#### Appendix 15.0 – Job/Workplace Hazard Analysis – Risk Evaluation & Control Measures

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| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Administration / Documentation | Liability Exposures / Non-Compliance with OHSA / Regulations | Appropriate Required Documentation | L | H | Trailer job board set-up | Y - | Project Superintendent | Job Start Up |
|  |  | Joint Health & Safety Site Com. | L | L | Joint Health & Safety Site Com. | Y - | Project Superintendent/ Manager | Not required @ this time |
|  |  | Worker Trade Committee | L | L | Worker Trade Committee | Y - | Project Superintendent/ Manager | Not required @ this time |
|  |  | Subcontractor Safety PolicyCompliance Check list | L | M | Subcontractor Safety Policy ComplianceCheck list | Y - | Project Manager | Prior To Sub Start Dates |
|  |  | Record Keeping | L | H | Tailgates; confined space entry; EngineeredDwgs.; locates; meeting minutes; WHMIS; etc. | Y - | Foreman | Continuous requirement |
| Company Office | Generic Office |  MSD’s | L | H | Awareness training and internal reaction(s) | N | Office Manager | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Company Office (cont’d) |  | WHMIS | L | L | Awareness training and internal reaction(s) to mentioned concerns | N | Office Manager | Continuous requirement |
|  |  | Ergonomical Concerns | L | H | Awareness training and internal reaction(s) to mentioned concerns | N | Office Manager | Continuous requirement |
| Emergency Plan | Emergency on Project | People | L | L | Assess situation >1st aid + Emergency care & Transportation > secure scene | Y -  | All | Original Plan at onset of Project and then follow-up or additionalrequirements at time of "Event" |
|  |  |  |  |  | Appropriate notifications |  | All | At time of Event |
|  |  | Equipment | L | L | Eliminate source >containment > approved disposal |  | All | See above |
|  |  | Materials | L | L | Eliminate source >containment > approved disposal |  | All | See above |
|  |  | Environment | L | L | Eliminate source >containment > approved disposal |  | All | See above |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Environmental Protection | Erosion | Grade works / Land stripping and Cut/Fill | H | H | Erosion Control Mechanisms | Y - Environmental Control Plan / policy | Project Superintendent/ Manager | Continuous requirement |
|  | Siltation | Grade works / Land stripping and Cut/Fill | M | H | Siltation Control Mechanisms | Y - Environmental Control Plan / policy | Project Superintendent/ Manager | Continuous requirement |
| General Construction Issues | Communication | Communication break-down | M | H | Communication Practices | Y - Communication Policy | All | Continuous requirement |
|  |  | Cell Phones and additional distractions | L | H | Electronic equipment and Phone Restrictions | Y- Policy | All | Continuous requirement |
|  | PPE | Contact with individual | L | H | Appropriate PPE |  Y - PPE Policy | All | Continuous requirement |
|  |
| MSDs |  |  |  |  |  |  |  |  |
|  | Material Properties | WHMIS | L | L | WHMIS Awareness | Y - WHMIS Policy | All / Safety Coordinator | Continuous requirement |
|  | Housekeeping | Slip /Trip/ Falls | M | H | Site planning | Y - Housekeeping Policy | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Housekeeping |  | All | Continuous requirement |
|  |  |  |  |  | Site Access / Maintenance |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| MSDs (cont’d) | Hazard Reporting | Un-reported Hazards - leading to accidents | L | L | Open Communication Lines / action taken upon reports received / Worker Reps-JHSC / | Y- | All | Continuous requirement |
|  | Accident Reporting | Liability Exposures / Non-Compliance with OHSA / WSIB, Regulations | L | M | Awareness Training | Y- | All / Safety Coordinator | Continuous requirement |
|  | Refusal Of Work | Immanent risk of injury | L | L | Operational Procedure to remedy the situation | Y- | All | Continuous requirement |
|  | Corrective Actions | Inappropriate Actions in relations to health and Safety | L | L | Application of Internal Responsibility System escalating to application of the progressive corrective actions policy | Y | Project Supervisor/Project Superintendent/Safety Coorindator | Continuous requirement |

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| Trucking /Grade works and Granulars | Material Delivery | Dumping of Materials / Granulars | L | H | Soil Stability / Truck tip-over |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Overhead wires |  | Project Supervisor | Continuous requirement |
|  |  | Delivery Coordination | L | H | Arrival Procedures / communication betweenall involved parties (Subs) |  | Project Supervisor | Continuous requirement |
|  |  |  | Designation of drop zones |  |  |  |
|  |  | Moving equipment / Back-upHazards | H | H | Competent signal person | Y - | Project Supervisor | Continuous requirement |
|  |  |  | Awareness training | Y - | All / Safety Coordinator | Continuous requirement |
|  |  | Dust control | L | M | Water Truck |  | Project Supervisor | Continuous requirement |
|  |  |  |  | Mud Mat | Project Supervisor | Continuous requirement |
| Site Security | Theft | Equipment | L | L | Restricted Access, machinery immobilization |  | All | Continuous requirement |
|  |  | Materials | L | M | Storage locations |  | All | Continuous requirement |
|  |  | Trailer | L | L | Placement, visibility |  | Project Superintendent | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Site Security (cont’d) | Vandalism | Equipment, materials, trailer | L | L | Placement, visibility |  | All | Continuous requirement |
| Structure Development | Material Delivery | Delivery Coordination | L | L | Arrival Procedures / communication betweenall involved parties (Subs) |  | Project Supervisor | Continuous requirement |
|  |  | Moving equipment / Back-uphazards | H | L | Designation of drop zones |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Competent signal person | Y - | All | Continuous requirement |
|  |  |  |  |  | Awareness Training | Y - | All / Safety Coordinator | Continuous requirement |
|  | Material Handling | Rigging | M | H | Inspection and maintenance of all components on a daily basis; (including safety latches) | Y- | Crane Operator / All | Continuous requirement |
|  |  |  |  |  | Load capacity and ratings |  | Crane Operator | Continuous requirement |
|  |  |  |  |  | Competent personnel to perform rigging tasks |  | Crane Operator / All | Continuous requirement |
|  |  | Safe Crane Operation | H | H | Competent operator | Y - | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Competent signal person |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Structure Development (cont’d) |  |  |  |  | Crane Inspection and maintenance, recordsand documentation, log book |  | Crane Operator | Continuous requirement |
|  |  | Pinch Points | M | H | Hazard awareness through ongoing tailgate training | Y- | All / Safety Coordinator | Continuous requirement |
|  |  |  | Personnel Protective Equipment, (gloves,etc.) |  | All | Continuous requirement |
|  |  | Overhead Powerlines /Obstructions | M | L | Appropriate Signage | Y - Overhead Power Line Policy | Project Supervisor | Continuous requirement |
|  |  |  | Awareness training |  | All / Safety Coordinator | Continuous requirement |
|  | Scaffolding | Assembly and Removal | M | M | Awareness Training | Y – Scaffolding | Project Supervisor | Continuous requirement |
|  |  |  |  | Inspection |  | Competent Worker/ Project Supervisor | Continuous requirement |
|  | Working @ heights | Fall Protection | H | L | Awareness Training | Y - | All / Safety Coordinator | Continuous requirement |
|  |  |  |  |  | Guards and Barriers |  | All | Continuous requirement |
|  |  |  |  |  | Travel Restraint |  | All | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Structure Development (cont’d) |  |  |  |  | PPE, fall protection equipment |  | All | Continuous requirement |
|  | Concrete placement |  | L | L |  |  | All | Continuous requirement |
| Traffic Control | Vehicular and Equipment Traffic | Moving equipment / Back-up hazards | H | H | Designation of drop zones |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Competent signal person | Y - | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Awareness Training | Y - | All / Safety Coordinator | Continuous requirement |
|  |  | 3rd Party / Motoring Public | M | L | Traffic Control Plan | Y- | Project Supervisor | Continuous requirement |
| Tunnels/Shafts Cofferdams | Tunnels/Shafts/ Cofferdams | Risk of Structural failure | H | L | OHSA Construction Regulations |  | Project Superintendent/Safety Coordinator | Continuous requirement |
| Underground Services (Sewer/water) | Material Delivery | Offloading materials | M | H | Material Handling practices – Loader with forks/hoisting rigging |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Overhead wires | Y | Project Supervisor | Continuous requirement |
|  |  | Delivery Coordination | L | H | Arrival Procedures/ communication between al involved parties (Subs) |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Designation of drop zones |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  | Moving Equipment /Back up hazards | H | H | Competent signal personal | Y | All | Continuous requirement |
|  |  |  |  |  | Awareness training | Y | All/Safety Coordinator | Continuous requirement |
|  | Trenching & Excavating  | Soil Classification & slope requirements | M | H | Competent person to classify soil type as per OHSA | Y | Project Supervisor | Continuous requirement |
|  |  | Worker protection Scheme; (sloping, trench box, shoring, engineered support system) | H | H | Operational determination by superintendent/open cut with appropriate sloping or worker protection system – Trench box or trench wall supports | Y | Operational determination by project supervisor/ superintendent | Continuous requirement |
|  |  | Access Egress | M | H | Sloped and/or stepped embankment or ladders, etc |  | All | Continuous requirement(sloped, ladders, etc) |
|  |  | Material Spoil Location | M | H | Minimum one meter clear to edge of excavation |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Appropriate Sloping and Spoil Material |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  | Overhead Powerlines/ Obstructions | M | L | Appropriate Signage | Y – Overhead Power Line Policy | Project Supervisor / Superintendent | Continuous requirement |
|  |  |  |  |  | Awareness Training |  | All / Safety Coordinator | Continuous requirement |
|  |  | Underground Obstructions | M | M | Obtaining Utility Locates as Appropriate |  | Project Superintendent | Continuous requirement |
|  |  |  |  |  | Locating Utilities |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Blanking &/or removal and replacement of Utility Crossings |  | Operational determination by project supervisor/ superintendent | Continuous requirement |
|  | Confined Space | Existing line break-ins/ Manholes/ valve chamber entry/ repair and emergency works | H | L | Competent personnel onsite | Y | Project superintendent | Continuous requirement |
|  |  |  |  |  | Hazard Assessment, Coordination and Plan development |  | Project Superintendent | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  |  |  |  | Appropriate Training for all personnel |  | All/ Safety Coordinator | Continuous requirement |
|  |  |  |  |  | Gas monitor allocation and competent usage |  | Project superintendent | Continuous requirement |
|  |  |  |  |  | Entry permit and documentation |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Emergency rescue plan and equipment |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Continuous monitoring |  | Project Supervisor | Continuous requirement |
|  | Material Handling | Rigging | M | H | Inspection and maintenance of all components on a daily basis; including safety latches | Y | Crane Operator/All | Continuous requirement |
|  |  |  |  |  | Load capacity and ratings |  | Crane Operator | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/ water) (cont’d) |  |  |  |  | Competent personnel to preform rigging tasks |  | Crane Operator/All | Continuous requirement |
|  |  | Safe Crane Operation | H | H | Competent Operator | Y | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Competent Signal Person |  | Project Supervisor | Continuous requirement |
|  |  |  |  |  | Crane inspection and maintenance records and documentation log book |  | Crane Operator | Continuous requirement |
|  |  | Pinch Points | M | H | Hazard awareness through ongoing tailgate training | Y | All/ Safety Coordinator | Continuous requirement |
|  |  |  |  |  | Personnel Protective Equipment (gloves, etc) |  | All | Continuous requirement |
|  | Pipe and structure Installation  | Material Handling  | M | H | Awareness Training | Y – Installation Procedures | All/Safety Coordinator | Continuous requirement |
|  | Contaminated Materials | Methane or other gas releases | L | L | Gas detection and monitoring |  | Project Supervisor | Continuous requirement |
| **Process / Activity** | **Hazardous Element** | **Job / Task - Hazard Sub-Category** | **Hazard Risk****Rating****(L-M-H,)** | **Frequency****Rating****(L-M-H,)** | **Control Factor** | **Safe Operating Procedure or Safe****Work Procedure****(Y/N? - Reference #)** | **Action By:** | **Action Date** |
| Underground Services (Sewer/water) (cont’d) |  | Contaminated materials – handling, disposal, residuals | L | L | PPE or per HAZMAT, tailgate training |  | Project Supervisor | Continuous requirement |
|  | Dewatering | Environmental Concerns | M | L | Siltation Ponds |  | Project Superintendent | Continuous requirement |
|  |  |  |  |  | Surrounding water table levels |  | Project Superintendent | Continuous requirement |
|  |  |  |  |  | Temperature variance @ outlet |  | Project Superintendent | Continuous requirement |
|  |  |  |  |  | Soil Stability |  | Project Superintendent | Continuous requirement |
|  | Structure benching and Misc internal works | Material properties installation requirements | M | H | WHMIS and PPE policies | Y | Project Supervisor | Continuous requirement |
|  |  | Confined Space | H | L | See Confined Space Section | Y | Project Supervisor | Continuous requirement |
|  | Water main testing and Misc Works | Failure due to pressures/chlorination | L | H | Awareness Training/ Subcontractor procurement |  | Project Superintendent | Continuous requirement |