SUPPLEMENT

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Interpretation of Self-Potential data for case of partially penetrating pumping well (model representations)

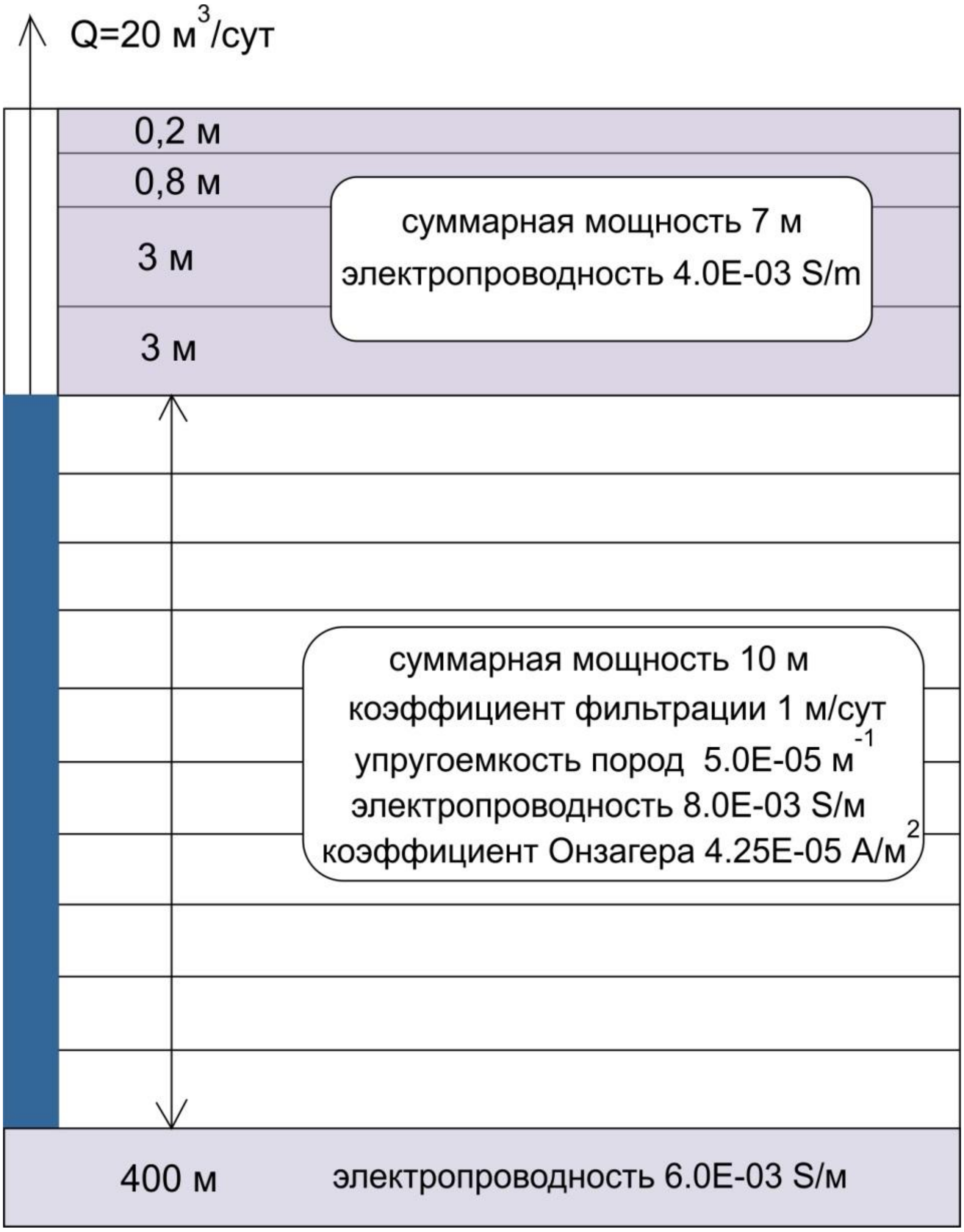

Fig.1. Model geometry and parameters.

Top signature: Q = 20 m^3/day. First block: total thickness 7 m, electrical conductivity 4.0E-03 S/m. Second block: total thickness 10 m, filtration coefficient 1 m/day, elasticity of rocks 5.0E-05 m^{-1}, electrical conductivity 8.0E-03 S/m, Onsager coefficient 4.25E-05 A/m^2. Lower signature: electrical conductivity 6.0E-03 S/m.

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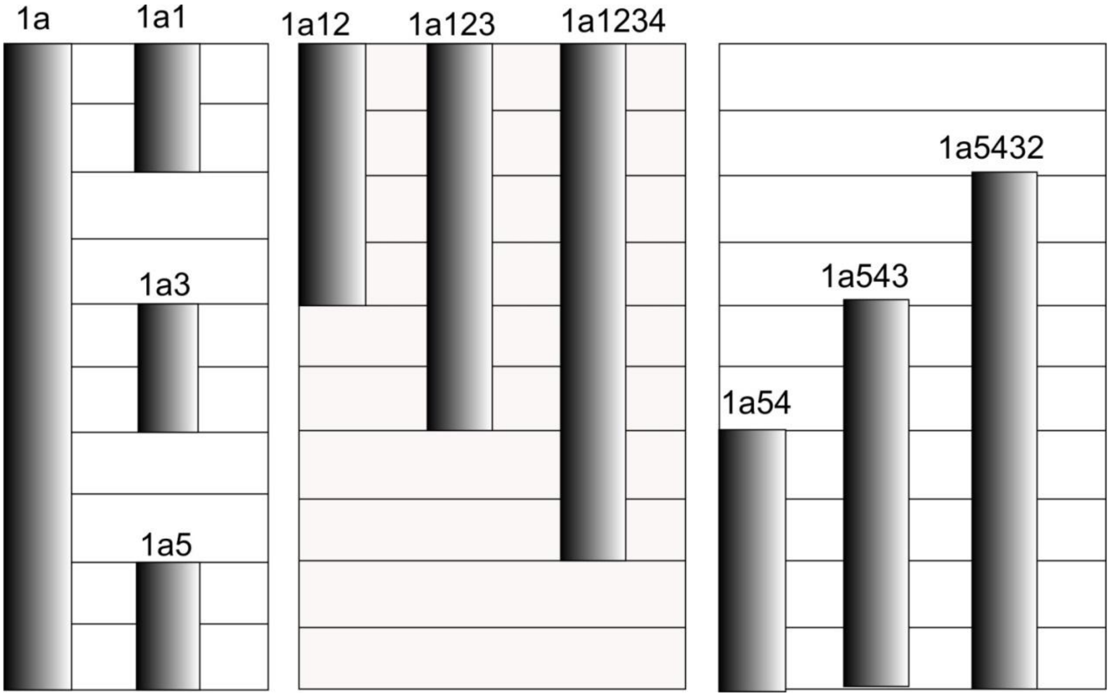

Fig.2. Variants of imperfection of pumping wells according to the degree of reservoir opening (the numbers indicate the corresponding version of the filter position relative to the estimated layers of the aquifer).

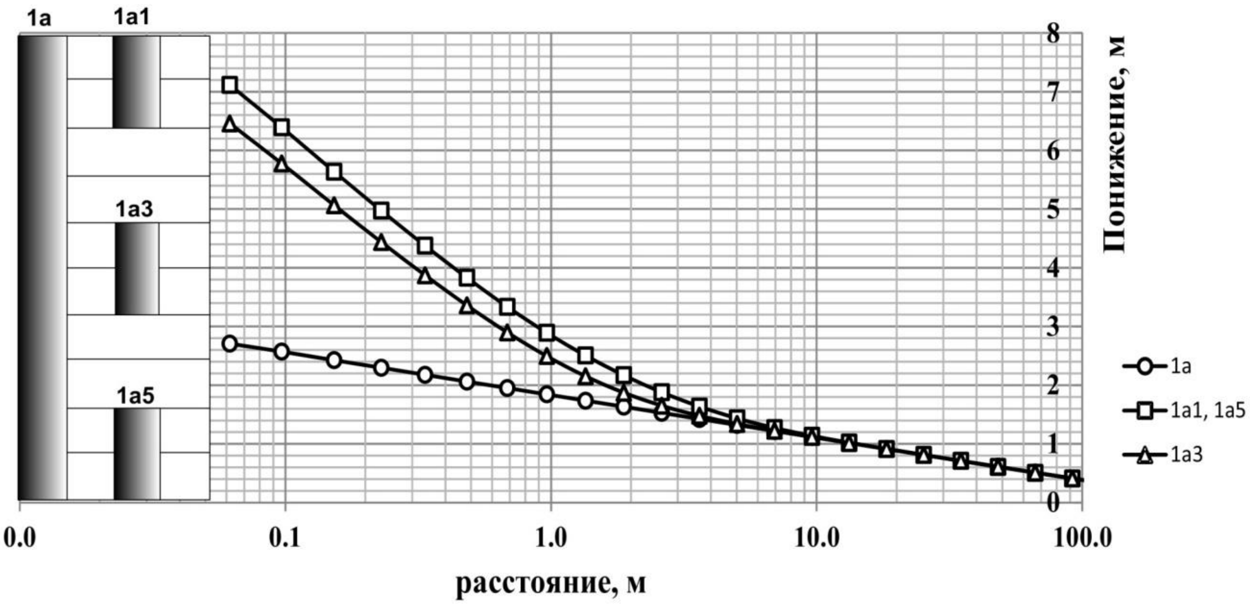

Fig.3. Drawdowns vs. distance from the pumping well for the case of short filters ($l_ф/m=1/5$). For comparison, the graph for the case of the fully penetrating well is also show.

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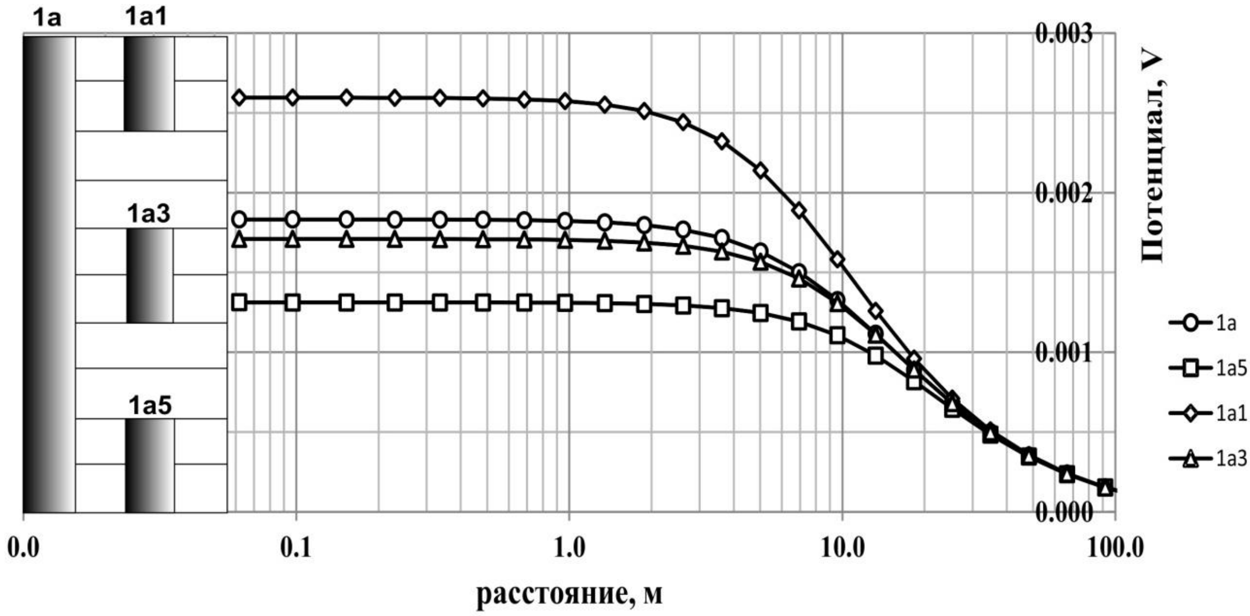

Fig.4. SP vs. distance from the pumping well for the case of short filters ($l_ф/m=1/5$). The case of insulating casing. For comparison, the graph for the case of the fully penetrating well is also show.

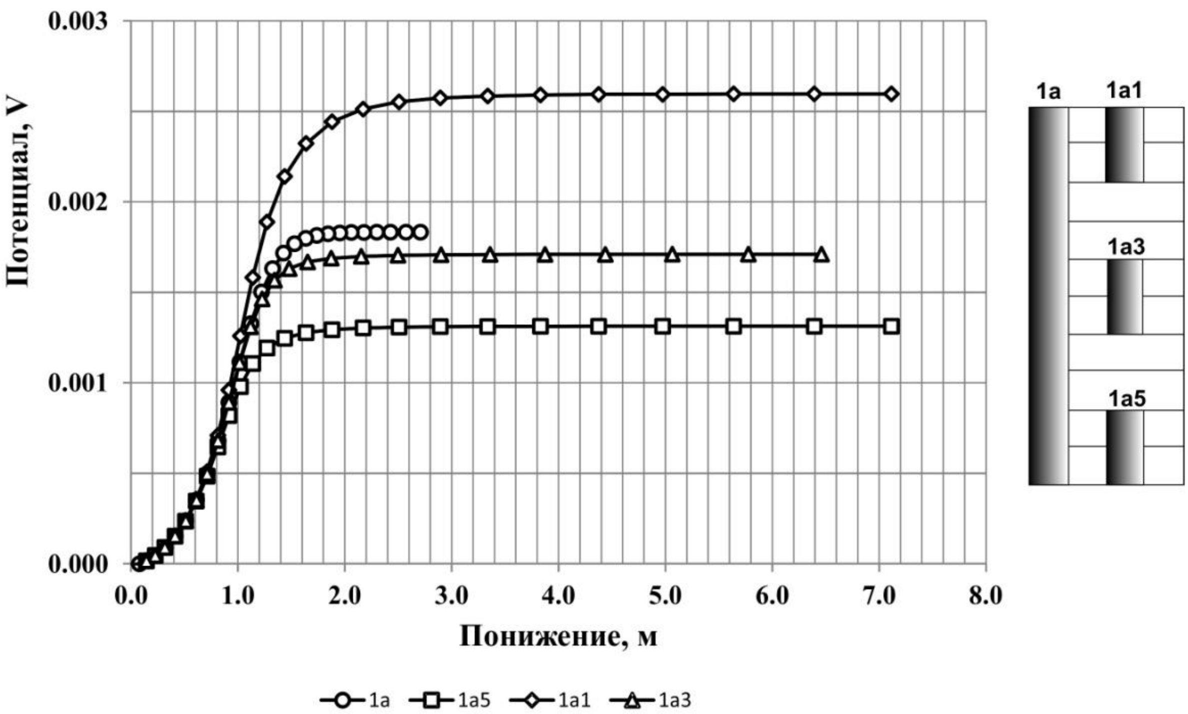

Fig.5. SP vs. drawdown for the case of short filters ($l_ф/m=1/5$). The case of insulating casing. For comparison, the graph for the case of the fully penetrating well is also show.

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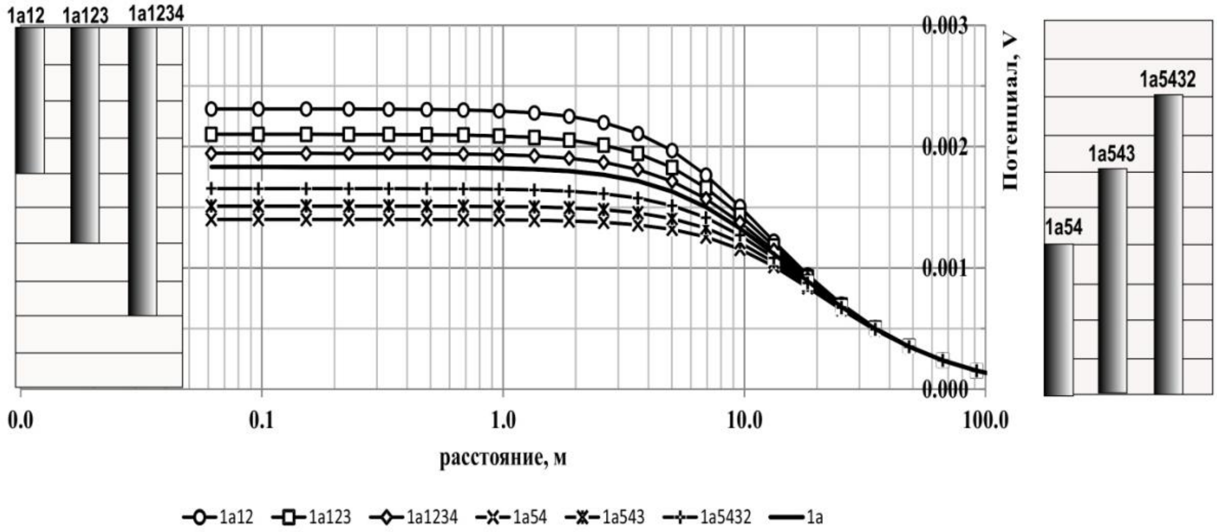

Fig.6. SP vs. distance from the pumping well (1/5< $l_ф$/m <4/5). The case of insulating casing. For comparison, the graph for the case of the fully penetrating well is also show.

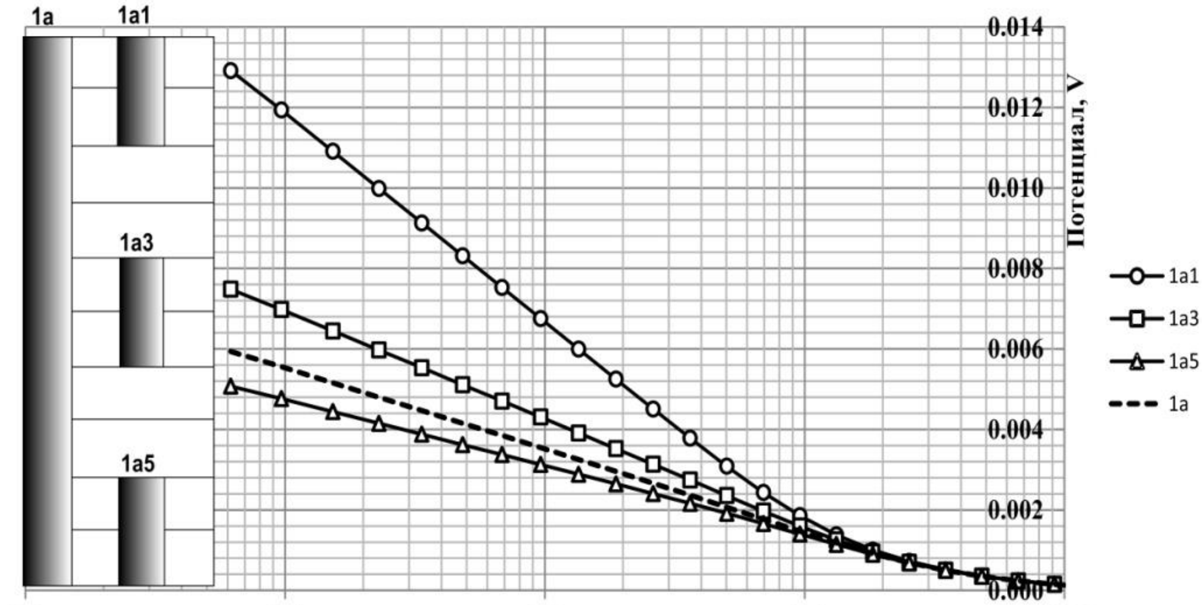

Fig.7. SP vs. distance from the pumping well for the case of short filters ($l_ф$/m=1/5). The case of metallic casing. For comparison, the graph for the case of the fully penetrating well is also show.

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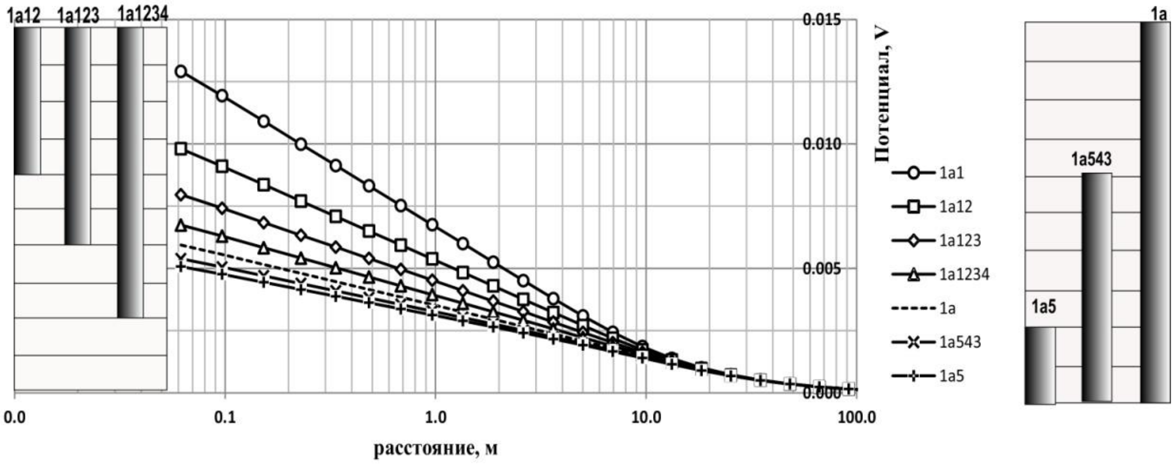

Fig.8. SP vs. distance from the pumping well. The case of metallic casing ($1/5< l_ф/m <4/5$). For comparison, the graph for the case of the fully penetrating well is also show.

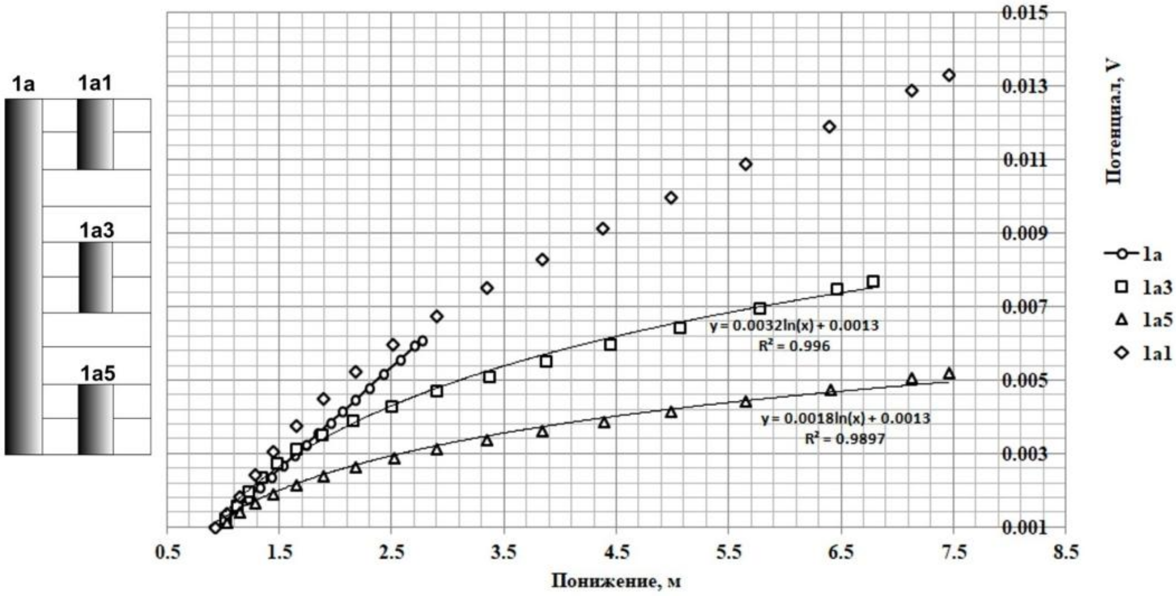

Fig.9. SP vs. drawdown for the case of short filters ($l_ф/m=1/5$). The case of metallic casing. For comparison, the graph for the case of the fully penetrating well is also show.

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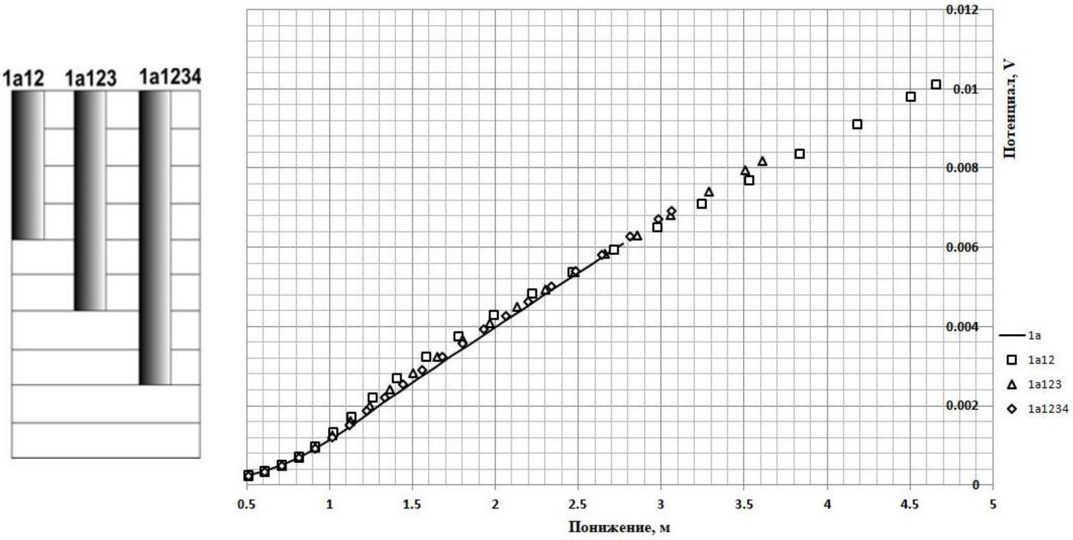

Fig.10. SP vs. drawdown (1/5< $l_ф$/m <4/5). The case of metallic casing. For comparison, the graph for the case of the fully penetrating well is also show.

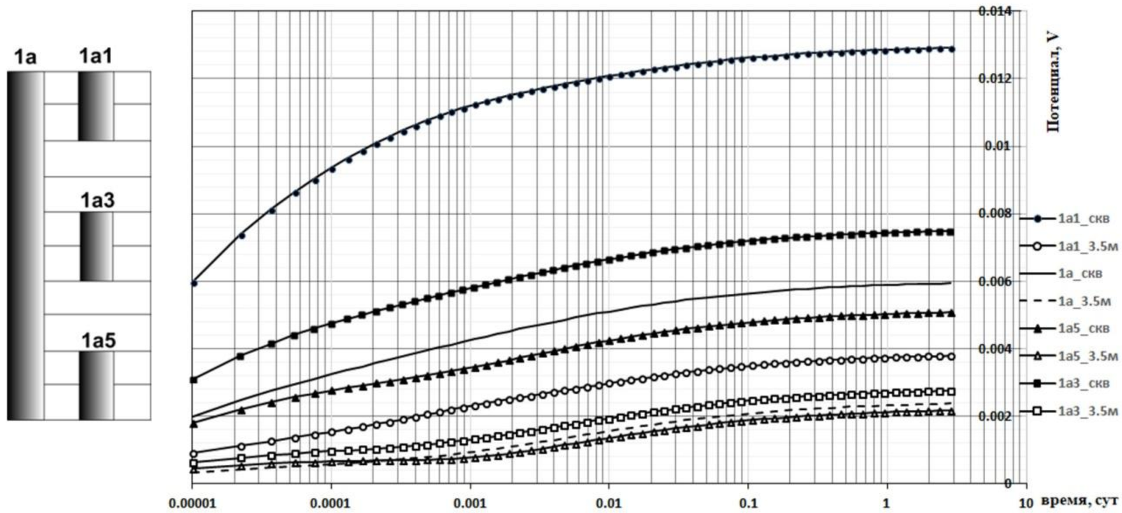

Fig.11. Time variation of SP for the models shown in Fig. 2. The case of metallic casing (1a1_скв: potential at the well, 1a1_3,5м: potential at 3.5 m far away from the well).