Surface Geophysics Proposal Considerations		
1	Do the data quality objectives and scope of work meet the project objectives?	
2	Does the proposal specify the equipment and order of tools to be used (for example, equipment model, software version)?	
3	Is the tool appropriate for the site?	
	Has the tool matrix (resolution, scale, targets, weaknesses/limitations of tool) been reviewed to determine tool applicability?	
	Has the considerations for the tool checklist been evaluated to determine tool applicability?	
	What site conditions may prove challenging for implementation?	
	What potential is there for false positive signals? What are they and have they been tested for response?	
	What is the methodology for QA/QC in field and during post-processing?	
	Are there any deviations or recommendations from a requested suite of tools with supporting justification?	
4	Has a rationale for survey design been provided?	
	Has (or will) the proposer reviewed background information for the site (for example, geologic and hydrogeologic maps, previous studies, geography, aerial photographs, site history, historic fire insurance maps)?	
5	Does the proposal provide a description of the workflow process?	
	How the tool will be implemented?	
	What method will be used to ensure data location accuracy?	
	Does the proposal address several “what if” scenarios to deal with special issues?	
	Is there flexibility in the proposed work to expand the footprint and depth of the investigation?	
	Is there a plan and budget for targeted confirmatory sampling when unexpected, interesting, or questionable responses are observed?	
6	Does the proposal comply with safety requirements for the site?	
	What safety concerns may make the site unusual?	
	Are field personnel properly trained?	
7	Does the proposal specify the data deliverables?	
	Will raw data digital files be provided?	
	Will locational data be provided (for example, will I be able to relocate the area at a later time?)	
	Will copies of field notebooks be provided?	
	Will a report or memo summarizing the investigation and data interpretation be provided?	

Surface Geophysics Proposal Considerations		
8	Does the proposal provide detailed costs?	
	Are subcontractors identified?	
	Are proposed hours appropriate?	
	Are equipment costs appropriate?	
	Are commodities/supplies appropriate?	
	Has a comparison of costs per day versus production (feet/day) per day been conducted to see which is likely to be more cost effective?	
9	Does the proposal provide a clear project timeline?	
10	What is the contractor's level of experience?	
	Are resumes provided?	
	Are references and other projects of similar scope provided?	
11	Are any permits are required?	
12	What are the insurance requirements?	

Surface Geophysics Report Considerations		
1	Is there a summary of the tools and methods utilized?	
2	Does the report include limitations that constrained the study physically (for example, interferences, safety considerations, access) or due to other reasons beyond control of the contractor?	
3	Was the solicited scope of work followed as requested or were there deviations from the scope that were performed? If so, is there adequate justification for the deviations and was the user aware of them/approving of them in advance?	
4	What type of post processing was performed on the data? Does the report summarize the methods and assumptions used?	
5	What type of QA/QC was performed? Were there QA/QC steps in the field that were adequately followed? Was there data processing/interpretation QA/QC performed and is it described? Were there any deviations from the QA/QC plan?	
6	Is there a narrative summary of the findings and results?	
	Is there a description of the types of responses observed, their potential origins, and whether they were confirmed with sampling?	
	Is there a description of lines of evidence observed to support/refute on-site interpretations?	
	Were there any limitations of the technology (were there any suspected false negatives)?	
	Are there recommendations for follow-up sampling locations if definitive confirmation was not accomplished during the `investigation?	
7	Are raw data files provided?	
	Are summary tables of logs provided?	
	Are logs presented in at least two appropriate scale factors (typically very low for absence/presence determinations and high for semi-quantitative site-wide comparisons of impact)?	
8	Is there at least one plan view figure of the study area and the transects?	
9	What types of graphics are provided to illustrate the findings? Are there 2D or 3D profiles of responses with adequate scale, color ramp definitions?	

Surface Geophysics ERT Considerations		
1	Is site in an urban area?	
	Urbanized areas may prohibit the ability to achieve the required transect lengths for the desired depth.	
2	Is study area paved with impervious surfaces?	
	Electrodes require direct contact with subsurface soil which will be impaired by the presence of asphalt and concrete.	
	Capacitively coupled systems exist for settings with impervious surfaces, however, the resolution and depth of study is reduced.	

Surface Geophysics GPR Considerations		
1	Is the water table depth less than 5 feet from ground surface?	
	Shallow water table attenuates the GPR signal and thus reduces resolution and penetration depth.	
2	Are there aboveground interferences?	
	Standing water can cause loss of resolution.	
	Aboveground tanks, fences, power lines causing air wave interference.	
3	Is the site terrain relatively flat?	
	Flat terrain is ideal -topographic correction and ease of operator use.	
	Significantly undulating terrain will require topographic correction and can be more challenging to implement by the operator.	

Surface Geophysics Seismic Reflection/Seismic Refraction Considerations		
1	Is site in an urban area?	
	Urbanized areas provide high potential for excessive interferences and noise that can compromise data quality.	
	Extensive pre-planning is required (for example, background data collection, identification of interferences). Seismic tools may still be effective in locations with a high degree of electrical interference.	

Surface Geophysics MASW Considerations		
1	Are there aboveground interferences?	
	Ambient noise can be minimized by vertical stacking (combining multiple records).	
2	What is the site terrain relatively level?	
	Surface reliefs with dimension greater than about 10% of receiver-spread length or surface slope greater than 10° are not recommended.	
	Ground should be nearly flat at least within the receiver span.	

Surface Geophysics EM TDEM Considerations		
1	What is the water table depth?	
	Some FDEM instruments used to obtain vertical soundings are sensitive to vertical geologic features including groundwater in fractured bedrock.	
2	Are subsurface features present?	
	Rebar in reinforced concrete can cause interference.	
	Buried utilities will have an impact on vertical soundings.	
3	Are aboveground interferences present?	
	Buildings, fences, reinforced concrete, and high-power utilities can cause interference and must be accounted for in the study design and planning.	

Surface Geophysics EM TDEM Considerations		
1	Where is the study area? Urban or Rural area?	
	Time domain electromagnetic (TEM) method is more susceptible to interference from cultural features in urban areas, for example, Power lines, electric fences, roads, cars, any metals close to or by the study site. This will cause noise in the data.	
	Buried utilities (for example, pipe lines, cased wells) will significantly interfere with the EM signal, causing noise in the data.	
2	What is the scale of the project?	
	Airborne TEM is more suitable for larger area, it provides large ground coverage at relatively short time.	
	Groundbased TEM is more suitable for small projects. Depending on the available manpower, average of 16 soundings can be collected per day.	
	Choice of the size of the transmitting antenna will also depend on the size of the area, for example, a site big enough for the Walktem's 40 m x 40 m square loop.	
3	What are the site conditions?	
	Sites covered with tall grass, shrubs or bushes are not suitable for groundbased TEM. This will cause difficulties in placement of antenna. Complete removal of shrubs and bushes can resolve this.	
4	What is the geology of the site?	
	TEM is sensitive to conductive features (clay and shale), current system moves slowly in the subsurface which in turn results in a shallower depth of investigation.	
	Current system moves fast in the subsurface for intermediate to resistive features (for example, sand and gravel), typical for environments encountered in groundwater mapping, allows for higher depth of investigation.	
5	What is the intended depth of investigation?	
	For deeper targets >426 feet (>130 m), for example, in mining projects, airborne EM is more suitable.	