## Sample JSA

### Job Steps | Hazards | Barriers or Controls
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1. Establish general locations for boreholes during initial site walk-about | Spray paint or other chemical marking products | MSDS sheet or consumer product labels
| Electrical environment | Have owner/authorized personnel accompany Approved electrically resistant footwear
| Personnel contacting live electrical apparatus | Safe limits of approach
| Moving vehicles in vicinity | Reflective safety vest or other clothing Stay within visible barriers when required
2. Take samples for contaminants at six proposed borehole locations | Electrical environment | Have owner/authorized personnel accompany Approved electrically resistant footwear
| Personnel or equipment contacting live electrical apparatus | Safe limits of approach
| Moving vehicles in vicinity | Reflective safety vest or other clothing Stay within visible barriers when required
| Contact of underground electrical apparatus | Excavate by hand only
| Pinches, cuts, strains | Personnel wear hard hats and gloves Safe lifting practices
| Possible contaminated fill soils | Approved sampling and handling practices
3. Locate underground utilities | Electrical environment | Approved electrically resistant footwear
| False or missing locates due to static or induction electric fields | Plans showing underground utility location Appropriate locate instrumentation Documentation of locates
| Personnel or equipment contacting live electrical apparatus | Safe limits of approach
| Moving vehicles in vicinity | Reflective safety vest or other clothing Stay within visible barriers when required
4. Set up drill rig at borehole locations | Electrical environment | Approved electrically resistant footwear
| Moving vehicles in vicinity | Reflective safety vest or other clothing Stay within visible barriers when required
| Pipe rack overhead at borehole 3 | Use half-tower on drill rig
| Personnel or equipment contacting live electrical apparatus | Safe limits of approach
| Ground potential rise, induction | Ground drill rig using two 4/0 portable grounds due to non-availability of station grounds (see step 3)
| Proximity of borehole to buried services/utilities | Hand excavate to expose services
5. Drill boreholes to required depth | Electrical environment | Approved electrically resistant footwear
| Moving vehicles in vicinity | Reflective safety vest or other clothing All work to be carried out within visible barriers
| High-speed rotating augers | Maintain safe distance away from augers Wear close-fitting clothing Recognized drilling practices
| High decibel levels during drilling | Hearing protection
| Flying particles/debris | Approved eye protection
| Contact of underground electrical apparatus by augers or samplers | Plans showing underground utility location Locate done using appropriate equipment Drill within defined area Excavation permits
| Personnel or equipment contacting live electrical apparatus | Safe limits of approach
| Ground potential rise, induction | Ground drill rig using two 4/0 portable ground rods
| Proximity of borehole to buried services/utilities | Hand excavate to expose services
| Possible contaminated fills/soils | Personnel wear gloves, eye protection Approved practices per results of chemical analysis If unknown contaminants encountered, stop work in that area and notify the owner. Do not resume work until conditions are identified and appropriate protective measures are taken
| Possible contaminated soil cuttings or slurry resulting from drilling activities | Approved handling practices per chemical test results Soils to be contained in drums, if contaminated, for disposal at licensed facility
| Bentonite, cement, and other drilling agents | MSDS sheet or consumer product labels Approved personal protective equipment
| Pinches, cuts, strains | Personnel wear hard hats and gloves Safe lifting practices
6. Move drill rig off of and between borehole locations | Electrical environment | Have owner/authorized personnel accompany Approved electrically resistant footwear
| Moving vehicles in vicinity | Reflective safety vest or other clothing
| Personnel or equipment contacting live electrical apparatus | Safe limits of approach

**NOTES:**
1. Borehole locations shown on attached plan