



Summary of Aestus Work Flow and Decision Processes

Aestus, LLC's GeoTrax Survey™ High Resolution Electrical Resistivity Imaging Rapid Site Assessment Using EPA's TRIAD Site Characterization Model



<u>Systematic Planning (Office)</u>		<u>Day 1 in Field</u>		<u>Day 2 in Field</u>		<u>Day 3 in Field</u>		<u>Day 4 and Beyond in Field</u>
<ol style="list-style-type: none"> 1. Review existing site data and conceptual model of contaminant distribution in subsurface 2. Work with client to develop proposed survey transect layout 3. Review utility maps to avoid placing transect parallel to and within ~15 feet of a known metallic utility conduit (perpendicular transects OK). 		<ol style="list-style-type: none"> 1. GeoTrax Survey™ across area believed to have highest levels of contamination 2. GeoTrax Survey™ across area believed to be clean (background survey) or the cleanest area at the site 3. GeoTrax Survey™ other areas of site on Day 1 (time permitting) 4. Perform land surveying via total station to generate metadata (x, y, z locations) of GeoTrax Survey™ transects. 5. Generate topo correction files for Day 1 surveys and email/FTP data and topo correction files to Aestus office for overnight processing. 6. Topo correct, QC, and process data overnight and normalize electrical resistivity color scale for Day 1 images so that resistivity values on all Day 1 images are viewable in same color scale. 7. Email Day 1 GeoTrax Survey™ images to Aestus field and management personnel and to client for review on AM of Day 2. 	Site Screening	<ol style="list-style-type: none"> 1. Conduct brief field meeting in morning via phone/web conference as necessary to involve project stakeholders. Based on review of Day 1 data, select confirmation drilling targets focused on anomalous and anomaly-free zones to calibrate levels of contamination represented by GeoTrax Survey™ data. 2. Aestus field crew continue to perform GeoTrax Surveys™ at planned locations and continue to land survey x, y, z locations of transects. 3. Drilling crew mobilized (by others) and start confirmation boring process and other data collection (e.g., soil gas survey) as appropriate. 4. Generate topo correction files for Day 1 surveys and email/FTP data and topo correction files to Aestus office for overnight processing. 5. Topo correct, QC, and process data overnight and normalize electrical resistivity color scale for Day 1 and 2 images so that resistivity values on all Day 1 and 2 images are viewable in same color scale. 6. Generate draft 3-D perspective views showing the 2-D GeoTrax Survey™ images relative to one another in 3-D space 7. Email Day 1 and 2 GeoTrax Survey™ images along with draft 3-D to Aestus field/management personnel and to client for review on AM of Day 3. 	On-Site Verification	<ol style="list-style-type: none"> 1. Conduct brief field meeting in morning via phone/web conference as necessary to involve project stakeholders. Based on review of Days 1-2 data, select additional confirmation drilling targets. Incorporate any available real-time field screening data (i.e. PID readings, on-site laboratory analytical data, etc.) to aid in selection of confirmation boring targets. 2. Review draft 3-D perspective views; If 2-D survey images from completed adjacent surveys look significantly different from one another, then add additional surveys to fill in perceived data gaps. If completed adjacent surveys are very similar to one another, consider eliminating in between survey to cut program cost. 3. Aestus field crew continue to perform GeoTrax Surveys™ at planned locations and continue to land survey x, y, z locations of transects. 4. Drilling crew continue confirmation boring process (performed by others). 5. Generate topo correction files for Day 1 surveys and email/FTP data and topo correction files to Aestus office for overnight processing. 6. Topo correct, QC, and process data overnight and normalize electrical resistivity color scale for Day 1 and 2 images so that resistivity values on all Day 1 and 2 images are viewable in same color scale. 7. Regenerate draft 3-D perspective views showing all available 2-D GeoTrax Survey™ images relative to one another in 3-D space 8. Email Days 1-3 GeoTrax Survey™ images along with draft 3-D to Aestus personnel and to client for review on AM of Day 3. 	Lab Verification	<ol style="list-style-type: none"> 1. Repeat Day 3 process on Day 4 and subsequent field days (as appropriate) until original work scope completed and/or project stakeholders believe that enough GeoTrax Survey™ data and drilling data has been collected to adequately achieve project objectives at this stage.
								<ol style="list-style-type: none"> 1. QA check GeoTrax Survey™ and related land survey data collected 2. Request from consulting firm/regulator and obtain confirmation sampling data including boring logs, analytical data, monitoring well construction data, etc. 3. Using Aestus' Common Earth Model approach, combine all data sets that are spatially coincident with our GeoTrax Survey™ locations and post data collected using TRIAD approach onto our 2-D survey images. Finalize 3-D visualization of site data collected and use 2-D and 3-D data to generate conclusions from TRIAD site characterization and updated site conceptual model. 4. Submit findings to project stakeholders in report format.

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