Craig Taraszki

From: Pidala, Anthony <Anthony.Pidala@dep.state.fl.us>
Sent: Friday, April 07, 2017 3:25 PM
To: Craig Taraszki
Cc: Loesch, Gerald
Subject: RE: Maintenance Dredge Authorization

Good afternoon, Craig

Whether or not an area is eligible to be dredged under the maintenance exemption criteria provided in 403.813(1)(f), F.S., is not dependent upon any other activities proposed to occur in the same area. Dredging activities and dock construction are two separate activities, that would require independent reviews to determine the appropriate form of authorization; one should not directly affect the other.

I would add that, if someone wanted to construct a dock in an area with shallow water depths, and they knew that dredging would be required, then it would be in their best interest to determine/delineate the area that may qualify for *maintenance* dredging prior to deciding on the exact location/configuration of the proposed dock. They would want to try to fit all or most of the dock (particularly the mooring areas and turning basin) into the footprint of the historically dredged area.

Let me know if this answers your question(s), or if any additional clarification is needed.

Thank you, and have a good weekend…

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From: Craig Taraszki [mailto:CraigT@jpfirm.com]
Sent: Friday, April 7, 2017 11:29 AM
To: Pidala, Anthony <Anthony.Pidala@dep.state.fl.us>
Subject: Maintenance Dredge Authorization

Anthony,

May an applicant apply for a dredge authorization (specifically, an exception to revive a historical dredge area) prior to applying for the private dock that the dredged channel is intended to serve? It seems logical that, where some dredge area will be required to provide the functionality of the dock and boat lift, that the limits of the permissible dredge should be established prior to designing the dock. I did not see anything in the ERP application documents that made applying for the local, county or FDEP dock permit/authorization a prerequisite for applying for the dredge authorization.

Craig A. Taraszki

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Craig Taraszki
Johnson Pope Bokor Ruppel & Burns, LLP
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April 18, 2017

Re: Results of the MER survey along the marine shoreline of 3 Stonegate Drive, Belleair, FL.

Mr. Taraszki,

N.S. Nettles & Associates, Inc. (NSN) has completed a marine geophysical survey using Multi-Electrode Electrical Resistivity (MER) along the shoreline of the above referenced address. This report describes the results of the mapping, including processed and annotated MER graphics, location map graphics, and interpretation of the data.

From review of a 1957 historical aerial photograph (Figure 1), it is apparent that previous dredging activities occurred along the shoreline adjacent to 3 Stonegate Drive. The purpose of the geophysical data collection was to image the sub-surface of the seafloor in order to determine the presence of a previous dredged channel, establish the original dredge depths, and determine if the geophysical results align with the historical imagery. The MER data collection was performed by NSN Geologists Bret Jarrett, Ph.D. and Patrick Bryce on April 14, 2016. A total of six MER transect lines were performed (each oriented roughly southeast to northwest), extending seaward from the mangrove shoreline abutting 3 Stonegate Drive (Figure 2).

MER is a geophysical method of mapping the sub-surface geology by arcing an electric current between pairs of electrodes. NSN uses the multi-channel Super Sting system, which employs 28, 56, or 112 electrodes attached to a cable. The electrodes are either coupled to the ground using 24-inch stainless steel spikes or laid directly on the bottom of a water body. Computer programs in the Super Sting unit manage the sequencing of arcing electric currents through the electrodes. Several different methods (Dipole-Dipole, Schlumberger, Pole-Pole, Wenner, and Induced Polarization) may be used to collect electrical data. These methods are effective in differentiating the various sub-surface geological strata, including sands, silts, clays, and rock units. Additionally, MER is effective in identifying karst (sinkhole) features such as vertical solution pipes, ravel zones, caverns, and changes in the porosity of the surficial sediments.

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The MER transects are the graphical depiction of the Inverse Model Resistivity Section of the field data being adjusted for the distance of the electrode pairs during each measurement. This graphic provides the resistivity distribution, from which the geologic stratigraphy is interpreted.

The Dipole-Dipole method was used to record the MER transects for this study. A waterproof cable using 28 electrodes and a 1.5 meter electrode spacing was deployed from kayaks for each transect line (resulting in total distance of 40.5 meters per line). Weights were attached to the beginning and end of each line to avoid any potential disturbance of the line during the test. Buoys were also placed at the end of the lines, and a Trimble GeoXH (2008 series) handheld GPS unit (with Tornado antenna) was used for positioning. Data were collected during a rising tide regime, and water depths ranged from approximately 1 foot along the shoreline to approximately 3 feet at the seaward extent of the lines.

Figures 3 to 8 show the results of each MER transect line. While the data recorded maximum resistivity values ranging from approximately 25 to 50 Ohm.m, Figures 3 to 8 are presented with a range of 0 to 3 Ohm.m. This is to better highlight low resistivity features, such as consistent with typical infilled dredge material. Each data figure is annotated with the interpreted stratigraphy. In general, the MER data show saturated unconsolidated sediments overlying limestone bedrock. The higher resistivity material near the surface of the profiles represents periodic occurrences of rubble. The top of limestone is seen near the base of the graphics as the higher resistivity strata (shaded red). The top of limestone generally occurred from approximately 4 to 5 meters in depth. However, standing out in Transects 1 and 6 are large depressional features in the limestone, resulting from karst activity.

Consistent along the landward side of each profile are low resistivity strata (<1 Ohm.m) overlying limestone. This material is consistent with high water content, organic silts that typically accumulate within dredged channels in low-energy marine environments and mark the previous dredged channel. In the directly overlying sediments, the organic silts are increasingly diluted by sand input (e.g., erosion of bluffs to the north and storm drain outflows). Additionally, the sinkhole depressions may act as sinks for a portion of the accumulated dredge fill. This is especially apparent in Transect 6, where low resistivity strata are seen along the eastern flank of the karst depression. Very low resistivity materials, such as evident as the dark-blue/black shaded strata near the western sides of Transects 5 and 6 represent a highly weathered and dissolved top of limestone (producing a clayey limestone residuum). From the MER data, the original dredge depths (below the

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seafloor) are as follows: Transect 1 (3.7 m), Transect 2 (4.7 m), Transect 3 (3.6 m), Transect 4 (3.7 m), Transect 5 (3.7 m), and Transect 6 (3.7 m).

Figure 9 displays the 1957 historical aerial overlain with the locations of the MER transects (blue lines). The yellow line is the centerline of the previous dredge channel identified from the MER data. The strong alignment between the historical imagery and the MER data provide compelling support for a previous dredge channel, oriented northeast-southwest, along the waterfront at 3 Stonegate Drive.

Sincerely,

Sandy Nettles

SANDY NETTLES LICENSE NO. PG0000710 STATE OF FLORIDA PROFESSIONAL GEOLOGIST

Sandy Nettles, PG, Florida Registration No. 710
N.S. Nettles & Associates, Inc.

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Figure 1
1957 Historical Aerial Photograph
Belleair, Florida

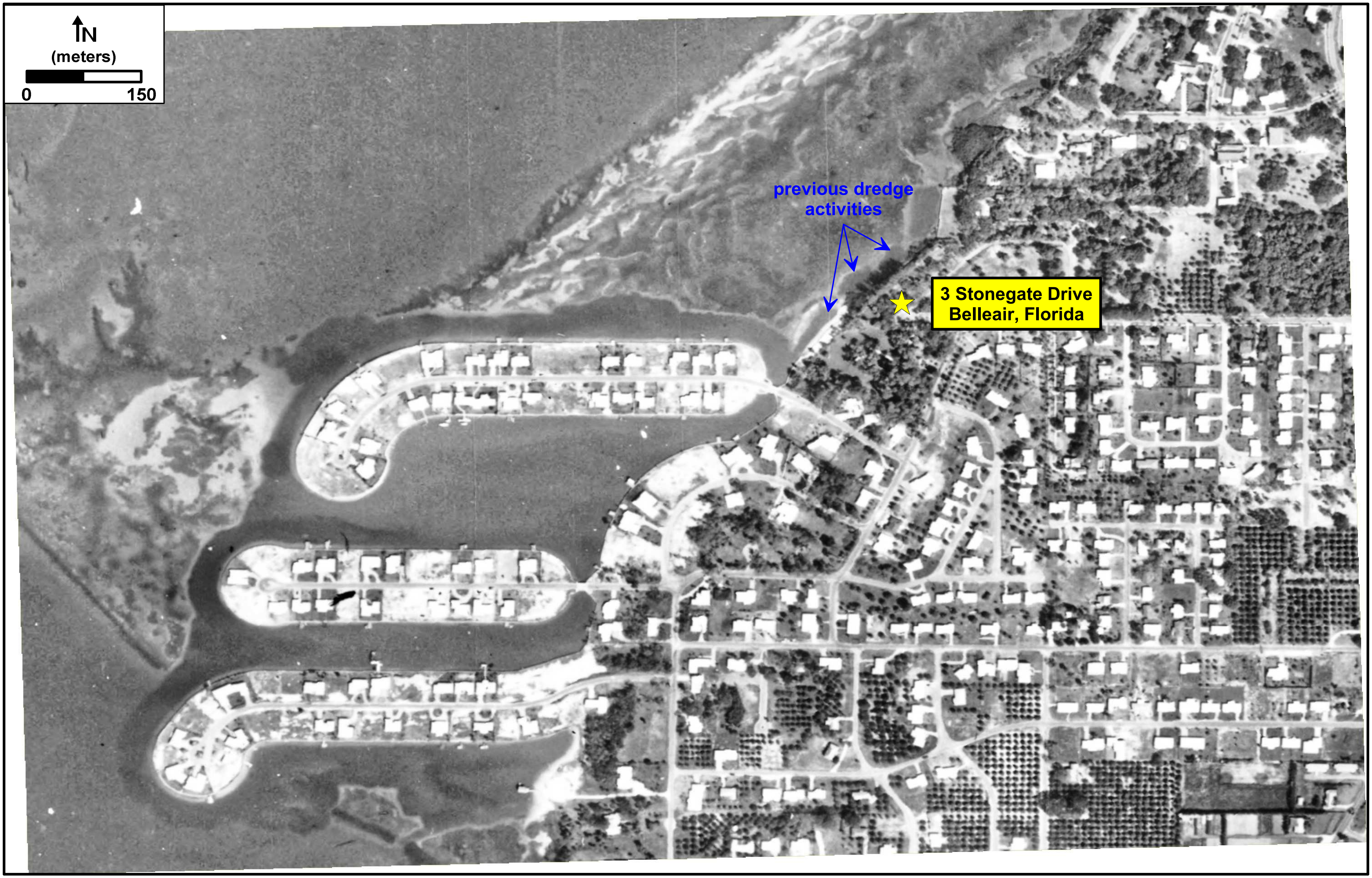

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Figure 2
MER Transect Location Map
Belleair, FL
4/14/17

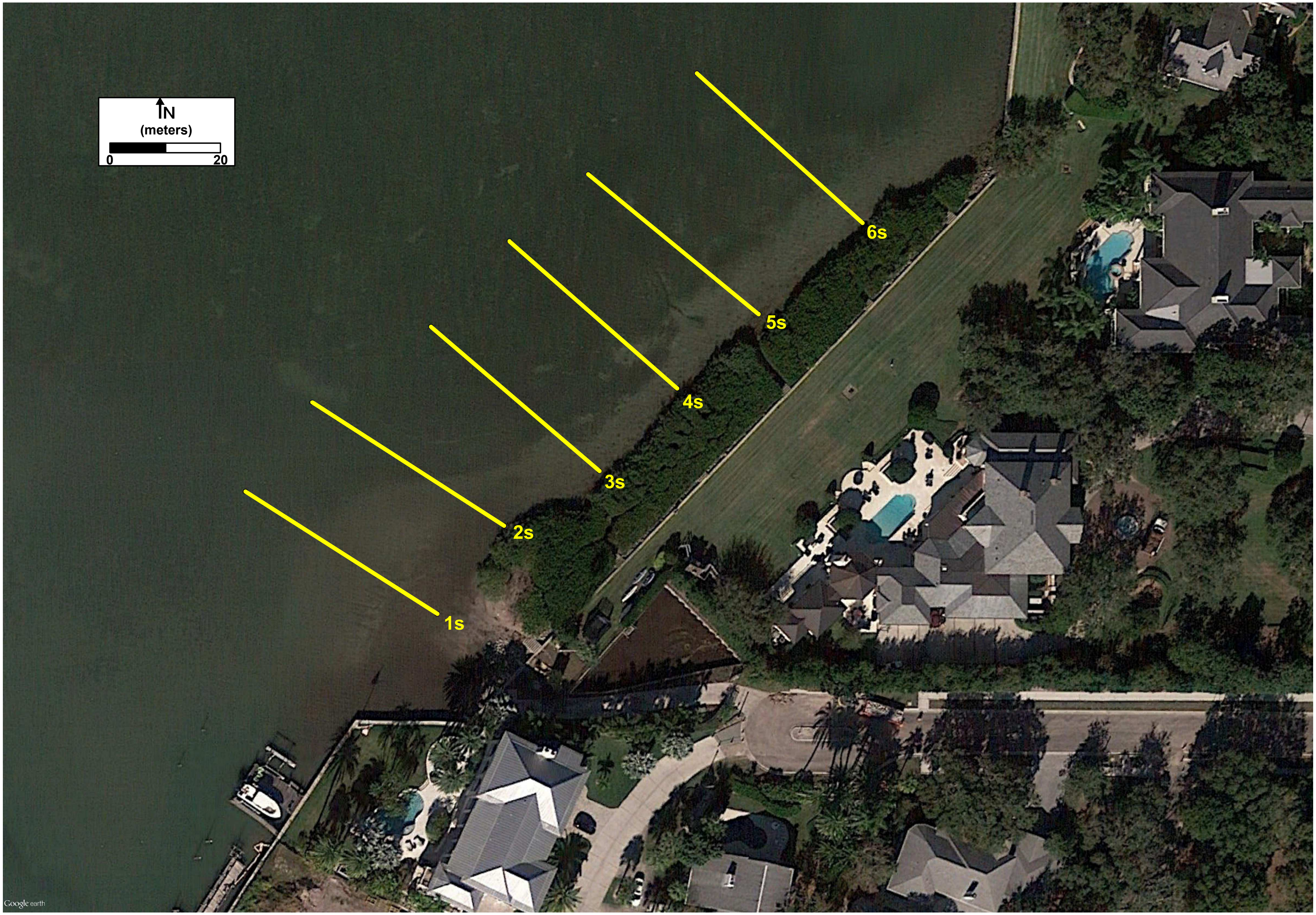

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Figure 3
MER Transect 1

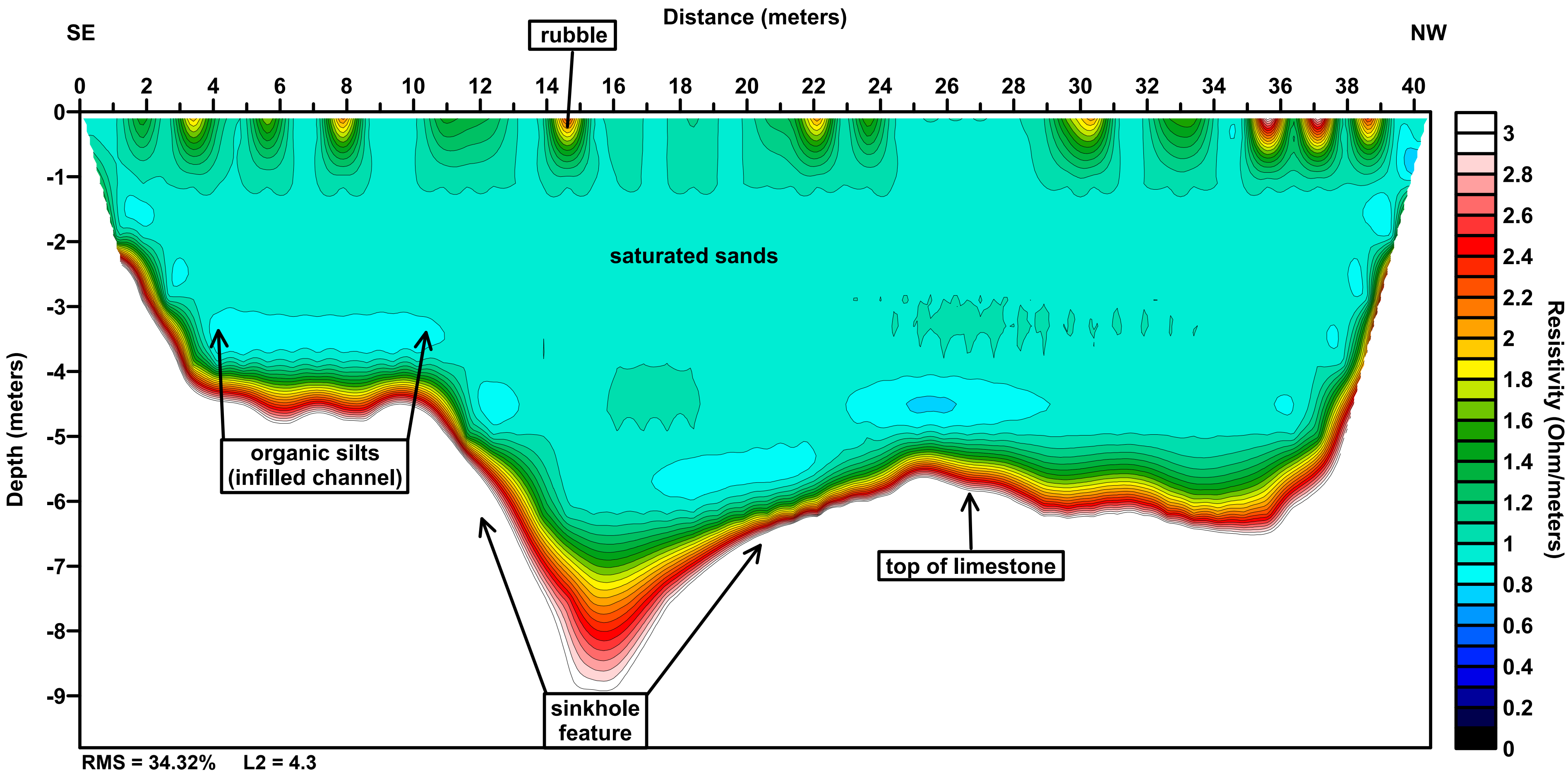

Figure 4
MER Transect 2

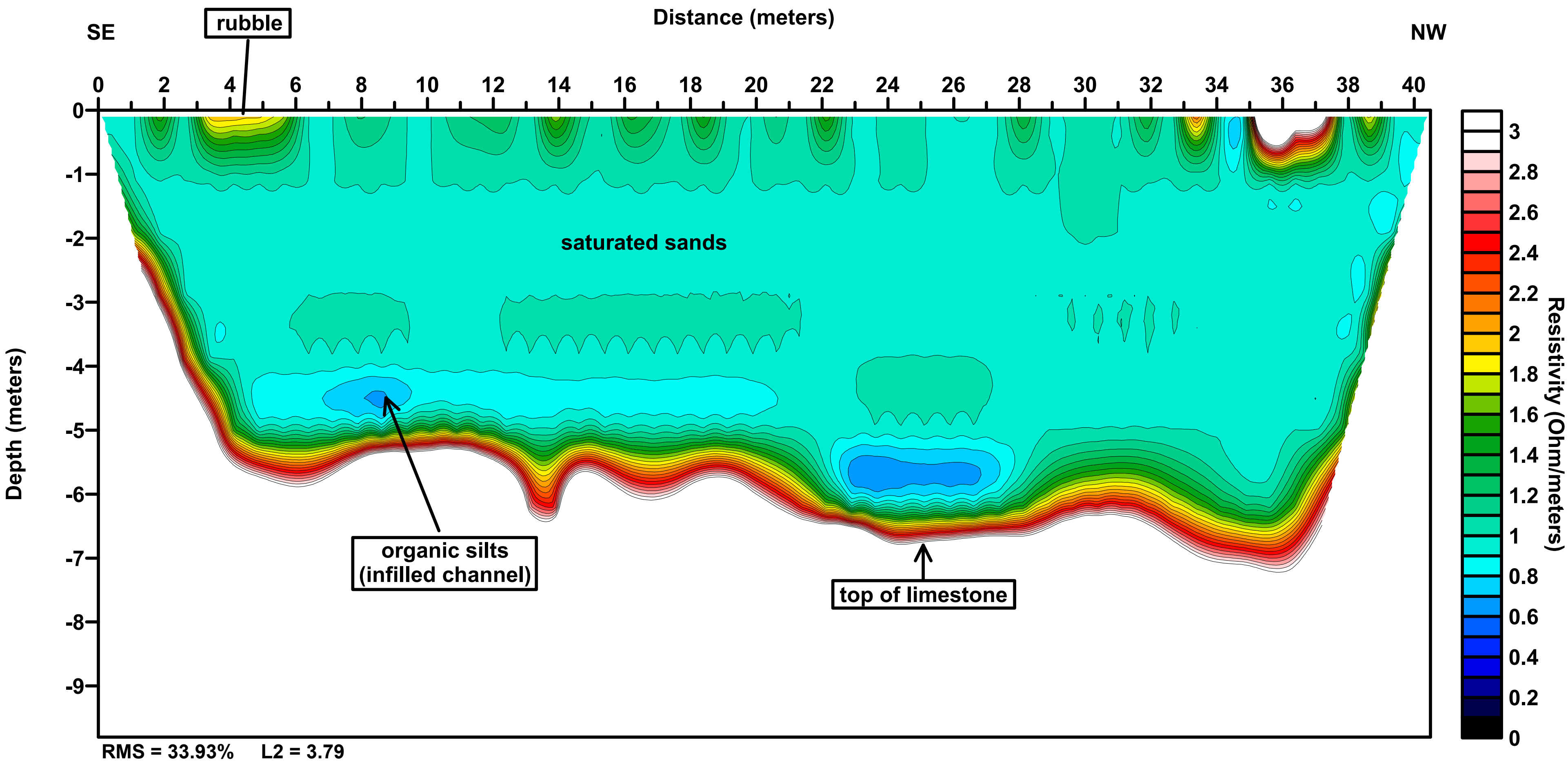

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Figure 5
MER Transect 3

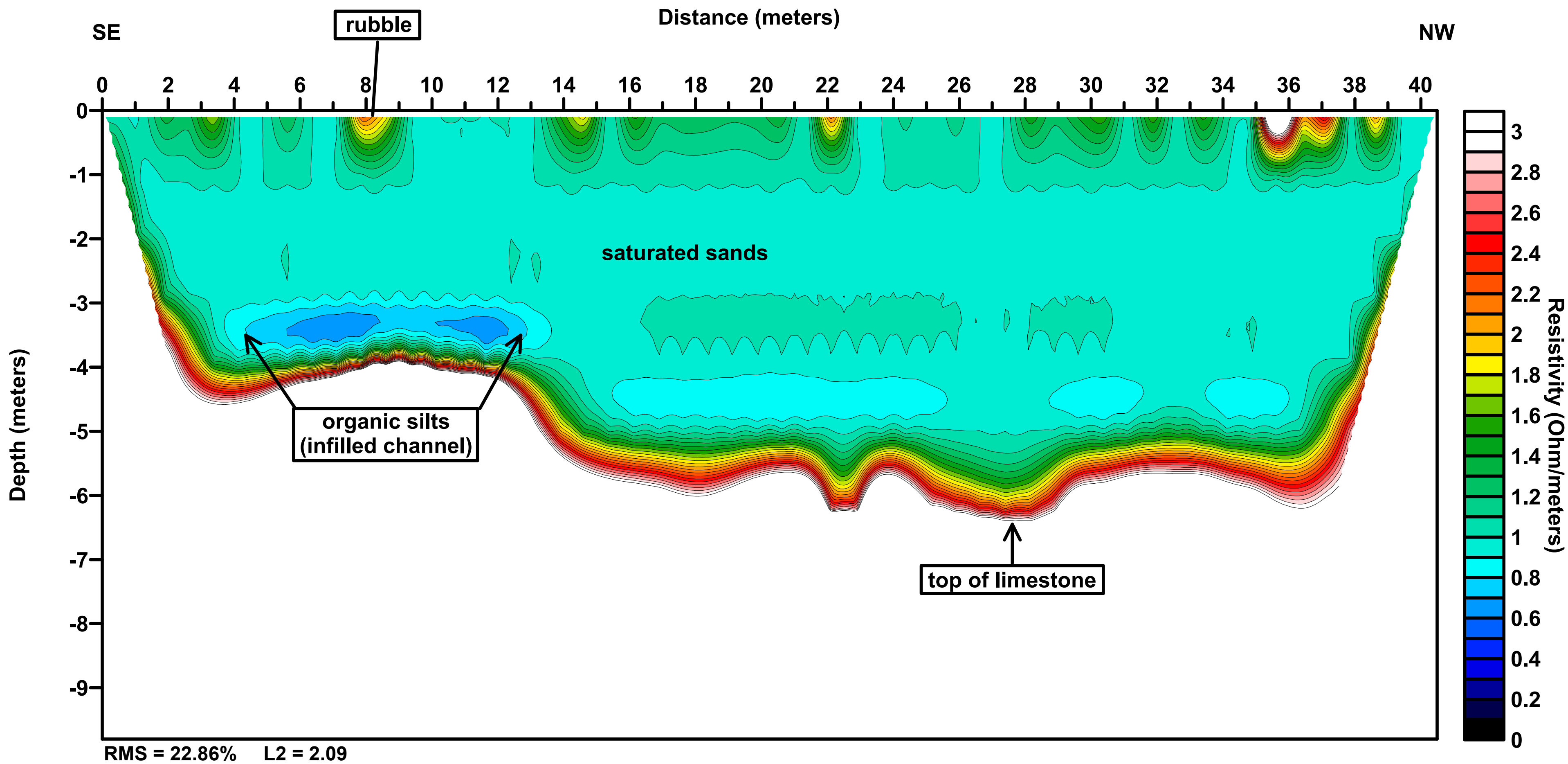

Figure 6
MER Transect 4

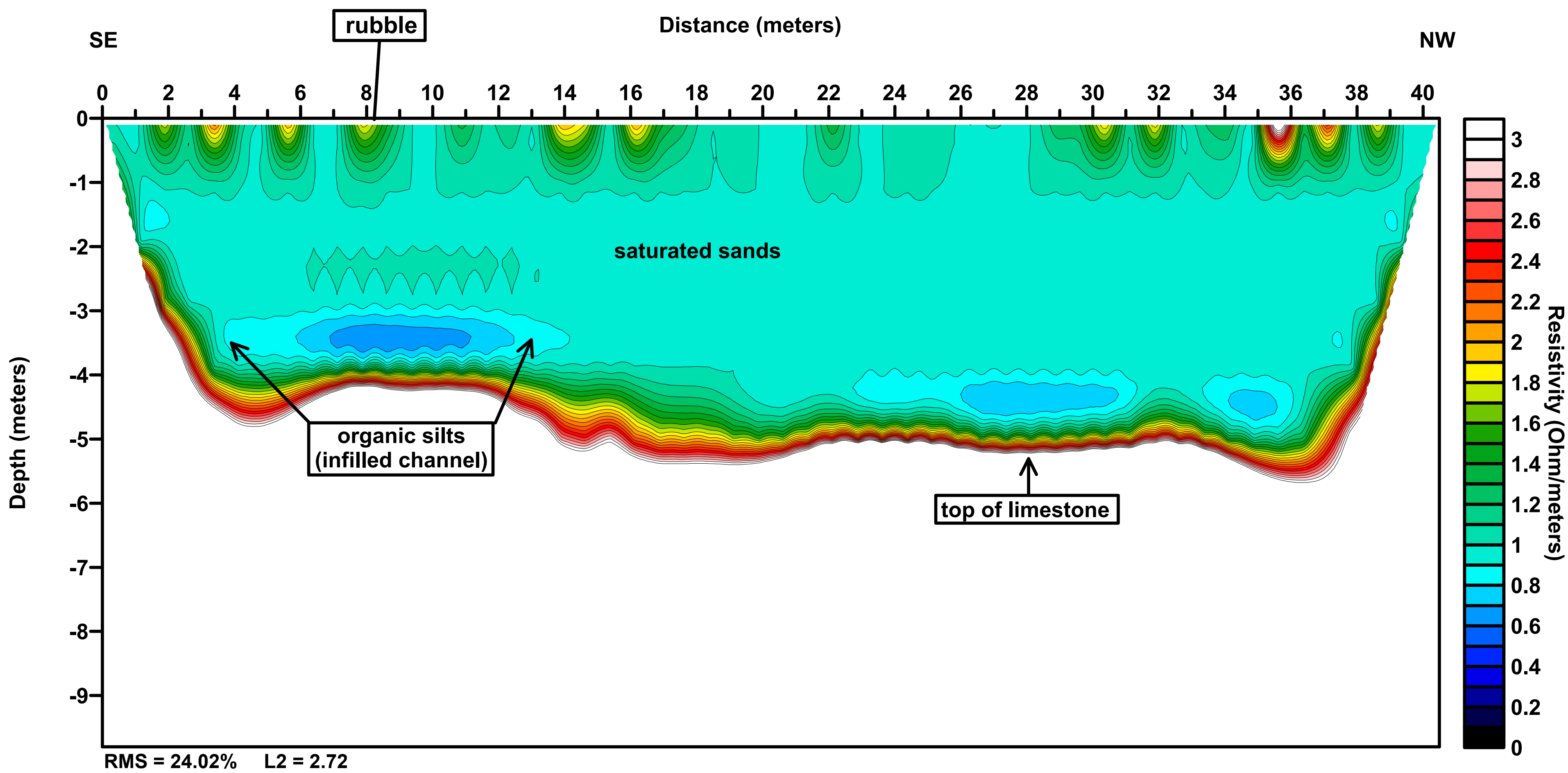

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Figure 7
MER Transect 5

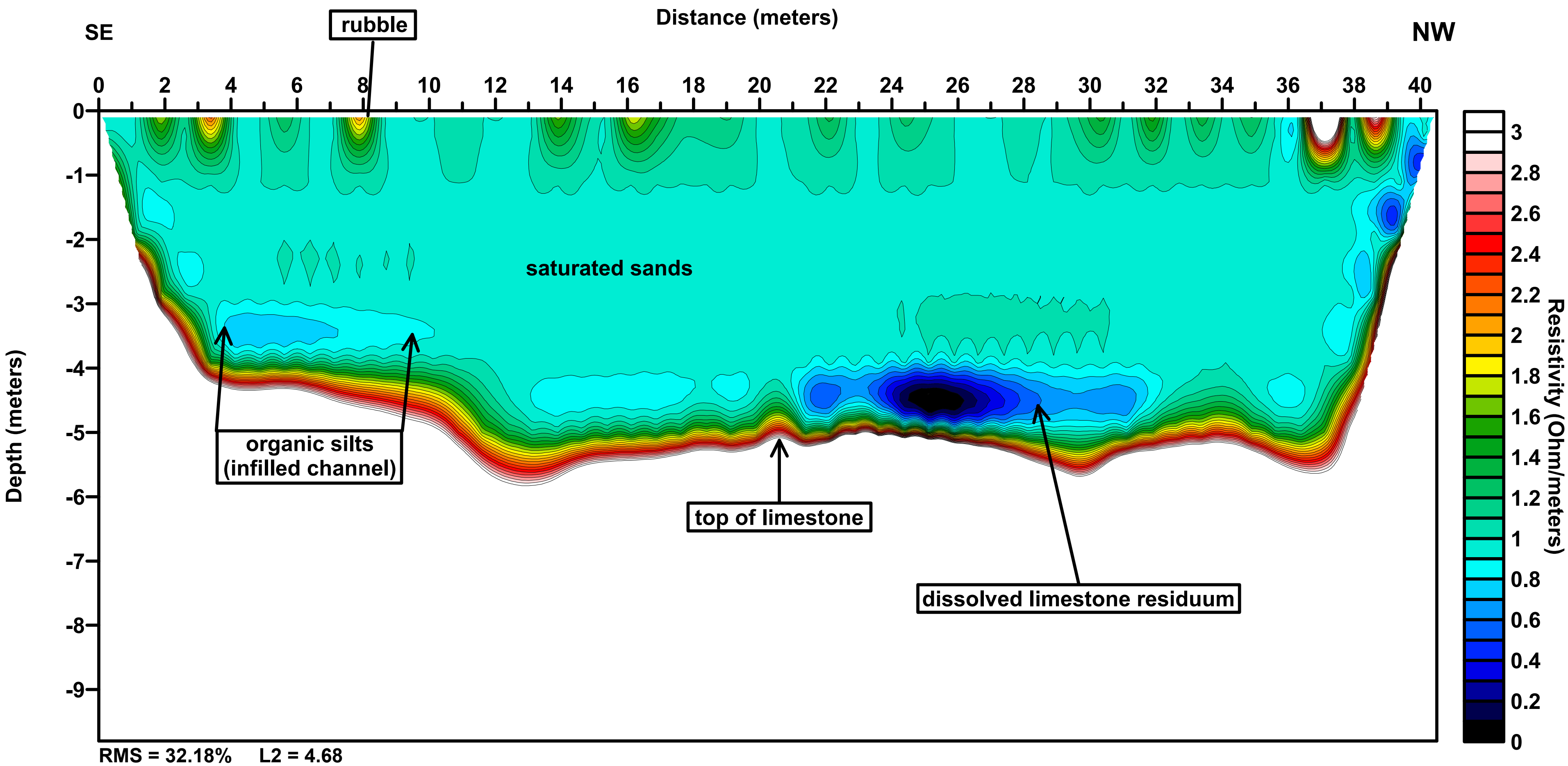

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Figure 8
MER Transect 6

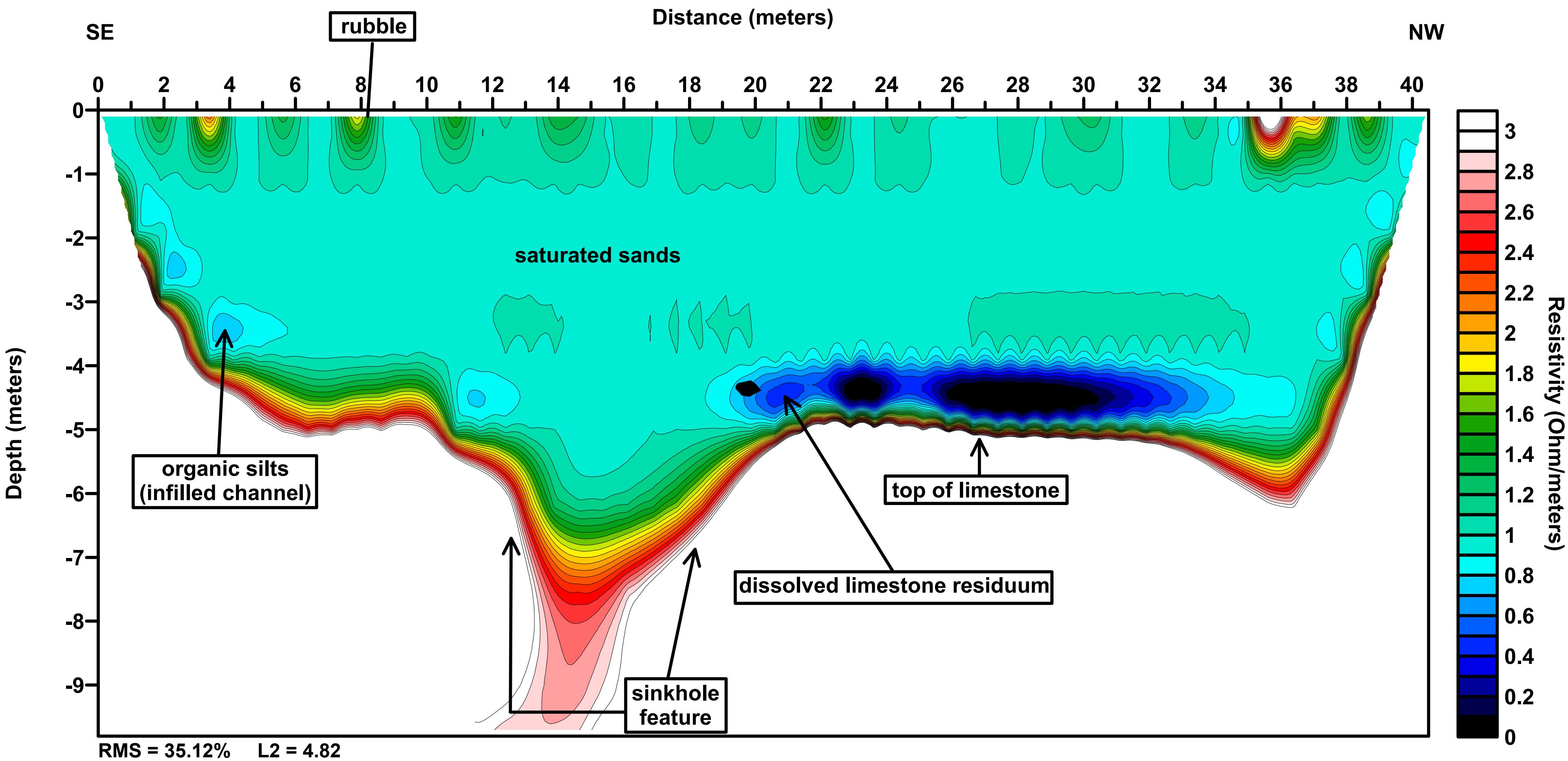

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Figure 9
Comparison of Historical Imagery with MER Results
1957 Historical Aerial Photograph

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