

Decision Matrix of Surficial Geophysical Methods for Specific Investigations

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	Lithology	Top of bedrock	Rippability	Detection of water surfaces	Fault detection	Suspected voids or cavity detection	In situ elastic moduli (velocities)	Material boundaries, dip,...	Linear subsurface water conduits
Seismic Refraction	S	W	W	S	S		W	S	
Seismic Reflection	S	S	S		S	S		W	
SP									W
DC Resistivity	S	S		S	S	S		S	
Electromagnetics					S			S	W
Ground-penetrating Radar		S		S	S	S		S	S
Gravity					S	S		S	
Magnetics					S				

W=works well in most materials and natural configurations.

S=works well under special circumstances of favorable materials or configurations.

Blank=not recommended

Landfill boundaries	Large ferrous bodies - tanks	Conductive bodies, ores, plumes,...
		S
W	S	S
S	S	W
S	S	
W	W	