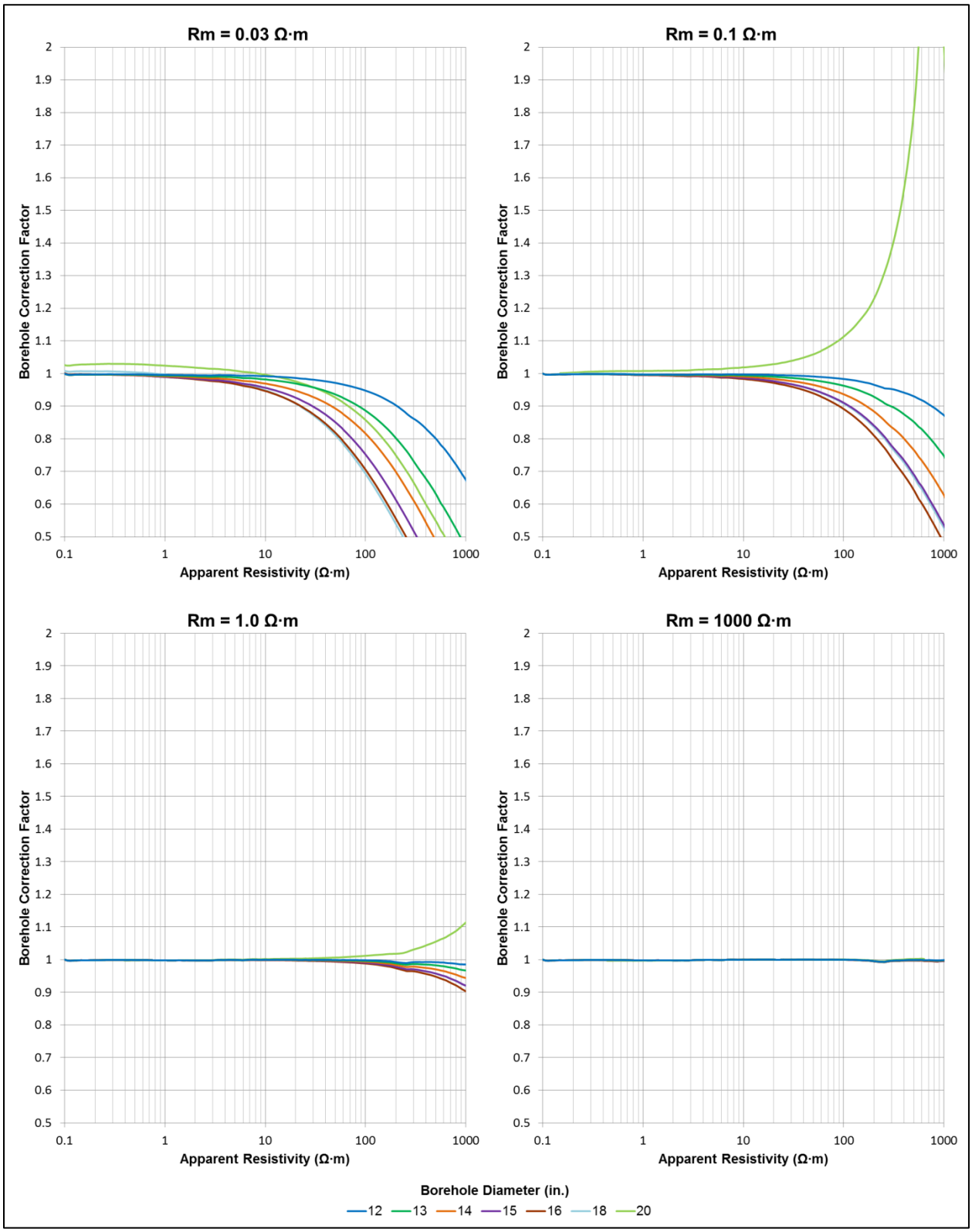


Chart 3-111

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 40-in. Spacing, 250 kHz Attenuation Resistivity

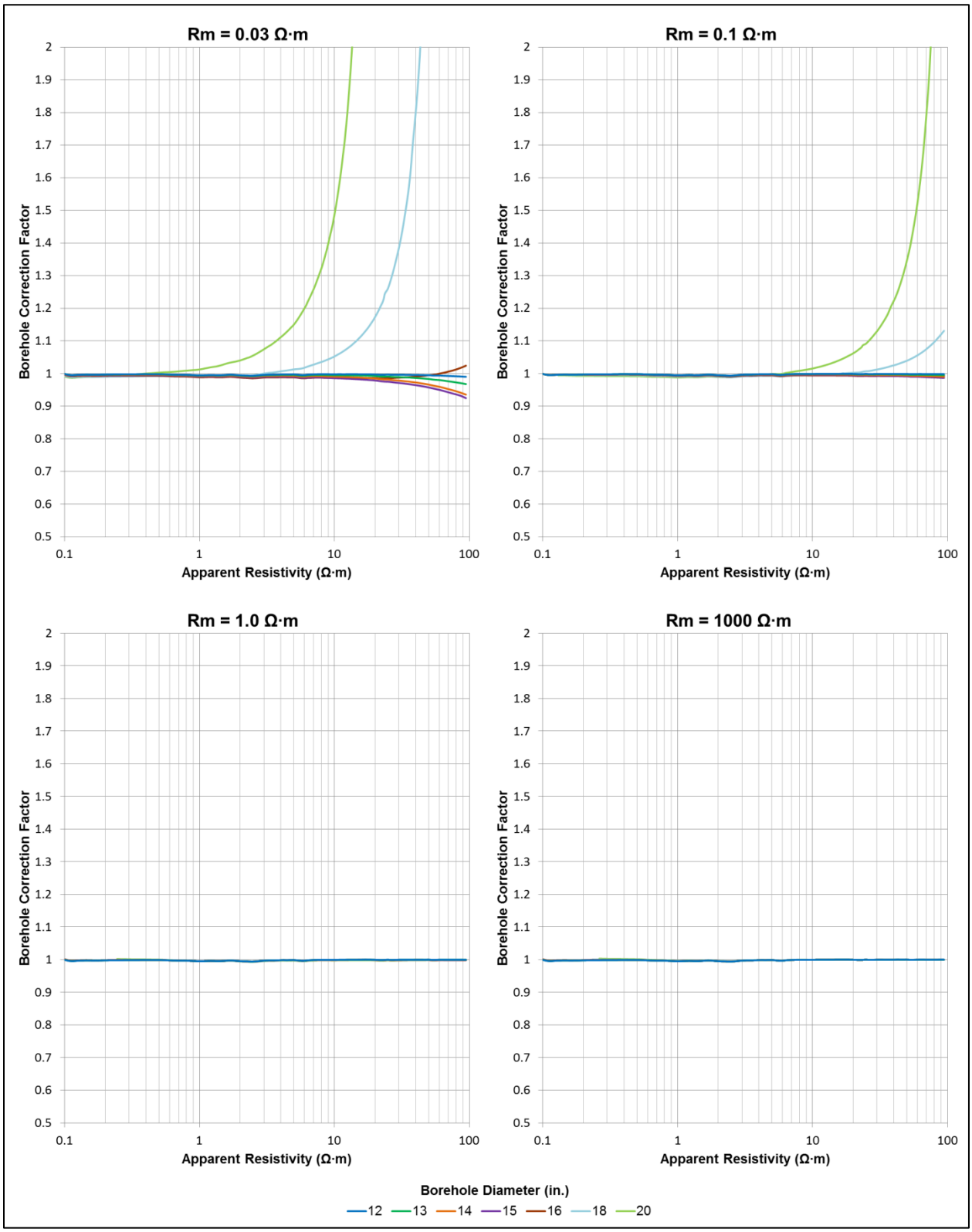


Chart 3-112

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 48-in. Spacing, 2 MHz, Phase-Shift Resistivity

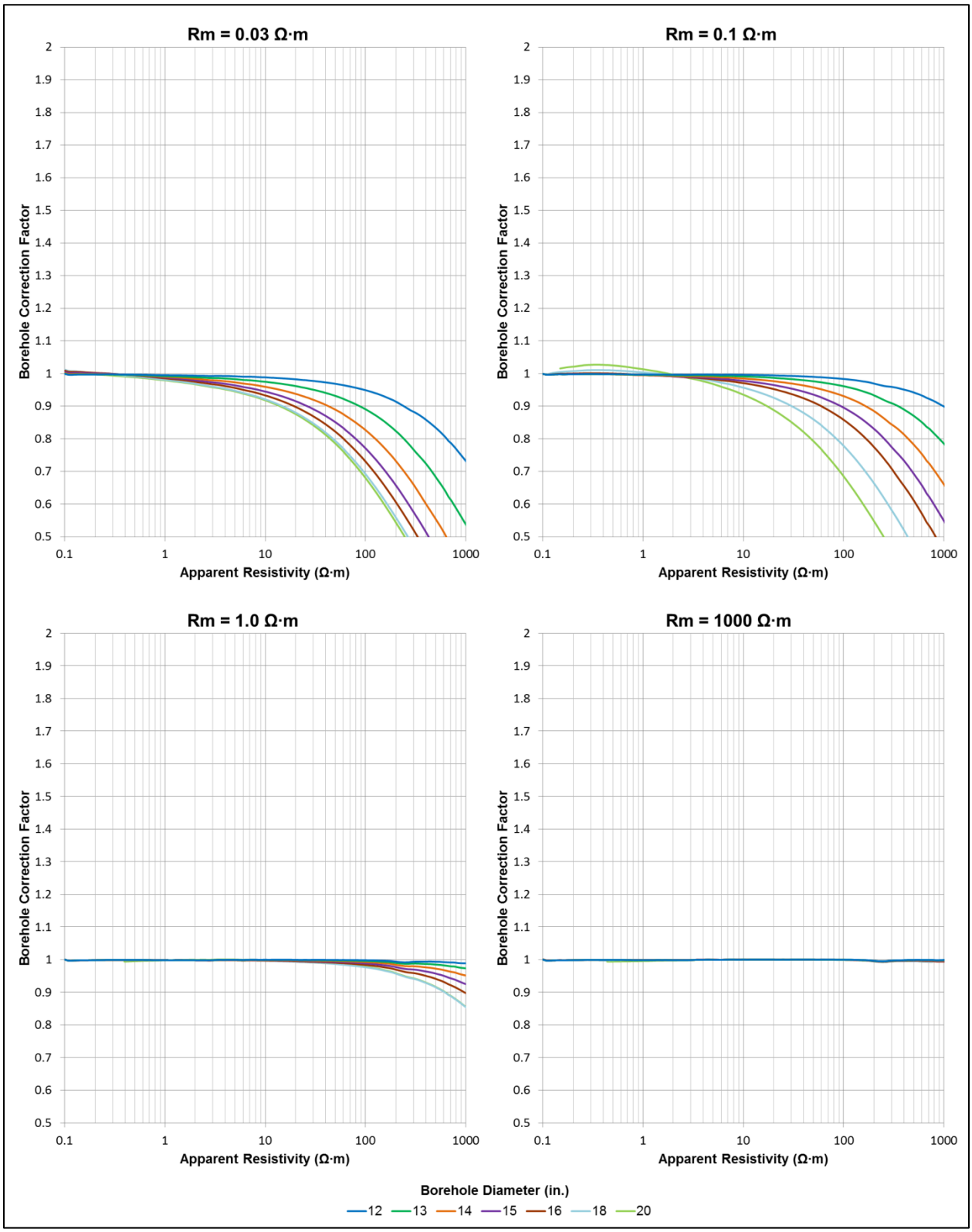


Chart 3-113

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 48-in. Spacing, 2 MHz, Attenuation Resistivity

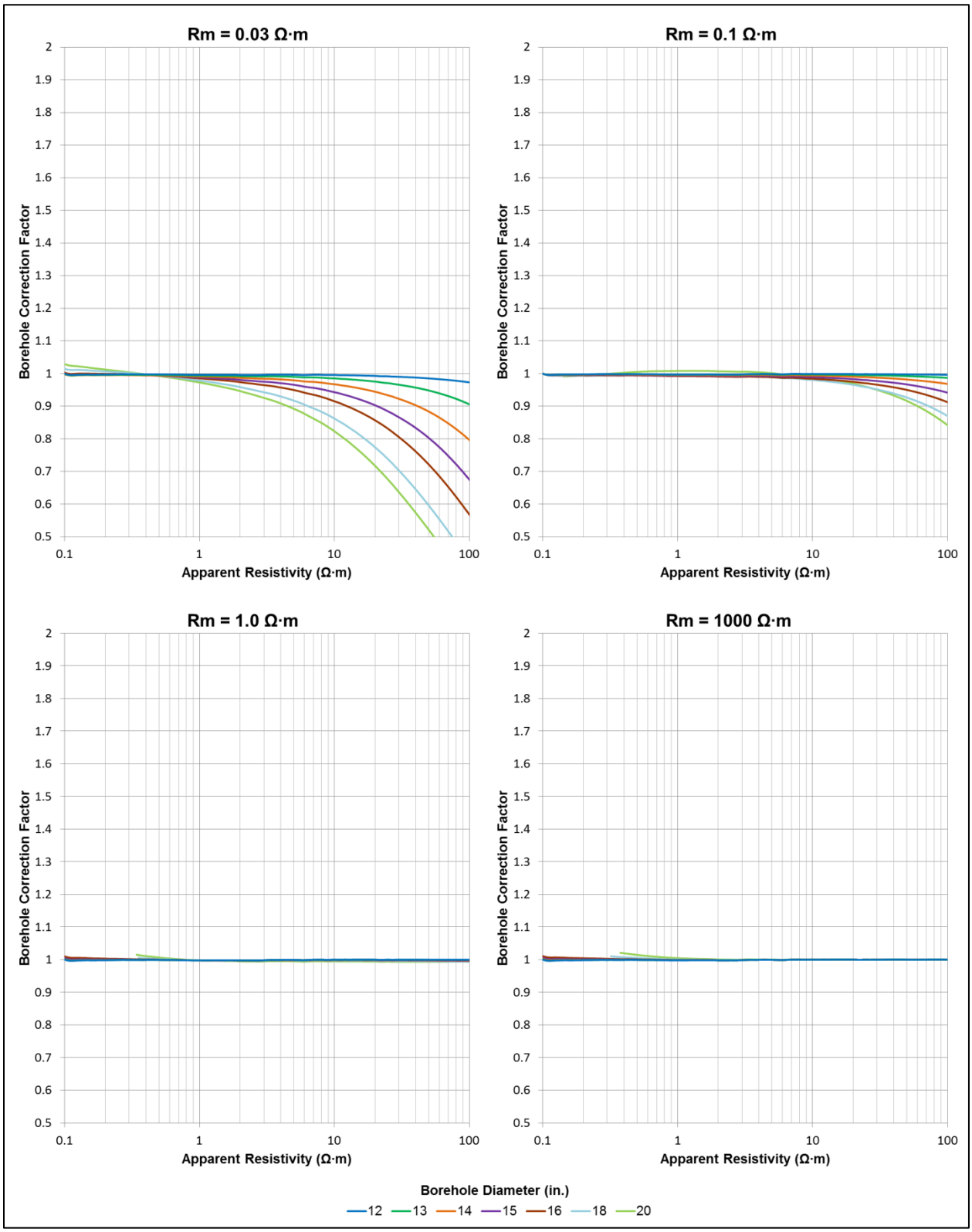


Chart 3-114

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 48-in. Spacing, 500 kHz, Phase-Shift Resistivity

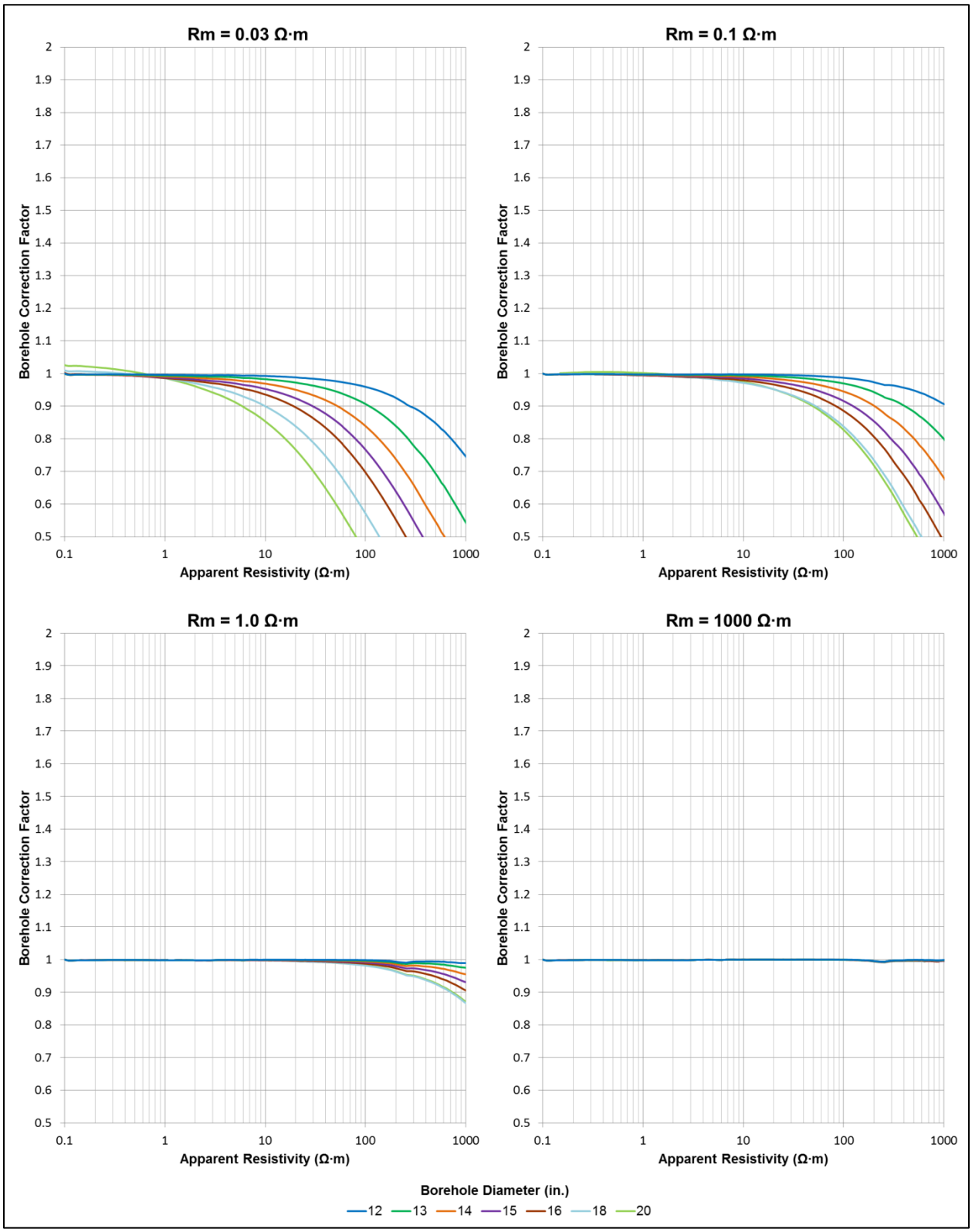


Chart 3-115

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 48-in. Spacing, 500 kHz Attenuation Resistivity

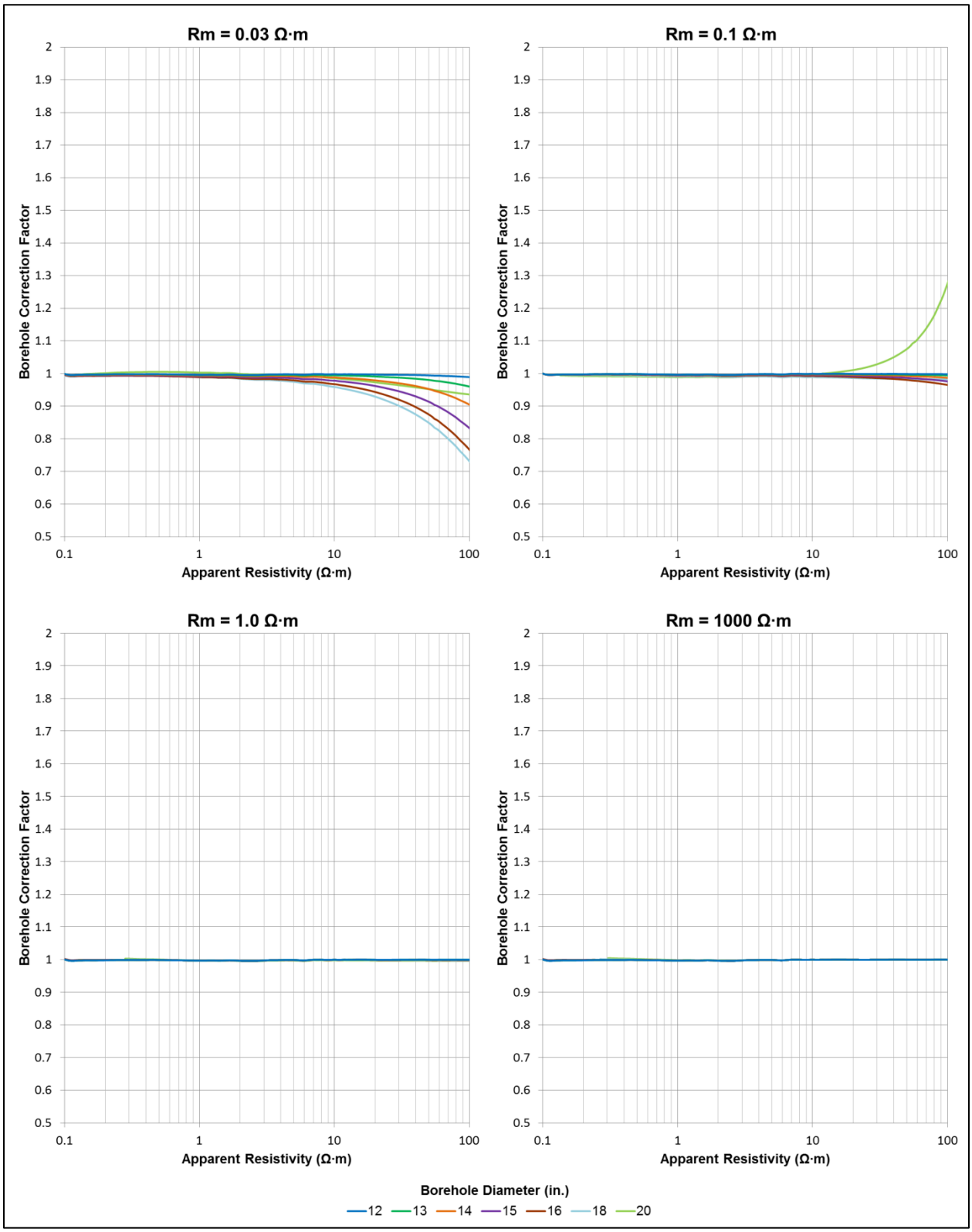


Chart 3-116

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 48-in. Spacing, 250 kHz, Phase-Shift Resistivity

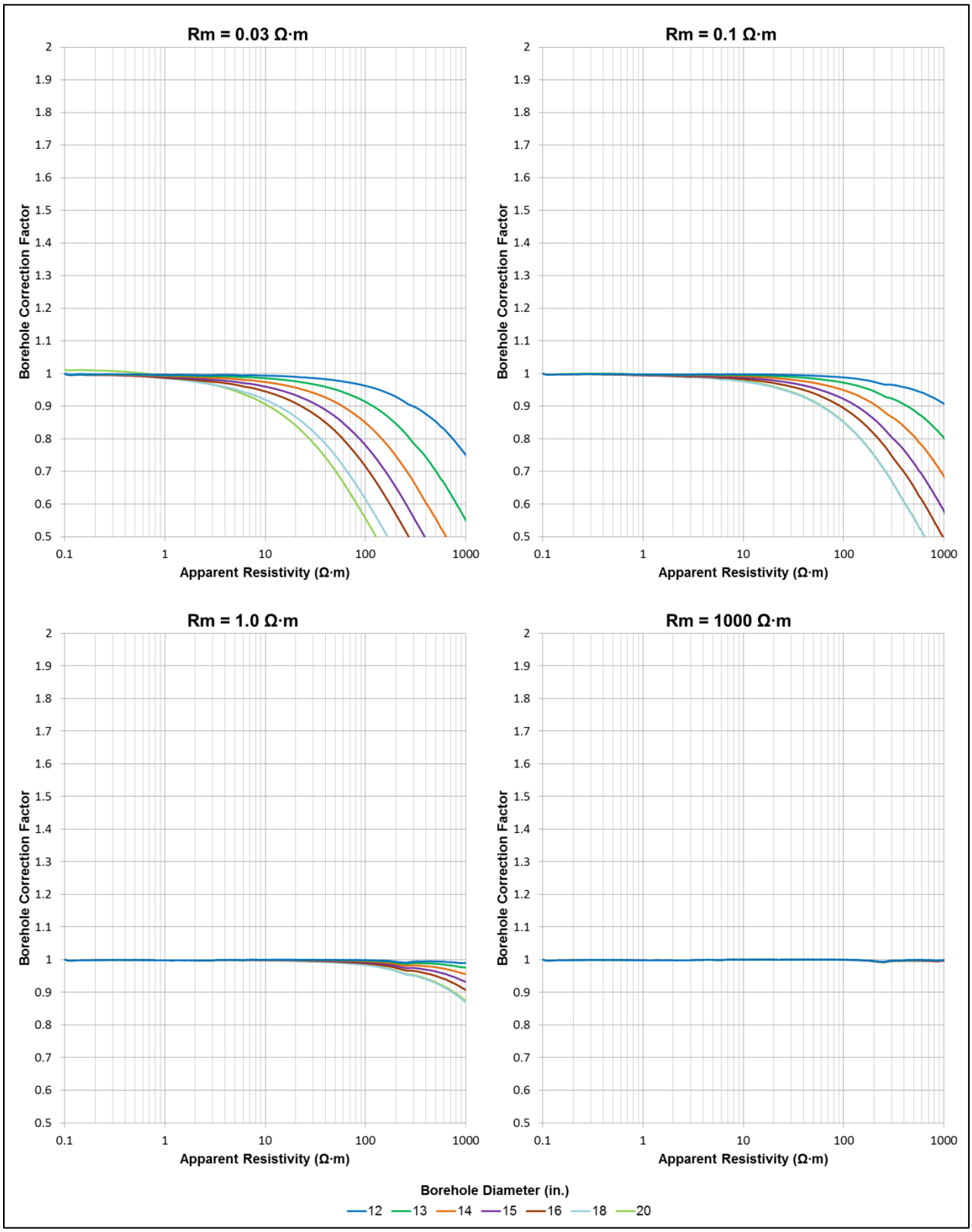


Chart 3-117

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR-M5™ Tool, 48-in. Spacing, 250 kHz Attenuation Resistivity

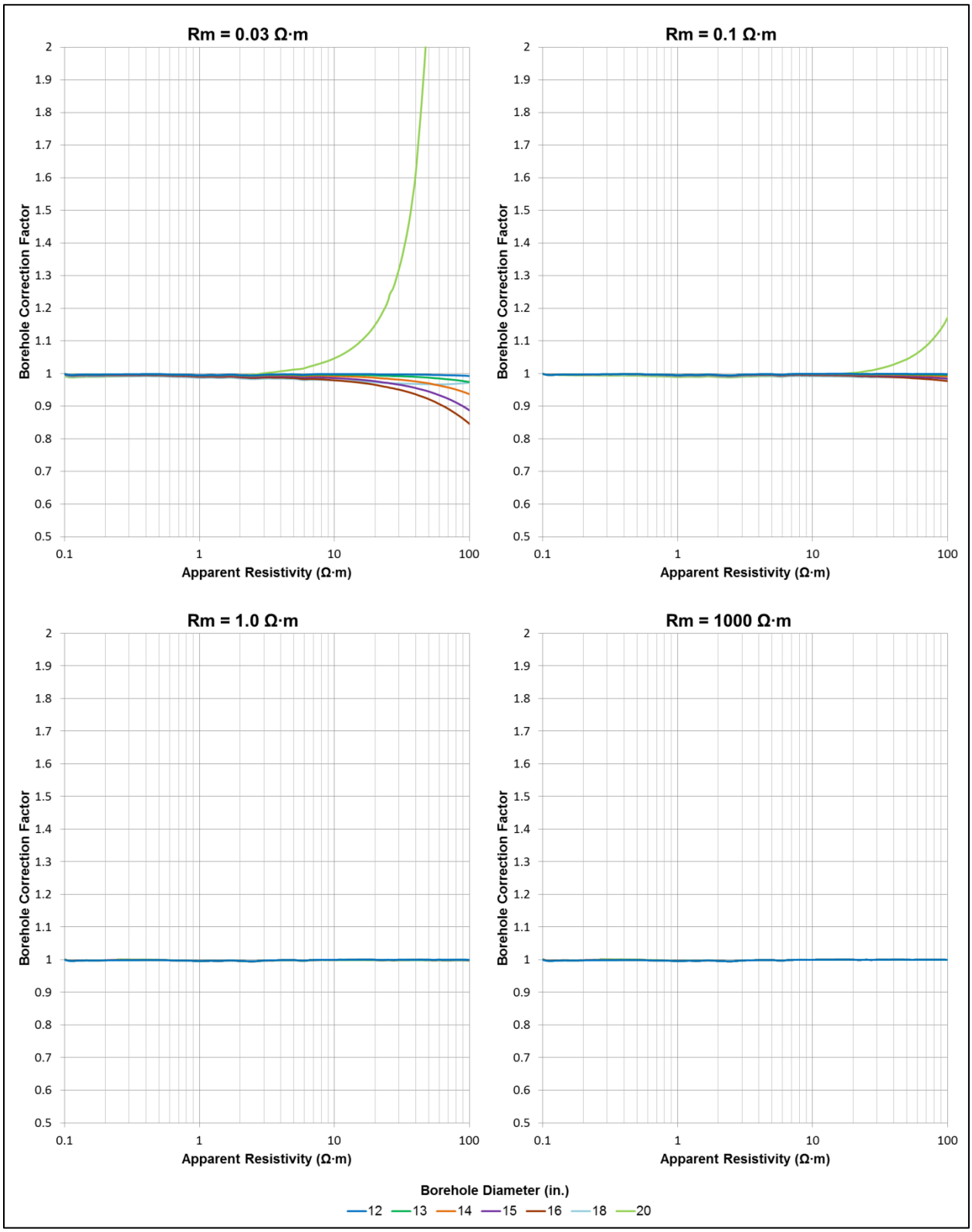


Chart 3-118

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 12-in. Spacing, 2 MHz Phase-Shift Resistivity

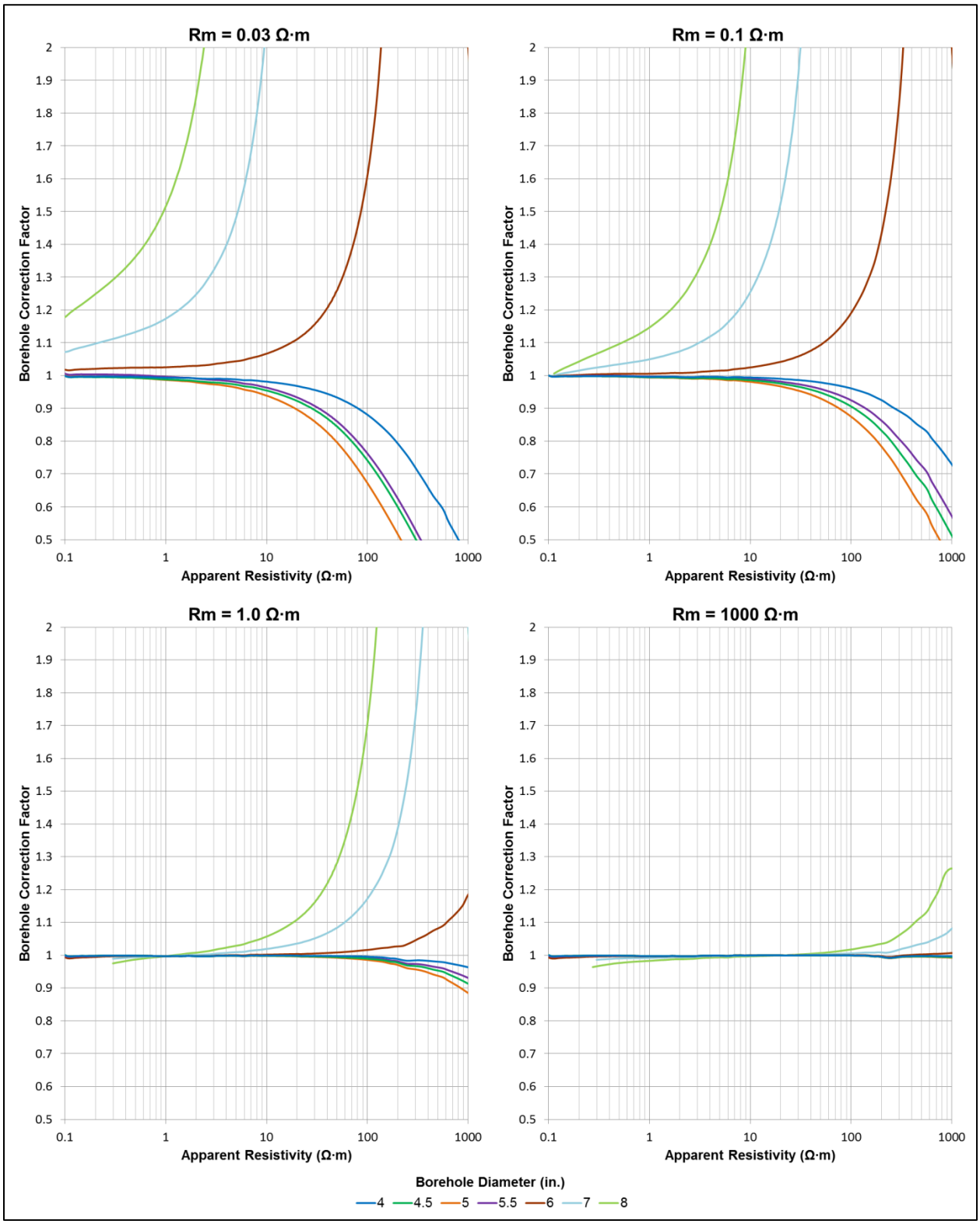


Chart 3-119

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 12-in. Spacing, 2 MHz Attenuation Resistivity

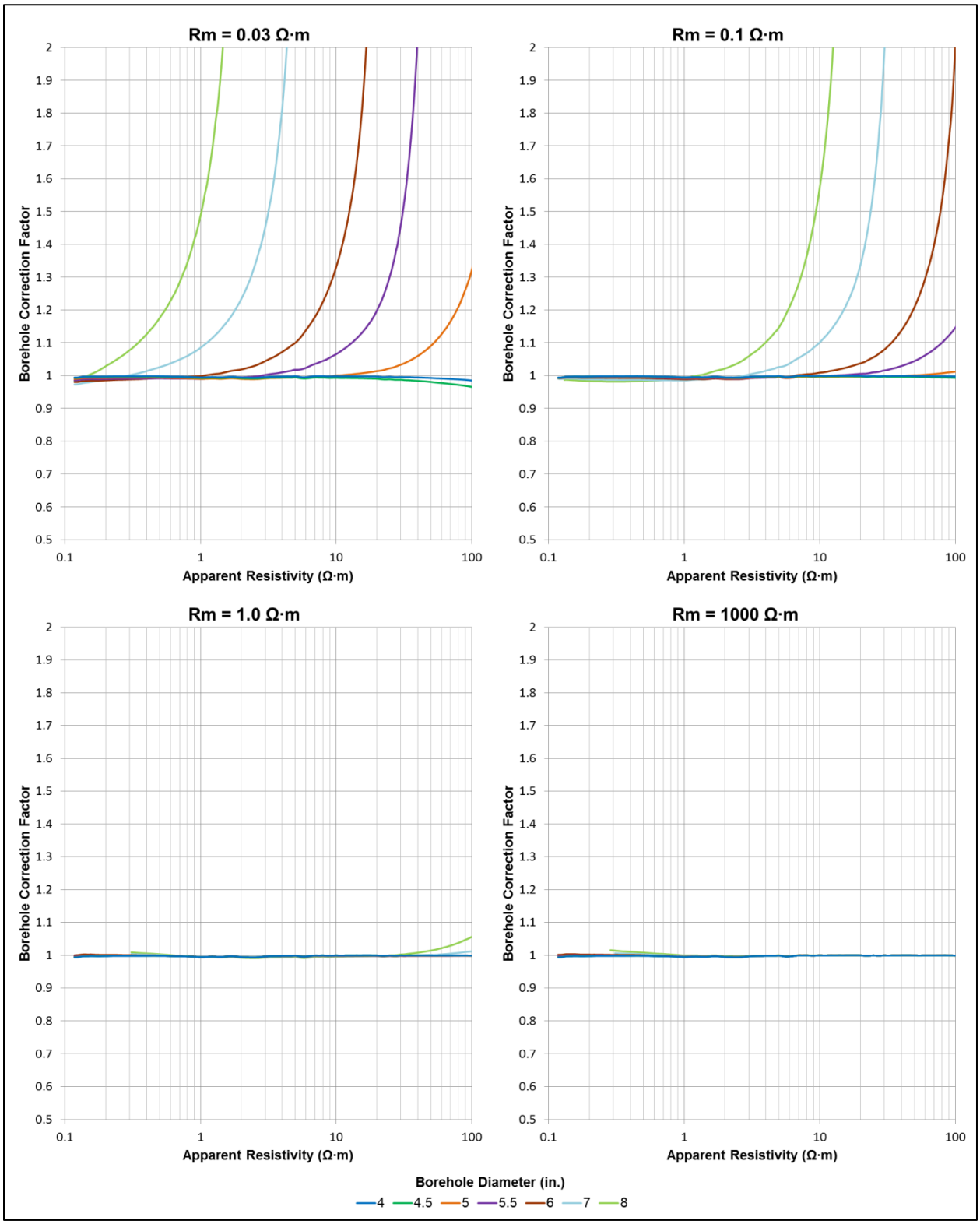


Chart 3-120

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 20-in. Spacing, 2 MHz Phase-Shift Resistivity

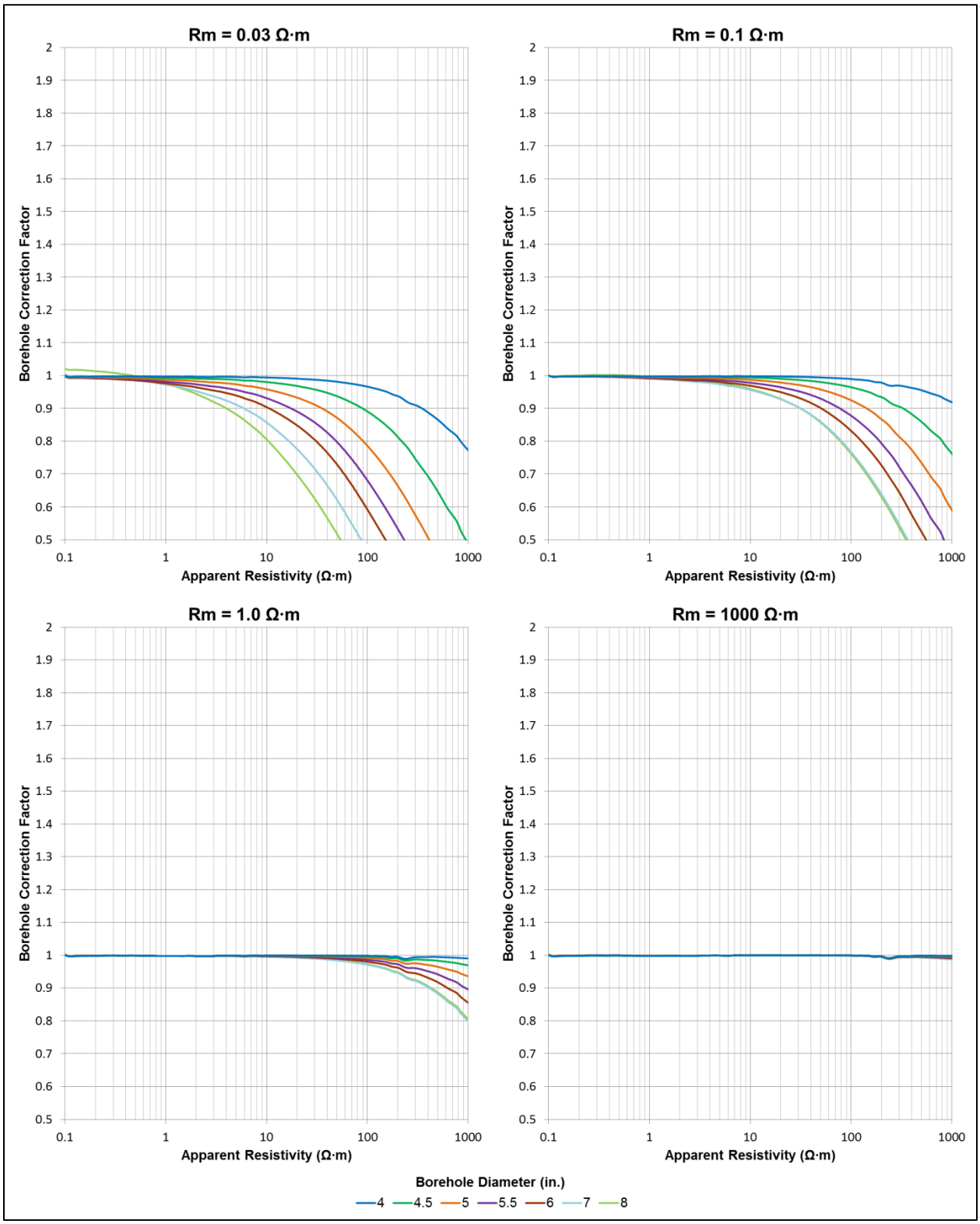


Chart 3-121

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 20-in. Spacing, 2 MHz Attenuation Resistivity

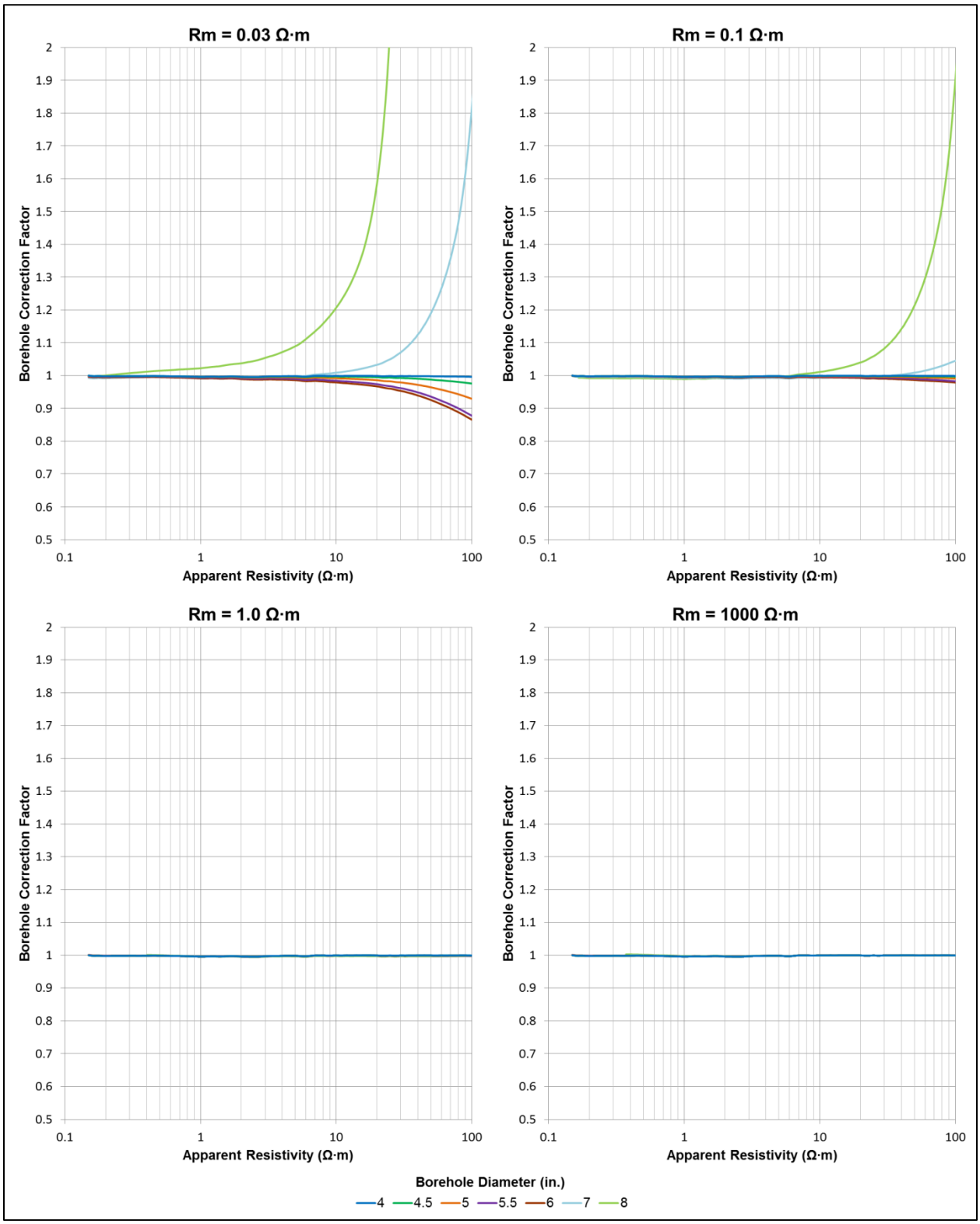


Chart 3-122

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 28-in. Spacing, 2 MHz Phase-Shift Resistivity

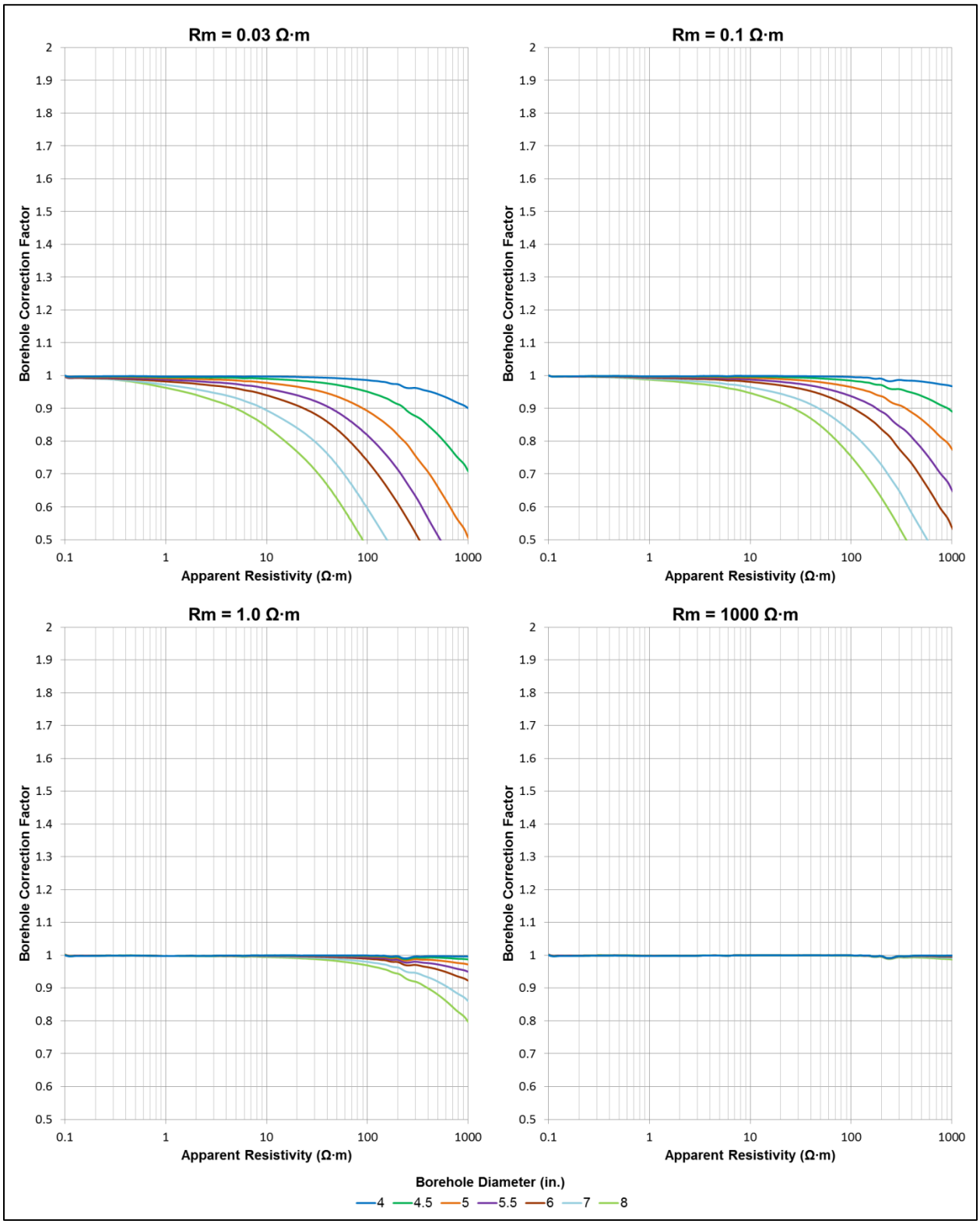


Chart 3-123

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 28-in. Spacing, 2 MHz Attenuation Resistivity

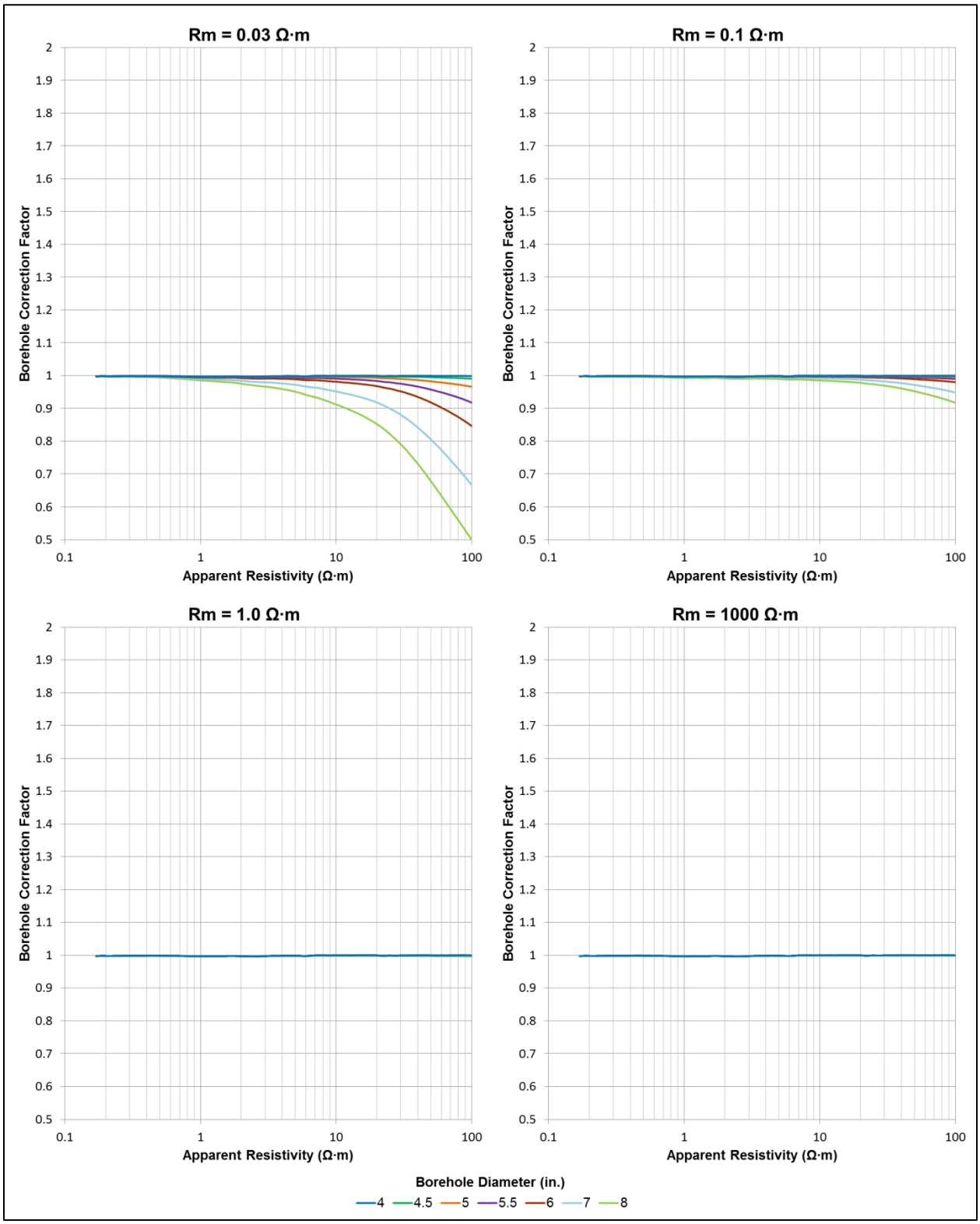


Chart 3-124

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 44-in. Spacing, 500 kHz Phase-Shift Resistivity

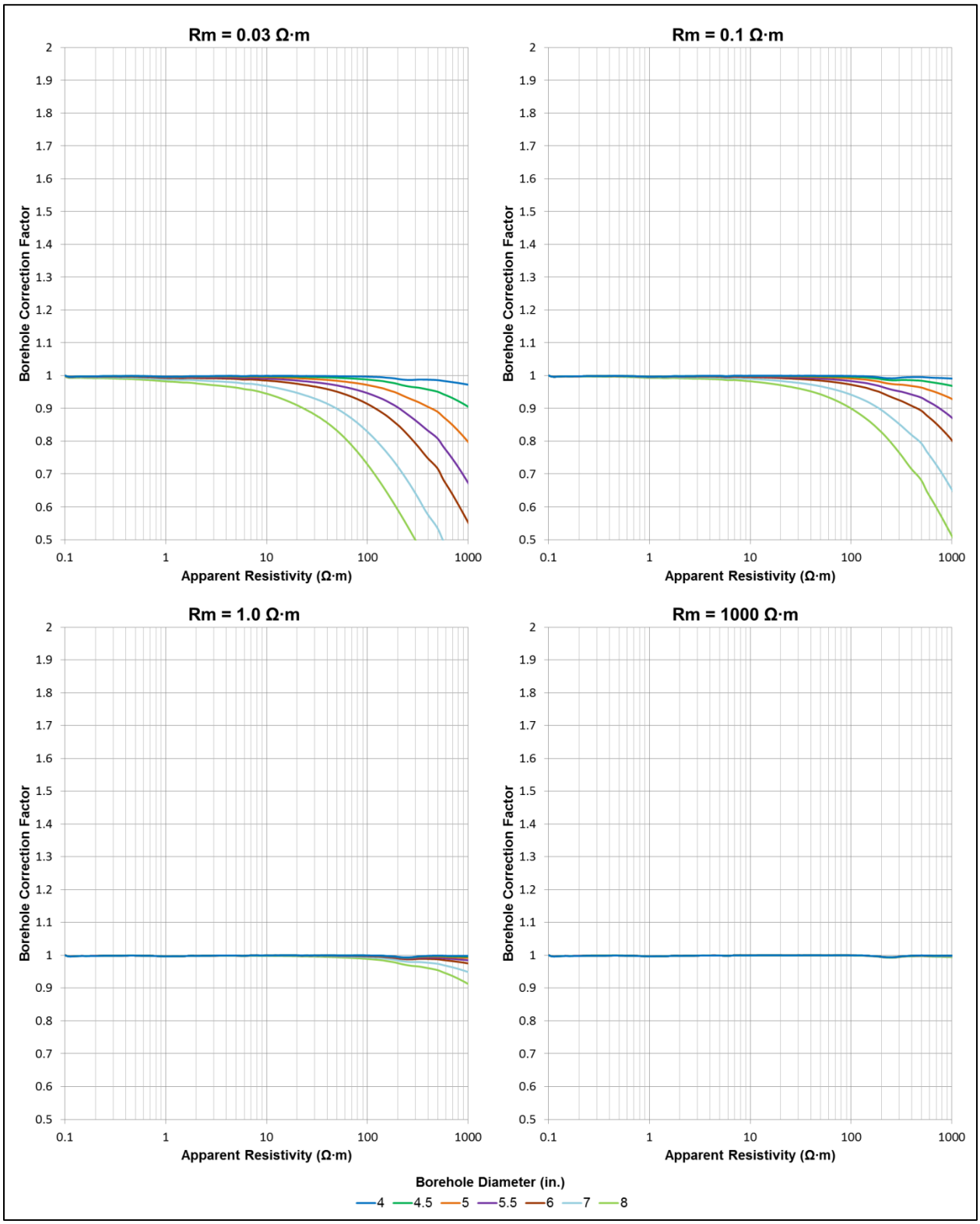


Chart 3-125

Resistivity Corrections for Borehole Size and Mud Resistivity
Super-Slim EWR™-Phase 4 Tool, 44-in. Spacing, 500 kHz Attenuation Resistivity

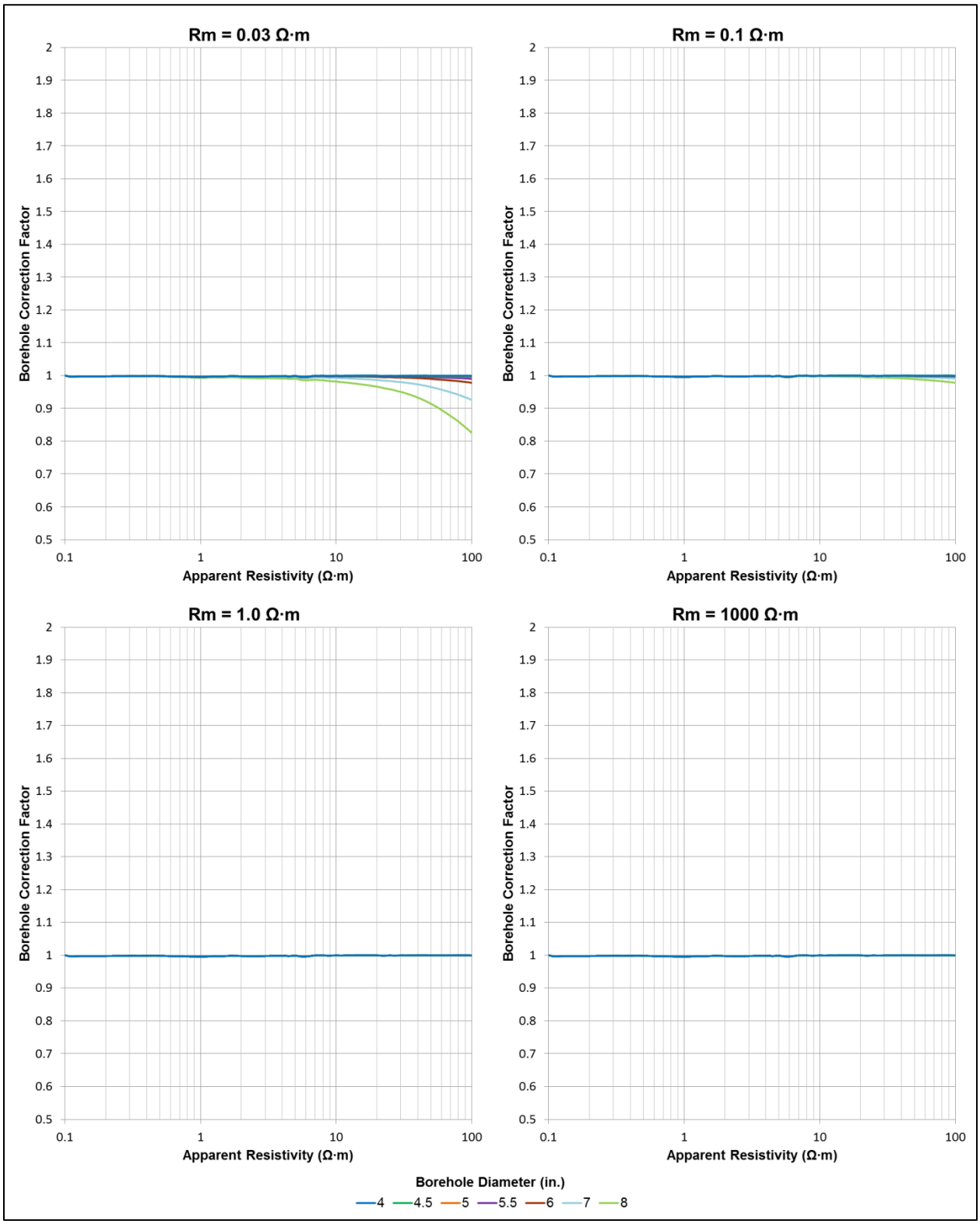


Chart 3-126

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 9-in. Spacing, 2 MHz Phase-Shift Resistivity

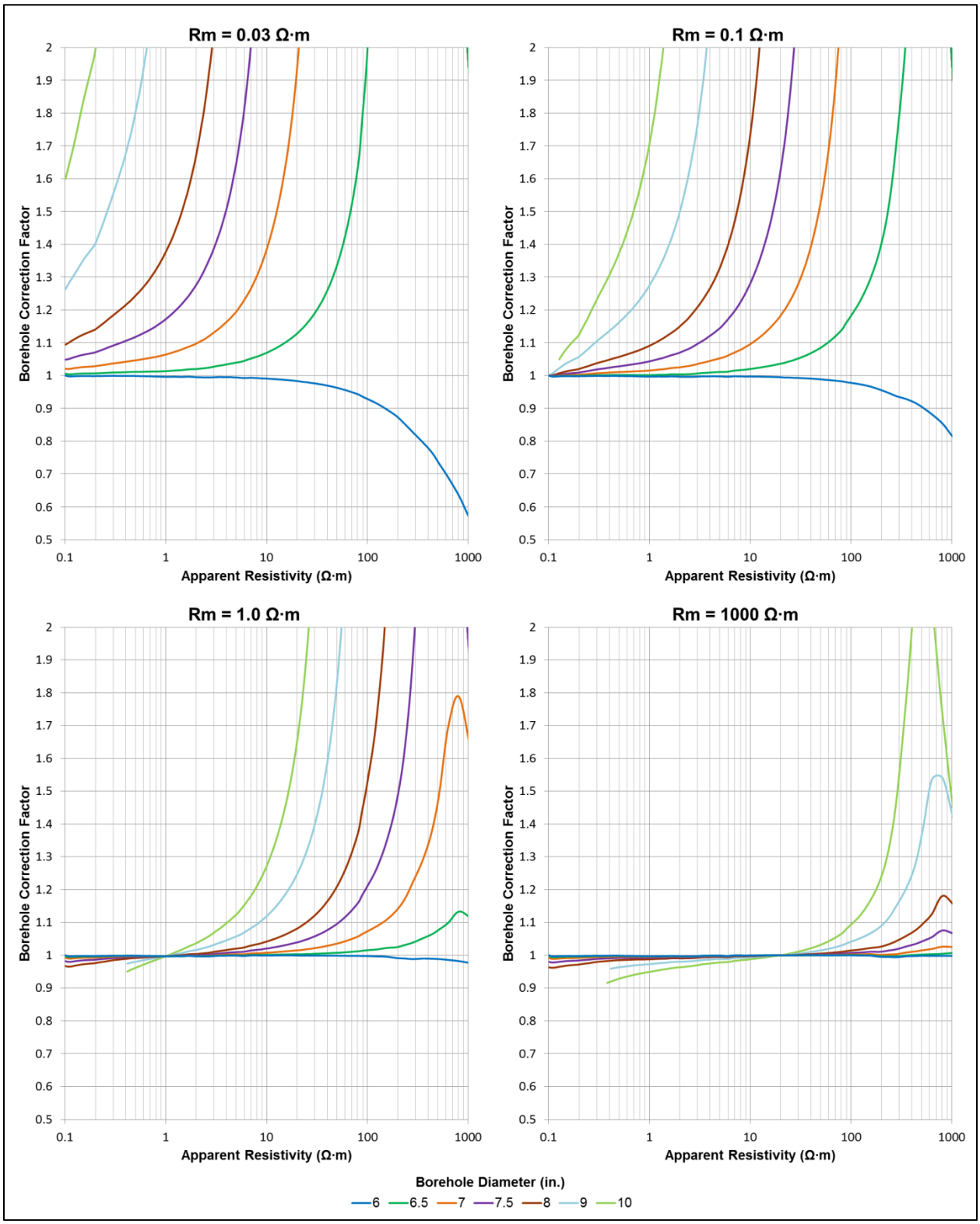


Chart 3-127

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 9-in. Spacing, 2 MHz Attenuation Resistivity

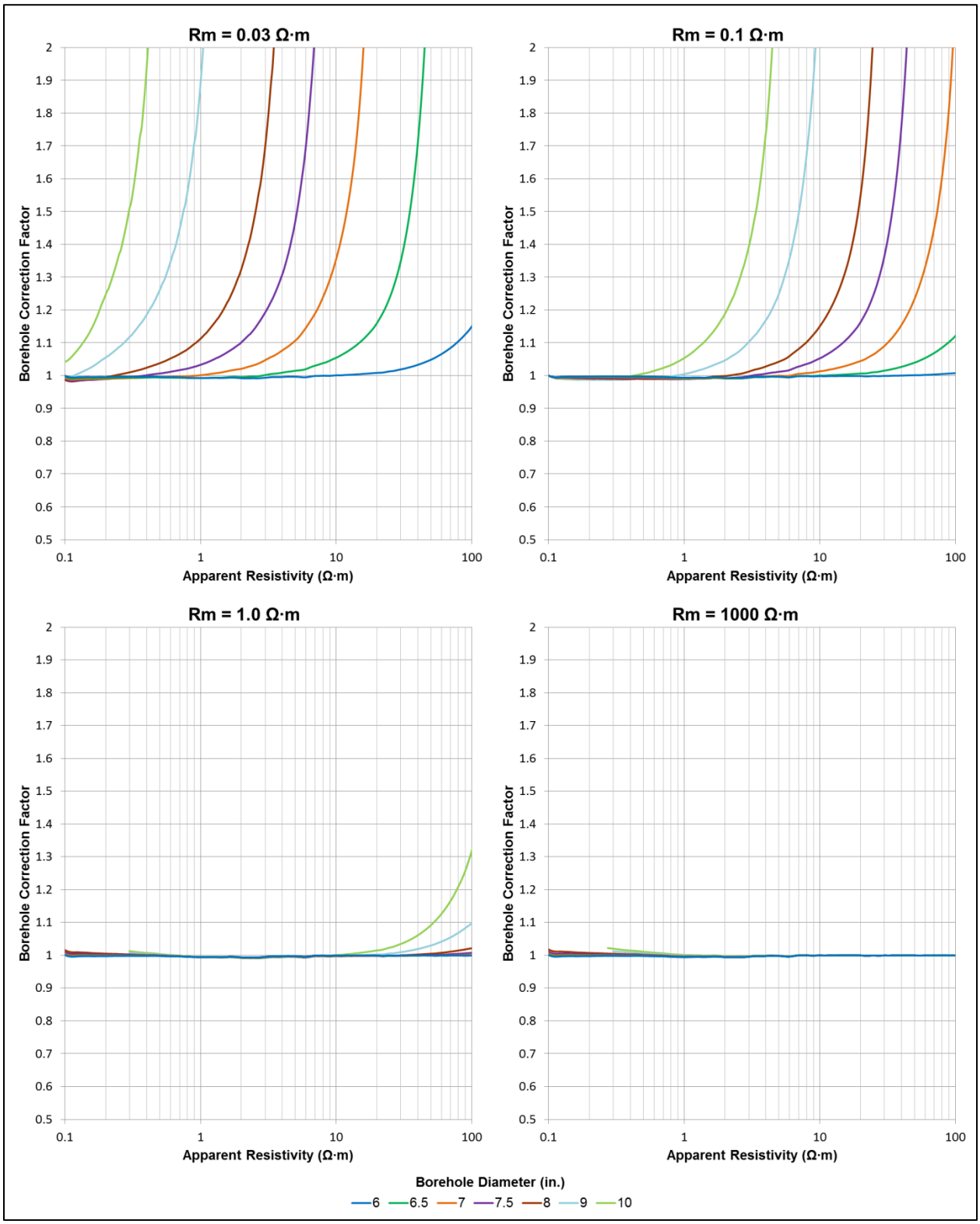


Chart 3-128

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 15-in. Spacing, 2 MHz Phase-Shift Resistivity

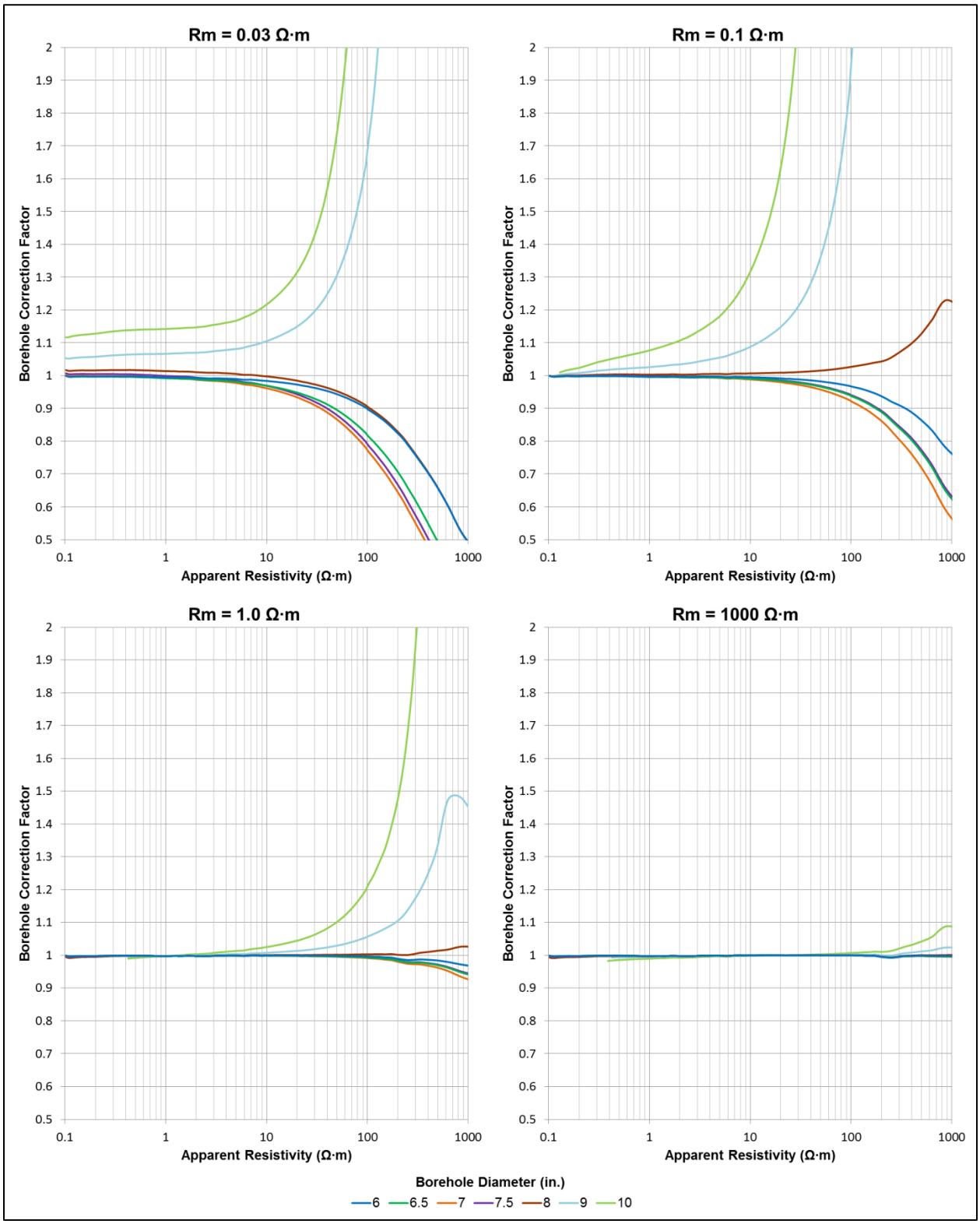


Chart 3-129

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 15-in. Spacing, 2 MHz Attenuation Resistivity

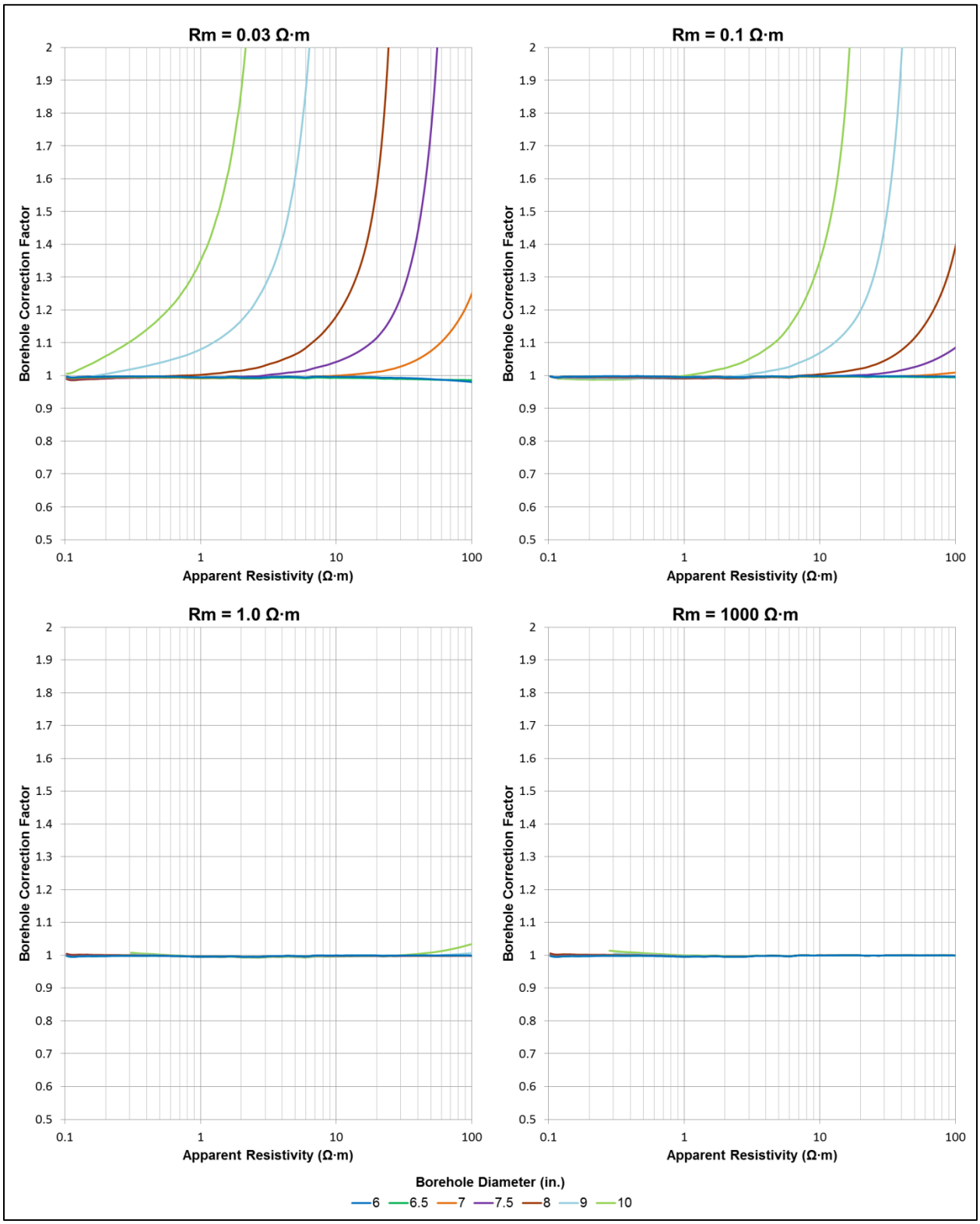


Chart 3-130

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 27-in. Spacing, 2 MHz Phase-Shift Resistivity

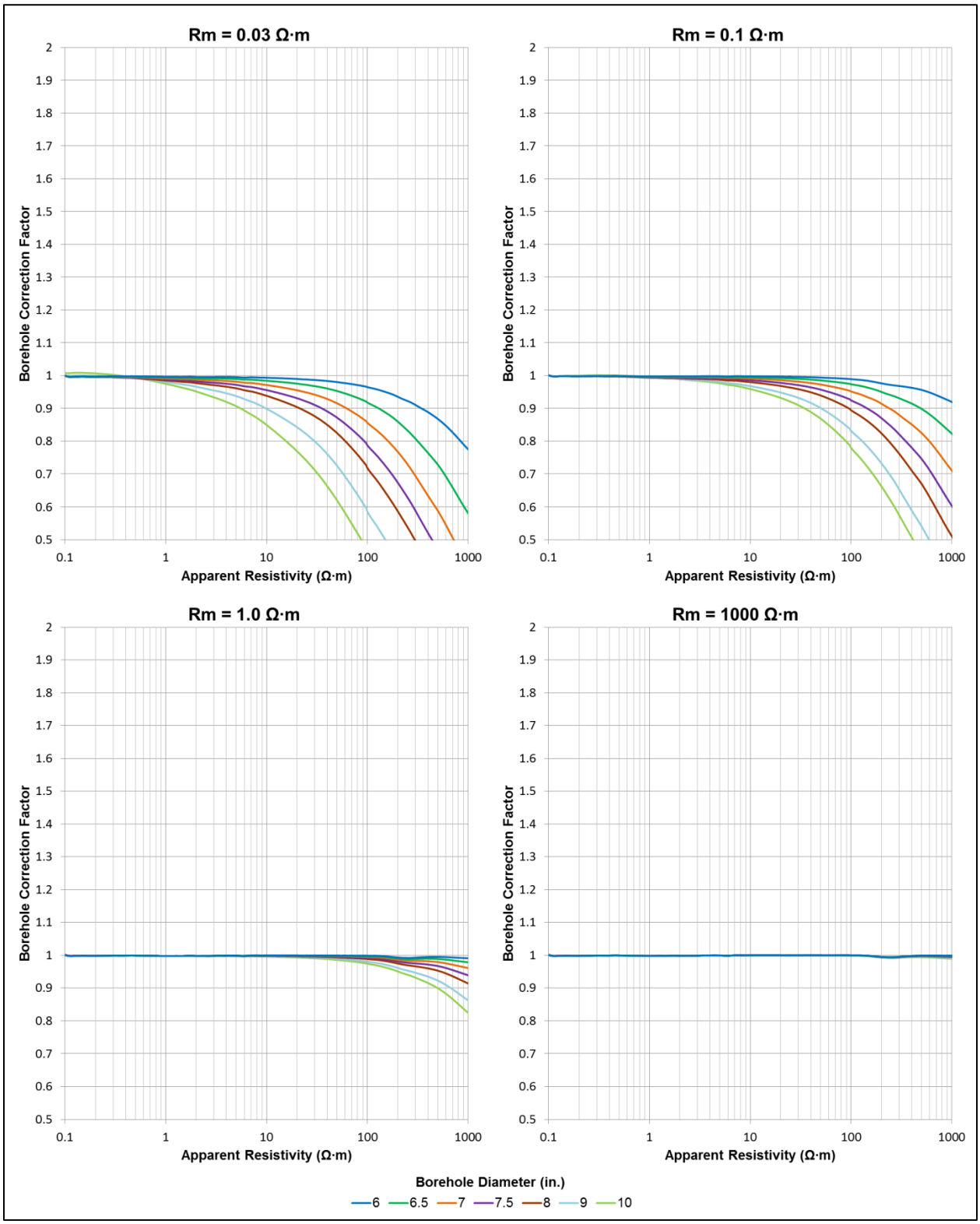


Chart 3-131

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 27-in. Spacing, 2 MHz Attenuation Resistivity

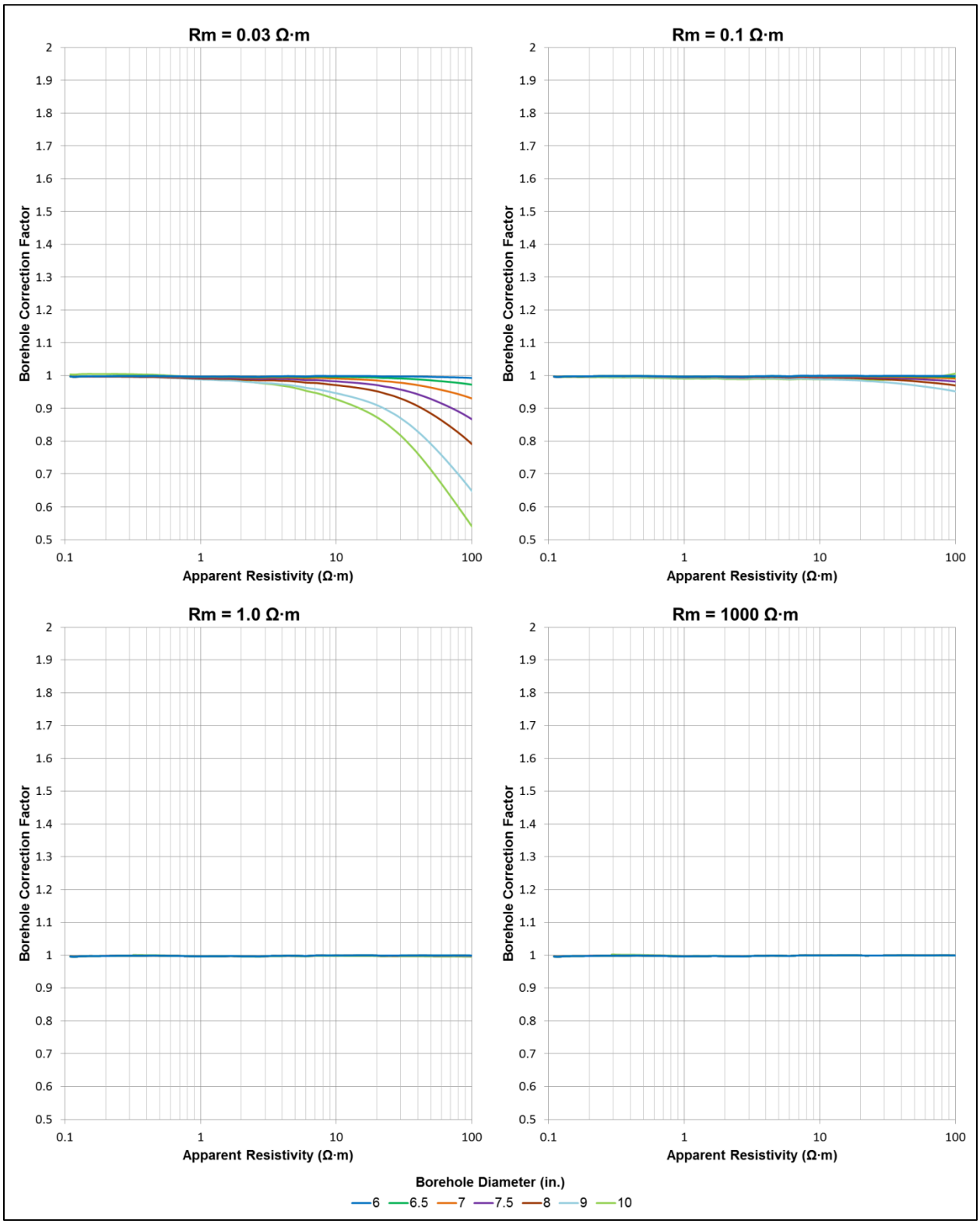


Chart 3-132

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 1 MHz Phase-Shift Resistivity

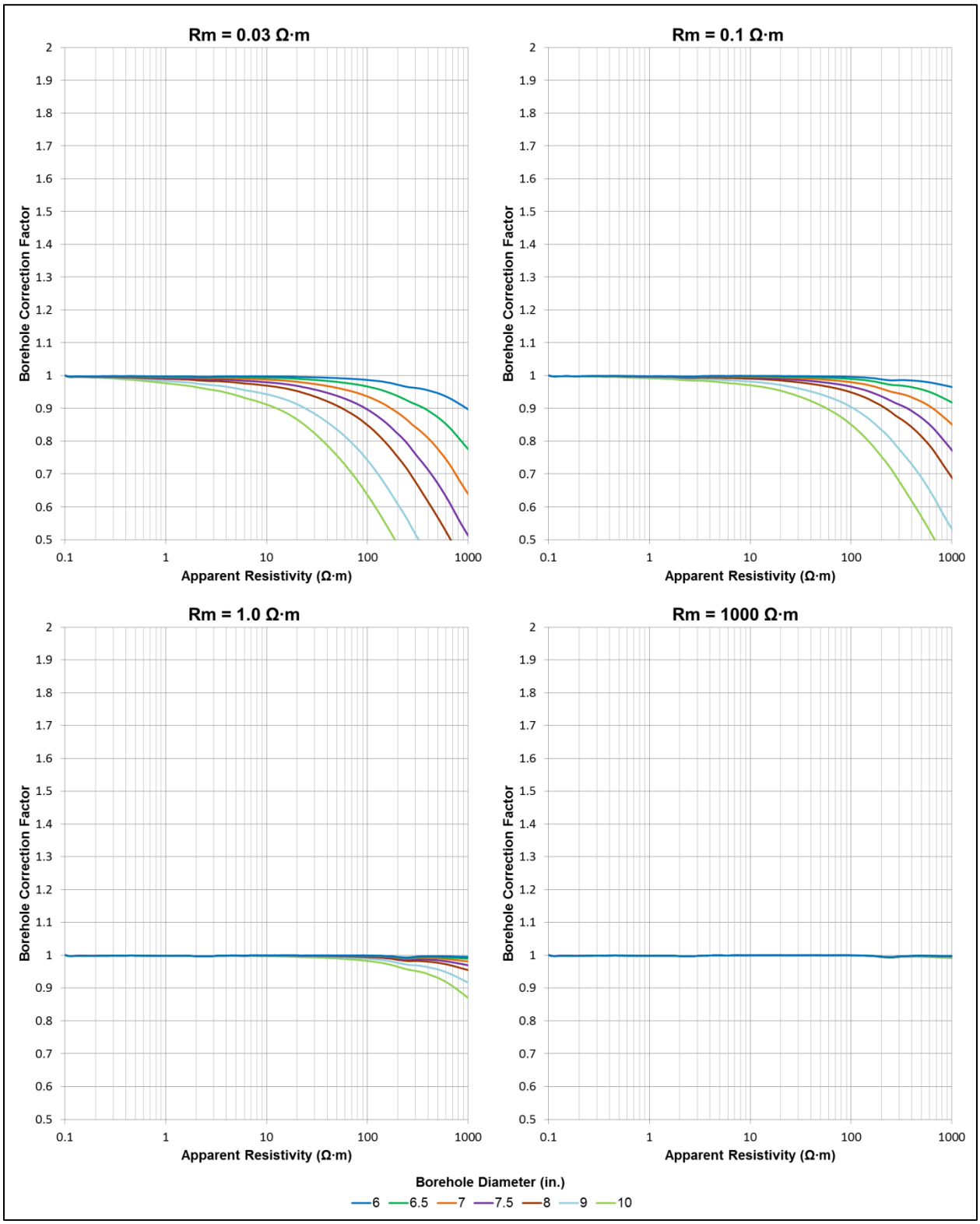


Chart 3-133

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 1 MHz Attenuation Resistivity

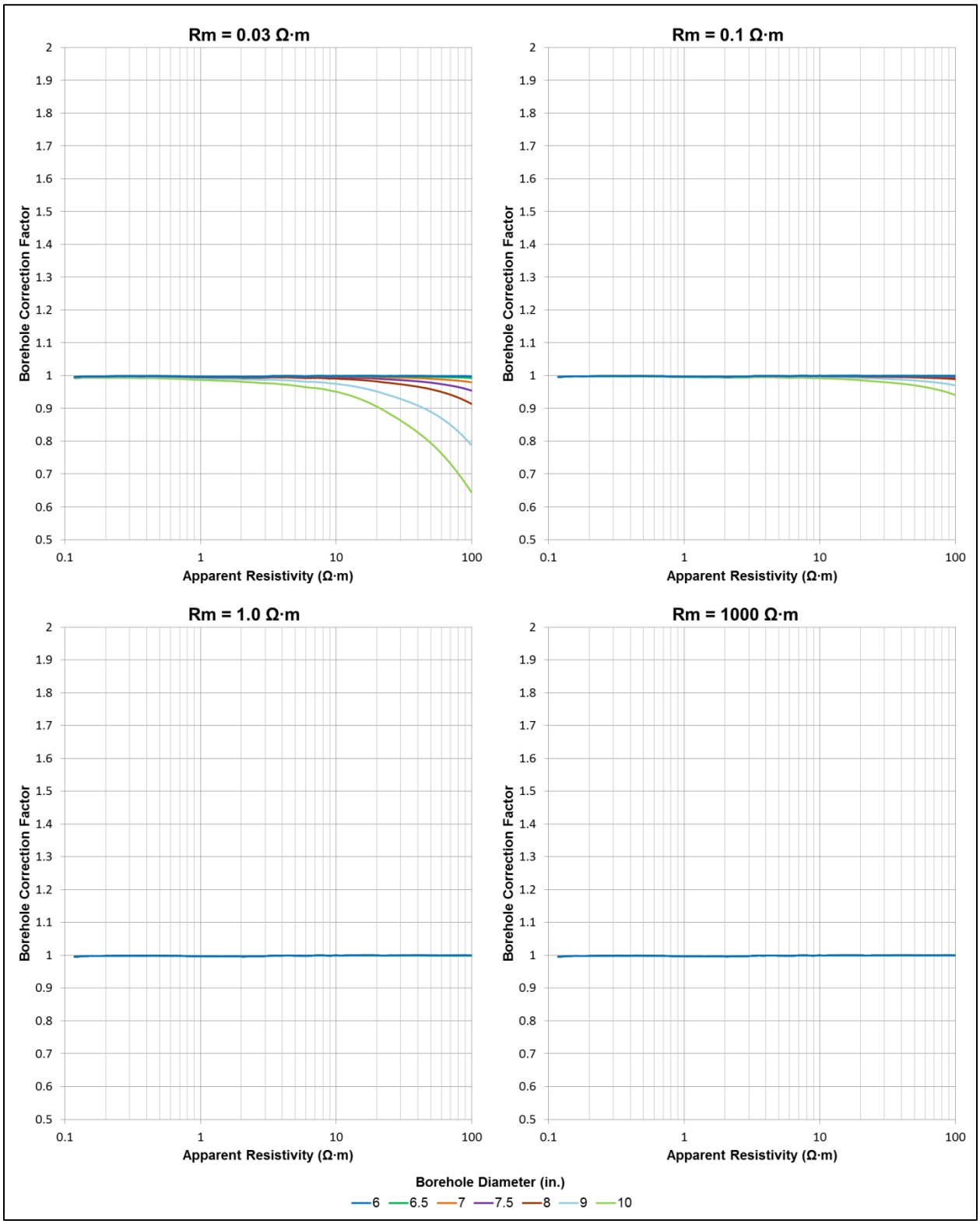


Chart 3-134

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 500 kHz[1] Phase-Shift Resistivity

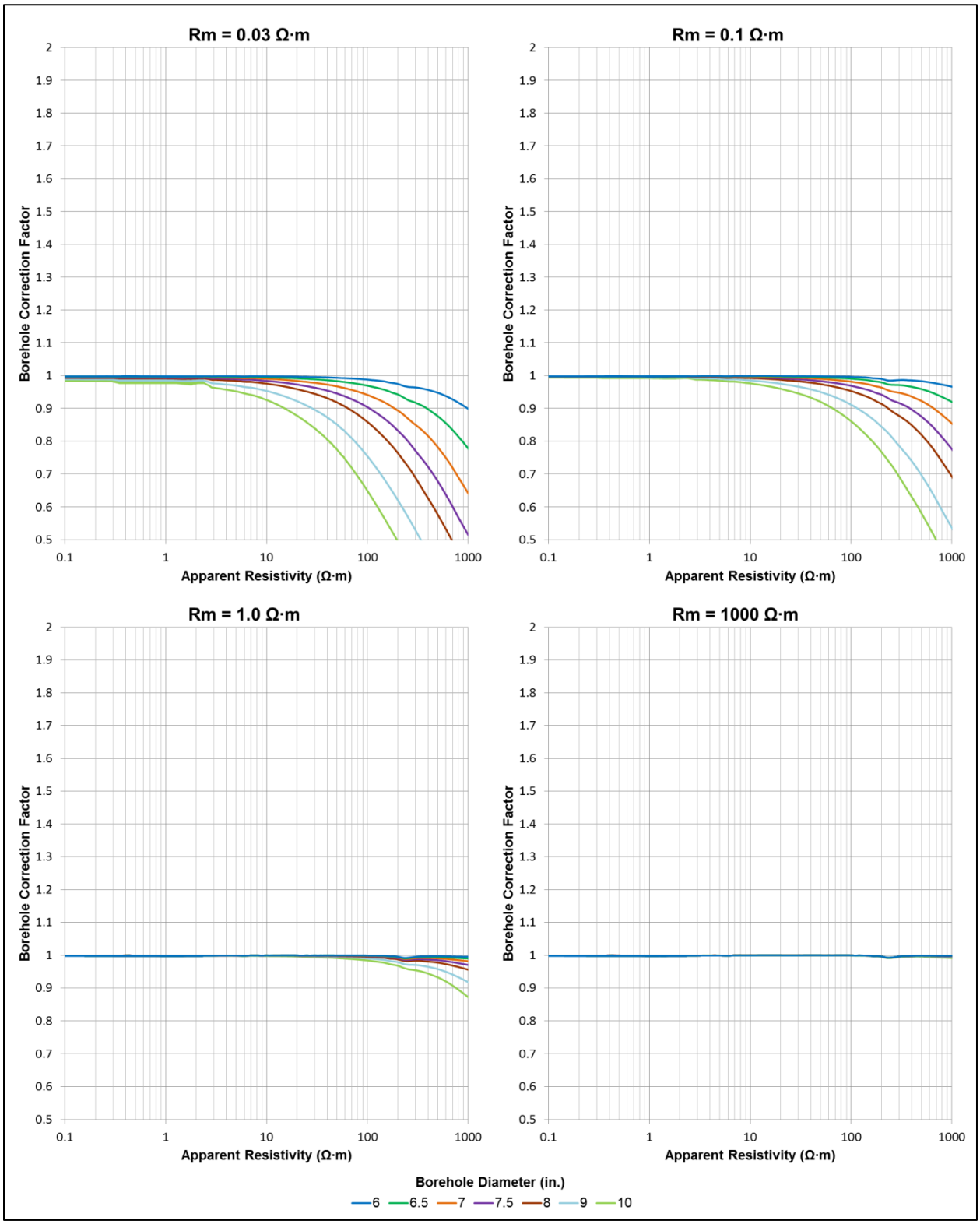


Chart 3-135

[1] The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Resistivity Corrections for Borehole Size and Mud Resistivity
4¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 500 kHz[2] Attenuation Resistivity

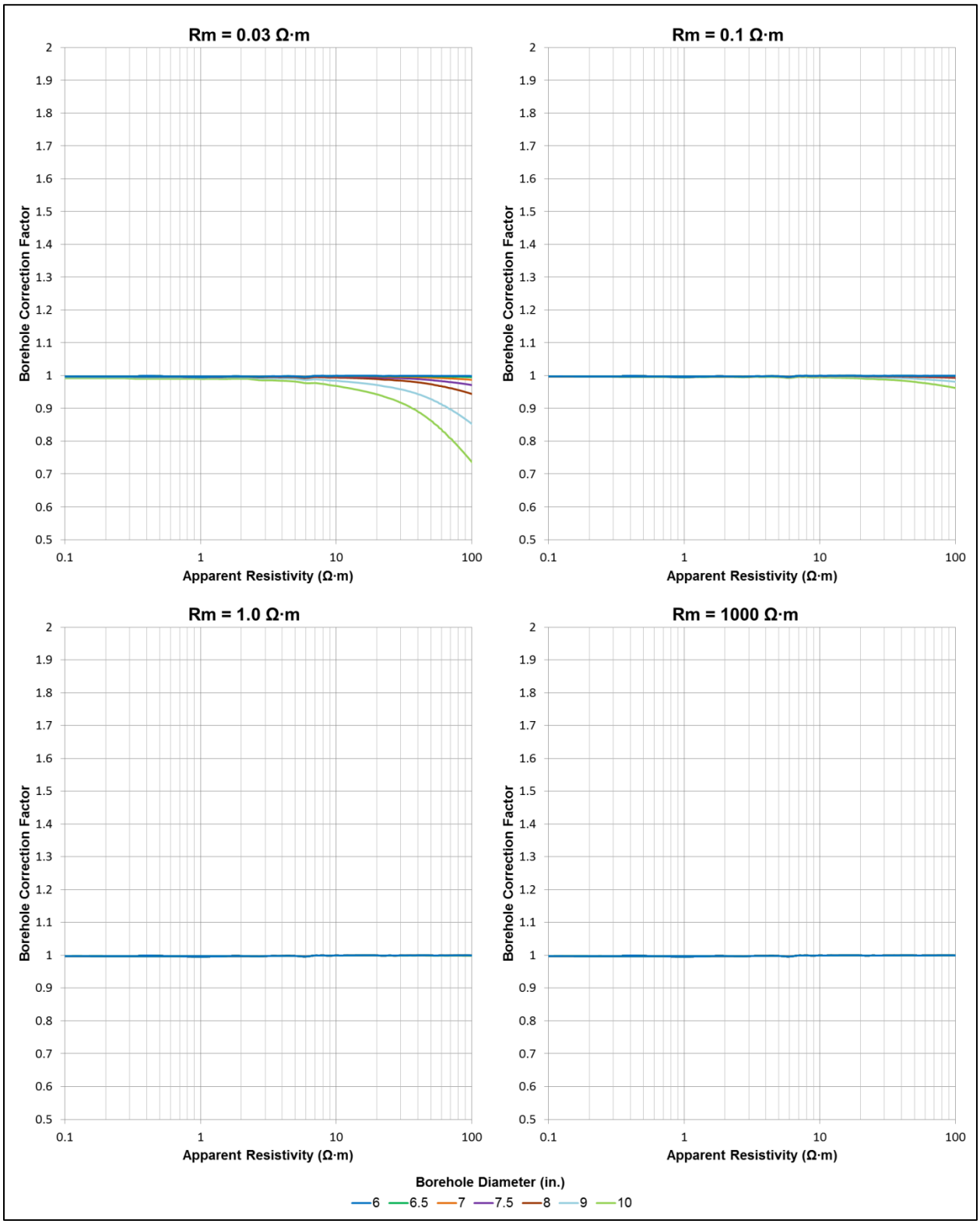


Chart 3-136

[2] The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 9-in. Spacing, 2 MHz Phase-Shift Resistivity

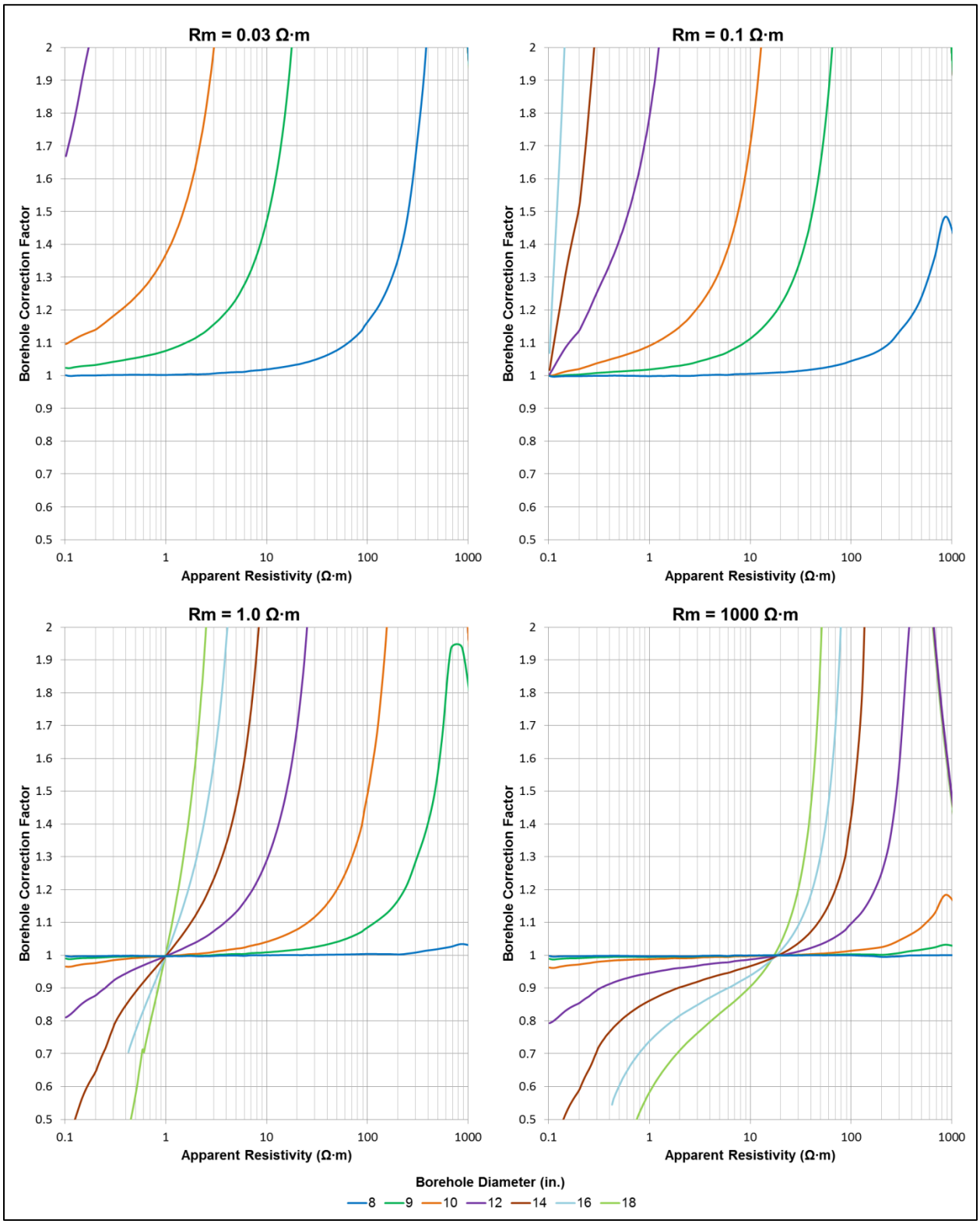


Chart 3-137

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 9-in. Spacing, 2 MHz Attenuation Resistivity

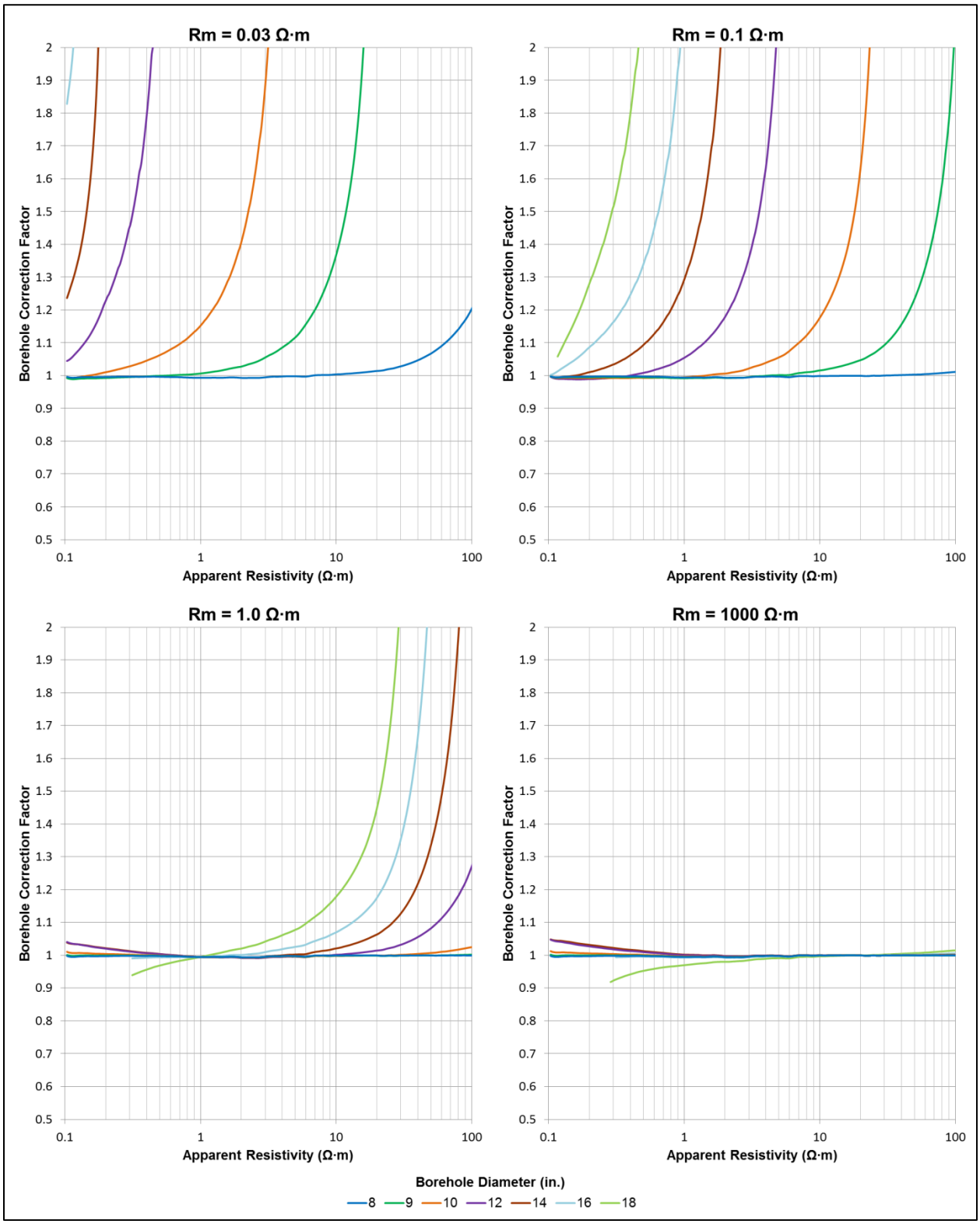


Chart 3-138

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 15-in. Spacing, 2 MHz Phase-Shift Resistivity

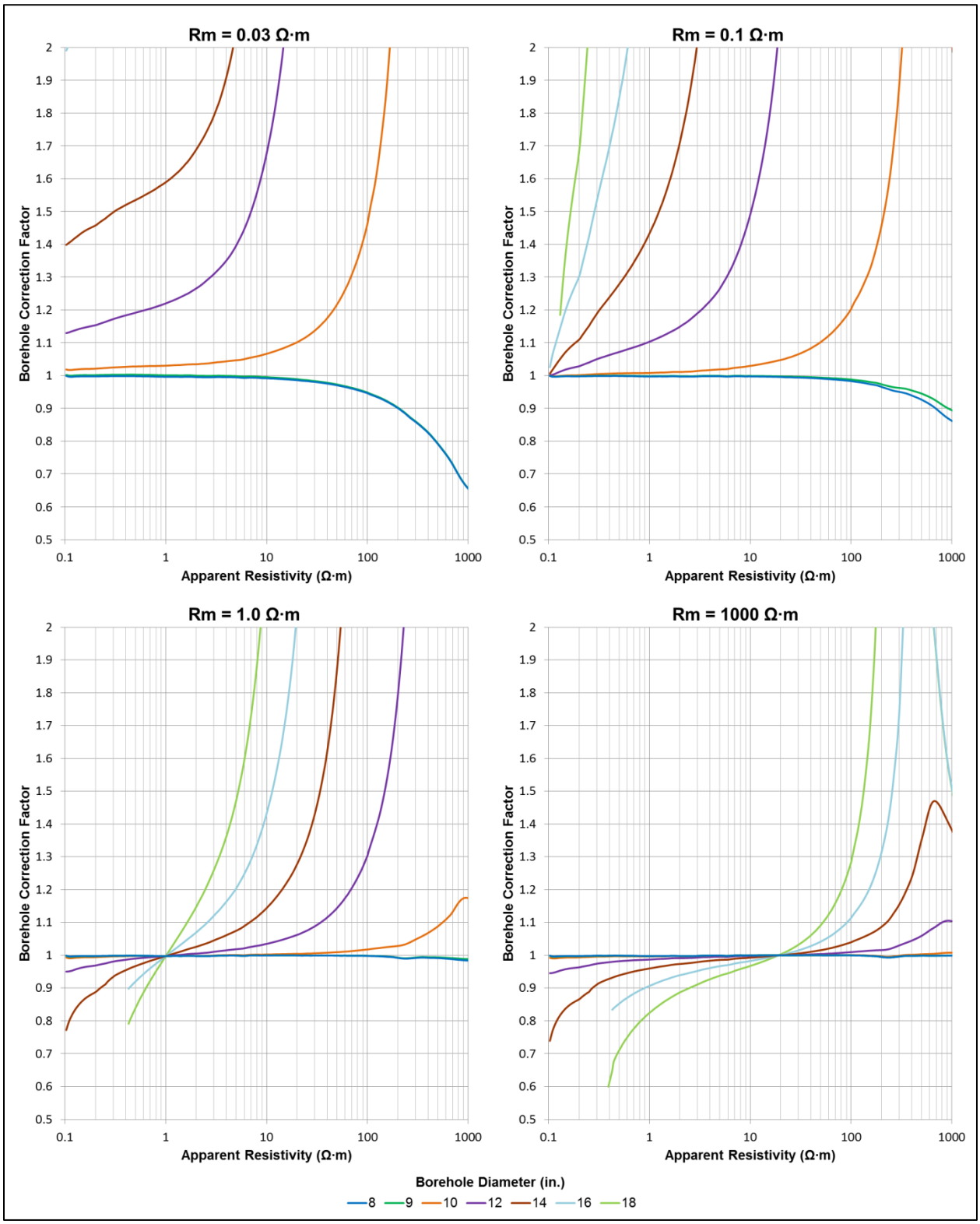


Chart 3-139

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 15-in. Spacing, 2 MHz Attenuation Resistivity

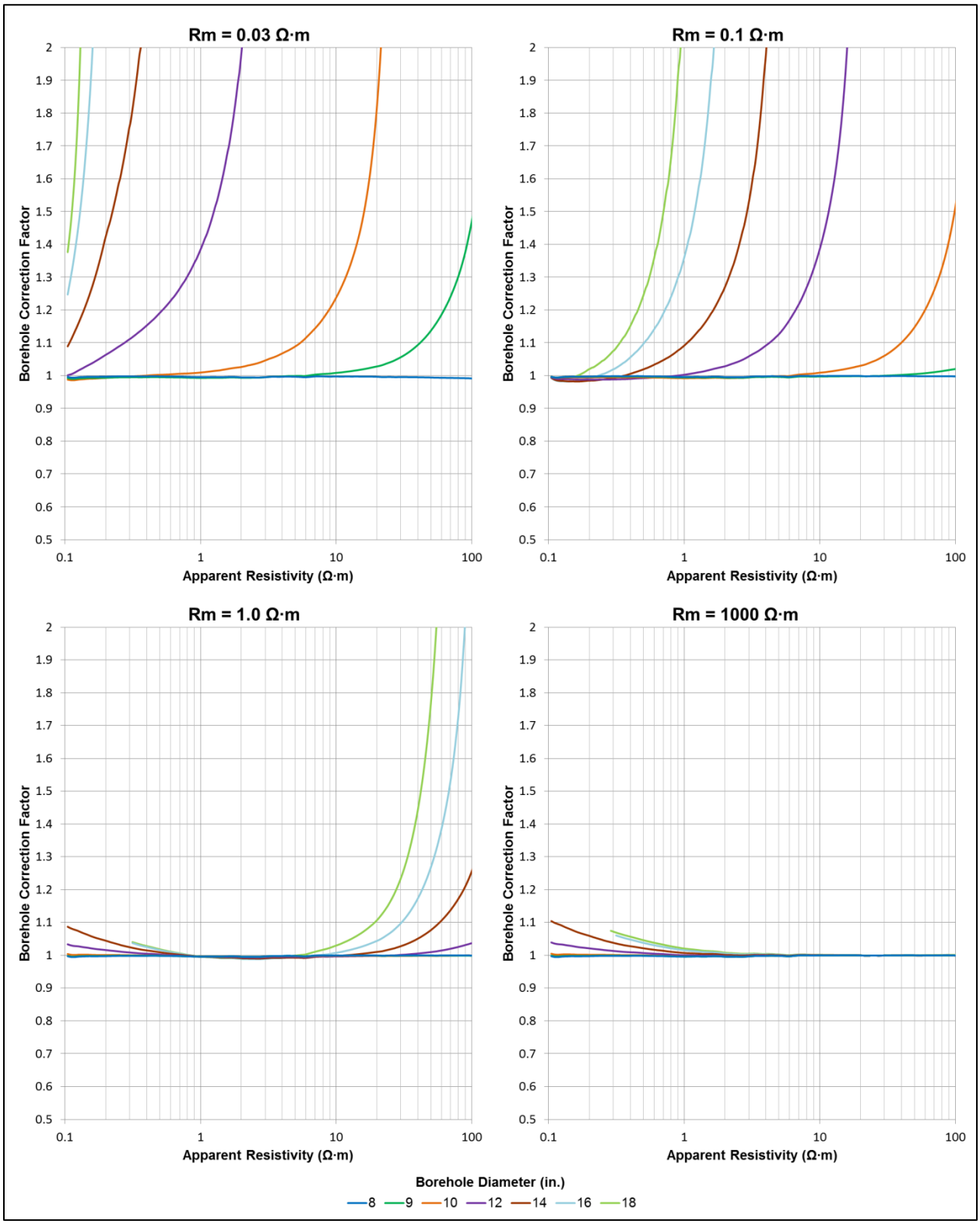


Chart 3-140

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 27-in. Spacing, 2 MHz Phase-Shift Resistivity

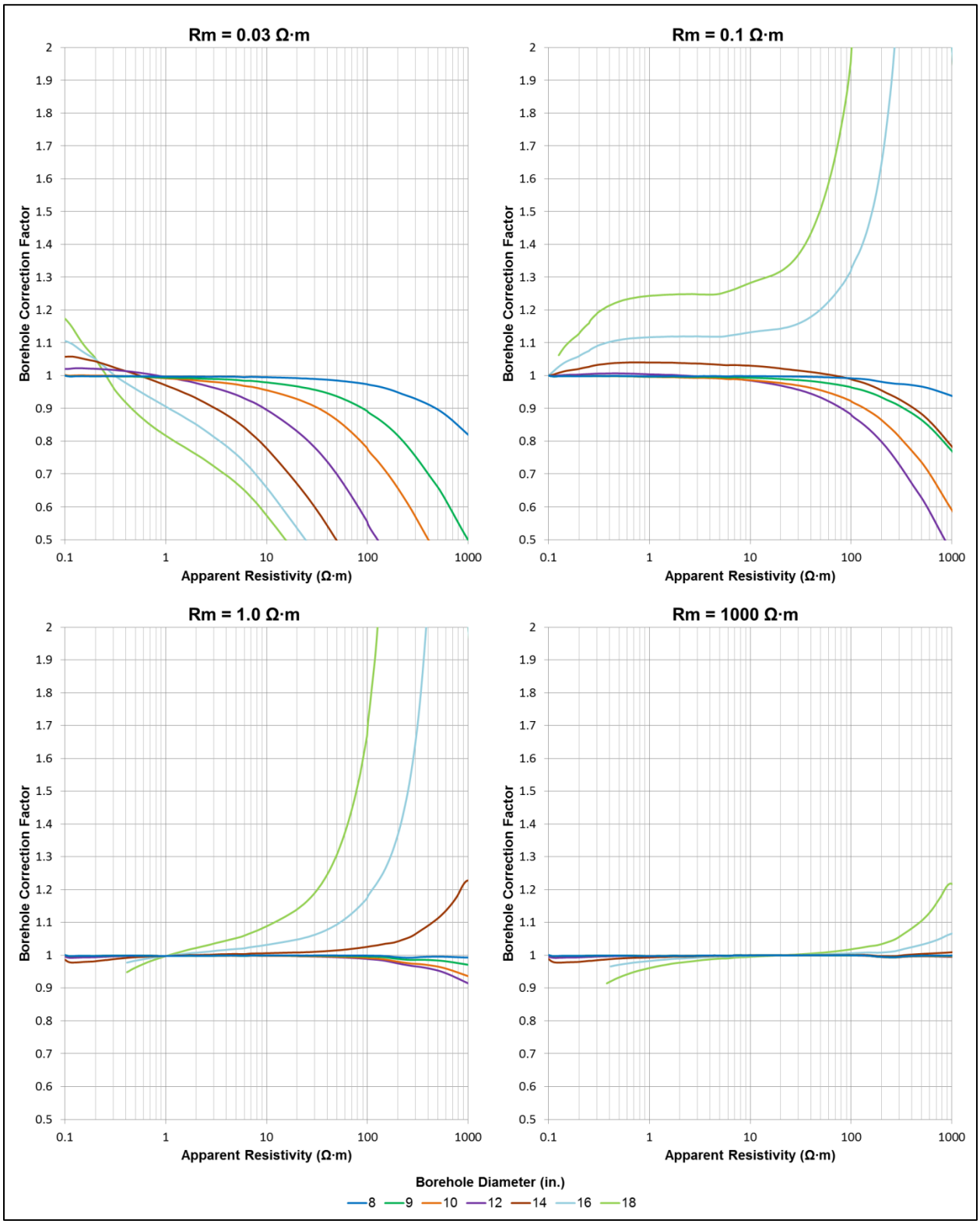


Chart 3-141

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 27-in. Spacing, 2 MHz Attenuation Resistivity

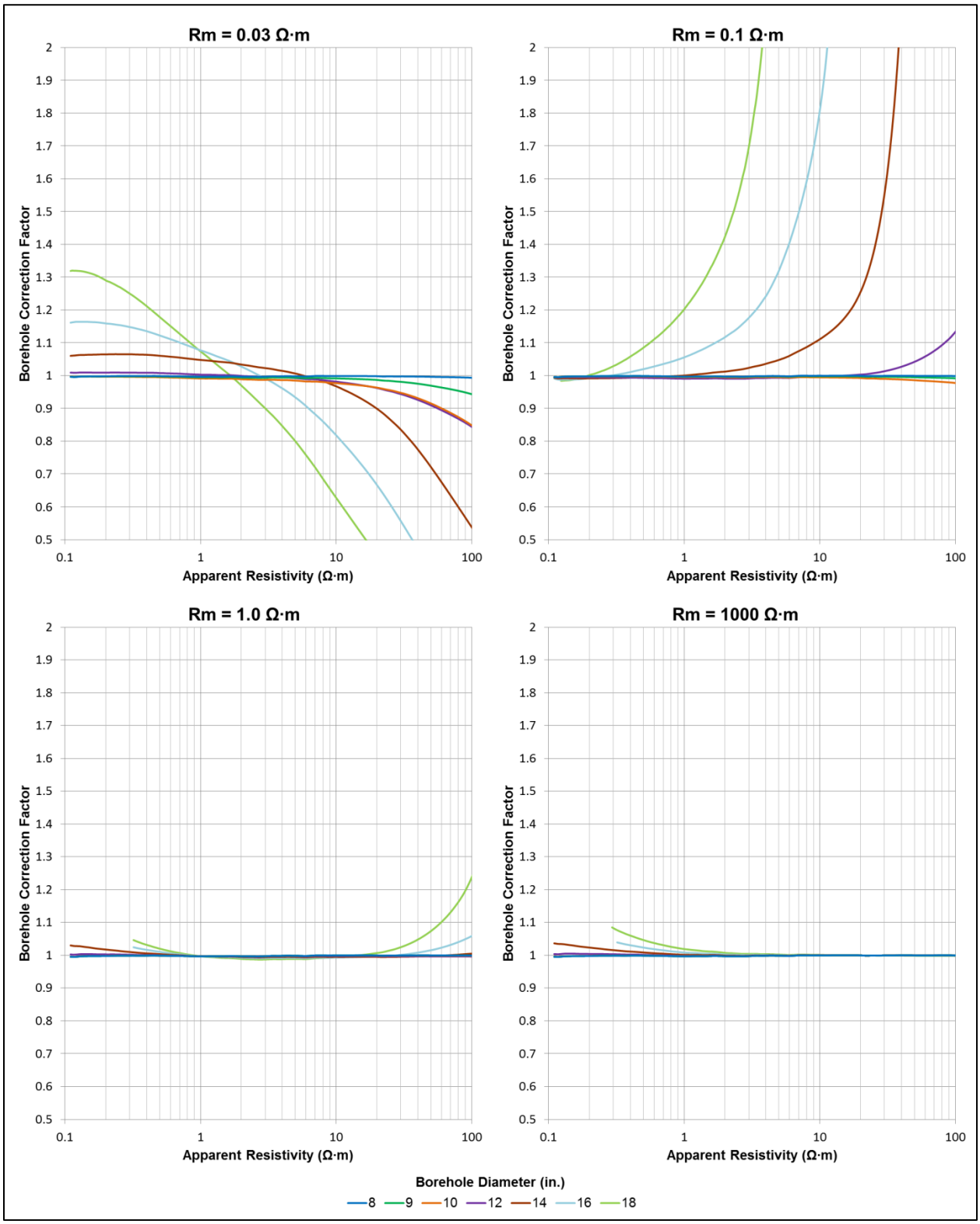


Chart 3-142

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 1 MHz Phase-Shift Resistivity

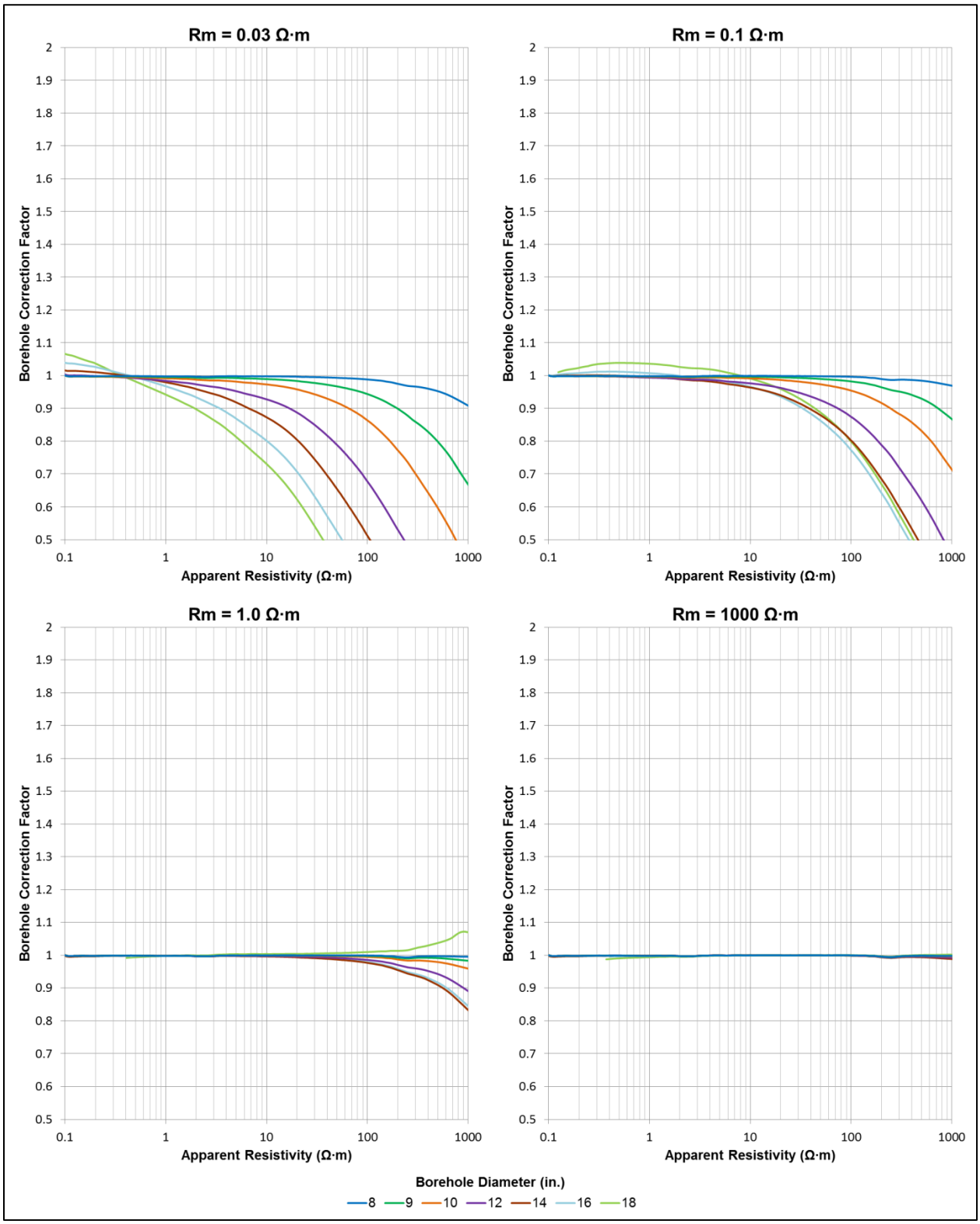


Chart 3-143

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 1 MHz Attenuation Resistivity

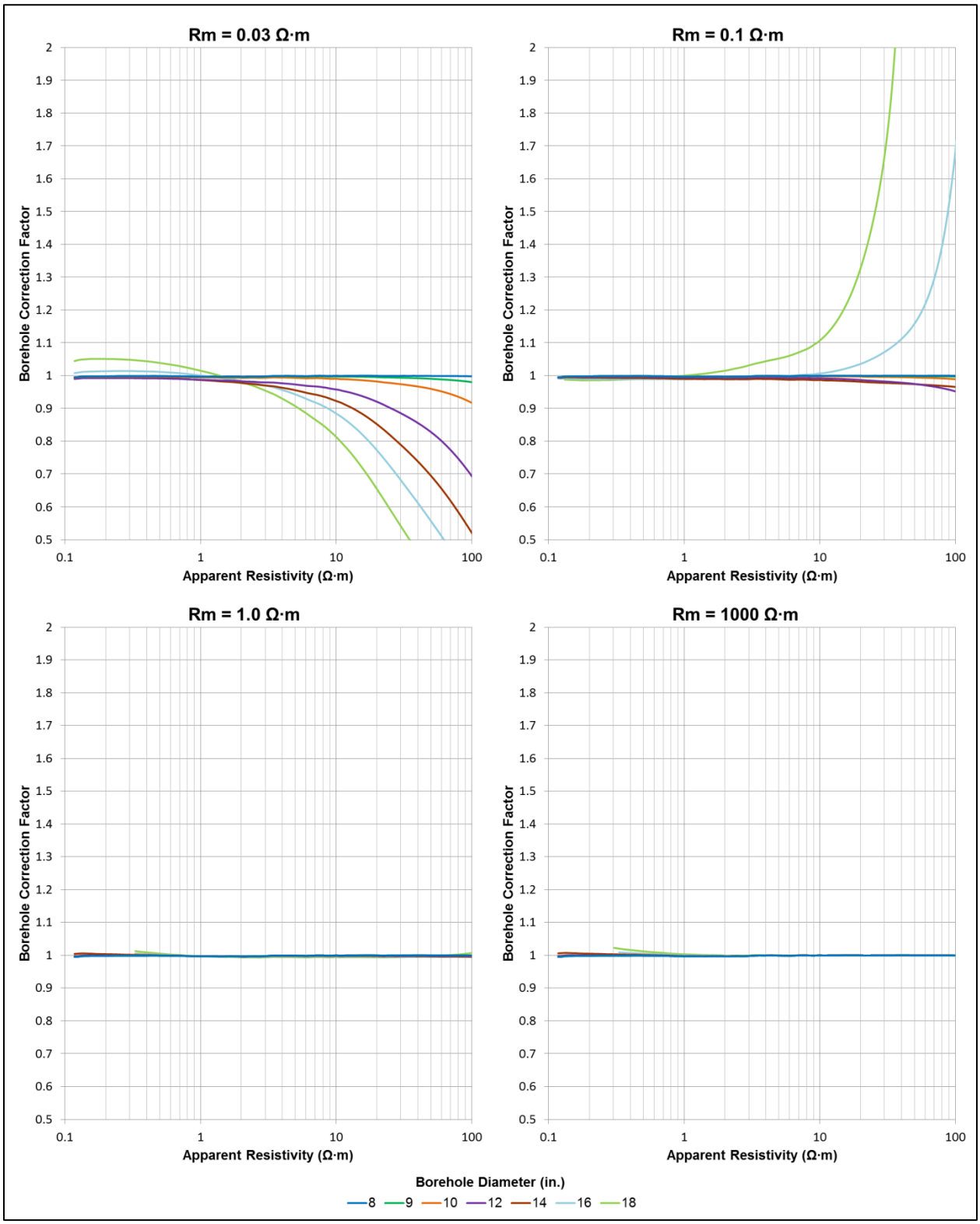


Chart 3-144

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 500 kHz[3] Phase-Shift Resistivity

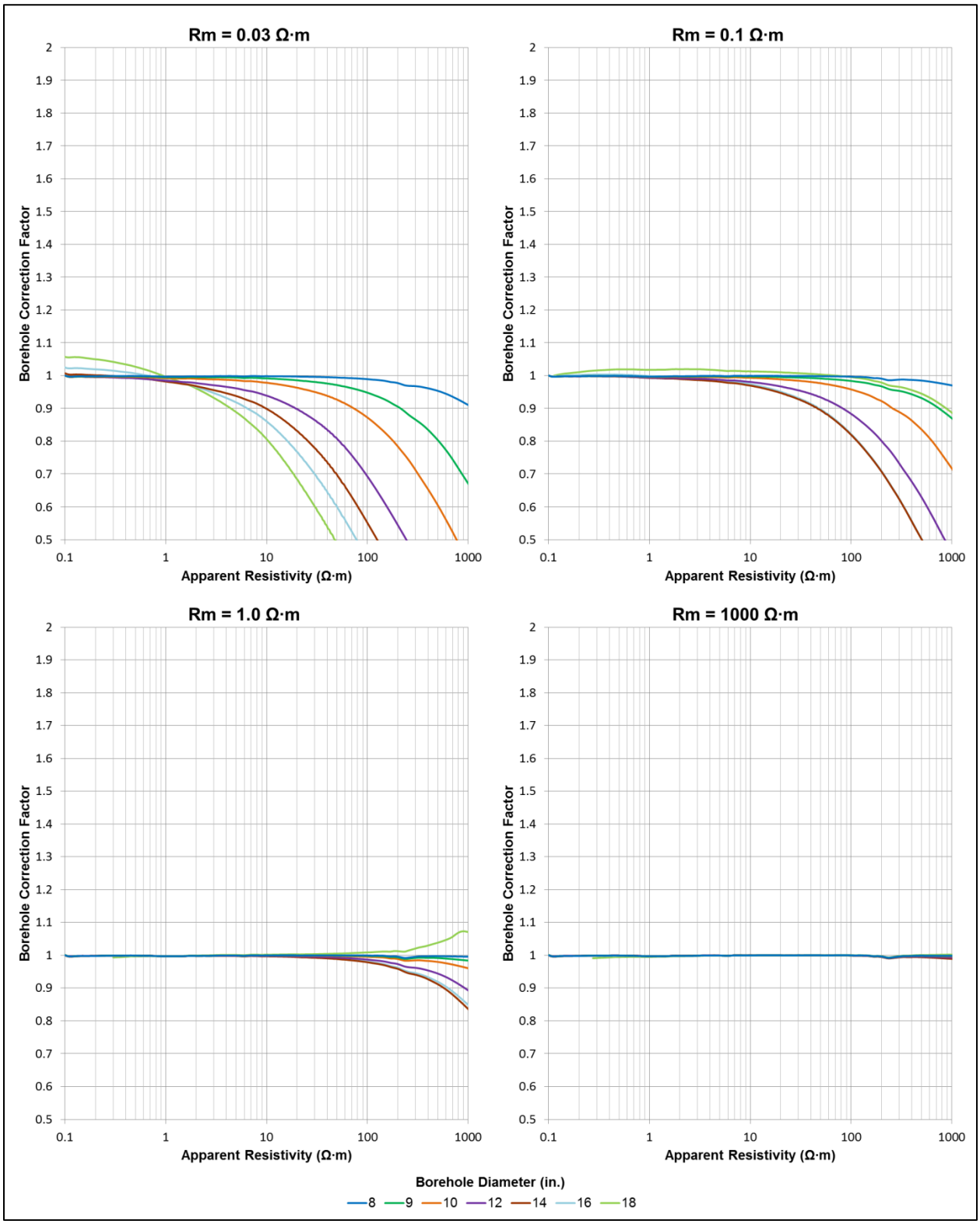


Chart 3-145

[3] The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Resistivity Corrections for Borehole Size and Mud Resistivity
6¾-in. EWR™-Phase 4 Tool, 39-in. Spacing, 500 kHz[4] Attenuation Resistivity

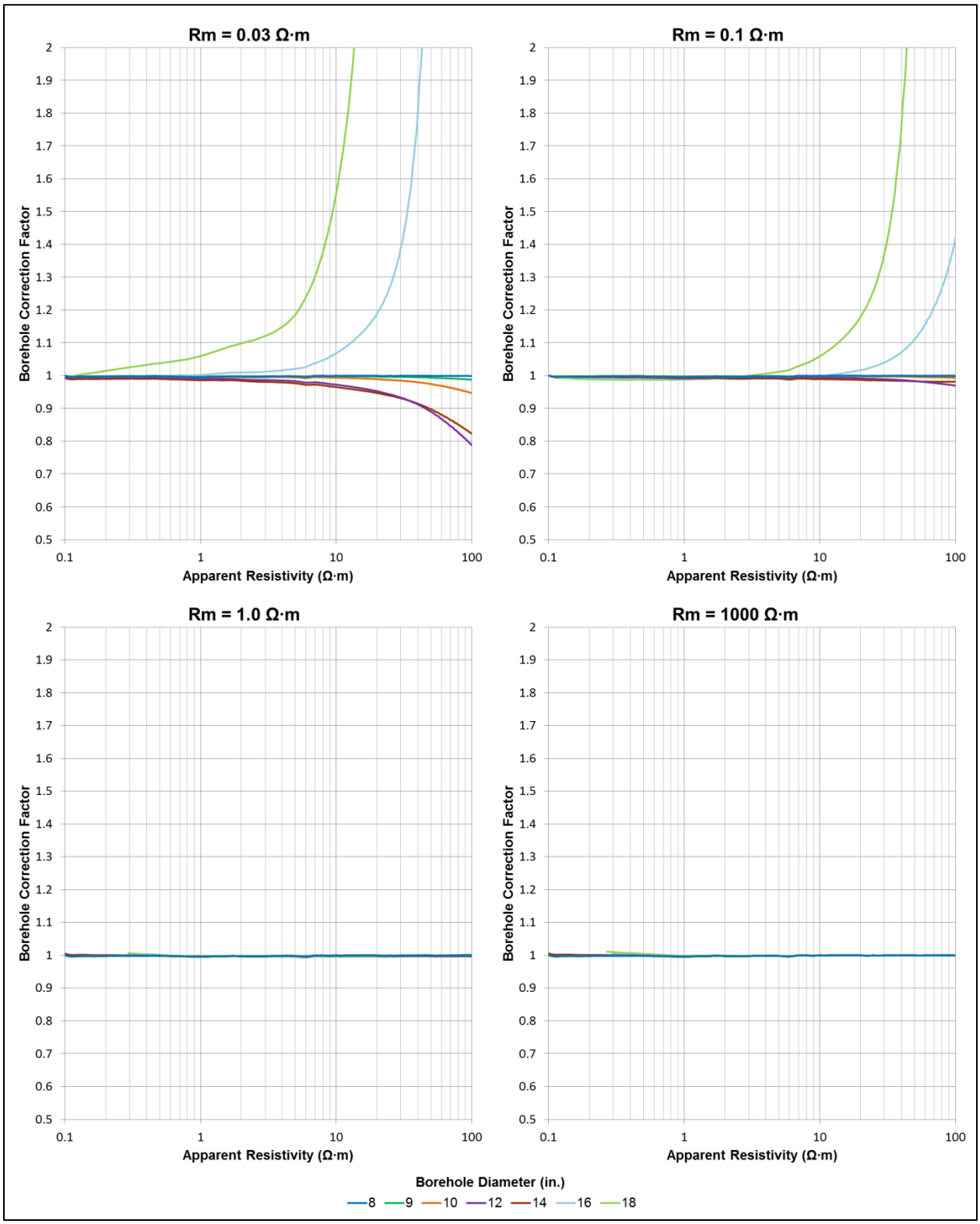


Chart 3-146

[4] The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 9-in. Spacing, 2 MHz Phase-Shift Resistivity

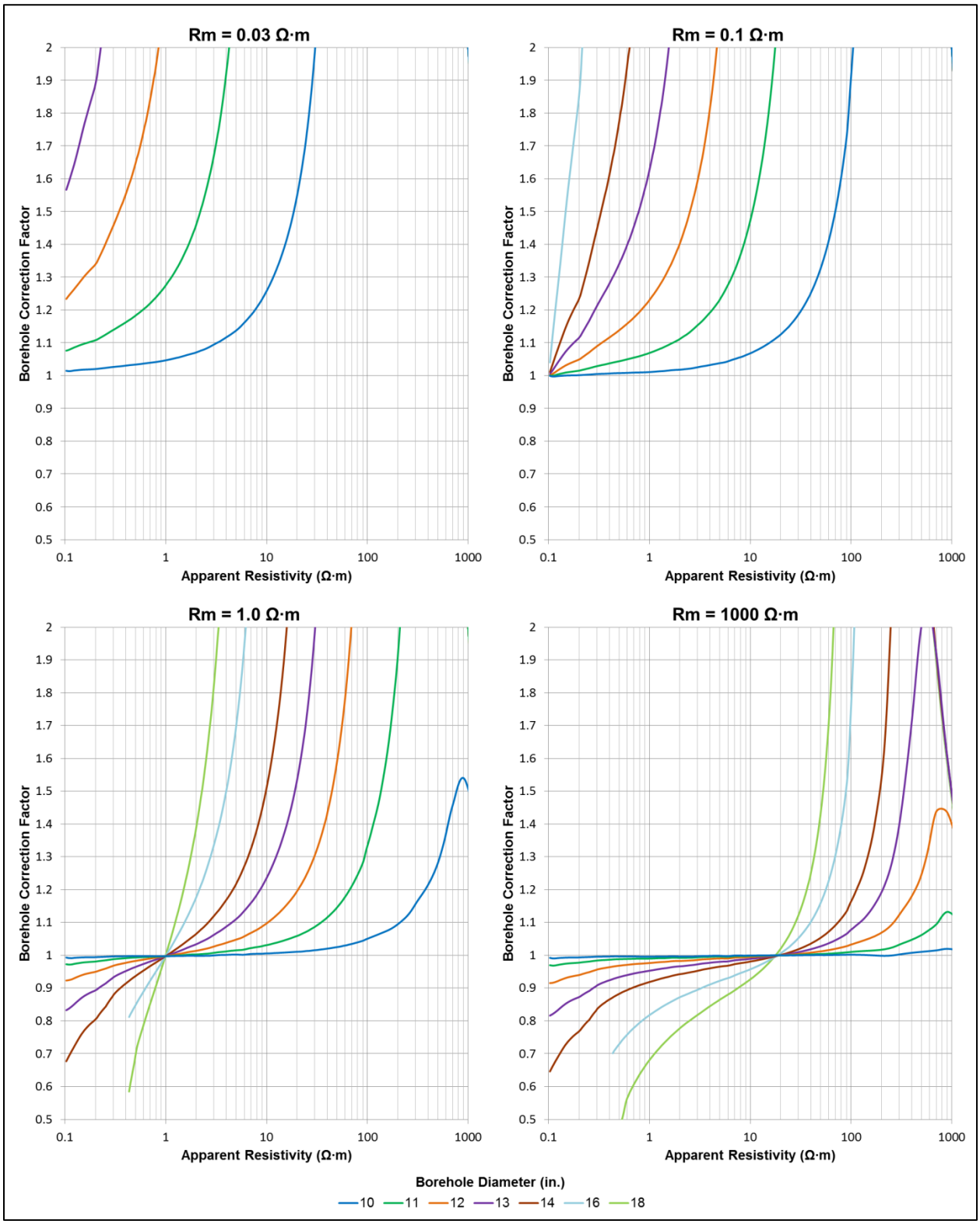


Chart 3-147

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 9-in. Spacing, 2 MHz Attenuation Resistivity

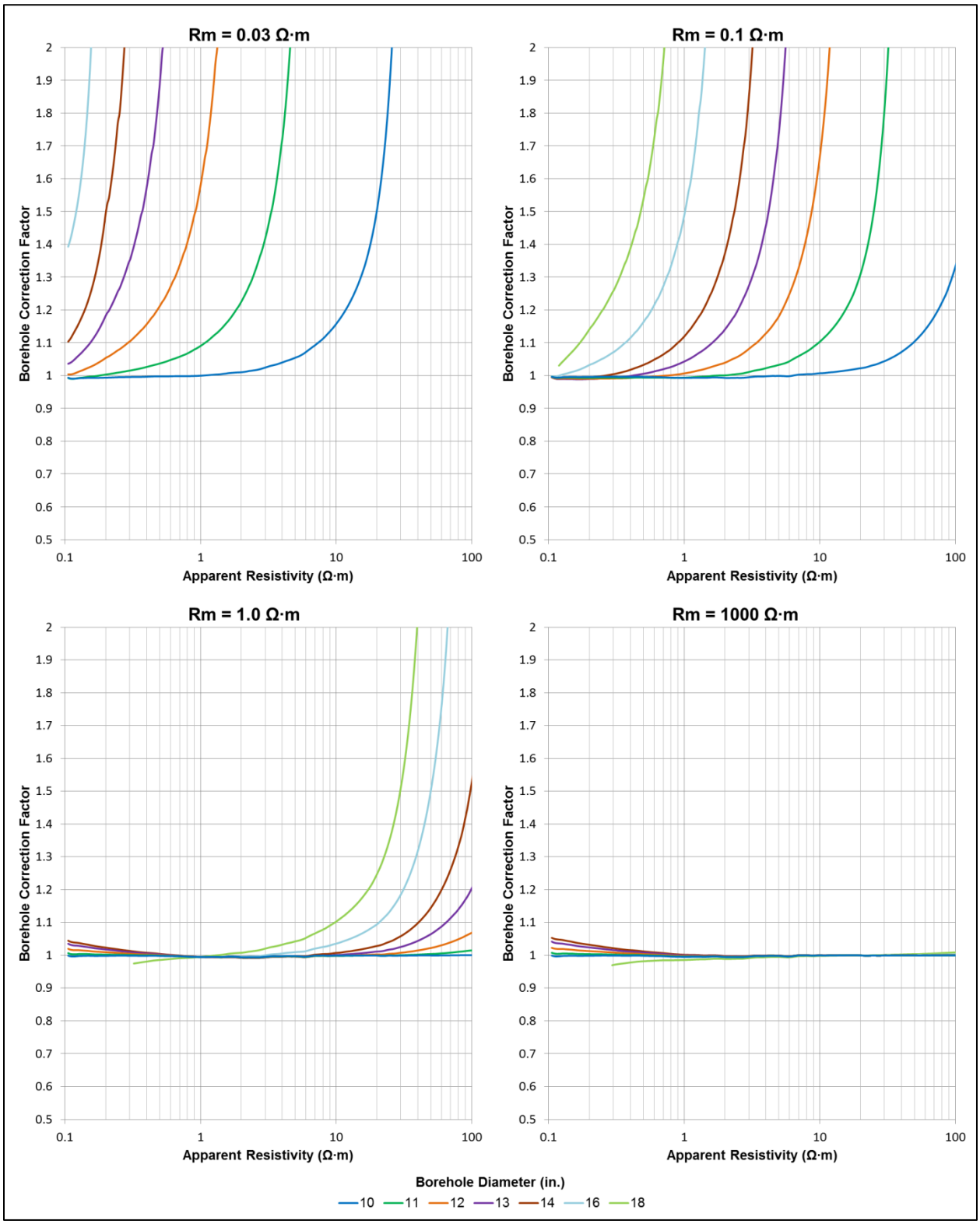


Chart 3-148

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 15-in. Spacing, 2 MHz Phase-Shift Resistivity

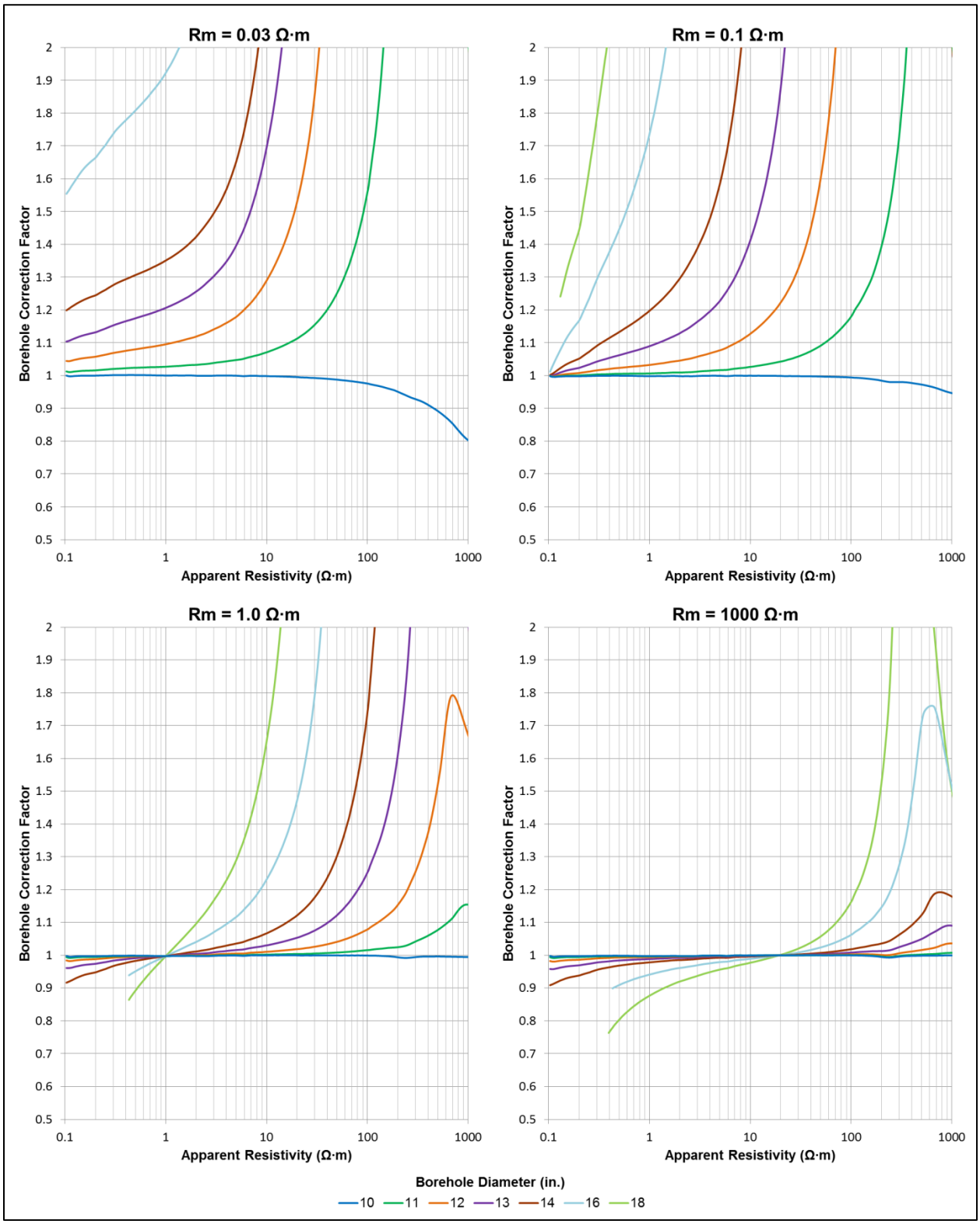


Chart 3-149

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 15-in. Spacing, 2 MHz Attenuation Resistivity

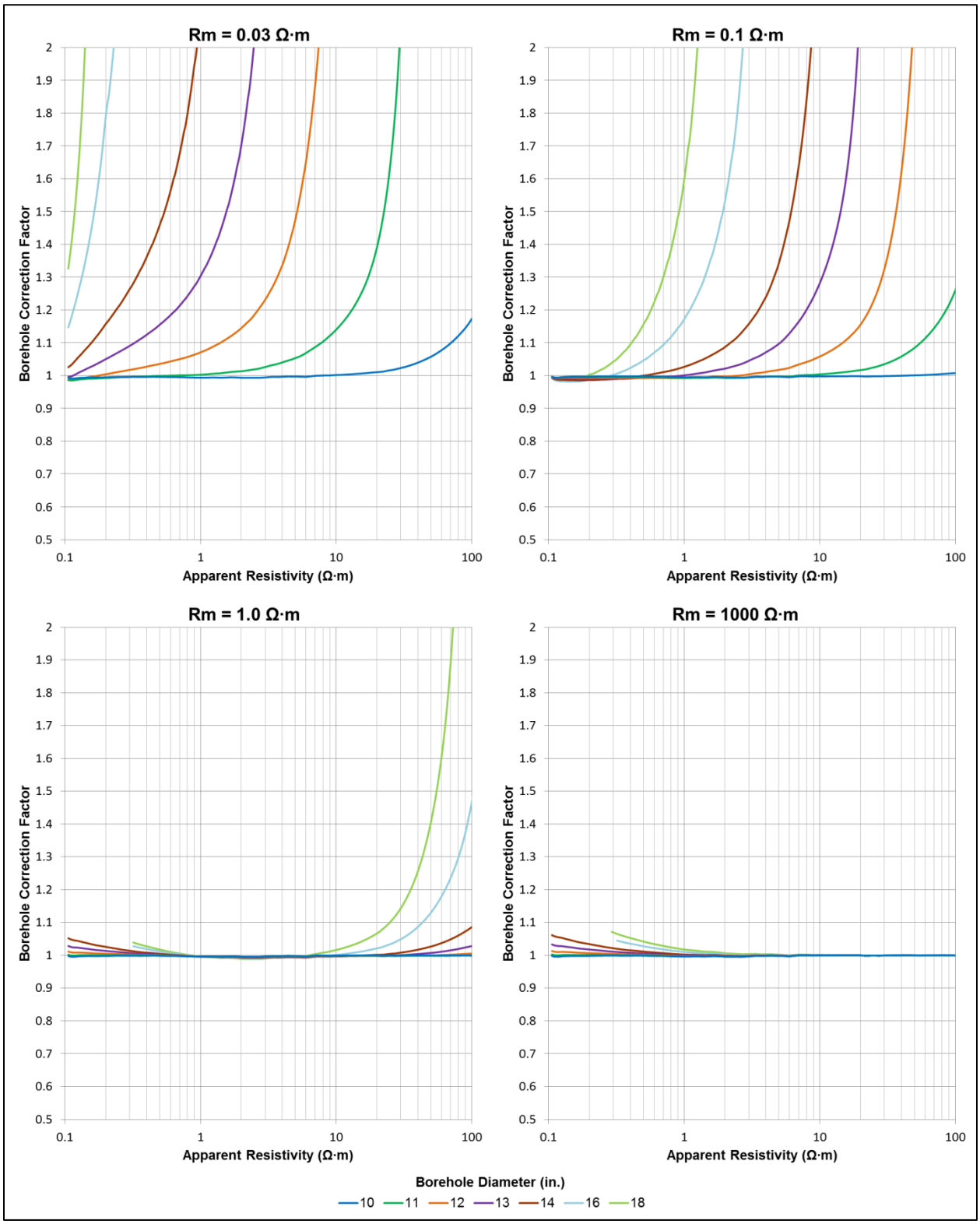


Chart 3-150

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 27-in. Spacing, 2 MHz Phase-Shift Resistivity

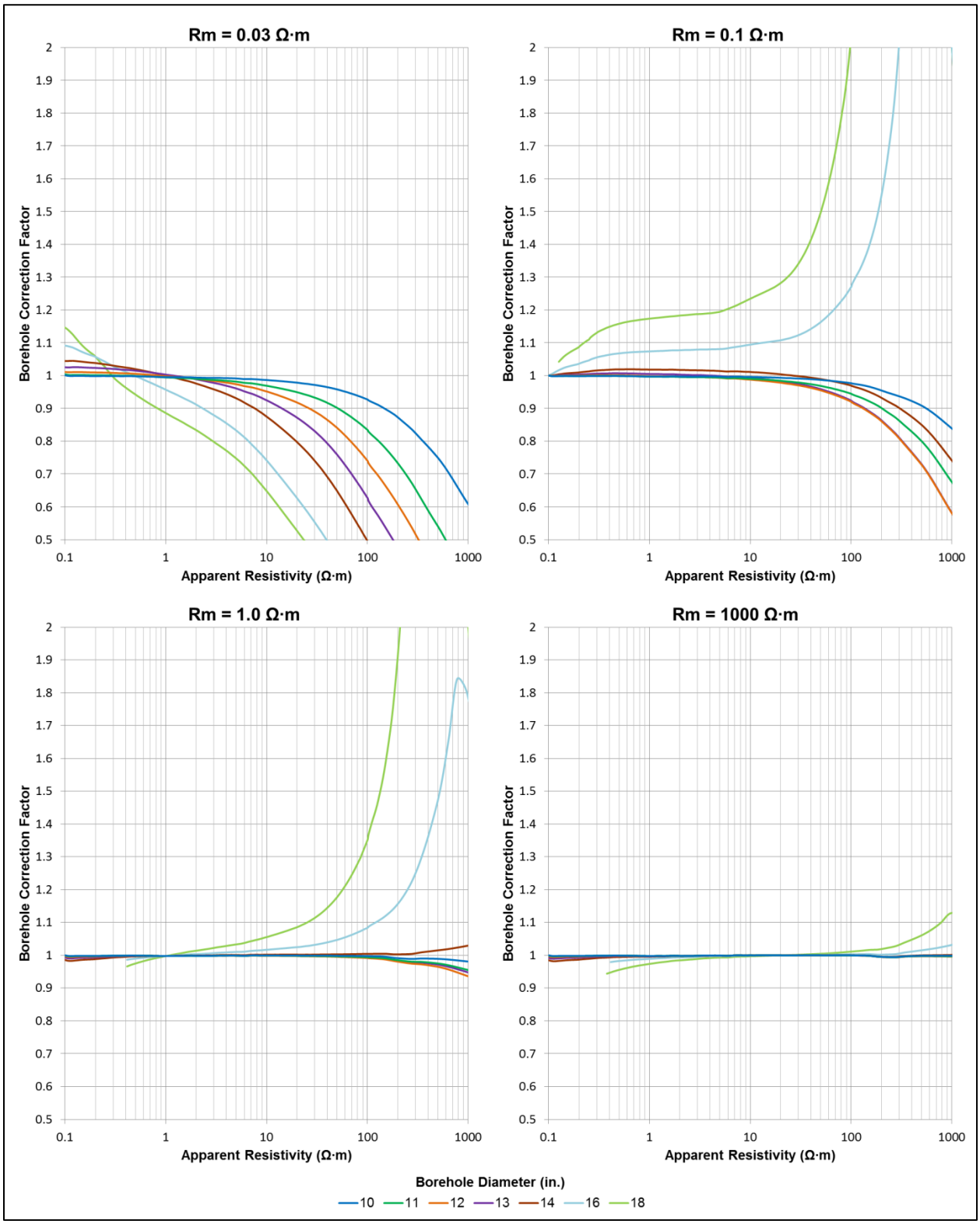


Chart 3-151

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 27-in. Spacing, 2 MHz Attenuation Resistivity

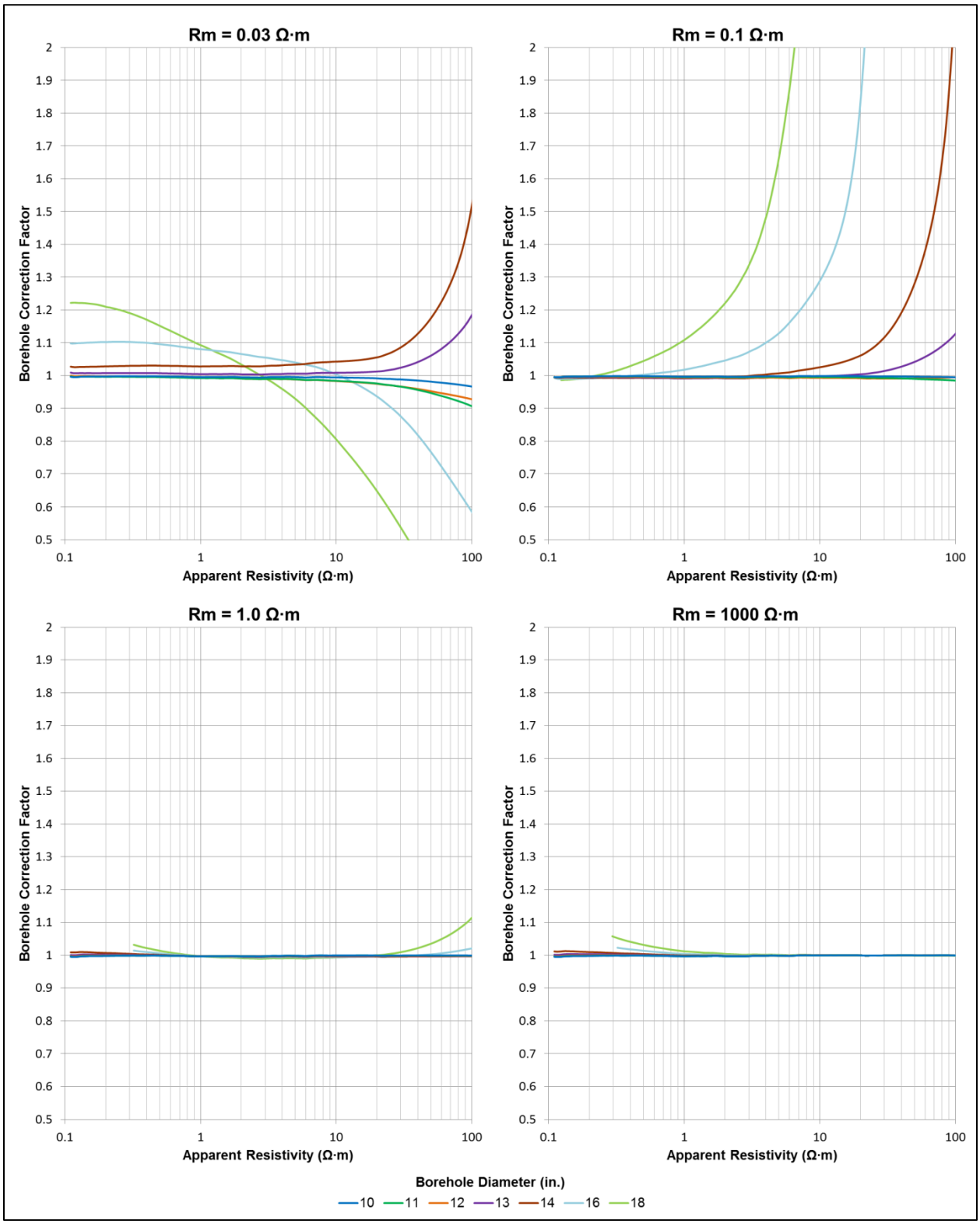


Chart 3-152

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 39-in. Spacing, 1 MHz Phase-Shift Resistivity

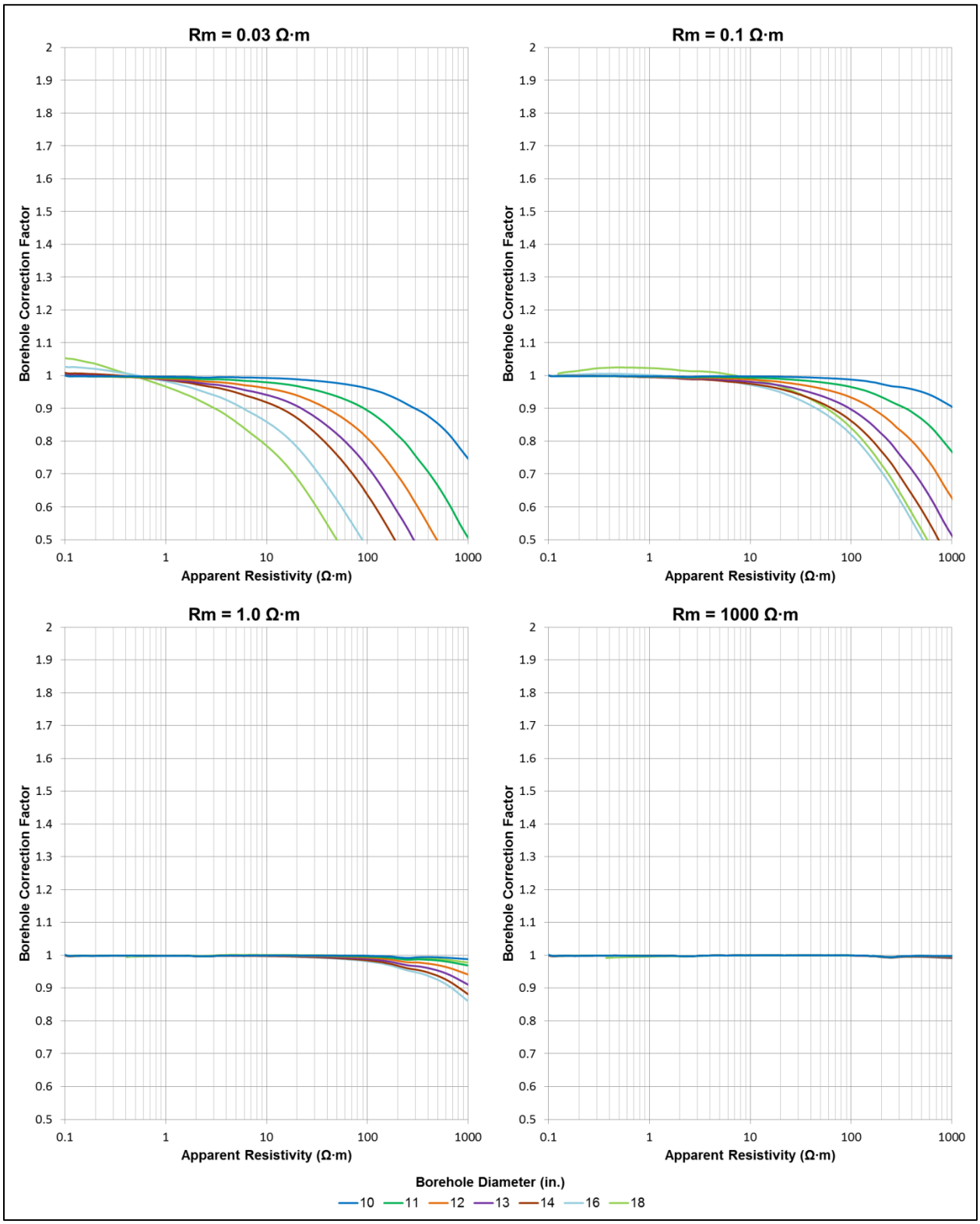


Chart 3-153

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 39-in. Spacing, 1 MHz Attenuation Resistivity

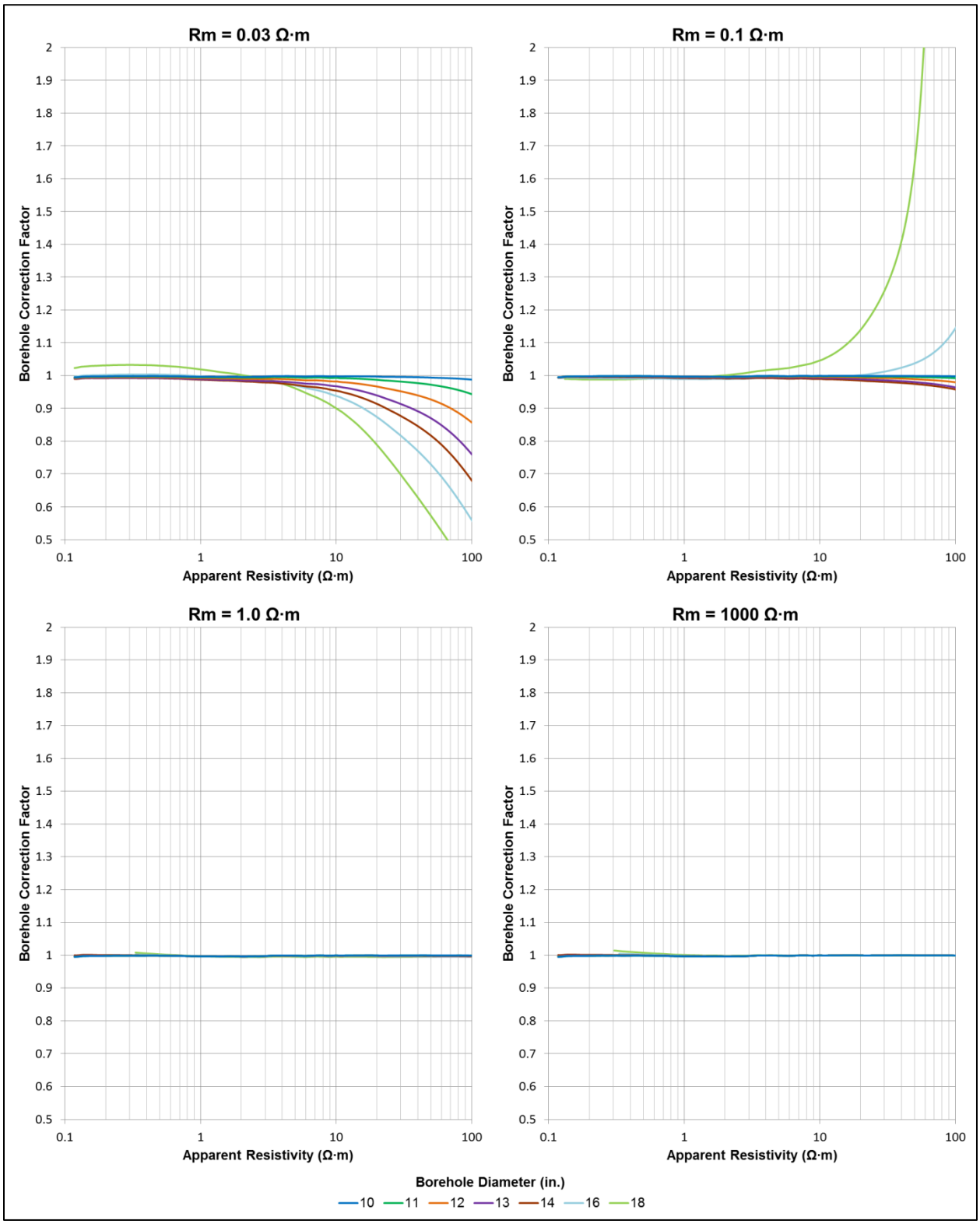


Chart 3-154

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 39-in. Spacing, 500 kHz[5] Phase-Shift Resistivity

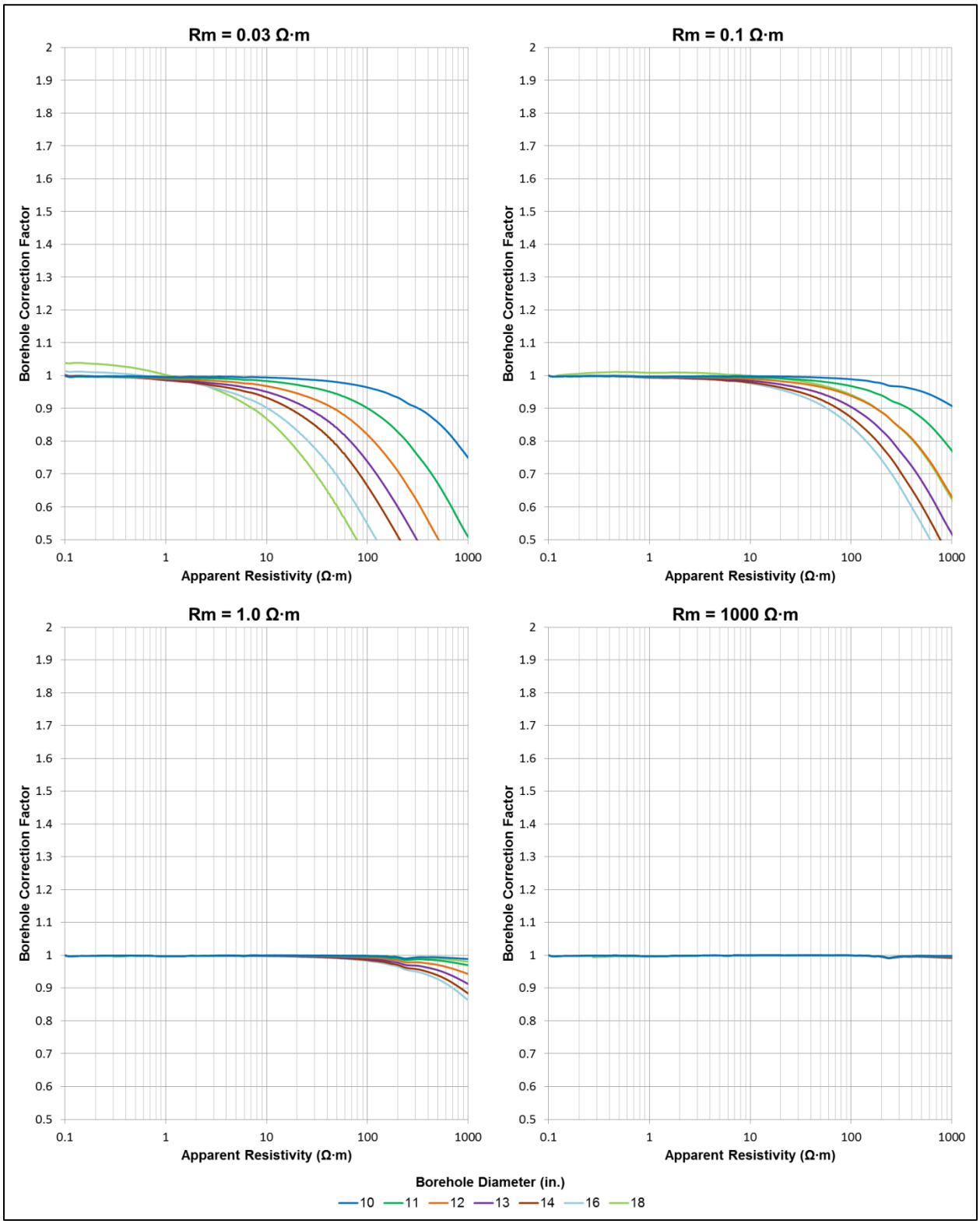


Chart 3-155

[5] The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Resistivity Corrections for Borehole Size and Mud Resistivity
8-in. EWR™-Phase 4 Tool, 39-in. Spacing, 500 kHz[6] Attenuation Resistivity

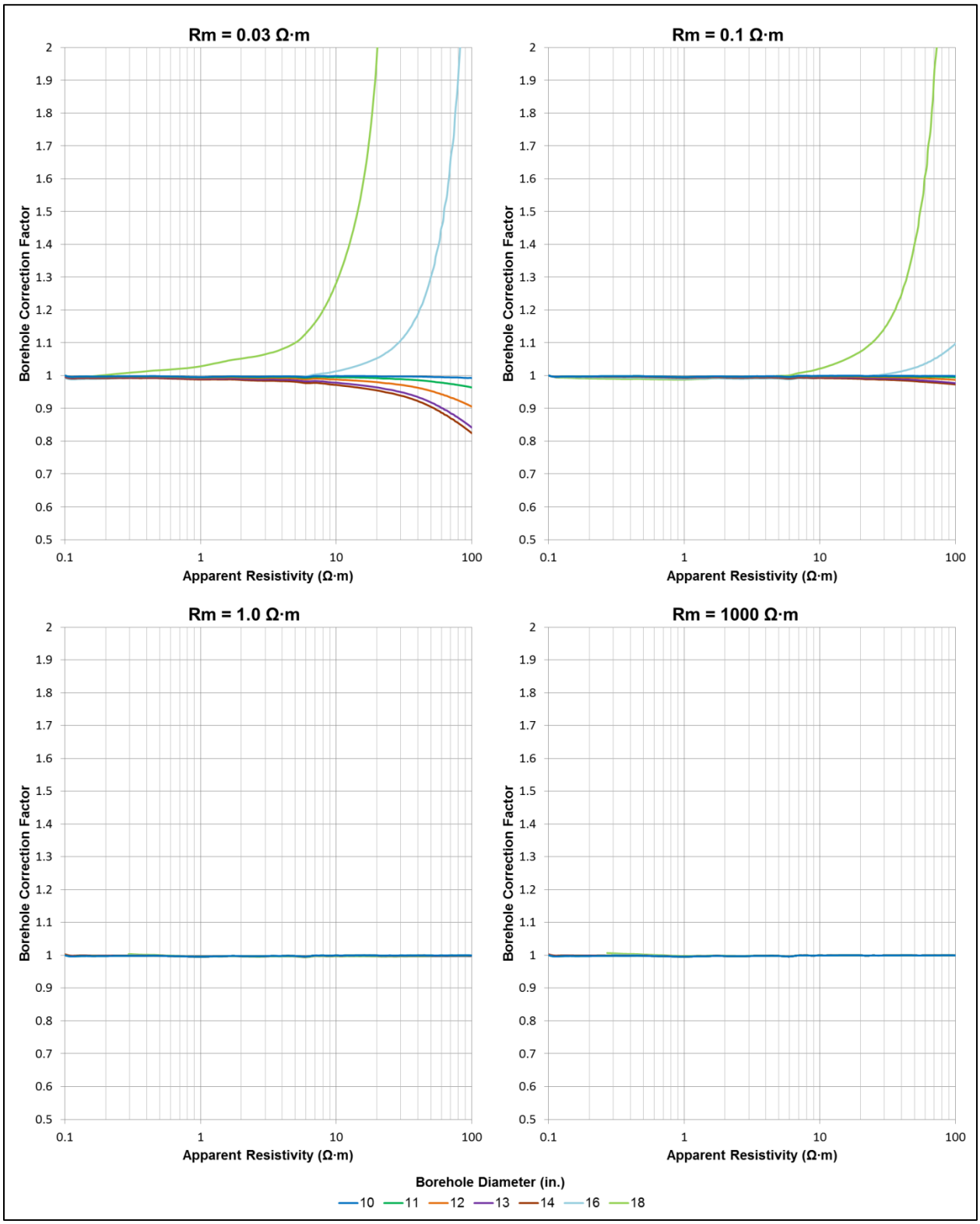


Chart 3-156

[6] The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 18-in. Spacing, 2 MHz Phase-Shift Resistivity

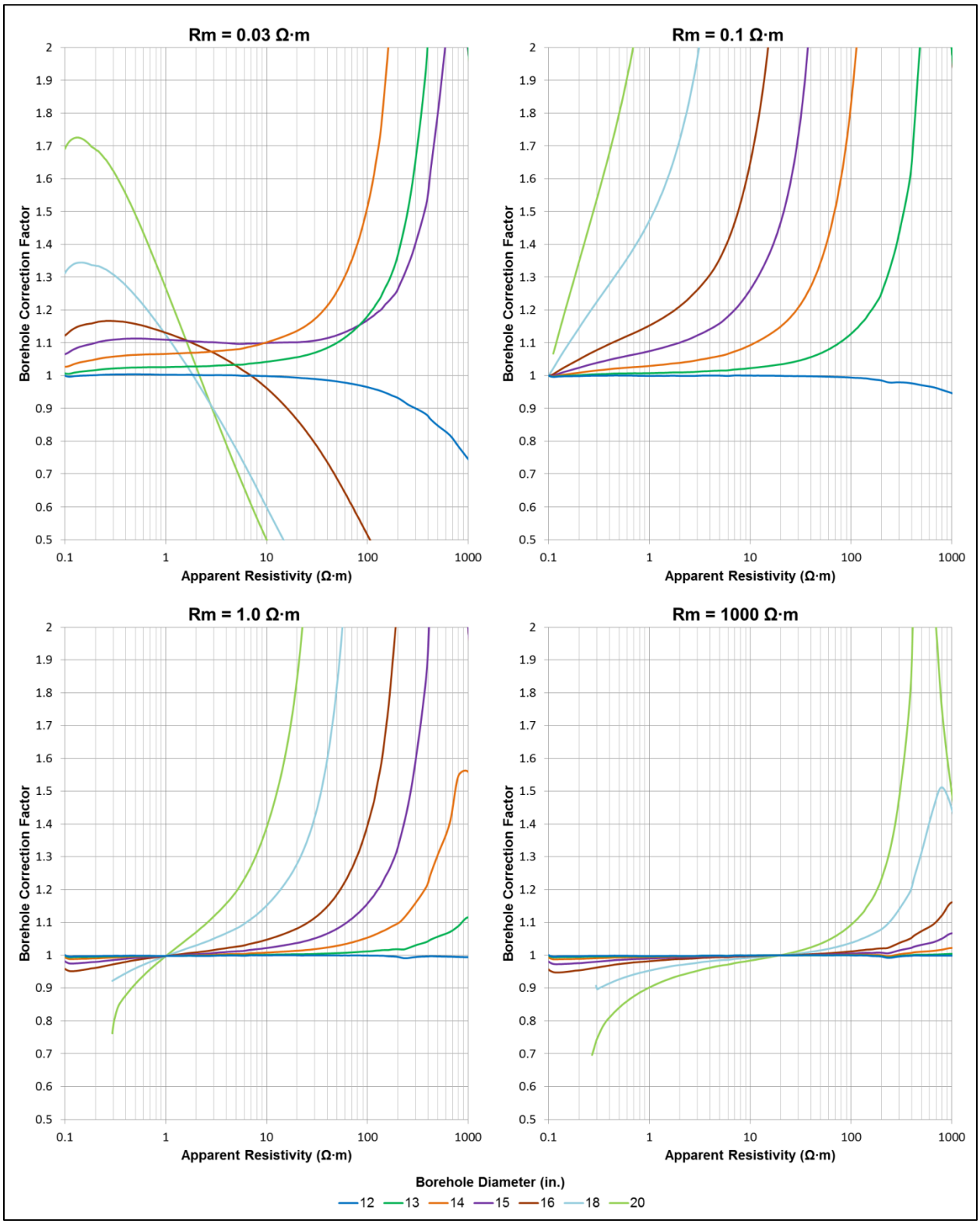


Chart 3-157

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 18-in. Spacing, 2 MHz Attenuation Resistivity

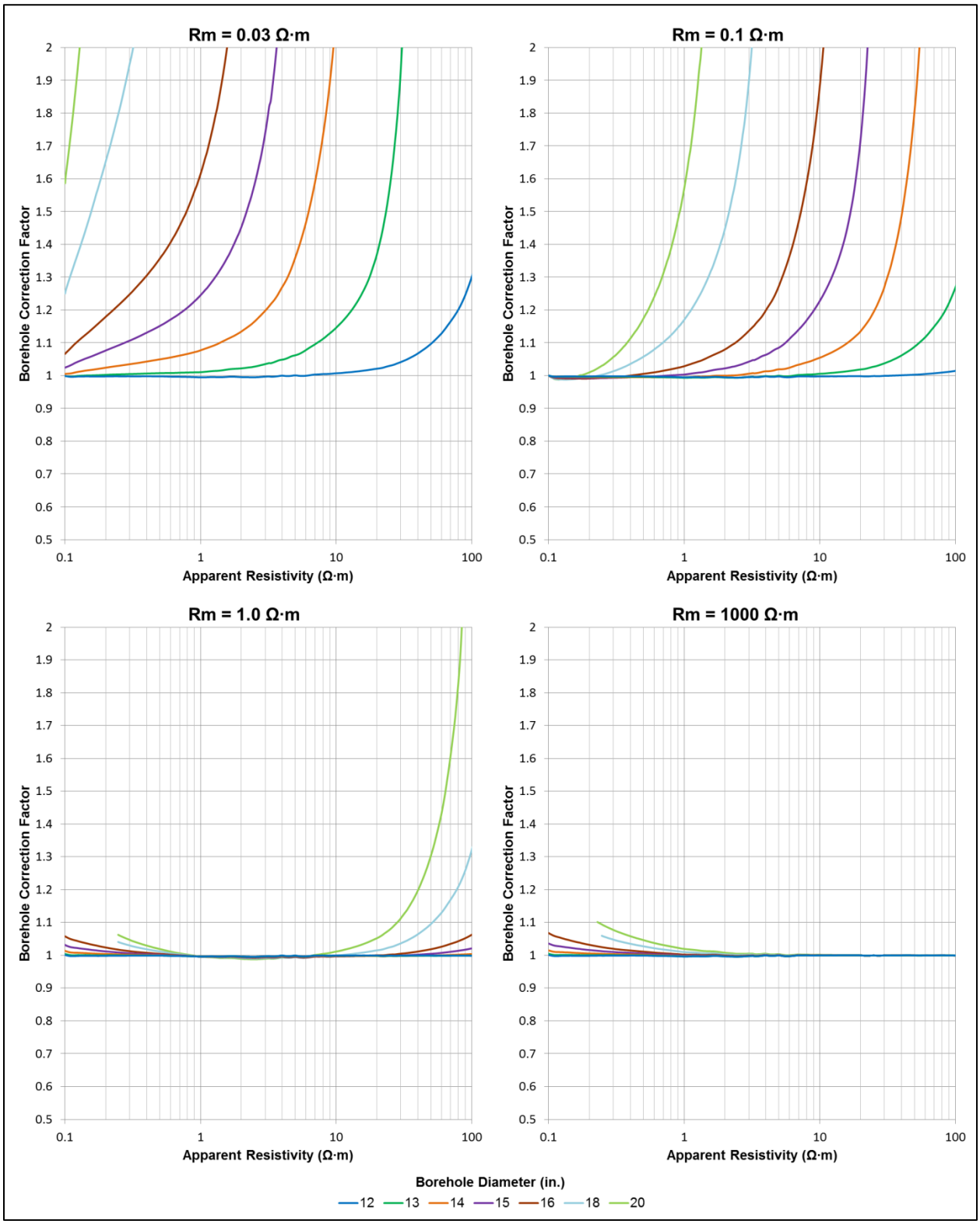


Chart 3-158

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 24-in. Spacing, 2 MHz Phase-Shift Resistivity

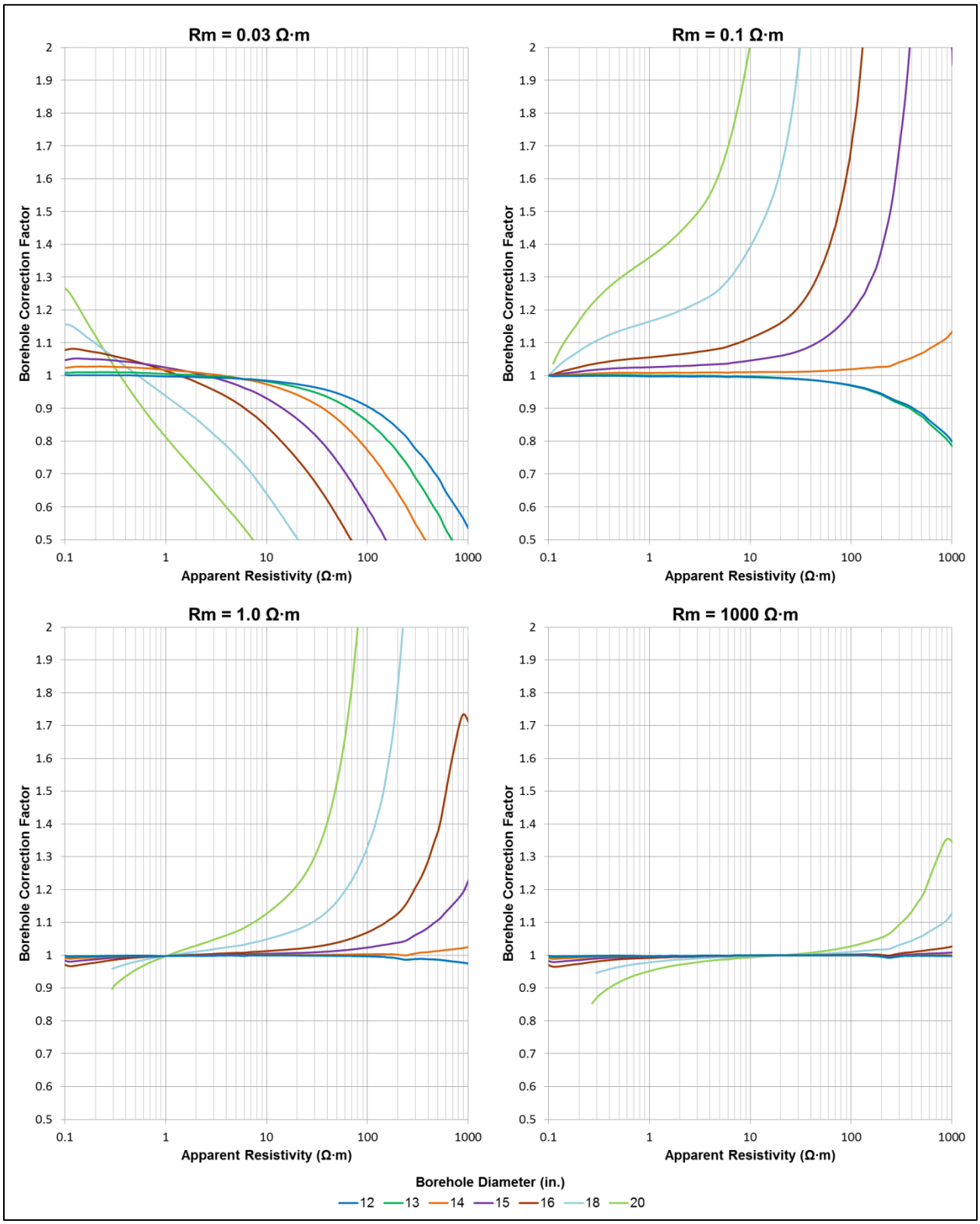


Chart 3-159

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 24-in. Spacing, 2 MHz Attenuation Resistivity

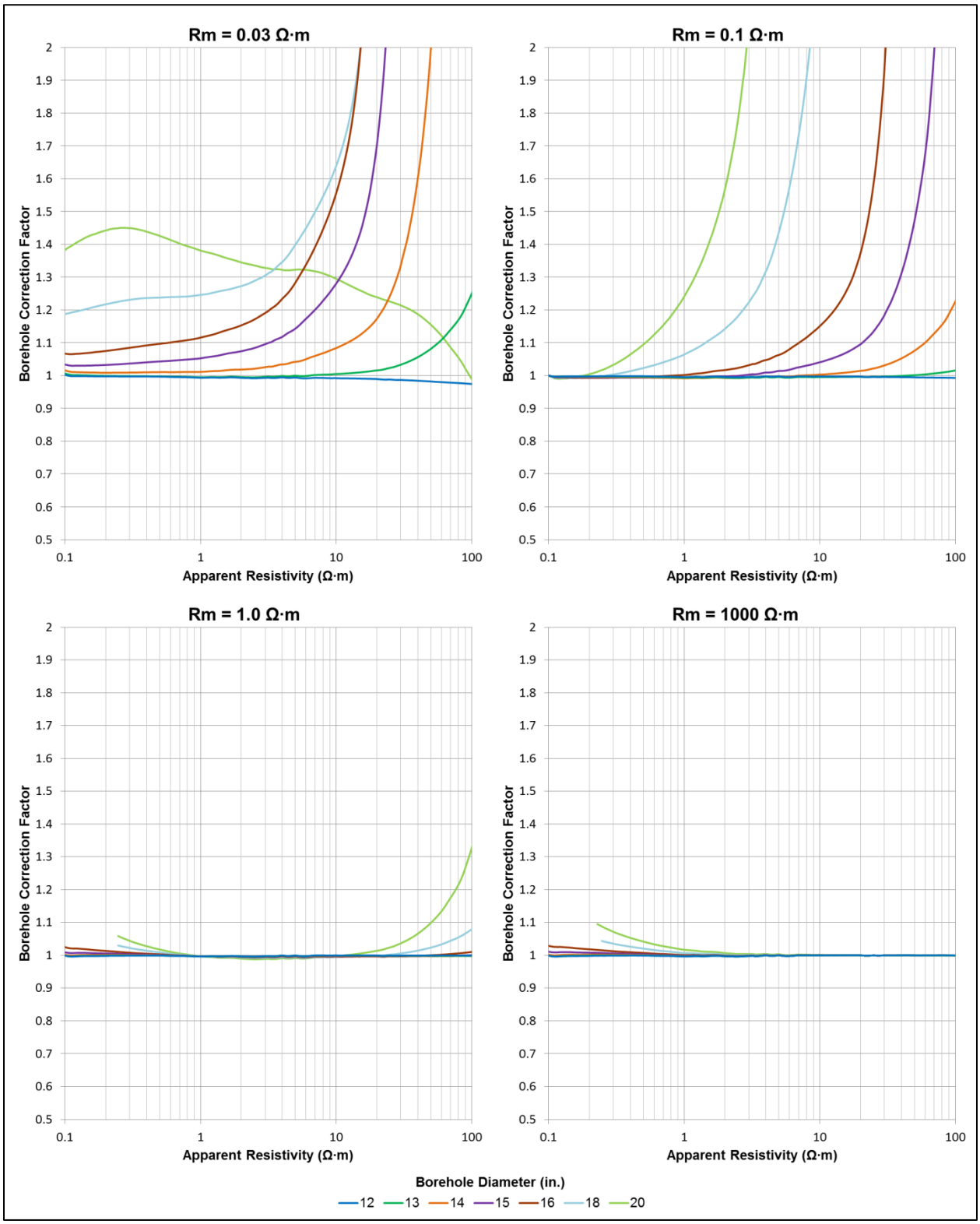


Chart 3-160

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 30-in. Spacing, 2 MHz Phase-Shift Resistivity

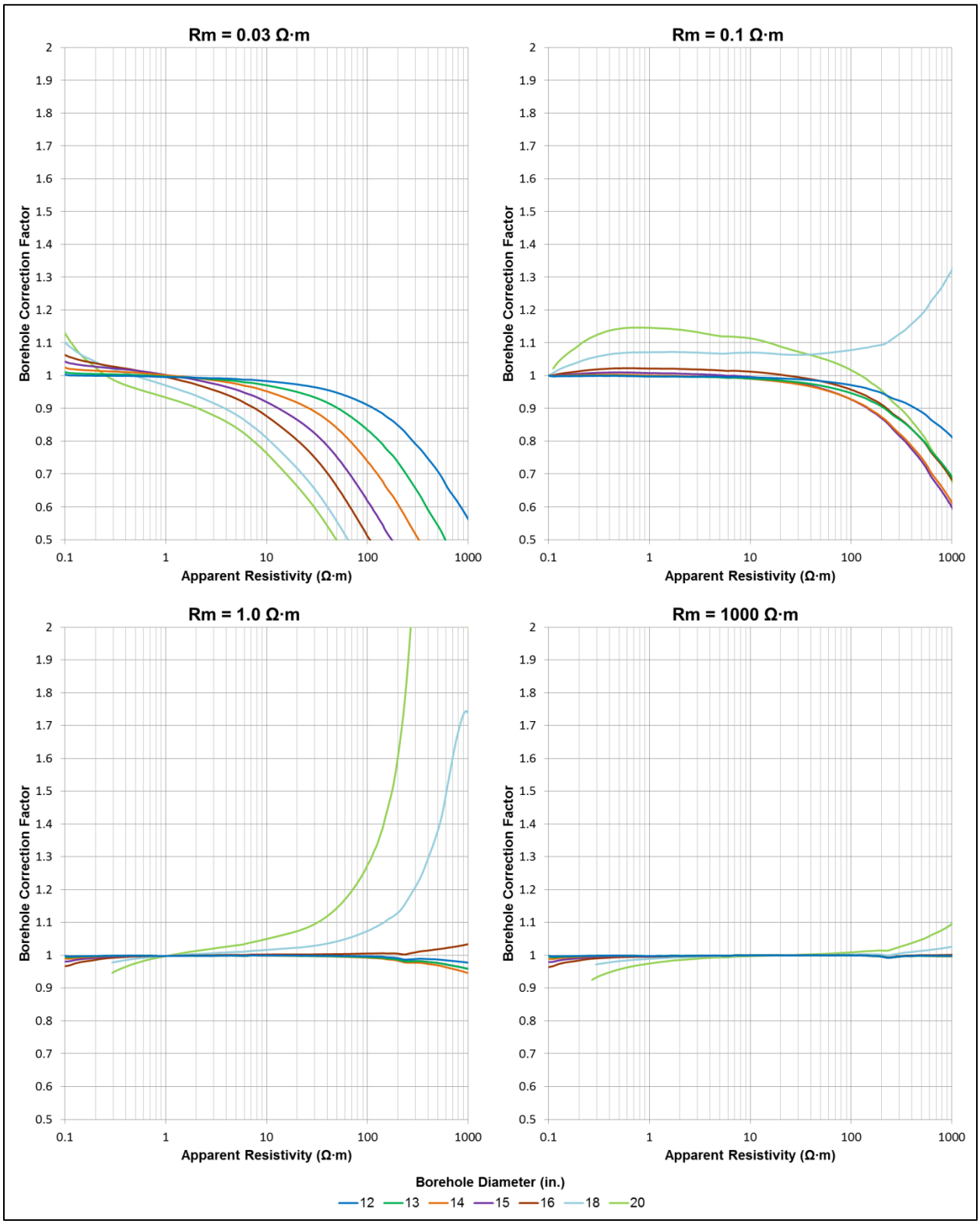


Chart 3-161

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 30-in. Spacing, 2 MHz Attenuation Resistivity

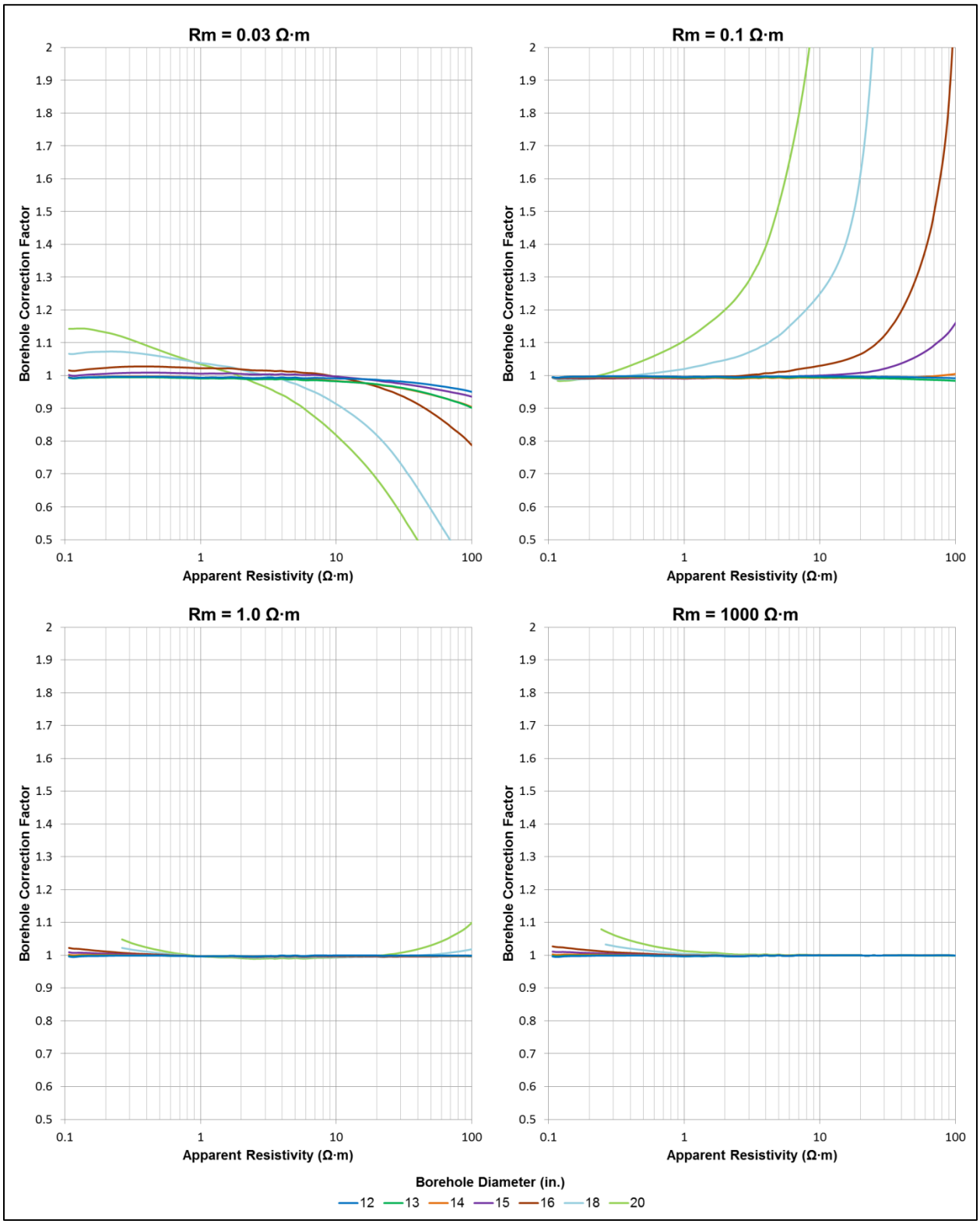


Chart 3-162

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 42-in. Spacing, 1 MHz Phase-Shift Resistivity

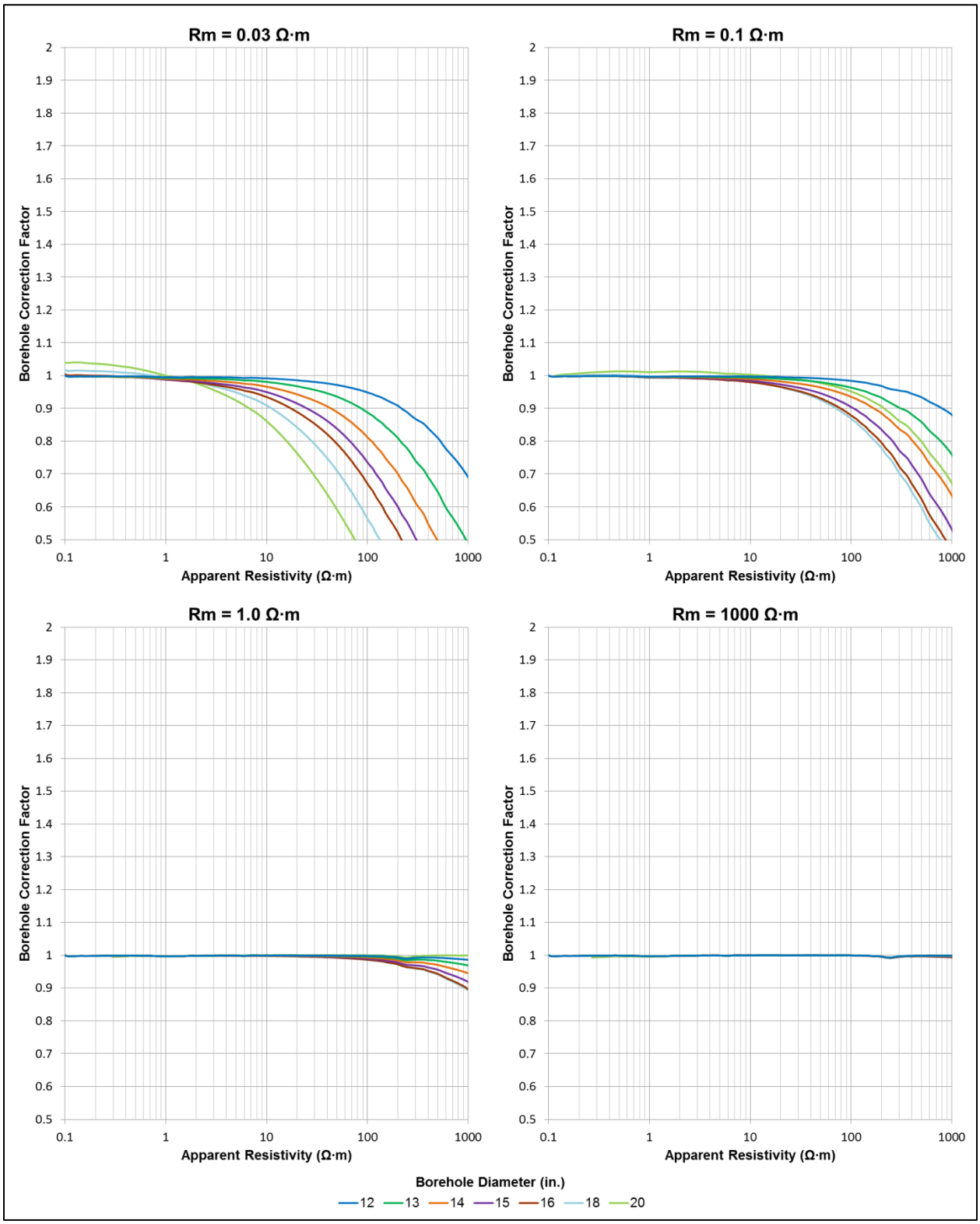


Chart 3-163

Resistivity Corrections for Borehole Size and Mud Resistivity
9½-in. EWR™-Phase 4D Tool, 42-in. Spacing, 1 MHz Attenuation Resistivity

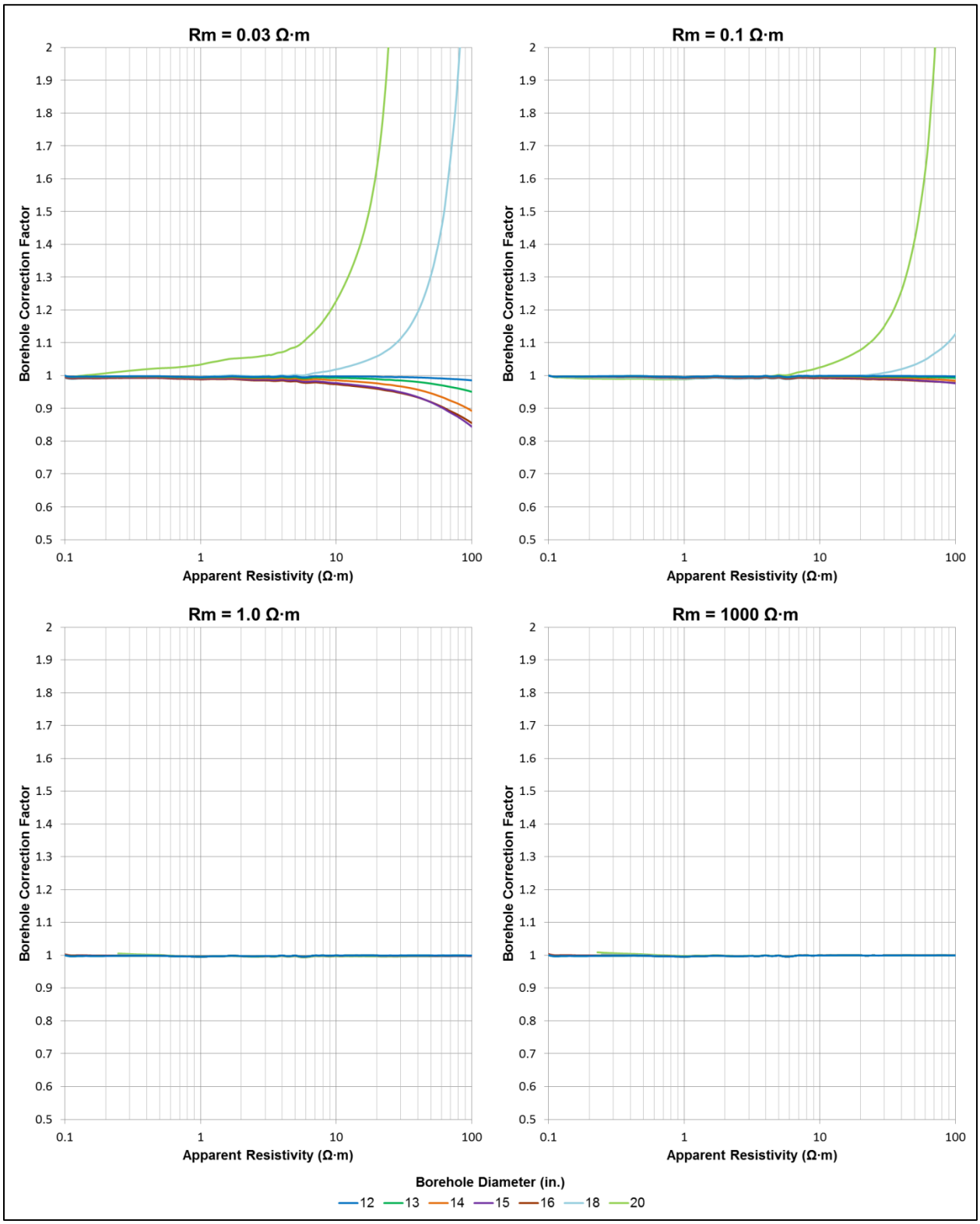


Chart 3-164

Resistivity Correction for Relative Dielectric Constant

Wave propagation resistivity tools measure the phase-shift and attenuation of electromagnetic waves as they pass through the formation. The measured phase-shift and attenuation are a function of both the resistivity and the permittivity of the rock. In order to determine the resistivity, it is necessary to assume a value for the permittivity. The permittivity is usually expressed in terms of the ratio of the permittivity of the rock to the permittivity of a vacuum. This ratio is commonly referred to as the relative dielectric constant, and is defined as:

$$\varepsilon_r = \frac{\varepsilon}{\varepsilon_0}$$

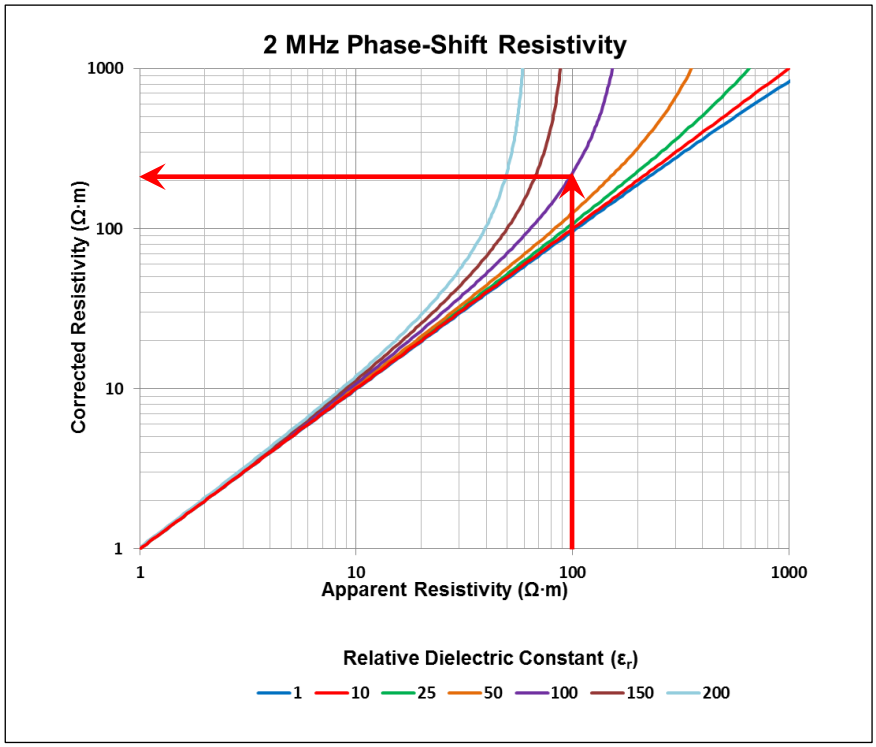
where ε is the permittivity of the rock and ε_0 is the permittivity of a vacuum, equal to 8.8542 x 10^{-12} farads per metre.

The relative dielectric constant used in Halliburton's resistivity transforms is assumed to be 10. This is a close approximation for most conditions encountered in well-bores, but in a few situations may lead to errors in the calculated resistivity. The charts in this section illustrate the effect on the resistivity measurement when the relative dielectric constant differs from the assumed value of 10.

Example

Determine the correct value for the phase-shift resistivity measurement from the 48-inch spacing of the ADR™ tool, operating at 2 MHz, given that the apparent resistivity is 100 Ω·m and the relative dielectric constant of the formation is 100.

- Select the chart for the 48-inch spacing of the ADR™ tool.
- Select the sub-chart for the 2 MHz phase-shift resistivity (see figure below).
- Enter the horizontal axis at the apparent resistivity of 100 Ω·m.
- Draw a vertical line to the curve representing a relative dielectric constant of 100.
- Draw a line horizontally to intersect the vertical axis at a corrected value of approximately 200 Ω·m.



Resistivity Correction for Relative Dielectric Constant
ADR™ Tool, 16-in Spacing

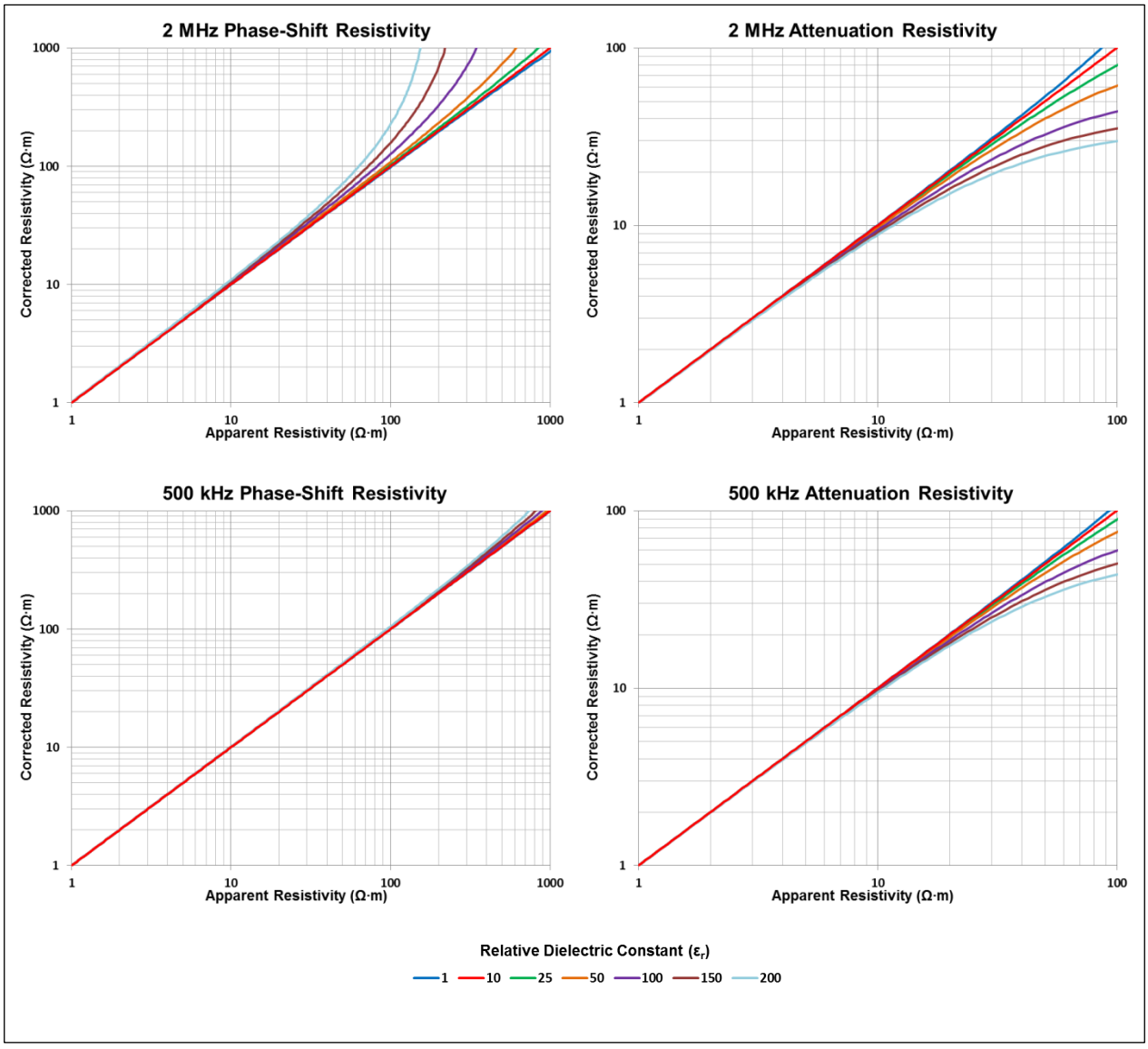


Chart 3-165

Resistivity Correction for Relative Dielectric Constant
ADR™ Tool, 32-in Spacing

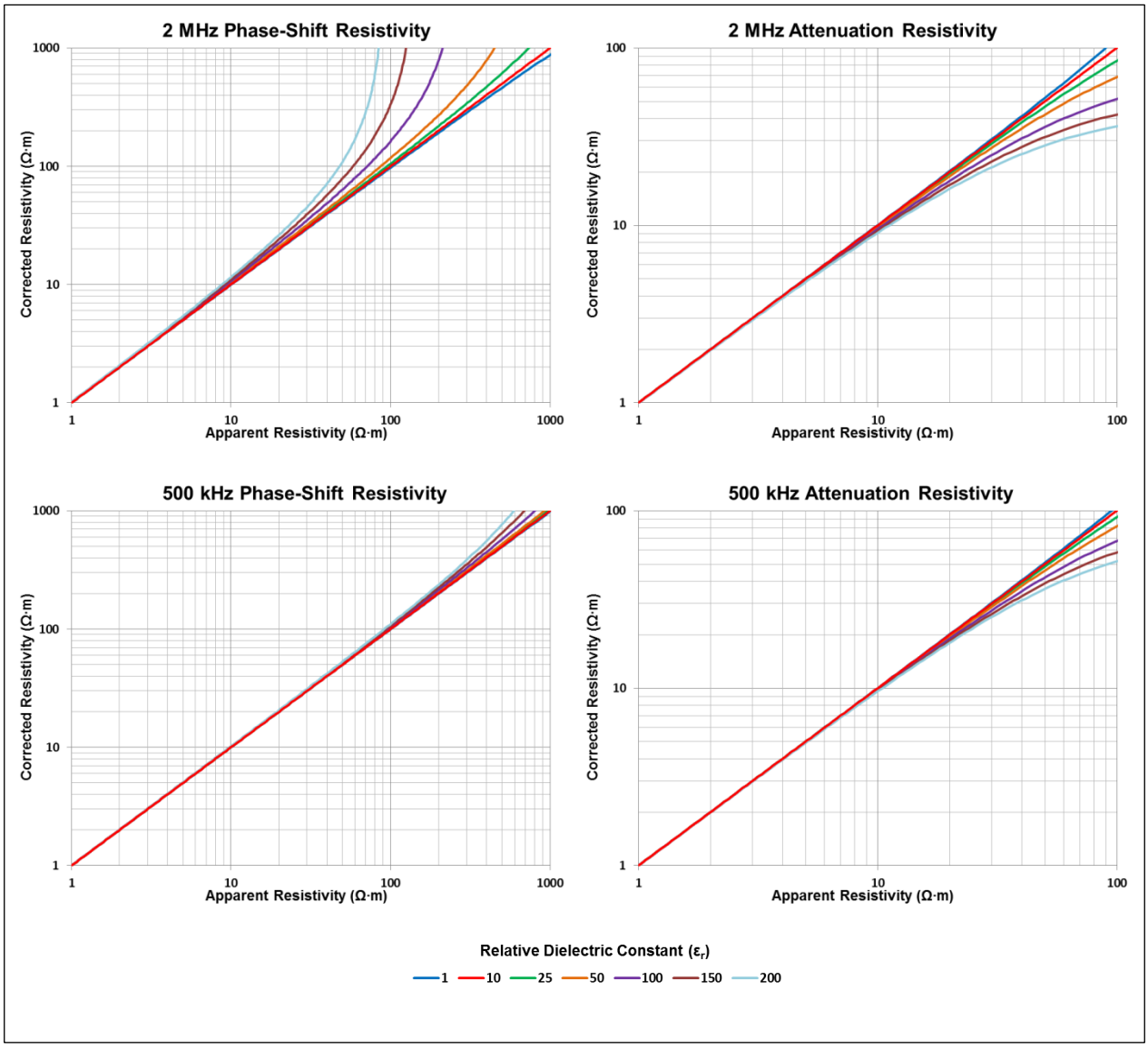


Chart 3-166

Resistivity Correction for Relative Dielectric Constant
ADR™ Tool, 48-in Spacing

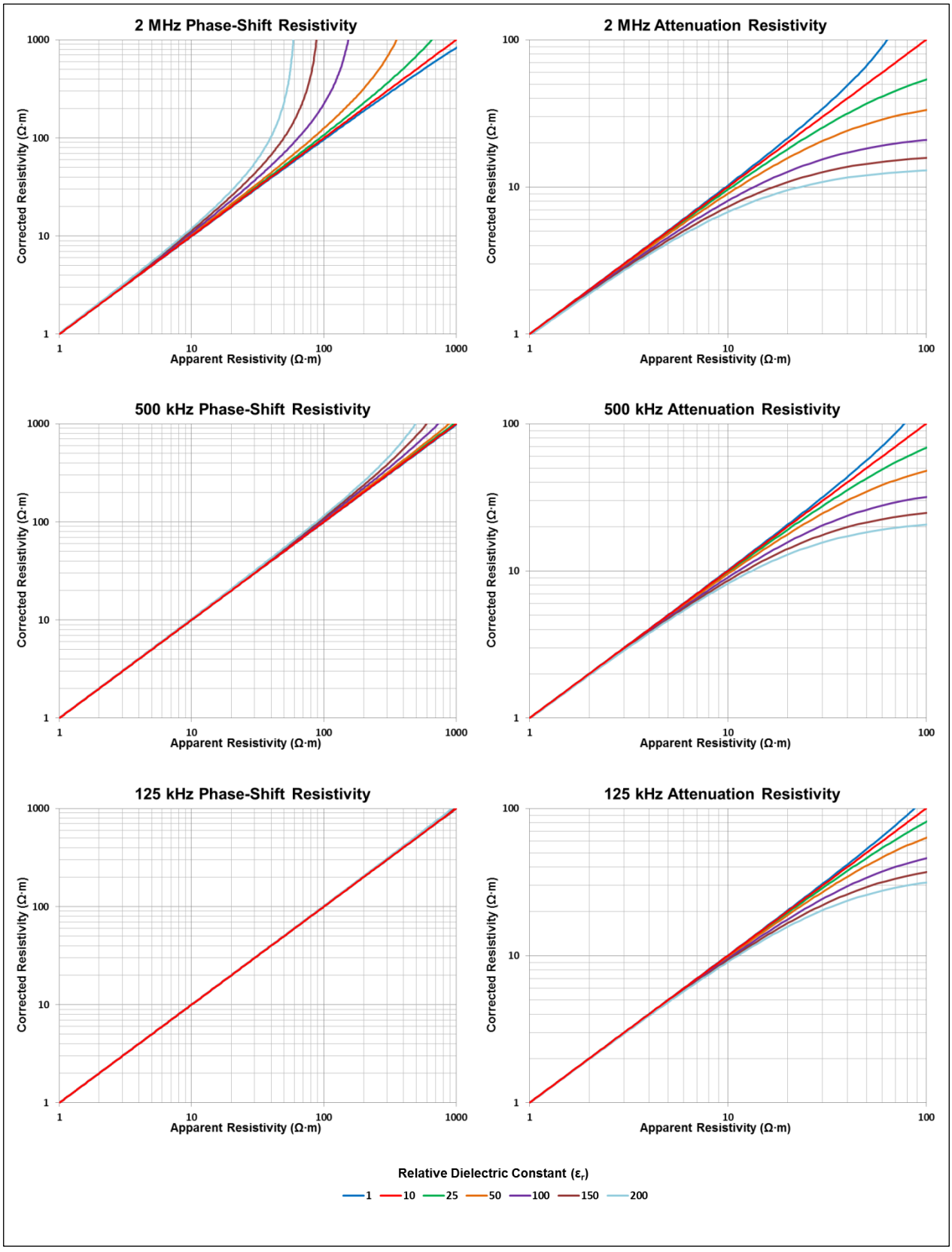


Chart 3-167

Resistivity Correction for Relative Dielectric Constant
EWR-M5™ Tool, 16-in Spacing

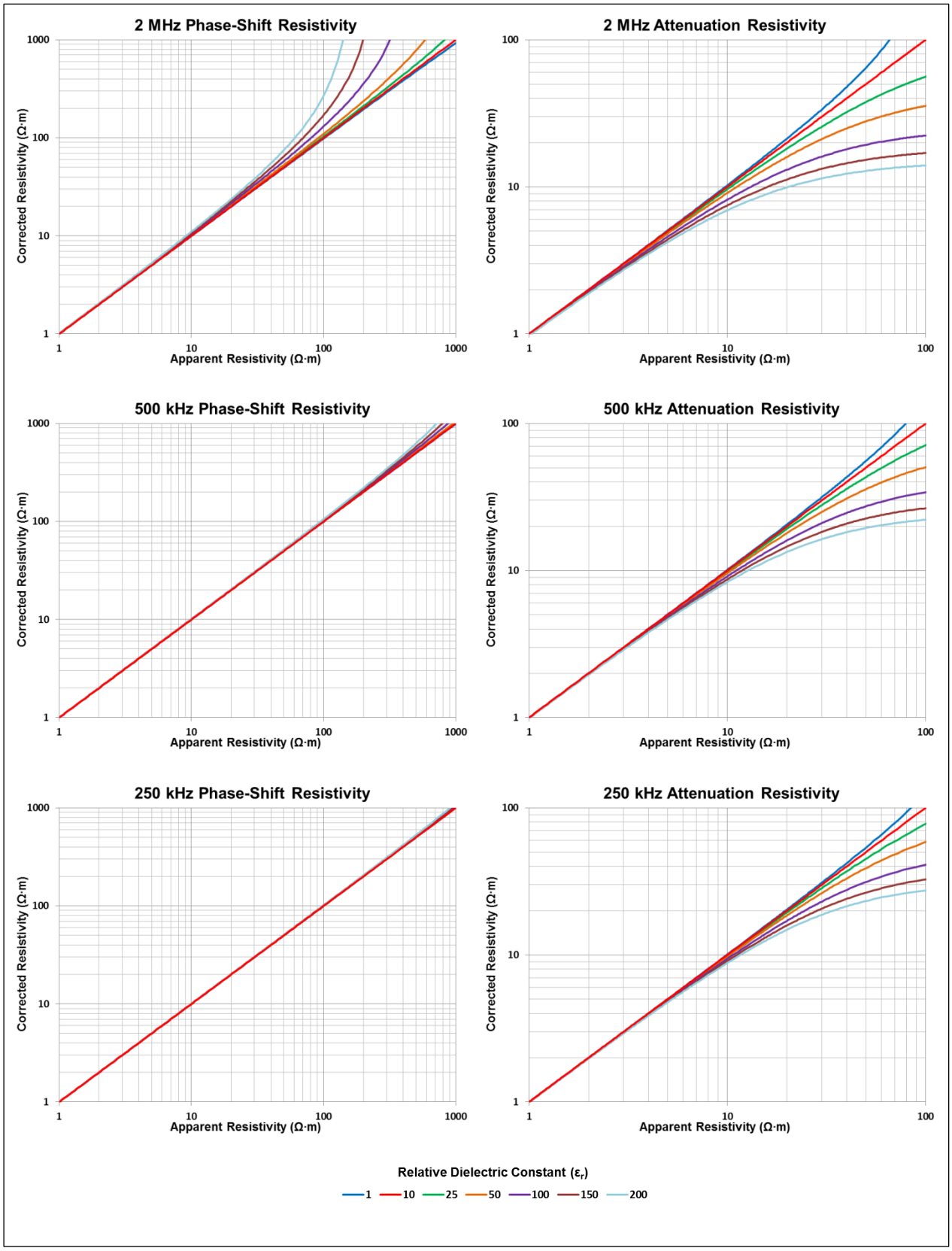


Chart 3-168

Resistivity Correction for Relative Dielectric Constant
EWR-M5™ Tool, 24-in Spacing

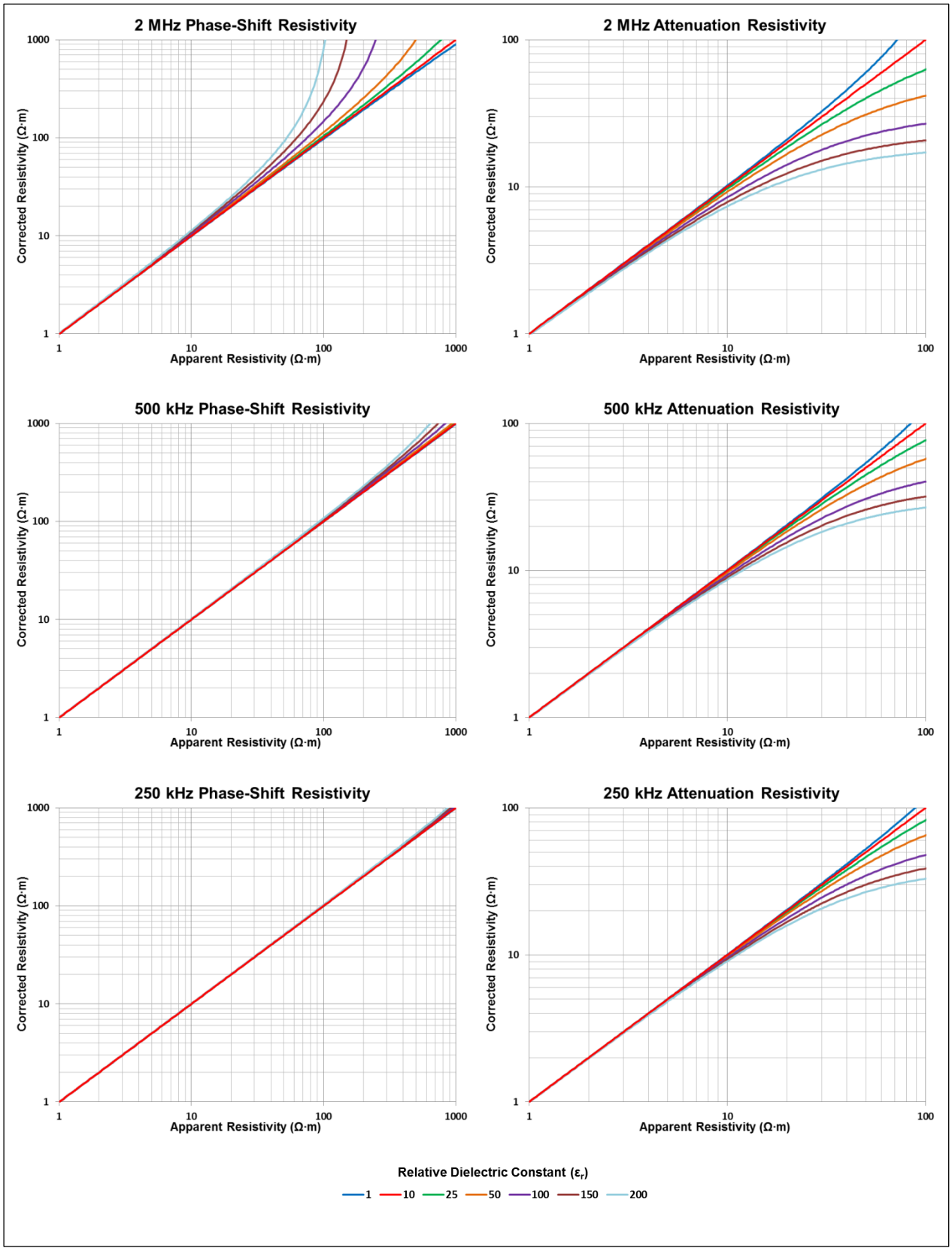


Chart 3-169

Resistivity Correction for Relative Dielectric Constant
EWR-M5™ Tool, 32-in Spacing

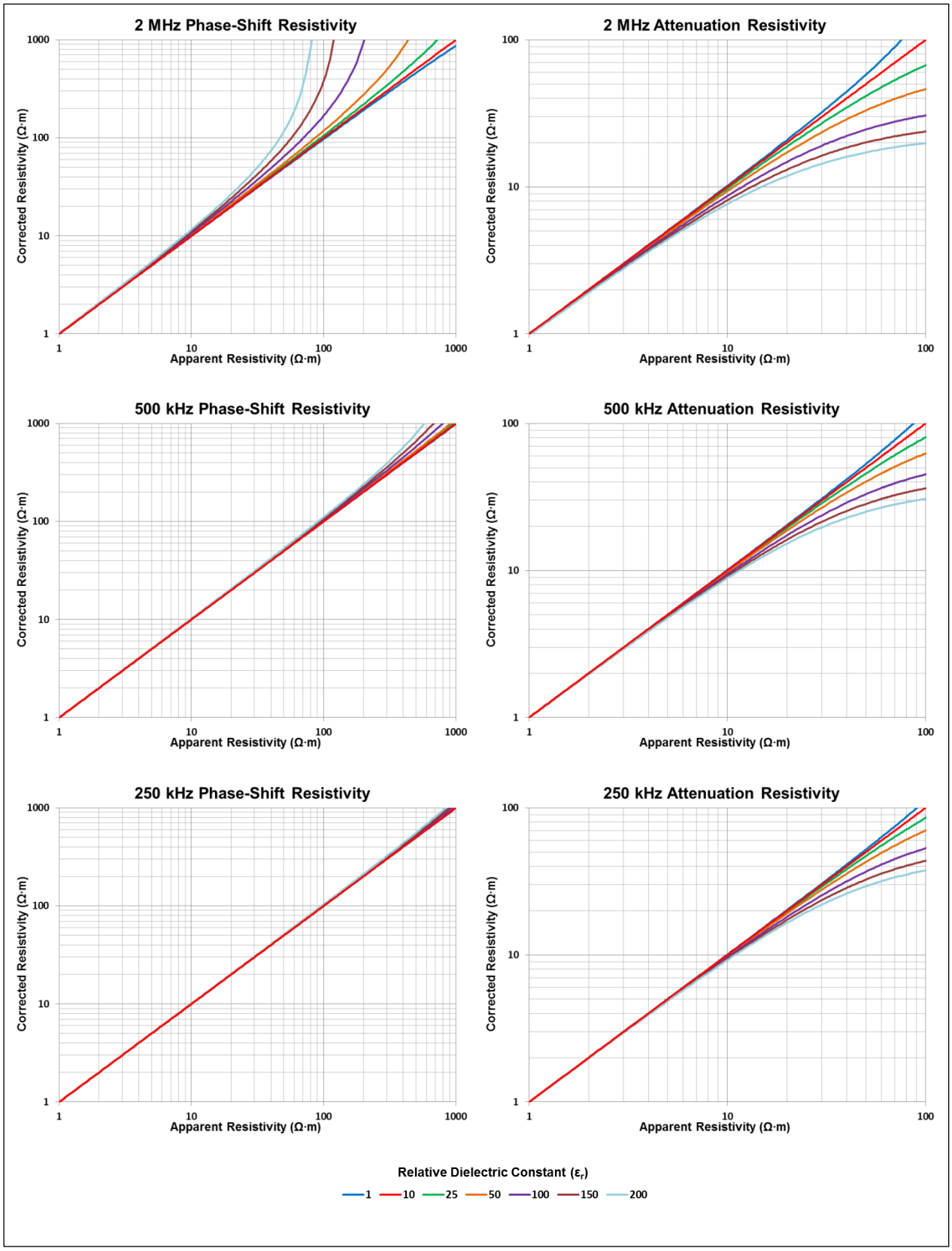


Chart 3-170

Resistivity Correction for Relative Dielectric Constant
EWR-M5™ Tool, 40-in Spacing

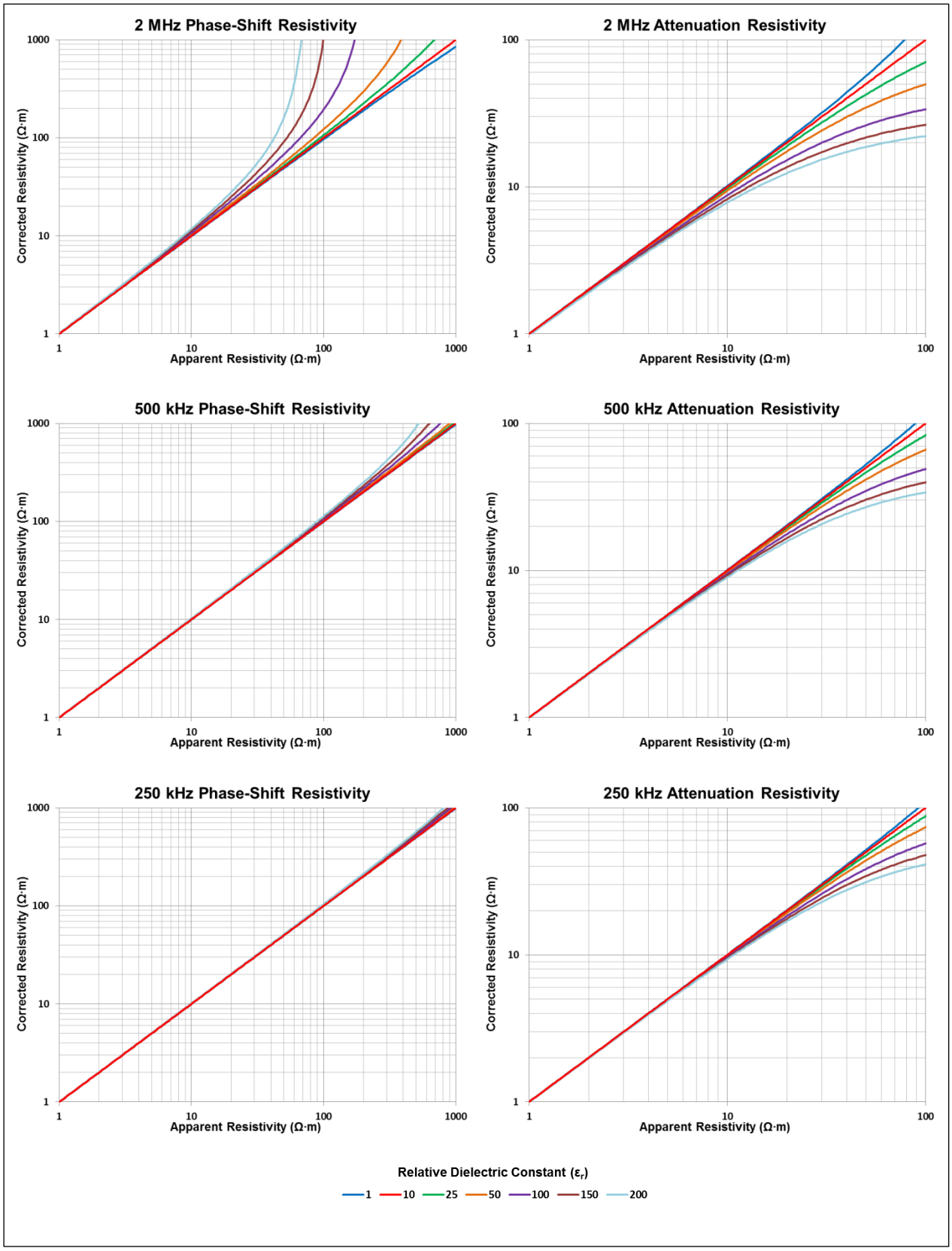


Chart 3-171

Resistivity Correction for Relative Dielectric Constant
EWR-M5™ Tool, 48-in Spacing

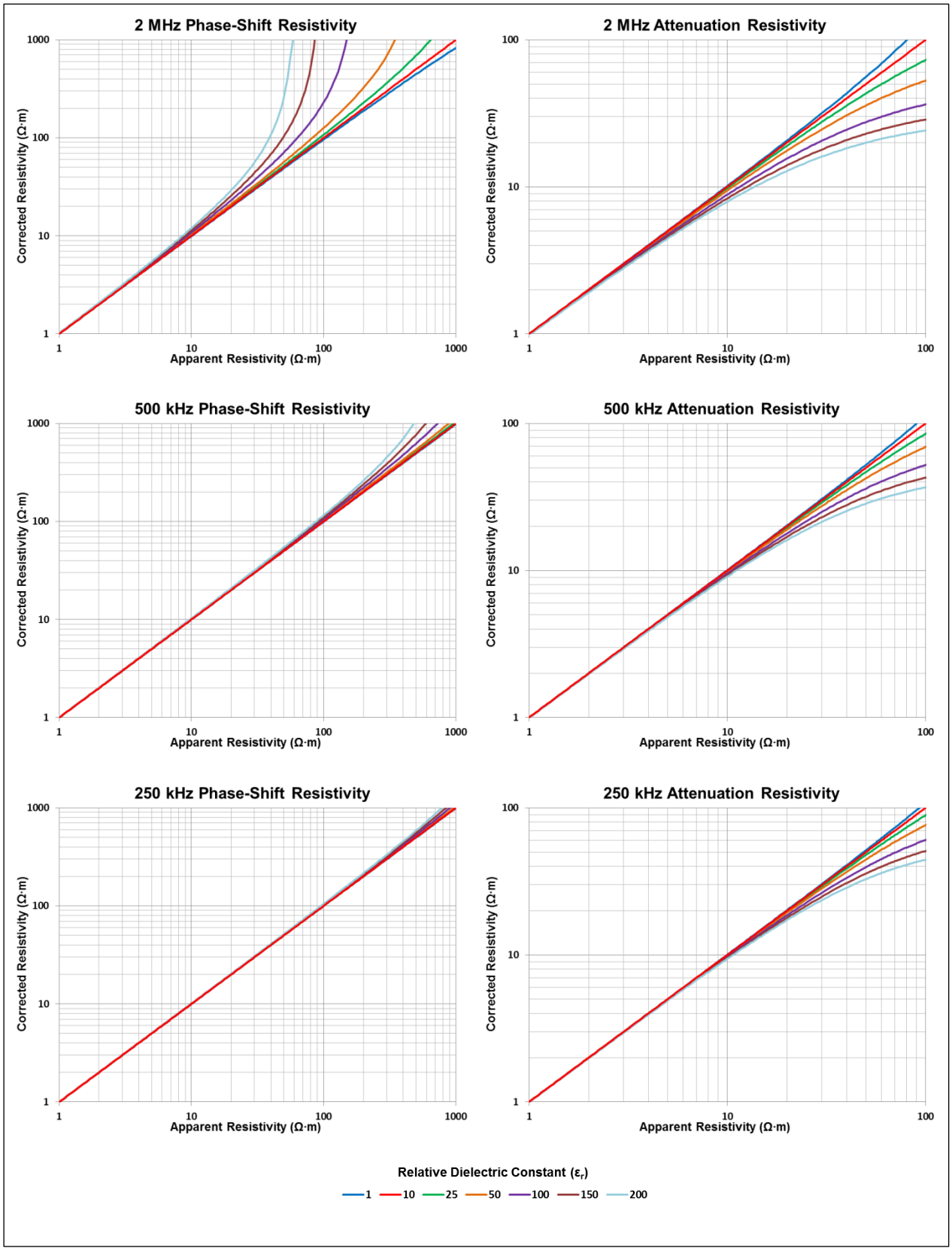
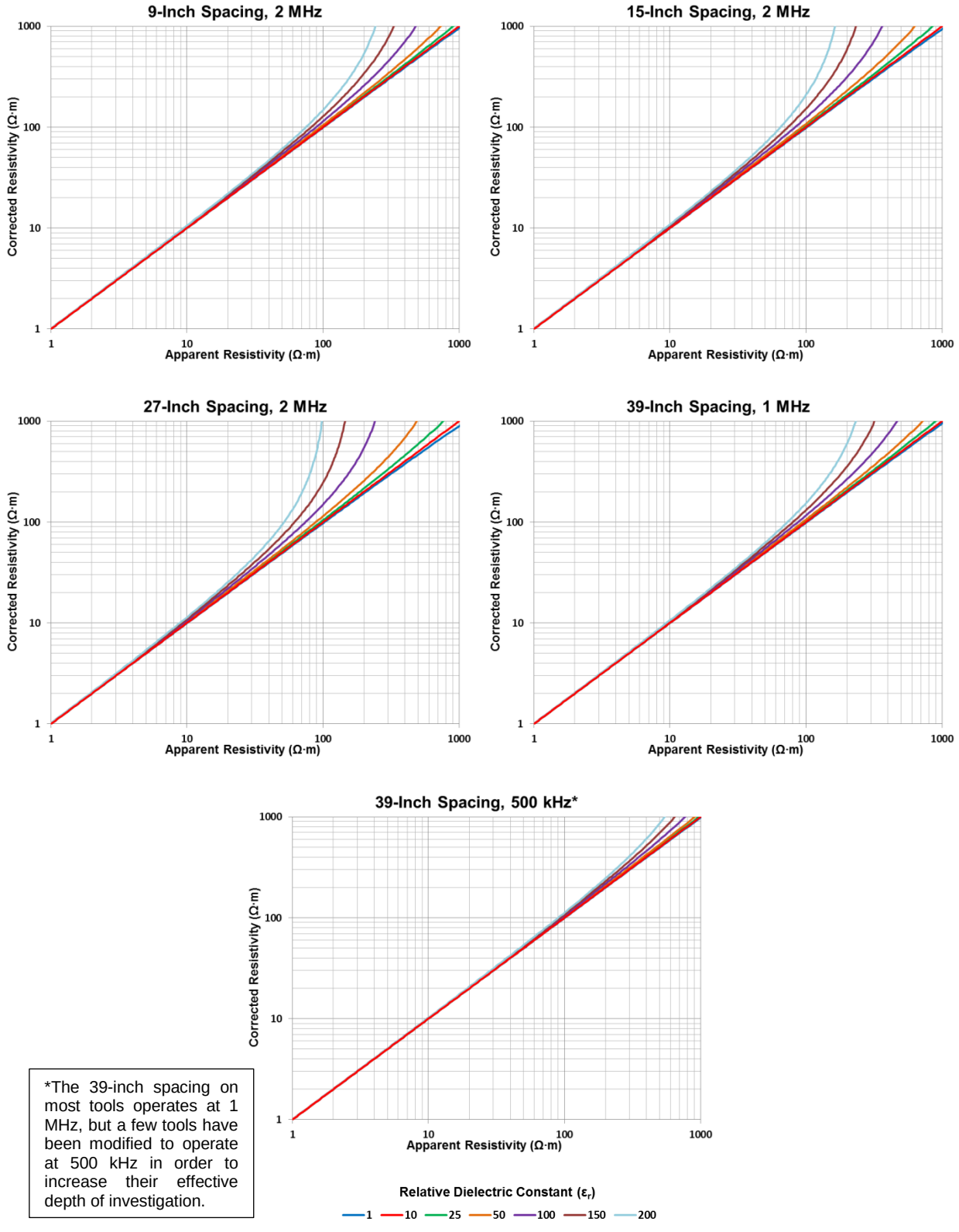


Chart 3-172

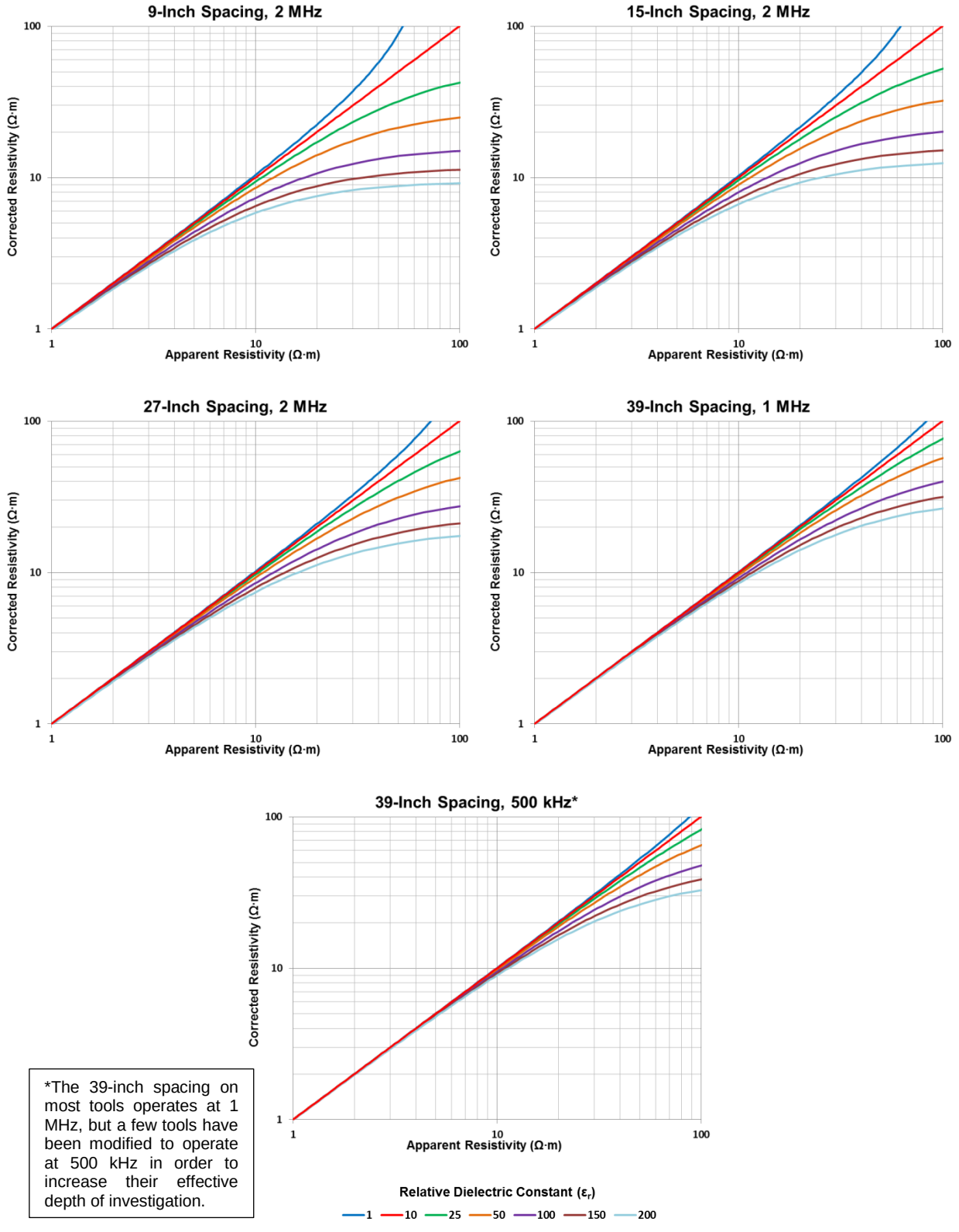
Resistivity Correction for Relative Dielectric Constant
EWR™-Phase 4 Tool, Phase-Shift Resistivity



*The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Chart 3-173

Resistivity Correction for Relative Dielectric Constant
EWR™-Phase 4 Tool, Attenuation Resistivity



*The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Chart 3-174

Resistivity Correction for Relative Dielectric Constant
EWR™-Phase 4D Tool, Phase-Shift Resistivity

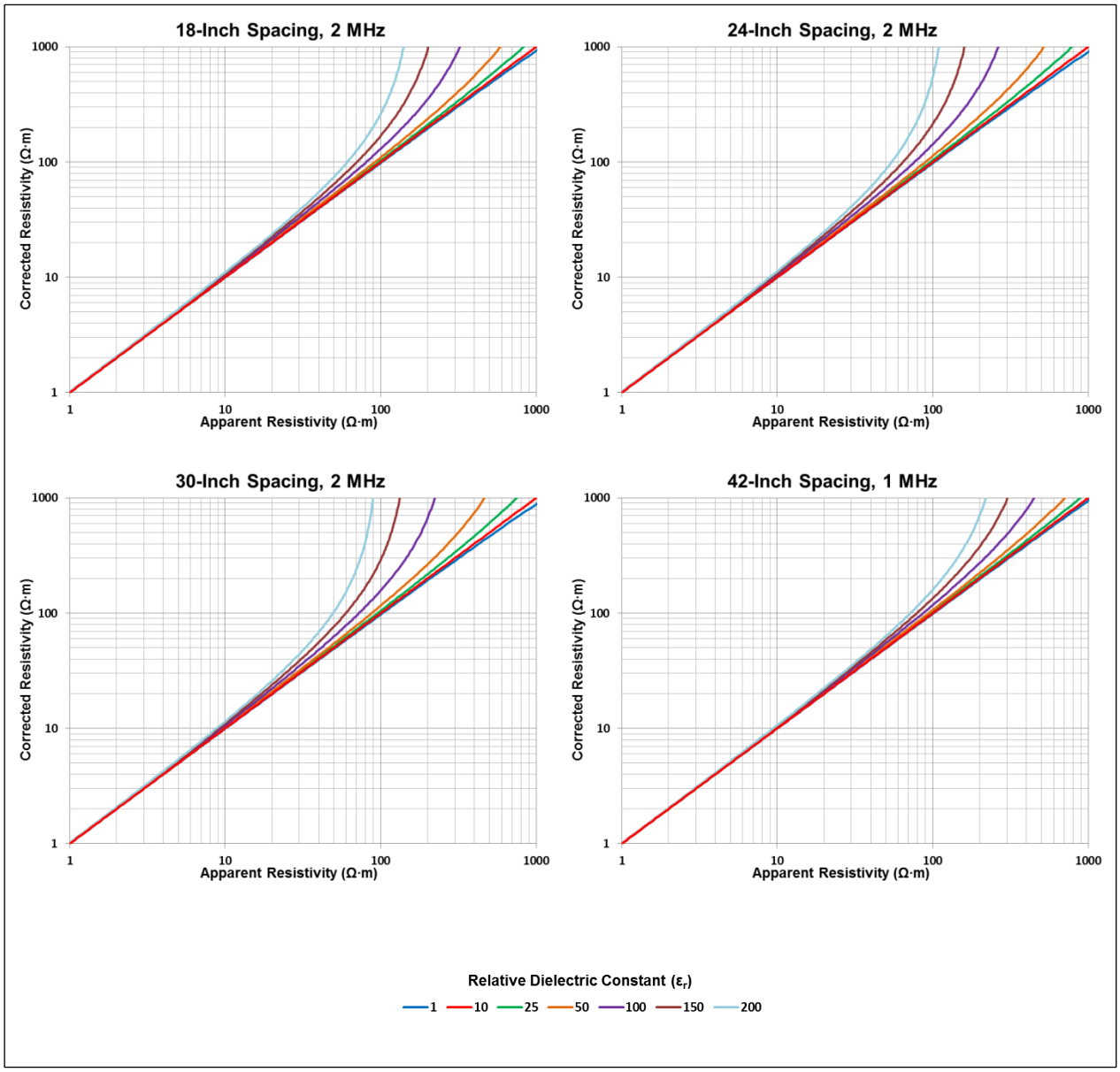


Chart 3-175

Resistivity Correction for Relative Dielectric Constant
EWR™-Phase 4D Tool, Attenuation Resistivity

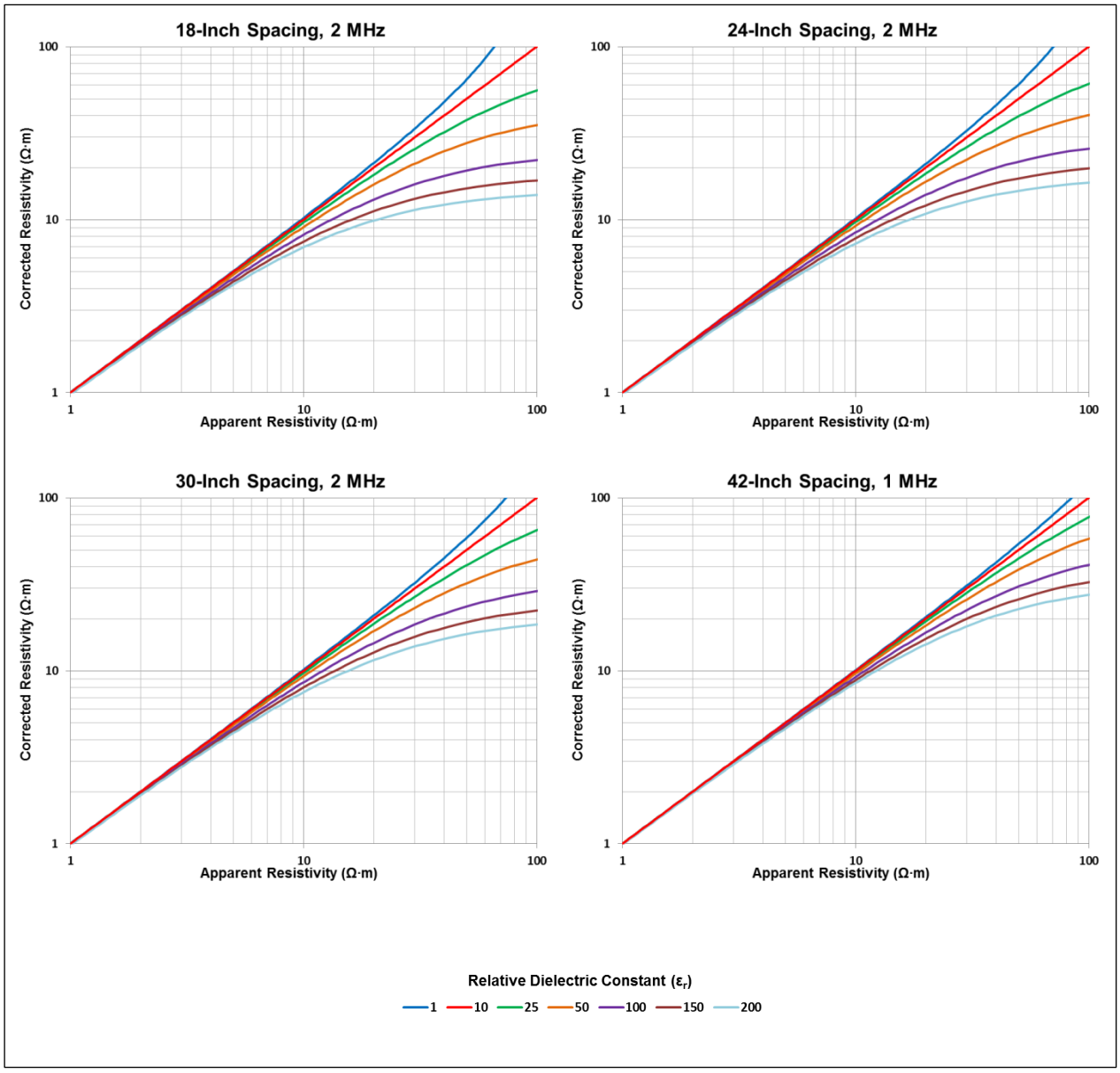


Chart 3-176

Resistivity Correction for Relative Dielectric Constant
Super-Slim EWR™-Phase 4 Tool, Phase-Shift Resistivity

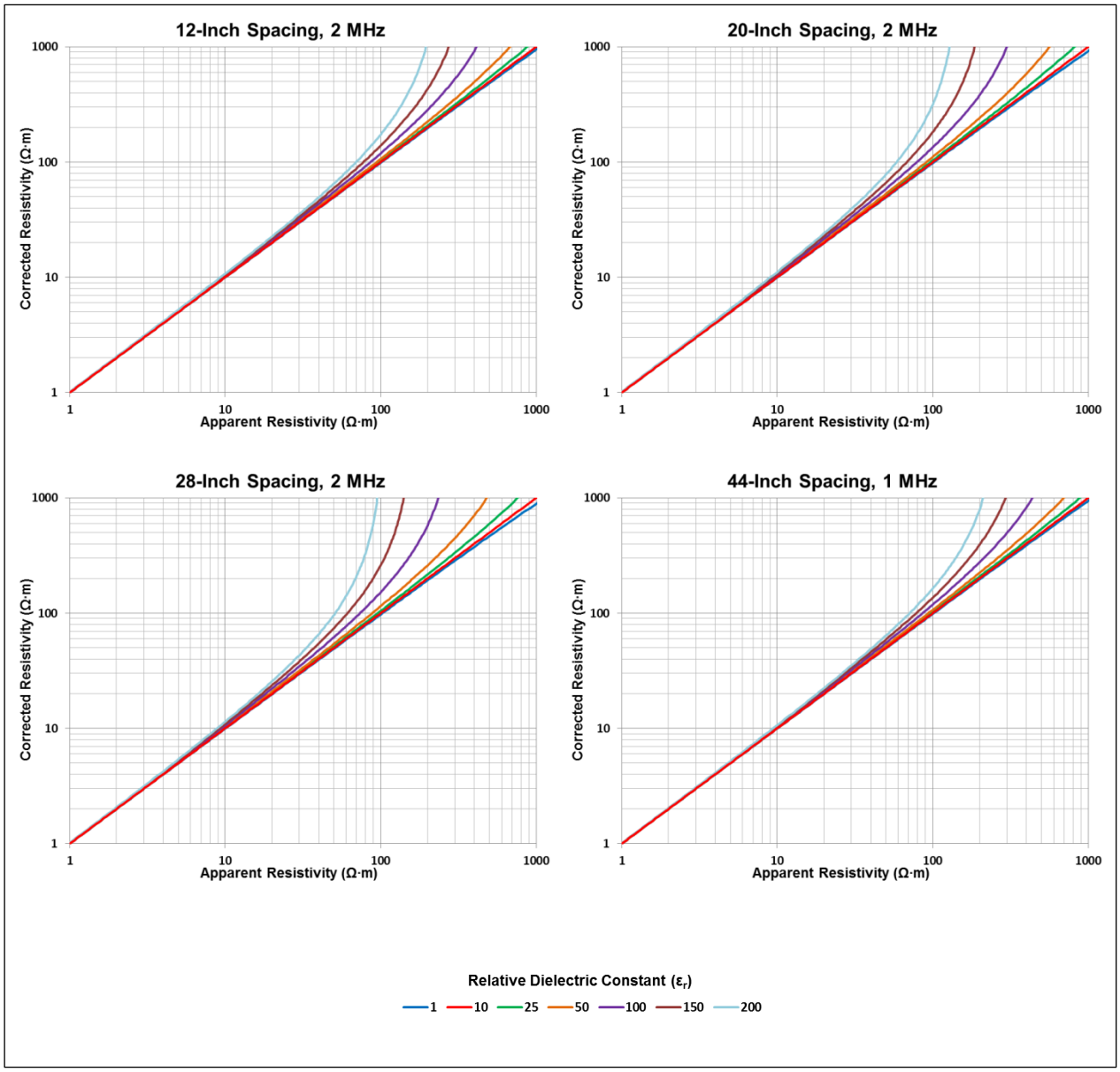


Chart 3-177

Resistivity Correction for Relative Dielectric Constant
Super-Slim EWR™-Phase 4 Tool, Attenuation Resistivity

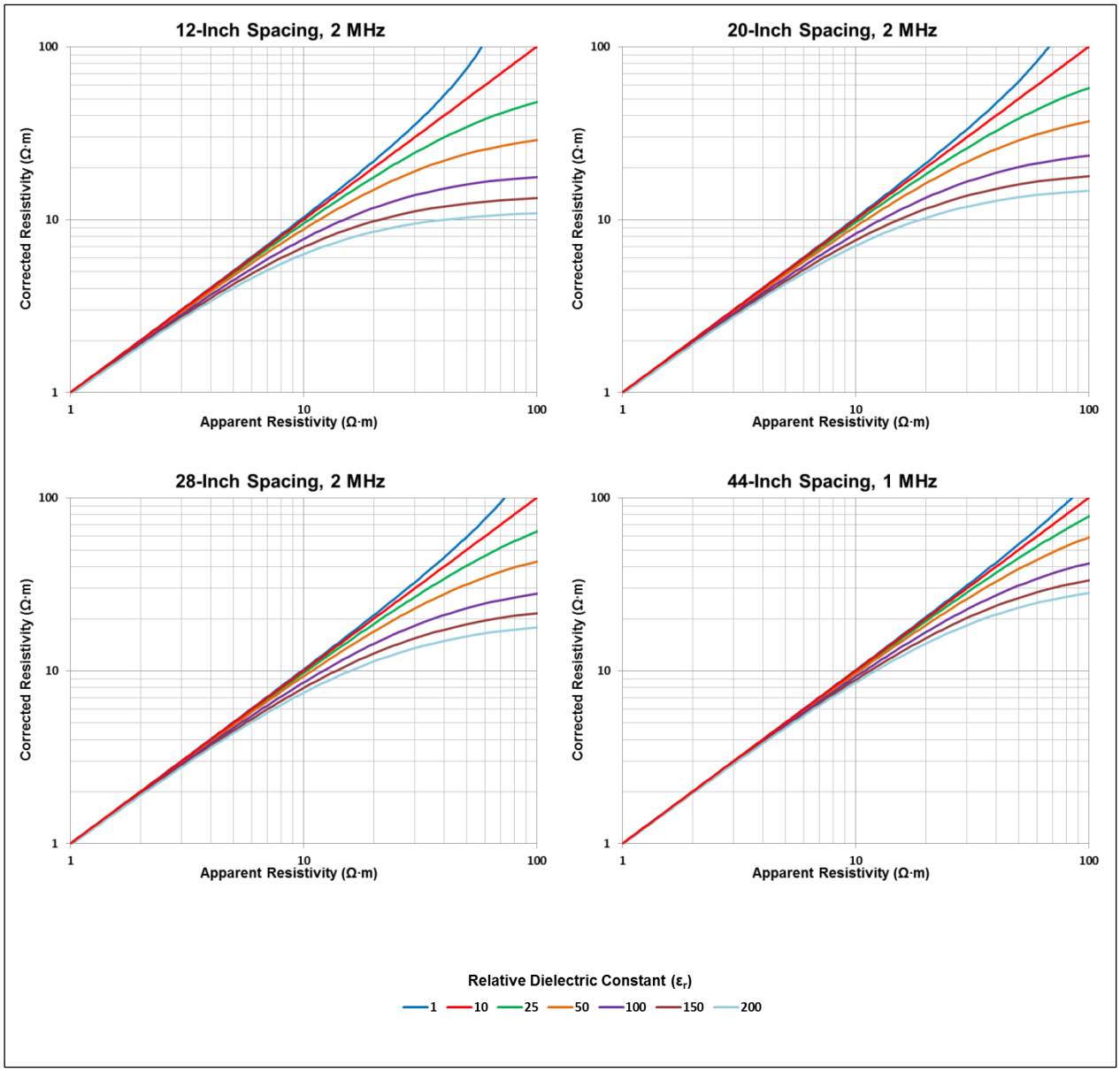


Chart 3-178

Resistivity Depth of Investigation

The depth of investigation of a wave-propagation resistivity sensor depends on several factors and is not constant. In general, measurements made with a longer transmitter-to-receiver spacing have a greater depth of investigation than those with a shorter spacing. Also the frequency at which the measurement is made affects the depth of investigation, such that low-frequency measurements have a greater depth of investigation than high-frequency measurements. Finally, the depth of investigation depends on whether the resistivity is derived from measurements of phase-shift or attenuation. Attenuation-based measurements have a greater depth of investigation than phase-shift-based measurements.

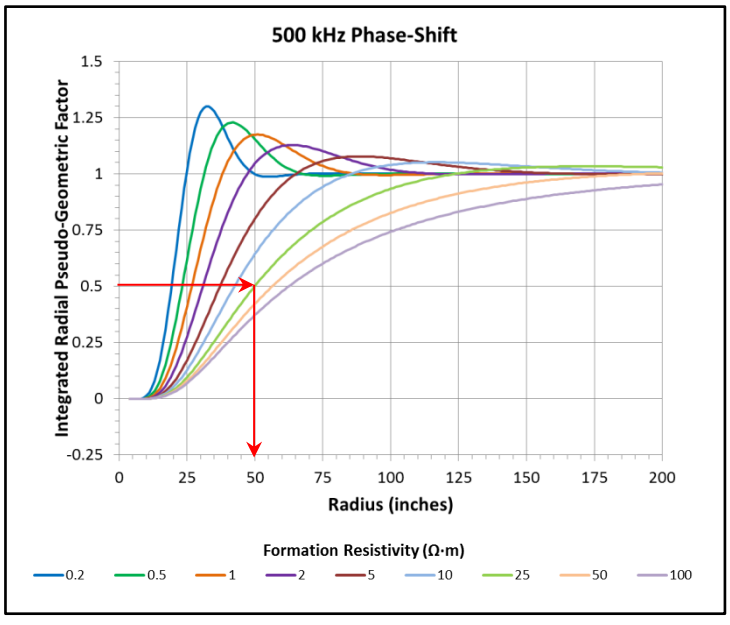
Within an individual tool design, all of the above factors (spacing, frequency and measurement type) are constant. However the depth of investigation also depends on the resistivity of the surrounding rock, which varies with vertical depth. In general, a particular combination of spacing, frequency and measurement type will have a greater depth of investigation in high-resistivity rock than in low-resistivity rock.

A wave-propagation resistivity measurement is influenced by a large volume of the surrounding rock, ranging from the borehole wall out to (in theory) infinity, and is not confined to a specific radial interval. In order to quantify the depth of investigation, allowing meaningful comparisons to be made between measurements, it is therefore necessary to define it in terms of the proportion of the signal which arises from within a particular radial distance from the tool. The following charts illustrate the proportion of the total signal arising from within a particular radius. This proportion is known as the *Integrated Radial Pseudo-Geometric Factor*, or IRPGF. The nominal depth of investigation is defined as the radius, from the centre of the tool, within which 50% of the total signal originates.
The nominal depth of investigation can be determined by inspection of the charts.

Example

Determine the nominal depth of investigation of the 48-inch phase-resistivity measurement from the ADR™ tool, operating at 500 kHz in a 25 Ω·m formation.

- Select the chart for the 48-inch spacing of the ADR™ tool and select the sub-chart for the 500 kHz phase-shift measurement (see figure below).
- Enter the chart on the vertical axis at an IRPGF value of 0.5.
- Draw a horizontal line to intersect the 25 Ω·m formation resistivity curve.
- Draw a vertical line to intersect the horizontal axis at the nominal radius of investigation of 50 inches.



Resistivity Depth of Investigation
ADR™ Tool 16-inch Spacing

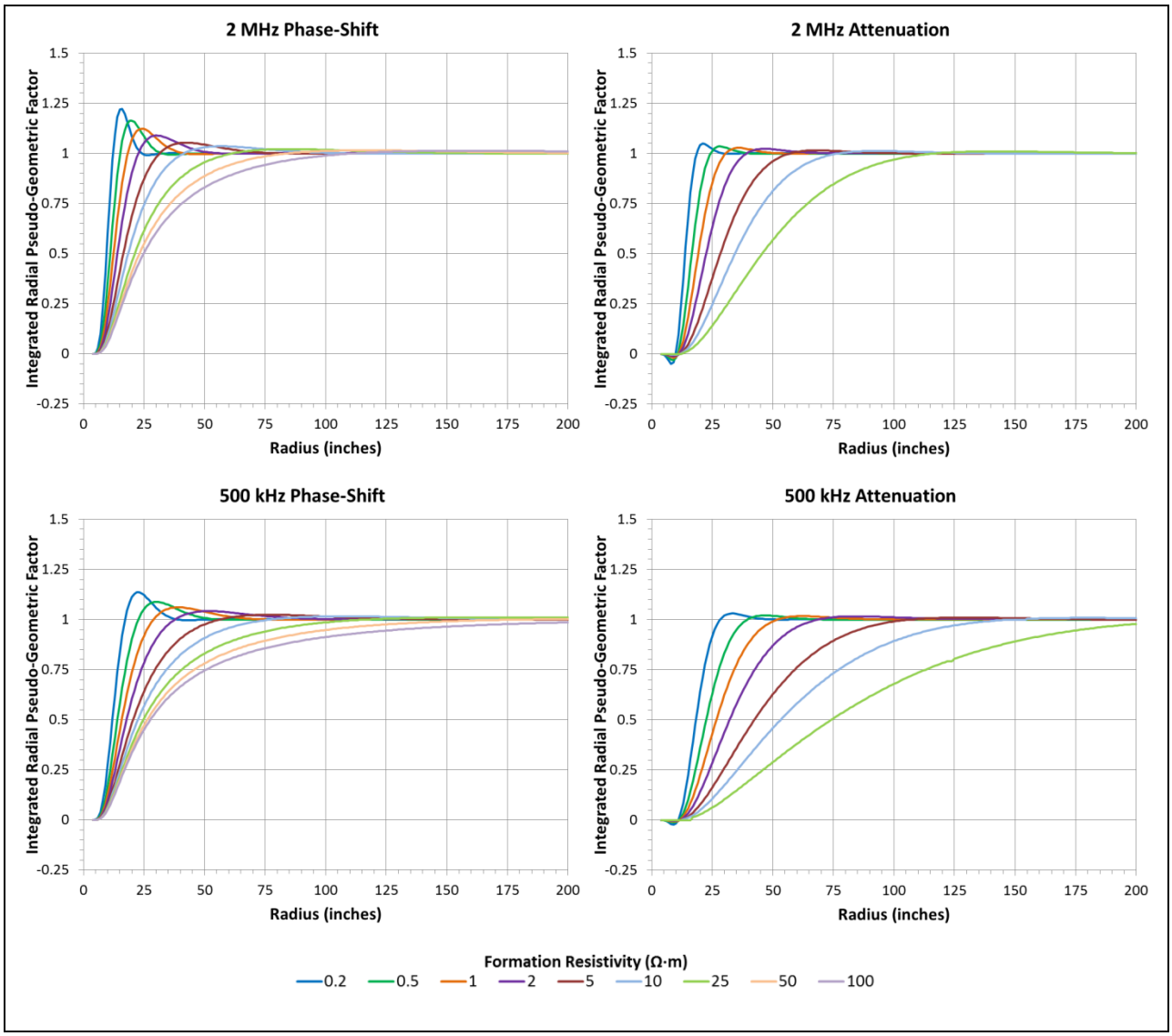


Chart 3-179

Resistivity Depth of Investigation
ADR™ Tool 32-inch Spacing

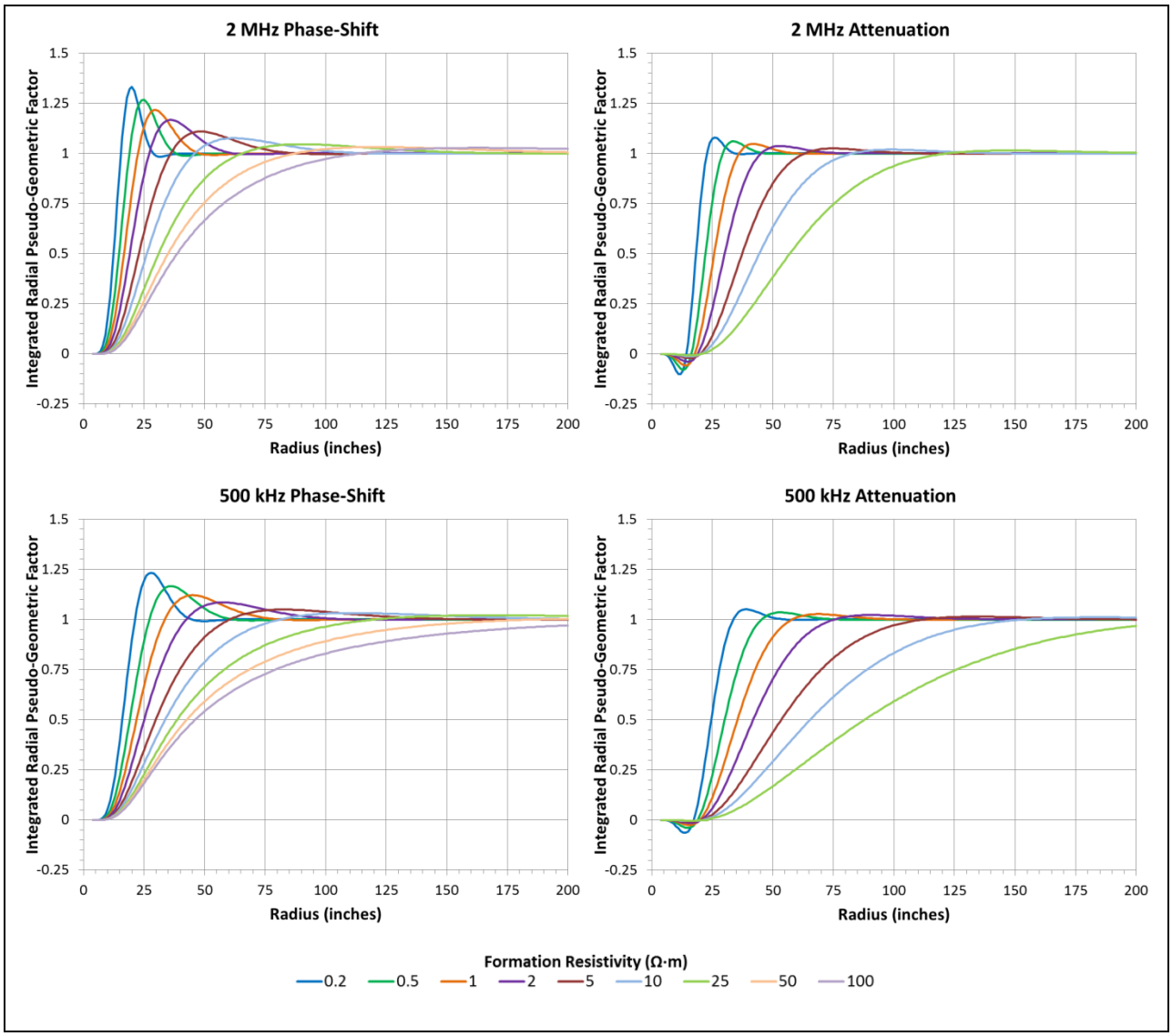


Chart 3-180

Resistivity Depth of Investigation
ADR™ Tool 48-inch Spacing

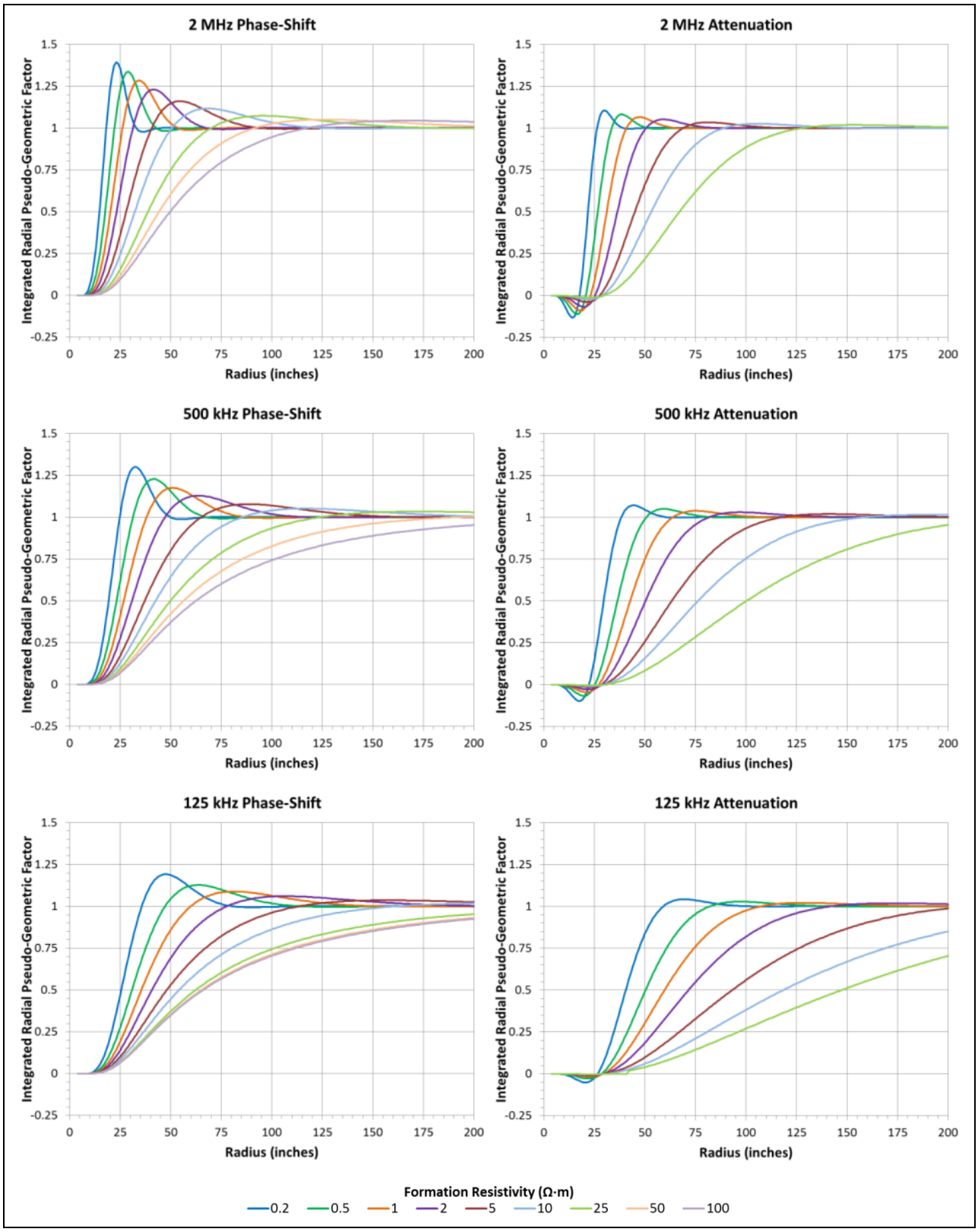


Chart 3-181

Resistivity Depth of Investigation
EWR-M5™ Tool 16-inch Spacing

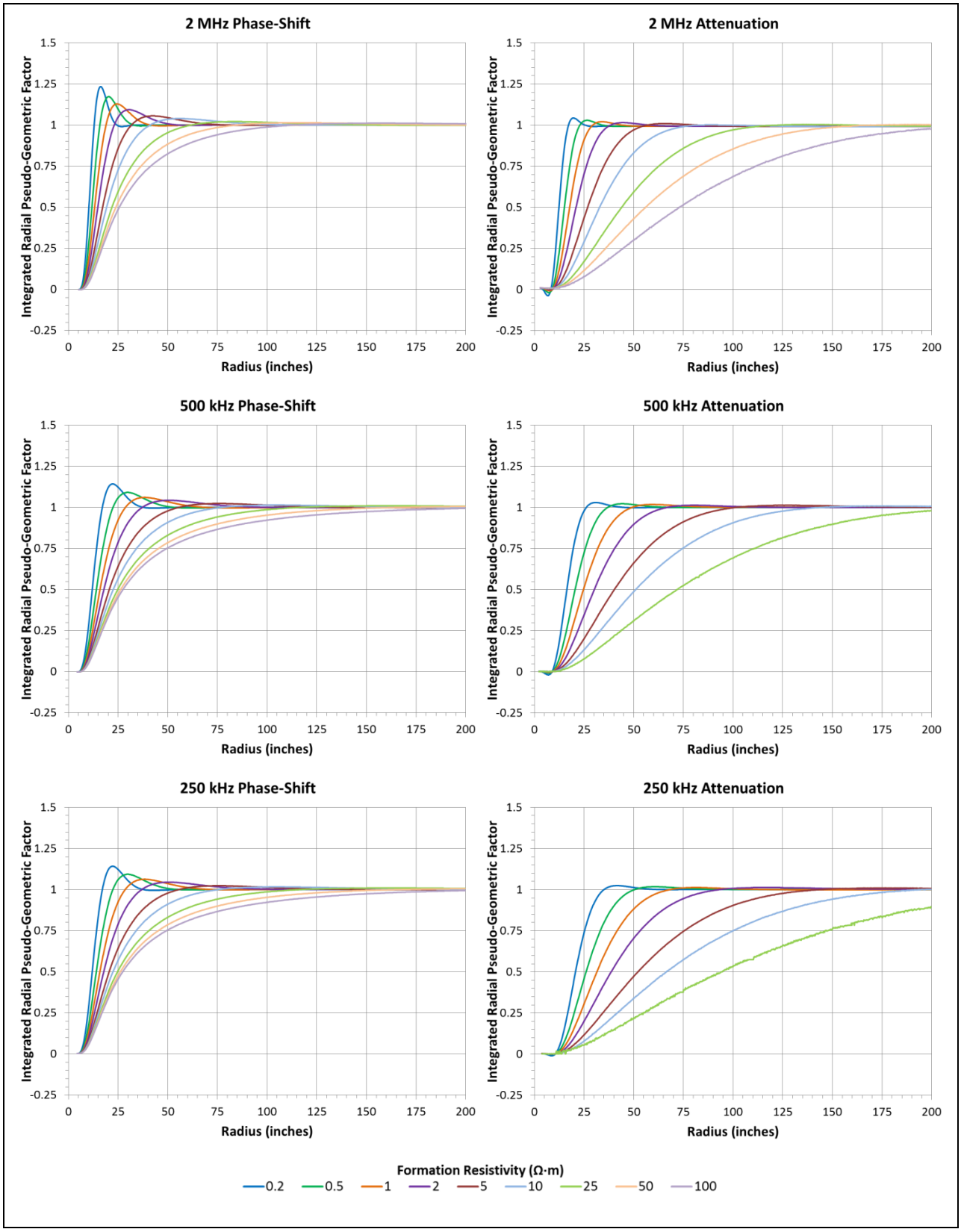


Chart 3-182

Resistivity Depth of Investigation
EWR-M5™ Tool 24-inch Spacing

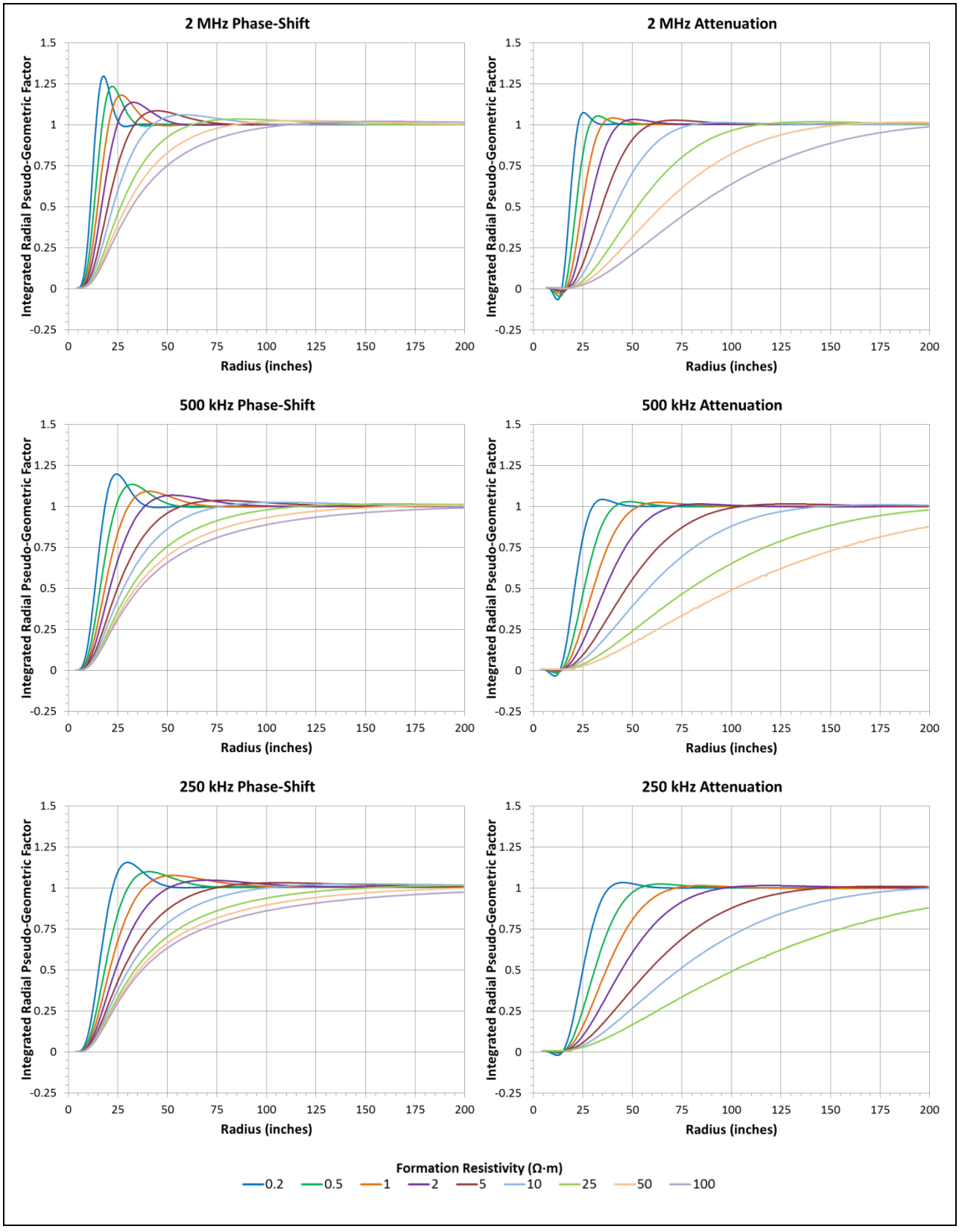


Chart 3-183

Resistivity Depth of Investigation
EWR-M5™ Tool 32-inch Spacing

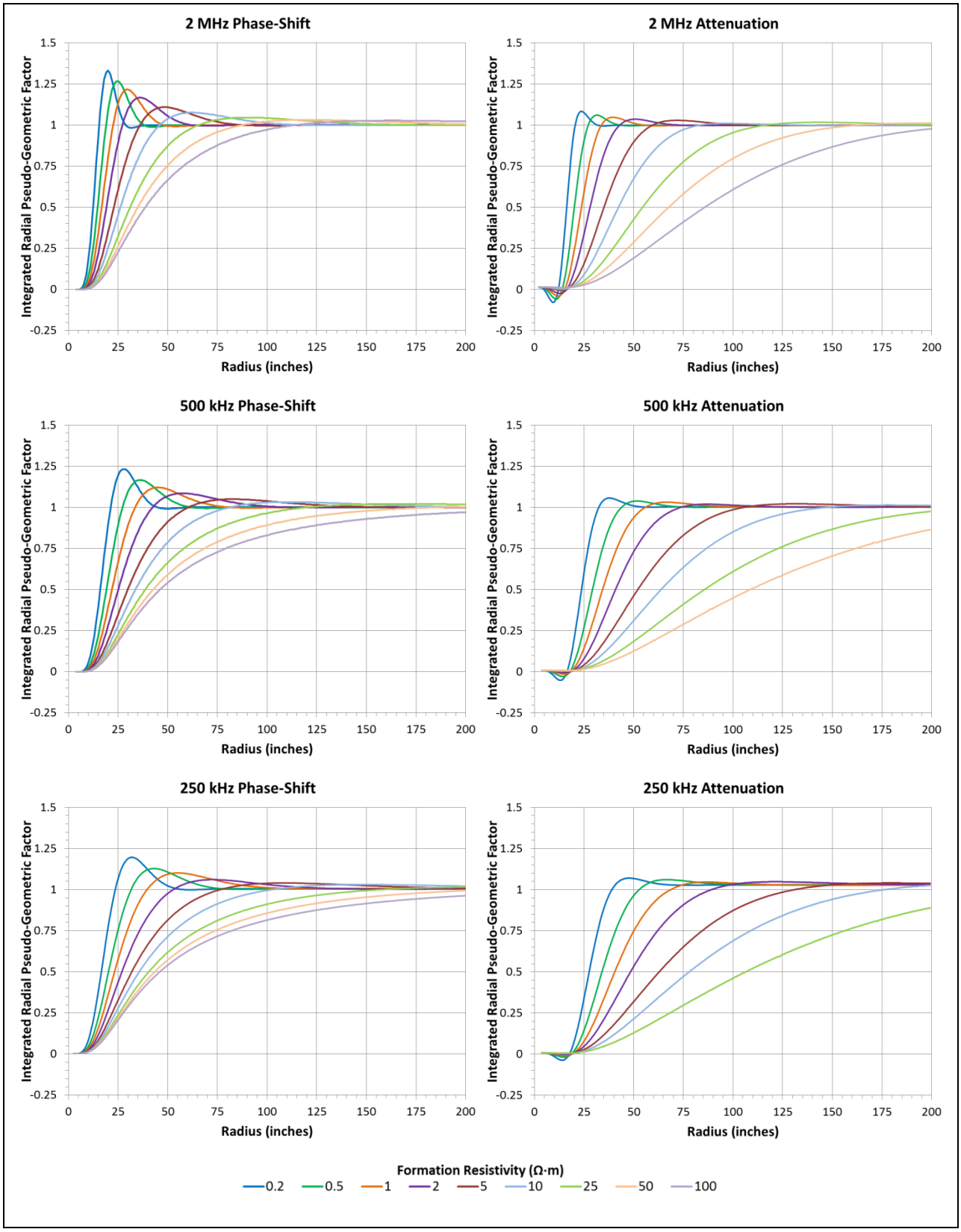


Chart 3-184

Resistivity Depth of Investigation
EWR-M5™ Tool 40-inch Spacing

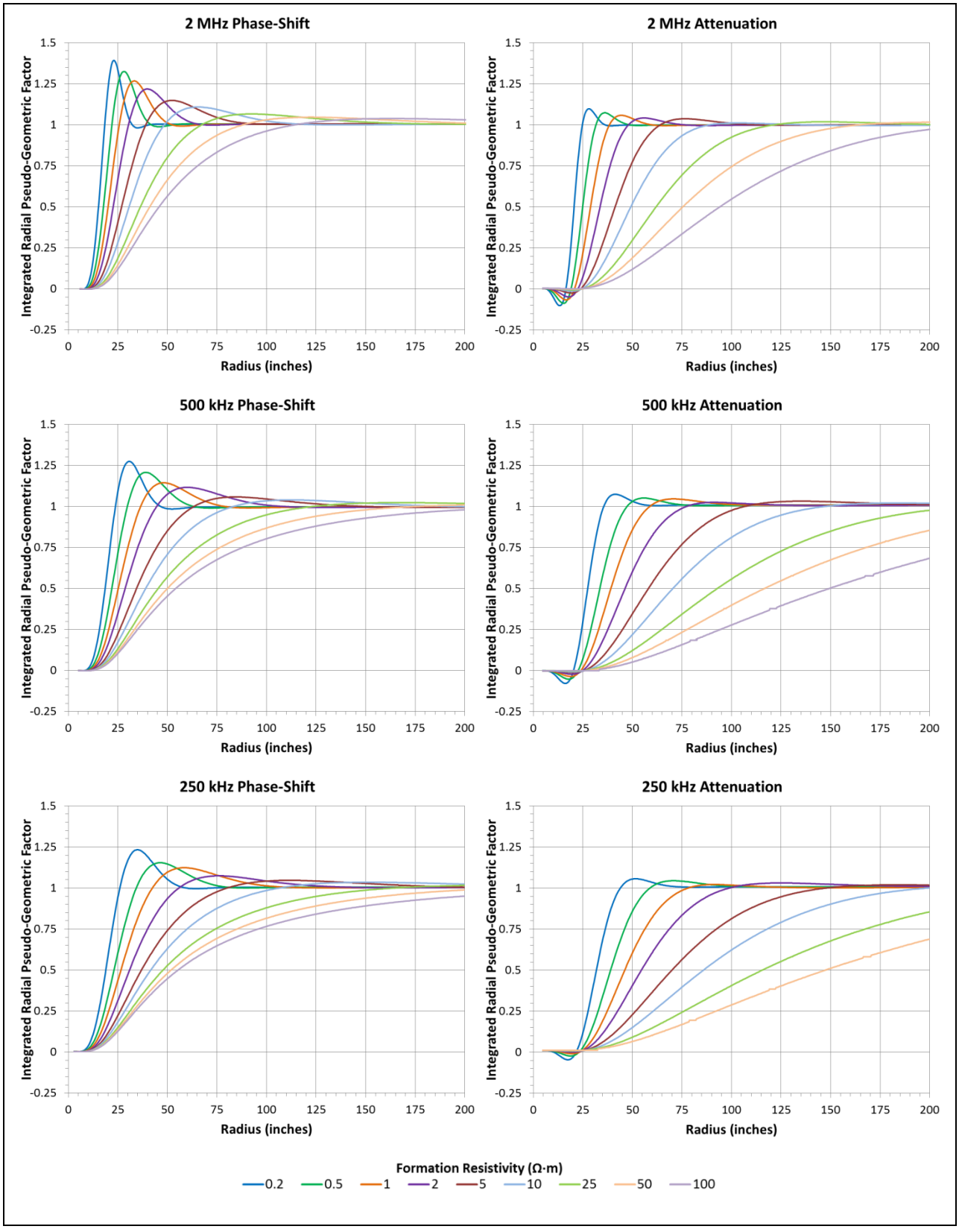


Chart 3-185

Resistivity Depth of Investigation
EWR-M5™ Tool 48-inch Spacing

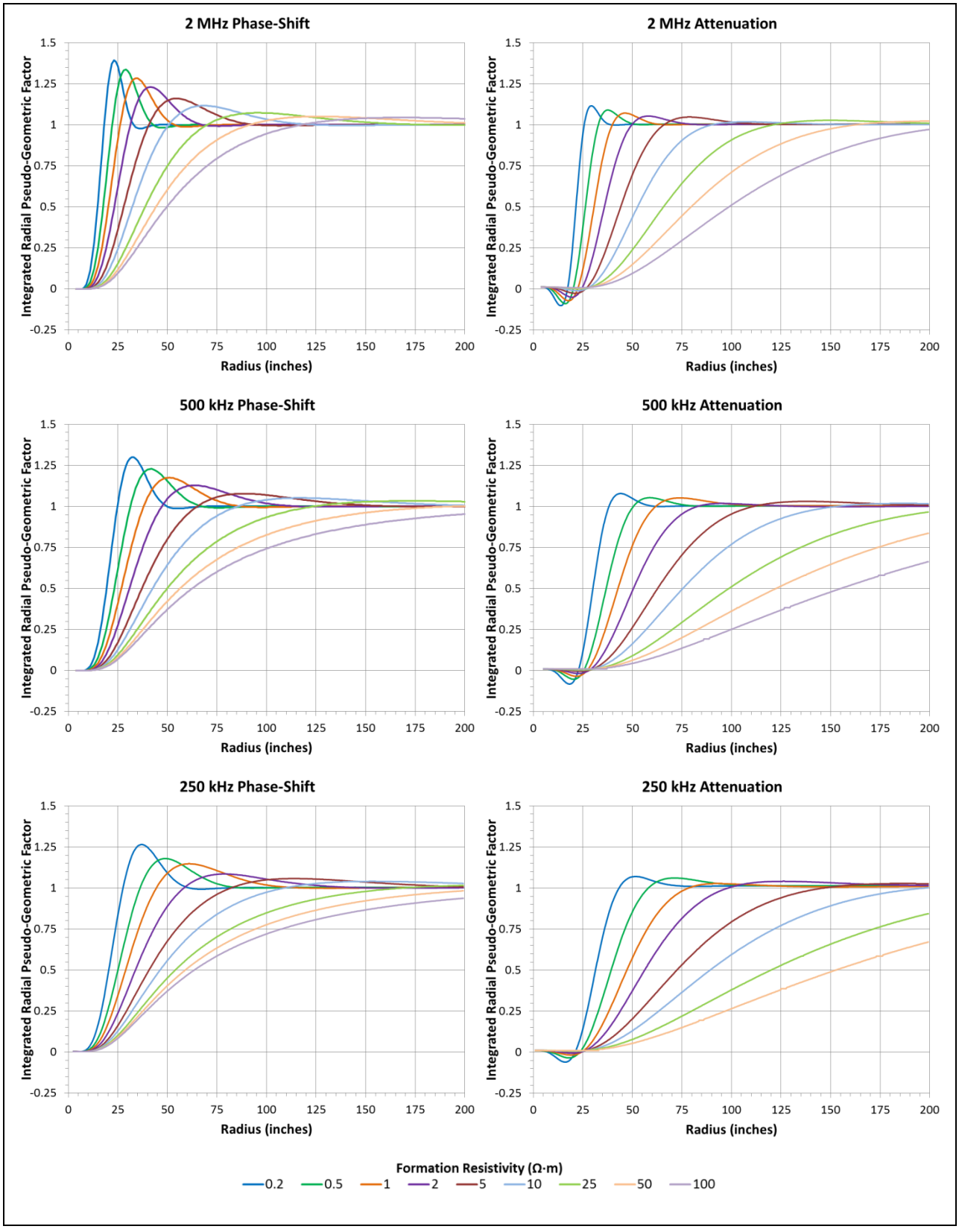
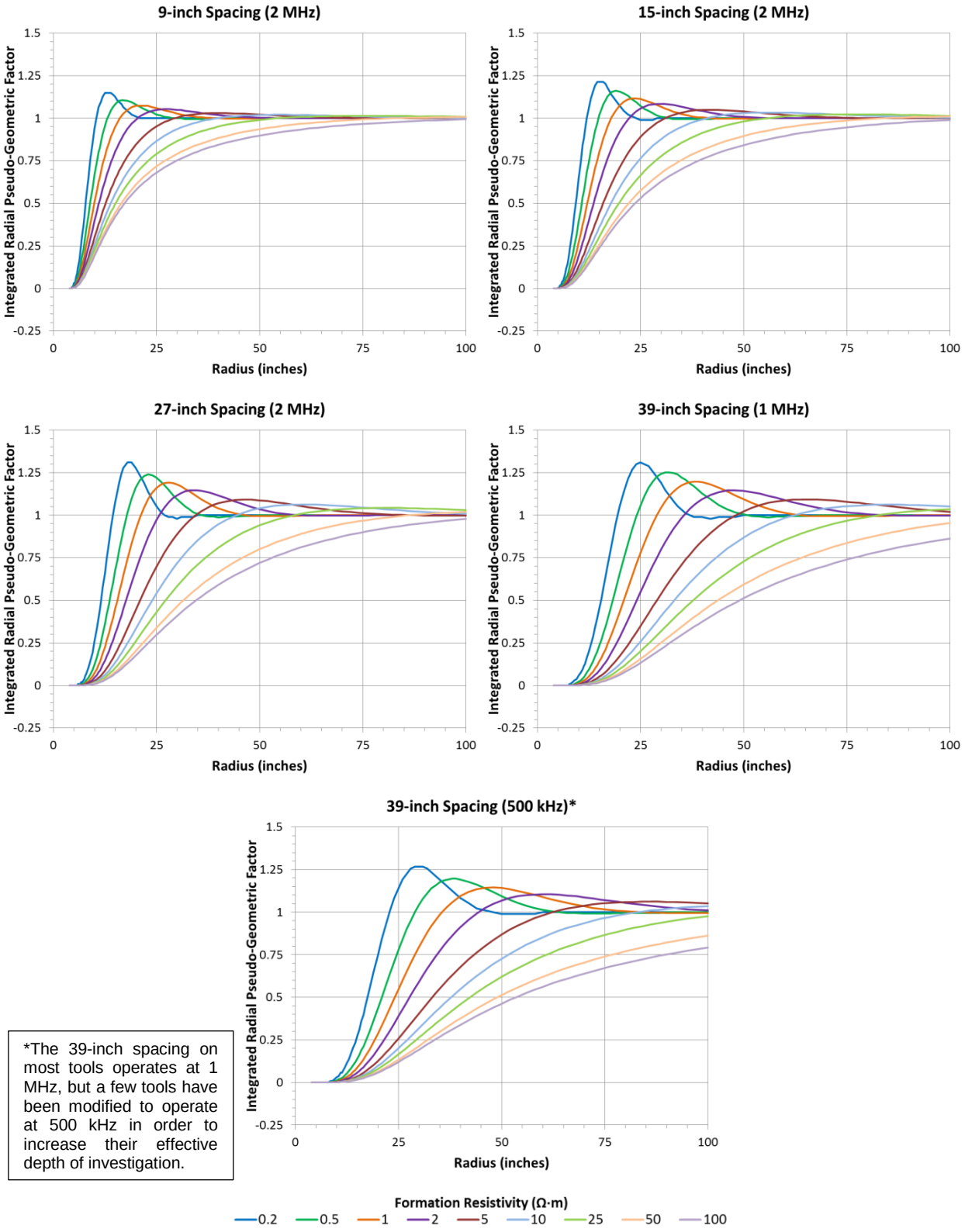


Chart 3-186

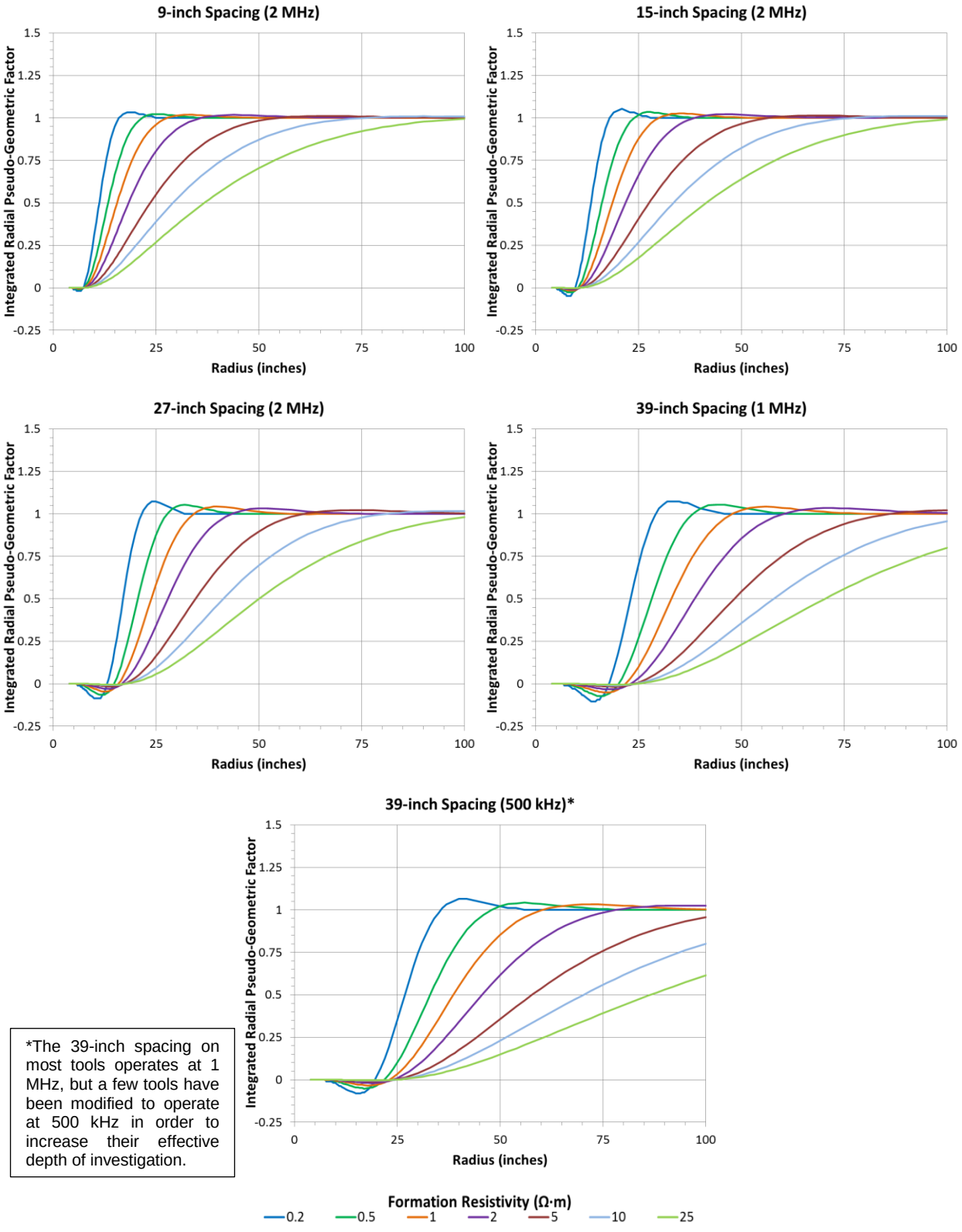
Resistivity Depth of Investigation
EWR™-Phase 4 Tool (Phase-Shift Resistivity)



*The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Chart 3-187

Resistivity Depth of Investigation
EWR™-Phase 4 Tool (Attenuation Resistivity)



*The 39-inch spacing on most tools operates at 1 MHz, but a few tools have been modified to operate at 500 kHz in order to increase their effective depth of investigation.

Chart 3-188

Resistivity Depth of Investigation
EWR™-Phase 4D Tool (Phase-Shift Resistivity)

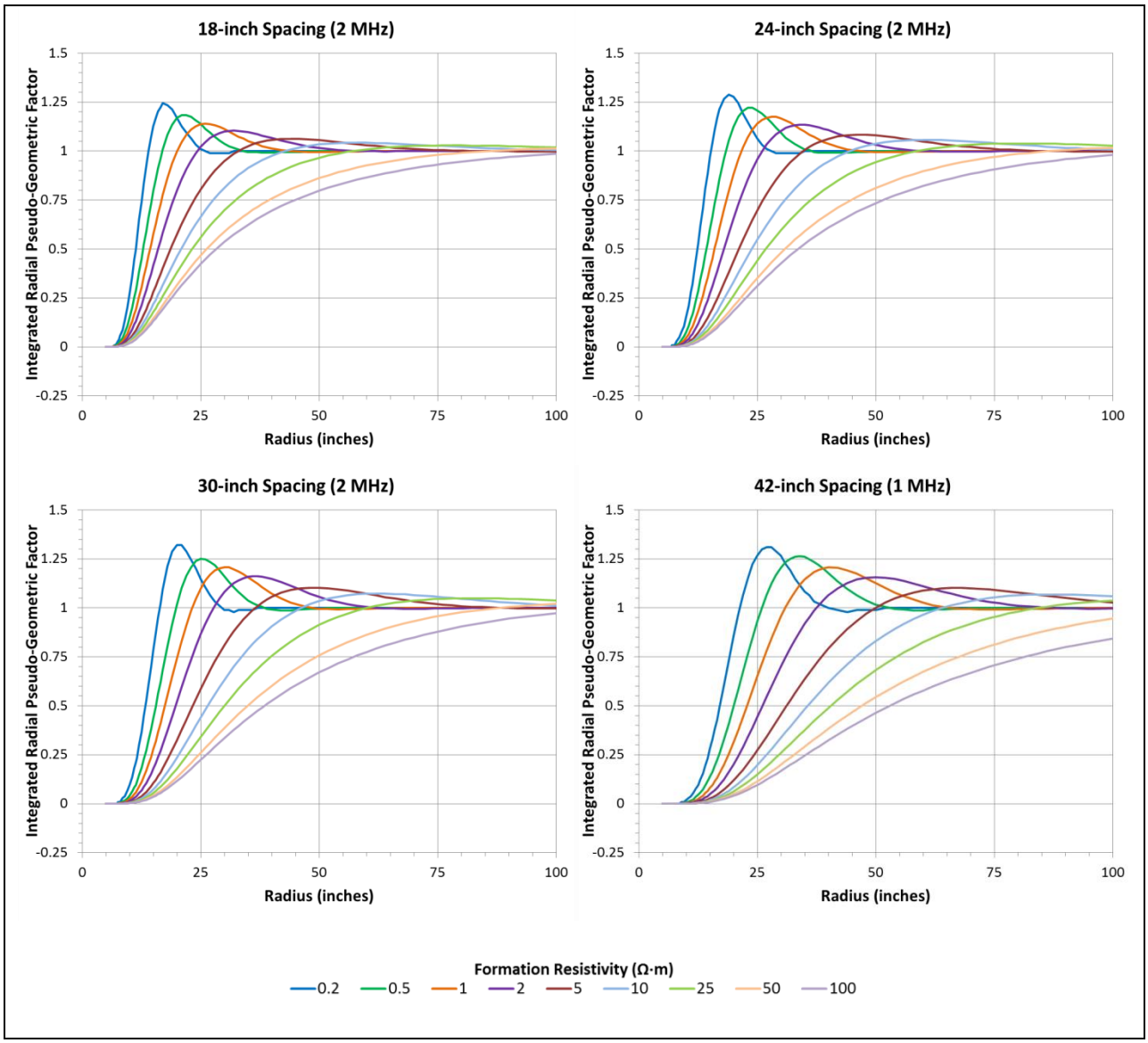


Chart 3-189

Resistivity Depth of Investigation
EWR™-Phase 4D Tool (Attenuation Resistivity)

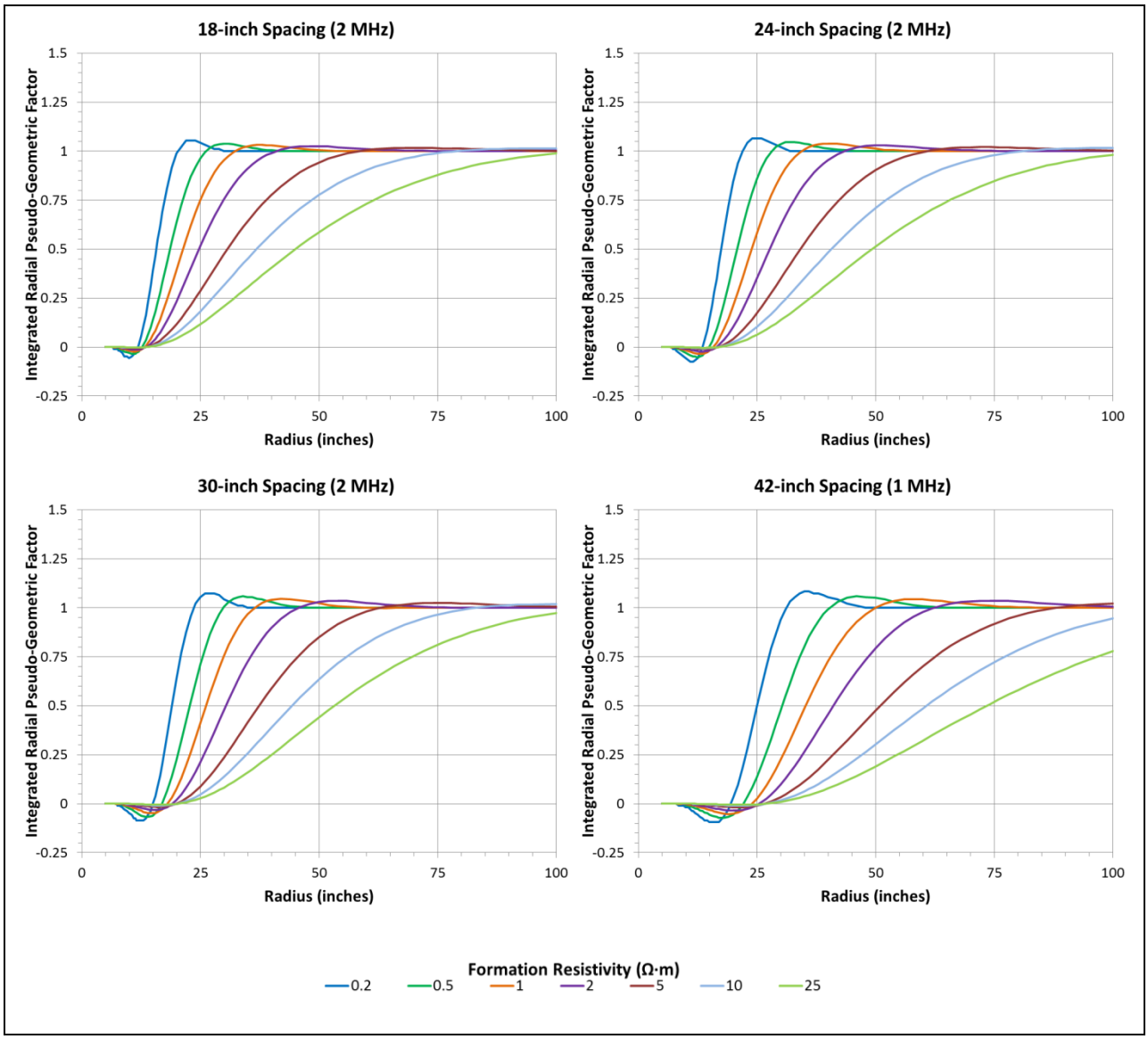


Chart 3-190

Resistivity Depth of Investigation
Super-Slim EWR™-Phase 4 Tool (Phase-Shift Resistivity)

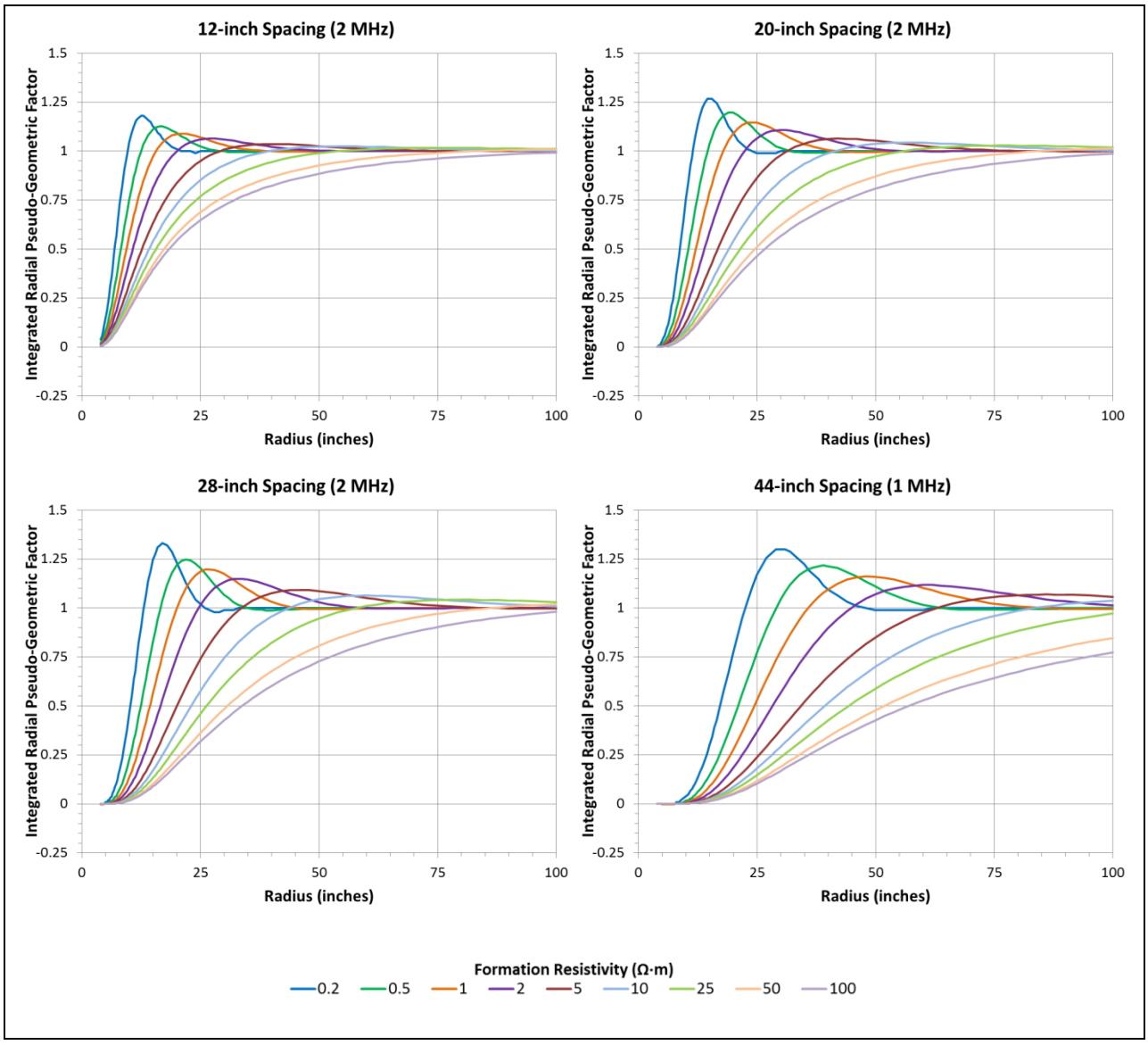


Chart 3-191

Resistivity Depth of Investigation
Super-Slim EWR™-Phase 4 Tool (Attenuation Resistivity)

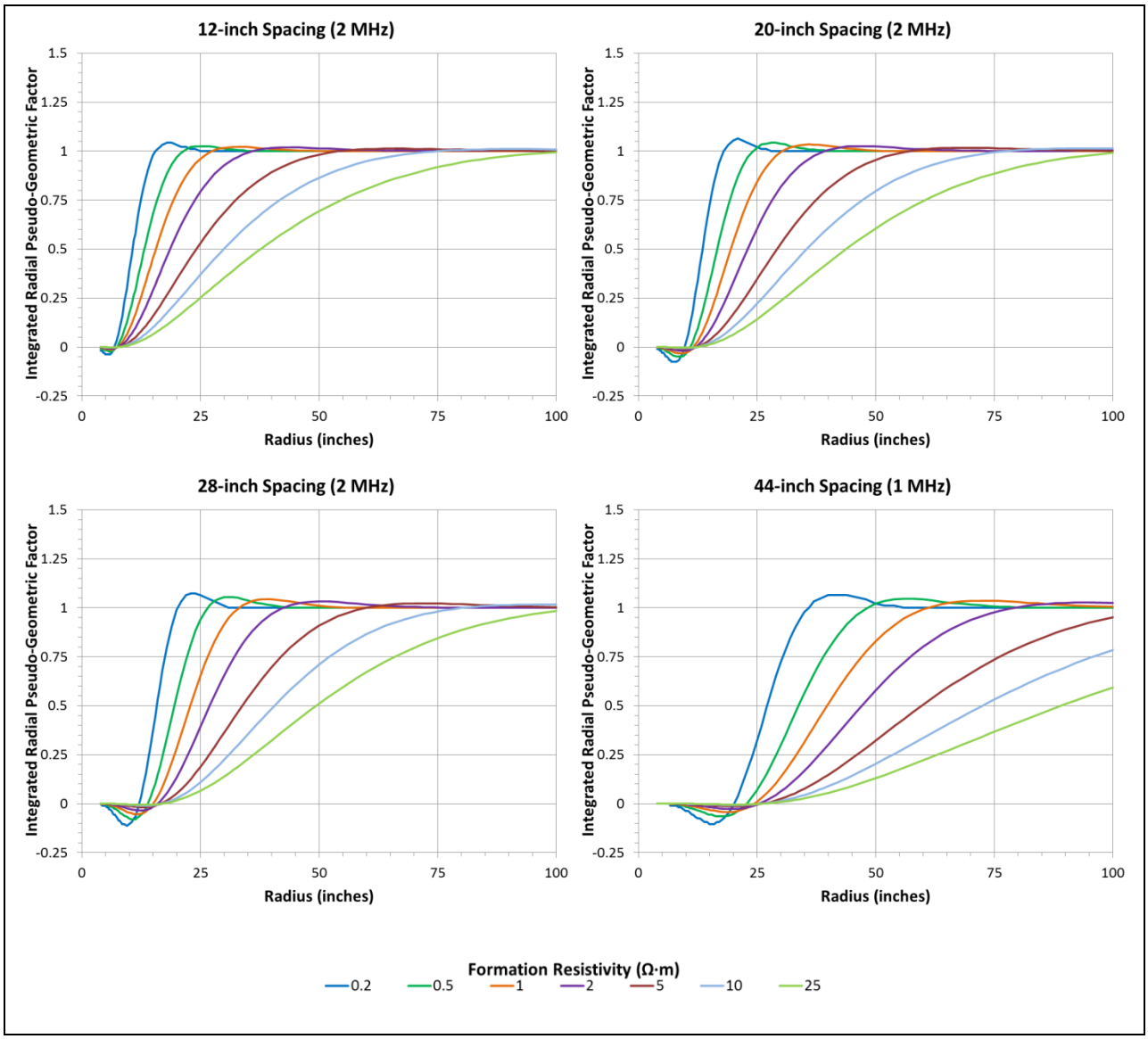
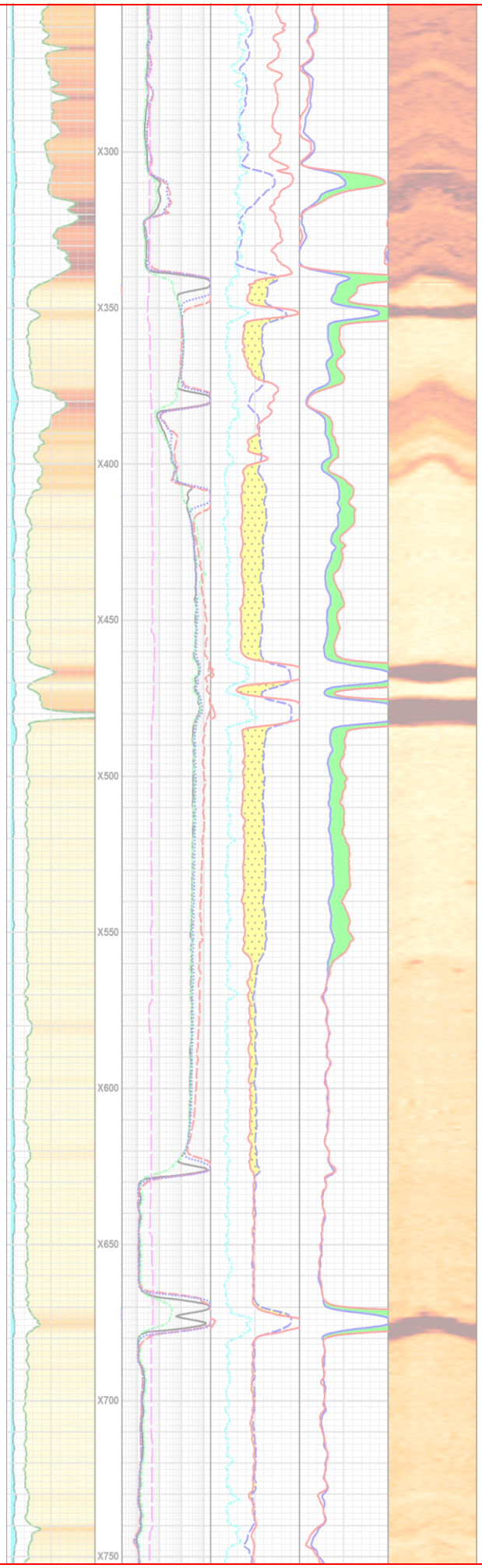


Chart 3-192



Φ

Porosity

4 Porosity

The environmental correction charts for neutron porosity tools contained in this section were generated using a combination of laboratory measurements and mathematical modelling. The laboratory measurements were acquired at Halliburton's facilities in Houston, Texas, encompassing a wide range of formation porosities, mud types, mud weights and salinities.

The neutron porosity tool which is represented in this section is the Compensated Thermal Neutron tool (CTN™). This tool is available is several variants, with the main differentiating features being the collar diameter, the type of source used in the tool, and the pressure rating of the tool. The variants covered are as follows:

CTN™ Collar Diameter	Source Type	Pressure Rating
4¾ in.	Americium/Beryllium	20,000 psi (138 MPa)
6¾ in.	Americium/Beryllium	25,000 psi (172 MPa)
		30,000 psi (206 MPa)*
	Californium	25,000 psi (172 MPa)
8 in.	Americium/Beryllium	25,000 psi (172 MPa) or 30,000 psi (206 MPa)*

*30,000 psi tools are referred to in the below charts as *XHP* tools.

Other variations in tool design exist, but these do not have a material effect on the charts presented here. In the 8-in. tool, the pressure rating (standard or XHP) does not affect the environmental sensitivity of the tool, and so no distinction is drawn in the charts between the two. However the detector configuration of the 6¾-in. tool is different in the XHP variant compared with the standard-pressure tool, resulting in differences in the two tools' environmental sensitivity. Hence they are presented here separately. In addition, the 6¾-in. standard-pressure tool may be run with either an americium/beryllium (Am/Be) source or a californium (Cf) source. The choice of source affects the environmental sensitivity of the tool, so charts are presented for the two cases separately.

Neutron Porosity Environmental Corrections

Neutron porosity tools require a large number of environmental corrections, some of which are dependent on multiple factors. The porosity measurement is affected by borehole diameter, the position of the tool within the borehole, mud type, mud density, mud salinity, formation type, formation water salinity, pressure and temperature. Due to the interdependence of some of the corrections, is it not possible to present a comprehensive set of charts which cover all conditions. Some of the charts below assume fixed values for some parameters. Where this is the case, the assumptions are shown below the chart. The charts are intended to provide a representative indication of the magnitude and direction of each correction. For cases not covered by the charts displayed here, please refer to the online eChartBook™, at http://eChartBook.Halliburton.com, which provides customized charts for specific conditions.

The charts for each tool variant are presented in a "waterfall" style, illustrating that each correction is applied sequentially, starting with the raw, uncorrected porosity and ending with a fully-corrected value. In each chart, the correction is applied by entering at the top, at the uncorrected porosity value, moving vertically downwards to the value of the environmental parameter in question, then following the red correction lines to the reference condition, indicated by the light green horizontal line.

For convenience, the charts for each variant are divided into two groups, the first group representing corrections associated with the borehole and the second group representing corrections associated with the formation. Borehole corrections are presented separately for a rotating tool and a non-rotating tool; formation corrections are presented separately for each of the three reservoir rock types, limestone, sandstone and dolomite. Care should be taken to select the appropriate charts. To fully correct a raw porosity value, use one of the borehole correction chart sequences first, followed by one of the formation correction sequences.

Borehole Correction Sequence

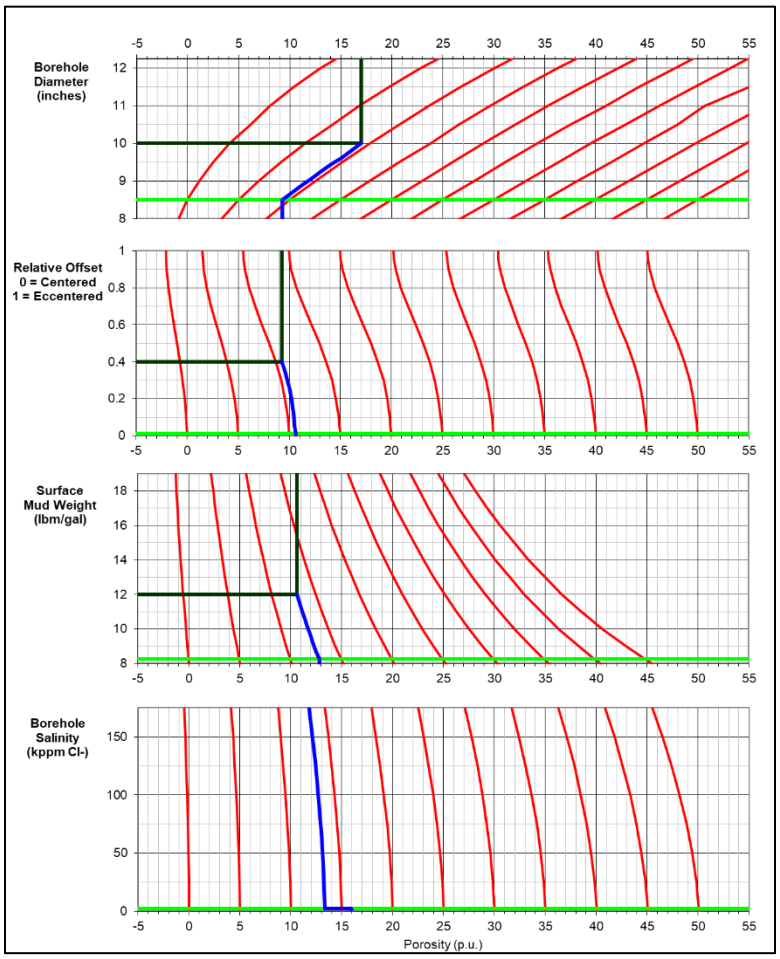
There are four stages in the borehole correction, as follows:

- *Borehole Diameter Correction* – For a given tool size, the porosity is referenced to a fixed, reference borehole diameter filled with fresh water. The correction compensates for the fact that running the tool in a larger borehole than the reference diameter will cause the porosity to read high.
- *Relative Offset Correction* – The measured porosity is influenced by the position of the tool in the borehole. The reference condition is a centred tool. The correction compensates for the effect of the tool being off-centre. The term *relative offset* refers to the relative position of the tool between a centred position (relative offset = 0) and a fully off-centre position (pressed against the borehole wall, relative offset = 1). The magnitude of the relative offset correction is dependent on the borehole diameter. For simplicity, the charts presented here assume that the borehole diameter is equal to the reference diameter for the given tool size. Note that in the case of a non-rotating tool, the magnitude and direction of the relative offset correction is dependent on the orientation of the detectors in the tool (i.e. the detector toolface), relative to the direction of the offset. For simplicity, in the charts presented here, both the detector toolface and the direction of the offset are assumed to be 180°, corresponding to the tool having its detectors facing the low side of a deviated borehole, and the tool moving off-centre under the influence of gravity. For a rotating tool, the correction is independent of toolface.
- *Surface Mud Weight Correction* – The response of the neutron porosity tool is influenced by the density of the fluid filling the borehole, which in turn is dependent upon the pressure and temperature in the borehole. Different mud types respond differently to variations in pressure and temperature. The reference condition is a borehole filled with fresh water at atmospheric pressure and 70°F (21.1°C). For illustrative purposes, and for simplicity, the charts presented here assume that the borehole fluid is a barite-weighted, water-based mud, at 10,000 psi and 200°F (93.3°C), representing typical down-hole conditions. The correction is presented relative to the measured density of the borehole fluid at surface. The correction is also dependent upon the diameter of the borehole, so again for simplicity, the charts presented here assume that the borehole diameter is equal to the reference diameter for the given tool size.
- *Borehole Salinity Correction* – The response of the neutron porosity tool is influenced by the salinity of the fluid in the borehole or, more precisely, the concentration of chlorine ions in the fluid, chlorine being a very effective neutron absorber. The reference condition is a concentration of zero (fresh water). This correction is also a function of the borehole diameter, so, for simplicity, the charts presented here assume that the borehole diameter is equal to the reference diameter for the given tool size.

Example

Apply a correction for borehole diameter, for a rotating 6¾-in. CTN™ tool with an Am/Be source, given that the borehole diameter is 10 inches and the uncorrected porosity is 17 p.u.

- Select the "rotating" borehole correction chart for the given CTN™ tool variant (see figure to the right).
- Enter the top of the chart at 17 p.u. and move vertically downwards to the borehole diameter of 10 inches (black lines).
- Follow the red correction lines down to the reference condition at 8.5 inches (light green line).
- Drop vertically to the horizontal axis, and read the corrected porosity of about 9 p.u. (blue line).



A similar process can be used to apply corrections for relative offset (tool position), mud weight and borehole salinity, as shown in the figure.

Note that the input porosity for the borehole salinity correction is the output from the relative offset correction, not the mud weight correction. The salinity correction and mud weight correction are both added to the output from the relative offset correction, in order to reach the final result. This gives rise to the discontinuous appearance of the borehole salinity correction in the example shown (blue line).

Formation Correction Sequence

The formation correction sequence is applied after the borehole correction sequence, described above. The sequence that should be used depends on the assumed formation matrix type (limestone, sandstone or dolomite). Care should be taken to choose the appropriate chart sequence. The formation correction comprises four steps, as follows:

Lithology Correction – The reference condition is a limestone matrix. For matrices other than limestone, a correction is required, in order to compensate for the different neutron capture characteristics of the elements which make up the different matrix types.
Formation Salinity Correction – The reference condition is a formation filled with fresh water. The measurement is influenced by the salinity of the formation fluid, specifically the concentration of chlorine, since chlorine is an effective absorber of neutrons.
Water Density Ratio Correction – The water density ratio refers to the density of the formation water relative to its density at surface conditions. Changes in the density of the formation fluid have an impact on the neutron porosity measurement, since the hydrogen index of the fluid will also change. The density of the formation water is a function of pressure and temperature. However the correction required is usually small, since at typical down-hole conditions, the effect of increased pressure (to increase the water density) tends to be counteracted by the effect of increased temperature (to decrease the water density).

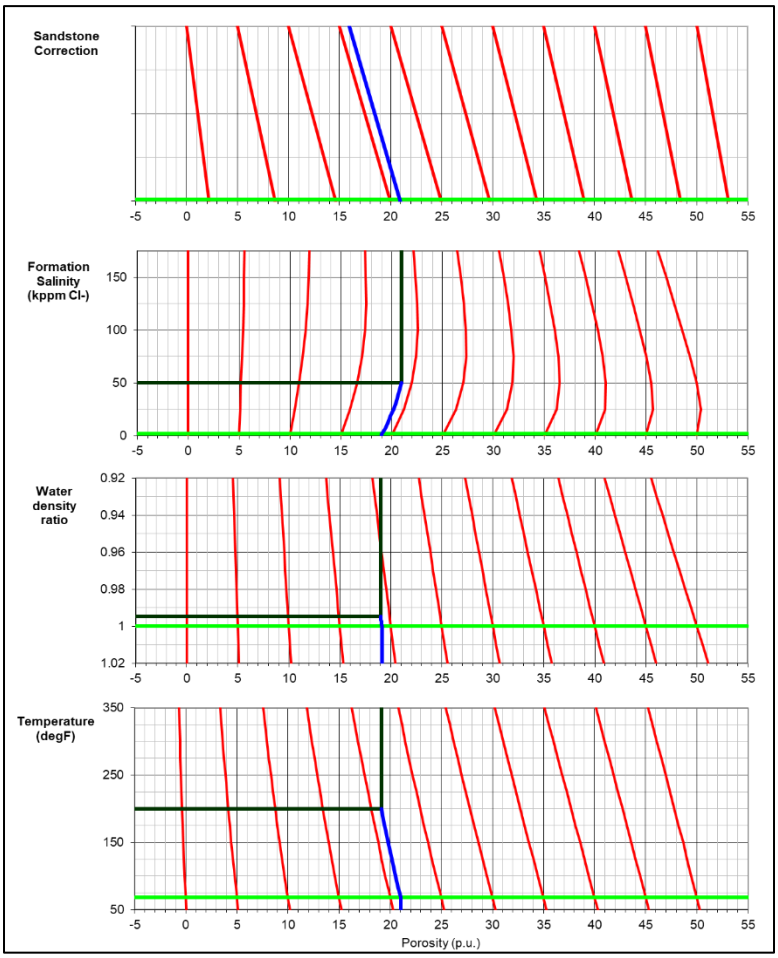
Temperature Correction –Temperature affects the degree to which energetic neutrons lose energy during collisions with atoms in the down-hole environment. The temperature correction is applied to compensate for this effect. The reference temperature is 70°F.

Example

Having applied borehole corrections for the 6¾-in. CTN™ tool with Am/Be source (described above), determine the correction required for a formation water salinity of 50,000 ppm Cl^-, given that the assumed matrix lithology is sandstone.

- Select the appropriate formation correction chart sequence for the specified tool variant in a sandstone matrix (see figure to the right).
- Enter the top of the sandstone correction chart at 16 p.u. (the output from the borehole salinity correction, above).
- Follow the red correction lines to the bottom of the chart to determine the sandstone-corrected porosity of 21 p.u. (blue line).
- Enter the formation salinity correction chart at 21 p.u. and move vertically to the desired salinity value of 50 kppm Cl^- (black lines).
- Follow the red correction lines to the reference condition of zero salinity, indicated by the light green line, to obtain the salinity-corrected porosity of about 19 p.u.

A similar process can be followed to determine the water density ratio correction (typically very small, as shown) and the temperature correction, to obtain a final, fully-corrected porosity of about 21 p.u.



Neutron Porosity Environmental Corrections
4¾-in. CTN™ Tool, Am/Be Source, Borehole Corrections, Rotating

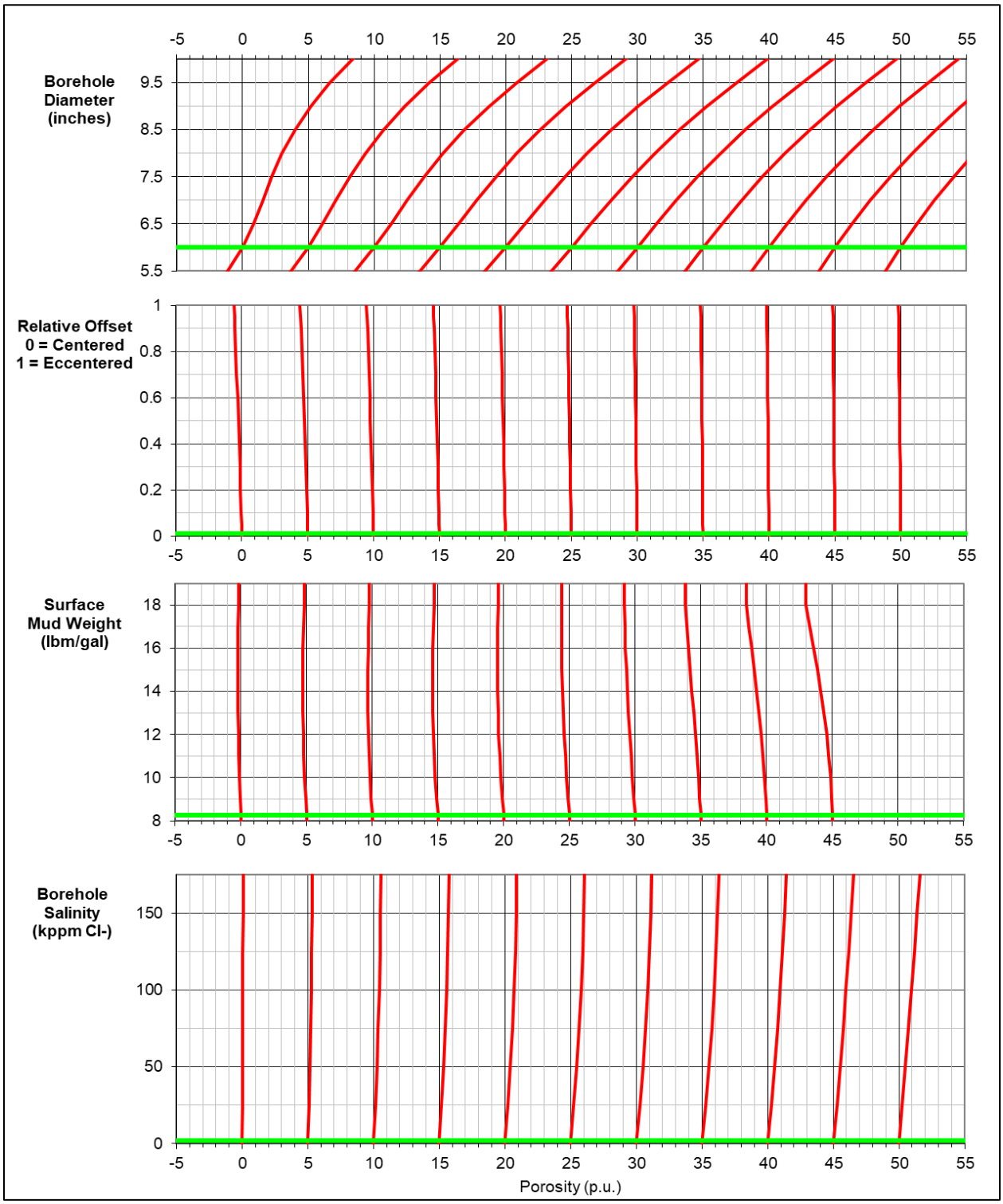


Chart 4-1

The corrections shown for relative offset, surface mud weight and borehole salinity assume a 6-inch diameter borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
4¾-in. CTN™ Tool, Am/Be Source, Borehole Corrections, Non-Rotating

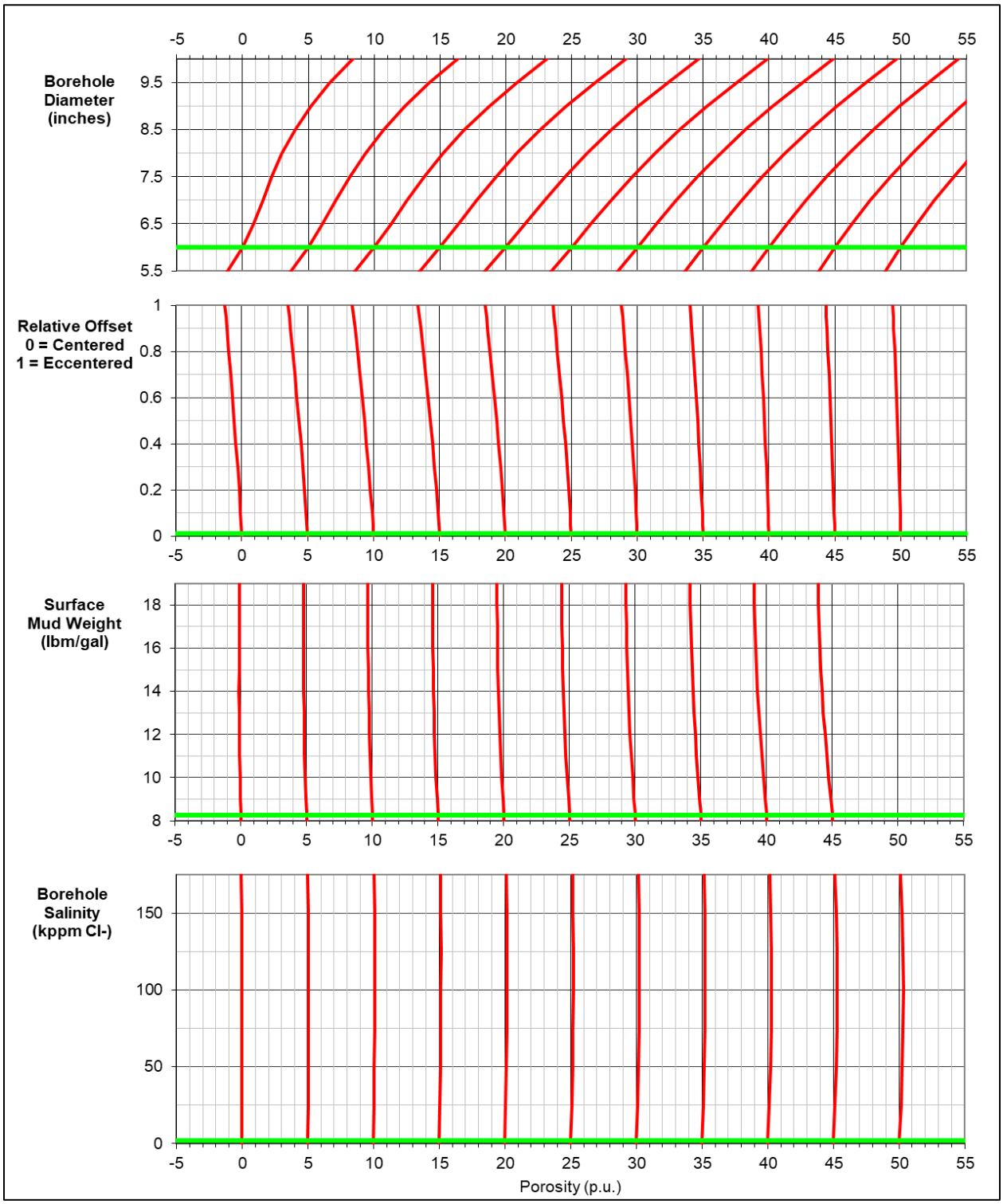


Chart 4-2

The corrections shown for relative offset, surface mud weight and borehole salinity assume a 6-inch diameter borehole. The correction for relative offset assumes the tool is oriented with the detectors facing in the same direction as the tool offset from the centre of the borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
4¾-in. CTN™ Tool, Am/Be Source, Formation Corrections, Limestone Matrix

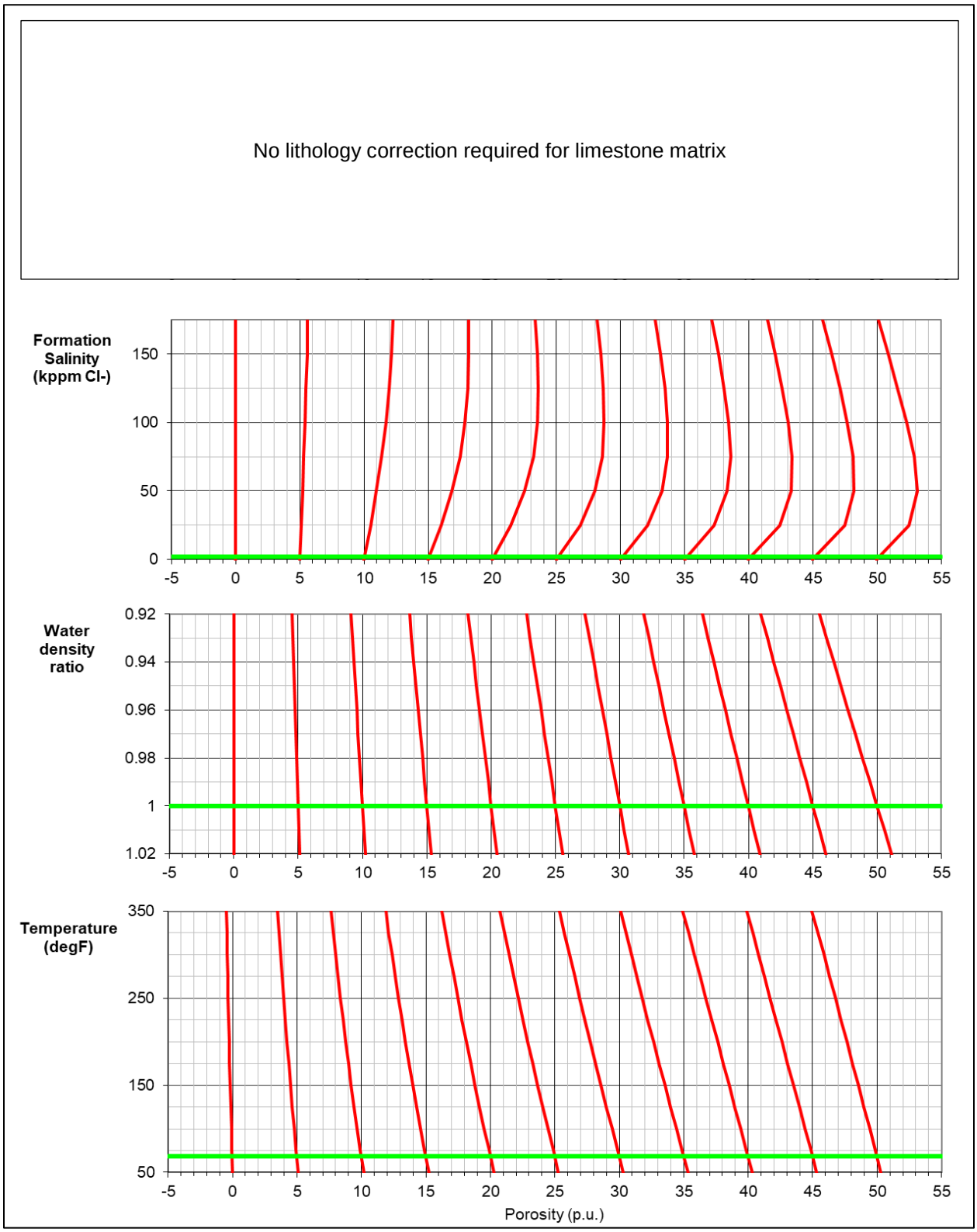


Chart 4-3

Neutron Porosity Environmental Corrections
4¾-in. CTN™ Tool, Am/Be Source, Formation Corrections, Sandstone Matrix

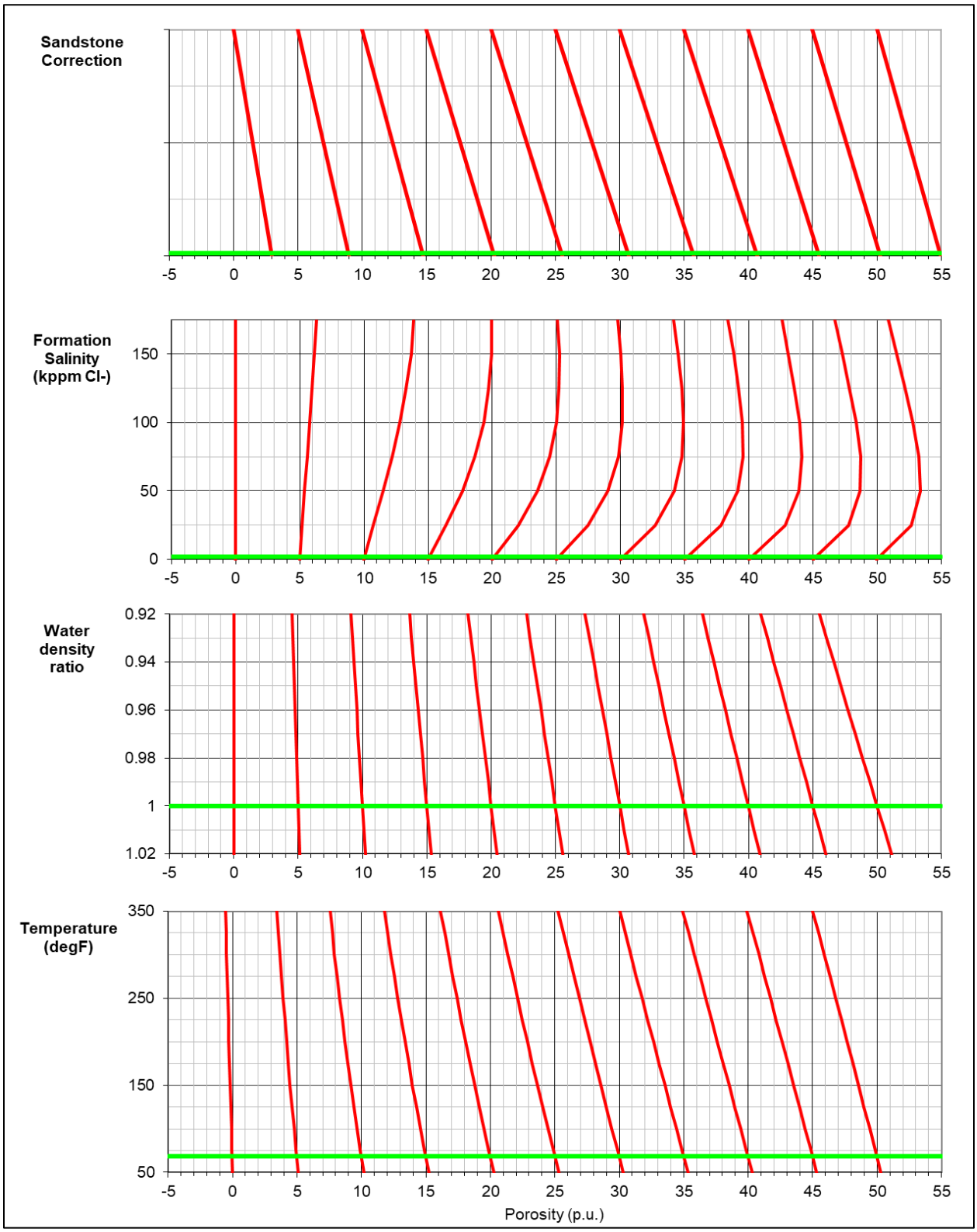


Chart 4-4

Neutron Porosity Environmental Corrections
4¾-in. CTN™ Tool, Am/Be Source, Formation Corrections, Dolomite Matrix

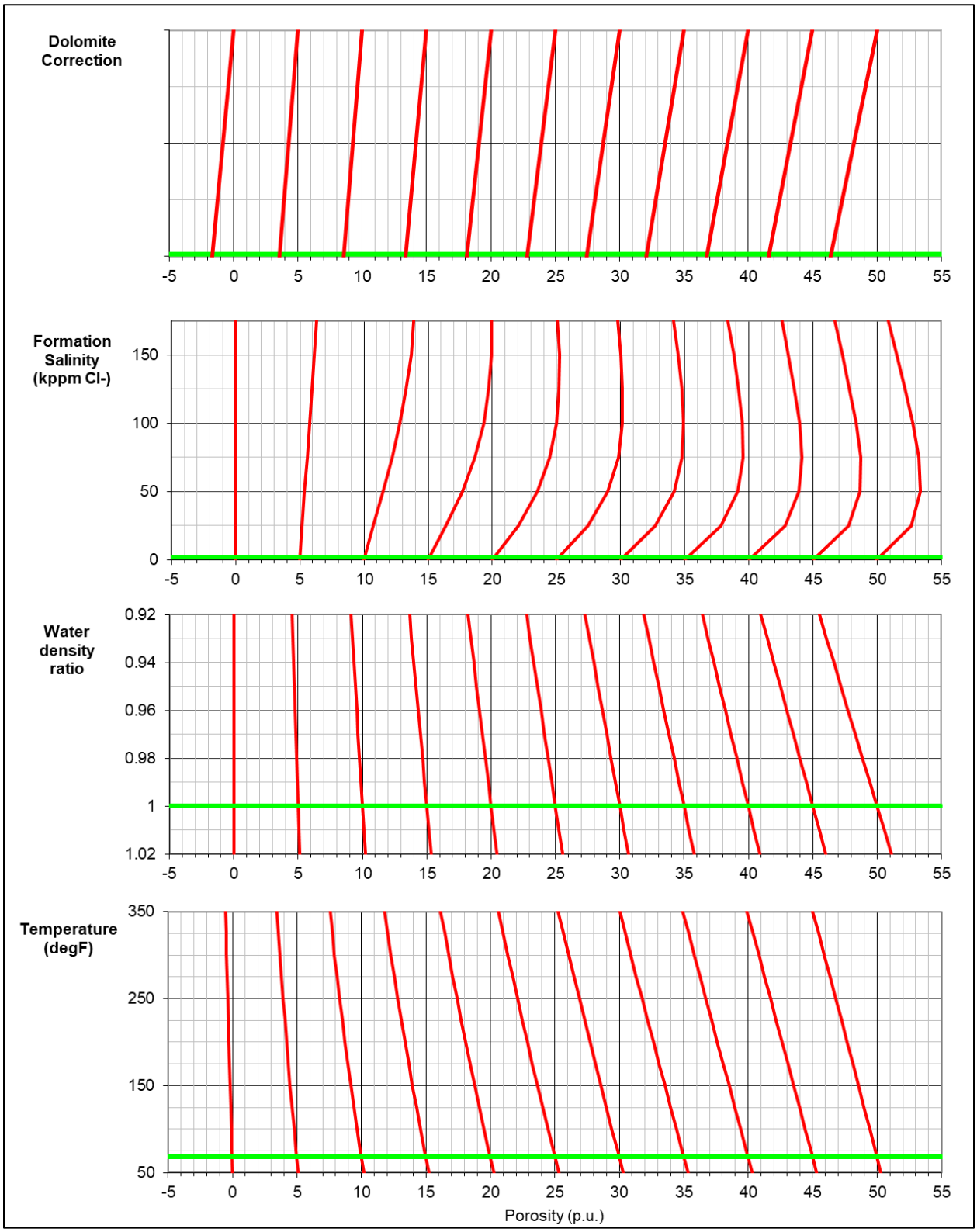


Chart 4-5

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Am/Be Source, Borehole Corrections, Rotating

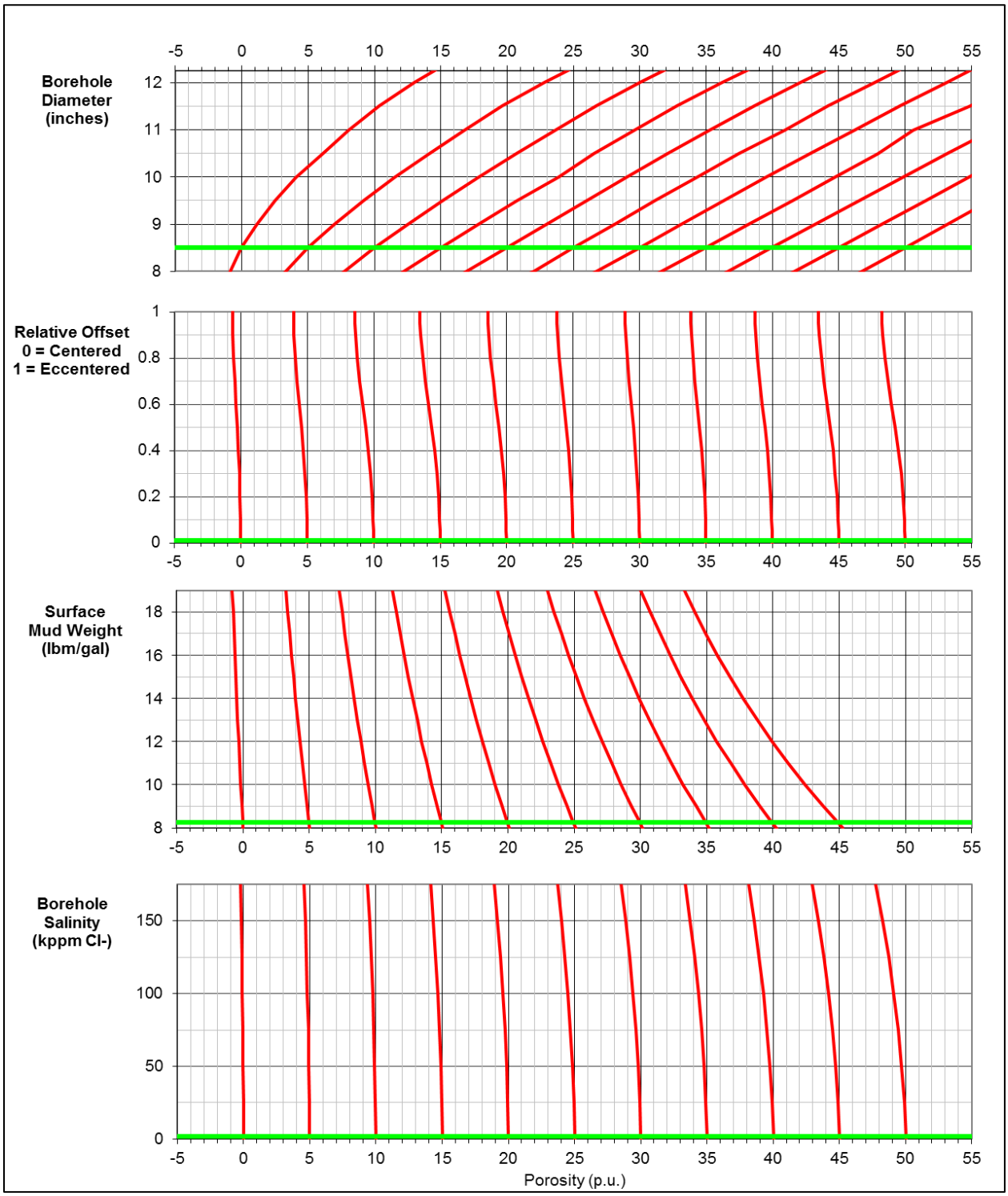


Chart 4-6

The corrections shown for relative offset, surface mud weight and borehole salinity assume an 8.5-inch diameter borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Am/Be Source, Borehole Corrections, Non-Rotating

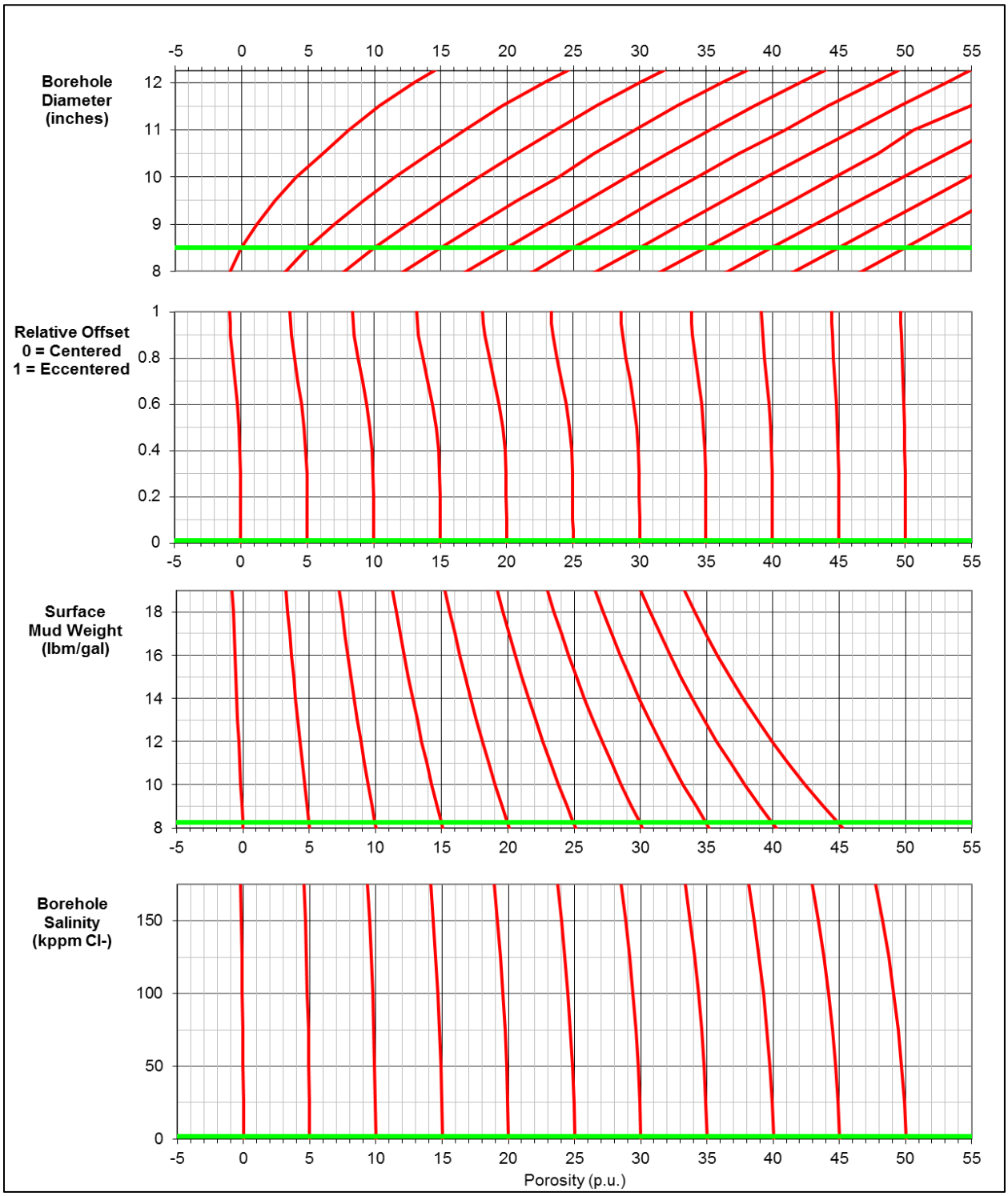


Chart 4-7

The corrections shown for relative offset, surface mud weight and borehole salinity assume an 8.5-inch diameter borehole. The correction for relative offset assumes the tool is oriented with the detectors facing in the same direction as the tool offset from the centre of the borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Am/Be Source, Formation Corrections, Limestone Matrix

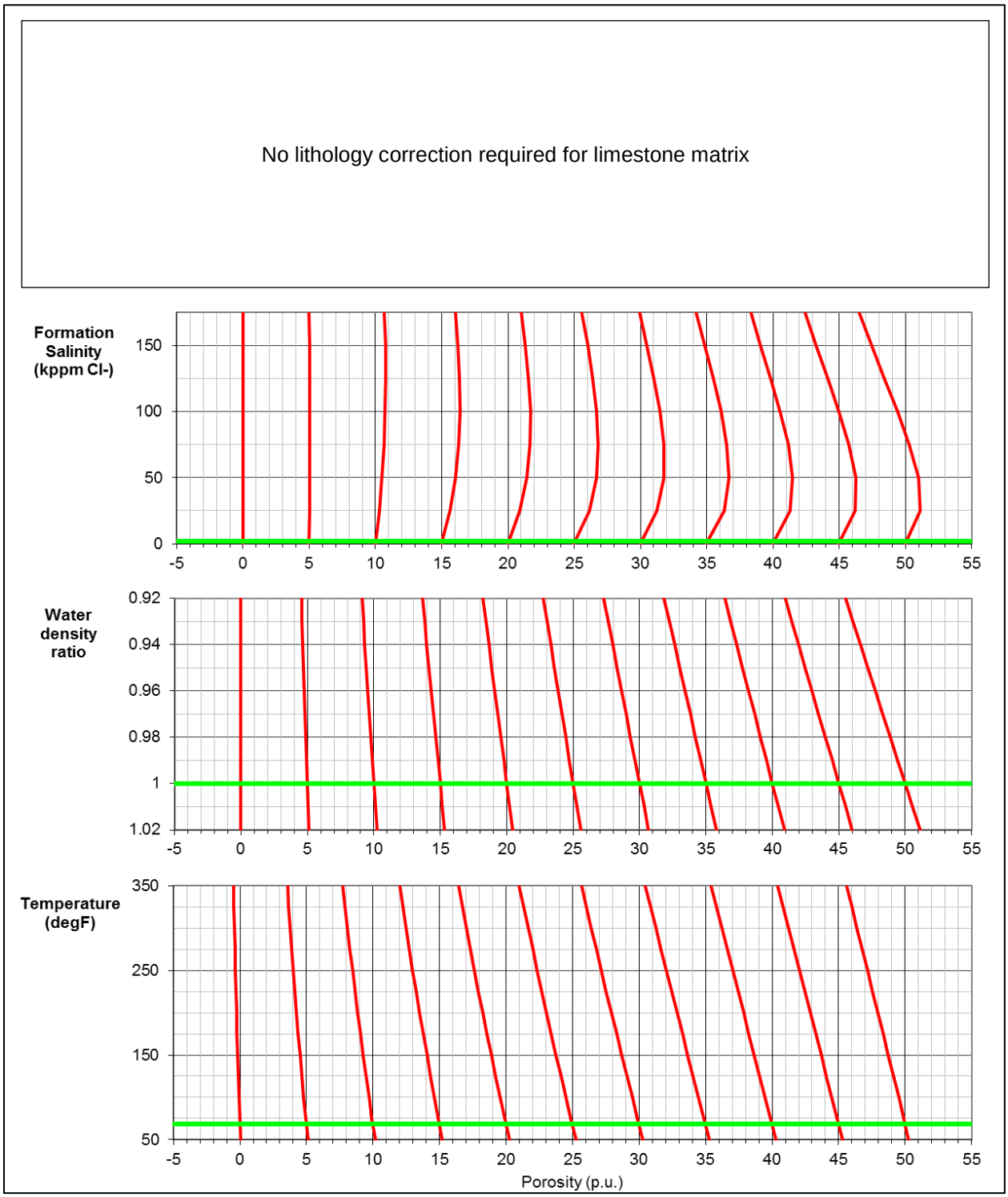


Chart 4-8

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Am/Be Source, Formation Corrections, Sandstone Matrix

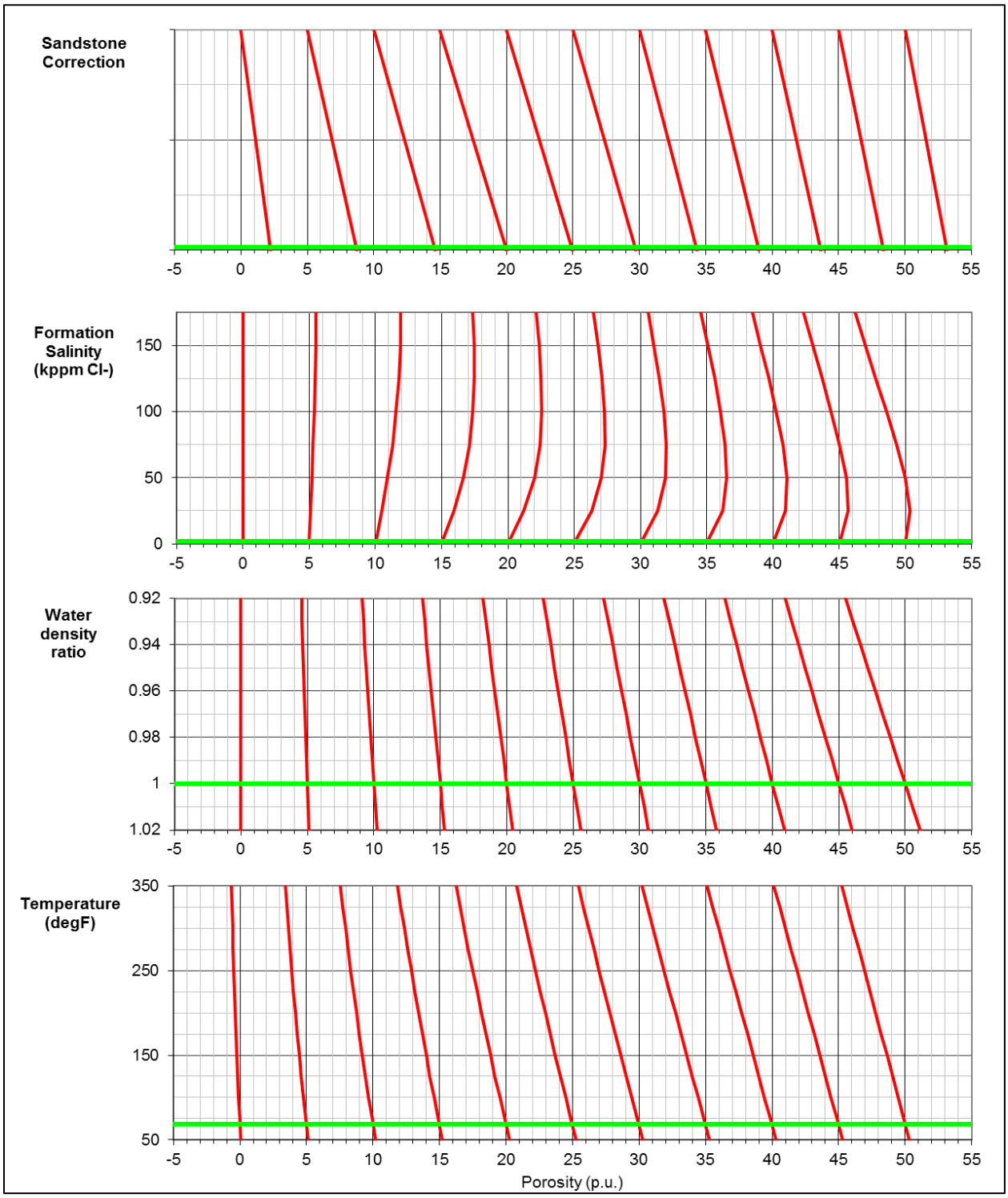


Chart 4-9

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Am/Be Source, Formation Corrections, Dolomite Matrix

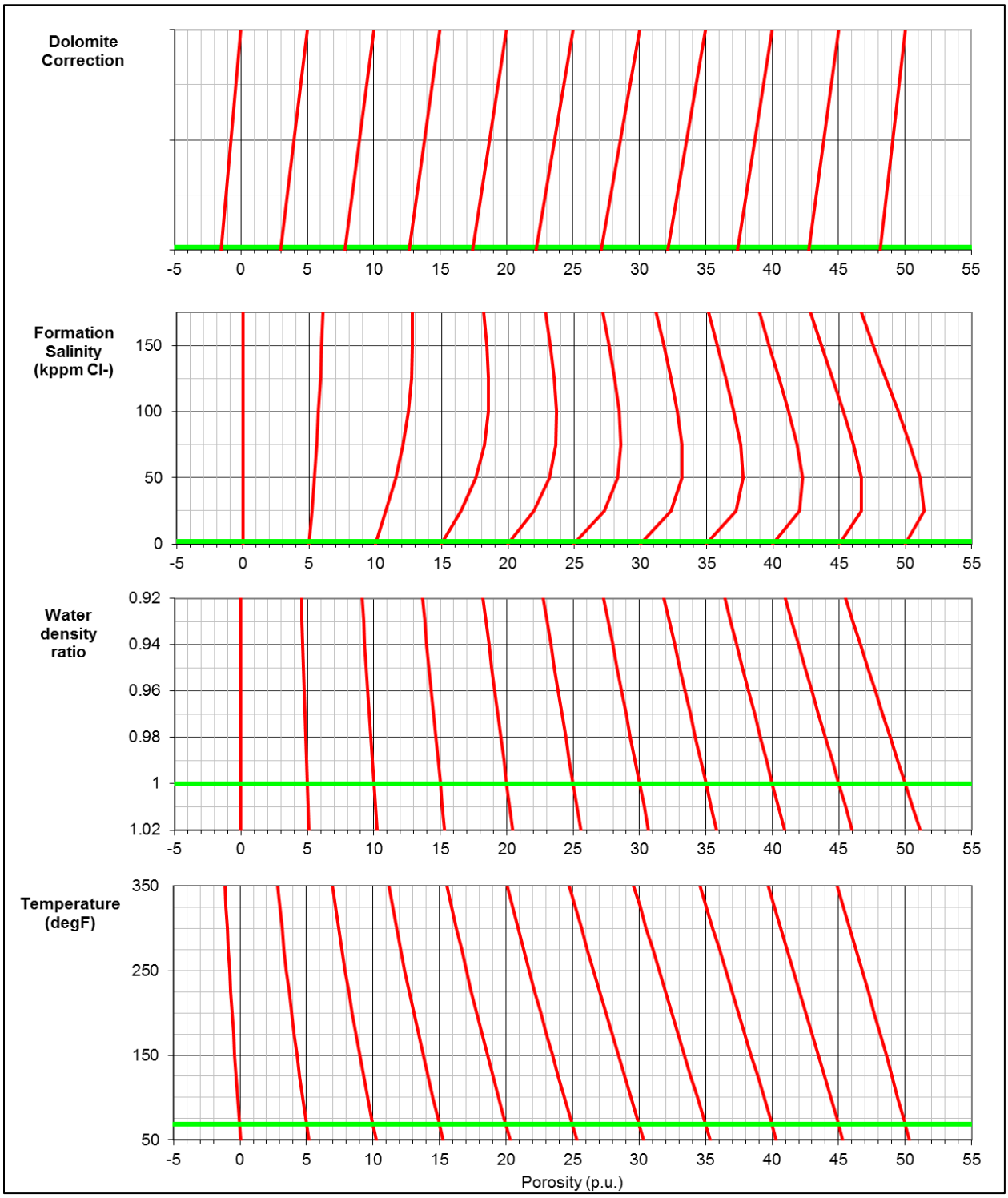


Chart 4-10

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Cf Source, Borehole Corrections, Rotating

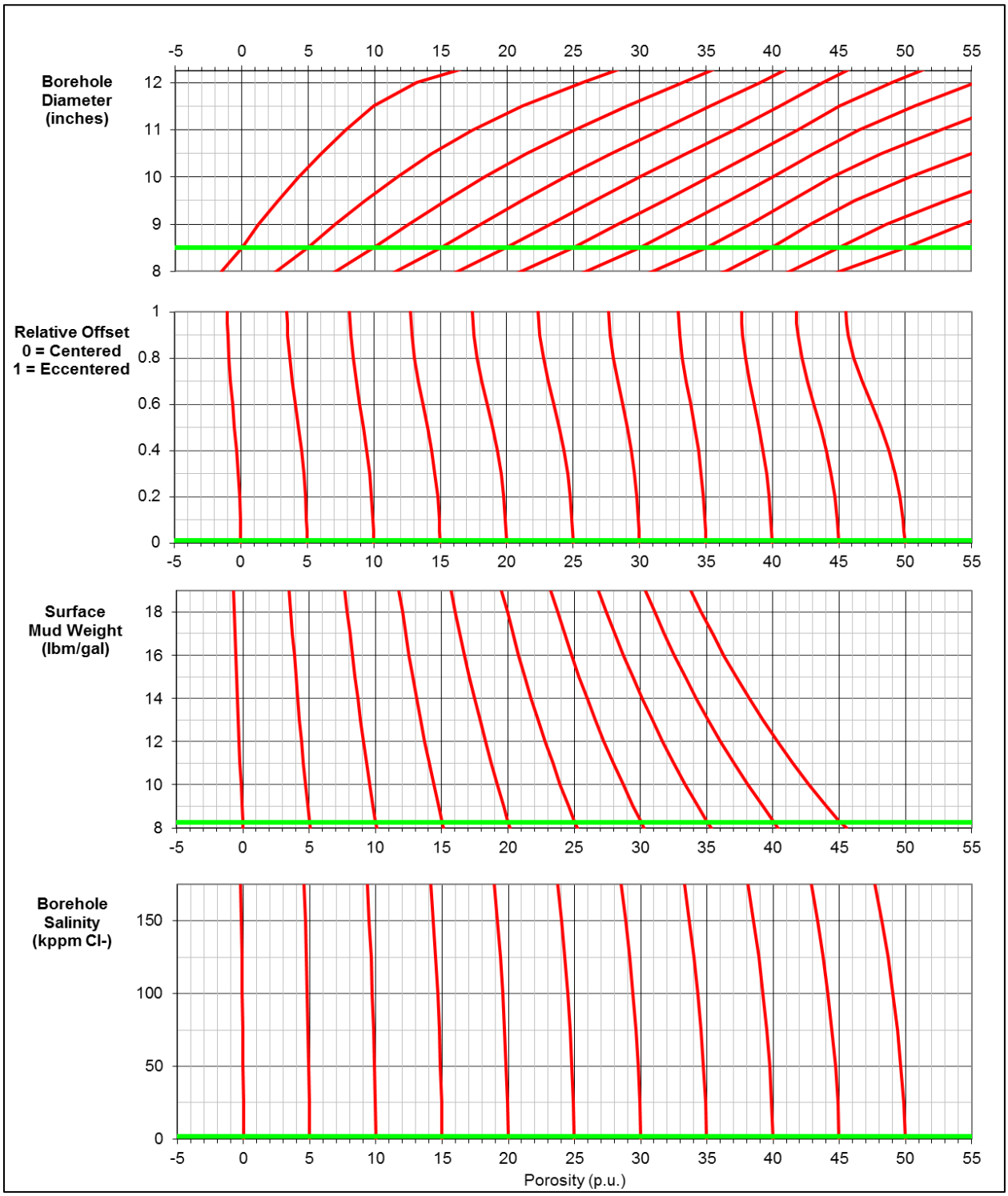


Chart 4-11

The corrections shown for relative offset, surface mud weight and borehole salinity assume an 8.5-inch diameter borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Cf Source, Borehole Corrections, Non-Rotating

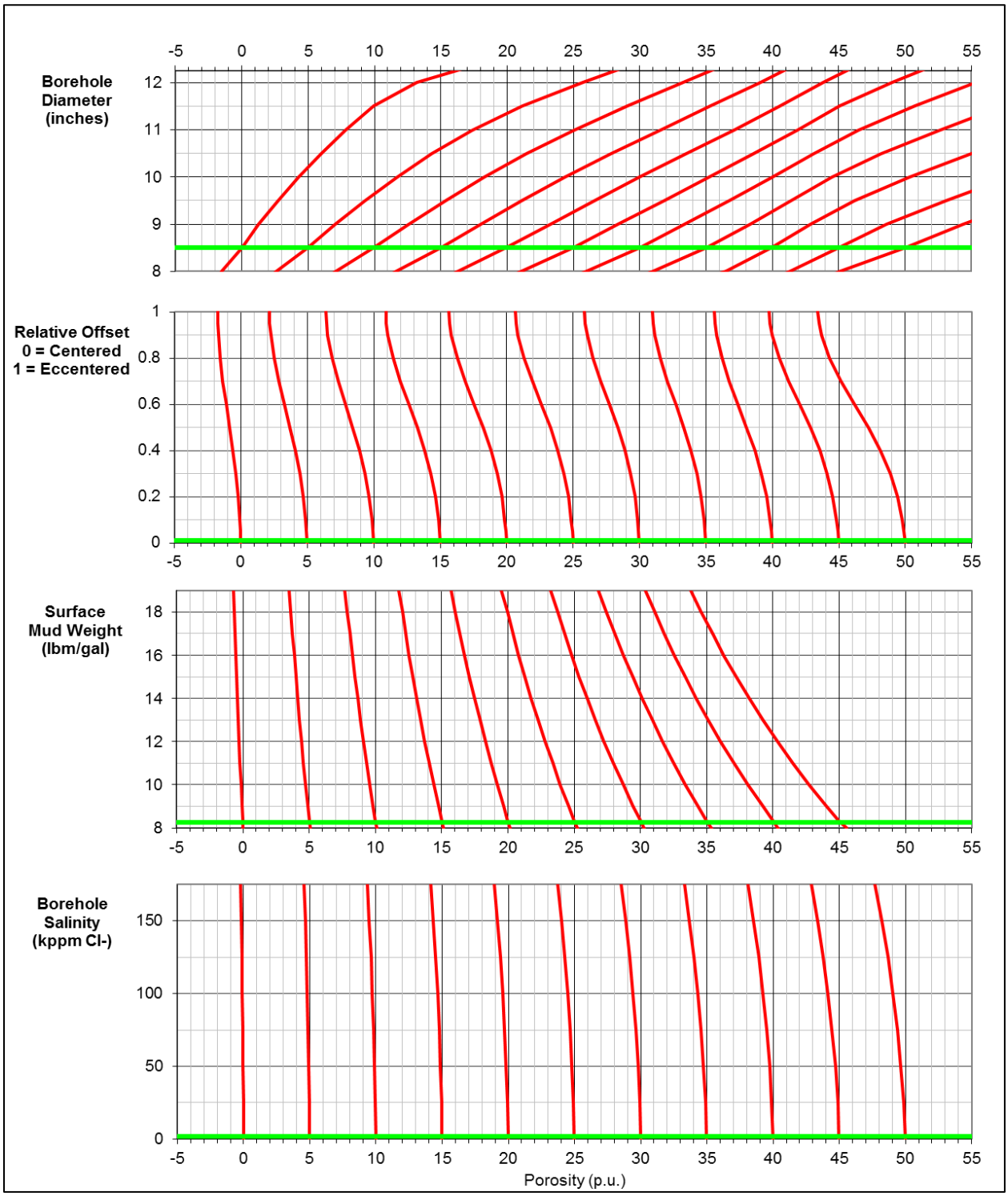


Chart 4-12

The corrections shown for relative offset, surface mud weight and borehole salinity assume an 8.5-inch diameter borehole. The correction for relative offset assumes the tool is oriented with the detectors facing in the same direction as the tool offset from the centre of the borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Cf Source, Formation Corrections, Limestone Matrix

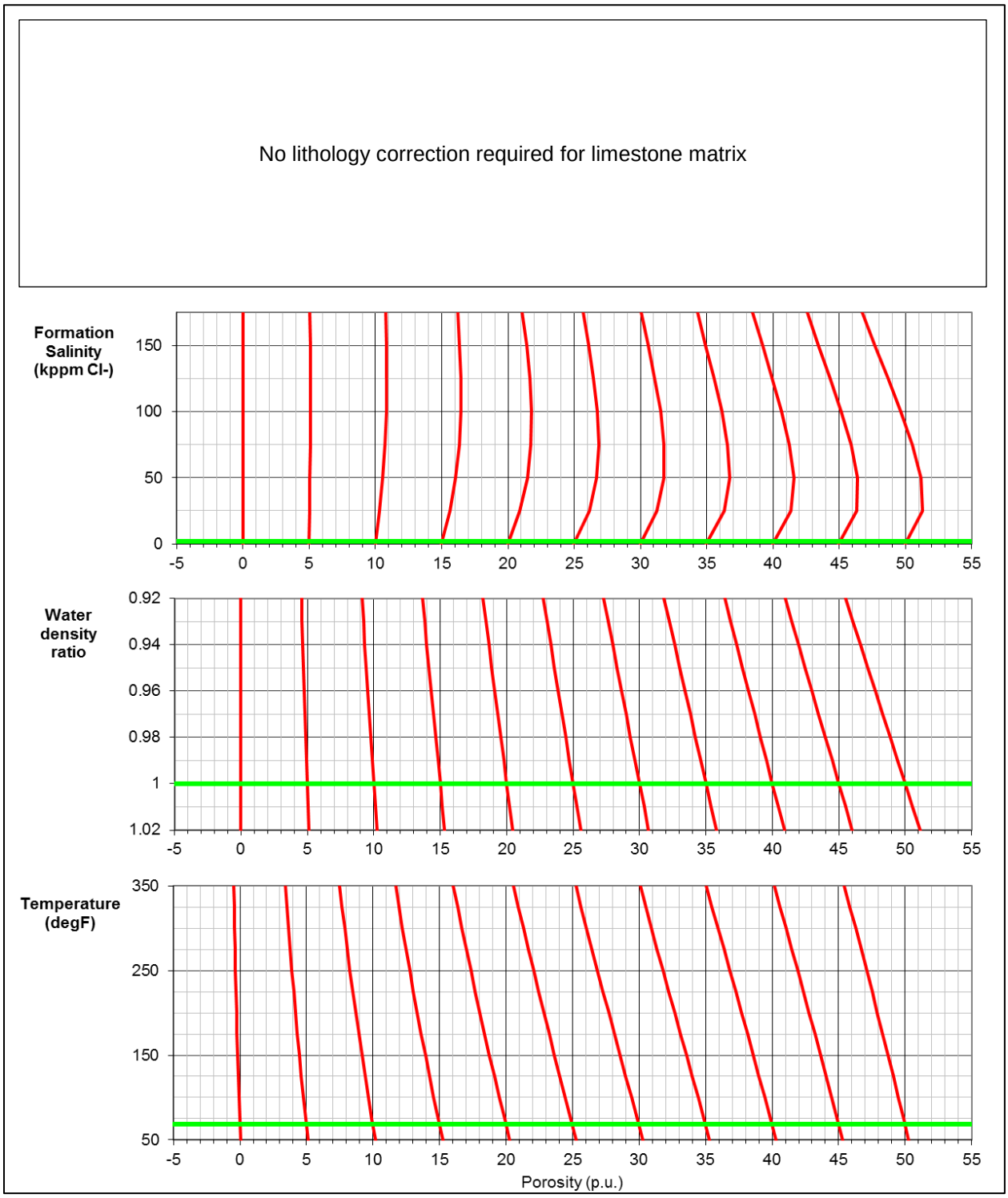


Chart 4-13

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Cf Source, Formation Corrections, Sandstone Matrix

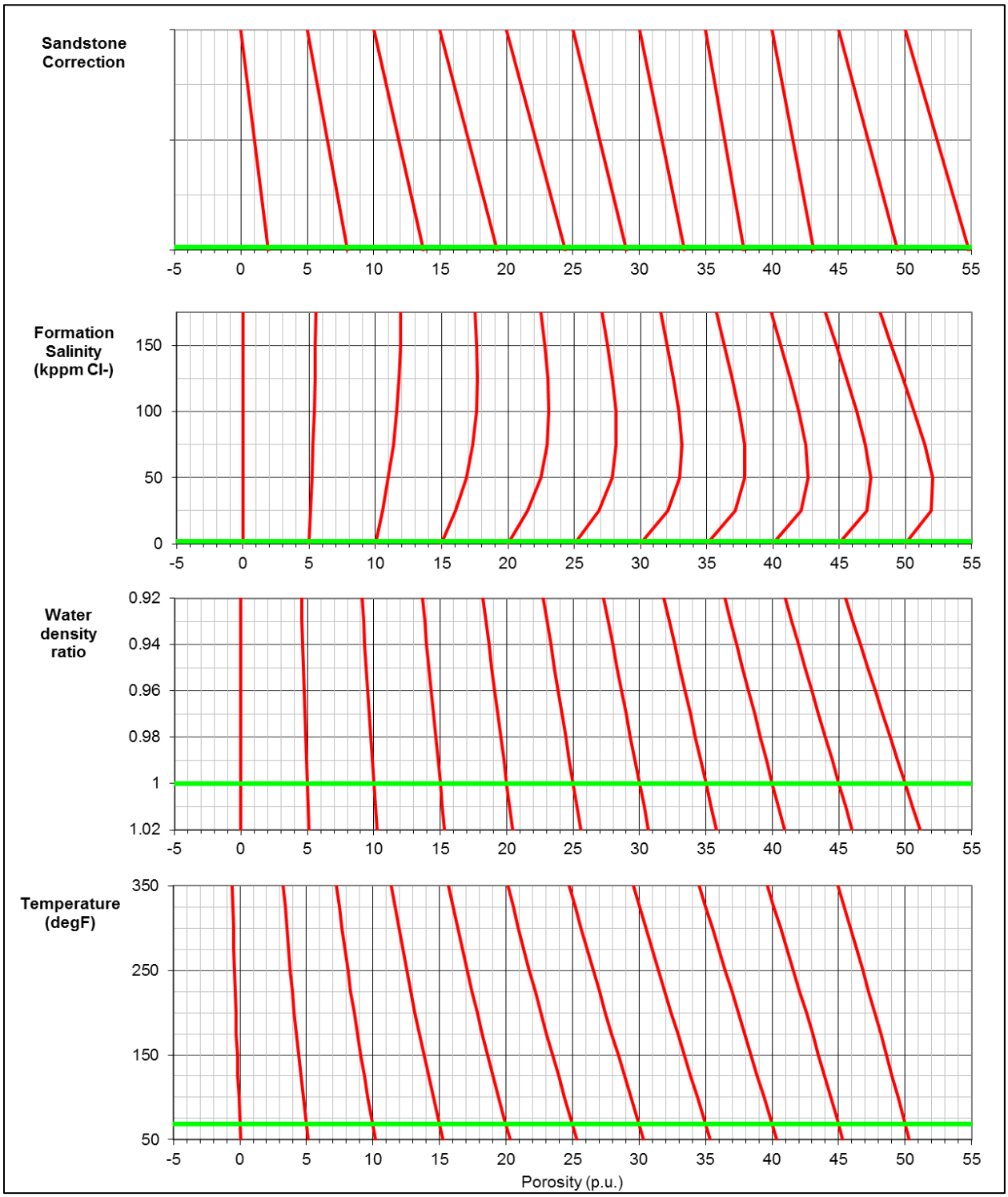


Chart 4-14

Neutron Porosity Environmental Corrections
6¾-in. CTN™ Tool, Cf Source, Formation Corrections, Dolomite Matrix

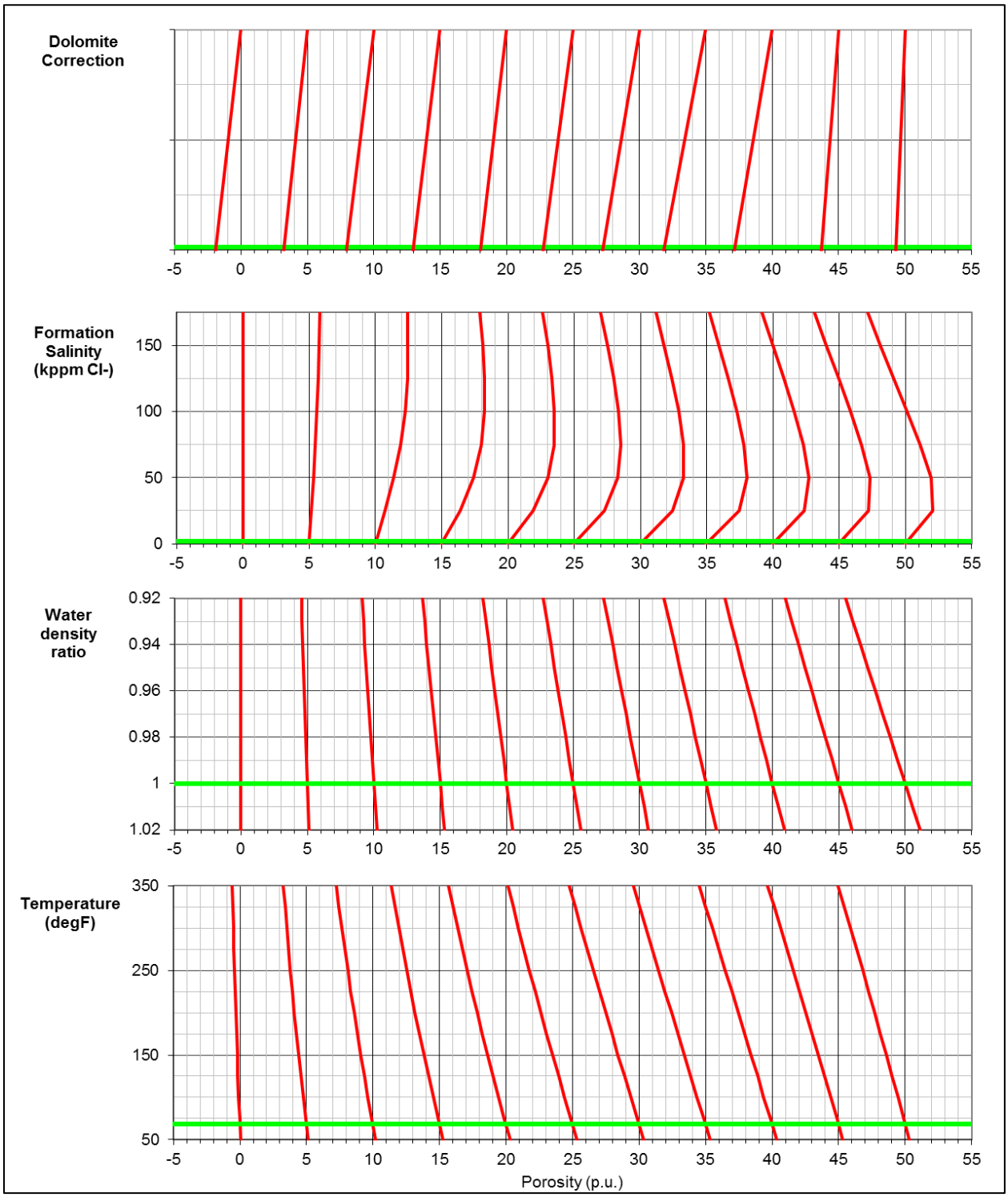


Chart 4-15

Neutron Porosity Environmental Corrections
6¾-in. XHP CTN™ Tool, Am/Be Source, Borehole Corrections, Rotating

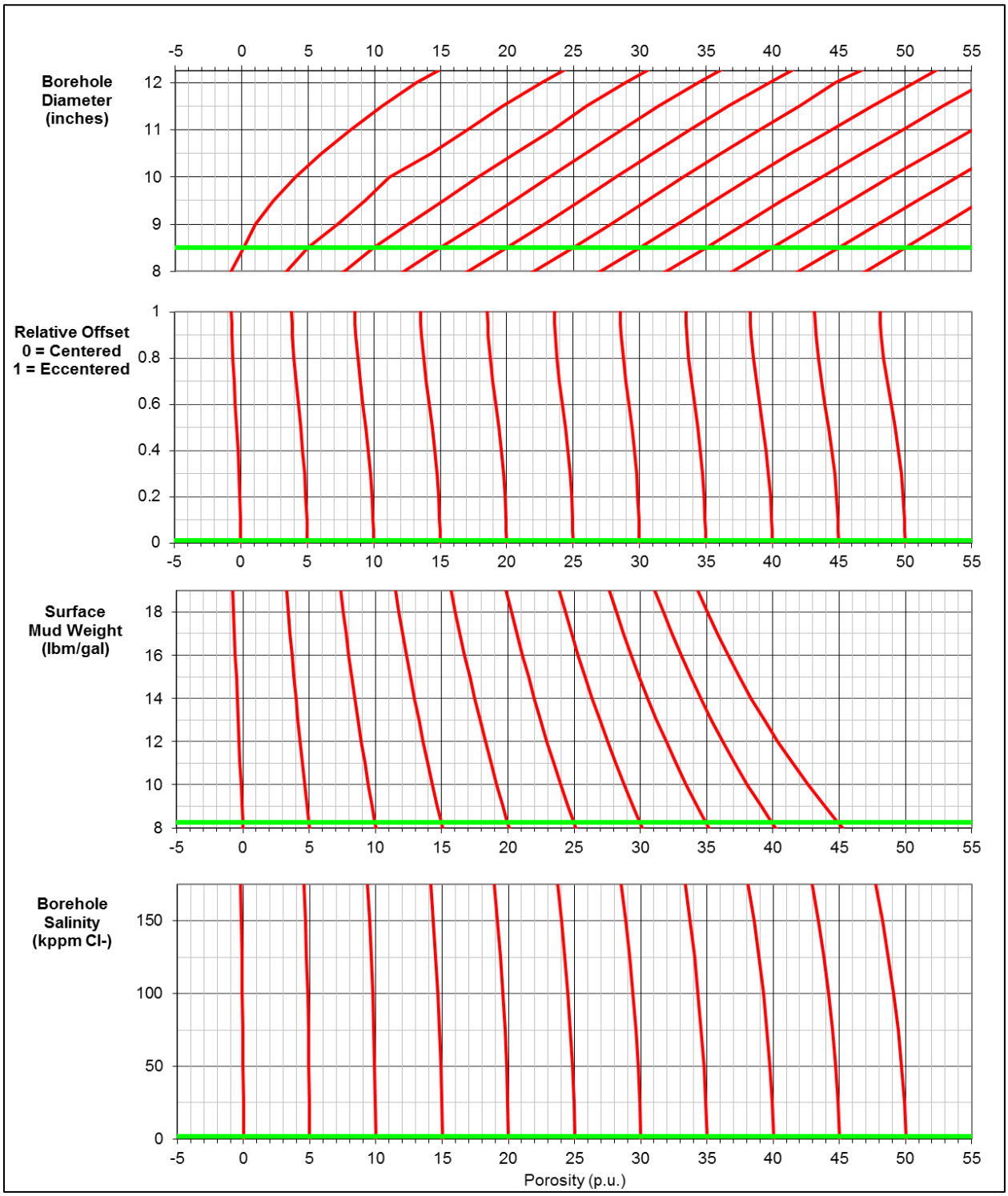


Chart 4-16

The corrections shown for relative offset, surface mud weight and borehole salinity assume an 8.5-inch diameter borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
6¾-in. XHP CTN™ Tool, Am/Be Source, Borehole Corrections, Non-Rotating

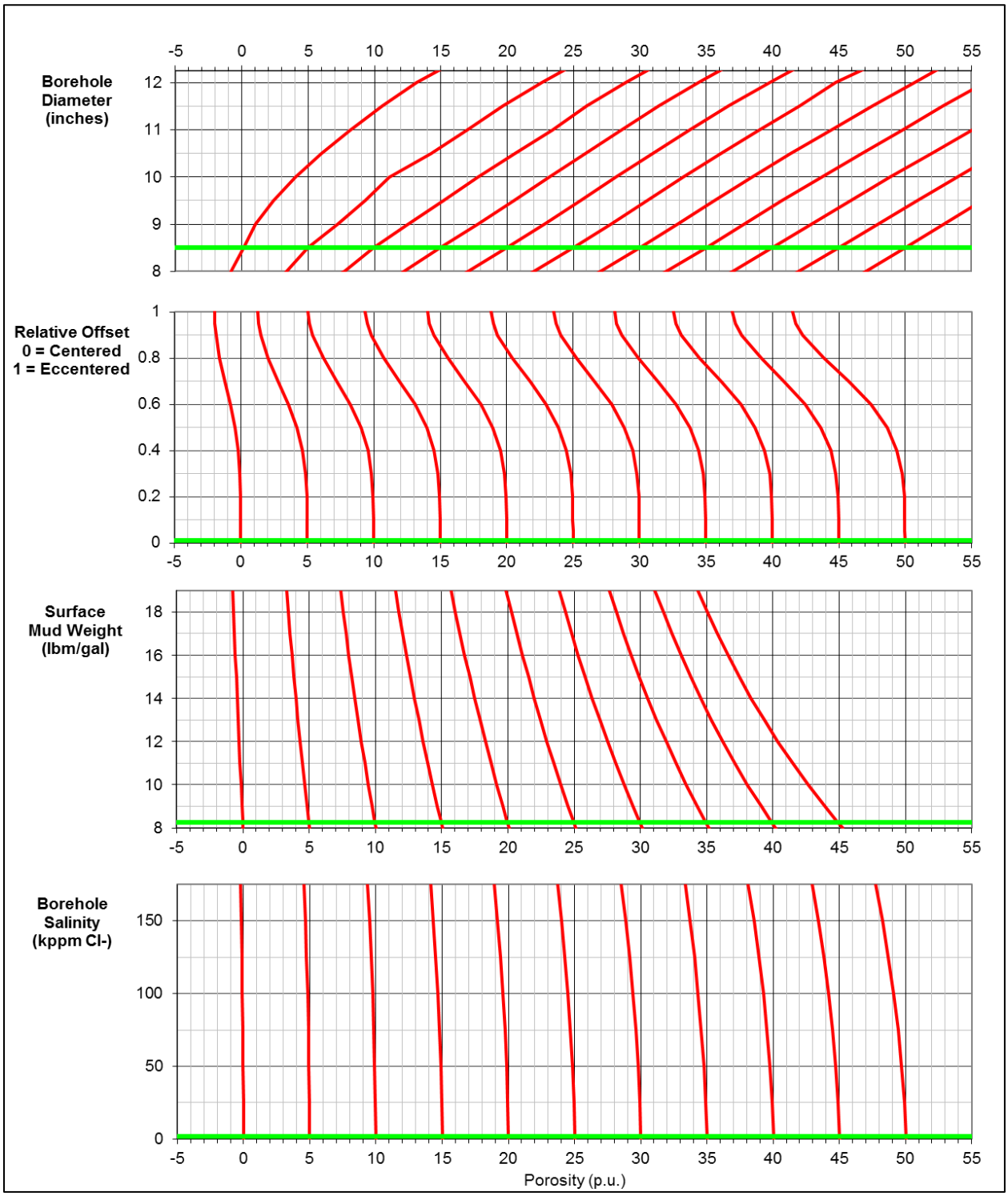


Chart 4-17

The corrections shown for relative offset, surface mud weight and borehole salinity assume an 8.5-inch diameter borehole. The correction for relative offset assumes the tool is oriented with the detectors facing in the same direction as the tool offset from the centre of the borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
6¾-in. XHP CTN™ Tool, Am/Be Source, Formation Corrections, Limestone Matrix

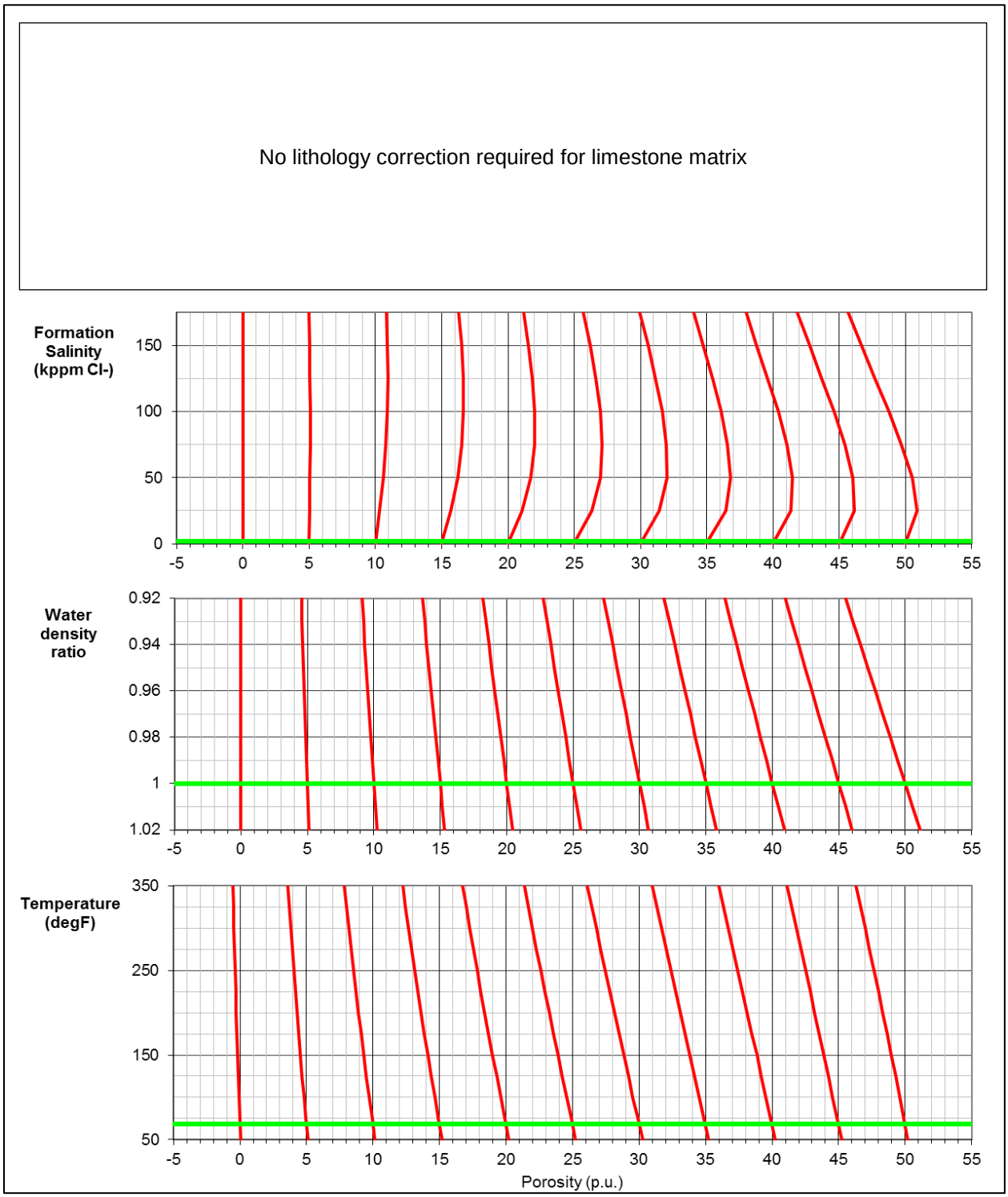


Chart 4-18

Neutron Porosity Environmental Corrections
6¾-in. XHP CTN™ Tool, Am/Be Source, Formation Corrections, Sandstone Matrix

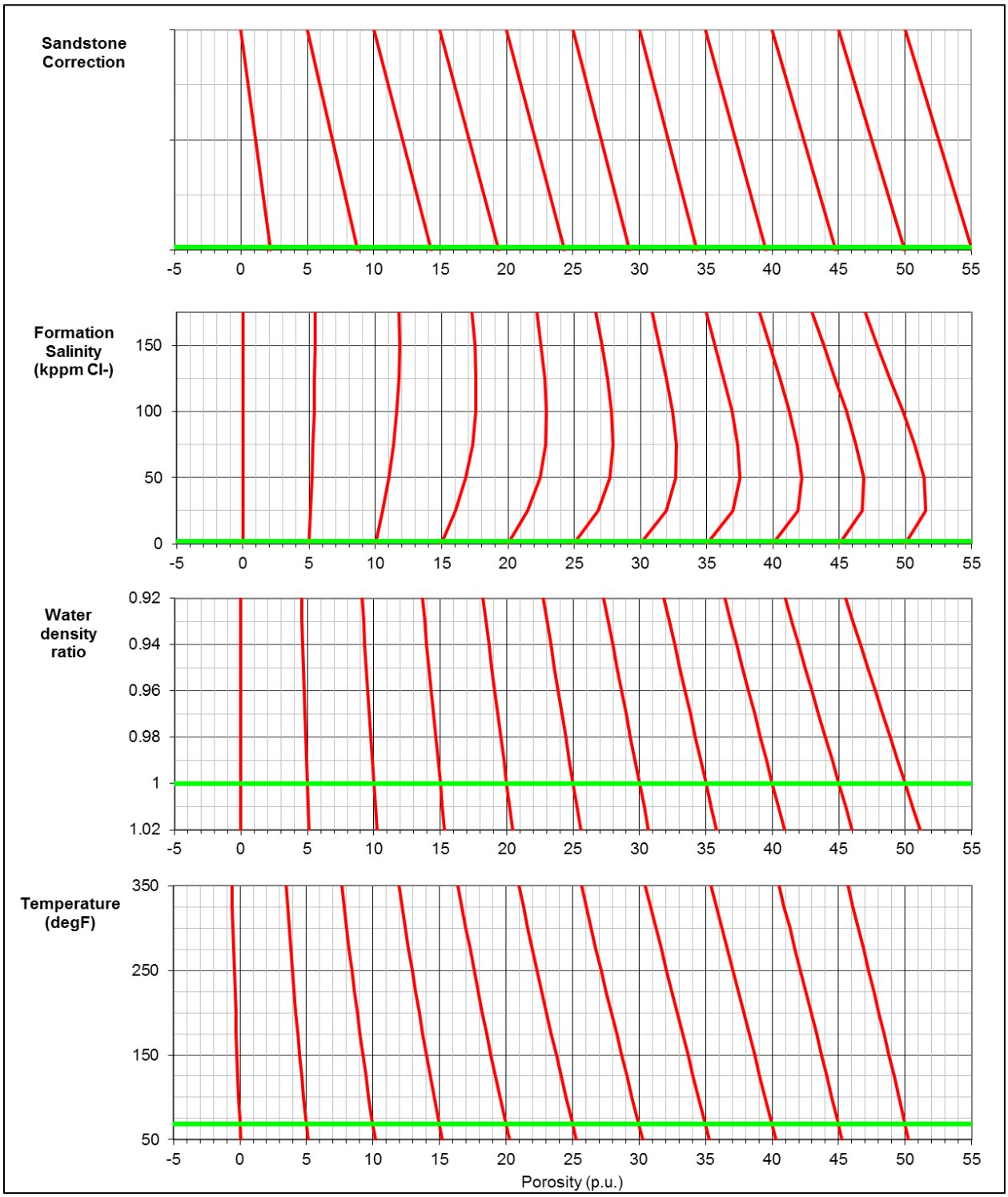


Chart 4-19

Neutron Porosity Environmental Corrections
6¾-in. XHP CTN™ Tool, Am/Be Source, Formation Corrections, Dolomite Matrix

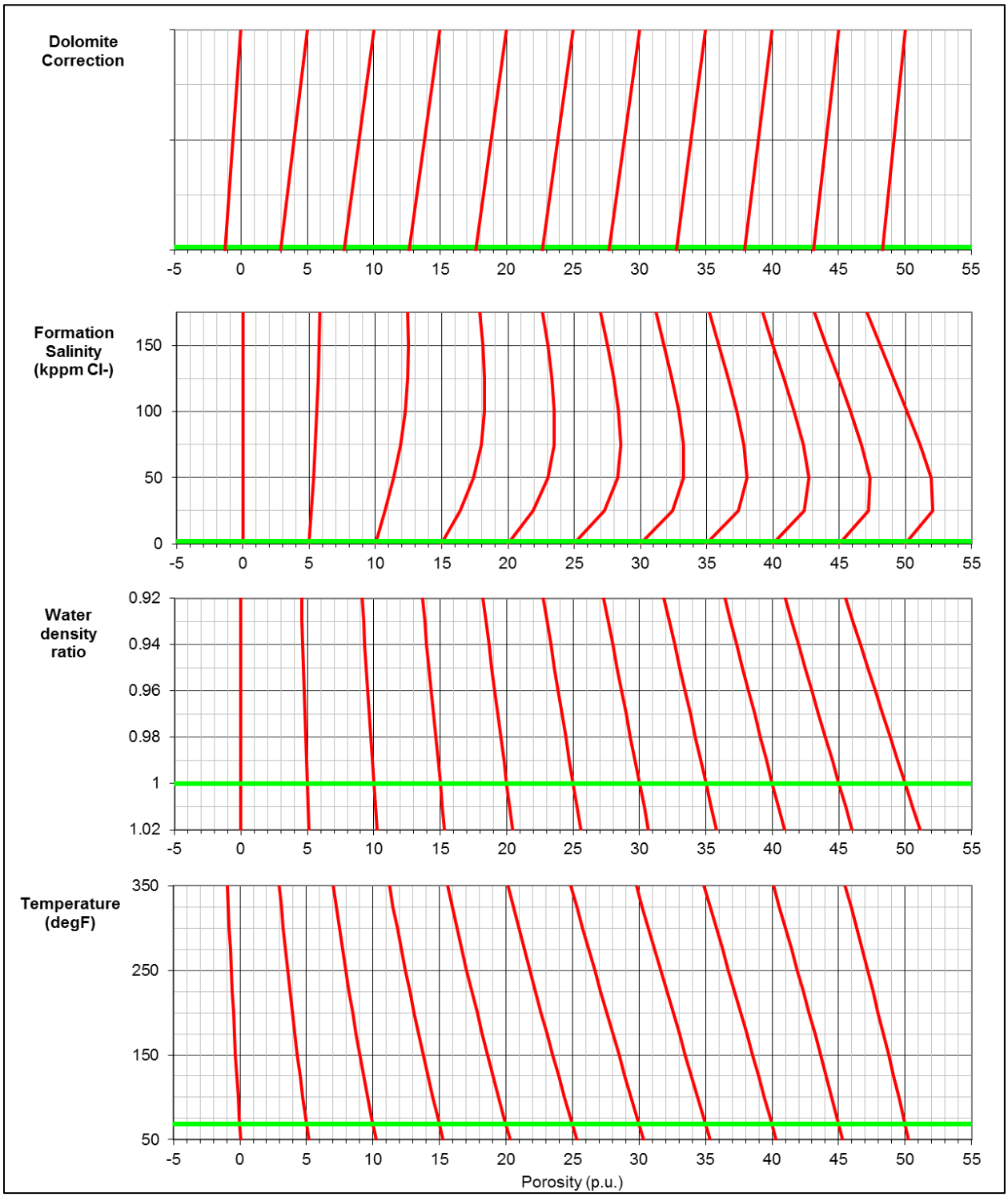


Chart 4-20

Neutron Porosity Environmental Corrections
8-in. CTN™ Tool, Am/Be Source, Borehole Corrections, Rotating

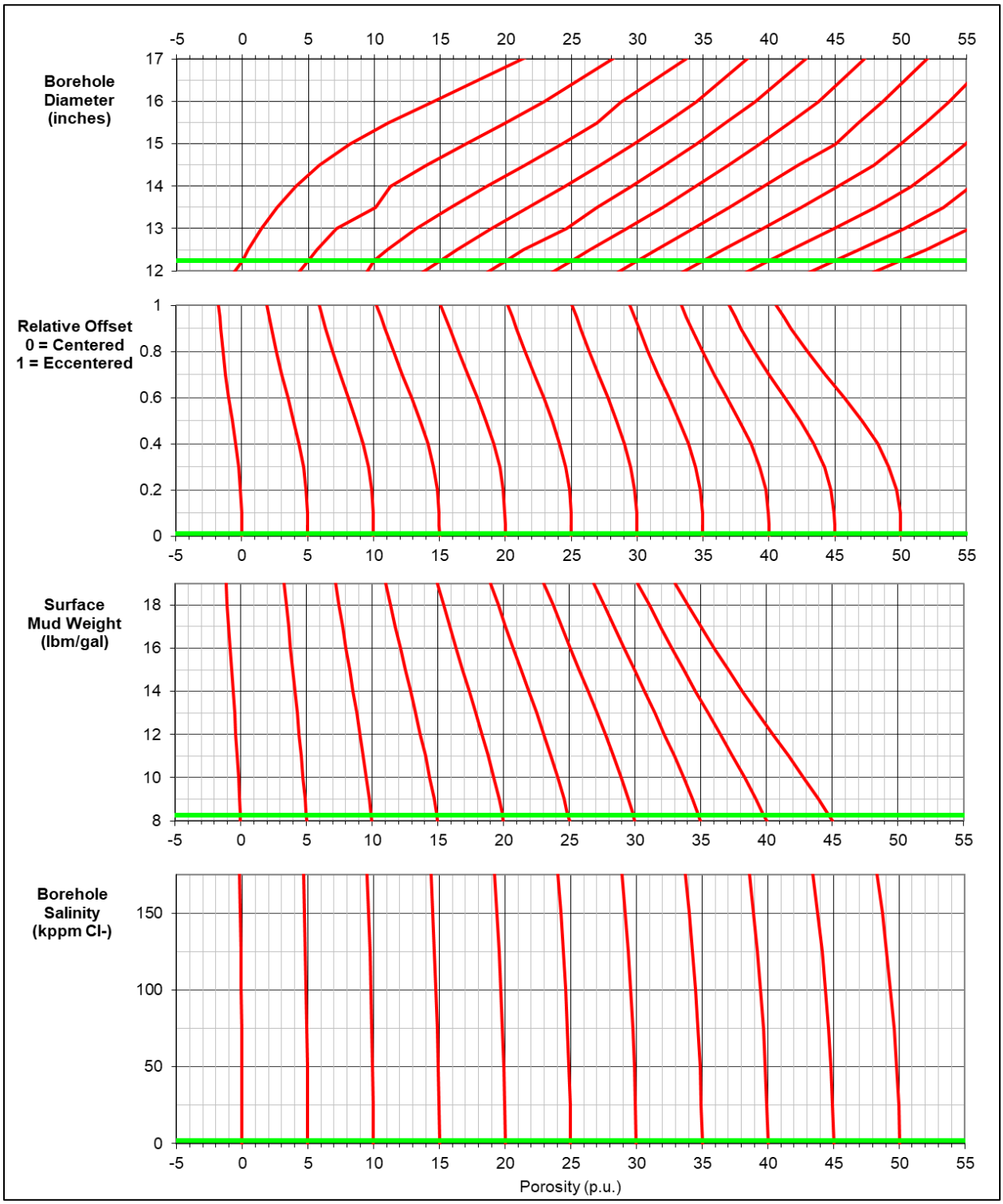


Chart 4-21

The corrections shown for relative offset, surface mud weight and borehole salinity assume a 12.25-inch diameter borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
8-in. CTN™ Tool, Am/Be Source, Borehole Corrections, Non-Rotating

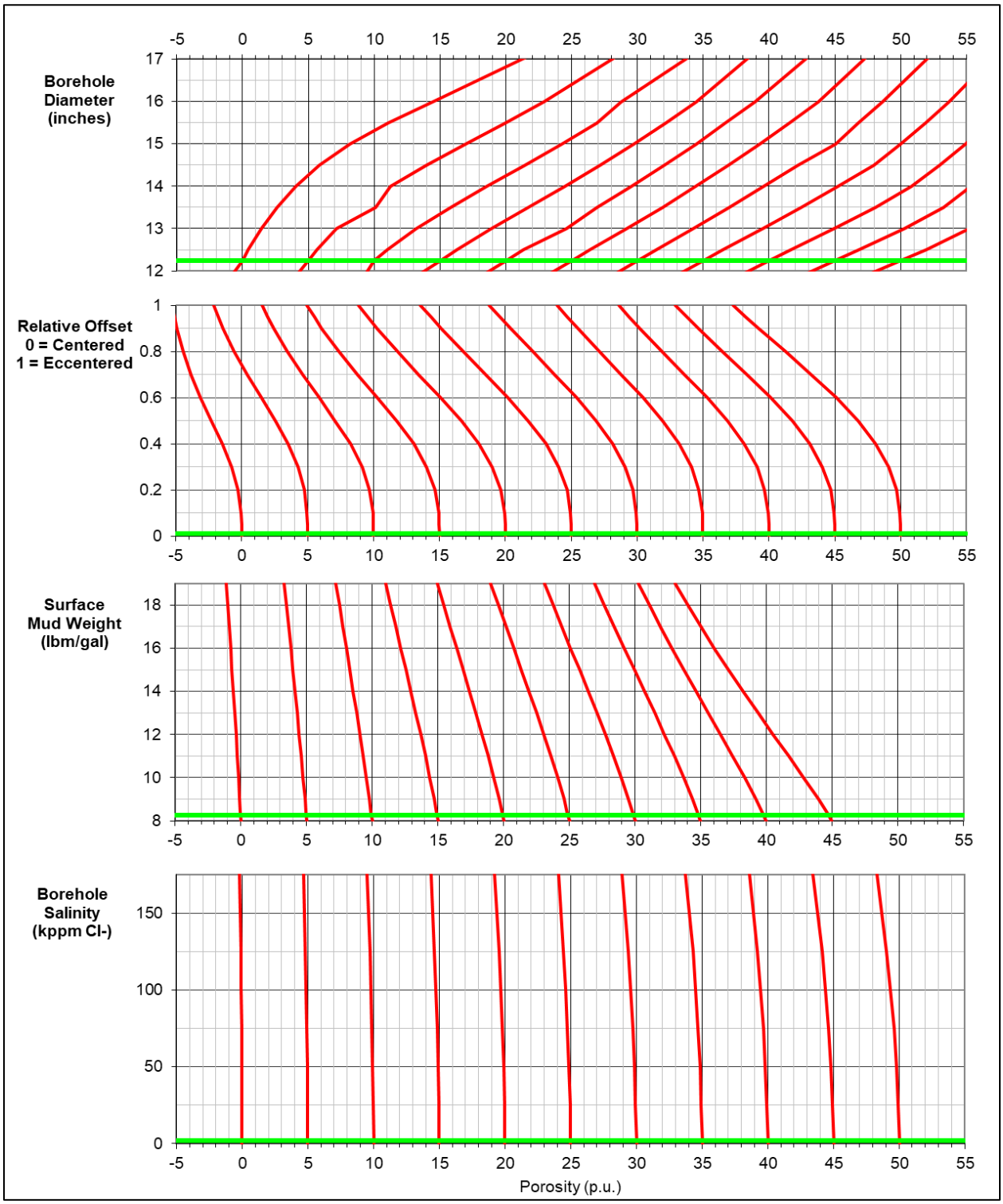


Chart 4-22

The corrections shown for relative offset, surface mud weight and borehole salinity assume a 12.25-inch diameter borehole. The correction for relative offset assumes the tool is oriented with the detectors facing in the same direction as the tool offset from the centre of the borehole. The correction for surface mud weight also assumes a barite-weighted water-based mud, at a pressure of 10,000 psi and a temperature of 200°F.

Neutron Porosity Environmental Corrections
8-in. CTN™ Tool, Am/Be Source, Formation Corrections, Limestone Matrix

No lithology correction required for limestone matrix

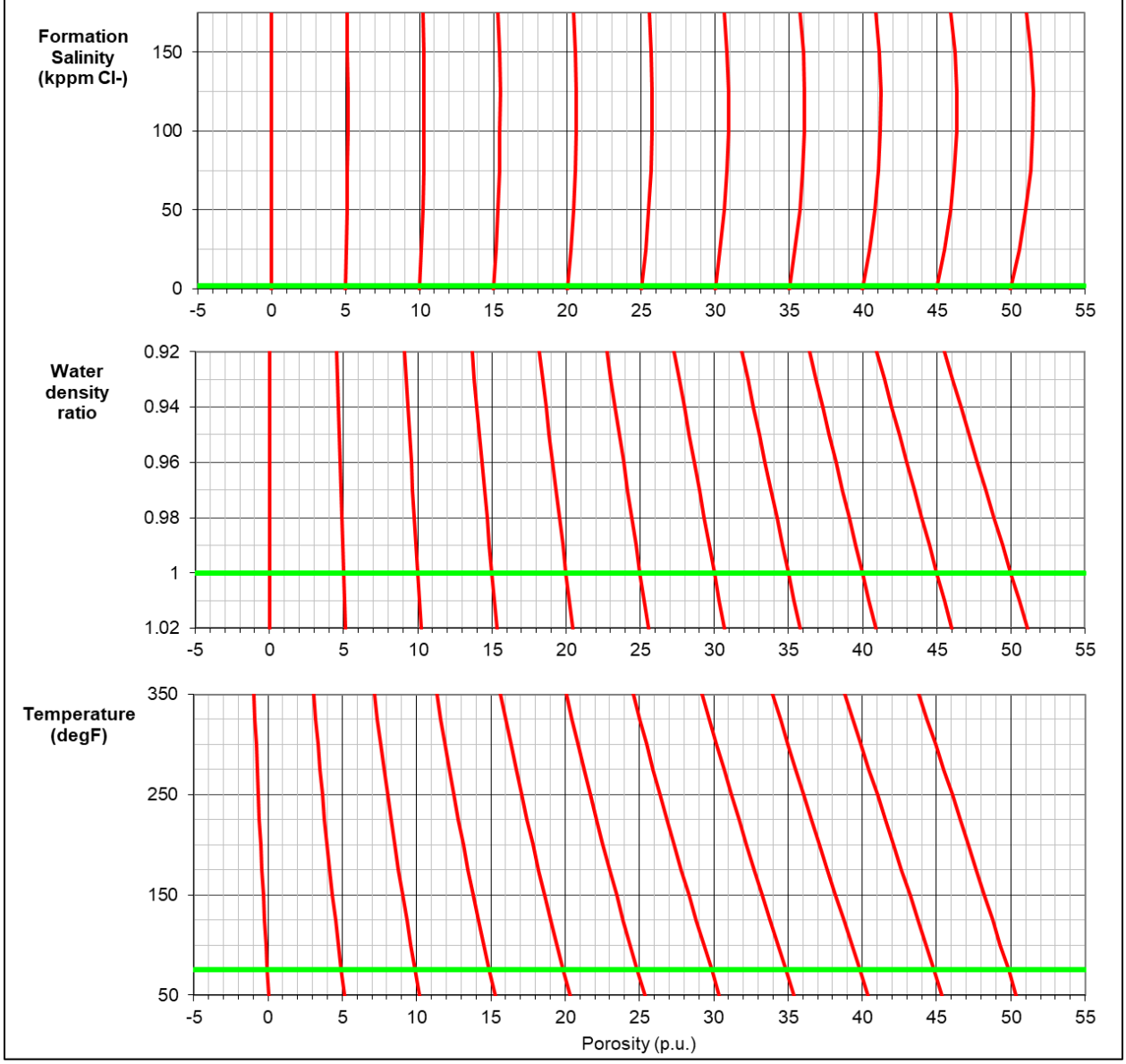


Chart 4-23

Neutron Porosity Environmental Corrections
8-in. CTN™ Tool, Am/Be Source, Formation Corrections, Sandstone Matrix

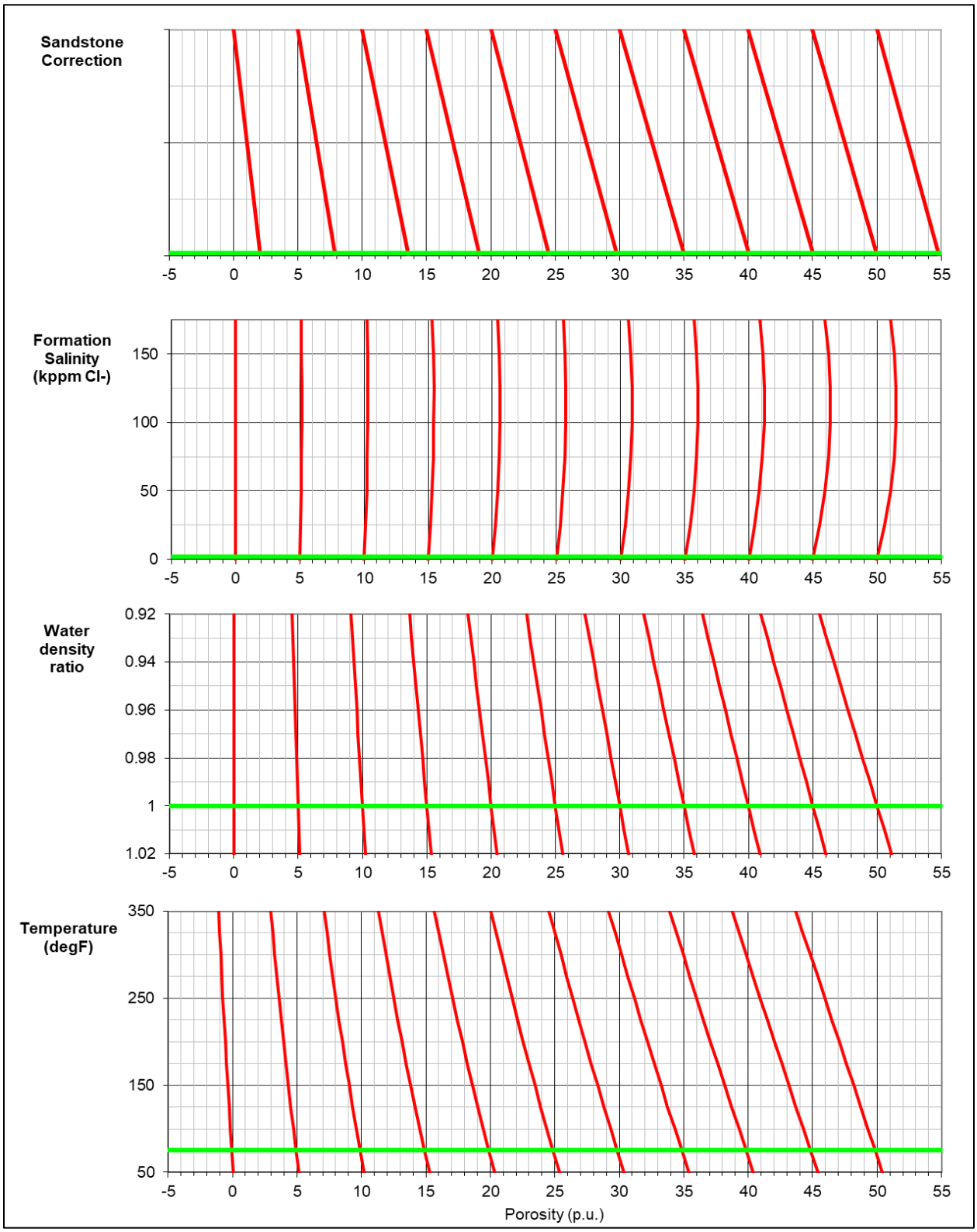


Chart 4-24

Neutron Porosity Environmental Corrections
8-in. CTN™ Tool, Am/Be Source, Formation Corrections, Dolomite Matrix

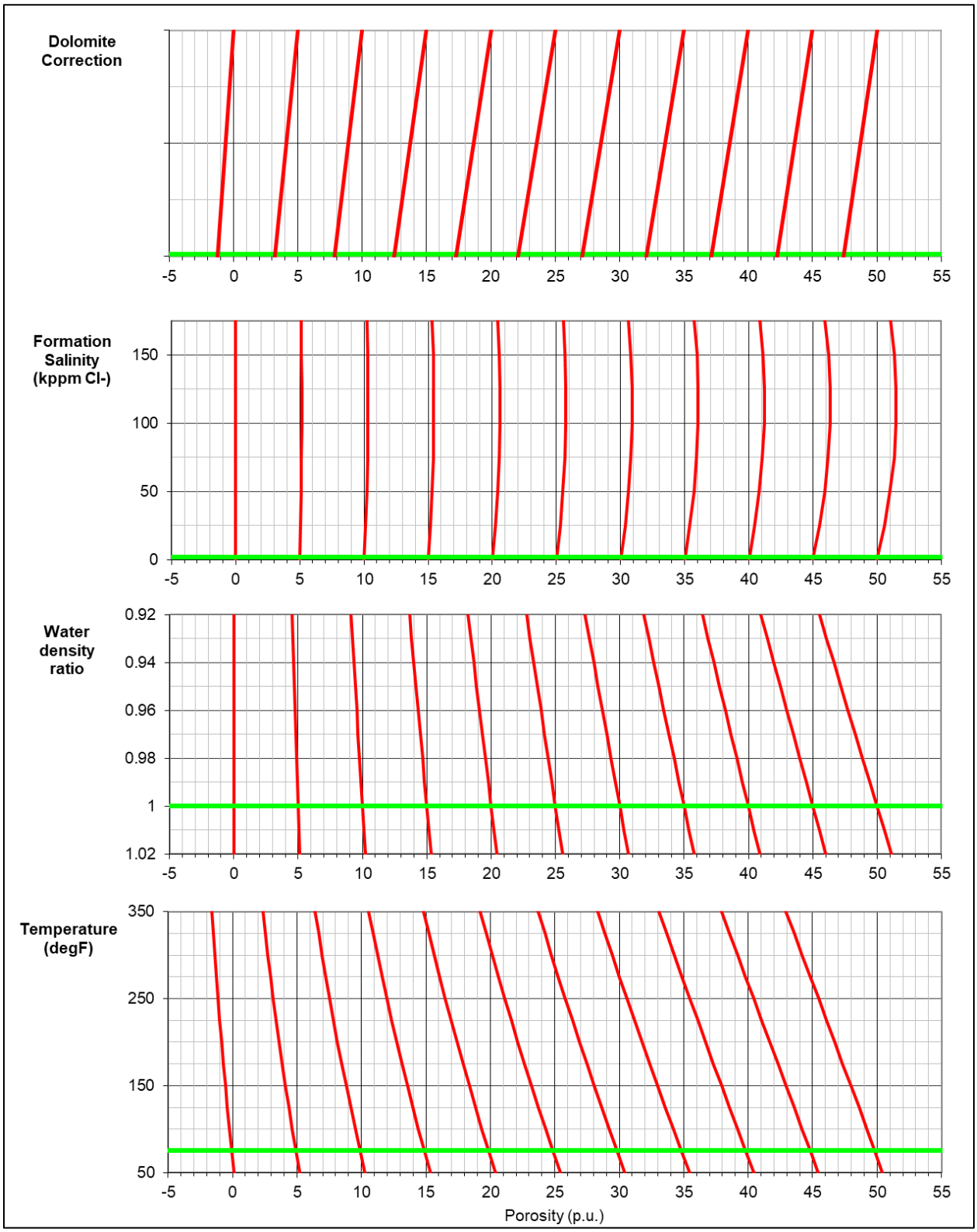


Chart 4-25

Determination of Porosity and Lithology from Bulk Density & Neutron Porosity

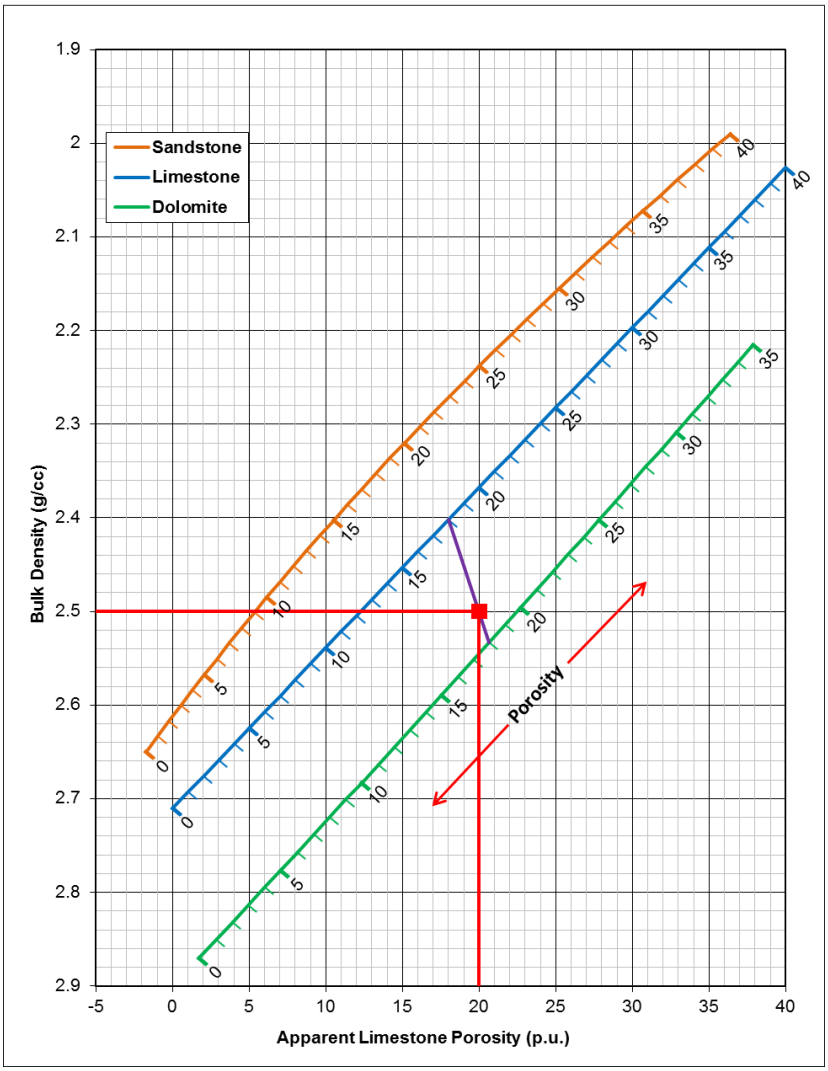
In a formation consisting of a mixture of two lithology types, it is possible to determine the true porosity, and the relative proportions of the two lithologies, using a density-neutron cross-plot. The cross-plot consists of bulk density on the vertical axis and apparent limestone porosity on the horizontal axis. The plot features known lithology lines for each of the three main reservoir lithologies (sandstone, limestone & dolomite). The vertical position of the known lithology lines is a function of the density of the formation fluid, while the horizontal position depends on the response of a particular neutron porosity tool to that type of lithology. In order to use the cross-plot it is therefore important to know the type of neutron porosity tool that was used to acquire the log data, and the density of the fluid in the reservoir. Plots are presented below for each type of Compensated Thermal Neutron (CTN™) tool currently in service, and for a selection of different fluid densities.

Not every situation can be represented in a set of printed charts, such as those presented here. For conditions which are not shown here, please refer to the online eChartBook™, at http://eChartBook.Halliburton.com, where customized charts are available for any combination of parameters.

Example

Determine the true porosity and fractional mix of lithologies, assuming a mixture of limestone and dolomite, where the neutron porosity data was acquired using a 6¾-in. standard-pressure CTN™ tool, run with an Americium/Beryllium (Am/Be) source. The apparent limestone porosity is 20 p.u., the measured formation density is 2.5 g/cc and the formation fluid is assumed to be fresh water (1.0 g/cc).

- Select the appropriate chart for the CTN tool type and fluid density (See figure to the right).
- Plot a point corresponding to 20 p.u. and 2.5 g/cc.
- Construct a line intersecting this point which meets the limestone and dolomite lines at the same porosity (purple line).
- Read the true porosity value from the limestone or dolomite line, being in this case approximately 18 p.u.
- Estimate the relative proportions of limestone and dolomite based on the position of the plotted point between the two lithology lines. If it were mid-way between the two lines, the mixture would be 50% of each. In this example the point is closer to the dolomite line, indicating approximately 85% dolomite and 15% limestone.



Porosity & Lithology Determination from Bulk Density & Neutron Porosity
4¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.00 g/cc

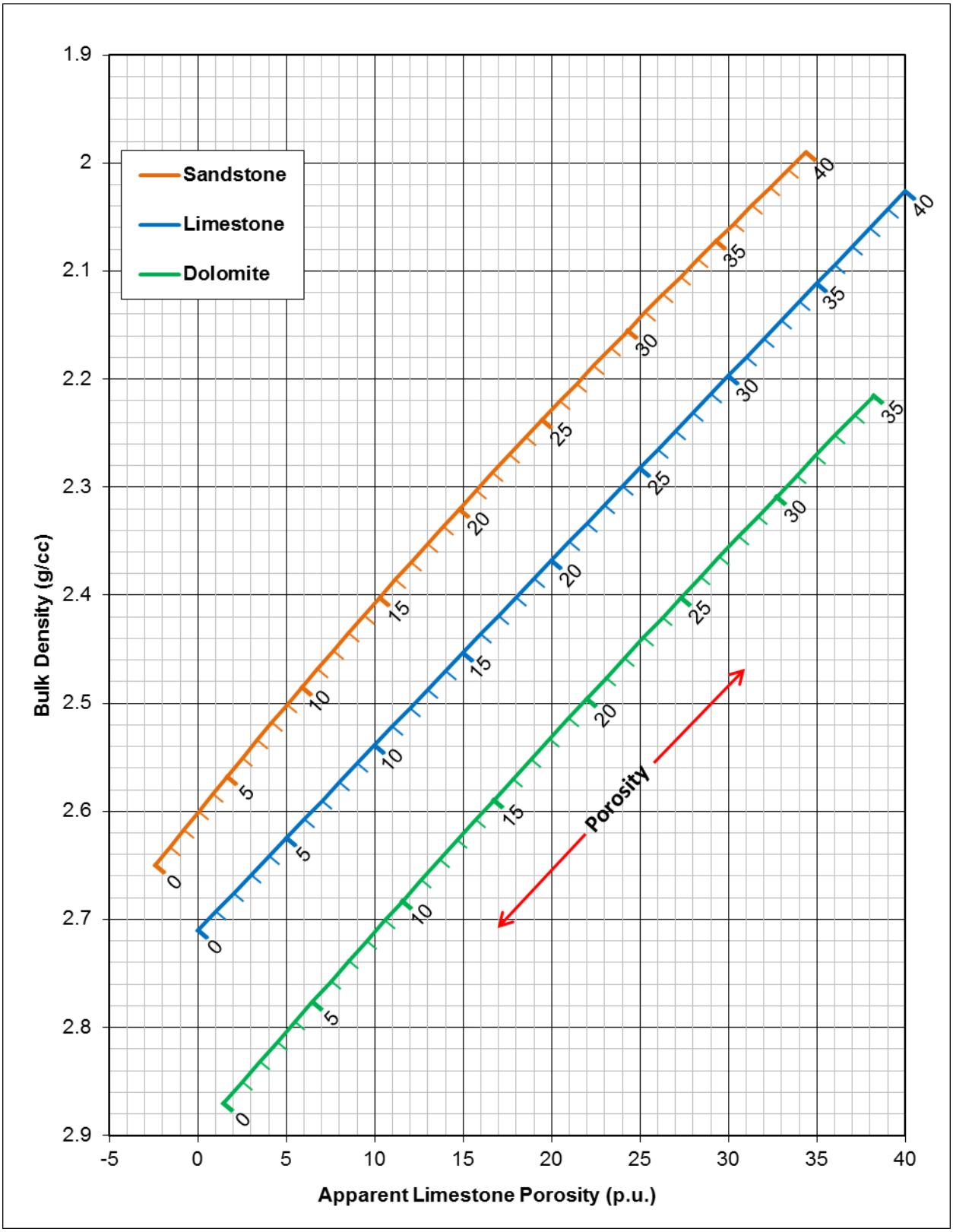


Chart 4-26

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
4¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.10 g/cc

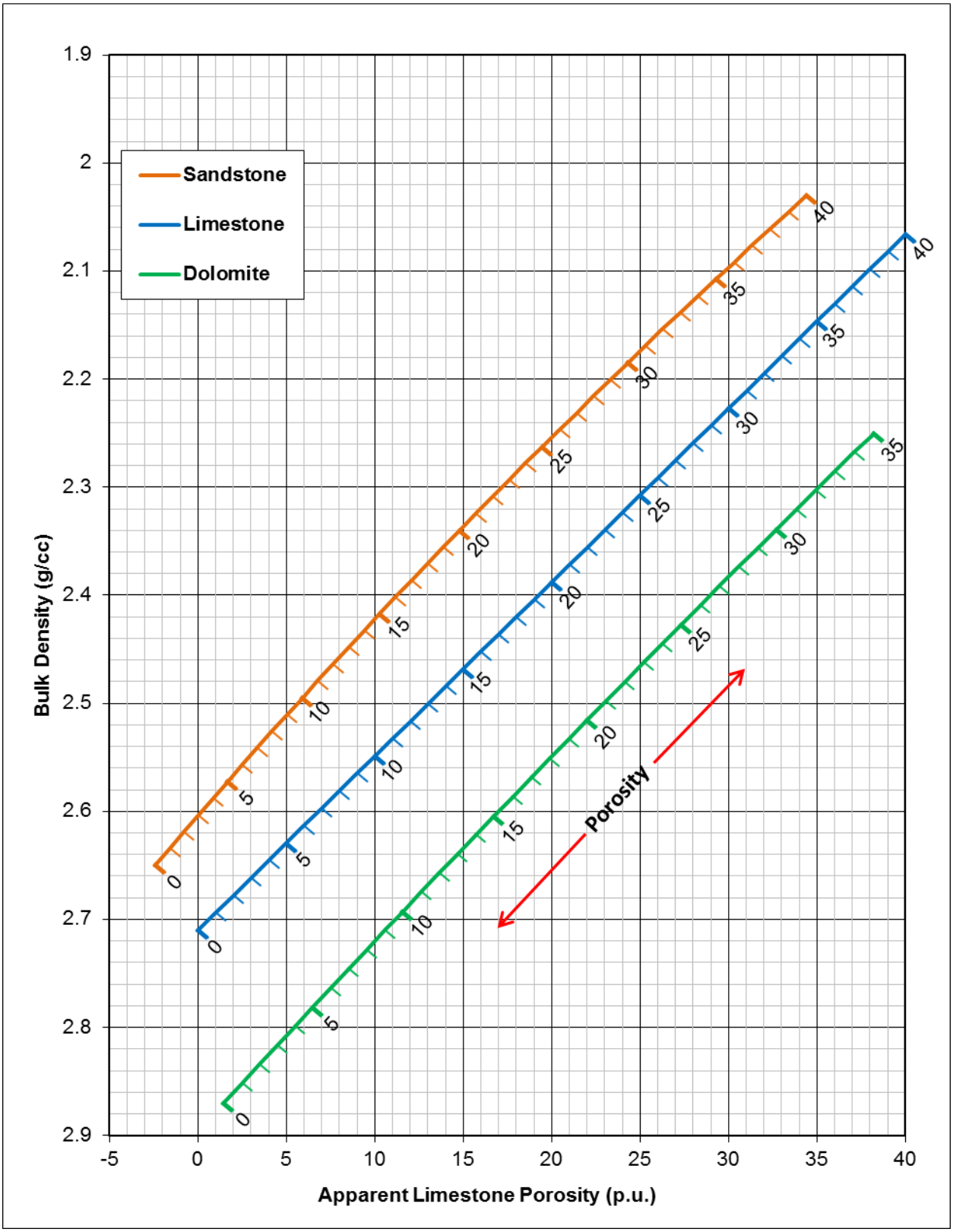


Chart 4-27

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
4¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.19 g/cc

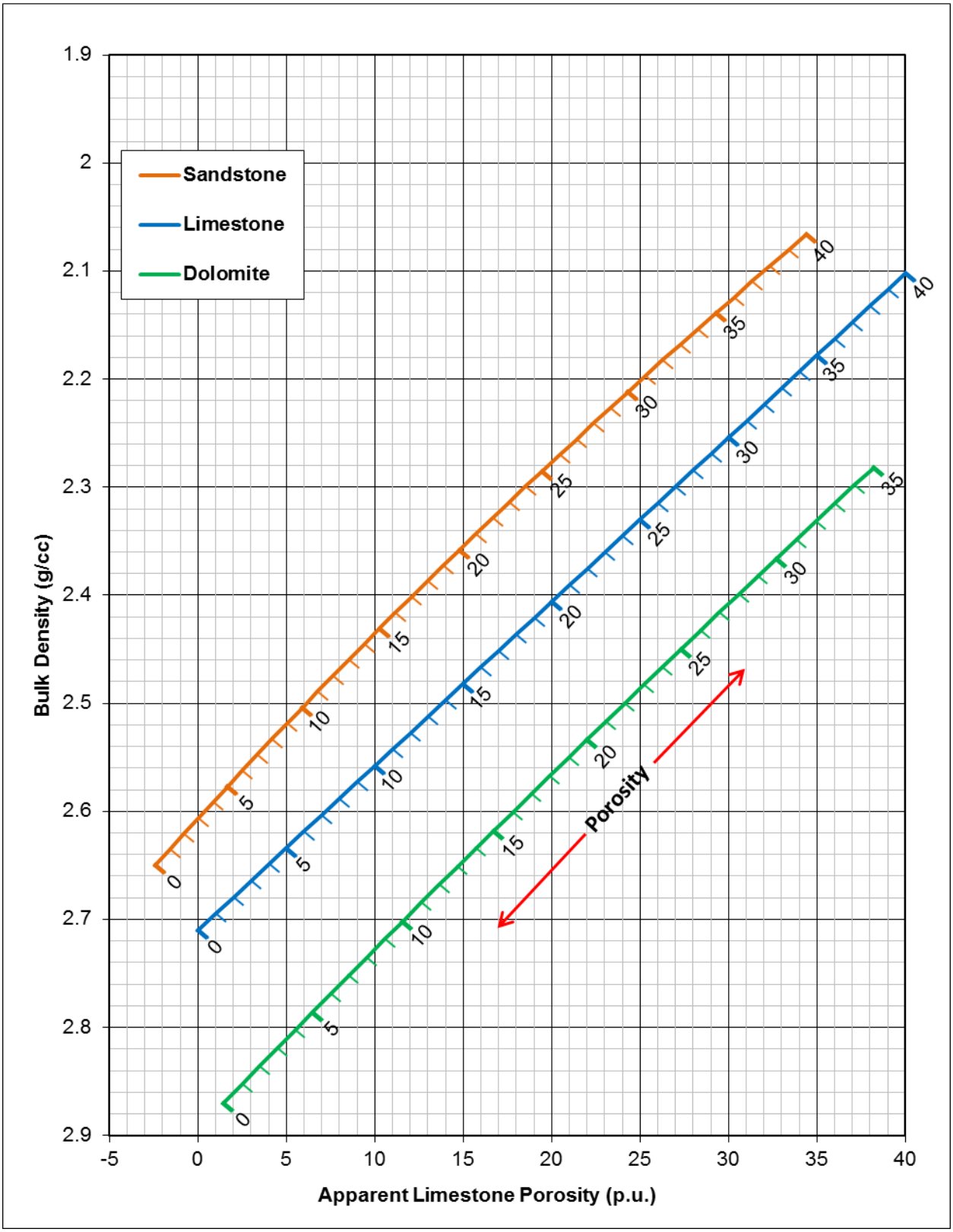


Chart 4-28

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.00 g/cc

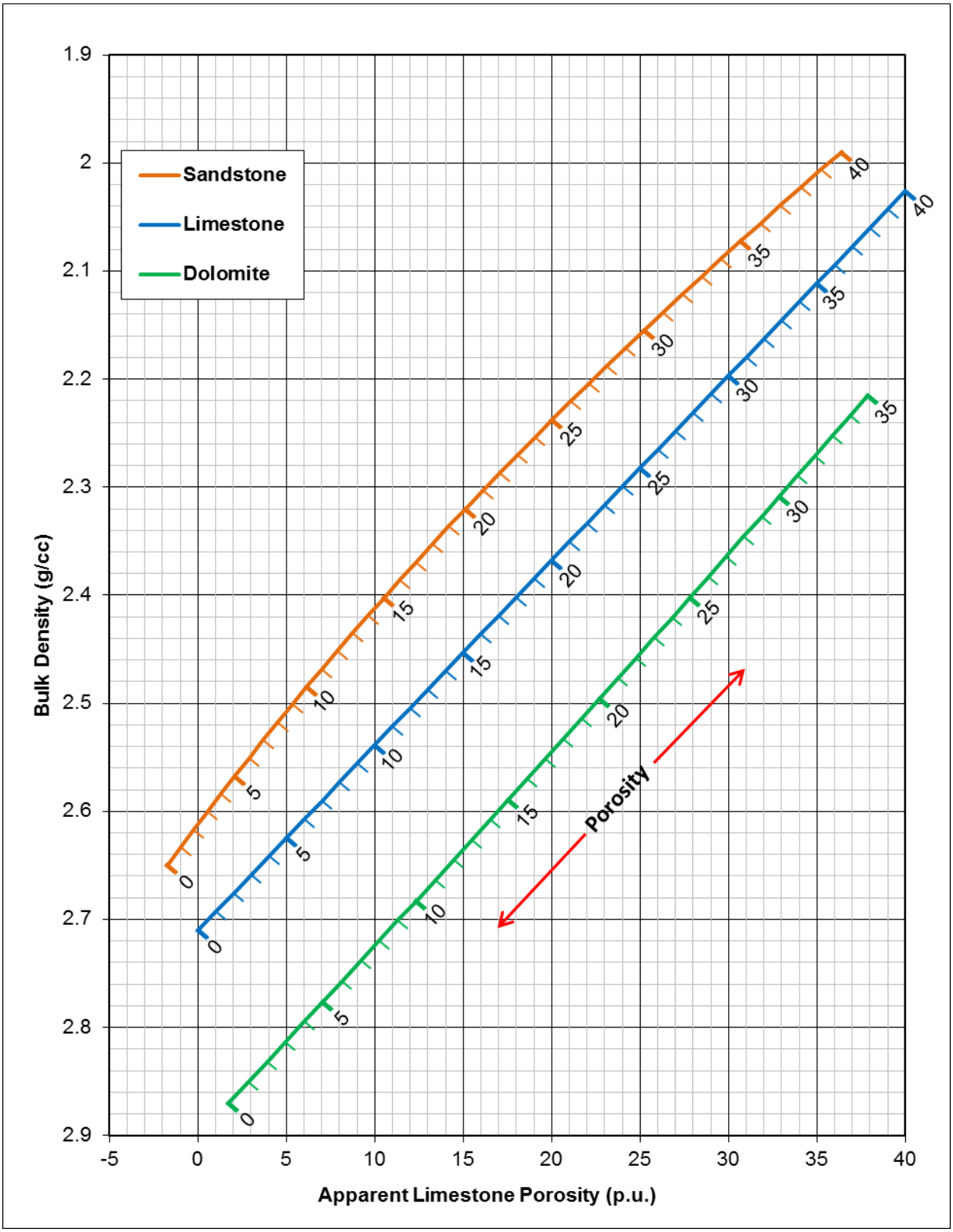


Chart 4-29

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.10 g/cc

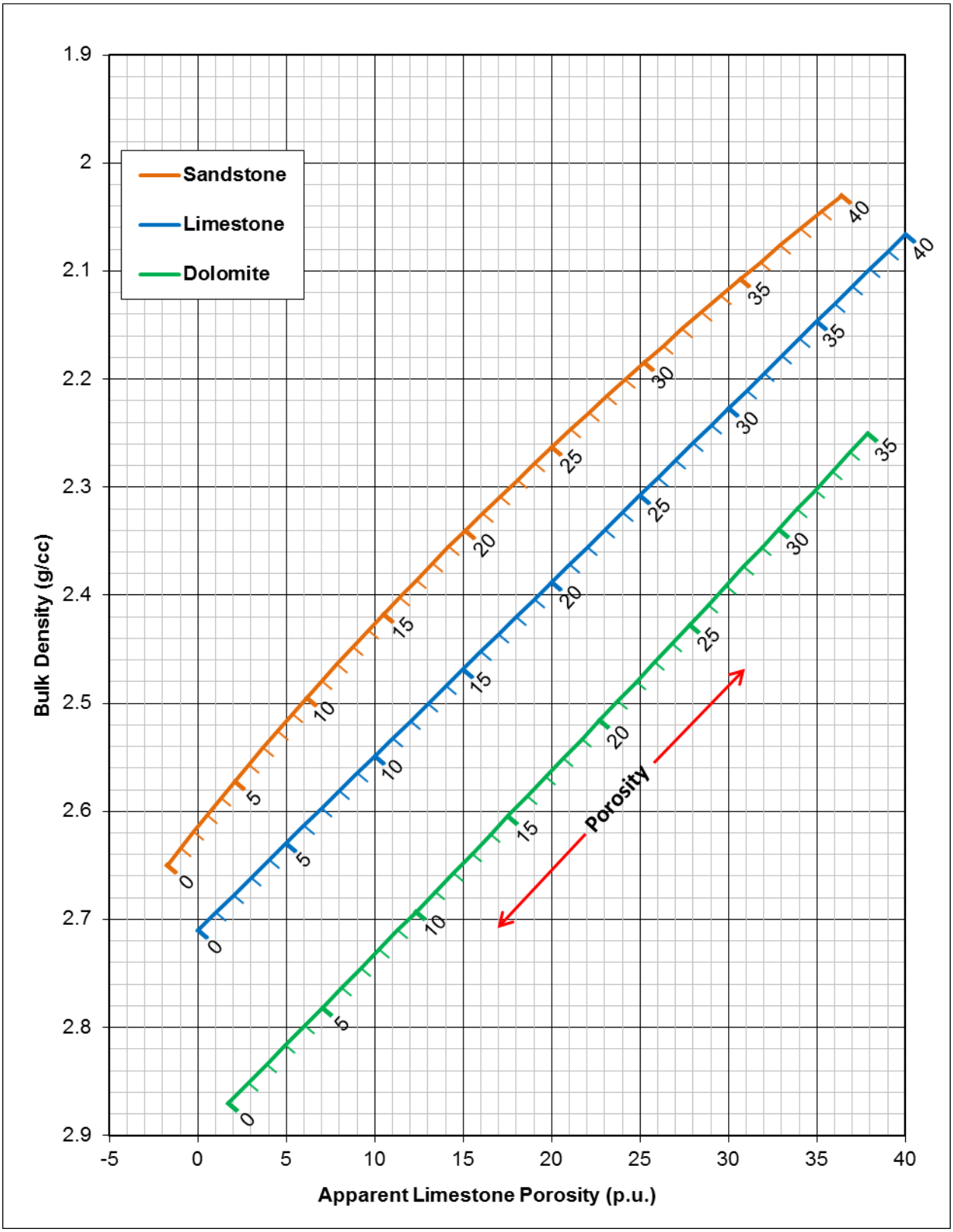


Chart 4-30

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.19 g/cc

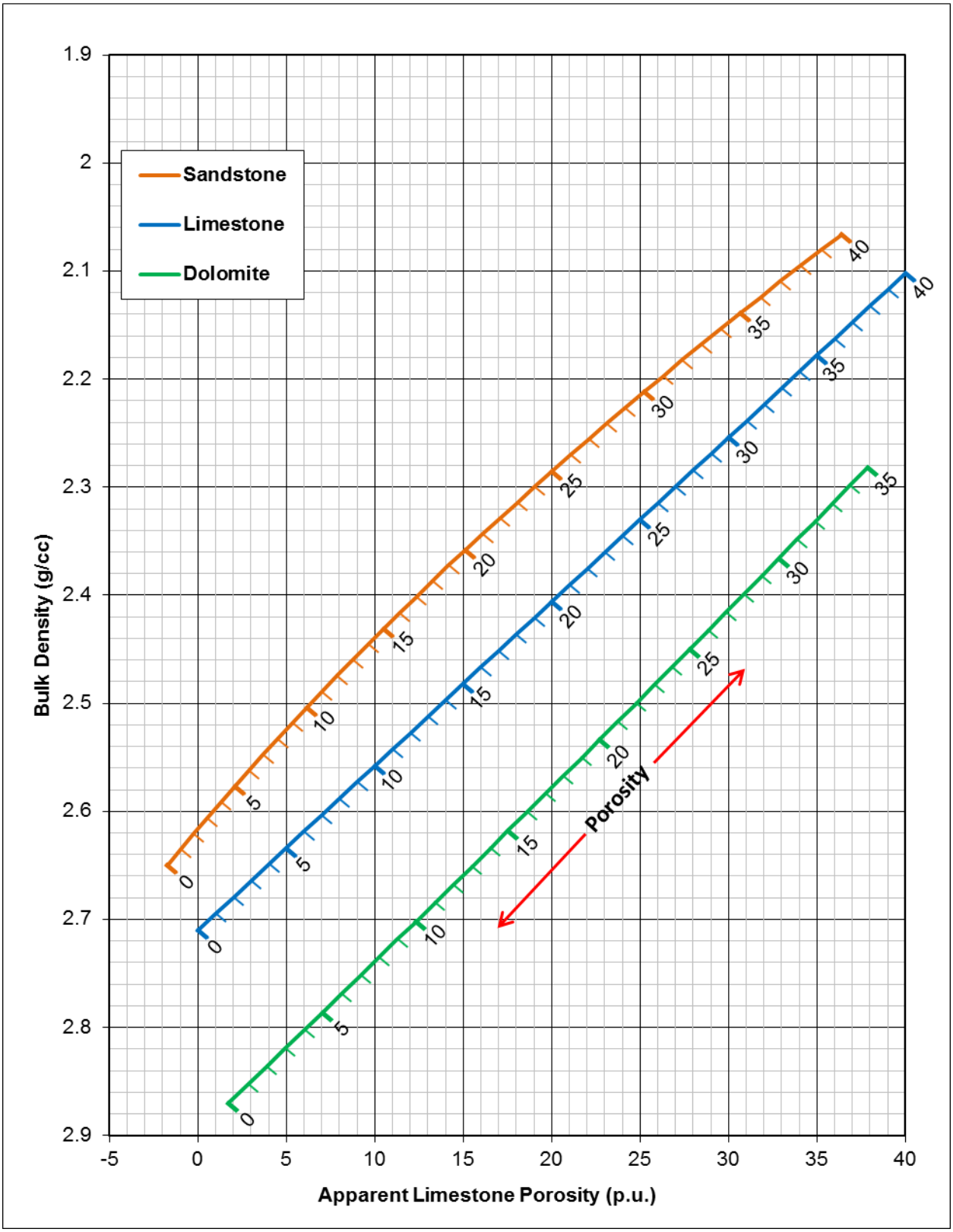


Chart 4-31

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. CTN™ Tool, Cf Source, Fluid Density = 1.00 g/cc

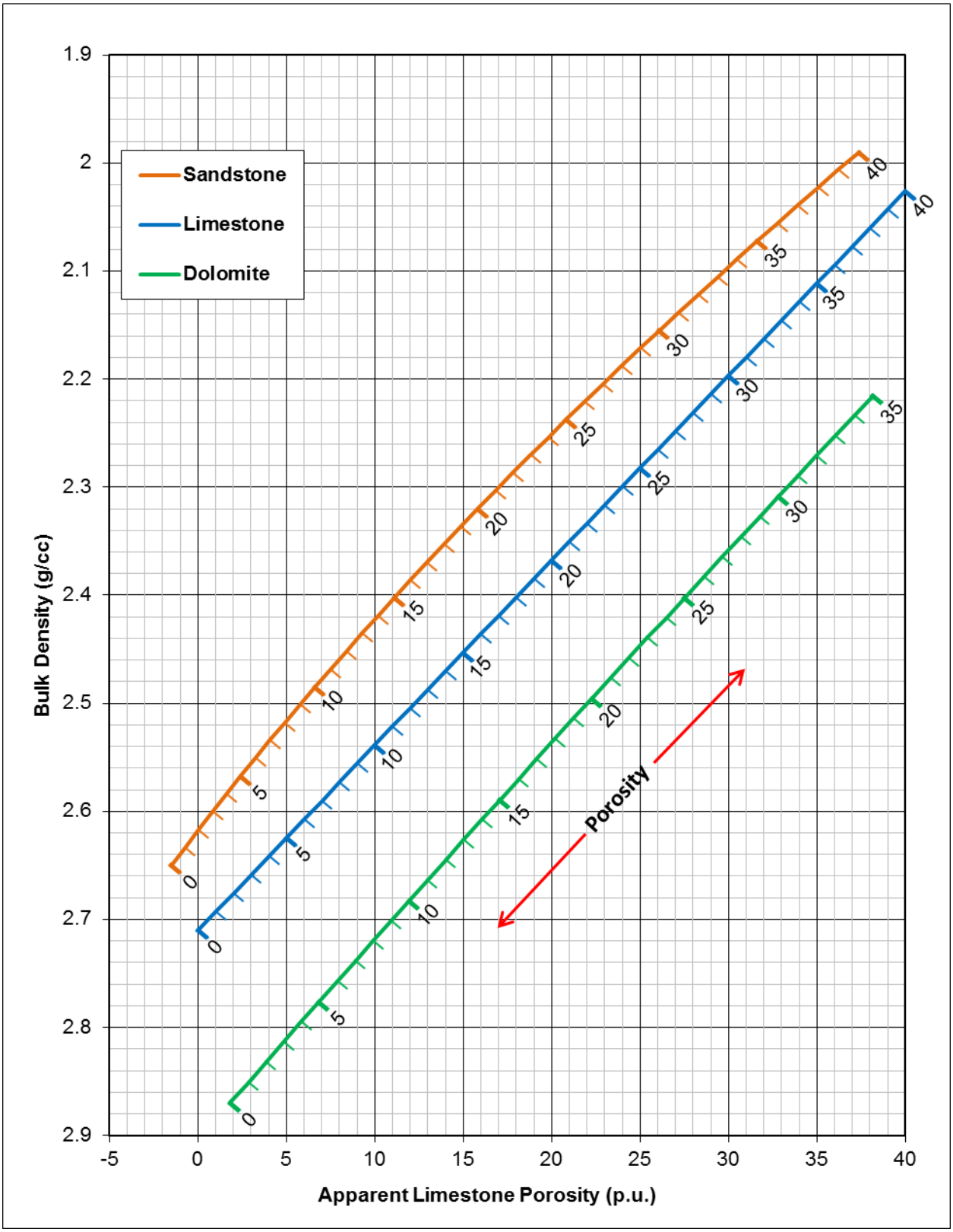


Chart 4-32

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. CTN™ Tool, Cf Source, Fluid Density = 1.10 g/cc

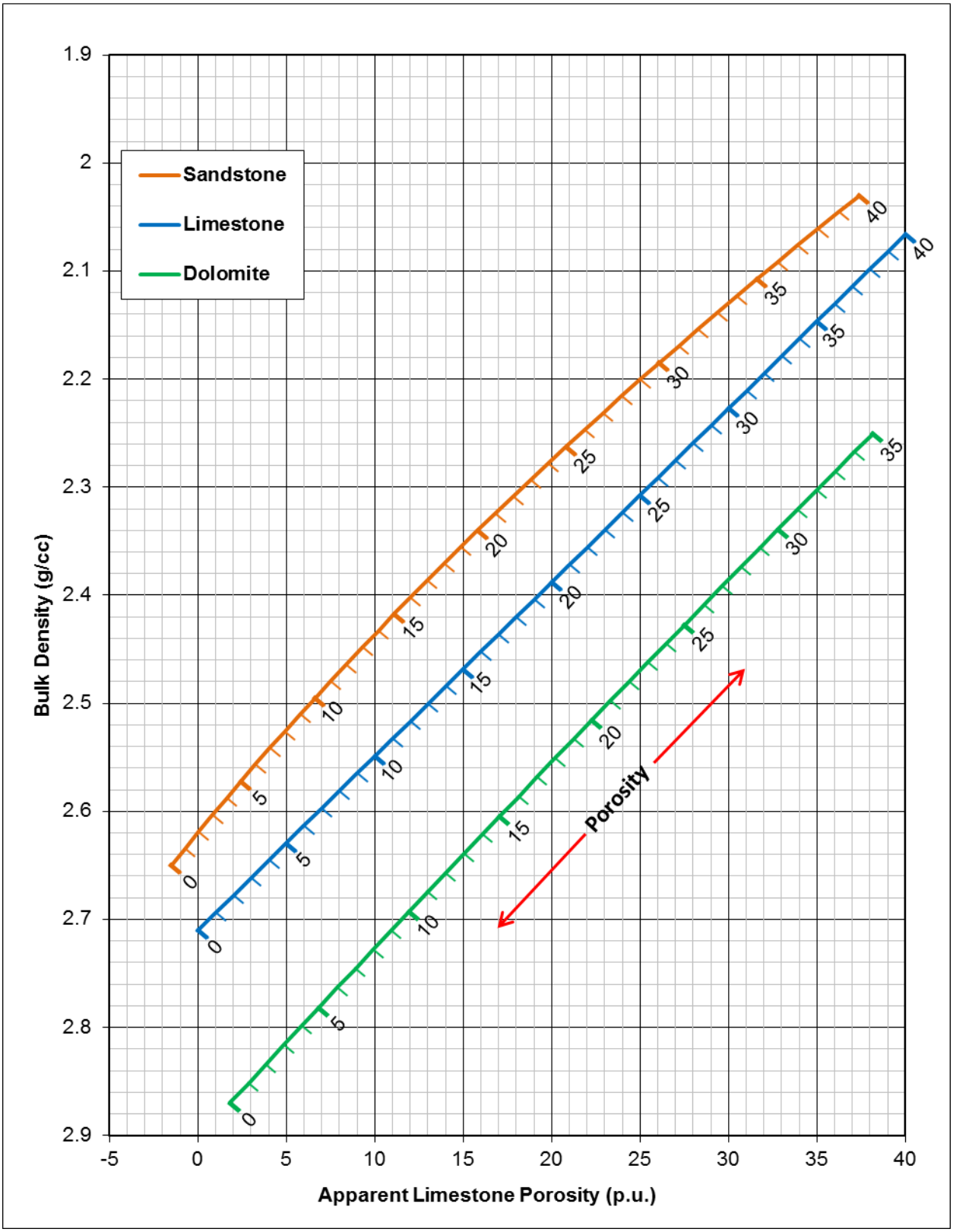


Chart 4-33

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. CTN™ Tool, Cf Source, Fluid Density = 1.19 g/cc

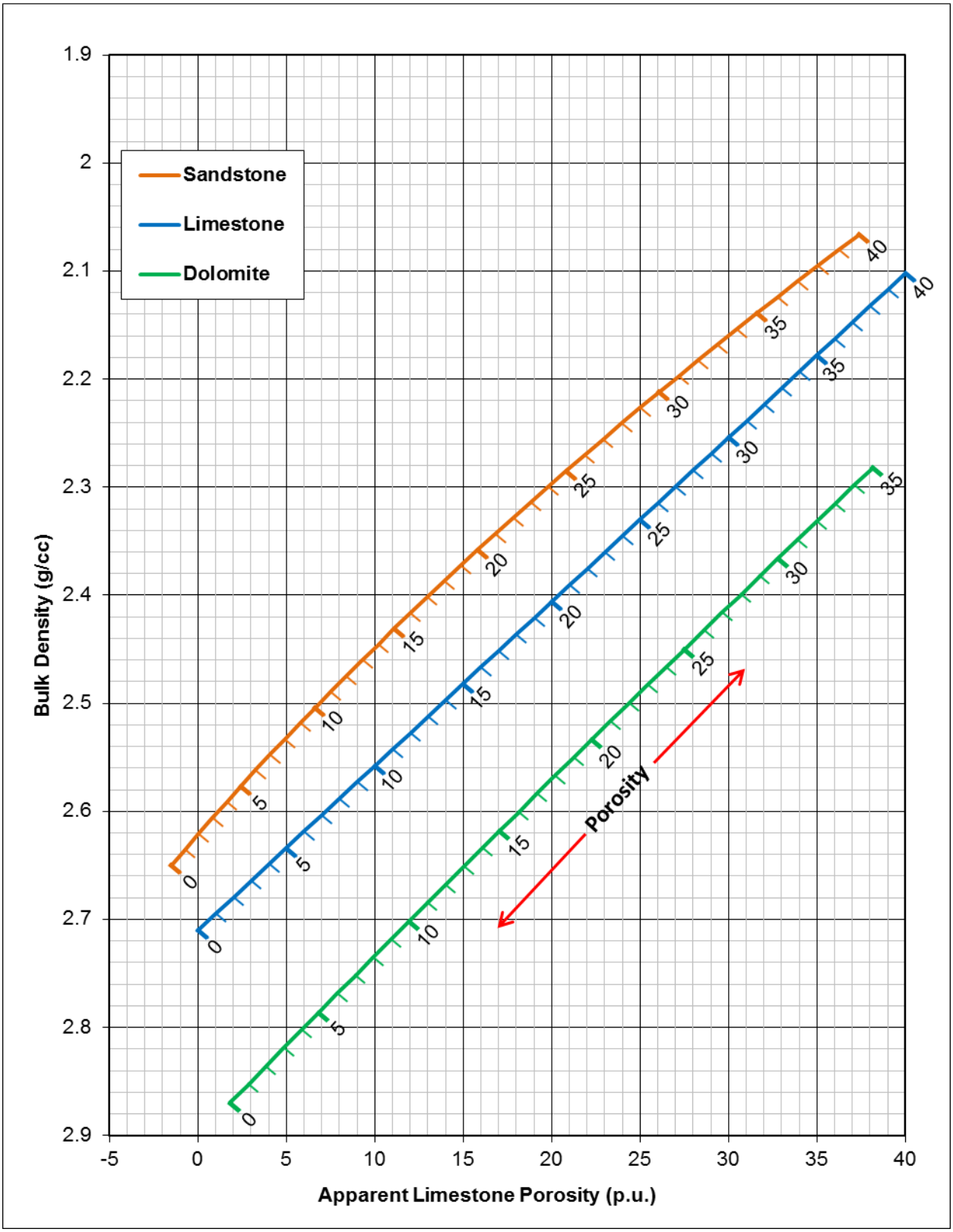


Chart 4-34

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. XHP CTN™ Tool, Am/Be Source, Fluid Density = 1.00 g/cc

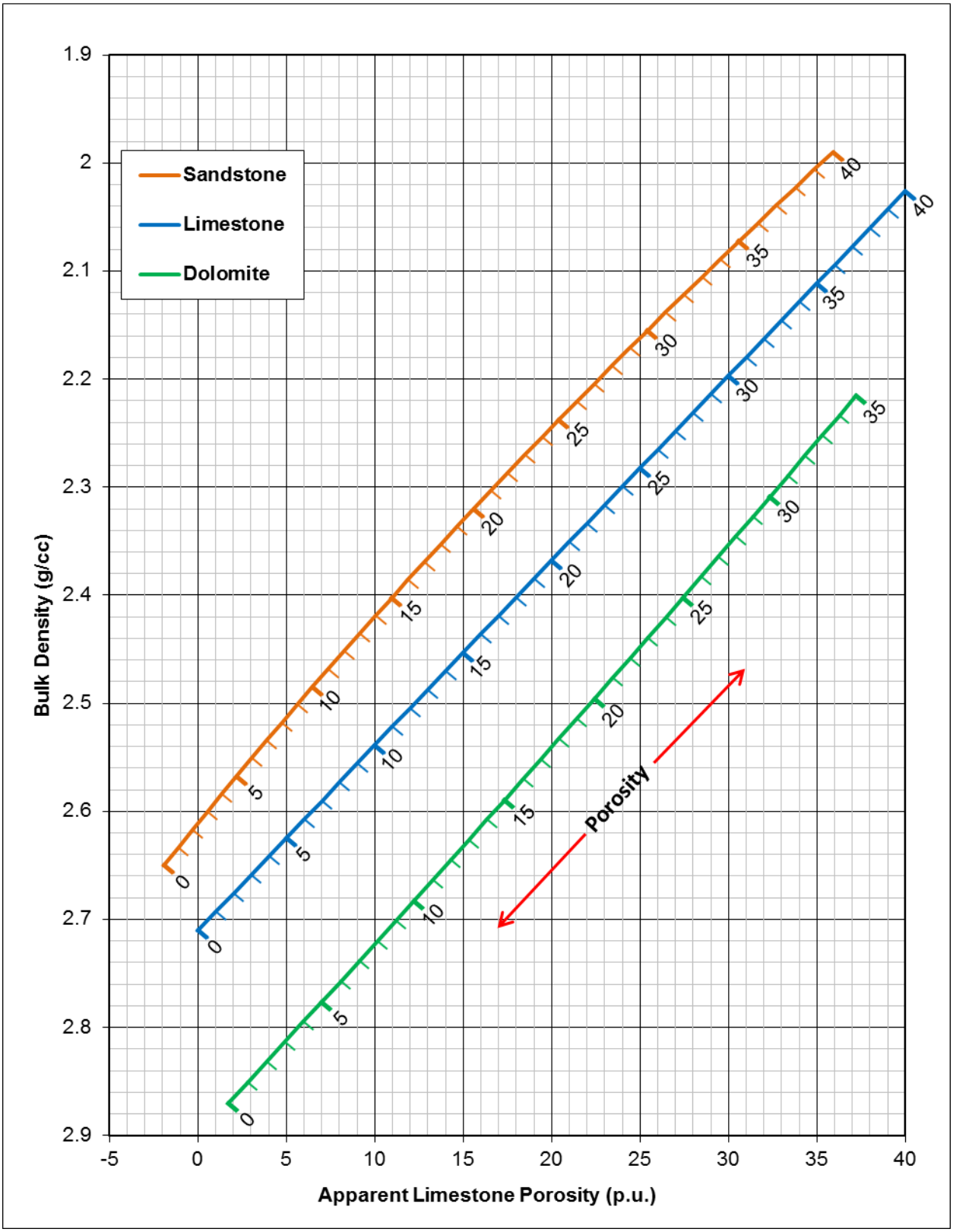


Chart 4-35

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. XHP CTN™ Tool, Am/Be Source, Fluid Density = 1.10 g/cc

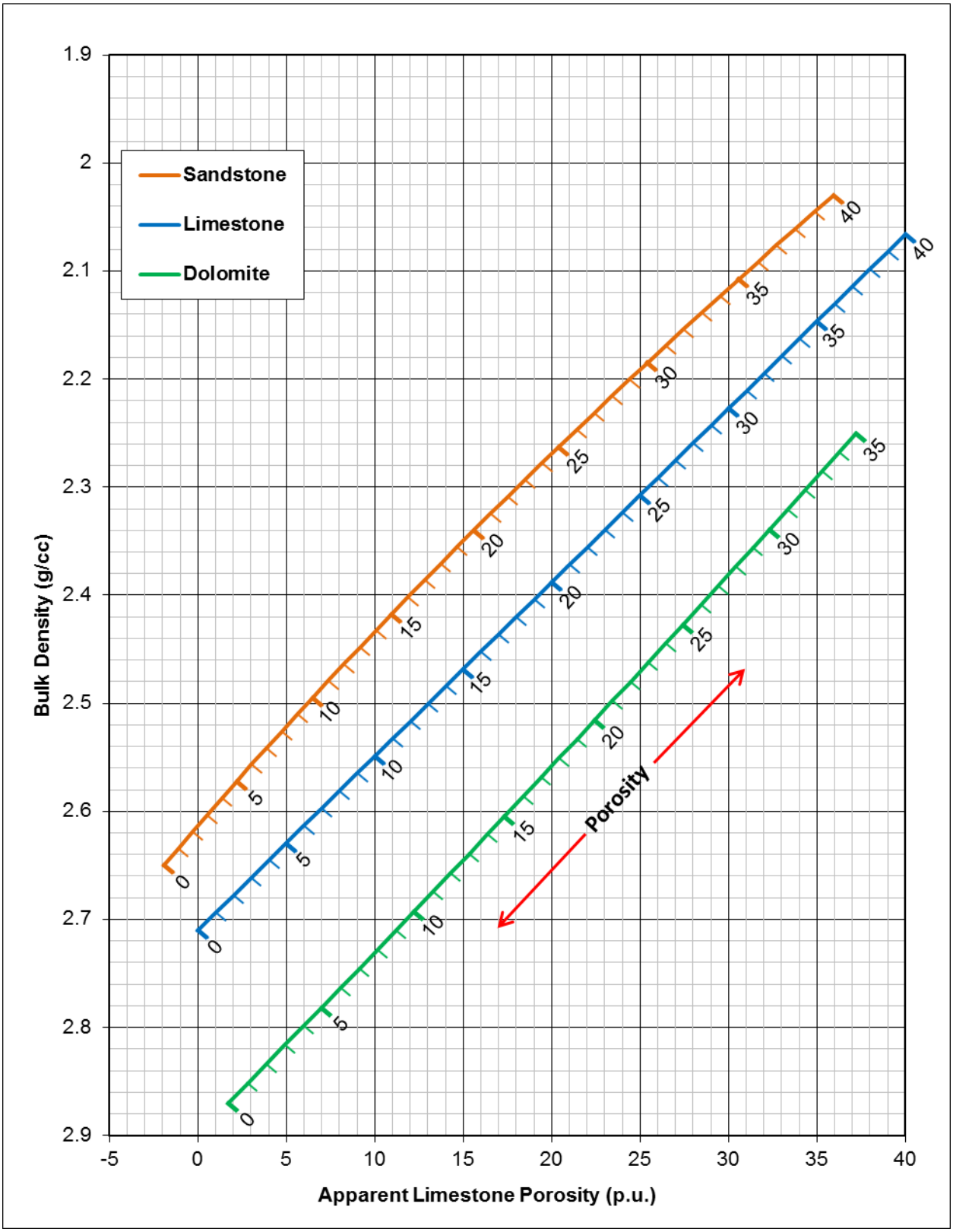


Chart 4-36

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
6¾-in. XHP CTN™ Tool, Am/Be Source, Fluid Density = 1.19 g/cc

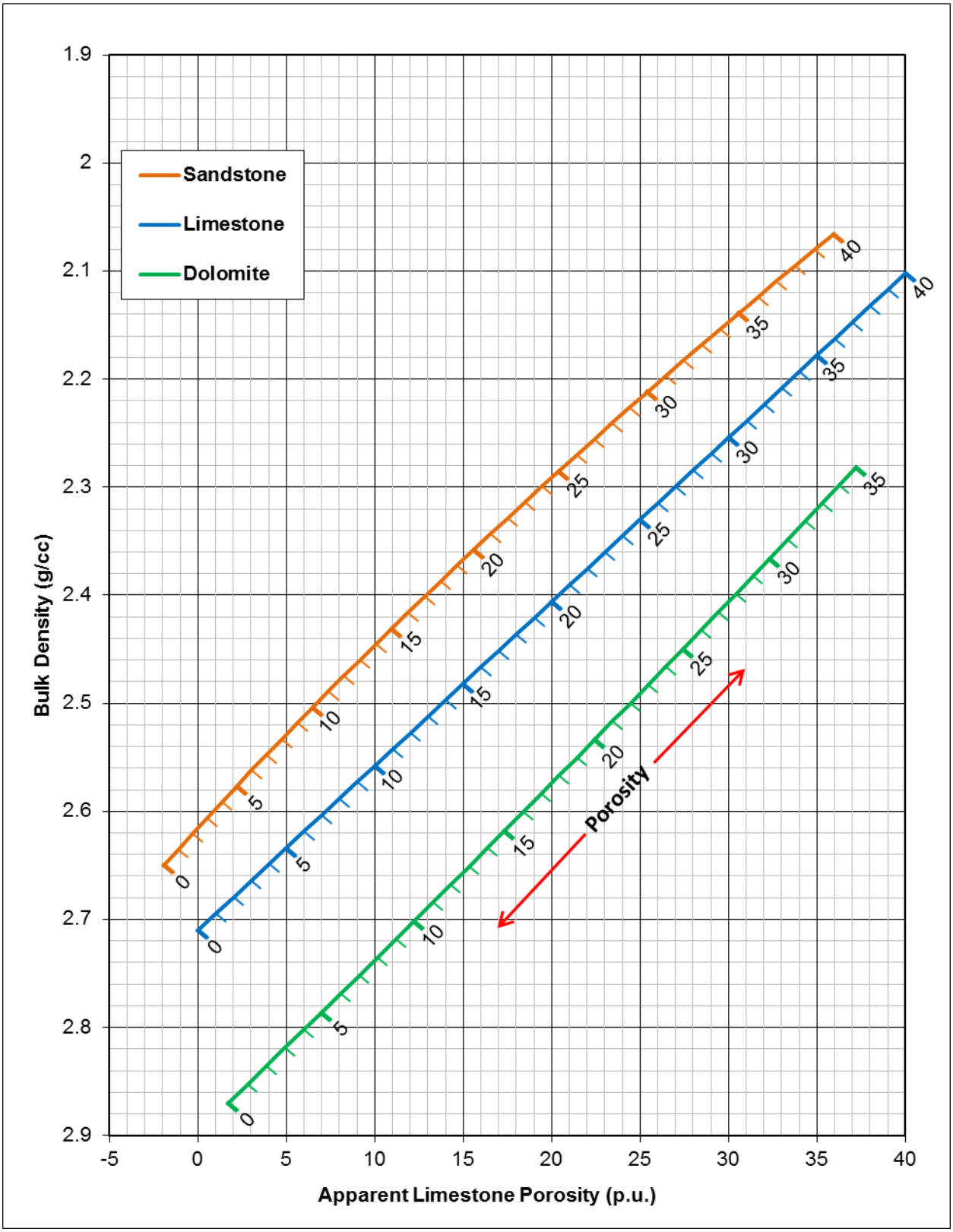


Chart 4-37

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
8-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.00 g/cc

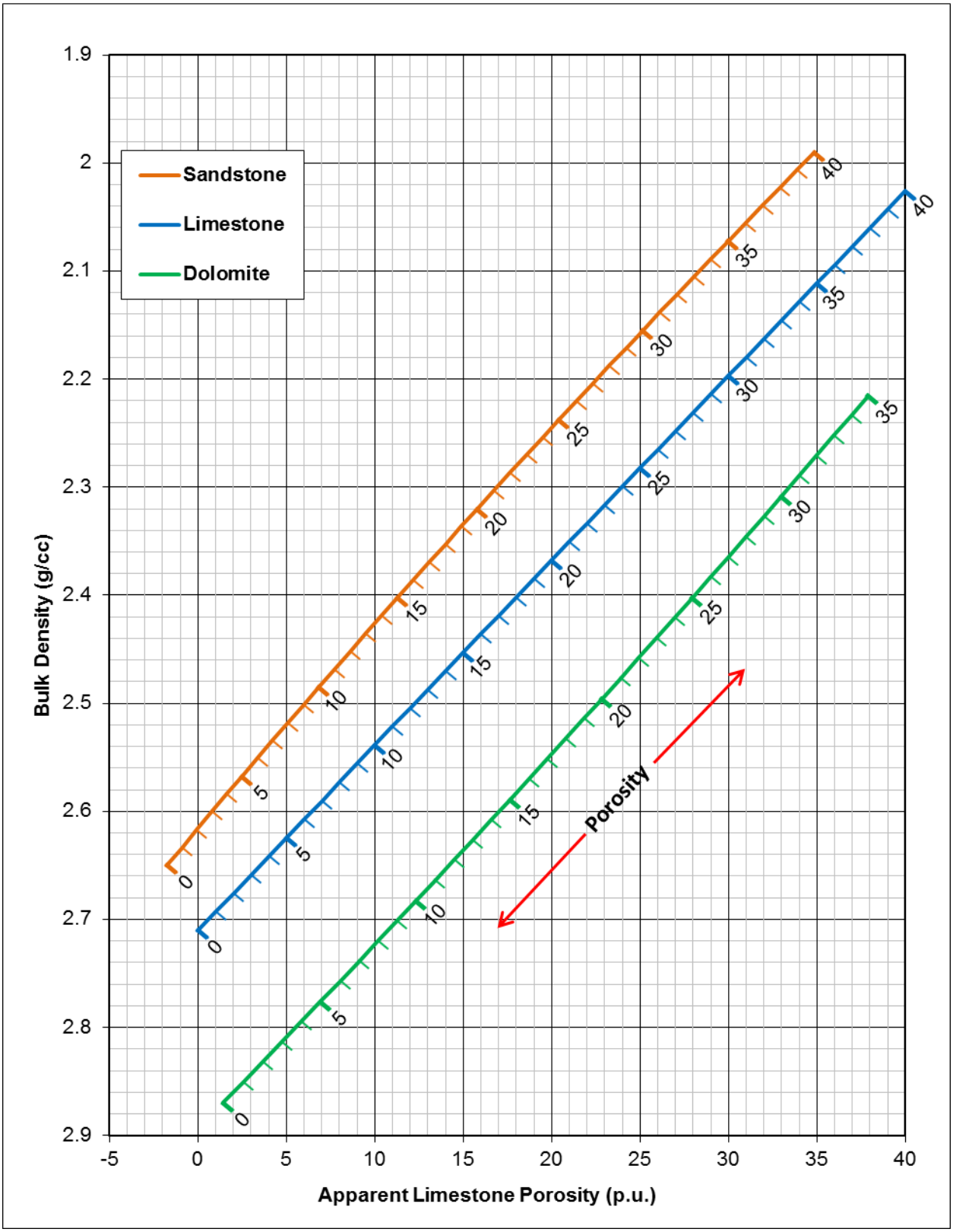


Chart 4-38

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
8-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.10 g/cc

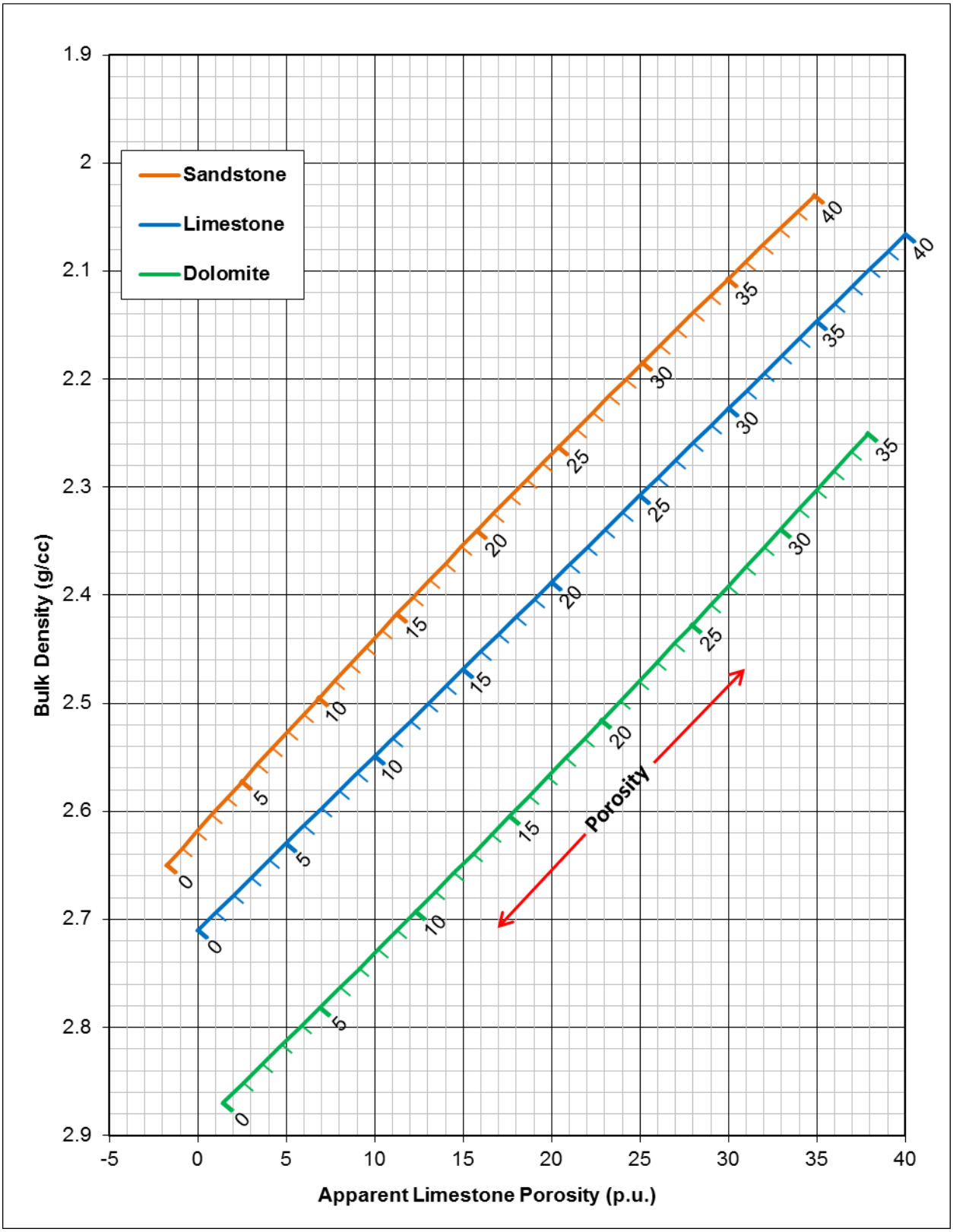


Chart 4-39

Porosity & Lithology Determination from Bulk Density & Neutron Porosity
8-in. CTN™ Tool, Am/Be Source, Fluid Density = 1.19 g/cc

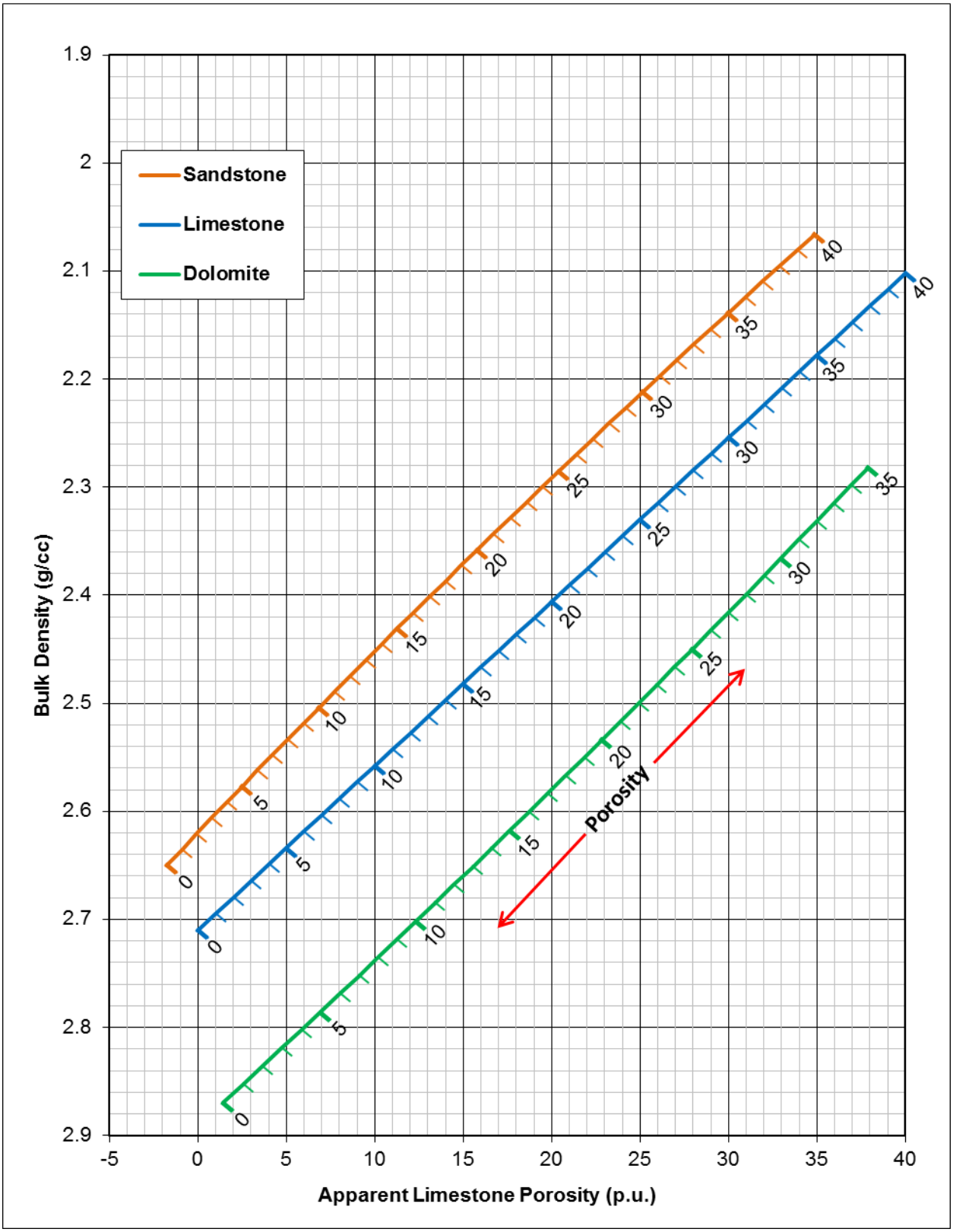


Chart 4-40

Determination of Porosity and Lithology from Bulk Density and Photoelectric Factor

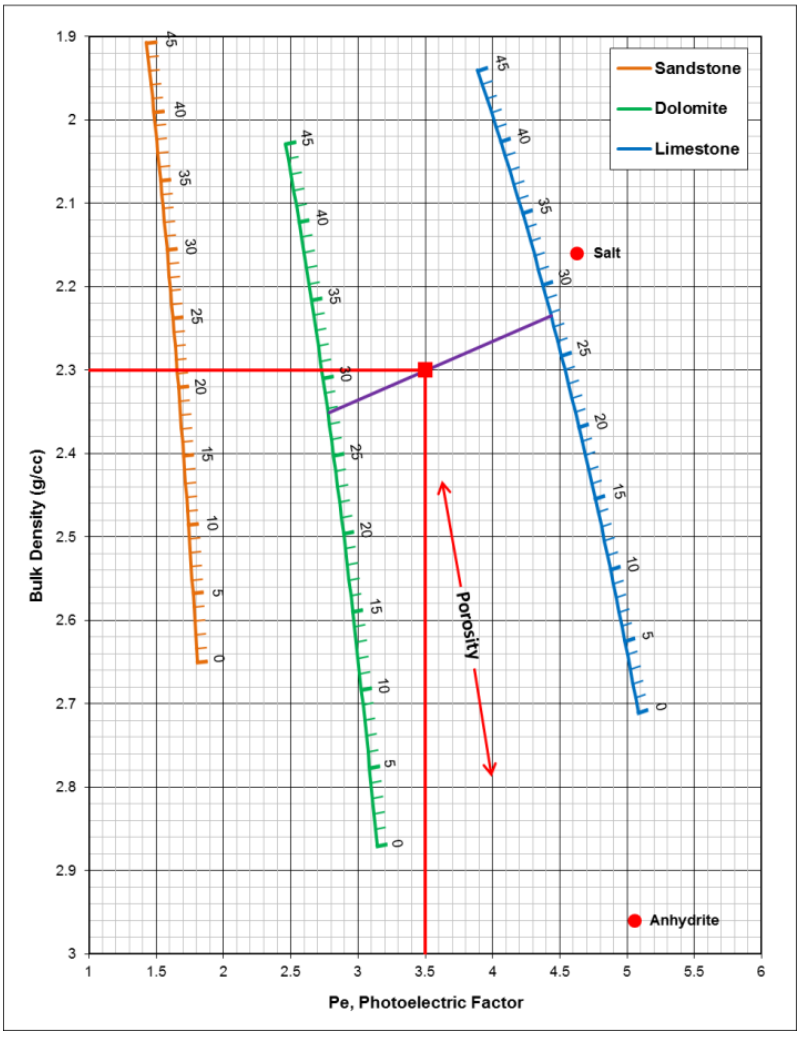
In a formation consisting of a mixture of two lithology types, it is possible to determine the true porosity, and the relative proportions of the two lithologies, using a cross-plot of bulk density and photoelectric factor (Pe). The cross-plot consists of bulk density on the vertical axis and Pe on the horizontal axis. The plot features known lithology lines for each of the three main reservoir lithologies (sandstone, limestone & dolomite). Both the vertical and horizontal positions of the known lithology lines are a function of the density of the formation fluid. The plot is independent of the type of tool used to acquire the data. In order to use the cross-plot it is therefore necessary to know only the density of the fluid in the reservoir. Plots are presented below for a selection of different fluid densities.

Not every situation can be represented in a set of printed charts, such as those presented here. For conditions which are not shown here, please refer to the online eChartBook™, at http://eChartBook.Halliburton.com, where customized charts are available for any combination of parameters.

Example

Determine the true porosity and fractional mix of lithologies, assuming a mixture of limestone and dolomite, where the measured bulk density is 2.3 g/cc and the measured Pe is 3.5. The formation fluid is assumed to be fresh water (1.0 g/cc).

- Select the appropriate chart for the given fluid density (See figure to the right).
- Plot a point corresponding to a density of 2.3 g/cc and a Pe of 3.5.
- Construct a line intersecting this point which meets the limestone and dolomite lines at the same porosity (purple line).
- Read the true porosity value from the limestone or dolomite line, being in this case approximately 28 p.u.
- Estimate the relative proportions of limestone and dolomite based on the position of the plotted point between the two lithology lines. If it were mid-way between the two lines, the mixture would be 50% of each. In this example the point is slightly closer to the dolomite line, indicating approximately 55% dolomite and 45% limestone.



Porosity & Lithology Determination from Density & Photoelectric Factor
Fluid Density = 1.00 g/cc

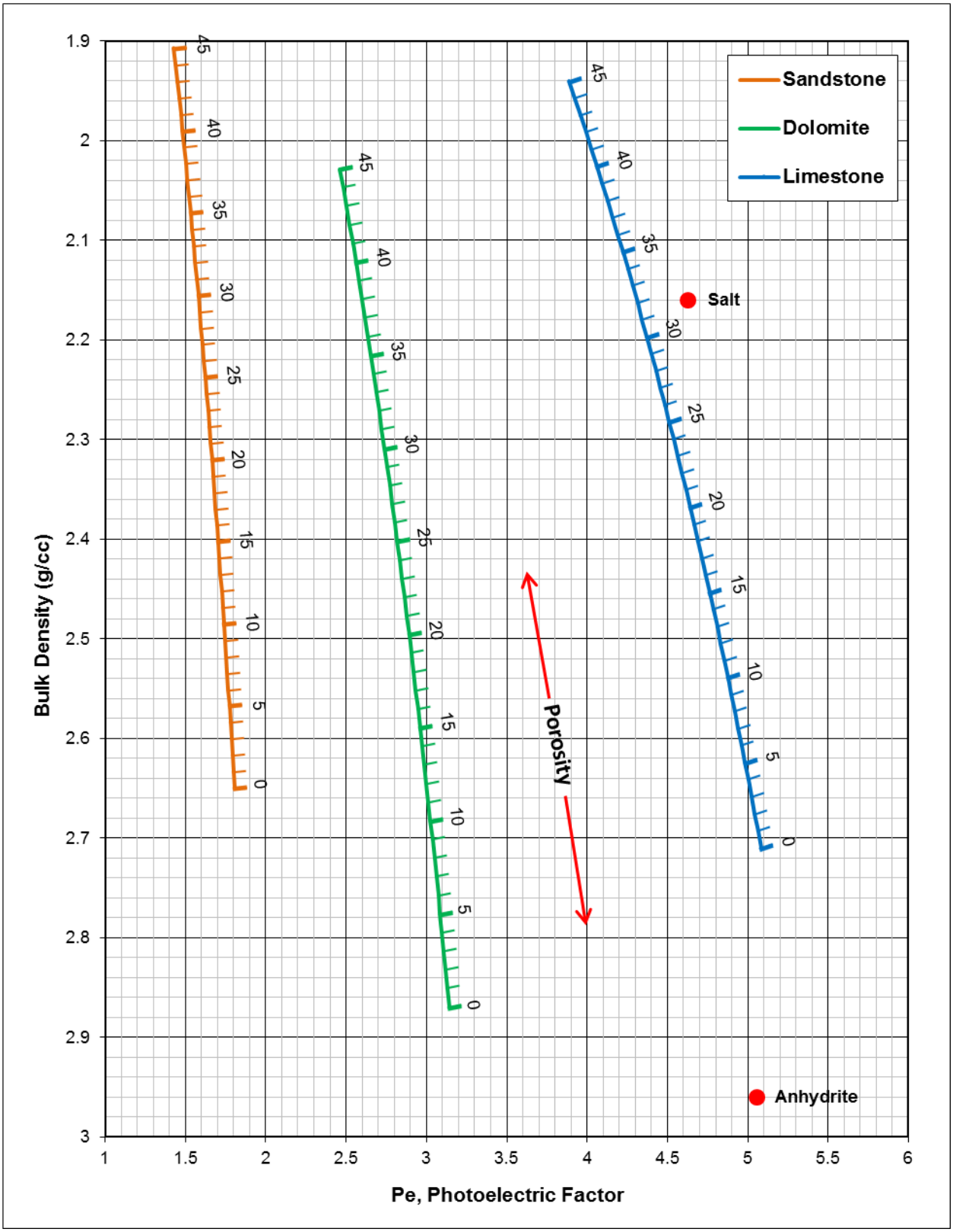


Chart 4-41

Porosity & Lithology Determination from Density & Photoelectric Factor
Fluid Density = 1.10 g/cc

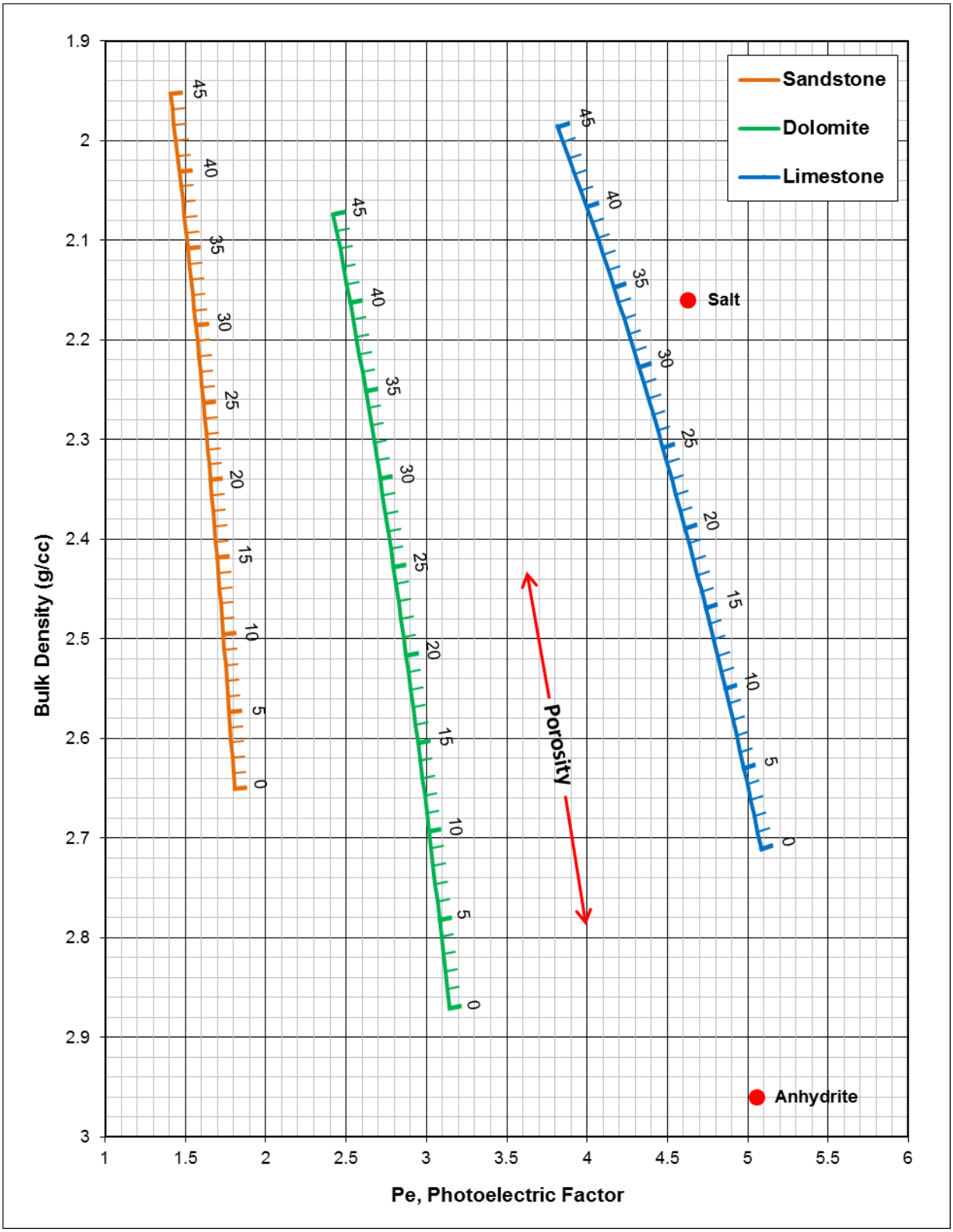


Chart 4-42

Porosity & Lithology Determination from Density & Photoelectric Factor
Fluid Density = 1.19 g/cc

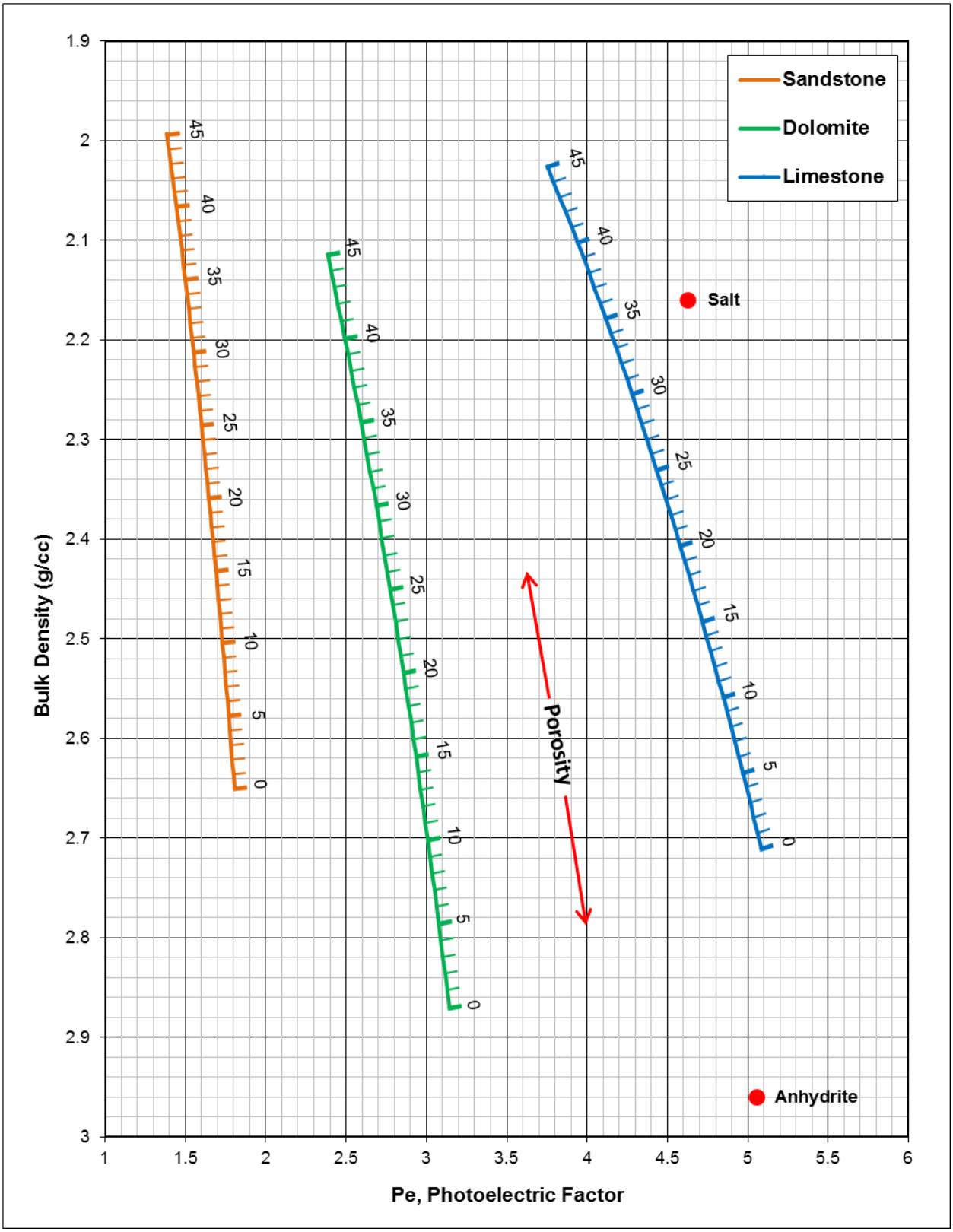


Chart 4-43

Porosity Determination from Bulk Density

The porosity of a reservoir can be determined from a measurement of bulk density, if the matrix lithology and the density of the reservoir fluid are known. Porosity can be calculated using the following equation:

$$\Phi_d = \frac{\rho_{ma} - \rho_b}{\rho_{ma} - \rho_{fl}}$$

Where:

Φ_d = porosity computed from density
ρ_{ma} = formation matrix density
ρ_b = measured formation bulk density
ρ_{fl} = formation fluid density

The plots below illustrate this equation graphically for various formation fluid densities and for the three main reservoir lithologies, whose matrix densities are assumed to be as follows:

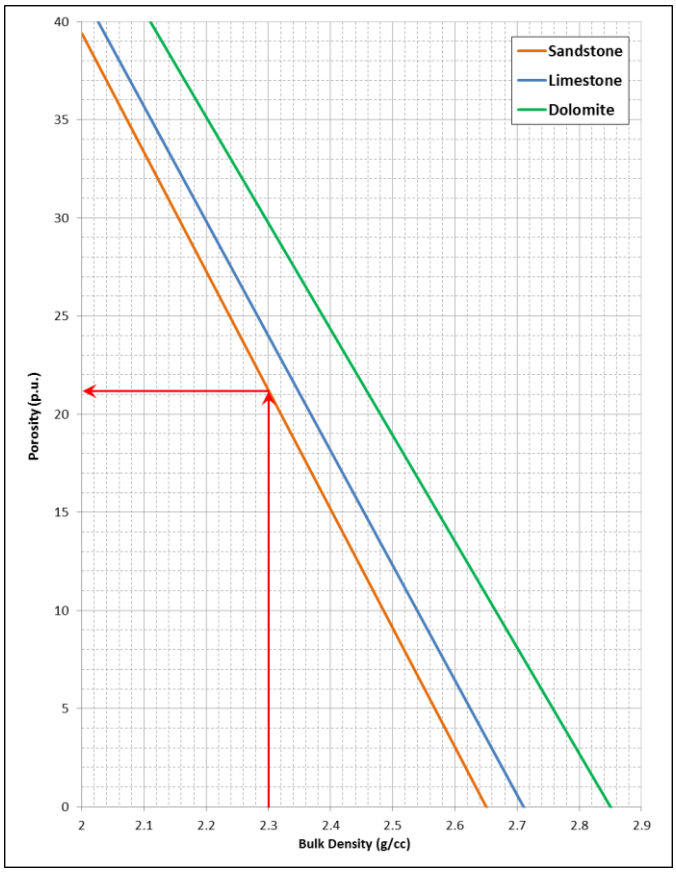
Limestone:	2.71 g/cc
Sandstone:	2.65 g/cc
Dolomite:	2.87 g/cc

Not every situation can be represented in a set of printed charts, such as those presented here. For conditions which are not shown here, please refer to the online eChartBook™, at http://eChartBook.Halliburton.com, where customized charts are available for any combination of parameters.

Example

Determine the porosity of a sandstone formation, given that the measured density is 2.3 g/cc and the formation fluid is assumed to be fresh water (1.0 g/cc).

- Select the appropriate chart for the given formation fluid density (see figure to the right).
- Enter the horizontal axis at the measured bulk density of 2.3 g/cc.
- Draw a vertical line to intersect the sandstone lithology line.
- Draw a horizontal line to intersect the vertical axis at approximately 21 p.u.



Porosity Determination from Bulk Density
Fluid Density = 1.00 g/cc

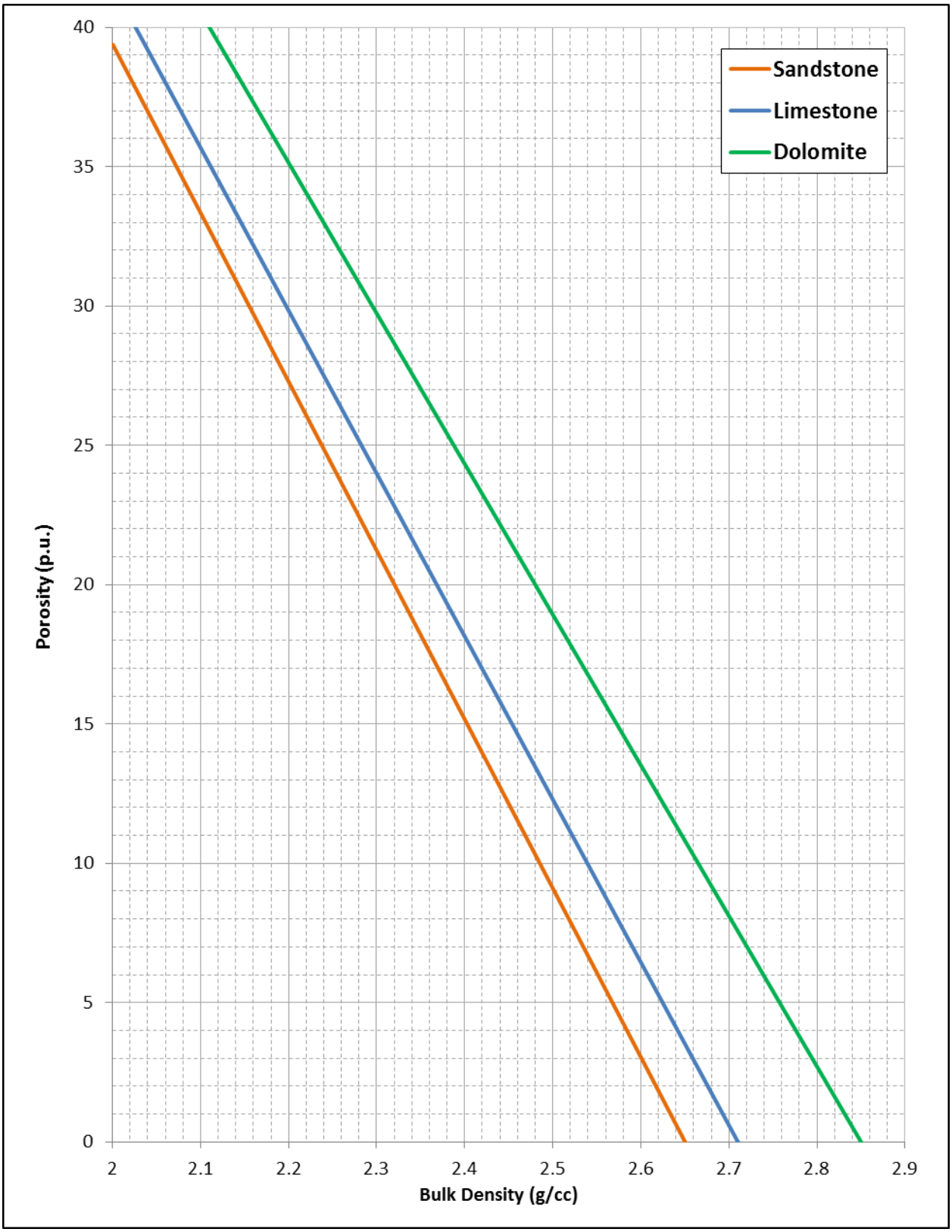


Chart 4-44

Porosity Determination from Bulk Density
Fluid Density = 1.10 g/cc

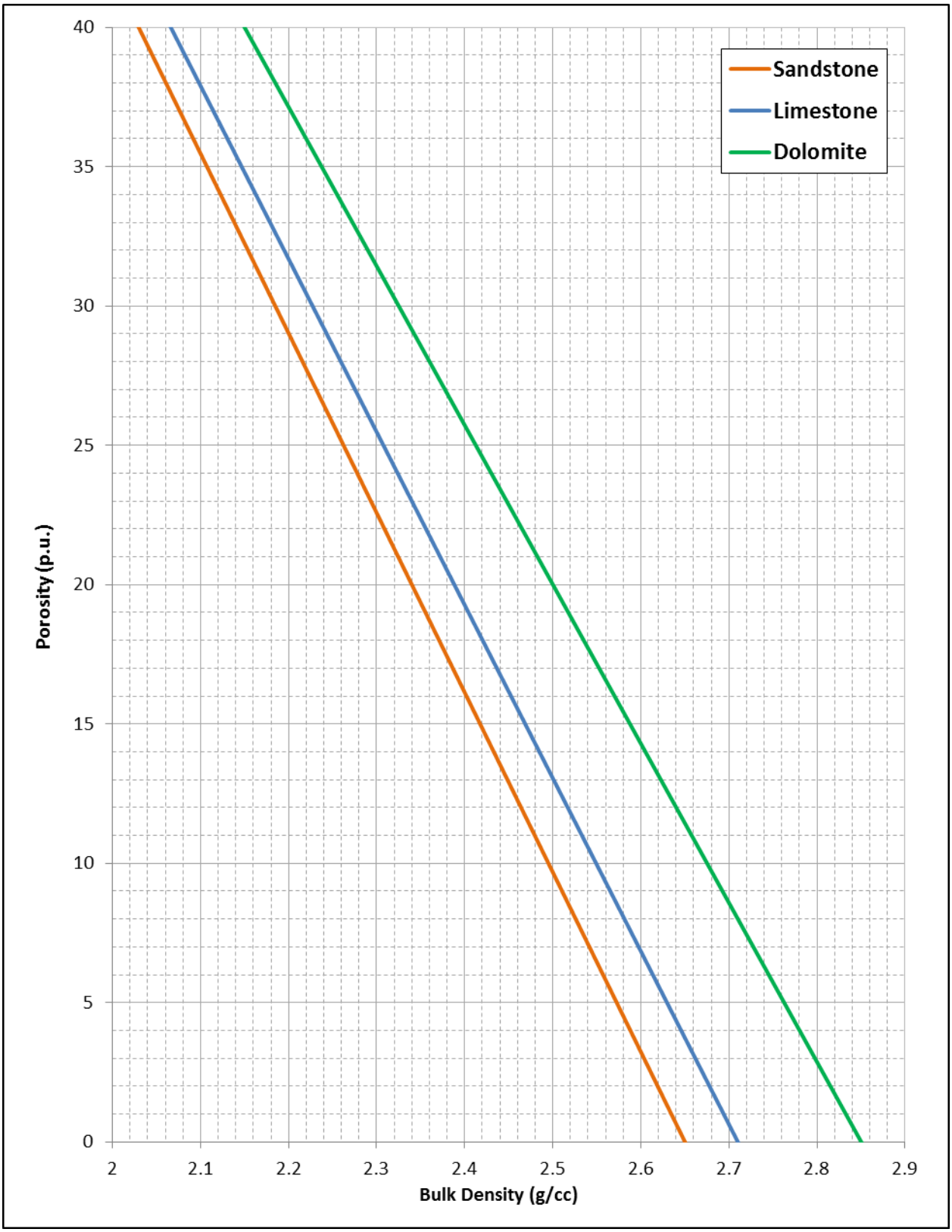


Chart 4-45

Porosity Determination from Bulk Density
Fluid Density = 1.19 g/cc

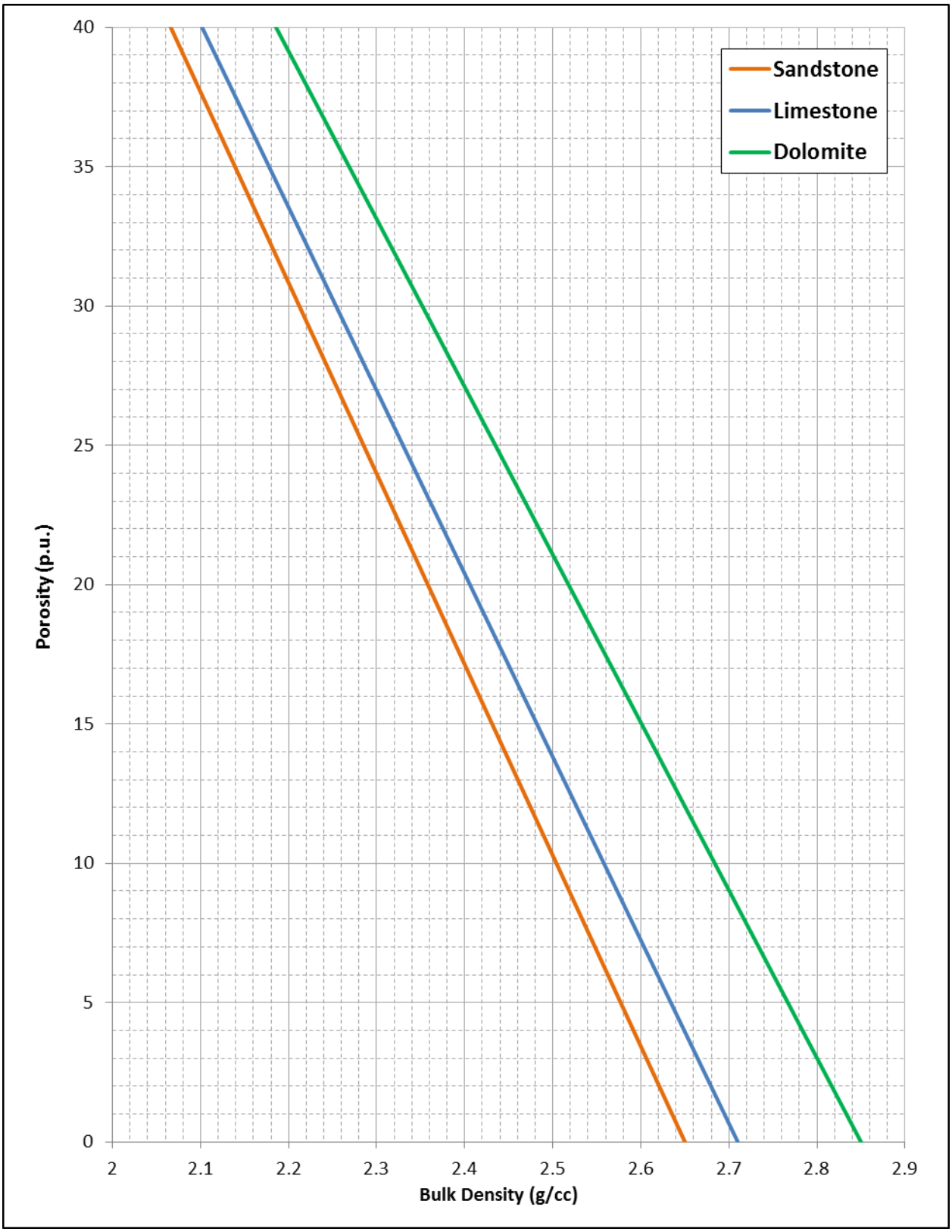
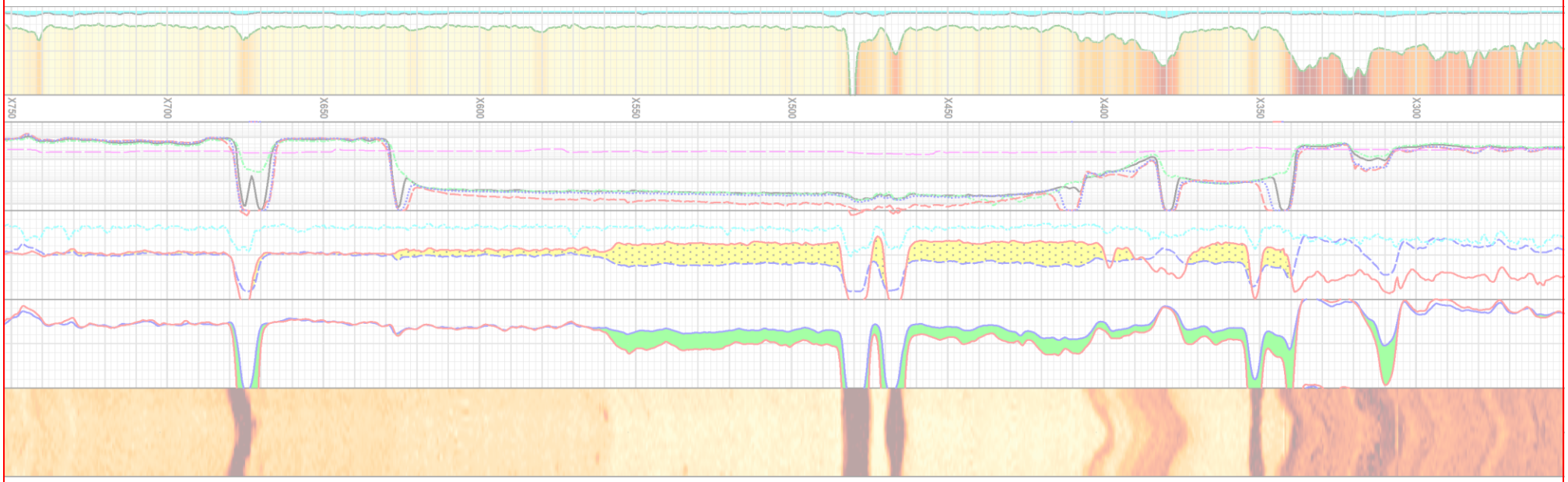


Chart 4-46



Tool & Curve Mnemonics

ABC

5 Tool & Curve Mnemonics

Tool Mnemonics

Tool Mnemonic	Tool Name	Tool Type
ABG™	At-Bit Gamma Ray (mounted in Geo-Pilot® rotary steerable system)	Gamma Ray
ACAL™	AcoustiCaliper™	Caliper
ADR™	Azimuthal Deep Resistivity	Propagation Resistivity
AFR™	Azimuthal Focused Resistivity	Laterolog Resistivity Imager
AGR™	Azimuthal Gamma Ray	Gamma Ray
ALD™	Azimuthal Litho Density	Azimuthal Density
BAT™	Bimodal Acoustic Tool	Sonic
CTN™	Compensated Thermal Neutron	Thermal Neutron
DDS2™	Drill-string Dynamics Sensor 2 (mounted in EWR-M5™ Tool)	Vibration
DDSr-xxx™	Drill-string Dynamics Sensor (mounted in sensor xxx)	Vibration
DDS™	Drill-string Dynamics Sensor	Vibration
DGR™	Dual Gamma Ray	Gamma Ray
DM	Directional Module	Directional Survey
DrillDOC®	Drilling Downhole Optimisation Collar	Weight, Torque & Bending Moment
EWR-M5™	Electromagnetic Wave Resistivity – 5 Spacings	Propagation Resistivity
EWR™-Phase 4	Electromagnetic Wave Resistivity – Phase 4	Propagation Resistivity
EWR™-Phase 4D	Electromagnetic Wave Resistivity – Phase 4™Deep	Propagation Resistivity
GABI™	Gamma Ray and At-Bit Inclination	Gamma Ray
GeoTap®	GeoTap®	Formation Pressure
GeoTap® IDS	GeoTap® IDS	Formation Pressure with Fluid ID & Sampling
GM	Gamma Module	Gamma Ray
IVSS	Insert Vibration Severity Sensor	Vibration
MRIL®-WD™	Magnetic Resonance Imaging (While Drilling)	Nuclear Magnetic Resonance
PCAL	Pinger Caliper (Mounted on ALD™)	Caliper
PCD	Pressure Case Directional	Directional Survey
PCG	Pressure Case Gamma	Gamma Ray

Tool Mnemonic	Tool Name	Tool Type
PWD	Pressure While Drilling	Borehole Pressure
QBAT™	Quadrupole Bimodal Acoustic Tool	Sonic
Quasar Pulse™	Integrated 200°C System	Directional, Gamma Ray, Pressure & Vibration
Radian®	Radian® Azimuthal Gamma Ray & Inclination	Gamma Ray & Inclination
SLD™	Stabilized Litho Density	Density
Slim Phase 4™	Slim Electromagnetic Wave Resistivity – Phase 4	Propagation Resistivity
Solar 175®	175°C System	Directional, Gamma Ray, Pressure & Vibration
Super Slim Phase 4™	Super Slim Electromagnetic Wave Resistivity – Phase 4	Propagation Resistivity
SVSS	Sonde Vibration Severity Sensor	Vibration
XBAT™	Crossed Dipole Bimodal Acoustic Tool	Sonic

LWD Curve Mnemonics

The table below contains mnemonics and curve labels for the most commonly used measurements from Sperry Drilling LWD sensors. Variables are listed in alphabetical order by mnemonic.

A complete list of all Sperry LWD mnemonics, including variables that are less common, can be found in the LWD Curve Mnemonics document (H07513) at the following link:
http://www.halliburton.com/premium/ss/contents/Procedures_and_Manuals/web/H07513_LWD_Curve_Mnemonics.pdf

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ABC	Conductivity	At-Bit Conductivity	ABC	AFR
ABC-T	Conductivity	At-Bit Conductivity RT	ABC	AFR
ABR	Resistivity	At-Bit Resistivity	ABR	AFR
ABR-T	Resistivity	At-Bit Resistivity RT	ABR	AFR
ACDD	Data Density	ACAL Data Density	ACDD	ACAL
ACHDC	Hole Diameter	ACAL Composite Hole Diam	ACDC	ACAL
ACHD-T	Hole Diameter	ACAL Hole Diameter	AHD	ACAL
ACXT	Formation Exposure Time	ACAL Exposure Time	ACXT	ACAL
ADDD	Data Density	ADR Data Density	ADDD	ADR
ADTEMP	Temperature	ADR Temperature	ADTE	ADR
ADTEMP-T	Temperature	ADR Temperature RT	ADTE	ADR
ADXT	Formation Exposure Time	ADR Formation Exp Time	ADXT	ADR
ADXTLS	Formation Exposure Time	ADR Form Exp Time LS	ADXL	ADR
AFCDC	Conductivity	AFR Deep Conductivity BC	CFCD	AFR
AFCDLHH	Conductivity Image	AFR Deep HR Cond LT HS	CDLH	AFR
AFCDLHM	Conductivity Image	AFR Deep HR Cond LT Mag	HLDC	AFR
AFCDUHH	Conductivity Image	AFR Deep HR Cond UT HS	CDUH	AFR
AFCDUHM	Conductivity Image	AFR Deep HR Cond UT Mag	HUDC	AFR
AFCMC	Conductivity	AFR Med Conductivity BC	CFCM	AFR
AFCMHH	Conductivity Image	AFR Medium HR Cond HS	CMHH	AFR
AFCMHM	Conductivity Image	AFR Medium HR Cond Mag	CMHM	AFR
AFCMLHH	Conductivity Image	AFR Medium HR Cond LT HS	CMLH	AFR
AFCMLHM	Conductivity Image	AFR Medium HR Cond LT Mag	HLMC	AFR
AFCMLSH	Conductivity Image	AFR Medium SR Cond LT HS	CMLS	AFR
AFCMLSM	Conductivity Image	AFR Medium SR Cond LT Mag	SLMC	AFR
AFCMSH	Conductivity Image	AFR Medium SR Cond HS	CMSH	AFR
AFCMSM	Conductivity Image	AFR Medium SR Cond Mag	CMSM	AFR
AFCMUHH	Conductivity Image	AFR Medium HR Cond UT HS	CMUH	AFR
AFCMUHM	Conductivity Image	AFR Medium HR Cond UT Mag	HUMC	AFR
AFCMUSH	Conductivity Image	AFR Medium SR Cond UT HS	CMUS	AFR
AFCMUSM	Conductivity Image	AFR Medium SR Cond UT Mag	SUMC	AFR
AFCSC	Conductivity	AFR Shall Conductivity BC	CFCS	AFR
AFCSLHH	Conductivity Image	AFR Shallow HR Cond LT HS	CSLH	AFR
AFCSLHM	Conductivity Image	AFR Shallow HR Cond LT Mg	HLSC	AFR
AFCSLSH	Conductivity Image	AFR Shallow SR Cond LT HS	CSLS	AFR
AFCSLSM	Conductivity Image	AFR Shallow SR Cond LT Mg	SLSC	AFR
AFCSUHH	Conductivity Image	AFR Shallow HR Cond UT HS	CSUH	AFR
AFCSUHM	Conductivity Image	AFR Shallow HR Cond UT Mg	HUSC	AFR
AFCSUSH	Conductivity Image	AFR Shallow SR Cond UT HS	CSUS	AFR

[7] LISM is the mnemonic used in digital data files with the LIS format. This format requires that curve mnemonics be no more than four characters long. All other file formats use the full-length mnemonic shown on the left.

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
AFCSUSM	Conductivity Image	AFR Shallow SR Cond UT Mg	SUSC	AFR
AFDD	Data Density	AFR Data Density	AFDD	AFR
AFMR	Mud Resistivity	AFR Mud Resistivity	AFMR	AFR
AFMR-T	Mud Resistivity	AFR Mud Resistivity RT	AFMR	AFR
AFRDC	Resistivity	AFR Deep Resistivity BC	CFRD	AFR
AFRDLC-T	Resistivity	AFR Deep Res LT BC RT	CRDL	AFR
AFRDLHH	Resistivity Image	AFR Deep HR Res LT HS	RDLH	AFR
AFRDLHM	Resistivity Image	AFR Deep HR Res LT Mag	HLDR	AFR
AFRDUC-T	Resistivity	AFR Deep Res UT BC RT	CRDU	AFR
AFRDUHH	Resistivity Image	AFR Deep HR Res UT HS	RDUH	AFR
AFRDUHM	Resistivity Image	AFR Deep HR Res UT Mag	HUDR	AFR
AFRMC	Resistivity	AFR Medium Resistivity BC	CFRM	AFR
AFRMC-T	Resistivity	AFR Medium Res BC RT	AFRM	AFR
AFRMHH	Resistivity Image	AFR Medium HR Res HS	RMHH	AFR
AFRMHM	Resistivity Image	AFR Medium HR Res Mag	RMHM	AFR
AFRMLC-T	Resistivity	AFR Medium Res LT BC RT	CRML	AFR
AFRMLHH	Resistivity Image	AFR Medium HR Res LT HS	RMLH	AFR
AFRMLHM	Resistivity Image	AFR Medium HR Res LT Mag	HLMR	AFR
AFRMLSH	Resistivity Image	AFR Medium SR Res LT HS	RMLS	AFR
AFRMLSM	Resistivity Image	AFR Medium SR Res LT Mag	SLMR	AFR
AFRMSH	Resistivity Image	AFR Medium SR Res HS	RMSH	AFR
AFRMSH-T	Resistivity Image	AFR Medium SR Res HS RT	RMSH	AFR
AFRMSM	Resistivity Image	AFR Medium SR Res Mag	RMSM	AFR
AFRMUC-T	Resistivity	AFR Medium Res UT BC RT	CRMU	AFR
AFRMUHH	Resistivity Image	AFR Medium HR Res UT HS	RMUH	AFR
AFRMUHM	Resistivity Image	AFR Medium HR Res UT Mag	HUMR	AFR
AFRMUSH	Resistivity Image	AFR Medium SR Res UT HS	RMUS	AFR
AFRMUSM	Resistivity Image	AFR Medium SR Res UT Mag	SUMR	AFR
AFRSC	Resistivity	AFR Shall Resistivity BC	CFRS	AFR
AFRSLC-T	Resistivity	AFR Shallow Res LT BC RT	CRSL	AFR
AFRSLHH	Resistivity Image	AFR Shallow HR Res LT HS	RSLH	AFR
AFRSLHM	Resistivity Image	AFR Shallow HR Res LT Mag	HLSR	AFR
AFRSLSH	Resistivity Image	AFR Shallow SR Res LT HS	RSLS	AFR
AFRSLSH-T	Resistivity Image	AFR Shal SR Res LT HS RT	RSLS	AFR
AFRSLSM	Resistivity Image	AFR Shallow SR Res LT Mag	SLSR	AFR
AFRSLSM-T	Resistivity Image	AFR Shal SR Res LT Mag RT	SLSR	AFR
AFRSUC-T	Resistivity	AFR Shallow Res UT BC RT	CRSU	AFR
AFRSUHH	Resistivity Image	AFR Shallow HR Res UT HS	RSUH	AFR
AFRSUHM	Resistivity Image	AFR Shallow HR Res UT Mag	HUSR	AFR
AFRSUSH	Resistivity Image	AFR Shallow SR Res UT HS	RSUS	AFR
AFRSUSM	Resistivity Image	AFR Shallow SR Res UT Mag	SUSR	AFR
AFXT	Formation Exposure Time	AFR Form Exp Time	AFXT	AFR
AGDD	Data Density	AGR Data Density	AGDD	AGR
AGRC	Gamma Ray	AGR Combined Gamma Ray	AGRC	AGR
AGRCC	Gamma Ray	AGR Comb Gamma Ray BCorr	AGCC	AGR
AGRCCH	Gamma Ray Image	AGR GR Azi HS BCorr	AGCH	AGR
AGRCCM	Gamma Ray Image	AGR GR Azi Mag BCorr	AGCM	AGR
AGRCC-T	Gamma Ray	AGR Comb Gamma Ray BC RT	AGCC	AGR
AGRCH	Gamma Ray Image	AGR Gamma Ray Azi HS	AGRH	AGR

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
AGRCM	Gamma Ray Image	AGR Gamma Ray Azi Mag	AGRM	AGR
AGRC-T	Gamma Ray	AGR Combined Gamma Ray RT	AGRC	AGR
AGXT	Formation Exposure Time	AGR Formation Exp Time	AGXT	AGR
ALCD01H	Density	ALD HS Comp Density 1/16	D01H	ALD
ALCD01H-T	Density	ALD HS Comp Den 1/16 RT	D01H	ALD
ALCD01M	Density	ALD Mg Comp Density 1/16	D01M	ALD
ALCD01M-T	Density	ALD Mag Comp Den 1/16 RT	D01M	ALD
ALCD02H	Density	ALD HS Comp Density 2/16	D02H	ALD
ALCD02H-T	Density	ALD HS Comp Den 2/16 RT	D02H	ALD
ALCD02M	Density	ALD Mg Comp Density 2/16	D02M	ALD
ALCD02M-T	Density	ALD Mag Comp Den 2/16 RT	D02M	ALD
ALCD03H	Density	ALD HS Comp Density 3/16	D03H	ALD
ALCD03H-T	Density	ALD HS Comp Den 3/16 RT	D03H	ALD
ALCD03M	Density	ALD Mg Comp Density 3/16	D03M	ALD
ALCD03M-T	Density	ALD Mag Comp Den 3/16 RT	D03M	ALD
ALCD04H	Density	ALD HS Comp Density 4/16	D04H	ALD
ALCD04H-T	Density	ALD HS Comp Den 4/16 RT	D04H	ALD
ALCD04M	Density	ALD Mg Comp Density 4/16	D04M	ALD
ALCD04M-T	Density	ALD Mag Comp Den 4/16 RT	D04M	ALD
ALCD05H	Density	ALD HS Comp Density 5/16	D05H	ALD
ALCD05H-T	Density	ALD HS Comp Den 5/16 RT	D05H	ALD
ALCD05M	Density	ALD Mg Comp Density 5/16	D05M	ALD
ALCD05M-T	Density	ALD Mag Comp Den 5/16 RT	D05M	ALD
ALCD06H	Density	ALD HS Comp Density 6/16	D06H	ALD
ALCD06H-T	Density	ALD HS Comp Den 6/16 RT	D06H	ALD
ALCD06M	Density	ALD Mg Comp Density 6/16	D06M	ALD
ALCD06M-T	Density	ALD Mag Comp Den 6/16 RT	D06M	ALD
ALCD07H	Density	ALD HS Comp Density 7/16	D07H	ALD
ALCD07H-T	Density	ALD HS Comp Den 7/16 RT	D07H	ALD
ALCD07M	Density	ALD Mg Comp Density 7/16	D07M	ALD
ALCD07M-T	Density	ALD Mag Comp Den 7/16 RT	D07M	ALD
ALCD08H	Density	ALD HS Comp Density 8/16	D08H	ALD
ALCD08H-T	Density	ALD HS Comp Den 8/16 RT	D08H	ALD
ALCD08M	Density	ALD Mg Comp Density 8/16	D08M	ALD
ALCD08M-T	Density	ALD Mag Comp Den 8/16 RT	D08M	ALD
ALCD09H	Density	ALD HS Comp Density 9/16	D09H	ALD
ALCD09H-T	Density	ALD HS Comp Den 9/16 RT	D09H	ALD
ALCD09M	Density	ALD Mg Comp Density 9/16	D09M	ALD
ALCD09M-T	Density	ALD Mag Comp Den 9/16 RT	D09M	ALD
ALCD10H	Density	ALD HS Comp Density 10/16	D10H	ALD
ALCD10H-T	Density	ALD HS Comp Den 10/16 RT	D10H	ALD
ALCD10M	Density	ALD Mg Comp Density 10/16	D10M	ALD
ALCD10M-T	Density	ALD Mag Comp Den 10/16 RT	D10M	ALD
ALCD11H	Density	ALD HS Comp Density 11/16	D11H	ALD
ALCD11H-T	Density	ALD HS Comp Den 11/16 RT	D11H	ALD
ALCD11M	Density	ALD Mg Comp Density 11/16	D11M	ALD
ALCD11M-T	Density	ALD Mag Comp Den 11/16 RT	D11M	ALD
ALCD12H	Density	ALD HS Comp Density 12/16	D12H	ALD
ALCD12H-T	Density	ALD HS Comp Den 12/16 RT	D12H	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALCD12M	Density	ALD Mg Comp Density 12/16	D12M	ALD
ALCD12M-T	Density	ALD Mag Comp Den 12/16 RT	D12M	ALD
ALCD13H	Density	ALD HS Comp Density 13/16	D13H	ALD
ALCD13H-T	Density	ALD HS Comp Den 13/16 RT	D13H	ALD
ALCD13M	Density	ALD Mg Comp Density 13/16	D13M	ALD
ALCD13M-T	Density	ALD Mag Comp Den 13/16 RT	D13M	ALD
ALCD14H	Density	ALD HS Comp Density 14/16	D14H	ALD
ALCD14H-T	Density	ALD HS Comp Den 14/16 RT	D14H	ALD
ALCD14M	Density	ALD Mg Comp Density 14/16	D14M	ALD
ALCD14M-T	Density	ALD Mag Comp Den 14/16 RT	D14M	ALD
ALCD15H	Density	ALD HS Comp Density 15/16	D15H	ALD
ALCD15H-T	Density	ALD HS Comp Den 15/16 RT	D15H	ALD
ALCD15M	Density	ALD Mg Comp Density 15/16	D15M	ALD
ALCD15M-T	Density	ALD Mag Comp Den 15/16 RT	D15M	ALD
ALCD16H	Density	ALD HS Comp Density 16/16	D16H	ALD
ALCD16H-T	Density	ALD HS Comp Den 16/16 RT	D16H	ALD
ALCD16M	Density	ALD Mg Comp Density 16/16	D16M	ALD
ALCD16M-T	Density	ALD Mag Comp Den 16/16 RT	D16M	ALD
ALCD1H	Density	ALD HS Comp Density 1/8	D1H	ALD
ALCD1H-T	Density	ALD HS Comp Den 1/8 RT	D1H	ALD
ALCD1M	Density	ALD Mag Comp Density 1/8	D1M	ALD
ALCD1M-T	Density	ALD Mag Comp Den 1/8 RT	D1M	ALD
ALCD2H	Density	ALD HS Comp Density 2/8	D2H	ALD
ALCD2H-T	Density	ALD HS Comp Den 2/8 RT	D2H	ALD
ALCD2M	Density	ALD Mag Comp Density 2/8	D2M	ALD
ALCD2M-T	Density	ALD Mag Comp Den 2/8 RT	D2M	ALD
ALCD3H	Density	ALD HS Comp Density 3/8	D3H	ALD
ALCD3H-T	Density	ALD HS Comp Den 3/8 RT	D3H	ALD
ALCD3M	Density	ALD Mag Comp Density 3/8	D3M	ALD
ALCD3M-T	Density	ALD Mag Comp Den 3/8 RT	D3M	ALD
ALCD4H	Density	ALD HS Comp Density 4/8	D4H	ALD
ALCD4H-T	Density	ALD HS Comp Den 4/8 RT	D4H	ALD
ALCD4M	Density	ALD Mag Comp Density 4/8	D4M	ALD
ALCD4M-T	Density	ALD Mag Comp Den 4/8 RT	D4M	ALD
ALCD5H	Density	ALD HS Comp Density 5/8	D5H	ALD
ALCD5H-T	Density	ALD HS Comp Den 5/8 RT	D5H	ALD
ALCD5M	Density	ALD Mag Comp Density 5/8	D5M	ALD
ALCD5M-T	Density	ALD Mag Comp Den 5/8 RT	D5M	ALD
ALCD6H	Density	ALD HS Comp Density 6/8	D6H	ALD
ALCD6H-T	Density	ALD HS Comp Den 6/8 RT	D6H	ALD
ALCD6M	Density	ALD Mag Comp Density 6/8	D6M	ALD
ALCD6M-T	Density	ALD Mag Comp Den 6/8 RT	D6M	ALD
ALCD7H	Density	ALD HS Comp Density 7/8	D7H	ALD
ALCD7H-T	Density	ALD HS Comp Den 7/8 RT	D7H	ALD
ALCD7M	Density	ALD Mag Comp Density 7/8	D7M	ALD
ALCD7M-T	Density	ALD Mag Comp Den 7/8 RT	D7M	ALD
ALCD8H	Density	ALD HS Comp Density 8/8	D8H	ALD
ALCD8H-T	Density	ALD HS Comp Den 8/8 RT	D8H	ALD
ALCD8M	Density	ALD Mag Comp Density 8/8	D8M	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALCD8M-T	Density	ALD Mag Comp Den 8/8 RT	D8M	ALD
ALCDA	Density	ALD Average Comp Density	ACDA	ALD
ALCDA-T	Density	ALD Avg Comp Density RT	ACDA	ALD
ALCDBQ	Density	ALD Comp Density B-Quad	CDBQ	ALD
ALCDBQ-T	Density	ALD Comp Den B-Quad RT	CDBQ	ALD
ALCDEQ	Density	ALD Comp Density E-Quad	CDEQ	ALD
ALCDEQ-T	Density	ALD Comp Den E-Quad RT	CDEQ	ALD
ALCDH	Density Image	ALD Comp Density Azi HS	LCDH	ALD
ALCDHC	Density	ALD HCRB Comp Density	ACDH	ALD
ALCDH-T	Density Image	ALD Comp Den Azi HS RT	LCDH	ALD
ALCDLC	Density	ALD LCRB Comp Density	ACDL	ALD
ALCDLC-T	Density	ALD LCRB Comp Density RT	ACDL	ALD
ALCDLQ	Density	ALD Comp Density L-Quad	CDLQ	ALD
ALCDLQ-T	Density	ALD Comp Den L-Quad RT	CDLQ	ALD
ALCDM	Density Image	ALD Comp Density Azi Mag	LCDM	ALD
ALCDM-T	Density Image	ALD Comp Den Azi Mag RT	LCDM	ALD
ALCDNQ	Density	ALD Comp Density N-Quad	CDNQ	ALD
ALCDNQ-T	Density	ALD Comp Den N-Quad RT	CDNQ	ALD
ALCDRQ	Density	ALD Comp Density R-Quad	CDRQ	ALD
ALCDRQ-T	Density	ALD Comp Den R-Quad RT	CDRQ	ALD
ALCDSQ	Density	ALD Comp Density S-Quad	CDSQ	ALD
ALCDSQ-T	Density	ALD Comp Den S-Quad RT	CDSQ	ALD
ALCDTQ	Density	ALD Comp Density T-Quad	CDTQ	ALD
ALCDTQ-T	Density	ALD Comp Den T-Quad RT	CDTQ	ALD
ALCDWQ	Density	ALD Comp Density W-Quad	CDWQ	ALD
ALCDWQ-T	Density	ALD Comp Den W-Quad RT	CDWQ	ALD
ALDC01H	Density Correction	ALD HS Den Corr 1/16	C01H	ALD
ALDC01M	Density Correction	ALD Mg Den Corr 1/16	C01M	ALD
ALDC02H	Density Correction	ALD HS Den Corr 2/16	C02H	ALD
ALDC02M	Density Correction	ALD Mg Den Corr 2/16	C02M	ALD
ALDC03H	Density Correction	ALD HS Den Corr 3/16	C03H	ALD
ALDC03M	Density Correction	ALD Mg Den Corr 3/16	C03M	ALD
ALDC04H	Density Correction	ALD HS Den Corr 4/16	C04H	ALD
ALDC04M	Density Correction	ALD Mg Den Corr 4/16	C04M	ALD
ALDC05H	Density Correction	ALD HS Den Corr 5/16	C05H	ALD
ALDC05M	Density Correction	ALD Mg Den Corr 5/16	C05M	ALD
ALDC06H	Density Correction	ALD HS Den Corr 6/16	C06H	ALD
ALDC06M	Density Correction	ALD Mg Den Corr 6/16	C06M	ALD
ALDC07H	Density Correction	ALD HS Den Corr 7/16	C07H	ALD
ALDC07M	Density Correction	ALD Mg Den Corr 7/16	C07M	ALD
ALDC08H	Density Correction	ALD HS Den Corr 8/16	C08H	ALD
ALDC08M	Density Correction	ALD Mg Den Corr 8/16	C08M	ALD
ALDC09H	Density Correction	ALD HS Den Corr 9/16	C09H	ALD
ALDC09M	Density Correction	ALD Mg Den Corr 9/16	C09M	ALD
ALDC10H	Density Correction	ALD HS Den Corr 10/16	C10H	ALD
ALDC10M	Density Correction	ALD Mg Den Corr 10/16	C10M	ALD
ALDC11H	Density Correction	ALD HS Den Corr 11/16	C11H	ALD
ALDC11M	Density Correction	ALD Mg Den Corr 11/16	C11M	ALD
ALDC12H	Density Correction	ALD HS Den Corr 12/16	C12H	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALDC12M	Density Correction	ALD Mg Den Corr 12/16	C12M	ALD
ALDC13H	Density Correction	ALD HS Den Corr 13/16	C13H	ALD
ALDC13M	Density Correction	ALD Mg Den Corr 13/16	C13M	ALD
ALDC14H	Density Correction	ALD HS Den Corr 14/16	C14H	ALD
ALDC14M	Density Correction	ALD Mg Den Corr 14/16	C14M	ALD
ALDC15H	Density Correction	ALD HS Den Corr 15/16	C15H	ALD
ALDC15M	Density Correction	ALD Mg Den Corr 15/16	C15M	ALD
ALDC16H	Density Correction	ALD HS Den Corr 16/16	C16H	ALD
ALDC16M	Density Correction	ALD Mg Den Corr 16/16	C16M	ALD
ALDC1H	Density Correction	ALD HS Den Corr 1/8	C1H	ALD
ALDC1M	Density Correction	ALD Mg Den Correction 1/8	C1M	ALD
ALDC2H	Density Correction	ALD HS Den Corr 2/8	C2H	ALD
ALDC2M	Density Correction	ALD Mg Den Correction 2/8	C2M	ALD
ALDC3H	Density Correction	ALD HS Den Corr 3/8	C3H	ALD
ALDC3M	Density Correction	ALD Mg Den Correction 3/8	C3M	ALD
ALDC4H	Density Correction	ALD HS Den Corr 4/8	C4H	ALD
ALDC4M	Density Correction	ALD Mg Den Correction 4/8	C4M	ALD
ALDC5H	Density Correction	ALD HS Den Corr 5/8	C5H	ALD
ALDC5M	Density Correction	ALD Mg Den Correction 5/8	C5M	ALD
ALDC6H	Density Correction	ALD HS Den Corr 6/8	C6H	ALD
ALDC6M	Density Correction	ALD Mg Den Correction 6/8	C6M	ALD
ALDC7H	Density Correction	ALD HS Den Corr 7/8	C7H	ALD
ALDC7M	Density Correction	ALD Mg Den Correction 7/8	C7M	ALD
ALDC8H	Density Correction	ALD HS Den Corr 8/8	C8H	ALD
ALDC8M	Density Correction	ALD Mg Den Correction 8/8	C8M	ALD
ALDCA	Density Correction	ALD Average Den Corr	ADCA	ALD
ALDCA-T	Density Correction	ALD Average Den Corr RT	ADCA	ALD
ALDCBQ	Density Correction	ALD Den Correction B-Quad	DCBQ	ALD
ALDCBQ-T	Density Correction	ALD Den Corr B-Quad RT	DCBQ	ALD
ALDCEQ	Density Correction	ALD Den Correction E-Quad	DCEQ	ALD
ALDCEQ-T	Density Correction	ALD Den Corr E-Quad RT	DCEQ	ALD
ALDCH	Density Correction Image	ALD Den Corr Azi HS	LDCH	ALD
ALDCHC	Density Correction	ALD HCRB Den Correction	ADCH	ALD
ALDCLC	Density Correction	ALD LCRB Den Correction	ADCL	ALD
ALDCLC-T	Density Correction	ALD LCRB Density Corr RT	ADCL	ALD
ALDCLQ	Density Correction	ALD Den Correction L-Quad	DCLQ	ALD
ALDCLQ-T	Density Correction	ALD Den Corr L-Quad RT	DCLQ	ALD
ALDCM	Density Correction Image	ALD Den Corr Azi Mag	LDCM	ALD
ALDCNQ	Density Correction	ALD Den Correction N-Quad	DCNQ	ALD
ALDCNQ-T	Density Correction	ALD Den Corr N-Quad RT	DCNQ	ALD
ALDCRQ	Density Correction	ALD Den Correction R-Quad	DCRQ	ALD
ALDCRQ-T	Density Correction	ALD Den Corr R-Quad RT	DCRQ	ALD
ALDCSQ	Density Correction	ALD Den Correction S-Quad	DCSQ	ALD
ALDCSQ-T	Density Correction	ALD Den Corr S-Quad RT	DCSQ	ALD
ALDCTQ	Density Correction	ALD Den Correction T-Quad	DCTQ	ALD
ALDCTQ-T	Density Correction	ALD Den Corr T-Quad RT	DCTQ	ALD
ALDCWQ	Density Correction	ALD Den Correction W-Quad	DCWQ	ALD
ALDCWQ-T	Density Correction	ALD Den Corr W-Quad RT	DCWQ	ALD
ALDD	Data Density	ALD Data Density	ALDD	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALDP01H	Porosity	ALD HS Den Porosity 1/16	T01H	ALD
ALDP01H-T	Porosity	ALD HS Den Poros 1/16 RT	T01H	ALD
ALDP01M	Porosity	ALD Mg Den Porosity 1/16	T01M	ALD
ALDP01M-T	Porosity	ALD Mg Den Poros 1/16 RT	T01M	ALD
ALDP02H	Porosity	ALD HS Den Porosity 2/16	T02H	ALD
ALDP02H-T	Porosity	ALD HS Den Poros 2/16 RT	T02H	ALD
ALDP02M	Porosity	ALD Mg Den Porosity 2/16	T02M	ALD
ALDP02M-T	Porosity	ALD Mg Den Poros 2/16 RT	T02M	ALD
ALDP03H	Porosity	ALD HS Den Porosity 3/16	T03H	ALD
ALDP03H-T	Porosity	ALD HS Den Poros 3/16 RT	T03H	ALD
ALDP03M	Porosity	ALD Mg Den Porosity 3/16	T03M	ALD
ALDP03M-T	Porosity	ALD Mg Den Poros 3/16 RT	T03M	ALD
ALDP04H	Porosity	ALD HS Den Porosity 4/16	T04H	ALD
ALDP04H-T	Porosity	ALD HS Den Poros 4/16 RT	T04H	ALD
ALDP04M	Porosity	ALD Mg Den Porosity 4/16	T04M	ALD
ALDP04M-T	Porosity	ALD Mg Den Poros 4/16 RT	T04M	ALD
ALDP05H	Porosity	ALD HS Den Porosity 5/16	T05H	ALD
ALDP05H-T	Porosity	ALD HS Den Poros 5/16 RT	T05H	ALD
ALDP05M	Porosity	ALD Mg Den Porosity 5/16	T05M	ALD
ALDP05M-T	Porosity	ALD Mg Den Poros 5/16 RT	T05M	ALD
ALDP06H	Porosity	ALD HS Den Porosity 6/16	T06H	ALD
ALDP06H-T	Porosity	ALD HS Den Poros 6/16 RT	T06H	ALD
ALDP06M	Porosity	ALD Mg Den Porosity 6/16	T06M	ALD
ALDP06M-T	Porosity	ALD Mg Den Poros 6/16 RT	T06M	ALD
ALDP07H	Porosity	ALD HS Den Porosity 7/16	T07H	ALD
ALDP07H-T	Porosity	ALD HS Den Poros 7/16 RT	T07H	ALD
ALDP07M	Porosity	ALD Mg Den Porosity 7/16	T07M	ALD
ALDP07M-T	Porosity	ALD Mg Den Poros 7/16 RT	T07M	ALD
ALDP08H	Porosity	ALD HS Den Porosity 8/16	T08H	ALD
ALDP08H-T	Porosity	ALD HS Den Poros 8/16 RT	T08H	ALD
ALDP08M	Porosity	ALD Mg Den Porosity 8/16	T08M	ALD
ALDP08M-T	Porosity	ALD Mg Den Poros 8/16 RT	T08M	ALD
ALDP09H	Porosity	ALD HS Den Porosity 9/16	T09H	ALD
ALDP09H-T	Porosity	ALD HS Den Poros 9/16 RT	T09H	ALD
ALDP09M	Porosity	ALD Mg Den Porosity 9/16	T09M	ALD
ALDP09M-T	Porosity	ALD Mg Den Poros 9/16 RT	T09M	ALD
ALDP10H	Porosity	ALD HS Den Porosity 10/16	T10H	ALD
ALDP10H-T	Porosity	ALD HS Den Poros 10/16 RT	T10H	ALD
ALDP10M	Porosity	ALD Mg Den Porosity 10/16	T10M	ALD
ALDP10M-T	Porosity	ALD Mg Den Poros 10/16 RT	T10M	ALD
ALDP11H	Porosity	ALD HS Den Porosity 11/16	T11H	ALD
ALDP11H-T	Porosity	ALD HS Den Poros 11/16 RT	T11H	ALD
ALDP11M	Porosity	ALD Mg Den Porosity 11/16	T11M	ALD
ALDP11M-T	Porosity	ALD Mg Den Poros 11/16 RT	T11M	ALD
ALDP12H	Porosity	ALD HS Den Porosity 12/16	T12H	ALD
ALDP12H-T	Porosity	ALD HS Den Poros 12/16 RT	T12H	ALD
ALDP12M	Porosity	ALD Mg Den Porosity 12/16	T12M	ALD
ALDP12M-T	Porosity	ALD Mg Den Poros 12/16 RT	T12M	ALD
ALDP13H	Porosity	ALD HS Den Porosity 13/16	T13H	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALDP13H-T	Porosity	ALD HS Den Poros 13/16 RT	T13H	ALD
ALDP13M	Porosity	ALD Mg Den Porosity 13/16	T13M	ALD
ALDP13M-T	Porosity	ALD Mg Den Poros 13/16 RT	T13M	ALD
ALDP14H	Porosity	ALD HS Den Porosity 14/16	T14H	ALD
ALDP14H-T	Porosity	ALD HS Den Poros 14/16 RT	T14H	ALD
ALDP14M	Porosity	ALD Mg Den Porosity 14/16	T14M	ALD
ALDP14M-T	Porosity	ALD Mg Den Poros 14/16 RT	T14M	ALD
ALDP15H	Porosity	ALD HS Den Porosity 15/16	T15H	ALD
ALDP15H-T	Porosity	ALD HS Den Poros 15/16 RT	T15H	ALD
ALDP15M	Porosity	ALD Mg Den Porosity 15/16	T15M	ALD
ALDP15M-T	Porosity	ALD Mg Den Poros 15/16 RT	T15M	ALD
ALDP16H	Porosity	ALD HS Den Porosity 16/16	T16H	ALD
ALDP16H-T	Porosity	ALD HS Den Poros 16/16 RT	T16H	ALD
ALDP16M	Porosity	ALD Mg Den Porosity 16/16	T16M	ALD
ALDP16M-T	Porosity	ALD Mg Den Poros 16/16 RT	T16M	ALD
ALDP1H	Porosity	ALD HS Den Porosity 1/8	T1H	ALD
ALDP1H-T	Porosity	ALD HS Den Poros 1/8 RT	T1H	ALD
ALDP1M	Porosity	ALD Mag Den Porosity 1/8	T1M	ALD
ALDP1M-T	Porosity	ALD Mg Den Poros 1/8 RT	T1M	ALD
ALDP2H	Porosity	ALD HS Den Porosity 2/8	T2H	ALD
ALDP2H-T	Porosity	ALD HS Den Poros 2/8 RT	T2H	ALD
ALDP2M	Porosity	ALD Mag Den Porosity 2/8	T2M	ALD
ALDP2M-T	Porosity	ALD Mg Den Poros 2/8 RT	T2M	ALD
ALDP3H	Porosity	ALD HS Den Porosity 3/8	T3H	ALD
ALDP3H-T	Porosity	ALD HS Den Poros 3/8 RT	T3H	ALD
ALDP3M	Porosity	ALD Mag Den Porosity 3/8	T3M	ALD
ALDP3M-T	Porosity	ALD Mg Den Poros 3/8 RT	T3M	ALD
ALDP4H	Porosity	ALD HS Den Porosity 4/8	T4H	ALD
ALDP4H-T	Porosity	ALD HS Den Poros 4/8 RT	T4H	ALD
ALDP4M	Porosity	ALD Mag Den Porosity 4/8	T4M	ALD
ALDP4M-T	Porosity	ALD Mg Den Poros 4/8 RT	T4M	ALD
ALDP5H	Porosity	ALD HS Den Porosity 5/8	T5H	ALD
ALDP5H-T	Porosity	ALD HS Den Poros 5/8 RT	T5H	ALD
ALDP5M	Porosity	ALD Mag Den Porosity 5/8	T5M	ALD
ALDP5M-T	Porosity	ALD Mg Den Poros 5/8 RT	T5M	ALD
ALDP6H	Porosity	ALD HS Den Porosity 6/8	T6H	ALD
ALDP6H-T	Porosity	ALD HS Den Poros 6/8 RT	T6H	ALD
ALDP6M	Porosity	ALD Mag Den Porosity 6/8	T6M	ALD
ALDP6M-T	Porosity	ALD Mg Den Poros 6/8 RT	T6M	ALD
ALDP7H	Porosity	ALD HS Den Porosity 7/8	T7H	ALD
ALDP7H-T	Porosity	ALD HS Den Poros 7/8 RT	T7H	ALD
ALDP7M	Porosity	ALD Mag Den Porosity 7/8	T7M	ALD
ALDP7M-T	Porosity	ALD Mg Den Poros 7/8 RT	T7M	ALD
ALDP8H	Porosity	ALD HS Den Porosity 8/8	T8H	ALD
ALDP8H-T	Porosity	ALD HS Den Poros 8/8 RT	T8H	ALD
ALDP8M	Porosity	ALD Mag Den Porosity 8/8	T8M	ALD
ALDP8M-T	Porosity	ALD Mg Den Poros 8/8 RT	T8M	ALD
ALDPA	Porosity	ALD Average Den Porosity	ADPA	ALD
ALDPA-T	Porosity	ALD Avg Den Porosity RT	ADPA	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALDPBQ	Porosity	ALD Den Porosity B-Quad	DPBQ	ALD
ALDPBQ-T	Porosity	ALD Den Poros B-Quad RT	DPBQ	ALD
ALDPEQ	Porosity	ALD Den Porosity E-Quad	DPEQ	ALD
ALDPEQ-T	Porosity	ALD Den Poros E-Quad RT	DPEQ	ALD
ALDPH	Porosity Image	ALD Den Porosity Azi HS	LDPH	ALD
ALDPH-T	Porosity Image	ALD Den Poros Azi HS RT	LDPH	ALD
ALDPLC	Porosity	ALD LCRB Den Porosity	ADPL	ALD
ALDPLC-T	Porosity	ALD LCRB Den Porosity RT	ADPL	ALD
ALDPLQ	Porosity	ALD Den Porosity L-Quad	DPLQ	ALD
ALDPLQ-T	Porosity	ALD Den Poros L-Quad RT	DPLQ	ALD
ALDPM	Porosity Image	ALD Den Porosity Azi Mag	LDPM	ALD
ALDPM-T	Porosity Image	ALD Den Poros Azi Mag RT	LDPM	ALD
ALDPNQ	Porosity	ALD Den Porosity N-Quad	DPNQ	ALD
ALDPNQ-T	Porosity	ALD Den Poros N-Quad RT	DPNQ	ALD
ALDPRQ	Porosity	ALD Den Porosity R-Quad	DPRQ	ALD
ALDPRQ-T	Porosity	ALD Den Poros R-Quad RT	DPRQ	ALD
ALDPSQ	Porosity	ALD Den Porosity S-Quad	DPSQ	ALD
ALDPSQ-T	Porosity	ALD Den Poros S-Quad RT	DPSQ	ALD
ALDPTQ	Porosity	ALD Den Porosity T-Quad	DPTQ	ALD
ALDPTQ-T	Porosity	ALD Den Poros T-Quad RT	DPTQ	ALD
ALDPWQ	Porosity	ALD Den Porosity W-Quad	DPWQ	ALD
ALDPWQ-T	Porosity	ALD Den Poros W-Quad RT	DPWQ	ALD
ALFDA	Density	ALD Average Far Density	AFDA	ALD
ALFDLC	Density	ALD LCRB Far Density	AFDL	ALD
ALHDA-T	Hole Diameter	ALD Average Hole Diam RT	AHDA	ALD
ALHDC	Hole Diameter	ALD Composite Hole Diam	AHDC	ALD
ALHDRS	Hole Diameter	ALD RS Acoustic Hole Diam	AHDR	ALD
ALHSI	Hole Diameter	ALD Hole Size Indicator	AHSI	ALD
ALNDA	Density	ALD Average Near Density	ANDA	ALD
ALNDLC	Density	ALD LCRB Near Density	ANDL	ALD
ALPE01H	Photoelectric Factor	ALD HS Pe Factor 1/16	H01P	ALD
ALPE01M	Photoelectric Factor	ALD Mag Pe Factor 1/16	M01P	ALD
ALPE02H	Photoelectric Factor	ALD HS Pe Factor 2/16	H02P	ALD
ALPE02M	Photoelectric Factor	ALD Mag Pe Factor 2/16	M02P	ALD
ALPE03H	Photoelectric Factor	ALD HS Pe Factor 3/16	H03P	ALD
ALPE03M	Photoelectric Factor	ALD Mag Pe Factor 3/16	M03P	ALD
ALPE04H	Photoelectric Factor	ALD HS Pe Factor 4/16	H04P	ALD
ALPE04M	Photoelectric Factor	ALD Mag Pe Factor 4/16	M04P	ALD
ALPE05H	Photoelectric Factor	ALD HS Pe Factor 5/16	H05P	ALD
ALPE05M	Photoelectric Factor	ALD Mag Pe Factor 5/16	M05P	ALD
ALPE06H	Photoelectric Factor	ALD HS Pe Factor 6/16	H06P	ALD
ALPE06M	Photoelectric Factor	ALD Mag Pe Factor 6/16	M06P	ALD
ALPE07H	Photoelectric Factor	ALD HS Pe Factor 7/16	H07P	ALD
ALPE07M	Photoelectric Factor	ALD Mag Pe Factor 7/16	M07P	ALD
ALPE08H	Photoelectric Factor	ALD HS Pe Factor 8/16	H08P	ALD
ALPE08M	Photoelectric Factor	ALD Mag Pe Factor 8/16	M08P	ALD
ALPE09H	Photoelectric Factor	ALD HS Pe Factor 9/16	H09P	ALD
ALPE09M	Photoelectric Factor	ALD Mag Pe Factor 9/16	M09P	ALD
ALPE10H	Photoelectric Factor	ALD HS Pe Factor 10/16	H10P	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALPE10M	Photoelectric Factor	ALD Mag Pe Factor 10/16	M10P	ALD
ALPE11H	Photoelectric Factor	ALD HS Pe Factor 11/16	H11P	ALD
ALPE11M	Photoelectric Factor	ALD Mag Pe Factor 11/16	M11P	ALD
ALPE12H	Photoelectric Factor	ALD HS Pe Factor 12/16	H12P	ALD
ALPE12M	Photoelectric Factor	ALD Mag Pe Factor 12/16	M12P	ALD
ALPE13H	Photoelectric Factor	ALD HS Pe Factor 13/16	H13P	ALD
ALPE13M	Photoelectric Factor	ALD Mag Pe Factor 13/16	M13P	ALD
ALPE14H	Photoelectric Factor	ALD HS Pe Factor 14/16	H14P	ALD
ALPE14M	Photoelectric Factor	ALD Mag Pe Factor 14/16	M14P	ALD
ALPE15H	Photoelectric Factor	ALD HS Pe Factor 15/16	H15P	ALD
ALPE15M	Photoelectric Factor	ALD Mag Pe Factor 15/16	M15P	ALD
ALPE16H	Photoelectric Factor	ALD HS Pe Factor 16/16	H16P	ALD
ALPE16M	Photoelectric Factor	ALD Mag Pe Factor 16/16	M16P	ALD
ALPE1H	Photoelectric Factor	ALD HS Pe Factor 1/8	P1H	ALD
ALPE1M	Photoelectric Factor	ALD Mag Pe Factor 1/8	P1M	ALD
ALPE2H	Photoelectric Factor	ALD HS Pe Factor 2/8	P2H	ALD
ALPE2M	Photoelectric Factor	ALD Mag Pe Factor 2/8	P2M	ALD
ALPE3H	Photoelectric Factor	ALD HS Pe Factor 3/8	P3H	ALD
ALPE3M	Photoelectric Factor	ALD Mag Pe Factor 3/8	P3M	ALD
ALPE4H	Photoelectric Factor	ALD HS Pe Factor 4/8	P4H	ALD
ALPE4M	Photoelectric Factor	ALD Mag Pe Factor 4/8	P4M	ALD
ALPE5H	Photoelectric Factor	ALD HS Pe Factor 5/8	P5H	ALD
ALPE5M	Photoelectric Factor	ALD Mag Pe Factor 5/8	P5M	ALD
ALPE6H	Photoelectric Factor	ALD HS Pe Factor 6/8	P6H	ALD
ALPE6M	Photoelectric Factor	ALD Mag Pe Factor 6/8	P6M	ALD
ALPE7H	Photoelectric Factor	ALD HS Pe Factor 7/8	P7H	ALD
ALPE7M	Photoelectric Factor	ALD Mag Pe Factor 7/8	P7M	ALD
ALPE8H	Photoelectric Factor	ALD HS Pe Factor 8/8	P8H	ALD
ALPE8M	Photoelectric Factor	ALD Mag Pe Factor 8/8	P8M	ALD
ALPEA	Photoelectric Factor	ALD Average Pe Factor	APEA	ALD
ALPEA-T	Photoelectric Factor	ALD Average Pe Factor RT	APEA	ALD
ALPEBQ	Photoelectric Factor	ALD Pe Factor B-Quad	PEBQ	ALD
ALPEBQ-T	Photoelectric Factor	ALD Pe Factor B-Quad RT	PEBQ	ALD
ALPEEQ	Photoelectric Factor	ALD Pe Factor E-Quad	PEEQ	ALD
ALPEEQ-T	Photoelectric Factor	ALD Pe Factor E-Quad RT	PEEQ	ALD
ALPEH	Photoelectric Factor Image	ALD Pe Factor Azi HS	LPEH	ALD
ALPELC	Photoelectric Factor	ALD LCRB Pe Factor	APEL	ALD
ALPELC-T	Photoelectric Factor	ALD LCRB Pe Factor RT	APEL	ALD
ALPELQ	Photoelectric Factor	ALD Pe Factor L-Quad	PELQ	ALD
ALPELQ-T	Photoelectric Factor	ALD Pe Factor L-Quad RT	PELQ	ALD
ALPEM	Photoelectric Factor Image	ALD Pe Factor Azi Mag	LPEM	ALD
ALPENQ	Photoelectric Factor	ALD Pe Factor N-Quad	PENQ	ALD
ALPENQ-T	Photoelectric Factor	ALD Pe Factor N-Quad RT	PENQ	ALD
ALPERQ	Photoelectric Factor	ALD Pe Factor R-Quad	PERQ	ALD
ALPERQ-T	Photoelectric Factor	ALD Pe Factor R-Quad RT	PERQ	ALD
ALPESQ	Photoelectric Factor	ALD Pe Factor S-Quad	PESQ	ALD
ALPESQ-T	Photoelectric Factor	ALD Pe Factor S-Quad RT	PESQ	ALD
ALPETQ	Photoelectric Factor	ALD Pe Factor T-Quad	PETQ	ALD
ALPETQ-T	Photoelectric Factor	ALD Pe Factor T-Quad RT	PETQ	ALD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ALPEWQ	Photoelectric Factor	ALD Pe Factor W-Quad	PEWQ	ALD
ALPEWQ-T	Photoelectric Factor	ALD Pe Factor W-Quad RT	PEWQ	ALD
ALSDR	Diagnostic	ALD RS Std Dev Ratio	ASDR	ALD
ALSDR-T	Diagnostic	ALD RS Std Dev Ratio RT	ASDR	ALD
ALSOH	Acoustic Stand-Off Image	ALD Stand-Off Azi HS	SOHL	ALD
ALSOM	Acoustic Stand-Off Image	ALD Stand-Off Azi Mag	SOML	ALD
ALTFC-T	Toolface	ALD Toolface Combined	ALFC	ALD
ALXT	Formation Exposure Time	ALD Form Exp Time	ALXT	ALD
ARH16AC	Resistivity	Avg 16in 2M At Res Cor	AH1D	ADR
ARH16AC-T	Resistivity	Avg 16in 2M ARes Cor RT	AH1D	ADR
ARH16PC	Resistivity	Avg 16in 2M Ph Res Cor	AH1C	ADR
ARH16PC-T	Resistivity	Avg 16in 2M PRes Cor RT	AH1C	ADR
ARH32AC	Resistivity	Avg 32in 2M At Res Cor	AH2D	ADR
ARH32AC-T	Resistivity	Avg 32in 2M ARes Cor RT	AH2D	ADR
ARH32PC	Resistivity	Avg 32in 2M Ph Res Cor	AH2C	ADR
ARH32PC-T	Resistivity	Avg 32in 2M PRes Cor RT	AH2C	ADR
ARH48AC	Resistivity	Avg 48in 2M At Res Cor	AH3D	ADR
ARH48AC-T	Resistivity	Avg 48in 2M ARes Cor RT	AH3D	ADR
ARH48PC	Resistivity	Avg 48in 2M Ph Res Cor	AH3C	ADR
ARH48PC-T	Resistivity	Avg 48in 2M PRes Cor RT	AH3C	ADR
ARL48AC	Resistivity	Avg 48in 125k At Res Cor	AL3D	ADR
ARL48AC-T	Resistivity	Avg 48in 125k ARes Cor RT	AL3D	ADR
ARL48PC	Resistivity	Avg 48in 125k Ph Res Cor	AL3C	ADR
ARL48PC-T	Resistivity	Avg 48in 125k PRes Cor RT	AL3C	ADR
ARM16AC	Resistivity	Avg 16in 500k At Res Cor	AM1D	ADR
ARM16AC-T	Resistivity	Avg 16in 500k ARes Cor RT	AM1D	ADR
ARM16PC	Resistivity	Avg 16in 500k Ph Res Cor	AM1C	ADR
ARM16PC-T	Resistivity	Avg 16in 500k PRes Cor RT	AM1C	ADR
ARM32AC	Resistivity	Avg 32in 500k At Res Cor	AM2D	ADR
ARM32AC-T	Resistivity	Avg 32in 500k ARes Cor RT	AM2D	ADR
ARM32PC	Resistivity	Avg 32in 500k Ph Res Cor	AM2C	ADR
ARM32PC-T	Resistivity	Avg 32in 500k PRes Cor RT	AM2C	ADR
ARM48AC	Resistivity	Avg 48in 500k At Res Cor	AM3D	ADR
ARM48AC-T	Resistivity	Avg 48in 500k ARes Cor RT	AM3D	ADR
ARM48PC	Resistivity	Avg 48in 500k Ph Res Cor	AM3C	ADR
ARM48PC-T	Resistivity	Avg 48in 500k PRes Cor RT	AM3C	ADR
BGCG	Gamma Ray	ABG Combined Gamma Ray	BGCG	ABG
BGCGBC	Gamma Ray	ABG Gamma Ray Btm Quad BC	BCCB	ABG
BGCGBC-T	Gamma Ray	ABG GR Btm Quad BC RT	BCCB	ABG
BGCGC	Gamma Ray	ABG Comb Gamma Ray BC	BCGC	ABG
BGCGC-T	Gamma Ray	ABG Comb Gamma Ray BC RT	BCGC	ABG
BGCGHC	Gamma Ray Image	ABG Comb Gamma Azi HS BC	BCCH	ABG
BGCGHC-T	Gamma Ray Image	ABG Comb GR Azi HS BC RT	BCCH	ABG
BGCGLC	Gamma Ray	ABG Gamma Ray Lft Quad BC	BCCL	ABG
BGCGLC-T	Gamma Ray	ABG GR Lft Quad BC RT	BCCL	ABG
BGCGRC	Gamma Ray	ABG Gamma Ray Rgt Quad BC	BCCR	ABG
BGCGRC-T	Gamma Ray	ABG GR Rgt Quad BC RT	BCCR	ABG
BGCG-T	Gamma Ray	ABG Combined Gamma Ray RT	BGCG	ABG
BGCGTC	Gamma Ray	ABG Gamma Ray Top Quad BC	BCCT	ABG

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
BGCGTC-T	Gamma Ray	ABG GR Top Quad BC RT	BCCT	ABG
BGDD	Data Density	ABG Data Density	BGDD	ABG
BTCC	Acoustic Coherence	BAT Comp Coherence	BTCC	BAT
BTCCA-T	Acoustic Coherence	BAT Comp Coherence Avg RT	BCCA	BAT
BTCS	Acoustic Slowness	BAT Comp Slowness	BTCS	BAT
BTCSC	Acoustic Coherence	BAT Comb Shear Coherence	BCSC	BAT
BTCSS	Acoustic Slowness	BAT Comb Shear Slowness	BCSS	BAT
BTCS-T	Acoustic Slowness	BAT Comp Slowness RT	BTCS	BAT
BTDD	Data Density	BAT Data Density	BTDD	BAT
BTRSC	Acoustic Coherence	BAT Ref Shear Coherence	BRSC	BAT
BTRSS-T	Acoustic Slowness	BAT Ref Shear Slowness RT	BRSS	BAT
BTSFLAG	Diagnostic	BAT Shear Flag	BSFG	BAT
BTVPVS	Velocity Ratio	BAT VP/VS Ratio	BVPS	BAT
BTXT	Formation Exposure Time	BAT Form Exp Time	BTXT	BAT
C09AC	Conductivity	9in Atten Conductivity BC	D09A	EWR-Phase 4
C09PC	Conductivity	9in Phase Conductivity BC	D09P	EWR-Phase 4
C12AC	Conductivity	12in Att Conductivity BC	D12A	Super-Slim EWR-Phase 4
C12PC	Conductivity	12in Ph Conductivity BC	D12P	Super-Slim EWR-Phase 4
C15AC	Conductivity	15in Att Conductivity BC	D15A	EWR-Phase 4
C15PC	Conductivity	15in Ph Conductivity BC	D15P	EWR-Phase 4
C18AC	Conductivity	18in Att Conductivity BC	D18A	EWR-Phase 4D
C18PC	Conductivity	18in Ph Conductivity BC	D18P	EWR-Phase 4D
C20AC	Conductivity	20in Att Conductivity BC	D20A	Super-Slim EWR-Phase 4
C20PC	Conductivity	20in Ph Conductivity BC	D20P	Super-Slim EWR-Phase 4
C24AC	Conductivity	24in Att Conductivity BC	D24A	EWR-Phase 4D
C24PC	Conductivity	24in Ph Conductivity BC	D24P	EWR-Phase 4D
C27AC	Conductivity	27in Att Conductivity BC	D27A	EWR-Phase 4
C27PC	Conductivity	27in Ph Conductivity BC	D27P	EWR-Phase 4
C28AC	Conductivity	28in Att Conductivity BC	D28A	Super-Slim EWR-Phase 4
C28PC	Conductivity	28in Ph Conductivity BC	D28P	Super-Slim EWR-Phase 4
C30AC	Conductivity	30in Att Conductivity BC	D30A	EWR-Phase 4D
C30PC	Conductivity	30in Ph Conductivity BC	D30P	EWR-Phase 4D
C39AC	Conductivity	39in Att Conductivity BC	D39A	EWR-Phase 4
C39PC	Conductivity	39in Ph Conductivity BC	D39P	EWR-Phase 4
C42AC	Conductivity	42in Att Conductivity BC	D42A	EWR-Phase 4D
C42PC	Conductivity	42in Ph Conductivity BC	D42P	EWR-Phase 4D
C44AC	Conductivity	44in Att Conductivity BC	D44A	Super-Slim EWR-Phase 4
C44PC	Conductivity	44in Ph Conductivity BC	D44P	Super-Slim EWR-Phase 4
CH16AC	Conductivity	16in 2 MHz Atten Con BC	H1AD	EWR-M5
CH16AC-T	Conductivity	16in 2 MHz At Con BC RT	H1AD	EWR-M5
CH16PC	Conductivity	16in 2 MHz Phase Con BC	H1PD	EWR-M5
CH16PC-T	Conductivity	16in 2 MHz Ph Con BC RT	H1PD	EWR-M5
CH24AC	Conductivity	24in 2 MHz Atten Con BC	H2AD	EWR-M5
CH24AC-T	Conductivity	24in 2 MHz At Con BC RT	H2AD	EWR-M5
CH24PC	Conductivity	24in 2 MHz Phase Con BC	H2PD	EWR-M5
CH24PC-T	Conductivity	24in 2 MHz Ph Con BC RT	H2PD	EWR-M5
CH32AC	Conductivity	32in 2 MHz Atten Con BC	H3AD	EWR-M5
CH32AC-T	Conductivity	32in 2 MHz At Con BC RT	H3AD	EWR-M5
CH32PC	Conductivity	32in 2 MHz Phase Con BC	H3PD	EWR-M5

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
CH32PC-T	Conductivity	32in 2 MHz Ph Con BC RT	H3PD	EWR-M5
CH40AC	Conductivity	40in 2 MHz Atten Con BC	H4AD	EWR-M5
CH40AC-T	Conductivity	40in 2 MHz At Con BC RT	H4AD	EWR-M5
CH40PC	Conductivity	40in 2 MHz Phase Con BC	H4PD	EWR-M5
CH40PC-T	Conductivity	40in 2 MHz Ph Con BC RT	H4PD	EWR-M5
CH48AC	Conductivity	48in 2 MHz Atten Con BC	H5AD	EWR-M5
CH48AC-T	Conductivity	48in 2 MHz At Con BC RT	H5AD	EWR-M5
CH48PC	Conductivity	48in 2 MHz Phase Con BC	H5PD	EWR-M5
CH48PC-T	Conductivity	48in 2 MHz Ph Con BC RT	H5PD	EWR-M5
CL16AC	Conductivity	16in 250 kHz Atten Con BC	L1AD	EWR-M5
CL16AC-T	Conductivity	16in 250 kHz At Con BC RT	L1AD	EWR-M5
CL16PC	Conductivity	16in 250 kHz Phase Con BC	L1PD	EWR-M5
CL16PC-T	Conductivity	16in 250 kHz Ph Con BC RT	L1PD	EWR-M5
CL24AC	Conductivity	24in 250 kHz Atten Con BC	L2AD	EWR-M5
CL24AC-T	Conductivity	24in 250 kHz At Con BC RT	L2AD	EWR-M5
CL24PC	Conductivity	24in 250 kHz Phase Con BC	L2PD	EWR-M5
CL24PC-T	Conductivity	24in 250 kHz Ph Con BC RT	L2PD	EWR-M5
CL32AC	Conductivity	32in 250 kHz Atten Con BC	L3AD	EWR-M5
CL32AC-T	Conductivity	32in 250 kHz At Con BC RT	L3AD	EWR-M5
CL32PC	Conductivity	32in 250 kHz Phase Con BC	L3PD	EWR-M5
CL32PC-T	Conductivity	32in 250 kHz Ph Con BC RT	L3PD	EWR-M5
CL39AC	Conductivity	39in 500k Atten Cond BC	DL3A	EWR-Phase 4
CL39PC	Conductivity	39in 500k Phase Cond BC	D3LP	EWR-Phase 4
CL40AC	Conductivity	40in 250 kHz Atten Con BC	L4AD	EWR-M5
CL40AC-T	Conductivity	40in 250 kHz At Con BC RT	L4AD	EWR-M5
CL40PC	Conductivity	40in 250 kHz Phase Con BC	L4PD	EWR-M5
CL40PC-T	Conductivity	40in 250 kHz Ph Con BC RT	L4PD	EWR-M5
CL48AC	Conductivity	48in 250 kHz Atten Con BC	L5AD	EWR-M5
CL48AC-T	Conductivity	48in 250 kHz At Con BC RT	L5AD	EWR-M5
CL48PC	Conductivity	48in 250 kHz Phase Con BC	L5PD	EWR-M5
CL48PC-T	Conductivity	48in 250 kHz Ph Con BC RT	L5PD	EWR-M5
CM16AC	Conductivity	16in 500 kHz Atten Con BC	M1AD	EWR-M5
CM16AC-T	Conductivity	16in 500 kHz At Con BC RT	M1AD	EWR-M5
CM16PC	Conductivity	16in 500 kHz Phase Con BC	M1PD	EWR-M5
CM16PC-T	Conductivity	16in 500 kHz Ph Con BC RT	M1PD	EWR-M5
CM24AC	Conductivity	24in 500 kHz Atten Con BC	M2AD	EWR-M5
CM24AC-T	Conductivity	24in 500 kHz At Con BC RT	M2AD	EWR-M5
CM24PC	Conductivity	24in 500 kHz Phase Con BC	M2PD	EWR-M5
CM24PC-T	Conductivity	24in 500 kHz Ph Con BC RT	M2PD	EWR-M5
CM32AC	Conductivity	32in 500 kHz Atten Con BC	M3AD	EWR-M5
CM32AC-T	Conductivity	32in 500 kHz At Con BC RT	M3AD	EWR-M5
CM32PC	Conductivity	32in 500 kHz Phase Con BC	M3PD	EWR-M5
CM32PC-T	Conductivity	32in 500 kHz Ph Con BC RT	M3PD	EWR-M5
CM40AC	Conductivity	40in 500 kHz Atten Con BC	M4AD	EWR-M5
CM40AC-T	Conductivity	40in 500 kHz At Con BC RT	M4AD	EWR-M5
CM40PC	Conductivity	40in 500 kHz Phase Con BC	M4PD	EWR-M5
CM40PC-T	Conductivity	40in 500 kHz Ph Con BC RT	M4PD	EWR-M5
CM48AC	Conductivity	48in 500 kHz Atten Con BC	M5AD	EWR-M5
CM48AC-T	Conductivity	48in 500 kHz At Con BC RT	M5AD	EWR-M5

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
CM48PC	Conductivity	48in 500 kHz Phase Con BC	M5PD	EWR-M5
CM48PC-T	Conductivity	48in 500 kHz Ph Con BC RT	M5PD	EWR-M5
D1AX	Drillstring Vibration	DDSr-DOC1 Average X	D1AX	DDSr-DOC
D1AX-T	Drillstring Vibration	DDSr-DOC1 Average X RT	1AX	DDSr-DOC
D1AY	Drillstring Vibration	DDSr-DOC1 Average Y	D1AY	DDSr-DOC
D1AY-T	Drillstring Vibration	DDSr-DOC1 Average Y RT	1AY	DDSr-DOC
D1AZ	Drillstring Vibration	DDSr-DOC1 Average Z	D1AZ	DDSr-DOC
D1AZ-T	Drillstring Vibration	DDSr-DOC1 Average Z RT	1AZ	DDSr-DOC
D1DA	Drillstring Vibration	DDSr-DOC1 Delta Average	D1DA	DDSr-DOC
D1PX	Drillstring Vibration	DDSr-DOC1 Peak X	D1PX	DDSr-DOC
D1PX-T	Drillstring Vibration	DDSr-DOC1 Peak X RT	1PX	DDSr-DOC
D1PY	Drillstring Vibration	DDSr-DOC1 Peak Y	D1PY	DDSr-DOC
D1PY-T	Drillstring Vibration	DDSr-DOC1 Peak Y RT	1PY	DDSr-DOC
D1PZ	Drillstring Vibration	DDSr-DOC1 Peak Z	D1PZ	DDSr-DOC
D1PZ-T	Drillstring Vibration	DDSr-DOC1 Peak Z RT	1PZ	DDSr-DOC
D1RN	Drillstring Rotation	DDSr-DOC1 Min RPM	D1RN	DDSr-DOC
D1RPM	Drillstring Rotation	DDSr-DOC1 Avg RPM	D1RP	DDSr-DOC
D1RX	Drillstring Rotation	DDSr-DOC1 Max RPM	D1RX	DDSr-DOC
D1SS-T	Drillstring Vibration	DDSr-DOC1 SS Severity RT	1SSS	DDSr-DOC
D1TVAX-T	Drillstring Vibration	DDSr-DOC1 T Vib Avg X RT	1TAX	DDSr-DOC
D1TVPX-T	Drillstring Vibration	DDSr-DOC1 T Vib Peak X RT	1TPX	DDSr-DOC
D1TVPZ-T	Drillstring Vibration	DDSr-DOC1 T Vib Peak Z RT	1TPZ	DDSr-DOC
D1TVSSI-T	Drillstring Vibration	DDSr-DOC1 T Vib Stick-Slip RT	1SSI	DDSr-DOC
DDAX	Drillstring Vibration	DDSr-DGR Average X	DDAX	DDSr-DGR
DDAX-T	Drillstring Vibration	DDSr-DGR Average X RT	DAX	DDSr-DGR
DDAY	Drillstring Vibration	DDSr-DGR Average Y	DDAY	DDSr-DGR
DDAY-T	Drillstring Vibration	DDSr-DGR Average Y RT	DAY	DDSr-DGR
DDAZ	Drillstring Vibration	DDSr-DGR Average Z	DDAZ	DDSr-DGR
DDAZ-T	Drillstring Vibration	DDSr-DGR Average Z RT	DAZ	DDSr-DGR
DDDA	Drillstring Vibration	DDSr-DGR Delta Average	DDDA	DDSr-DGR
DDPX	Drillstring Vibration	DDSr-DGR Peak X	DDPX	DDSr-DGR
DDPX-T	Drillstring Vibration	DDSr-DGR Peak X RT	DPX	DDSr-DGR
DDPY	Drillstring Vibration	DDSr-DGR Peak Y	DDPY	DDSr-DGR
DDPY-T	Drillstring Vibration	DDSr-DGR Peak Y RT	DPY	DDSr-DGR
DDPZ	Drillstring Vibration	DDSr-DGR Peak Z	DDPZ	DDSr-DGR
DDPZ-T	Drillstring Vibration	DDSr-DGR Peak Z RT	DPZ	DDSr-DGR
DDRN	Drillstring Rotation	DDSr-DGR Min RPM	DDRN	DDSr-DGR
DDRPM	Drillstring Rotation	DDSr-DGR Avg RPM	DDRP	DDSr-DGR
DDRX	Drillstring Rotation	DDSr-DGR Max RPM	DDRX	DDSr-DGR
DDSS-T	Drillstring Vibration	DDSr-DGR SS Severity RT	DSSD	DDSr-DGR
DDTVAX-T	Drillstring Vibration	DDSr-DGR T Vib Avg X RT	DTAX	DDSr-DGR
DDTVPX-T	Drillstring Vibration	DDSr-DGR T Vib Peak X RT	DTPX	DDSr-DGR
DDTVPZ-T	Drillstring Vibration	DDSr-DGR T Vib Peak Z RT	DTPZ	DDSr-DGR
DDTVSSI-T	Drillstring Vibration	DDSr-DGR T Vib Stick-Slip RT	DSSI	DDSr-DGR
DGDD	Data Density	DGR Data Density	DGDD	DGR
DGRC	Gamma Ray	DGR Combined Gamma Ray	DGRC	DGR
DGRCC	Gamma Ray	DGR Comb Gamma Ray BCorr	DGCC	DGR
DGXT	Formation Exposure Time	DGR Exposure Time	DGXT	DGR
DHAX	Drillstring Vibration	DDSr-HCIM Average X	DHAX	DDSr-HCIM

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
DHAX-T	Drillstring Vibration	DDSr-HCIM Average X RT	HAX	DDSr-HCIM
DHAY	Drillstring Vibration	DDSr-HCIM Average Y	DHAY	DDSr-HCIM
DHAY-T	Drillstring Vibration	DDSr-HCIM Average Y RT	HAY	DDSr-HCIM
DHAZ	Drillstring Vibration	DDSr-HCIM Average Z	DHAZ	DDSr-HCIM
DHAZ-T	Drillstring Vibration	DDSr-HCIM Average Z RT	HAZ	DDSr-HCIM
DHDA	Drillstring Vibration	DDSr-HCIM Delta Average	DHDA	DDSr-HCIM
DHPX	Drillstring Vibration	DDSr-HCIM Peak X	DHPX	DDSr-HCIM
DHPX-T	Drillstring Vibration	DDSr-HCIM Peak X RT	HPX	DDSr-HCIM
DHPY	Drillstring Vibration	DDSr-HCIM Peak Y	DHPY	DDSr-HCIM
DHPY-T	Drillstring Vibration	DDSr-HCIM Peak Y RT	HPY	DDSr-HCIM
DHPZ	Drillstring Vibration	DDSr-HCIM Peak Z	DHPZ	DDSr-HCIM
DHPZ-T	Drillstring Vibration	DDSr-HCIM Peak Z RT	HPZ	DDSr-HCIM
DHRN	Drillstring Rotation	DDSr-HCIM Min RPM	DHRN	DDSr-HCIM
DHRPM	Drillstring Rotation	DDSr-HCIM Avg RPM	DHRP	DDSr-HCIM
DHRX	Drillstring Rotation	DDSr-HCIM Max RPM	DHRX	DDSr-HCIM
DHSS-T	Drillstring Vibration	DDSr-HCIM SS Severity RT	HSS	DDSr-HCIM
DHTVAX-T	Drillstring Vibration	DDSr-HCIM T Vib Avg X RT	HTAX	DDSr-HCIM
DHTVPX-T	Drillstring Vibration	DDSr-HCIM T Vib Peak X RT	HTPX	DDSr-HCIM
DHTVPZ-T	Drillstring Vibration	DDSr-HCIM T Vib Peak Z RT	HTPZ	DDSr-HCIM
DHTVSSI-T	Drillstring Vibration	DDSr-HCIM T Vib Stick-Slip RT	HSSI	DDSr-HCIM
EWDD	Data Density	EWR Data Density	EWDD	EWR-Phase 4
EWDD	Data Density	EWR Data Density	EWDD	EWR-Phase 4D
EWDD	Data Density	EWR Data Density	EWDD	Super-Slim EWR-Phase 4
EWTEMP	Temperature	EWR Temperature	EWT	EWR-Phase 4
EWTEMP	Temperature	EWR Temperature	EWT	EWR-Phase 4D
EWTEMP	Temperature	EWR Temperature	EWT	Super-Slim EWR-Phase 4
EWXT	Formation Exposure Time	EWR Formation Exp Time	EWXT	EWR-Phase 4
EWXT	Formation Exposure Time	EWR Formation Exp Time	EWXT	EWR-Phase 4D
EWXT	Formation Exposure Time	EWR Formation Exp Time	EWXT	Super-Slim EWR-Phase 4
GBCG	Gamma Ray	GABI Combined Gamma Ray	GBCG	GABI
GBCG	Gamma Ray	GABI Combined Gamma Ray	GBCG	GABI
GBCGC	Gamma Ray	GABI Comb Gamma Ray BCorr	GBCC	GABI
GBCGC	Gamma Ray	GABI Comb Gamma Ray BCorr	GBCC	GABI
GBCGC-T	Gamma Ray	GABI Comb Gamma Ray BC RT	GBCC	GABI
GBCGH	Gamma Ray Image	GABI Comb Gamma Azi HS	CGH	GABI
GBCGHC	Gamma Ray Image	GABI Comb Gamma Azi HS BC	CGHC	GABI
GBCGHC-T	Gamma Ray Image	GABI Comb GR Azi HS BC RT	CGHC	GABI
GBCGH-T	Gamma Ray Image	GABI Comb Gamma Azi HS RT	CGH	GABI
GBCGM	Gamma Ray Image	GABI Comb Gamma Azi Mag	CGM	GABI
GBCGMC	Gamma Ray Image	GABI Comb GR Azi Mag BC	CGMC	GABI
GBCG-T	Gamma Ray	GABI Comb Gamma Ray RT	GBCG	GABI
GBDD	Data Density	GABI Data Density	GBDD	GABI
GBINC	Inclination	GABI Inclination	GBIN	GABI
GBINC-T	Inclination	GABI Inclination RT	GBIN	GABI
GBXT	Formation Exposure Time	GABI Exposure Time	GBXT	GABI
GDAX	Drillstring Vibration	DDSr-GP Average X	GDAX	DDSr-GP
GDAX-T	Drillstring Vibration	DDSr-GP Average X RT	GAX	DDSr-GP
GDAY	Drillstring Vibration	DDSr-GP Average Y	GDAY	DDSr-GP
GDAY-T	Drillstring Vibration	DDSr-GP Average Y RT	GAY	DDSr-GP

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
GDAZ	Drillstring Vibration	DDSr-GP Average Z	GDAZ	DDSr-GP
GDAZ-T	Drillstring Vibration	DDSr-GP Average Z RT	GAZ	DDSr-GP
GDDA	Drillstring Vibration	DDSr-GP Delta Average	GDDA	DDSr-GP
GDPX	Drillstring Vibration	DDSr-GP Peak X	GDPX	DDSr-GP
GDPX-T	Drillstring Vibration	DDSr-GP Peak X RT	GPX	DDSr-GP
GDPY	Drillstring Vibration	DDSr-GP Peak Y	GDPY	DDSr-GP
GDPY-T	Drillstring Vibration	DDSr-GP Peak Y RT	GPY	DDSr-GP
GDPZ	Drillstring Vibration	DDSr-GP Peak Z	GDPZ	DDSr-GP
GDPZ-T	Drillstring Vibration	DDSr-GP Peak Z RT	GPZ	DDSr-GP
GDRN	Drillstring Rotation	DDSr-GP Min RPM	GDRN	DDSr-GP
GDRPM	Drillstring Rotation	DDSr-GP Avg RPM	GDRP	DDSr-GP
GDRX	Drillstring Rotation	DDSr-GP Max RPM	GDRX	DDSr-GP
GDSS-T	Diagnostic	DDSr-GP SS Severity RT	GSSS	DDSr-GP
GDTVAX-T	Drillstring Vibration	DDSr-GP T Vib Avg X RT	GTAX	DDSr-GP
GDTVPX-T	Drillstring Vibration	DDSr-GP T Vib Peak X RT	GTPX	DDSr-GP
GDTVPZ-T	Drillstring Vibration	DDSr-GP T Vib Peak Z RT	GTPZ	DDSr-GP
GDTVSSI-T	Diagnostic	DDSr-GP T Vib Stick-Slip RT	GSSI	DDSr-GP
GMDD	Data Density	GM Data Density	GMDD	GM
GMGRC	Gamma Ray	GM Combined Gamma Ray	GMGR	GM
GMGRCC	Gamma Ray	GM Comb Gamma Ray BCor	GMGC	GM
GMGRCC-T	Gamma Ray	GM Comb Gamma Ray RT BCor	GMGC	GM
GMGRC-T	Gamma Ray	GM Combined Gamma Ray RT	GMGR	GM
GMXT	Formation Exposure Time	GM Exposure Time	GMXT	GM
GR-C	Gamma Ray	Composite Gamma Ray	GRC	Multiple
GRC-C	Gamma Ray	Composite Gamma Ray BC	GRCC	Multiple
GTA-T	Diagnostic	GT Alpha RT	GTA	GeoTap
GTB-T	Diagnostic	GT Beta RT	GTB	GeoTap
GTBUTR-T	Pressure Test Time	GT Build-Up Time Req RT	GBTR	GeoTap
GTBUT-T	Pressure Test Time	GT BU-Time Actual RT	GBUT	GeoTap
GTCOM	Diagnostic	GT Comments	GCOM	GeoTap
GTDDT-T	Pressure Test Time	GT Draw-Down Time RT	GTDT	GeoTap
GTFM-T	Fluid Mobility	GT Fluid Mobility RT	GTFM	GeoTap
GTPDS-T	Pressure	GT Diff Press Status RT	GDPS	GeoTap
GTPED-T	Pressure	GT End DD Pressure RT	GPED	GeoTap
GTPH1S-T	Pressure	GT Hyd Press 1 Status RT	GP1S	GeoTap
GTPH1-T	Pressure	GT Hydrostatic Press 1 RT	GTP1	GeoTap
GTPH2-T	Pressure	GT Hydrostatic Press 2 RT	GTP2	GeoTap
GTPP	Pressure	GT Strain Pressure	GTPP	GeoTap
GTPP	Pressure	GT Strain Pressure	GTPP	GeoTap
GTPQ	Pressure	GT Quartz Pressure	GTPQ	GeoTap
GTPQH	Pressure	GT HR Quartz Pressure	GPQH	GeoTap
GTPQ-T	Pressure	GT Quartz Pressure RT	GTPQ	GeoTap
GTPS1-T	Pressure	GT Stop Pressure 1 RT	GPS1	GeoTap
GTPS2-T	Pressure	GT Stop Pressure 2 RT	GPS2	GeoTap
GTPSD-T	Pressure	GT Start DD Pressure RT	GPSD	GeoTap
GTPS-T	Pressure	GT Stop Pressure RT	GTPS	GeoTap
GTS-T	Diagnostic	GT Sigma RT	GTS	GeoTap
GTTN-T	Diagnostic	GT Test Number RT	GTTN	GeoTap
GTTSM-T	Diagnostic	GT Test Start Method RT	TTSM	GeoTap

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
GTTTM-T	Diagnostic	GT Test Terminate Method	TTTM	GeoTap
GTTTS-T	Diagnostic	GT Test Termin Status RT	GTTS	GeoTap
HAG1C	Gamma Ray	AGR HS GR (1/8) BCorr	HG1C	AGR
HAG1C-T	Gamma Ray	AGR HS GR (1/8) RT BCorr	HG1C	AGR
HAG2C	Gamma Ray	AGR HS GR (2/8) BCorr	HG2C	AGR
HAG2C-T	Gamma Ray	AGR HS GR (2/8) RT BCorr	HG2C	AGR
HAG3C	Gamma Ray	AGR HS GR (3/8) BCorr	HG3C	AGR
HAG3C-T	Gamma Ray	AGR HS GR (3/8) RT BCorr	HG3C	AGR
HAG4C	Gamma Ray	AGR HS GR (4/8) BCorr	HG4C	AGR
HAG4C-T	Gamma Ray	AGR HS GR (4/8) RT BCorr	HG4C	AGR
HAG5C	Gamma Ray	AGR HS GR (5/8) BCorr	HG5C	AGR
HAG5C-T	Gamma Ray	AGR HS GR (5/8) RT BCorr	HG5C	AGR
HAG6C	Gamma Ray	AGR HS GR (6/8) BCorr	HG6C	AGR
HAG6C-T	Gamma Ray	AGR HS GR (6/8) RT BCorr	HG6C	AGR
HAG7C	Gamma Ray	AGR HS GR (7/8) BCorr	HG7C	AGR
HAG7C-T	Gamma Ray	AGR HS GR (7/8) RT BCorr	HG7C	AGR
HAG8C	Gamma Ray	AGR HS GR (8/8) BCorr	HG8C	AGR
HAG8C-T	Gamma Ray	AGR HS GR (8/8) RT BCorr	HG8C	AGR
HAGBQC	Gamma Ray	AGR Bottom Quad GR BCorr	HGBC	AGR
HAGBQC-T	Gamma Ray	AGR Btm Quad GR RT BCorr	HGBC	AGR
HAGLQC	Gamma Ray	AGR Left Quad GR BCorr	HGLC	AGR
HAGLQC-T	Gamma Ray	AGR Left Quad GR RT BCorr	HGLC	AGR
HAGRQC	Gamma Ray	AGR Right Quad GR BCorr	HGRC	AGR
HAGRQC-T	Gamma Ray	AGR Right Quad GR RT BCor	HGRC	AGR
HAGTQC	Gamma Ray	AGR Top Quad GR BCorr	HGTC	AGR
HAGTQC-T	Gamma Ray	AGR Top Quad GR RT BCorr	HGTC	AGR
HGB01C	Gamma Ray	GABI HS GR (1/16) BCorr	H01C	GABI
HGB02C	Gamma Ray	GABI HS GR (2/16) BCorr	H02C	GABI
HGB03C	Gamma Ray	GABI HS GR (3/16) BCorr	H03C	GABI
HGB04C	Gamma Ray	GABI HS GR (4/16) BCorr	H04C	GABI
HGB05C	Gamma Ray	GABI HS GR (5/16) BCorr	H05C	GABI
HGB06C	Gamma Ray	GABI HS GR (6/16) BCorr	H06C	GABI
HGB07C	Gamma Ray	GABI HS GR (7/16) BCorr	H07C	GABI
HGB08C	Gamma Ray	GABI HS GR (8/16) BCorr	H08C	GABI
HGB09C	Gamma Ray	GABI HS GR (9/16) BCorr	H09C	GABI
HGB10C	Gamma Ray	GABI HS GR (10/16) BCorr	H10C	GABI
HGB11C	Gamma Ray	GABI HS GR (11/16) BCorr	H11C	GABI
HGB12C	Gamma Ray	GABI HS GR (12/16) BCorr	H12C	GABI
HGB13C	Gamma Ray	GABI HS GR (13/16) BCorr	H13C	GABI
HGB14C	Gamma Ray	GABI HS GR (14/16) BCorr	H14C	GABI
HGB15C	Gamma Ray	GABI HS GR (15/16) BCorr	H15C	GABI
HGB16C	Gamma Ray	GABI HS GR (16/16) BCorr	H16C	GABI
HGB1C	Gamma Ray	GABI HS GR (1/8) BCorr	HB1C	GABI
HGB2C	Gamma Ray	GABI HS GR (2/8) BCorr	HB2C	GABI
HGB3C	Gamma Ray	GABI HS GR (3/8) BCorr	HB3C	GABI
HGB4C	Gamma Ray	GABI HS GR (4/8) BCorr	HB4C	GABI
HGB5C	Gamma Ray	GABI HS GR (5/8) BCorr	HB5C	GABI
HGB6C	Gamma Ray	GABI HS GR (6/8) BCorr	HB6C	GABI
HGB7C	Gamma Ray	GABI HS GR (7/8) BCorr	HB7C	GABI

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
HGB8C	Gamma Ray	GABI HS GR (8/8) BCorr	HB8C	GABI
HGBBQC	Gamma Ray	GABI Gamma Ray BQ BCorr	HBBC	GABI
HGBBQC-T	Gamma Ray	GABI B-Quad GR BCorr RT	HBBC	GABI
HGBLQC	Gamma Ray	GABI Gamma Ray LQ BCorr	HBLC	GABI
HGBLQC-T	Gamma Ray	GABI L-Quad GR BCorr RT	HBLC	GABI
HGBRQC	Gamma Ray	GABI Gamma Ray RQ BCorr	HBRC	GABI
HGBRQC-T	Gamma Ray	GABI R-Quad GR BCorr RT	HBRC	GABI
HGBTQC	Gamma Ray	GABI Gamma Ray TQ BCorr	HBTC	GABI
HGBTQC-T	Gamma Ray	GABI T-Quad GR BCorr RT	HBTC	GABI
IDSA	Diagnostic	GT-IDS Alpha	IDA	GeoTap IDS
IDSA-T	Diagnostic	GT-IDS Alpha RT	IDA	GeoTap IDS
IDSB	Diagnostic	GT-IDS Beta	IDB	GeoTap IDS
IDSBPP	Pressure	GT-IDS Bubble Pt Pressure	IBPP	GeoTap IDS
IDSBPP	Pressure	GT-IDS Bubble Pt Pressure	IBPP	GeoTap IDS
IDSBPPN	Pressure	GT-IDS Bubble Point Min P	IBPN	GeoTap IDS
IDSBPP-T	Pressure	GT-IDS Bubble Pt Press RT	IBPP	GeoTap IDS
IDSBPP-T	Pressure	GT-IDS Bubble Pt Press RT	IBPP	GeoTap IDS
IDSBPPX	Pressure	GT-IDS Bubble Point Max P	IBPX	GeoTap IDS
IDSBPTN	Diagnostic	GT-IDS BP Test Number	IBTN	GeoTap IDS
IDSBPTN-T	Diagnostic	GT-IDS BP Test Number RT	IBTN	GeoTap IDS
IDSBPV	Diagnostic	GT-IDS Bubble Pt Volume	IBPV	GeoTap IDS
IDSB-T	Diagnostic	GT-IDS Beta RT	IDB	GeoTap IDS
IDSBUT	Pressure Test Time	GT-IDS Build-Up Time	IDBU	GeoTap IDS
IDSBUTR-T	Pressure Test Time	GT-IDS BU Time Req RT	IBUR	GeoTap IDS
IDSBUT-T	Pressure Test Time	GT-IDS Build-Up Time RT	IBUT	GeoTap IDS
IDSCOM	Diagnostic	GT-IDS Comments	IDCM	GeoTap IDS
IDSCOMP	Fluid Compressibility	GT-IDS Compressibility	ICMP	GeoTap IDS
IDSCOMP	Fluid Compressibility	GT-IDS Compressibility	ICMP	GeoTap IDS
IDSCOMP-T	Fluid Compressibility	GT-IDS Compressibility RT	ICMP	GeoTap IDS
IDSCOMP-T	Fluid Compressibility	GT-IDS Compressibility RT	ICMP	GeoTap IDS
IDSDDR-T	Flow Rate	GT-IDS Draw-Down Rate RT	IDDR	GeoTap IDS
IDSDDV-T	Volume	GT-IDS Draw-Down Vol RT	IDDV	GeoTap IDS
IDSFCD	Fluid Contamination	GT-IDS Den Contamination	IFCD	GeoTap IDS
IDSFCDE	Fluid Contamination	GT-IDS Den Contamin Error	ICDE	GeoTap IDS
IDSFCDE-T	Fluid Contamination	GT-IDS Den Contam Err RT	ICDE	GeoTap IDS
IDSFCD-T	Fluid Contamination	GT-IDS Den Contamin RT	IFCD	GeoTap IDS
IDSFCR	Fluid Contamination	GT-IDS Res Contamination	IFCR	GeoTap IDS
IDSFCRE	Fluid Contamination	GT-IDS Res Contamin Error	ICRE	GeoTap IDS
IDSFCRE-T	Fluid Contamination	GT-IDS Res Contam Err RT	ICRE	GeoTap IDS
IDSFCR-T	Fluid Contamination	GT-IDS Res Contamin RT	IFCR	GeoTap IDS
IDSFD	Fluid Density	GT-IDS Density Raw	IDFD	GeoTap IDS
IDSFDA	Fluid Density	GT-IDS Average Density	IFDA	GeoTap IDS
IDSFDA-T	Fluid Density	GT-IDS Average Density RT	IFDA	GeoTap IDS
IDSFDC	Fluid Density	GT-IDS Density Press Corr	IFDC	GeoTap IDS
IDSFDD	Fluid Density	GT-IDS Den Distribution	IFDD	GeoTap IDS
IDSFDD-T	Fluid Density	GT-IDS Den Distrib RT	IFDD	GeoTap IDS
IDSFDN	Fluid Density	GT-IDS Min Density	IFDN	GeoTap IDS
IDSFDX	Fluid Density	GT-IDS Max Density	IFDX	GeoTap IDS
IDSFP	Pressure	GT-IDS FluidID Press Raw	IDFP	GeoTap IDS

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
IDSFPA	Pressure	GT-IDS FluidID Press Avg	IFPA	GeoTap IDS
IDSFPD	Pressure	GT-IDS FluidID Press Dspk	IFPD	GeoTap IDS
IDSFPN	Pressure	GT-IDS FluidID Press Norm	IFPN	GeoTap IDS
IDSFR	Fluid Resistivity	GT-IDS Raw Resistivity	IDFR	GeoTap IDS
IDSFRA	Fluid Resistivity	GT-IDS Avg Resistivity	IFRA	GeoTap IDS
IDSFRA-T	Fluid Resistivity	GT-IDS Avg Resistivity RT	IFRA	GeoTap IDS
IDSFRD	Fluid Resistivity	GT-IDS Res Distribution	IFRD	GeoTap IDS
IDSFRD-T	Fluid Resistivity	GT-IDS Resist Distrib RT	IFRD	GeoTap IDS
IDSFRN	Fluid Resistivity	GT-IDS Min Resistivity	IFRN	GeoTap IDS
IDSFRX	Fluid Resistivity	GT-IDS Max Resistivity	IFRX	GeoTap IDS
IDSFT	Fluid Temperature	GT-IDS Fluid Temp Raw	IDFT	GeoTap IDS
IDSFTA	Fluid Temperature	GT-IDS Fluid Temp Avg	IFTA	GeoTap IDS
IDSFTA-T	Fluid Temperature	GT-IDS Fluid Temp Avg RT	IFTA	GeoTap IDS
IDSIR	Diagnostic	GT-IDS Investig Radius	IDIR	GeoTap IDS
IDSIR-T	Diagnostic	GT-IDS Investig Radius RT	IDIR	GeoTap IDS
IDSPBUT	Pressure Test Time	GT-IDS Pump Build-Up Time	IPBU	GeoTap IDS
IDSPDN-T	Pressure	GT-IDS Min DD Pressure RT	IPDN	GeoTap IDS
IDSPED	Pressure	GT-IDS End DD Pressure	IPED	GeoTap IDS
IDSPED-T	Pressure	GT-IDS End DD Pressure RT	IPED	GeoTap IDS
IDSPE-T	Diagnostic	GT-IDS Pump Efficiency RT	IDPE	GeoTap IDS
IDSPH1	Pressure	GT-IDS Hydrostatic P1	IDP1	GeoTap IDS
IDSPH1-T	Pressure	GT-IDS Hydrostatic P1 RT	IDP1	GeoTap IDS
IDSPH2	Pressure	GT-IDS Hydrostatic P2	IDP2	GeoTap IDS
IDSPH2-T	Pressure	GT-IDS Hydrostatic P2 RT	IDP2	GeoTap IDS
IDSPI	Diagnostic	GT-IDS Productivity Index	IDPI	GeoTap IDS
IDSPIP	Pressure	GT-IDS Pump In Press Raw	IPIP	GeoTap IDS
IDSPIPA	Pressure	GT-IDS Pump In Press Avg	IPIA	GeoTap IDS
IDSPIPA-T	Pressure	GT-IDS Pump In P Avg RT	IPIA	GeoTap IDS
IDSPIPD	Pressure	GT-IDS Pump In Press Dspk	IPID	GeoTap IDS
IDSPIPN	Pressure	GT-IDS Pump In Press Norm	IPIN	GeoTap IDS
IDSPI-T	Diagnostic	GT-IDS Product Index RT	IDPI	GeoTap IDS
IDSPM	Fluid Mobility	GT-IDS Pump Mobility	IDPM	GeoTap IDS
IDSPMA	Fluid Mobility	GT-IDS Pump Mobility Avg	IPMA	GeoTap IDS
IDSPMA-T	Fluid Mobility	GT-IDS Pump Mobil Avg RT	IPMA	GeoTap IDS
IDSPOP	Pressure	GT-IDS Pmp Out Press Raw	IPOP	GeoTap IDS
IDSPOPA	Pressure	GT-IDS Pump Out Press Avg	IPOA	GeoTap IDS
IDSPOPA-T	Pressure	GT-IDS Pump Out P Avg RT	IPOA	GeoTap IDS
IDSPOPD	Pressure	GT-IDS Pmp Out Press Dspk	IPOD	GeoTap IDS
IDSPOPN	Pressure	GT-IDS Pmp Out Press Norm	IPON	GeoTap IDS
IDSPPN-T	Pressure	GT-IDS Min Pump Press RT	IPPN	GeoTap IDS
IDSPQ	Pressure	GT-IDS Quartz Pressure	IDPQ	GeoTap IDS
IDSPQ-T	Pressure	GT-IDS Quartz Pressure RT	IDPQ	GeoTap IDS
IDSPR	Flow Rate	GT-IDS Pump Rate Raw	IDPR	GeoTap IDS
IDSPRA	Flow Rate	GT-IDS Pump Rate Average	IPRA	GeoTap IDS
IDSPRA-T	Flow Rate	GT-IDS Pump Rate Avg RT	IPRA	GeoTap IDS
IDSPRD	Flow Rate	GT-IDS Pump Rate Despiked	IPRD	GeoTap IDS
IDSPS	Pressure	GT-IDS Stop Pressure	IDPS	GeoTap IDS
IDSPS1	Pressure	GT-IDS Stop Pressure 1	IPS1	GeoTap IDS
IDSPS1-T	Pressure	GT-IDS Stop Pressure 1 RT	IPS1	GeoTap IDS

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
IDSPS2	Pressure	GT-IDS Stop Pressure 2	IPS2	GeoTap IDS
IDSPS2-T	Pressure	GT-IDS Stop Pressure 2 RT	IPS2	GeoTap IDS
IDSPSD	Pressure	GT-IDS Start DD Pressure	IPSD	GeoTap IDS
IDSPSD-T	Pressure	GT-IDS Start DD Press RT	IPSD	GeoTap IDS
IDSPS-T	Pressure	GT-IDS Stop Pressure RT	IDPS	GeoTap IDS
IDSPTV	Volume	GT-IDS Pumped Total Vol	IPTV	GeoTap IDS
IDSS	Diagnostic	GT-IDS Sigma	IDS	GeoTap IDS
IDSSCN	Diagnostic	GT-IDS Sample Chamber #	IDSC	GeoTap IDS
IDSSCN-T	Diagnostic	GT-IDS Samp Chamber # RT	IDSC	GeoTap IDS
IDSS-T	Diagnostic	GT-IDS Sigma RT	IDS	GeoTap IDS
IDSTED	Pressure Test Time	GT-IDS End DD Time	ITED	GeoTap IDS
IDSTED-T	Pressure Test Time	GT-IDS End DD Time RT	ITED	GeoTap IDS
IDSTH1	Pressure Test Time	GT-IDS Hydrostatic T1	IDT1	GeoTap IDS
IDSTH2	Pressure Test Time	GT-IDS Hydrostatic T2	IDT2	GeoTap IDS
IDSTN	Diagnostic	GT-IDS Test Number	IDTN	GeoTap IDS
IDSTN-T	Diagnostic	GT-IDS Test Number RT	IDTN	GeoTap IDS
IDSTQ	Temperature	GT-IDS Quartz Temperature	IDTQ	GeoTap IDS
IDSTS	Pressure Test Time	GT-IDS Stop Time	IDTS	GeoTap IDS
IDSTS1	Pressure Test Time	GT-IDS Stop Time 1	ITS1	GeoTap IDS
IDSTS2	Pressure Test Time	GT-IDS Stop Time 2	ITS2	GeoTap IDS
IDSTSD	Pressure Test Time	GT-IDS Start DD Time	ITSD	GeoTap IDS
IDSTSD-T	Pressure Test Time	GT-IDS Start DD Time RT	ITSD	GeoTap IDS
IDSTV-T	Temperature	GT-IDS Temp Variance RT	ITVR	GeoTap IDS
M5DD	Data Density	M5 Data Density	M5DD	EWR-M5
M5TEMP	Temperature	M5 Temperature	M5T	EWR-M5
M5XT	Formation Exposure Time	M5 Formation Exp Time	M5XT	EWR-M5
MAG1C	Gamma Ray	AGR Mag GR (1/8) BCorr	MG1C	AGR
MAG1C-T	Gamma Ray	AGR Mag GR (1/8) RT BCorr	MG1C	AGR
MAG2C	Gamma Ray	AGR Mag GR (2/8) BCorr	MG2C	AGR
MAG2C-T	Gamma Ray	AGR Mag GR (2/8) RT BCorr	MG2C	AGR
MAG3C	Gamma Ray	AGR Mag GR (3/8) BCorr	MG3C	AGR
MAG3C-T	Gamma Ray	AGR Mag GR (3/8) RT BCorr	MG3C	AGR
MAG4C	Gamma Ray	AGR Mag GR (4/8) BCorr	MG4C	AGR
MAG4C-T	Gamma Ray	AGR Mag GR (4/8) RT BCorr	MG4C	AGR
MAG5C	Gamma Ray	AGR Mag GR (5/8) BCorr	MG5C	AGR
MAG5C-T	Gamma Ray	AGR Mag GR (5/8) RT BCorr	MG5C	AGR
MAG6C	Gamma Ray	AGR Mag GR (6/8) BCorr	MG6C	AGR
MAG6C-T	Gamma Ray	AGR Mag GR (6/8) RT BCorr	MG6C	AGR
MAG7C	Gamma Ray	AGR Mag GR (7/8) BCorr	MG7C	AGR
MAG7C-T	Gamma Ray	AGR Mag GR (7/8) RT BCorr	MG7C	AGR
MAG8C	Gamma Ray	AGR Mag GR (8/8) BCorr	MG8C	AGR
MAG8C-T	Gamma Ray	AGR Mag GR (8/8) RT BCorr	MG8C	AGR
MAGEQC	Gamma Ray	AGR East Quad GR BCorr	MGEC	AGR
MAGEQC-T	Gamma Ray	AGR East Quad GR RT BCorr	MGEC	AGR
MAGNQC	Gamma Ray	AGR North Quad GR BCorr	MGNC	AGR
MAGNQC-T	Gamma Ray	AGR North Quad GR RT BCor	MGNC	AGR
MAGSQC	Gamma Ray	AGR South Quad GR BCorr	MGSC	AGR
MAGSQC-T	Gamma Ray	AGR South Quad GR RT BCor	MGSC	AGR
MAGWQC	Gamma Ray	AGR West Quad GR BCorr	MGWC	AGR

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
MAGWQC-T	Gamma Ray	AGR West Quad GR RT BCorr	MGWC	AGR
MGB01C	Gamma Ray	GABI Mag GR (1/16) BCorr	M01C	GABI
MGB02C	Gamma Ray	GABI Mag GR (2/16) BCorr	M02C	GABI
MGB03C	Gamma Ray	GABI Mag GR (3/16) BCorr	M03C	GABI
MGB04C	Gamma Ray	GABI Mag GR (4/16) BCorr	M04C	GABI
MGB05C	Gamma Ray	GABI Mag GR (5/16) BCorr	M05C	GABI
MGB06C	Gamma Ray	GABI Mag GR (6/16) BCorr	M06C	GABI
MGB07C	Gamma Ray	GABI Mag GR (7/16) BCorr	M07C	GABI
MGB08C	Gamma Ray	GABI Mag GR (8/16) BCorr	M08C	GABI
MGB09C	Gamma Ray	GABI Mag GR (9/16) BCorr	M09C	GABI
MGB10C	Gamma Ray	GABI Mag GR (10/16) BCorr	M10C	GABI
MGB11C	Gamma Ray	GABI Mag GR (11/16) BCorr	M11C	GABI
MGB12C	Gamma Ray	GABI Mag GR (12/16) BCorr	M12C	GABI
MGB13C	Gamma Ray	GABI Mag GR (13/16) BCorr	M13C	GABI
MGB14C	Gamma Ray	GABI Mag GR (14/16) BCorr	M14C	GABI
MGB15C	Gamma Ray	GABI Mag GR (15/16) BCorr	M15C	GABI
MGB16C	Gamma Ray	GABI Mag GR (16/16) BCorr	M16C	GABI
MGB1C	Gamma Ray	GABI Mag GR (1/8) BCorr	MB1C	GABI
MGB2C	Gamma Ray	GABI Mag GR (2/8) BCorr	MB2C	GABI
MGB3C	Gamma Ray	GABI Mag GR (3/8) BCorr	MB3C	GABI
MGB4C	Gamma Ray	GABI Mag GR (4/8) BCorr	MB4C	GABI
MGB5C	Gamma Ray	GABI Mag GR (5/8) BCorr	MB5C	GABI
MGB6C	Gamma Ray	GABI Mag GR (6/8) BCorr	MB6C	GABI
MGB7C	Gamma Ray	GABI Mag GR (7/8) BCorr	MB7C	GABI
MGB8C	Gamma Ray	GABI Mag GR (8/8) BCorr	MB8C	GABI
MGBEQC	Gamma Ray	GABI GR East Quad BCorr	MBEC	GABI
MGBNQC	Gamma Ray	GABI GR North Quad BCorr	MBNC	GABI
MGBSQC	Gamma Ray	GABI GR South Quad BCorr	MBSC	GABI
MGBWQC	Gamma Ray	GABI GR West Quad BCorr	MBWC	GABI
MRB1-T	Diagnostic	MRIL B1 RT	MRB1	MRIL-WD
MRFDDF-T	Diagnostic	MRIL FDD Fill RT	MFDF	MRIL-WD
MRFDDT-T	Diagnostic	MRIL FDD Temp RT	MFDT	MRIL-WD
MRFE-T	Diagnostic	MRIL Fit Error RT	MRFE	MRIL-WD
MRG-T	Diagnostic	MRIL Gain RT	MRG	MRIL-WD
MRHVMN-T	Diagnostic	MRIL HV Min RT	MHVM	MRIL-WD
MRMDCO-T	Diagnostic	MRIL Max DC Offset RT	MDCO	MRIL-WD
MRMIEN-T	Diagnostic	MRIL Max IE Noise RT	MIEN	MRIL-WD
MRMN-T	Diagnostic	MRIL Max Noise RT	MRMN	MRIL-WD
MRMR-T	Diagnostic	MRIL Max Ring RT	MRMR	MRIL-WD
MRNM-T	Diagnostic	MRIL NMR Mode RT	MRNM	MRIL-WD
MRNRTT-T	Diagnostic	MRIL NMR RT Traffic RT	MNRT	MRIL-WD
MRNT-T	Diagnostic	MRIL NMR Traffic RT	MRNT	MRIL-WD
MRRA1-T	Diagnostic	MRIL Recovery Amp 1 RT	MRA1	MRIL-WD
MRRA2-T	Diagnostic	MRIL Recovery Amp 2 RT	MRA2	MRIL-WD
MRRA3-T	Diagnostic	MRIL Recovery Amp 3 RT	MRA3	MRIL-WD
MRRA4-T	Diagnostic	MRIL Recovery Amp 4 RT	MRA4	MRIL-WD
MRRA5-T	Diagnostic	MRIL Recovery Amp 5 RT	MRA5	MRIL-WD
MRRA6-T	Diagnostic	MRIL Recovery Amp 6 RT	MRA6	MRIL-WD
MRRA7-T	Diagnostic	MRIL Recovery Amp 7 RT	MRA7	MRIL-WD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
MRRA8-T	Diagnostic	MRIL Recovery Amp 8 RT	MRA8	MRIL-WD
MRRA9-T	Diagnostic	MRIL Recovery Amp 9 RT	MRA9	MRIL-WD
MRRAA-T	Diagnostic	MRIL Recovery Amp A RT	MRAA	MRIL-WD
MRTMODE-T	Diagnostic	MRIL Tool Mode RT	MTMD	MRIL-WD
P01AF	Porosity	TA-grp Bin 1ms Por.	PO1A	MRIL-WD
P01BF	Porosity	TB-grp Bin 1ms Por.	P01B	MRIL-WD
P01T1F	Porosity	T1 Bin 1ms Por.	P01T	MRIL-WD
P02AF	Porosity	TA-grp Bin 2ms Por.	P02A	MRIL-WD
P02BF	Porosity	TB-grp Bin 2ms Por.	P02B	MRIL-WD
P02T1F	Porosity	T1 Bin 2ms Por.	P02T	MRIL-WD
P05AF	Porosity	TA-grp Bin 0.5ms Por.	PO5A	MRIL-WD
P05T1F	Porosity	T1 Bin 0.5ms Por.	P05T	MRIL-WD
P10AF	Porosity	TA-grp Bin 2048ms Por.	P10A	MRIL-WD
P10BF	Porosity	TB-grp Bin 2048ms Por.	P10B	MRIL-WD
P10T1F	Porosity	T1 Bin 2048ms Por	P10T	MRIL-WD
P1AF	Porosity	TA-grp Bin 4ms Por.	P1A	MRIL-WD
P1BF	Porosity	TB-grp Bin 4ms Por.	P1B	MRIL-WD
P1PRF	Porosity	PR-grp Bin 0.5ms Por.	P1PR	MRIL-WD
P1T1F	Porosity	T1 Bin 4ms Por.	P1T1	MRIL-WD
P2AF	Porosity	TA-grp Bin 8ms Por.	P2A	MRIL-WD
P2BF	Porosity	TB-grp Bin 8ms Por.	P2B	MRIL-WD
P2PRF	Porosity	PR-grp Bin 1ms Por.	P2PR	MRIL-WD
P2T1F	Porosity	T1 Bin 8ms Por.	P2T1	MRIL-WD
P3AF	Porosity	TA-grp Bin 16ms Por.	P3A	MRIL-WD
P3BF	Porosity	TB-grp Bin 16ms Por.	P3B	MRIL-WD
P3PRF	Porosity	PR-grp Bin 2ms Por.	P3PR	MRIL-WD
P3T1F	Porosity	T1 Bin 16ms Por.	P3T1	MRIL-WD
P4AF	Porosity	TA-grp Bin 32ms Por.	P4A	MRIL-WD
P4BF	Porosity	TB-grp Bin 32ms Por.	P4B	MRIL-WD
P4PRF	Porosity	PR-grp Bin 4ms Por.	P4PR	MRIL-WD
P4T1F	Porosity	T1 Bin 32ms Por.	P4T1	MRIL-WD
P5AF	Porosity	TA-grp Bin 64ms Por.	P5A	MRIL-WD
P5BF	Porosity	TB-grp Bin 64ms Por.	P5B	MRIL-WD
P5T1F	Porosity	T1 Bin 64ms Por.	P5T1	MRIL-WD
P6AF	Porosity	TA-grp Bin 128ms Por.	P6A	MRIL-WD
P6BF	Porosity	TB-grp Bin 128ms Por.	P6B	MRIL-WD
P6T1F	Porosity	T1 Bin 128ms Por.	P6T1	MRIL-WD
P7AF	Porosity	TA-grp Bin 256ms Por.	P7A	MRIL-WD
P7BF	Porosity	TB-grp Bin 256ms Por.	P7B	MRIL-WD
P7T1F	Porosity	T1 Bin 256ms Por.	P7T1	MRIL-WD
P8AF	Porosity	TA-grp Bin 512ms Por.	P8A	MRIL-WD
P8BF	Porosity	TB-grp Bin 512ms Por.	P8B	MRIL-WD
P8T1F	Porosity	T1 Bin 512ms Por.	P8T1	MRIL-WD
P9AF	Porosity	TA-grp Bin 1028ms Por.	P9A	MRIL-WD
P9BF	Porosity	TB-grp Bin 1024ms Por.	P9B	MRIL-WD
P9T1F	Porosity	T1 Bin 1024ms Por.	P9T1	MRIL-WD
PGDD	Data Density	PCG Data Density	PGDD	PCG
PGGR6	Gamma Ray	PCG Gamma Ray	PGGR	PCG
PGHRC-T	Gamma Ray	PCG GR High-Range RT BCor	PGHC	PCG

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
PGHR-T	Gamma Ray	PCG GR High-Range RT	PGHR	PCG
PGRC6	Gamma Ray	PCG Gamma Ray BCorr	PGRC	PCG
PGXRC-T	Gamma Ray	PCG GR XHi-Range RT BCor	PGXC	PCG
PGXR-T	Gamma Ray	PCG GR XHi-Range RT	PGXR	PCG
PGXT	Formation Exposure Time	PCG Exposure Time	PGXT	PCG
PWEA	Borehole Pressure	PWD Annular EMW	PWEA	PWD
PWEAAF	Borehole Pressure	PWD Avg POff Annular EMW	EAAF	PWD
PWEANF	Borehole Pressure	PWD Min POff Annular EMW	EANF	PWD
PWEAXF	Borehole Pressure	PWD Max POff Annular EMW	EAXF	PWD
PWPA	Borehole Pressure	PWD Annular Pressure	PWPA	PWD
PWPD	Borehole Pressure	PWD Differential Pressure	PWPD	PWD
PWPI	Borehole Pressure	PWD Internal Pressure	PWPI	PWD
QSCGR	Gamma Ray	Quasar Combined Gamma	QSGR	Quasar Pulse
QSCGRC	Gamma Ray	Quasar Comb Gamma BC	QCGC	Quasar Pulse
QSCGRC-T	Gamma Ray	Quasar Comb GR BC RT	QCGC	Quasar Pulse
QSCGR-T	Gamma Ray	Quasar Combined GR RT	QSGR	Quasar Pulse
QSDD	Data Density	Quasar Data Density	QSDD	Quasar Pulse
QSXT	Formation Exposure Time	Quasar Exposure Time	QSXT	Quasar Pulse
R09AC	Resistivity	9in Atten Resistivity BC	B09A	EWR-Phase 4
R09PC	Resistivity	9in Phase Resistivity BC	B09P	EWR-Phase 4
R12AC	Resistivity	12in Atten Resistivity BC	B12A	Super-Slim EWR-Phase 4
R12PC	Resistivity	12in Phase Resistivity BC	B12P	Super-Slim EWR-Phase 4
R15AC	Resistivity	15in Atten Resistivity BC	B15A	EWR-Phase 4
R15PC	Resistivity	15in Phase Resistivity BC	B15P	EWR-Phase 4
R18AC	Resistivity	18in Atten Resistivity BC	B18A	EWR-Phase 4D
R18PC	Resistivity	18in Phase Resistivity BC	B18P	EWR-Phase 4D
R20AC	Resistivity	20in Atten Resistivity BC	B20A	Super-Slim EWR-Phase 4
R20PC	Resistivity	20in Phase Resistivity BC	B20P	Super-Slim EWR-Phase 4
R24AC	Resistivity	24in Atten Resistivity BC	B24A	EWR-Phase 4D
R24PC	Resistivity	24in Phase Resistivity BC	B24P	EWR-Phase 4D
R27AC	Resistivity	27in Atten Resistivity BC	B27A	EWR-Phase 4
R27PC	Resistivity	27in Phase Resistivity BC	B27P	EWR-Phase 4
R28AC	Resistivity	28in Atten Resistivity BC	B28A	Super-Slim EWR-Phase 4
R28PC	Resistivity	28in Phase Resistivity BC	B28P	Super-Slim EWR-Phase 4
R30AC	Resistivity	30in Atten Resistivity BC	B30A	EWR-Phase 4D
R30PC	Resistivity	30in Phase Resistivity BC	B30P	EWR-Phase 4D
R39AC	Resistivity	39in Atten Resistivity BC	B39A	EWR-Phase 4
R39PC	Resistivity	39in Phase Resistivity BC	B39P	EWR-Phase 4
R42AC	Resistivity	42in Atten Resistivity BC	B42A	EWR-Phase 4D
R42PC	Resistivity	42in Phase Resistivity BC	B42P	EWR-Phase 4D
R44AC	Resistivity	44in Atten Resistivity BC	B44A	Super-Slim EWR-Phase 4
R44PC	Resistivity	44in Phase Resistivity BC	B44P	Super-Slim EWR-Phase 4
RDCG	Gamma Ray	Radian Combined Gamma Ray	RDCG	Radian
RDCGC	Gamma Ray	Radian Comb Gamma Ray BC	RCGC	Radian
RDCGCH	Gamma Ray	Radian Gamma Azi HS BC	RCCH	Radian
RDCGC-T	Gamma Ray	Radian Comb Gamma BC RT	RCGC	Radian
RDCGC-T	Gamma Ray	Radian Comb Gamma BC RT	RCGC	Radian
RDCGH	Gamma Ray	Radian Gamma Azi HS	RCGH	Radian
RDCGHC-T	Gamma Ray	Radian Gamma Azi HS BC RT	RCCH	Radian

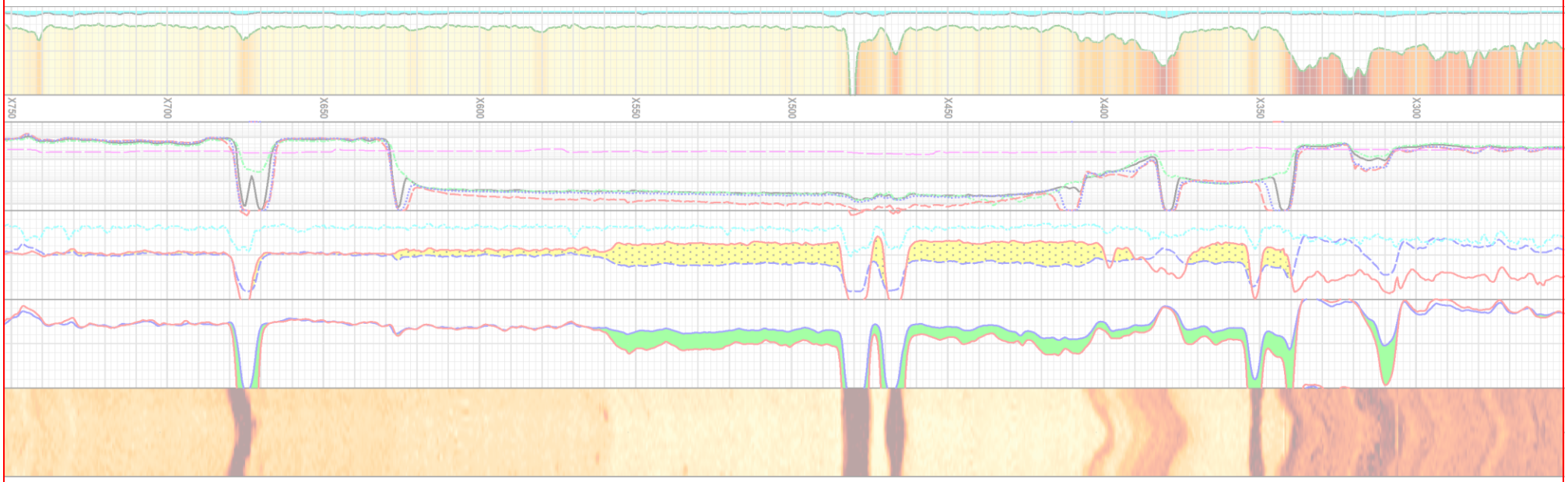
Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
RDCGH-T	Gamma Ray	Radian Gamma Azi HS RT	RCGH	Radian
RDCGMC-T	Gamma Ray	Radian Gamma Azi Mg BC RT	RCCM	Radian
RDCGM-T	Gamma Ray	Radian Gamma Azi Mg RT	RCGM	Radian
RDCG-T	Gamma Ray	Radian Comb Gamma Ray RT	RDCG	Radian
RDDD	Data Density	Radian Data Density	RDDD	Radian
RDI	Inclination	Radian Inclination	RDI	Radian
RDIO-T	Inclination	Radian On-the-Fly Inc	RDIO	Radian
RDXT	Formation Exposure Time	Radian Exposure Time	RDXT	Radian
RH16AC	Resistivity	16in 2 MHz Atten Res BC	H1AC	EWR-M5
RH16AC-T	Resistivity	16in 2 MHz At Res BC RT	H1AC	EWR-M5
RH16PC	Resistivity	16in 2 MHz Phase Res BC	H1PC	EWR-M5
RH16PC-T	Resistivity	16in 2 MHz Ph Res BC RT	H1PC	EWR-M5
RH24AC	Resistivity	24in 2 MHz Atten Res BC	H2AC	EWR-M5
RH24AC-T	Resistivity	24in 2 MHz At Res BC RT	H2AC	EWR-M5
RH24PC	Resistivity	24in 2 MHz Phase Res BC	H2PC	EWR-M5
RH24PC-T	Resistivity	24in 2 MHz Ph Res BC RT	H2PC	EWR-M5
RH32AC	Resistivity	32in 2 MHz Atten Res BC	H3AC	EWR-M5
RH32AC-T	Resistivity	32in 2 MHz At Res BC RT	H3AC	EWR-M5
RH32PC	Resistivity	32in 2 MHz Phase Res BC	H3PC	EWR-M5
RH32PC-T	Resistivity	32in 2 MHz Ph Res BC RT	H3PC	EWR-M5
RH40AC	Resistivity	40in 2 MHz Atten Res BC	H4AC	EWR-M5
RH40AC-T	Resistivity	40in 2 MHz At Res BC RT	H4AC	EWR-M5
RH40PC	Resistivity	40in 2 MHz Phase Res BC	H4PC	EWR-M5
RH40PC-T	Resistivity	40in 2 MHz Ph Res BC RT	H4PC	EWR-M5
RH48AC	Resistivity	48in 2 MHz Atten Res BC	H5AC	EWR-M5
RH48AC-T	Resistivity	48in 2 MHz At Res BC RT	H5AC	EWR-M5
RH48PC	Resistivity	48in 2 MHz Phase Res BC	H5PC	EWR-M5
RH48PC-T	Resistivity	48in 2 MHz Ph Res BC RT	H5PC	EWR-M5
RL16AC	Resistivity	16in 250 kHz Atten Res BC	L1AC	EWR-M5
RL16AC-T	Resistivity	16in 250 kHz At Res BC RT	L1AC	EWR-M5
RL16PC	Resistivity	16in 250 kHz Phase Res BC	L1PC	EWR-M5
RL16PC-T	Resistivity	16in 250 kHz Ph Res BC RT	L1PC	EWR-M5
RL24AC	Resistivity	24in 250 kHz Atten Res BC	L2AC	EWR-M5
RL24AC-T	Resistivity	24in 250 kHz At Res BC RT	L2AC	EWR-M5
RL24PC	Resistivity	24in 250 kHz Phase Res BC	L2PC	EWR-M5
RL24PC-T	Resistivity	24in 250 kHz Ph Res BC RT	L2PC	EWR-M5
RL32AC	Resistivity	32in 250 kHz Atten Res BC	L3AC	EWR-M5
RL32AC-T	Resistivity	32in 250 kHz At Res BC RT	L3AC	EWR-M5
RL32PC	Resistivity	32in 250 kHz Phase Res BC	L3PC	EWR-M5
RL32PC-T	Resistivity	32in 250 kHz Ph Res BC RT	L3PC	EWR-M5
RL39AC7	Resistivity	39in 500k Atten Res BC	B3LA	EWR-Phase 4
RL39PC7	Resistivity	39in 500k Phase Res BC	B3LP	EWR-Phase 4
RL40AC	Resistivity	40in 250 kHz Atten Res BC	L4AC	EWR-M5
RL40AC-T	Resistivity	40in 250 kHz At Res BC RT	L4AC	EWR-M5
RL40PC	Resistivity	40in 250 kHz Phase Res BC	L4PC	EWR-M5
RL40PC-T	Resistivity	40in 250 kHz Ph Res BC RT	L4PC	EWR-M5
RL48AC	Resistivity	48in 250 kHz Atten Res BC	L5AC	EWR-M5
RL48AC-T	Resistivity	48in 250 kHz At Res BC RT	L5AC	EWR-M5
RL48PC	Resistivity	48in 250 kHz Phase Res BC	L5PC	EWR-M5

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
RL48PC-T	Resistivity	48in 250 kHz Ph Res BC RT	L5PC	EWR-M5
RM16AC	Resistivity	16in 500 kHz Atten Res BC	M1AC	EWR-M5
RM16AC-T	Resistivity	16in 500 kHz At Res BC RT	M1AC	EWR-M5
RM16PC	Resistivity	16in 500 kHz Phase Res BC	M1PC	EWR-M5
RM16PC-T	Resistivity	16in 500 kHz Ph Res BC RT	M1PC	EWR-M5
RM24AC	Resistivity	24in 500 kHz Atten Res BC	M2AC	EWR-M5
RM24AC-T	Resistivity	24in 500 kHz At Res BC RT	M2AC	EWR-M5
RM24PC	Resistivity	24in 500 kHz Phase Res BC	M2PC	EWR-M5
RM24PC-T	Resistivity	24in 500 kHz Ph Res BC RT	M2PC	EWR-M5
RM32AC	Resistivity	32in 500 kHz Atten Res BC	M3AC	EWR-M5
RM32AC-T	Resistivity	32in 500 kHz At Res BC RT	M3AC	EWR-M5
RM32PC	Resistivity	32in 500 kHz Phase Res BC	M3PC	EWR-M5
RM32PC-T	Resistivity	32in 500 kHz Ph Res BC RT	M3PC	EWR-M5
RM40AC	Resistivity	40in 500 kHz Atten Res BC	M4AC	EWR-M5
RM40AC-T	Resistivity	40in 500 kHz At Res BC RT	M4AC	EWR-M5
RM40PC	Resistivity	40in 500 kHz Phase Res BC	M4PC	EWR-M5
RM40PC-T	Resistivity	40in 500 kHz Ph Res BC RT	M4PC	EWR-M5
RM48AC	Resistivity	48in 500 kHz Atten Res BC	M5AC	EWR-M5
RM48AC-T	Resistivity	48in 500 kHz At Res BC RT	M5AC	EWR-M5
RM48PC	Resistivity	48in 500 kHz Phase Res BC	M5PC	EWR-M5
RM48PC-T	Resistivity	48in 500 kHz Ph Res BC RT	M5PC	EWR-M5
RMM5	Resistivity	M5 Mud Resistivity	RMM5	EWR-M5
ROPA	Tool Speed	Avg Rate of Penetration	ROPA	ROP
RSPD	Tool Speed	Running Speed	RSPD	ROP
SC09AC	Conductivity	9in Smooth Atten Cond BC	09DA	EWR-Phase 4
SC09PC	Conductivity	9in Smooth Phase Cond BC	09DP	EWR-Phase 4
SC12AC	Conductivity	12in Smooth Atten Cond BC	12DA	Super-Slim EWR-Phase 4
SC12PC	Conductivity	12in Smooth Phase Cond BC	12DP	Super-Slim EWR-Phase 4
SC15AC	Conductivity	15in Smooth Atten Cond BC	15DA	EWR-Phase 4
SC15PC	Conductivity	15in Smooth Phase Cond BC	15DP	EWR-Phase 4
SC18AC	Conductivity	18in Smooth Atten Cond BC	18DA	EWR-Phase 4D
SC18PC	Conductivity	18in Smooth Phase Cond BC	18DP	EWR-Phase 4D
SC20AC	Conductivity	20in Smooth Atten Cond BC	20DA	Super-Slim EWR-Phase 4
SC20PC	Conductivity	20in Smooth Phase Cond BC	20DP	Super-Slim EWR-Phase 4
SC24AC	Conductivity	24in Smooth Atten Cond BC	24DA	EWR-Phase 4D
SC24PC	Conductivity	24in Smooth Phase Cond BC	24DP	EWR-Phase 4D
SC27AC	Conductivity	27in Smooth Atten Cond BC	27DA	EWR-Phase 4
SC27PC	Conductivity	27in Smooth Phase Cond BC	27DP	EWR-Phase 4
SC28AC	Conductivity	28in Smooth Atten Cond BC	28DA	Super-Slim EWR-Phase 4
SC28PC	Conductivity	28in Smooth Phase Cond BC	28DP	Super-Slim EWR-Phase 4
SC30AC	Conductivity	30in Smooth Atten Cond BC	30DA	EWR-Phase 4D
SC30PC	Conductivity	30in Smooth Phase Cond BC	30DP	EWR-Phase 4D
SC39AC	Conductivity	39in Smooth Atten Cond BC	39DA	EWR-Phase 4
SC39PC	Conductivity	39in Smooth Phase Cond BC	39DP	EWR-Phase 4
SC42AC	Conductivity	42in Smooth Atten Cond BC	42DA	EWR-Phase 4D
SC42PC	Conductivity	42in Smooth Phase Cond BC	42DP	EWR-Phase 4D
SC44AC	Conductivity	44in Smooth Atten Cond BC	44DA	Super-Slim EWR-Phase 4
SC44PC	Conductivity	44in Smooth Phase Cond BC	44DP	Super-Slim EWR-Phase 4
SCL39AC	Conductivity	39in 500k Smth At Con BC	3LDA	EWR-Phase 4

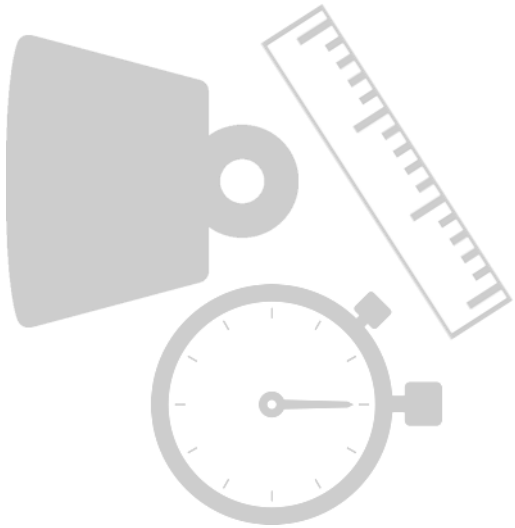
Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
SCL39PC	Conductivity	39in 500k Smth Ph Con BC	3LDP	EWR-Phase 4
SR09AC	Resistivity	9in Smooth Atten Res BC	09BA	EWR-Phase 4
SR09PC	Resistivity	9in Smooth Phase Res BC	09BP	EWR-Phase 4
SR12AC	Resistivity	12in Smooth Atten Res BC	12BA	Super-Slim EWR-Phase 4
SR12PC	Resistivity	12in Smooth Phase Res BC	12BP	Super-Slim EWR-Phase 4
SR15AC	Resistivity	15in Smooth Atten Res BC	15BA	EWR-Phase 4
SR15PC	Resistivity	15in Smooth Phase Res BC	15BP	EWR-Phase 4
SR18AC	Resistivity	18in Smooth Atten Res BC	18BA	EWR-Phase 4D
SR18PC	Resistivity	18in Smooth Phase Res BC	18BP	EWR-Phase 4D
SR20AC	Resistivity	20in Smooth Atten Res BC	20BA	Super-Slim EWR-Phase 4
SR20PC	Resistivity	20in Smooth Phase Res BC	20BP	Super-Slim EWR-Phase 4
SR24AC	Resistivity	24in Smooth Atten Res BC	24BA	EWR-Phase 4D
SR24PC	Resistivity	24in Smooth Phase Res BC	24BP	EWR-Phase 4D
SR27AC	Resistivity	27in Smooth Atten Res BC	27BA	EWR-Phase 4
SR27PC	Resistivity	27in Smooth Phase Res BC	27BP	EWR-Phase 4
SR28AC	Resistivity	28in Smooth Atten Res BC	28BA	Super-Slim EWR-Phase 4
SR28PC	Resistivity	28in Smooth Phase Res BC	28BP	Super-Slim EWR-Phase 4
SR30AC	Resistivity	30in Smooth Atten Res BC	30BA	EWR-Phase 4D
SR30PC	Resistivity	30in Smooth Phase Res BC	30BP	EWR-Phase 4D
SR39AC	Resistivity	39in Smooth Atten Res BC	39BA	EWR-Phase 4
SR39PC	Resistivity	39in Smooth Phase Res BC	39BP	EWR-Phase 4
SR42AC	Resistivity	42in Smooth Atten Res BC	42BA	EWR-Phase 4D
SR42PC	Resistivity	42in Smooth Phase Res BC	42BP	EWR-Phase 4D
SR44AC	Resistivity	44in Smooth Atten Res BC	44BA	Super-Slim EWR-Phase 4
SR44PC	Resistivity	44in Smooth Phase Res BC	44BP	Super-Slim EWR-Phase 4
SRL39AC	Resistivity	39in 500k Smth At Res BC	3LBA	EWR-Phase 4
SRL39PC	Resistivity	39in 500k Smth Ph Res BC	3LBP	EWR-Phase 4
T1DIST	NMR Spectrum	T1 Distribution	T1DI	MRIL-WD
T1KCOAT	Permeability	T1 Perm Coates	T1KC	MRIL-WD
T1KCOAT-T	Permeability	MRIL T1 Perm Coates RT	T1KC	MRIL-WD
T1LM	Diagnostic	T1 Log Mean	T1LM	MRIL-WD
T1LM-T	Diagnostic	MRIL T1 Log Mean RT	T1LM	MRIL-WD
T1MBVI-T	Porosity	MRIL T1 Cap Bound Por RT	MBVI	MRIL-WD
T1PIRRCT	Porosity	T1 Irr. Por. Cutof	PIRC	MRIL-WD
T1PIRRMX	Porosity	T1 Irr.Por. Max	PIRM	MRIL-WD
T1PIRRMX-T	Porosity	MRIL T1 Irr. Porosity RT	PIRM	MRIL-WD
T1PIRRSP	Porosity	T1 Irr. Por. Spec	PITS	MRIL-WD
T1PMIC	Porosity	T1 Micro Por.	PMIC	MRIL-WD
T1PMIC-T	Porosity	MRIL T1 Micro Porosity RT	PMIC	MRIL-WD
T1PTOT	Porosity	T1 Total Por.	PTOT	MRIL-WD
T1PTOT-T	Porosity	MRIL T1 Total Porosity RT	PTOT	MRIL-WD
T2DIST	NMR Spectrum	T2 Distribution	T2DI	MRIL-WD
T2DWB	NMR Time	T2 Diffusion Water	T2DB	MRIL-WD
T2KCOAT	Permeability	T2 Perm Coates	T2KC	MRIL-WD
T2KCOAT-T	Permeability	MRIL T2 Perm Coates RT	T2KC	MRIL-WD
T2LM	Diagnostic	T2 Log Mean	T2LM	MRIL-WD
T2LM-T	Diagnostic	MRIL T2 Log Mean RT	T2LM	MRIL-WD
T2MBVI-T	Porosity	MRIL T2 Cap Bound Por RT	MBVI	MRIL-WD
T2MFFI-T	Porosity	MRIL T2 Free Fluid Por RT	MFFI	MRIL-WD

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
T2MFFI-T	Porosity	MRIL T2 Free Fluid Por RT	MFFI	MRIL-WD
T2PIRRCT	Porosity	T2 Irr. Por. Cutof	PIRC	MRIL-WD
T2PIRRMX	Porosity	T2 Irr.Por. Max	PIRM	MRIL-WD
T2PIRRMX-T	Porosity	MRIL T2 Irr. Porosity RT	PIRM	MRIL-WD
T2PIRRSP	Porosity	T2 Irr. Por. Spec	PITS	MRIL-WD
T2PMIC	Porosity	T2 Micro Por.	PMIC	MRIL-WD
T2PMIC-T	Porosity	MRIL T2 Micro Porosity RT	PMIC	MRIL-WD
T2PTOT	Porosity	T2 Total Por.	PTOT	MRIL-WD
T2PTOT-T	Porosity	MRIL T2 Total Porosity RT	PTOT	MRIL-WD
TASPEC	NMR Spectrum	TA-grp T2 Spectrum	TASP	MRIL-WD
TBSPEC	NMR Spectrum	TB-grp T2 Spectrum	TBSP	MRIL-WD
TFG-T	Toolface	Toolface Grav	TFG	Toolface
TFM-T	Toolface	Toolface Mag	TFM	Toolface
TNDD	Data Density	CTN Data Density	TNDD	CTN
TNFA	Count Rate	CTN Far Avg Count-rate	TNFA	CTN
TNNA	Count Rate	CTN Near Avg Count-rate	TNNA	CTN
TNPD	Porosity	CTN Porosity Dolomite	TNPD	CTN
TNPD-T	Porosity	CTN Porosity Dolomite RT	TNPD	CTN
TNPL	Porosity	CTN Porosity Limestone	TNPL	CTN
TNPL-T	Porosity	CTN Porosity Limestone RT	TNPL	CTN
TNPS	Porosity	CTN Porosity Sandstone	TNPS	CTN
TNPS-T	Porosity	CTN Porosity Sandstone RT	TNPS	CTN
TNXT	Formation Exposure Time	CTN Form Exp Time	TNXT	CTN
TVD	Depth	True Vertical Depth	TVD	Depth
XBC1-T	Acoustic Slowness	XBAT Comp Slowness 1 RT	XBC1	XBAT
XBC2-T	Acoustic Slowness	XBAT Comp Slowness 2 RT	XBC2	XBAT
XBC3-T	Acoustic Slowness	XBAT Comp Slowness 3 RT	XBC3	XBAT
XBCS	Acoustic Slowness	XBAT Comp Slowness	XBCS	XBAT
XBCSS	Acoustic Slowness	XBAT Comb Shear Slowness	XCSS	XBAT
XBDD	Data Density	XBAT Data Density	XBDD	XBAT
XBRS1-T	Acoustic Slowness	XBAT Ref Shear Slow 1 RT	XRS1	XBAT
XBRS2-T	Acoustic Slowness	XBAT Ref Shear Slow 2 RT	XRS2	XBAT
XBRS3-T	Acoustic Slowness	XBAT Ref Shear Slow 3 RT	XRS3	XBAT
XBSFLAG	Diagnostic	XBAT Shear Flag	XSFG	XBAT
XBVPVS	Velocity Ratio	XBAT VP/VS Ratio	XVPS	XBAT
XBXT	Formation Exposure Time	XBAT Form Exp Time	XBXT	XBAT
ZRH16A	Azimuthal Resistivity	Azi 16in 2M Atten Res	ZH1A	ADR
ZRH16A-T	Azimuthal Resistivity	Azi 16in 2M At Res RT	ZH1A	ADR
ZRH16P	Azimuthal Resistivity	Azi 16in 2M Phase Res	ZH1P	ADR
ZRH16P-T	Azimuthal Resistivity	Azi 16in 2M Ph Res RT	ZH1P	ADR
ZRH32A	Azimuthal Resistivity	Azi 32in 2M Atten Res	ZH2A	ADR
ZRH32A-T	Azimuthal Resistivity	Azi 32in 2M At Res RT	ZH2A	ADR
ZRH32P	Azimuthal Resistivity	Azi 32in 2M Phase Res	ZH2P	ADR
ZRH32P-T	Azimuthal Resistivity	Azi 32in 2M Ph Res RT	ZH2P	ADR
ZRH48A	Azimuthal Resistivity	Azi 48in 2M Atten Res	ZH3A	ADR
ZRH48A-T	Azimuthal Resistivity	Azi 48in 2M At Res RT	ZH3A	ADR
ZRH48P	Azimuthal Resistivity	Azi 48in 2M Phase Res	ZH3P	ADR
ZRH48P-T	Azimuthal Resistivity	Azi 48in 2M Ph Res RT	ZH3P	ADR
ZRL48A	Azimuthal Resistivity	Azi 48in 125k Atten Res	ZL3A	ADR

Mnemonic	Measurement Type	Curve Label	LISM[7]	Tool
ZRL48A-T	Azimuthal Resistivity	Azi 48in 125k At Res RT	ZL3A	ADR
ZRL48P	Azimuthal Resistivity	Azi 48in 125k Phase Res	ZL3P	ADR
ZRL48P-T	Azimuthal Resistivity	Azi 48in 125k Ph Res RT	ZL3P	ADR
ZRM16A	Azimuthal Resistivity	Azi 16in 500k Atten Res	ZM1A	ADR
ZRM16A-T	Azimuthal Resistivity	Azi 16in 500k At Res RT	ZM1A	ADR
ZRM16P	Azimuthal Resistivity	Azi 16in 500k Phase Res	ZM1P	ADR
ZRM16P-T	Azimuthal Resistivity	Azi 16in 500k Ph Res RT	ZM1P	ADR
ZRM32A	Azimuthal Resistivity	Azi 32in 500k Atten Res	ZM2A	ADR
ZRM32A-T	Azimuthal Resistivity	Azi 32in 500k At Res RT	ZM2A	ADR
ZRM32P	Azimuthal Resistivity	Azi 32in 500k Phase Res	ZM2P	ADR
ZRM32P-T	Azimuthal Resistivity	Azi 32in 500k Ph Res RT	ZM2P	ADR
ZRM48A	Azimuthal Resistivity	Azi 48in 500k Atten Res	ZM3A	ADR
ZRM48A-T	Azimuthal Resistivity	Azi 48in 500k At Res RT	ZM3A	ADR
ZRM48P	Azimuthal Resistivity	Azi 48in 500k Phase Res	ZM3P	ADR
ZRM48P-T	Azimuthal Resistivity	Azi 48in 500k Ph Res RT	ZM3P	ADR



Unit Conversions



6 Unit Conversions

Length

Multiply By:		TO				
		feet	metres	miles	yards	inches
FROM	feet	-	0.3048	1.8939×10^{-4}	0.3333	12.000
	metres	3.2808	-	6.2137×10^{-4}	1.0936	39.370
	miles	5,280.0	1,609.3	-	1,760.0	63,360
	yards	3.0000	0.9144	5.6818×10^{-4}	-	36.000
	inches	8.3333×10^{-2}	2.5400×10^{-2}	1.5783×10^{-5}	2.7778×10^{-2}	-
	kilometres	3,280.8	1,000.0	0.6214	1,093.6	39,370
	centimetres	3.2808×10^{-2}	1.0000×10^{-2}	6.2137×10^{-6}	1.0936×10^{-2}	0.3937
	millimetres	3.2808×10^{-3}	1.0000×10^{-3}	6.2137×10^{-7}	1.0936×10^{-3}	3.9370×10^{-2}
	micrometres	3.2808×10^{-6}	1.0000×10^{-6}	6.2137×10^{-10}	1.0936×10^{-6}	3.9370×10^{-5}
	nanometres	3.2808×10^{-9}	1.0000×10^{-9}	6.2137×10^{-13}	1.0936×10^{-9}	3.9370×10^{-8}

Multiply By:		TO				
		kilometres	centimetres	millimetres	micrometres	nanometres
FROM	feet	3.0480×10^{-4}	30.480	304.80	3.0480×10^{5}	3.0480×10^{8}
	metres	1.0000×10^{-3}	100.00	1,000.0	1.0000×10^{6}	1.0000×10^{9}
	miles	1.6093	1.6093×10^{5}	1.6093×10^{6}	1.6093×10^{9}	1.6093×10^{12}
	yards	9.1440×10^{-4}	91.440	914.40	9.1440×10^{5}	9.1440×10^{8}
	inches	2.5400×10^{-5}	2.5400	25.400	25,400	2.5400×10^{7}
	kilometres	-	1.0000×10^{5}	1.0000×10^{6}	1.0000×10^{9}	1.0000×10^{12}
	centimetres	1.0000×10^{-5}	-	10.000	10,000	1.0000×10^{7}
	millimetres	1.0000×10^{-6}	0.1000	-	1,000.0	1.0000×10^{6}
	micrometres	1.0000×10^{-9}	1.0000×10^{-4}	1.0000×10^{-3}	-	1,000.0
	nanometres	1.0000×10^{-12}	1.0000×10^{-7}	1.0000×10^{-6}	1.0000×10^{-3}	-

Area

Multiply By:		TO				
		square feet	square metres	square miles	acres	square yards
FROM	square feet	-	9.2903×10^{-2}	3.5870×10^{-8}	2.2957×10^{-5}	0.1111
	square metres	10.764	-	3.8610×10^{-7}	2.4711×10^{-4}	1.1960
	square miles	2.7878×10^{7}	2.5900×10^{6}	-	640.00	3.0976×10^{6}
	acres	43,560	4,046.9	1.5625×10^{-3}	-	4,840.0
	square yards	9.0000	0.8361	3.2283×10^{-7}	2.0661×10^{-4}	-
	square inches	6.9444×10^{-3}	6.4516×10^{-4}	2.4910×10^{-10}	1.5942×10^{-7}	7.7160×10^{-4}
	square kilometres	1.0764×10^{7}	1.0000×10^{6}	0.3861	247.11	1.1960×10^{6}
	hectares	1.0764×10^{5}	10,000	3.8610×10^{-3}	2.4711	11,960
	square centimetres	1.0764×10^{-3}	1.0000×10^{-4}	3.8610×10^{-11}	2.4711×10^{-8}	1.1960×10^{-4}
	square millimetres	1.0764×10^{-5}	1.0000×10^{-6}	3.8610×10^{-13}	2.4711×10^{-10}	1.1960×10^{-6}

Multiply By:		TO				
		square inches	square kilometres	hectares	square centimetres	square millimetres
FROM	square feet	144.00	9.2903×10^{-8}	9.2903×10^{-6}	929.03	92,903
	square metres	1,550.0	1.0000×10^{-6}	1.0000×10^{-4}	10,000	1.0000×10^{6}
	square miles	4.0145×10^{9}	2.5900	259.00	2.5900×10^{10}	2.5900×10^{12}
	acres	6.2726×10^{6}	4.0469×10^{-3}	0.4047	4.0469×10^{7}	4.0469×10^{9}
	square yards	1,296.0	8.3613×10^{-7}	8.3613×10^{-5}	8,361.3	8.3613×10^{5}
	square inches	-	6.4516×10^{-10}	6.4516×10^{-8}	6.4516	645.16
	square kilometres	1.5500×10^{9}	-	100.00	1.0000×10^{10}	1.0000×10^{12}
	hectares	1.5500×10^{7}	1.0000×10^{-2}	-	1.0000×10^{8}	1.0000×10^{10}
	square centimetres	0.1550	1.0000×10^{-10}	1.0000×10^{-8}	-	100.00
	square millimetres	1.5500×10^{-3}	1.0000×10^{-12}	1.0000×10^{-10}	1.0000×10^{-2}	-

Volume

Multiply By:		TO					
		cubic feet	cubic metres	barrels	cubic yards	U.K. gallons	U.S. gallons
FROM	cubic feet	-	2.8317×10^{-2}	0.1781	3.7037×10^{-2}	6.2288	7.4805
	cubic metres	35.315	-	6.2898	1.3080	219.97	264.17
	barrels	5.6146	0.1590	-	0.2079	34.972	42.000
	cubic yards	27.000	0.7646	4.8089	-	168.18	201.97
	U.K. gallons	0.1605	4.5461×10^{-3}	2.8594×10^{-2}	5.9461×10^{-3}	-	1.2010
	U.S. gallons	0.1337	3.7854×10^{-3}	2.3810×10^{-2}	4.9511×10^{-3}	0.8327	-
	cubic inches	5.7870×10^{-4}	1.6387×10^{-5}	1.0307×10^{-4}	2.1433×10^{-5}	3.6046×10^{-3}	4.3290×10^{-3}
	litres	3.5316×10^{-2}	1.0000×10^{-3}	6.2900×10^{-3}	1.3080×10^{-3}	0.2200	0.2642
	cubic centimetres	3.5316×10^{-5}	1.0000×10^{-6}	6.2900×10^{-6}	1.3080×10^{-6}	2.1997×10^{-4}	2.6418×10^{-4}
	millilitres	3.5316×10^{-5}	1.0000×10^{-6}	6.2900×10^{-6}	1.3080×10^{-6}	2.1997×10^{-4}	2.6418×10^{-4}
	microlitres	3.5316×10^{-8}	1.0000×10^{-9}	6.2900×10^{-9}	1.3080×10^{-9}	2.1997×10^{-7}	2.6418×10^{-7}

Multiply By:		TO				
		cubic inches	litres	cubic centimetres	millilitres	microlitres
FROM	cubic feet	1,728.0	28.316	28,316	28,316	2.8316×10^{7}
	cubic metres	61,024	1000.0	1.0000×10^{6}	1.0000×10^{6}	1.0000×10^{9}
	barrels	9,702.0	158.98	1.5898×10^{5}	1.5898×10^{5}	1.5898×10^{8}
	cubic yards	46,656	764.53	7.6453×10^{5}	7.6453×10^{5}	7.6453×10^{8}
	U.K. gallons	277.42	4.5460	4,546.0	4,546.0	4.5460×10^{6}
	U.S. gallons	231.00	3.7853	3,785.3	3,785.3	3.7853×10^{6}
	cubic inches	-	1.6387×10^{-2}	16.387	16.387	16,387
	litres	61.026	-	1,000.0	1,000.0	1.0000×10^{6}
	cubic centimetres	6.1026×10^{-2}	1.0000×10^{-3}	-	1.0000	1,000.0
	millilitres	6.1026×10^{-2}	1.0000×10^{-3}	1.0000	-	1,000.0
	microlitres	6.1026×10^{-5}	1.0000×10^{-6}	1.0000×10^{-3}	1.0000×10^{-3}	-

Mass

Multiply By:		TO				
		pound	kilogram	long ton	short ton	kilopound
FROM	pound	-	0.4536	4.4643×10^{-4}	5.0000×10^{-4}	1.0000×10^{-3}
	kilogram	2.2046	-	9.8421×10^{-4}	1.1023×10^{-3}	2.2046×10^{-3}
	long ton	2,240.0	1,016.0	-	1.1200	2.2400
	short ton	2,000.0	907.18	0.8929	-	2.0000
	kilopound	1,000.0	453.59	0.4464	0.5000	-
	long hundredweight	112.00	50.802	5.0000×10^{-2}	5.6000×10^{-2}	0.1120
	short hundredweight	100.00	45.359	4.4643×10^{-2}	5.0000×10^{-2}	0.1000
	ounce (avoirdupois)	6.2500×10^{-2}	2.8350×10^{-2}	2.7902×10^{-5}	3.1250×10^{-5}	6.2500×10^{-5}
	tonne	2,204.6	1,000.0	0.9842	1.1023	2.2046
	gram	2.2046×10^{-3}	1.0000×10^{-3}	9.8421×10^{-7}	1.1023×10^{-6}	2.2046×10^{-6}
	milligram	2.2046×10^{-6}	1.0000×10^{-6}	9.8421×10^{-10}	1.1023×10^{-9}	2.2046×10^{-9}

Multiply By:		TO					
		long hundred-weight	short hundred-weight	ounce (avoirdupois)	tonne	gram	milligram
FROM	pound	8.9286×10^{-3}	1.0000×10^{-2}	16.000	4.5359×10^{-4}	453.59	4.5359×10^{5}
	kilogram	1.9684×10^{-2}	2.2046×10^{-2}	35.274	1.0000×10^{-3}	1,000.0	1.0000×10^{6}
	long ton	20.000	22.400	35,840	1.0160	1.0160×10^{6}	1.0160×10^{9}
	short ton	17.857	20.000	32,000	0.9072	9.0718×10^{5}	9.0718×10^{8}
	kilopound	8.9286	10.000	16,000	0.4536	4.5359×10^{5}	4.5359×10^{8}
	long hundredweight	-	1.1200	1,792.0	5.0802×10^{-2}	50,802	5.0802×10^{7}
	short hundredweight	0.8929	-	1,600.0	4.5359×10^{-2}	45,359	4.5359×10^{7}
	ounce (avoirdupois)	5.5804×10^{-4}	6.2500×10^{-4}	-	2.8350×10^{-5}	28.350	28,350
	tonne	19.684	22.046	35,274	-	1.0000×10^{6}	1.0000×10^{9}
	gram	1.9684×10^{-5}	2.2046×10^{-5}	3.5274×10^{-2}	1.0000×10^{-6}	-	1,000.0
	milligram	1.9684×10^{-8}	2.2046×10^{-8}	3.5274×10^{-5}	1.0000×10^{-9}	1.0000×10^{-3}	-

Density

Multiply By:		TO				
		pounds per cubic foot	grams per cubic centimetre	pounds per gallon (U.S.)	pounds per barrel	pounds per cubic inch
FROM	pounds per cubic foot	-	1.6019×10^{-2}	0.1337	5.6146	5.7870×10^{-4}
	grams per cubic centimetre	62.428	-	8.3454	350.51	3.6127×10^{-2}
	pounds per gallon (U.S.)	7.4805	0.1198	-	42.000	4.3290×10^{-3}
	pounds per barrel	0.1781	2.8530×10^{-3}	2.3810×10^{-2}	-	1.0307×10^{-4}
	pounds per cubic inch	1,728.0	27.680	231.00	9,702.0	-
	psi per thousand feet	0.1440	2.3067×10^{-3}	1.9250×10^{-2}	0.8085	8.3333×10^{-5}
	kilograms per cubic metre	6.2428×10^{-2}	1.0000×10^{-3}	8.3454×10^{-3}	0.3505	3.6127×10^{-5}
	grams per litre	6.2428×10^{-2}	1.0000×10^{-3}	8.3454×10^{-3}	0.3505	3.6127×10^{-5}
	milligrams per litre	6.2428×10^{-5}	1.0000×10^{-6}	8.3454×10^{-6}	3.5051×10^{-4}	3.6127×10^{-8}
	specific gravity	62.428	1.0000	8.3454	350.51	3.6127×10^{-2}
	kilopascals per metre	6.3659	0.1020	0.8510	35.742	3.6840×10^{-3}

Multiply By:		TO					
		psi per thousand feet	kilograms per cubic metre	grams per litre	milligrams per litre	specific gravity	kilopascals per metre
FROM	pounds per cubic foot	6.9444	16.019	16.018	16,019	1.6019×10^{-2}	0.1571
	grams per cubic centimetre	433.53	1000.00	1000.00	1.0000×10^{6}	1.0000	9.8066
	pounds per gallon (U.S.)	51.948	119.83	119.83	1.1983×10^{5}	0.1198	1.1751
	pounds per barrel	1.2369	2.8530	2.8530	2,853.0	2.8530×10^{-3}	2.7978×10^{-2}
	pounds per cubic inch	12,000	27,680	27,680	2.7680×10^{7}	27.680	271.45
	psi per thousand feet	-	2.3067	2.3067	2,306.7	2.3067×10^{-3}	2.2621×10^{-2}
	kilograms per cubic metre	0.4335	-	1.0000	1,000.0	1.0000×10^{-3}	9.8066×10^{-3}
	grams per litre	0.4335	1.0000	-	1,000.0	1.0000×10^{-3}	9.8066×10^{-3}
	milligrams per litre	4.3353×10^{-4}	1.0000×10^{-3}	1.0000×10^{-3}	-	1.0000×10^{-6}	9.8066×10^{-6}
	specific gravity	433.53	1000.00	1000.00	1.0000×10^{6}	-	9.8066
	kilopascals per metre	44.208	101.97	101.97	1.0197×10^{5}	0.1020	-

Force

Multiply By:		TO			
		pound force	newton	ounce force	dynes
FROM	pound force	-	4.4482	16.000	4.4482×10^{5}
	newton	0.2248	-	3.5969	100,000
	ounce force	6.2500×10^{-2}	0.2780	-	27,801
	dynes	2.2481×10^{-6}	1.0000×10^{-5}	3.5969×10^{-5}	-
	kilonewton	224.81	1,000.0	3,596.9	1.0000×10^{8}
	gram force	2.2046×10^{-3}	9.8067×10^{-3}	3.5274×10^{-2}	980.66
	kilogram force	2.2046	9.8067	35.274	9.8066×10^{5}

Multiply By:		TO		
		kilonewton	gram force	kilogram force
FROM	pound force	4.4482×10^{-3}	453.59	0.4536
	newton	1.0000×10^{-3}	101.97	0.1020
	ounce force	2.7801×10^{-4}	28.350	2.8350×10^{-2}
	dynes	1.0000×10^{-8}	1.0197×10^{-3}	1.0197×10^{-6}
	kilonewton	-	1.0197×10^{5}	101.97
	gram force	9.8067×10^{-6}	-	1.0000×10^{-3}
	kilogram force	9.8067×10^{-3}	1,000.0	-

Pressure

Multiply By:		TO				
		pounds per square inch	kilopascals	pounds per square foot	atmospheres	bars
FROM	pounds per square inch	-	6.8948	144.00	6.8045×10^{-2}	6.8948×10^{-2}
	kilopascals	0.1450	-	20.885	9.8690×10^{-3}	1.0000×10^{-2}
	pounds per square foot	6.9444×10^{-3}	4.7880×10^{-2}	-	4.7253×10^{-4}	4.7880×10^{-4}
	atmospheres	14.696	101.33	2,116.3	-	1.0133
	bars	14.504	100.00	2,088.5	0.9869	-
	millibars	1.4504×10^{-2}	0.1000	2.0885	9.8690×10^{-4}	1.0000×10^{-3}
	inches of mercury	0.4912	3.3865	70.728	3.3421×10^{-2}	3.3865×10^{-2}
	kilograms per square centimetre	14.223	98.067	2,048.2	0.9678	0.9807
	pascals	1.4504×10^{-4}	1.0000×10^{-3}	2.0885×10^{-2}	9.8690×10^{-6}	1.0000×10^{-5}
	megapascals	145.04	1,000.0	20,885	9.8690	10.000
	gigapascals	1.4504×10^{5}	1.0000×10^{6}	2.0885×10^{7}	9,869.0	10,000
	millimetres of mercury	1.9337×10^{-2}	0.1333	2.7845	1.3158×10^{-3}	1.3332×10^{-3}
	kilograms per square metre	1.4223×10^{-3}	9.8067×10^{-3}	0.2048	9.6782×10^{-5}	9.8067×10^{-5}
	dynes per square centimetre	1.4504×10^{-5}	1.0000×10^{-4}	2.0885×10^{-3}	9.8690×10^{-7}	1.0000×10^{-6}

Multiply By:		TO				
		millibars	inches of mercury	kilograms per square centimetre	pascals	megapascals
FROM	pounds per square inch	68.948	2.0360	7.0307×10^{-2}	6,894.8	6.8948×10^{-3}
	kilopascals	10.000	0.2953	1.0197×10^{-2}	1,000.0	1.0000×10^{-3}
	pounds per square foot	0.4788	1.4139×10^{-2}	4.8824×10^{-4}	47.880	4.7880×10^{-5}
	atmospheres	1,013.3	29.921	1.0332	1.0133×10^{5}	0.1013
	bars	1,000.0	29.529	1.0197	1.0000×10^{5}	0.1000
	millibars	-	2.9529×10^{-2}	1.0197×10^{-3}	100.00	1.0000×10^{-4}
	inches of mercury	33.865	-	3.4532×10^{-2}	3,386.5	3.3865×10^{-3}
	kilograms per square centimetre	980.67	28.959	-	98,067	9.8067×10^{-2}
	pascals	1.0000×10^{-2}	2.9529×10^{-4}	1.0197×10^{-5}	-	1.0000×10^{-6}
	megapascals	10,000	295.29	10.197	1.0000×10^{6}	-
	gigapascals	1.0000×10^{7}	2.9529×10^{5}	10,197	1.0000×10^{9}	1,000.0
	millimetres of mercury	1.3332	3.9370×10^{-2}	1.3595×10^{-3}	133.32	1.3332×10^{-4}
	kilograms per square metre	9.8067×10^{-2}	2.8958×10^{-3}	1.0000×10^{-4}	9.8067	9.8067×10^{-6}
	dynes per square centimetre	1.0000×10^{-3}	2.9529×10^{-5}	1.0197×10^{-6}	0.1000	1.0000×10^{-7}

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Pressure (continued)

Multiply By:		TO			
		gigapascals	millimetres of mercury	kilograms per square metre	dynes per square centimetre
FROM	pounds per square inch	6.8948×10^{-6}	51.714	703.07	68,948
	kilopascals	1.0000×10^{-6}	7.5005	101.97	10,000.0
	pounds per square foot	4.7880×10^{-8}	0.3591	4.8824	478.80
	atmospheres	1.0133×10^{-4}	760.00	10,332	1.0133×10^{6}
	bars	1.0000×10^{-4}	750.05	10,197	1.0000×10^{6}
	millibars	1.0000×10^{-7}	0.7500	10.197	1000.00
	inches of mercury	3.3865×10^{-6}	25.400	345.32	33,865
	kilograms per square centimetre	9.8067×10^{-5}	735.55	10,000	9.8067×10^{5}
	pascals	1.0000×10^{-9}	7.5005×10^{-3}	0.1020	10.0000
	megapascals	1.0000×10^{-3}	7,500.5	1.0197×10^{5}	1.0000×10^{7}
	gigapascals	-	7.5005×10^{6}	1.0197×10^{8}	1.0000×10^{10}
	millimetres of mercury	1.3332×10^{-7}	-	13.595	1,333.2
	kilograms per square metre	9.8066×10^{-9}	7.3555×10^{-2}	-	98.066
	dynes per square centimetre	1.0000×10^{-10}	7.5005×10^{-4}	1.0197×10^{-2}	-

Velocity

Multiply By:		TO				
		feet per second	metres per second	feet per hour	feet per minute	inches per minute
FROM	feet per second	-	0.3048	3,600.0	60.000	720.00
	metres per second	3.2808	-	11,811	196.85	2,362.2
	feet per hour	2.7778×10^{-4}	8.4667×10^{-5}	-	1.6667×10^{-2}	0.2000
	feet per minute	1.6667×10^{-2}	5.0800×10^{-3}	60.000	-	12.000
	inches per minute	1.3889×10^{-3}	4.2333×10^{-4}	5.0000	8.3333×10^{-2}	-
	inches per second	8.3333×10^{-2}	2.5400×10^{-2}	300.00	5.0000	60.000
	miles per hour	1.4667	0.4470	5,280.0	88.000	1,056.0
	knots	1.6867	0.5141	6,072.0	101.20	1,214.4
	furlongs per fortnight	5.4563×10^{-4}	1.6631×10^{-4}	1.9643	3.2738×10^{-2}	0.3929
	metres per hour	9.1134×10^{-4}	2.7778×10^{-4}	3.2808	5.4681×10^{-2}	0.6562
	metres per minute	5.4681×10^{-2}	1.6667×10^{-2}	196.85	3.2808	39.370
	kilometres per hour	0.9113	0.2778	3,280.8	54.681	656.17
	centimetres per minute	5.4681×10^{-4}	1.6667×10^{-4}	1.9685	3.2808×10^{-2}	0.3937
	centimetres per second	3.2808×10^{-2}	1.0000×10^{-2}	118.11	1.9685	23.622
	millimetres per minute	5.4681×10^{-5}	1.6667×10^{-5}	0.1969	3.2808×10^{-3}	3.9370×10^{-2}
	millimetres per second	3.2808×10^{-3}	1.0000×10^{-3}	11.811	0.1969	2.3622

Multiply By:		TO				
		inches per second	miles per hour	knots	furlongs per fortnight	metres per hour
FROM	feet per second	12.000	0.6818	0.5929	1,832.7	1,097.3
	metres per second	39.370	2.2369	1.9452	6,012.9	3,600.0
	feet per hour	3.3333×10^{-3}	1.8939×10^{-4}	1.6469×10^{-4}	0.5091	0.3048
	feet per minute	0.2000	1.1364×10^{-2}	9.8814×10^{-3}	30.545	18.288
	inches per minute	1.6667×10^{-2}	9.4697×10^{-4}	8.2345×10^{-4}	2.5455	1.5240
	inches per second	-	5.6818×10^{-2}	4.9407×10^{-2}	152.73	91.440
	miles per hour	17.600	-	0.8696	2,688.0	1,609.3
	knots	20.240	1.1500	-	3,091.2	1,850.7
	furlongs per fortnight	6.5476×10^{-3}	3.7202×10^{-4}	3.2350×10^{-4}	-	0.5987
	metres per hour	1.0936×10^{-2}	6.2137×10^{-4}	5.4032×10^{-4}	1.6702	-
	metres per minute	0.6562	3.7282×10^{-2}	3.2419×10^{-2}	100.21	60.000
	kilometres per hour	10.936	0.6214	0.5403	1,670.2	1,000.0
	centimetres per minute	6.5617×10^{-3}	3.7282×10^{-4}	3.2419×10^{-4}	1.0021	0.6000
	centimetres per second	0.3937	2.2369×10^{-2}	1.9452×10^{-2}	60.129	36.000
	millimetres per minute	6.5617×10^{-4}	3.7282×10^{-5}	3.2419×10^{-5}	0.1002	6.0000×10^{-2}
	millimetres per second	3.9370×10^{-2}	2.2369×10^{-3}	1.9452×10^{-3}	6.0129	3.6000

Continued on following page…

Velocity (continued)

Multiply By:		TO					
		metres per minute	kilometres per hour	centimetres per minute	centimetres per second	millimetres per minute	millimetres per second
FROM	feet per second	18.288	1.0973	1,828.8	30.480	18,288	304.80
	metres per second	60.000	3.6000	6,000.0	100.00	60,000	1,000.0
	feet per hour	5.0800×10^{-3}	3.0480×10^{-4}	0.5080	8.4667×10^{-3}	5.0800	8.4667×10^{-2}
	feet per minute	0.3048	1.8288×10^{-2}	30.480	0.5080	304.80	5.0800
	inches per minute	2.5400×10^{-2}	1.5240×10^{-3}	2.5400	4.2333×10^{-2}	25.400	0.4233
	inches per second	1.5240	9.1440×10^{-2}	152.40	2.5400	1,524.0	25.400
	miles per hour	26.822	1.6093	2,682.2	44.704	26,822	447.04
	knots	30.846	1.8507	3,084.6	51.410	30,846	514.10
	furlongs per fortnight	9.9786×10^{-3}	5.9871×10^{-4}	0.9979	1.6631×10^{-2}	9.9786	0.1663
	metres per hour	1.6667×10^{-2}	1.0000×10^{-3}	1.6667	2.7778×10^{-2}	16.667	0.2778
	metres per minute	-	6.0000×10^{-2}	100.00	1.6667	1,000.0	16.667
	kilometres per hour	16.667	-	1,666.7	27.778	16,667	277.78
	centimetres per minute	1.0000×10^{-2}	6.0000×10^{-4}	-	1.6667×10^{-2}	10.000	0.1667
	centimetres per second	0.6000	3.6000×10^{-2}	60.000	-	600.00	10.000
	millimetres per minute	1.0000×10^{-3}	6.0000×10^{-5}	0.1000	1.6667×10^{-3}	-	1.6667×10^{-2}
	millimetres per second	6.0000×10^{-2}	3.6000×10^{-3}	6.0000	0.1000	60.000	-

Flow Rate

Multiply By:		TO					
		cubic feet per second	cubic inches per second	U.S. gallons per second	U.K. gallons per second	cubic inches per minute	U.S. gallons per minute
FROM	cubic feet per second	-	1,728.0	7.4805	6.2288	1.0368×10^{5}	448.83
	cubic inches per second	5.7870×10^{-4}	-	4.3290×10^{-3}	3.6046×10^{-3}	60.000	0.2597
	U.S. gallons per second	0.1337	231.00	-	0.8327	13,860	60.000
	U.K. gallons per second	0.1605	277.42	1.2010	-	16,645	72.057
	cubic inches per minute	9.6451×10^{-6}	1.6667×10^{-2}	7.2150×10^{-5}	6.0077×10^{-5}	-	4.3290×10^{-3}
	U.S. gallons per minute	2.2280×10^{-3}	3.8500	1.6667×10^{-2}	1.3878×10^{-2}	231.00	-
	U.K. gallons per minute	2.6757×10^{-3}	4.6237	2.0016×10^{-2}	1.6667×10^{-2}	277.42	1.2010
	barrels per minute	9.3576×10^{-2}	161.70	0.7000	0.5829	9,702.0	42.000
	cubic centimetres per minute	5.8858×10^{-7}	1.0171×10^{-3}	4.4029×10^{-6}	3.6661×10^{-6}	6.1024×10^{-2}	2.6417×10^{-4}
	millilitres per minute	5.8858×10^{-7}	1.0171×10^{-3}	4.4029×10^{-6}	3.6661×10^{-6}	6.1024×10^{-2}	2.6417×10^{-4}
	litres per minute	5.8860×10^{-4}	1.0171	4.4030×10^{-3}	3.6662×10^{-3}	61.026	0.2642
	cubic metres per minute	0.5886	1,017.1	4.4030	3.6662	61,026	264.18
	barrels per hour	1.5596×10^{-3}	2.6950	1.1667×10^{-2}	9.7145×10^{-3}	161.70	0.7000
	cubic metres per hour	9.8099×10^{-3}	16.952	7.3383×10^{-2}	6.1104×10^{-2}	1,017.1	4.4030
	barrels per day	6.4984×10^{-5}	0.1123	4.8611×10^{-4}	4.0477×10^{-4}	6.7375	2.9167×10^{-2}
	cubic metres per day	4.0875×10^{-4}	0.7063	3.0576×10^{-3}	2.5460×10^{-3}	42.379	0.1835
	thousand cubic feet per day	86.400	1.4930×10^{5}	646.32	538.17	8.9580×10^{6}	38,779
	thousand cubic metres per day	0.4087	706.31	3.0576	2.5460	42,379	183.46
	cubic metres per second	35.315	61,024	264.17	219.97	3.6614×10^{6}	15,850
	cubic centimetres per second	3.5315×10^{-5}	6.1024×10^{-2}	2.6417×10^{-4}	2.1997×10^{-4}	3.6614	1.5850×10^{-2}
	cubic yards per minute	0.4500	777.60	3.3662	2.8030	46,656	201.97
	cubic metres per hour	9.8096×10^{-3}	16.951	7.3381×10^{-2}	6.1102×10^{-2}	1,017.1	4.4029
	litres per second	3.5315×10^{-2}	61.024	0.2642	0.2200	3,661.4	15.850
	litres per hour	9.8096×10^{-6}	1.6951×10^{-2}	7.3381×10^{-5}	6.1102×10^{-5}	1.0171	4.4029×10^{-3}

Continued on following page…

Flow Rate (continued)

Multiply By:		TO					
		U.S. gallons per minute	U.K. gallons per minute	barrels per minute	cubic centimetres per minute	millilitres per minute	litres per minute
FROM	cubic feet per second	448.83	373.73	10.686	1.6990×10^{6}	1.6990×10^{6}	1,699.0
	cubic inches per second	0.2597	0.2163	6.1843×10^{-3}	983.22	983.22	0.9832
	U.S. gallons per second	60.000	49.960	1.4286	2.2712×10^{5}	2.2712×10^{5}	227.12
	U.K. gallons per second	72.057	60.000	1.7157	2.7277×10^{5}	2.7277×10^{5}	272.76
	cubic inches per minute	4.3290×10^{-3}	3.6046×10^{-3}	1.0307×10^{-4}	16.387	16.387	1.6387×10^{-2}
	U.S. gallons per minute	-	0.8327	2.3810×10^{-2}	3,785.4	3,785.4	3.7853
	U.K. gallons per minute	1.2010	-	2.8594×10^{-2}	4,546.1	4,546.1	4.5460
	barrels per minute	42.000	34.972	-	1.5899×10^{5}	1.5899×10^{5}	158.98
	cubic centimetres per minute	2.6417×10^{-4}	2.1997×10^{-4}	6.2898×10^{-6}	-	1.0000	1.0000×10^{-3}
	millilitres per minute	2.6417×10^{-4}	2.1997×10^{-4}	6.2898×10^{-6}	1.0000	-	1.0000×10^{-3}
	litres per minute	0.2642	0.2200	6.2900×10^{-3}	1,000.0	1,000.0	-
	cubic metres per minute	264.18	219.97	6.2900	1.0000×10^{6}	1.0000×10^{6}	1,000.0
	barrels per hour	0.7000	0.5829	1.6667×10^{-2}	2,649.8	2,649.8	2.6497
	cubic metres per hour	4.4030	3.6662	0.1048	16,667	16,667	16.667
	barrels per day	2.9167×10^{-2}	2.4286×10^{-2}	6.9444×10^{-4}	110.41	110.41	0.1104
	cubic metres per day	0.1835	0.1528	4.3681×10^{-3}	694.47	694.47	0.6944
	thousand cubic feet per day	38,779	32,290	923.31	1.4679×10^{8}	1.4679×10^{8}	1.4679×10^{5}
	thousand cubic metres per day	183.46	152.76	4.3681	6.9447×10^{5}	6.9447×10^{5}	694.44
	cubic metres per second	15,850	13,198	377.39	6.0000×10^{7}	6.0000×10^{7}	60,000
	cubic centimetres per second	1.5850×10^{-2}	1.3198×10^{-2}	3.7739×10^{-4}	60.000	60.000	6.0000×10^{-2}
	cubic yards per minute	201.97	168.18	4.8089	7.6455×10^{5}	7.6455×10^{5}	764.53
	cubic metres per hour	4.4029	3.6661	0.1048	16,667	16,667	16.666
	litres per second	15.850	13.198	0.3774	60,000	60,000	60.000
	litres per hour	4.4029×10^{-3}	3.6661×10^{-3}	1.0483×10^{-4}	16.667	16.667	1.6666×10^{-2}

Continued on following page…

Flow Rate (continued)

Multiply By:		TO					
		barrels per hour	cubic metres per hour	barrels per day	cubic metres per day	thousand cubic feet per day	thousand cubic metres per day
FROM	cubic feet per second	641.19	101.94	15,388	2,446.5	1.1574×10^{-2}	2.4465
	cubic inches per second	0.3711	5.8992×10^{-2}	8.9054	1.4158	6.6980×10^{-6}	1.4158×10^{-3}
	U.S. gallons per second	85.714	13.627	2,057.1	327.05	1.5472×10^{-3}	0.3270
	U.K. gallons per second	102.94	16.366	2,470.5	392.77	1.8582×10^{-3}	0.3928
	cubic inches per minute	6.1843×10^{-3}	9.8319×10^{-4}	0.1484	2.3597×10^{-2}	1.1163×10^{-7}	2.3597×10^{-5}
	U.S. gallons per minute	1.4286	0.2271	34.286	5.4508	2.5787×10^{-5}	5.4508×10^{-3}
	U.K. gallons per minute	1.7157	0.2728	41.176	6.5462	3.0969×10^{-5}	6.5462×10^{-3}
	barrels per minute	60.000	9.5390	1,440.0	228.93	1.0831×10^{-3}	0.2289
	cubic centimetres per minute	3.7739×10^{-4}	6.0000×10^{-5}	9.0573×10^{-3}	1.4400×10^{-3}	6.8122×10^{-9}	1.4400×10^{-6}
	millilitres per minute	3.7739×10^{-4}	6.0000×10^{-5}	9.0573×10^{-3}	1.4400×10^{-3}	6.8122×10^{-9}	1.4400×10^{-6}
	litres per minute	0.3774	6.0000×10^{-2}	9.0576	1.4400	6.8124×10^{-6}	1.4400×10^{-3}
	cubic metres per minute	377.40	60.000	9,057.6	1,440.0	6.8124×10^{-3}	1.4400
	barrels per hour	-	0.1590	24.000	3.8156	1.8051×10^{-5}	3.8156×10^{-3}
	cubic metres per hour	6.2900	-	150.96	24.000	1.1354×10^{-4}	2.4000×10^{-2}
	barrels per day	4.1667×10^{-2}	6.6243×10^{-3}	-	0.1590	7.5212×10^{-7}	1.5898×10^{-4}
	cubic metres per day	0.2621	4.1667×10^{-2}	6.2900	-	4.7309×10^{-6}	1.0000×10^{-3}
	thousand cubic feet per day	55,399	8,807.4	1.3296×10^{6}	2.1138×10^{5}	-	211.38
	thousand cubic metres per day	262.08	41.667	6,290.0	1,000.0	4.7309×10^{-3}	-
	cubic metres per second	22,643	3,600.0	5.4344×10^{5}	86,398	0.4087	86.398
	cubic centimetres per second	2.2643×10^{-2}	3.6000×10^{-3}	0.5434	8.6397×10^{-2}	4.0873×10^{-7}	8.6397×10^{-5}
	cubic yards per minute	288.53	45.872	6,924.8	1,100.9	5.2083×10^{-3}	1.1009
	cubic metres per hour	6.2898	1.0000	150.96	24.000	1.1354×10^{-4}	2.4000×10^{-2}
	litres per second	22.643	3.6000	543.44	86.397	4.0873×10^{-4}	8.6397×10^{-2}
	litres per hour	6.2898×10^{-3}	1.0000×10^{-3}	0.1510	2.4000×10^{-2}	1.1354×10^{-7}	2.4000×10^{-5}

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Flow Rate (continued)

Multiply By:		TO					
		cubic metres per second	cubic centimetres per second	cubic yards per minute	cubic metres per hour	litres per second	litres per hour
FROM	cubic feet per second	2.8317×10^{-2}	28,317	2.2222	101.94	28.317	1.0194×10^{5}
	cubic inches per second	1.6387×10^{-5}	16.387	1.2860×10^{-3}	5.8993×10^{-2}	1.6387×10^{-2}	58.993
	U.S. gallons per second	3.7854×10^{-3}	3,785.4	0.2971	13.627	3.7854	13,627
	U.K. gallons per second	4.5461×10^{-3}	4,546.1	0.3568	16.366	4.5461	16,366
	cubic inches per minute	2.7312×10^{-7}	0.2731	2.1433×10^{-5}	9.8322×10^{-4}	2.7312×10^{-4}	0.9832
	U.S. gallons per minute	6.3090×10^{-5}	63.090	4.9511×10^{-3}	0.2271	6.3090×10^{-2}	227.12
	U.K. gallons per minute	7.5768×10^{-5}	75.769	5.9461×10^{-3}	0.2728	7.5769×10^{-2}	272.77
	barrels per minute	2.6498×10^{-3}	2,649.8	0.2079	9.5392	2.6498	9,539.2
	cubic centimetres per minute	1.6667×10^{-8}	1.6667×10^{-2}	1.3080×10^{-6}	6.0000×10^{-5}	1.6667×10^{-5}	6.0000×10^{-2}
	millilitres per minute	1.6667×10^{-8}	1.6667×10^{-2}	1.3080×10^{-6}	6.0000×10^{-5}	1.6667×10^{-5}	6.0000×10^{-2}
	litres per minute	1.6667×10^{-5}	16.667	1.3080×10^{-3}	6.0002×10^{-2}	1.6667×10^{-2}	60.000
	cubic metres per minute	1.6667×10^{-2}	16,667	1.3080	60.000	16.667	60,000
	barrels per hour	4.4163×10^{-5}	44.163	3.4658×10^{-3}	0.1590	4.4163×10^{-2}	158.99
	cubic metres per hour	2.7779×10^{-4}	277.79	2.1800×10^{-2}	1.0000	0.2778	1,000.0
	barrels per day	1.8401×10^{-6}	1.8401	1.4441×10^{-4}	6.6245×10^{-3}	1.8401×10^{-3}	6.6245
	cubic metres per day	1.1574×10^{-5}	11.574	9.0833×10^{-4}	4.1668×10^{-2}	1.1574×10^{-2}	41.668
	thousand cubic feet per day	2.4466	2.4466×10^{6}	192.00	8,807.7	2,446.6	8.8077×10^{6}
	thousand cubic metres per day	1.1574×10^{-2}	11,574	0.9083	41.668	11.574	41,668
	cubic metres per second	-	1.0000×10^{6}	78.477	3,600.0	1,000.0	3.6000×10^{6}
	cubic centimetres per second	1.0000×10^{-6}	-	7.8477×10^{-5}	3.6000×10^{-3}	1.0000×10^{-3}	3.6000
	cubic yards per minute	1.2743×10^{-2}	12,743	-	45.873	12.743	45,873
	cubic metres per hour	2.7778×10^{-4}	277.78	2.1799×10^{-2}	-	0.2778	1,000.0
	litres per second	1.0000×10^{-3}	1,000.0	7.8477×10^{-2}	3.6000	-	3,600.0
	litres per hour	2.7778×10^{-7}	0.2778	2.1799×10^{-5}	1.0000×10^{-3}	2.7778×10^{-4}	-

Work

Multiply By:		TO					
		foot-pounds	foot-kilopounds	newton-metres	kilonewton-metres	tonne-metres	short ton-miles
FROM	foot-pounds	-	1.0000×10^{-3}	1.3558	1.3558×10^{-3}	1.3826×10^{-4}	9.4697×10^{-8}
	foot-kilopounds	1,000.0	-	1,355.8	1.3558	0.1383	9.4697×10^{-5}
	newton-metres	0.7376	7.3756×10^{-4}	-	1.0000×10^{-3}	1.0197×10^{-4}	6.9845×10^{-8}
	kilonewton-metres	737.56	0.7376	1,000.0	-	0.1020	6.9845×10^{-5}
	tonne-metres	7,233.0	7.2330	9,806.6	9.8066	-	6.8494×10^{-4}
	short ton-miles	1.0560×10^{7}	10,560	1.4317×10^{7}	14,317	1,460.0	-
	long ton-miles	1.1827×10^{7}	11,827	1.6035×10^{7}	16,035	1,635.2	1.1200
	tonne-kilometres	7.2330×10^{6}	7,233.0	9.8067×10^{6}	9,806.7	1,000.0	0.6849
	megajoules	7.3756×10^{5}	737.56	1.0000×10^{6}	1.0000×10^{3}	101.97	6.9845×10^{-2}
	kilojoules	737.56	0.7376	1,000.0	1.0000	0.1020	6.9845×10^{-5}
	joules	0.7376	7.3756×10^{-4}	1.0000	1.0000×10^{-3}	1.0197×10^{-4}	6.9845×10^{-8}
	horsepower-hours	1.9800×10^{6}	1,980.0	2.6845×10^{6}	2,684.5	273.75	0.1875
	kilowatt-hours	2.6552×10^{6}	2,655.2	3.6000×10^{6}	3,600.0	367.10	0.2514
	British thermal units	778.17	0.7782	1,055.1	1.0551	0.1076	7.3690×10^{-5}
	dyne-centimetres	7.3756×10^{-8}	7.3756×10^{-11}	1.0000×10^{-7}	1.0000×10^{-10}	1.0197×10^{-11}	6.9845×10^{-15}
	short ton-feet	2,000.0	2.0000	2,711.6	2.7116	0.2765	1.8939×10^{-4}
	inch-pounds force	8.3333×10^{-2}	8.3333×10^{-5}	0.1130	1.1298×10^{-4}	1.1521×10^{-5}	7.8914×10^{-9}
	watt-hours	2,655.2	2.6552	3,600.0	3.6000	0.3671	2.5144×10^{-4}

Multiply By:		TO					
		long ton-miles	tonne-kilometres	megajoules	kilojoules	joules	horsepower-hours
FROM	foot-pounds	8.4552×10^{-8}	1.3825×10^{-7}	1.3558×10^{-6}	1.3558×10^{-3}	1.3558	5.0505×10^{-7}
	foot-kilopounds	8.4552×10^{-5}	1.3825×10^{-4}	1.3558×10^{-3}	1.3558	1,355.8	5.0505×10^{-4}
	newton-metres	6.2362×10^{-8}	1.0197×10^{-7}	1.0000×10^{-6}	1.0000×10^{-3}	1.0000	3.7251×10^{-7}
	kilonewton-metres	6.2362×10^{-5}	1.0197×10^{-4}	1.0000×10^{-3}	1.0000	1000.00	3.7251×10^{-4}
	tonne-metres	6.1156×10^{-4}	1.0000×10^{-3}	9.8066×10^{-3}	9.8066	9,806.6	3.6530×10^{-3}
	short ton-miles	0.8929	1.4600	14.317	14,317	1.4317×10^{7}	5.3333
	long ton-miles	-	1.6352	16.035	16,035	1.6035×10^{7}	5.9733
	tonne-kilometres	0.6116	-	9.8067	9,806.7	9.8067×10^{6}	3.6530
	megajoules	6.2362×10^{-2}	0.1020	-	1000	1.0000×10^{6}	0.3725
	kilojoules	6.2362×10^{-5}	1.0197×10^{-4}	1.0000×10^{-3}	-	1,000.0	3.7251×10^{-4}
	joules	6.2362×10^{-8}	1.0197×10^{-7}	1.0000×10^{-6}	1.0000×10^{-3}	-	3.7251×10^{-7}
	horsepower-hours	0.1674	0.2737	2.6845	2,684.5	2.6845×10^{6}	-
	kilowatt-hours	0.2245	0.3671	3.6000	3,600.0	3.6000×10^{6}	1.3410
	British thermal units	6.5796×10^{-5}	1.0759×10^{-4}	1.0551×10^{-3}	1.0551	1,055.1	3.9301×10^{-4}
	dyne-centimetres	6.2362×10^{-15}	1.0197×10^{-14}	1.0000×10^{-13}	1.0000×10^{-10}	1.0000×10^{-7}	3.7251×10^{-14}
	short ton-feet	1.6910×10^{-4}	2.7651×10^{-4}	2.7116×10^{-3}	2.7116	2,711.6	1.0101×10^{-3}
	inch-pounds force	7.0460×10^{-9}	1.1521×10^{-8}	1.1298×10^{-7}	1.1298×10^{-4}	0.1130	4.2088×10^{-8}
	watt-hours	2.2450×10^{-4}	3.6710×10^{-4}	3.6000×10^{-3}	3.6000	3,600.0	1.3410×10^{-3}

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Work (continued)

Multiply By:		TO					
		kilowatt-hours	British thermal units	dyne-centimetres	short ton-feet	inch-pounds force	watt-hours
FROM	foot-pounds	3.7662×10^{-7}	1.2851×10^{-3}	1.3558×10^{7}	5.0000×10^{-4}	12.000	3.7662×10^{-4}
	foot-kilopounds	3.7662×10^{-4}	1.2851	1.3558×10^{10}	0.5000	12,000	0.3766
	newton-metres	2.7778×10^{-7}	9.4782×10^{-4}	1.0000×10^{7}	3.6878×10^{-4}	8.8507	2.7778×10^{-4}
	kilonewton-metres	2.7778×10^{-4}	0.9478	1.0000×10^{10}	0.3688	8,850.7	0.2778
	tonne-metres	2.7240×10^{-3}	9.2948	9.8066×10^{10}	3.6165	86,795	2.7240
	short ton-miles	3.9771	13,570	1.4317×10^{14}	5,280.0	1.2672×10^{8}	3,977.1
	long ton-miles	4.4543	15,199	1.6035×10^{14}	5,913.5	1.4192×10^{8}	4,454.3
	tonne-kilometres	2.7241	9,294.9	9.8067×10^{13}	3,616.5	8.6796×10^{7}	2,724.1
	megajoules	0.2778	947.82	1.0000×10^{13}	368.78	8.8507×10^{6}	277.78
	kilojoules	2.7778×10^{-4}	0.9478	1.0000×10^{10}	0.3688	8,850.7	0.2778
	joules	2.7778×10^{-7}	9.4782×10^{-4}	1.0000×10^{7}	3.6878×10^{-4}	8.8507	2.7778×10^{-4}
	horsepower-hours	0.7457	2,544.4	2.6845×10^{13}	990.00	2.3760×10^{7}	745.70
	kilowatt-hours	-	3,412.1	3.6000×10^{13}	1,327.6	3.1863×10^{7}	1000.00
	British thermal units	2.9307×10^{-4}	-	1.0551×10^{10}	0.3891	9,338.0	0.2931
	dyne-centimetres	2.7778×10^{-14}	9.4782×10^{-11}	-	3.6878×10^{-11}	8.8507×10^{-7}	2.7778×10^{-11}
	short ton-feet	7.5323×10^{-4}	2.5701	2.7116×10^{10}	-	24,000	0.7532
	inch-pounds force	3.1385×10^{-8}	1.0709×10^{-4}	1.1298×10^{6}	4.1667×10^{-5}	-	3.1385×10^{-5}
	watt-hours	1.0000×10^{-3}	3.4121	3.6000×10^{10}	1.3276	31,863	-

Chemical Concentration

Multiply By:		TO					
		parts per million	parts per thousand	percent	thousand parts per million	kilograms per tonne	weight fraction
FROM	parts per million	-	1.0000×10^{-3}	1.0000×10^{-4}	1.0000×10^{-3}	1.0000×10^{-3}	1.0000×10^{-6}
	parts per thousand	1,000.0	-	0.1000	1.0000	1.0000	1.0000×10^{-3}
	percent	10,000	10.000	-	10.000	10.000	1.0000×10^{-2}
	thousand parts per million	1,000.0	1.0000	0.1000	-	1.0000	1.0000×10^{-3}
	kilograms per tonne	1,000.0	1.0000	0.1000	1.0000	-	1.0000×10^{-3}
	weight fraction	1.0000×10^{6}	1,000.0	100.00	1,000.0	1,000.0	-

Viscosity

Multiply By:		TO			
		centipoise	pascal seconds	millipascal seconds	pounds per foot-hour
FROM	centipoise	-	1.0000×10^{-3}	1.0000	2.4191
	pascal seconds	1,000.0	-	1,000.0	2,419.1
	millipascal seconds	1.0000	1.0000×10^{-3}	-	2.4191
	pounds per foot-hour	0.4134	4.1338×10^{-4}	0.4134	-
	pounds per foot-second	1,488.2	1.4882	1,488.2	3,600.0
	pounds force-seconds per square foot	47,880	47.880	47,880	1.1583×10^{5}
	pounds force-seconds per square inch	6.8948×10^{6}	6,894.8	6.8948×10^{6}	1.6679×10^{7}
	poise	100.00	0.1000	100.00	241.91

Multiply By:		TO			
		pounds per foot-second	pounds force-seconds per square foot	pounds force-seconds per square inch	poise
FROM	centipoise	6.7197×10^{-4}	2.0885×10^{-5}	1.4504×10^{-7}	1.0000×10^{-2}
	pascal seconds	0.6720	2.0885×10^{-2}	1.4504×10^{-4}	10.000
	millipascal seconds	6.7197×10^{-4}	2.0885×10^{-5}	1.4504×10^{-7}	1.0000×10^{-2}
	pounds per foot-hour	2.7778×10^{-4}	8.6336×10^{-6}	5.9956×10^{-8}	4.1338×10^{-3}
	pounds per foot-second	-	3.1081×10^{-2}	2.1584×10^{-4}	14.882
	pounds force-seconds per square foot	32.174	-	6.9444×10^{-3}	478.80
	pounds force-seconds per square inch	4,633.1	144.00	-	68,948
	poise	6.7197×10^{-2}	2.0885×10^{-3}	1.4504×10^{-5}	-

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