TASK HAZARD ANALYSIS (THA)

Geosyntec HS Procedures referenced herein are available on Geosyntec's H&S SharePoint site and should be consulted, as appropriate, per project-specific needs. This THA prepared per HS-106-Accident Prevention Program, HS-204-Task Hazard Analysis.

PART 1 – SITE SAFETY PLAN

A. PROJECT/TASK INFORMATION

TASK:	Routine Annual Operation Maintenance and Monitoring (OM&M). Add Soil Borings/Sampling		
Project Name:	JCI Jones Chemicals Inc., Caledonia, NY	**Project Number/Org:**	FR3533C
Project Address:	100 Sunny Sol Blvd, Caledonia, NY 14423		
Description of Task & Worksite:	Assist JCI with routine annual groundwater monitoring. Take an initial round of water levels and sample selected existing monitoring wells (12) using low-flow sampling procedures. Collect extraction wells (four) and air-stripper influent/effluent samples via specific sample ports. Review and record system performance data. Site is a 33-acre bleach manufacturing facility; entry requires all personnel to review JCI safety requirements. Much of the site is paved with easy access to well heads; there are limited wells with some uneven terrain. Also collect soil boings/sampling. There will be no work inside buildings and there will be minimal interaction with personnel. All work will be outside the buildings and in vastly open area.		

Geosyntec Personnel	**Name**	**Office Phone**	**Cell Phone**
Site Lead/HS Officer	Shekhar Melkote	(570)575-2631	(570)575-2631
Project Manager	Shekhar Melkote	(570)575-2631	(570)575-2631
Project Director	Joe Applegate	(850)518-1832	(850)556-8419
HS Coordinator	Shekhar Melkote	(570)575-2631	(850)556-8419
Regional HS Mngr.	Stephanie Sanchez	(850) 518-1839	(803)908-8068
Corp. HS Director	Dale Prokopchak	(804)332-6376	804-349-8067
Client Contact(s):	Tim Gaffney	(585)538-2314	(585)721-2263
Subcontractor(s):	☒ Not Applicable ☒ Applicable, provide contact information below:		

B. SUMMARY OF WORK STEPS, HAZARDS, CONTROLS

Based on **PART 2, "HAZARD ANALYSIS,"** and on worksite/client/project factors.

Abstract of work steps/hazards/controls, with references to applicable Sections in Part 2 for greater detail:

WORK STEPS	HAZARDS	CONTROLS
Groundwater Sampling	*Uneven ground & conscious of onsite plant activities*	*Use Level D; Light colored clothing; Insect Repellent*
Soil Sampling	*Working around Direct-Push Sampling UNit*	*Level D; Cognizant of movable parts*

C. H&S EQUIPMENT LIST

List HS equipment needed at the worksite to control/manage hazards identified in **PART 2, "HAZARD ANALYSIS."**

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**BASIC PPE AND SAFETY GEAR**	☒ Standard work clothes & footwear, appropriate for task ☒ Hard-toed boots/shoes ☒ Hardhat ☒ Safety glasses	☒ Work gloves appropriate for task ☒ Noise/hearing protection ☒ High-visibility/reflective vest ☒ First aid kit	
		☒ Basic PPE for limited protection from contact with affected groundwater – nitrile gloves and splash goggles.		
☐	**OTHER H&S EQUIPMENT/GEAR**	☒ Fire extinguisher ☐ Traffic control warning devices ☐	☐ Vehicle emergency kit (flares, lights, reflective device) ☐ ☐	
		☐ Other:		
☐	**ADDITIONAL PERSONAL PROTECTIVE EQUIPMENT (PPE)**	Eye/face protection ☒ Goggles ☐ Face shield Chemical protective clothing ☒ Gloves, type: ☐ Coveralls, type: ☐ Outer boots, boot covers	Respiratory Protection ☐ Disposable n-95 face mask ☐ Half-face air-purifying respirator ☐ Full-face air-purifying respirator ☐ Respirator cartridge, type: ☐	☐ Personal flotation device ☐ Personal fall apparatus ☐ Fire retardant clothing ☐ Arc Flash Protection ☐ Electrical-Hazard-rated boots, gloves ☐
		☐ Other:		
☐	**SPECIAL HAZARD CONTROLS**	☐ Portable GFCI ☐	☐ Lockout/tagout equipment ☐	☐ Ventilation equipment (fan, blower) ☐
☐	**DECON, PPE DISPOSAL**	☐ Waste receptacle for disposable PPE	☐ Hand washing provisions	☐ Decon solution, misc. supplies
		☐ Additional information:		

☒	**AIR MONITORING EQUIPMENT**	List needed air monitoring equipment below. See Part 2, Sections M, N and O for chemical hazard evaluation, action levels. OVA – PID. Action Level 25 ppm sustained in breathing zone.

D. EMERGENCY RESPONSE

Based on **PART 2, "HAZARD ANALYSIS,"** and on worksite factors, client requirements.

SUMMARY of Recognized Emergency Risk Factors & Response Procedures *(fire/explosion, medical , chemicals/spills, security, site conditions/topography, prevailing weather, other concerns)*: Uneven surfaces, heavy overgrown, wet ground, poison ivy, ticks, snakes, etc.

To Summon Police, Fire, Ambulance in an Emergency	☒ DIAL 911 ☐ use alternate procedure:
Nearest Emergency Medical Services	Hospital Name: Highland Hospital Address: 1000 South Avenue, Rochester, NY 14620 Phone #: (585)341-6880 ☒ See Attached Directions
For **Non-Emergency Urgent Care**:	Contact WorkCare, 24/7 at: 800-455-6155, menu option "3"
Other Emergency Contacts, as needed *(such as security, spill responder, utility):*	NA
Job-site **Evacuation** Procedure, Rally Point, Place of refuge:	Follow JCI Jones directives
Means of alerting on-site personnel in case of emergency:	☐ Verbal ☐ Radio ☒ Cell Phone ☐ Other:
Special Equipment, as applicable (such as PPE, first aid, eyewash):	Available inside the plant building

IMPORTANT: After initial emergency response actions and incident stabilization, contact appropriate project personnel (see Part 1.A.).

PART 2 – HAZARD ANALYSIS

Complete Section A. Then complete Sections B thru O, as applicable to your project. Provide comments in each section under "Explanatory Notes, Clarifications" to sufficiently describe ***site-specific*** *hazards and safety measures.*

A. BASIC HAZARD PREPAREDNESS

This section required for all Tasks.

Explanatory Notes, Clarifications:

Basic Personal Protection

☒ **Overhead Hazards** - Wear hardhat or "bump cap" as appropriate for hazard.
☒ **Hand injury hazards** - Wear protective work gloves appropriate for the hazard and work tasks.
☒ **Eye injury hazards** - Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection).
☒ **Foot hazards, rough terrain** - Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.
☒ **Noise** – use hearing protection, (earplugs, earmuffs, or both) as appropriate for conditions, at a minimum where noise levels exceed 85dBA.
☒ **Chemical/biological agents, low hazard and/or "passive" exposure** - use appropriate PPE and precautions; describe above.
☐ **Chemical/biological agents, elevated hazard and/or "active use" exposure** – see Part 2, Section(s) M, N, O, as applicable.

Geosyntec Procedures: *HS-109-Hearing Conservation, HS-113-Personal Protective Equipment, HS-210-Walking and Working Surfaces*

General Safety Precautions

☒ **General premises** hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location; describe specific hazards and controls above.
☒ **Weather/climate-related hazards** - heat cold protection, fluids, breaks, shade, sun screen, multiple layers, discontinue use of aerial lift/ladder in high wind, "30/30 rule" for lightning safety, protection from hail, seek place of refuge for extreme weather
☒ **Plant/Insect/Animal Hazards** - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions.
☐ **Traffic** – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures).
☐ **Illumination hazards/night work** - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.
☒ **Manual hand tools** - proper tool for the job, maintain in good condition, use vice/clamp to hold work piece, proper follow thru
☒ **Machinery hazards, passive exposure** – keep safe distance, heed warning signs, use appropriate PPE (such as eye/hearing protection), secure long hair, loose clothing, jewelry near moving parts. For active use of equipment machinery as part of the work, see Part 2, Section E "Powered Tools, Equipment, Machinery"
☒ **Lifting, manual material handling** – use proper lifting procedures, seek help for >50 lbs.

Geosyntec Procedures: *HS-127-Ticks, HS-124-Heat Stress, HS-125-Cold Stress, HS-210-Walking and Working Surfaces, HS-208-Housekeeping, HS-401-Back Injury Prevention, HS-502-Manual Hand Tool, HS 517 Traffic Safety*

Security

☐ **High crime, urban** – Use appropriate measures for personal security (such as buddy system, security service, work scheduling, other measures)
☐ **Working alone** - Establish "check in" procedure with supervisor/project manager.

Geosyntec Procedures: *HS-207-Working Alone*

Driving Hazards

☒ **Routine work travel** - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate).

☒ **Unfamiliar location** - Plan travel route before driving (assemble maps, enter destination in GPS).

☒ **Long Distance or During Sleep Hours** – Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield.

☐ **Unfamiliar vehicle** – Become familiar with vehicle operational controls before operating vehicle.

☐ **Special hazards** - see Part2, Section B, "Special Driving/Traffic/Transportation Hazards"

Geosyntec Procedures: *HS-105-Driver and Vehicle Safety*

B. SPECIAL DRIVING/TRAFFIC/TRANSPORTATION HAZARDS ☐Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐	**SPECIAL DRIVING HAZARDS** Off-Road Driving or use of non-typical vehicle, ATV Hazards: Worker injury due to vehicle collision, rollover	☐ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. ☐ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. ☐ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. ***Geosyntec Procedure(s):*** *HS-510-All Terrain Vehicles*
☐	**TRANSPORTING MATERIALS, TOWING/HAULING LOADS** Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.
☐	**WORKSITE IN/NEAR VEHICLE THOROUGHFARE** Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	☐ Wear reflective vests where exposed to traffic hazards. ☐ Where possible, park vehicles as protective shield from oncoming traffic. ☐ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☐ Use DOT-trained flaggers or police detail where appropriate or required. ***Geosyntec Procedure(s):*** *HS-517-Traffic Safety*
☐	**RAILROAD HAZARD** Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work. **Geosyntec Procedure(s):** HS-305-Rail Operations
☐	**WATER TRANSPORTATION**	☐ Follow HS 312 "Water Transportation Safety," and Section C, "Water/Boating Hazards." **Geosyntec Procedure(s):** HS-312-Water Transportation Safety
☐	**AIRPORT, AIRCRAFT** Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work. ☐ Follow HS 310 "Helicopter Safety" and/or HS 311 "General Aviation (Small Aircraft) Safety." ***Geosyntec Procedure(s):*** *HS-310-Helicopter Safety, HS 311-General Aviation (Small Aircraft) Safety*
☐	**HEAVY EQUIPMENT TRAFFIC/VEHICLE HAZARDS AT CONSTRUCTION SITE**	☐ See Section G, "Construction, Heavy Equipment, Lift Equipment"

C. WATER/BOATING HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐	**OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM** Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation	☐ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. ☐ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. ☐ Use fuel safety practices, fire extinguisher present in boat. ☐ Have lifesaving skiff/boat available. ☐ Monitor weather, develop float plan, ensure navigation/communication equipment operable. ☐ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. ☐ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. ☐ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. ☐ For electrical hazards associated with water/wet locations, see Section H, "Electrical Hazards." ***Geosyntec Procedure(s):*** *HS-306-Working on/near Water and Ice, HS-312-Water Transportation Safety*
☐	**WORK NEAR WATER HAZARDS OR ENTERING WATER** Hazards: drowning, hypothermia from water immersion, related injuries. ☐ Wading, wetland, mud/silt ☐ Dam release, flash flood, tide ☐ Diving ☐ Ice on/near water body	

D. FALL HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐ **WORKING AT HEIGHTS (GENERAL)**

Hazards: Falls, overhead hazards, impalement hazard (such as from falling onto unprotected rebar and similar)

IMPORTANT! Follow safe work practices per Section I, "Utility Related Hazards"

General fall protection requirement thresholds: required @ ≥4' (industry), ≥6' (construction), ≥10' (scaffolds)

☐ Ensure guardrails present
☐ Use personal fall apparatus (PFA)
☐ Use tether or positioning device
☐ Restrict access to hazard (barriers, tape, sign)
☐ Ensure covers in place over holes
☐ Use designated "watch person"
☐ Use fall protection net
☐ Restrict access beneath work to protect other site personnel from overhead hazards
☐ Ensure safe access to elevated work location (ladder, stair,)
☐ Install caps on protruding rebar

Geosyntec Procedure(s): *HS-120-Fall Protection, HS-210-Walking and Working Surfaces*

☐ **LADDERS / STAIRS**

☐ Extension/straight ladders
☐ Step ladders
☐ Fixed ladders
☐ Stairs

Hazards: Falls, overhead hazards

IMPORTANT! Follow safe work practices per Section I, "Utility Related Hazards"

☐ Follow safe work practices:

- Use ladders according to safe practices and manufacturer's instructions.
- Maintain 3 points of contact at all times on ladder; keep center of gravity within side rails.
- Do not use metal (conductive) ladder near electrical hazard.
- Extension/straight ladders shall be properly footed, secured, angled, extend above upper work surface.
- Stepladders are set on level ground or properly shimmed, spreaders locked; do not climb/stand on top step, top cap, or rear non-climbing side; use step ladder of sufficient length for work.
- Equip stairs with stair-rails where more than 4 steps, and for stairway height 4' or more.

Geosyntec Procedure(s): *HS-501-Ladders*

☐ **SCAFFOLD**

☐ Supported scaffold
☐ Suspended scaffold
☐ Free-standing/mobile scaffold

Hazards: Falls, overhead hazards.

IMPORTANT! Follow safe work practices per Section I, "Utility Related Hazards"

☐ Follow safe work practices:

- Identify/coordinate operations with subcontractor's competent person.
- Supported scaffold level, stable, proper attachments, tiebacks, planking,
- Suspended scaffolds anchored properly.
- Guardrails or personal fall apparatus required above 10 feet.
- Proper means of accessing scaffold (proper ladders, stair tower).
- Total height of free-standing scaffold not to exceed four times the minimum base dimension.
- Do not exceed load limits; store/stage materials in quantities sufficient for immediate use.

Geosyntec Procedure(s): *HS-507-Scaffolds*

☐ **AERIAL LIFT**

Hazards: Falls, overhead hazards, struck-by, run-over, caught between (pinch points), tip over, fluid leaks.

IMPORTANT! Follow safe work practices per Section I, "Utility Related Hazards"

☐ Follow safe work practices:

- Operators to be sufficiently trained, experienced and qualified.
- Equipment is inspected after mobilization and is in good condition.
- Harness & lanyard worn whenever operating the lift (possible exception for scissor lifts).
- Overhead and surface obstructions to be reviewed with operators prior to use.

Geosyntec Procedure(s): *HS-509-Aerial Lifts*

E. POWERED TOOLS, EQUIPMENT, MACHINERY ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☒ **POWERED HAND TOOLS**

☒ Electric-powered
☒ Fuel-powered
☐ Pneumatic
☐ Powder-actuated

Hazards: Eye/hand/body injury, fuel-related hazards, Inhalation hazards, noise, sparks, heat, fire hazard, electrical hazards

☒ For all power tools:

- Inspect tools to ensure safe operating condition before each use.
- Use tool in accordance with manufacturer's specifications.
- Ensure guards are in place and no hazardous equipment modifications.
- Use PPE or other safety practices, as appropriate, for eye/hearing/hand/head/body protection (such as use of Kevlar chaps and jacket for chainsaw use).
- Provide training or verify operator qualification for use of power tool.
- Stay clear of hazard zone, "line of fire" when working near where power tools are used.
- For spark/heat generating tool, control fire hazards, segregate combustible/flammable materials.

☐ Use respirators, ventilation, wet methods, other appropriate means to control inhalation hazard.
☒ See fuel-safety practices in Part 2, Section O, "Active Use of Commercial Chemical Products."
☒ For electrical hazards, see Part 2, Section H, "Electrical Hazards".

Geosyntec Procedure(s): *HS-503-Powered Hand Tools*

☒	**OPERATION OF EQUIPMENT/MACHINERY** ☒ Point-of-operation hazards ☒ Pinch points, moving parts ☐ 'Struck-by,' 'caught between' ☒ Hot surfaces, heat ☒ Extension cords, flexible wire ☒ Fuel related (gas or liquid) ☒ Hydraulic pressure ☐ Kinetic, stored energy ☒ Noise ☒ Emissions, discharge gases ☐ Working at heights, falls ☒ Lifting, repetitive motion ☒ Illumination ☒ Electrical	☒ General safety requirements for equipment, machinery: • Arrange worksite for safe access to equipment/machinery. • Use equipment/machinery in accordance with manufacturer's use and safety instructions. • Ensure point-of-operation, mechanical power transmission, other moving parts are guarded with protective devices; do not override interlocks, guards, protective devices. • Secure long hair/loose clothing/hanging jewelry near moving/rotating parts. • Heed warning signs/labels, keep safe distance; avoid locations of "struck by" and "caught between" hazards. • Implement lockout/tagout for repairs/adjustments/tooling changes. ☒ Use safe lifting practices for movement of heavy portable equipment ☒ Incorporate safety provisions/safe work practices for compressed air, pressurized systems (pneumatic/hydraulic), stored energy. ☐ For climbing/fall hazards associated with large equipment, See Part 2, Section D, "Fall Hazards." ☒ For electrical hazards, see Part 2, Section H, "Electrical Hazards." ☒ Operate fuel-powered equipment in well ventilated location. ☒ Use safe practices for fuels, see Part 2, Section O, "Active Use of Commercial Chemical Products."
☐	**LOCKOUT/TAGOUT OF HAZARDOUS ENERGY**	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel. ***Geosyntec Procedure(s):*** *HS-119-Lockout Tagout*
☐	**WELDING, CUTTING, HOT WORK (GAS OR ARC)** UV/IR light-eye/skin burns, hot-work hazards, toxic welding fumes, compressed gases, electrical shock	☐ General safe work practices: • Hot work permit system to be implemented. • Operator properly protected (eye protection, clothing, apron, etc.). • Fire hazard controls (watcher, fire extinguisher, water, isolate combustibles). • Protect nearby personnel from hazardous UV, IR light (shielding, curtain). ☐ For gas welding/cutting, use gas cylinder safe practices (secured, upright, caps on when not in use, prevent Damage; never secure gas cylinders to metal bench used for arc welding). ☐ For arc welding, follow electrical safe work practices. See Part 2 Section H, "Electrical Hazards." ☐ See Part 2, Section M "Active Use of Commercial Chemical Products" for hazards associated with welding rods (toxic metals), welding gases. ***Geosyntec Procedure(s):*** *HS-511-Welding, Cutting and Other Hot Work*
☒	**COMPRESSED AIR, COMPRESSOR** (for compressed gases, see Section P, "Compressed Gases")	☒ Never direct nozzle toward body; do not use compressed air for cleaning clothes. ☐ If compressed air is used for cleaning, restrict pressure to 30 psi, equip nozzle with chip guard. ☒ Use eye protection. ☒ Ensure air tank, hoses, fittings are in good repair using factory fittings.
☒	**PORTABLE GENERATOR** Hazards: Electrical shock, carbon monoxide in exhaust, fuel-related fire, injury from mechanical hazards, lifting	☒ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: • Keep generator dry. • Never use indoors, or near windows, vents, doors due to carbon monoxide hazard. • Use power cords/extension cords specified by instructions. • Use ground-fault circuit interrupters (GFCIs) in accordance with manufacturer's instructions. • See Part 2, Section H, "Electrical Hazards." • Shut down equipment before refueling. See safe practices for flammable/combustible liquids in Part 2, Section M, "Project Use of Commercial Chemical Products." ***Geosyntec Procedures:*** *HS-121-Electrical Safety, HS-115-Hazard Communication*
☐	**PORTABLE HEATERS (electric or fuel powered)** Hazards: Electric-powered: Electrical shock, fires from hot surfaces. Fuel powered: Carbon monoxide in exhaust, fires from hot surfaces, fuel-related fires	☐ Follow general safety practices for Operation of Equipment/Machinery (above), and as follows: • Keep heater dry, and locate heater on level surface where it will not be knocked over. • Never use fuel-powered heaters indoors, or near windows, vents, doors due to carbon monoxide hazard. • Keep combustible materials at least 3 feet from hot surfaces. • Do not use an extension cord or power strip to power an electric heater. • For electric heaters, See Part 2, Section H, "Electrical Hazards." • Shut down fuel-powered equipment before refueling. See safe practices for flammable/combustible liquids and/or compressed gases in Part 2, Section M, "Project Use of Commercial Chemical Products." ***Geosyntec Procedures:*** *HS-121-Electrical Safety, HS-115-Hazard Communication*

F. DRILLING ☒ **Applicable** ☐ **Not Applicable, Not Anticipated**

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**DRILLING** Hazards: Struck-by, run-over, caught between (pinch points), manual lifting, roll over, fluid leaks, fuel hazards, suspended equipment **IMPORTANT!** Follow safe work practices per Section I, "Utility Related Hazards"	☒ Follow safe work practices, as applicable: • Non-essential personnel to stay clear of drilling work zone when drill rig in operation. • Use PPE near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). • Contractor inspects drill rig daily before use. • Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. • Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. • Drill rigs will only be moved with masts lowered. • Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. • Use safety practices for refueling, fuel handling/storage/transport. • Spill equipment is available for fuel and hydraulic fluid leaks. • See "Mechanical Lifting, Rigging," in Part 2, Section G "Construction, Heavy Equipment, Lift Equipment." ***Geosyntec Procedure(s):*** *HS-403-Drilling*
G. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT	☐ **Applicable**	☒ **Not Applicable, Not Anticipated**
EXPLANATORY NOTES, CLARIFICATIONS:		
☐	**HEAVY EQUIPMENT** Hazards: Struck-by, run-over, caught between (pinch points), roll over, fluid leaks, overhead hazards **IMPORTANT!** Follow safe work practices per Section I, "Utility Related Hazards"	☐ Follow general safe work practices for heavy equipment: • Trained/qualified persons operate all heavy equipment. • Do not get into a potential crush situation below or between equipment, or in an excavation. • No passengers on moving/operating equipment except where passenger seat/restraint is present. • Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. • Leaks or defective safety equipment should be repaired before use. • Operators required to use seatbelts. • Eye contact with operator and use of hand signals prior to approaching near equipment. • High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. • Maximum safe slope for each vehicle will be followed. • Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. • Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. • Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. • Mark temporary roadways clearly, provide berms/stop logs where needed. ***Geosyntec Procedure(s):*** *HS-504-Heavy Equipment, HS-132-Competent Persons*
☐	**CRANES** Hazards: – electrocution by overhead utility lines – injury in swing radius – injury from falling load – Crane tipping over due to overbalancing, high winds, unstable ground, unsafe slope, bad placement of outriggers – injury from mechanical hazards **IMPORTANT!** Follow safe work practices per Section I, "Utility Related Hazards"	☐ In addition to general safety practices for heavy equipment (above), as applicable: • Only qualified persons operate cranes (certificate required). • Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. • Equipment to be inspected prior to mobilization and daily by crane operator. • Crane operator will remain at the controls at all times during operation. • Crane operation must be performed under the direction of an appointed signal person at all times. • Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. • Keep area beneath suspended loads clear of personnel. • Rigging procedures – see Mechanical Lifting, Rigging, below. ***Geosyntec Procedure(s):*** *HS-506-Cranes, HS-132-Competent Persons*
☐	**MECHANICAL LIFTING, RIGGING** Applies to lifting by crane, truck-mounted boom rig (e.g. drill rig), mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	☐ In addition to general safety practices for heavy equipment (above), as applicable: • Coordinate lifting operations with competent person. • Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart. • Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. • Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. • Hooks will be equipped with safety latches. ***Geosyntec Procedure(s):*** *HS-506-Cranes*
☐	**FORKLIFT** Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks. **IMPORTANT!** Follow safe work practices per Section I, "Utility Related Hazards"	☐ In addition to general safety practices for heavy equipment (above), as applicable: • Qualified operator, per established forklift training (certificate is required). • Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. • Do not exceed lifting load limits. • Forklift shall not be moved/driven with empty forks in raised position. • When not in use, forks lowered, brake set, controls in neutral, key removed. ***Geosyntec Procedure(s):*** *HS-505-Safe Operation of Forklifts, HS-132-Competent Persons*

☐	**AERIAL LIFTS**	☐ See Section D, "Fall Hazards" *Geosyntec Procedure(s): HS-509-Aerial Lifts*
☐	**TRENCHING/EXCAVATION** Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations **IMPORTANT!** Follow safe work practices per Section I, "Utility Related Hazards"	☐ Safe work practices when personnel will enter trenches/excavations: • Activities under supervision/oversight of competent person, daily inspection. • Excavated materials placed at least 2' from trench sidewall. • Prevent water accumulation in trench. • Sloping & shoring for excavations ≥20' must be approved by a professional engineer. • Sloping/shoring/trench box for excavations ≥5' when persons enter trench/excavation. • Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard . • Workers in trenches to be within 25 feet of ladder or sloped entryway. • Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. • If potential for atmospheric hazard, see Section J "Confined Space Entry, Hazardous Enclosed Spaces" ***Geosyntec Procedure(s):*** *HS-402-Excavation and Trenching, HS-132-Competent Persons*
☐	**DEMOLITION**	☐ Develop/implement demolition safety plan. ***Geosyntec Procedure(s):*** *HS-132-Competent Persons*
☐	**BLASTING**	☐ Develop/implement blasting safety plan. ***Geosyntec Procedure(s):*** *HS-307-Blasting and Use of Explosives, HS-132-Competent Persons*
☐	**PUBLIC AT RISK, SITE SECURITY**	☐ During site operations protect public (overhead protection, barriers, warning signs). ☐ During off hours, protect public with barriers, warning signs/lights; lock/secure hazardous materials.

H. ELECTICAL HAZARDS ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**ELECTRICAL HAZARDS (GENERAL)** Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	☒ Follow safe work practices: • Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. • Never touch electrical equipment if you are wet, or standing in water or on wet surfaces. • Use extension cords/power cords properly, prevent damage, take out of service if damaged. • Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. • Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements. • Ensure live parts are guarded, enclosures secure. • Enclosures, circuits properly labeled. ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety*
☐	**HANDS-ON WORK ON ELECTRICAL CIRCUITS:** ☐ Voltage < 50 v ☒ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/transformer	☒ Implement electrical safe work practices pertaining to: • Worker training/qualification (Level 1, Level 2, Level 3) • General electrical safe work practices, grounding, use of GFCIs • Safe work practices during diagnostics/troubleshooting, maintenance, repair • Safe design features for electrical equipment • Arc flash protection ☒ For utility-related hazards, see Section I, "Utility Related Hazards") ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety, HS-129-High Voltage Electricity Safety*
☐	**LOCKOUT/TAGOUT OF ELECTRICAL ENERGY**	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel. ***Geosyntec Procedure(s):*** *HS-119-Lockout Tagout*

I. UTILITY RELATED HAZARDS ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**OVERHEAD, ABOVE-GROUND UTILITIES**	☒ Maintain proper clearance, employ other appropriate precautions for the conditions. ***Geosyntec Procedure(s):*** *HS-304-Overhead Electrical Lines*
☒	**UNDERGROUND UTILITIES**	☒ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions. ☐ Hand digging within 3' of utility locations.

J. CONFINED SPACE ENTRY, HAZARDOUS ENCLOSED SPACES ☐ Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐	**CONFINED SPACE(S)** Potential/actual hazards: ☐ Atmospheric hazards: ☐ Flammable/explosive ☐ Oxygen deficiency ☐ Hydrogen sulfide	☐ Develop effective site-specific entry procedure **per applicable regulatory requirements**: • Personnel to be trained/qualified. • Hazards properly characterized • Use equipment necessary for safe entry (for access, retrieval, PPE, air monitoring, ventilation) • Develop measures for emergency rescue, as applicable. • IMPORTANT:

	☐ Other toxic ☐ Combustible dust ☐ Electrical ☐ Mechanical, engulfment, entrapment, stored energy	– Describe site-specific safety measures above in Explanatory Notes, Clarifications – Modify this THA or attach separate confined space safety plan/permit, as appropriate ☐ Protect non-entry personnel working near confined spaces thru control measures to prevent unauthorized entry (such as safety orientation, labeling, delineation, barriers) ***Geosyntec Procedure(s):*** *HS-118-Confined Space Entry*
☐	**HAZARDOUS ENCLOSED OR INDOOR SPACE(S)** ☐ Outfall, culvert ☐ Tunnel, shaft, gallery ☐ Machine/equipment pit/vault ☐ Basement/crawl space ☐ Building-related hazards ☐ Hazardous exhaust or emissions	☐ Use personal protective clothing to protect from chemical, physical, biological hazards. ☐ Use respiratory protection, if necessary/appropriate. ☐ Duct equipment exhaust to outdoors using passive duct or active exhaust ventilation. ☐ Use fans, blowers or other effective means of ventilation to introduce fresh air/dissipate atmospheric hazards. ☐ Conduct air monitoring, as appropriate for conditions and hazards (see Sections M, N, O, P). ☐ If space classified as confined space, follow confined space entry requirements (above). ***Geosyntec Procedures****: HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, Others as applicable*

K. STORAGE OF BULK MATERIALS ☐ Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐	**STORAGE OF MATERIALS** (for Chem. Storage, See Part 2 Section M)	☐ Store materials in stable manner (stacked, racked, blocked, interlocked, tied, wrapped, or otherwise secured) to prevent tipping, sliding, rolling, falling or collapse. ☐ Do not exceed load limits of racks, platform, scaffold; ensure racks are stable, robust, secure. ☐ Ensure stored materials do not block aisles, passageways.

L. INFECTIOUS / ALLERGENIC BIOHAZARDS ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS: COVID-19: See Attachment.

☐	☐ Wastewater, sewer ☐ Bird Guano ☐ Bloodborne pathogens ☐ Mold, fungi ☐ Valley Fever	☐ Low hazard - use basic hygiene practices, protective gloves, provide for hand washing. ☐ More severe hazard - add protective clothing, respirator/dust mask, decon, as appropriate. ☐ For human pathogens use "Universal Precautions" per Bloodborne Pathogen Program. ***Geosyntec Procedure(s):*** *HS-133-Bloodborne Pathogens*

M. PROJECT USE OF COMMERCIAL CHEMICAL PRODUCTS ☐ Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐	**PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD**	☐ Safety Data Sheets available, either on site or readily available within same work shift, containers labelled properly, workers trained/oriented on hazards ☐ For subcontractor use of chemical products, coordinate/discuss during safety meetings.
☐	**COMPRESSED GAS (flammable or nonflammable)**	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage. ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench. ☐ Store/use in a manner to prevent asphyxiation hazard. ☐ Segregate oxygen and fuel gases by distance (20') or barrier. ☐ Control ignition sources. ☐ "No smoking" signage at cylinder storage area for flammable gases. ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	**FLAMMABLE/COMBUSTIBLE LIQUIDS**	☐ Proper storage (flam. storage cabinets, other storage precautions). ☐ Use proper fuel safety can (metal fuel can preferred). ☐ Control ignition sources. ☐ Grounding and bonding where appropriate.
☐	**ACIDS, CAUSTICS, OTHER CORROSIVES**	☐ Handle with care, use appropriate eye/face/skin protection. ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate .
☐	**TOXIC**	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption); use PPE as appropriate, conduct air monitoring as appropriate.
☐	**EMISSIONS FROM FUEL COMBUSTION** ☐ Gasoline ☐ Diesel ☐ Propane/Natural Gas	☐ Position outdoor personnel upwind of exhaust source. ☐ Use blowers, fans to provide fresh air to work area and dissipate atmospheric hazards. ☐ Use respiratory protection for high levels of smoke, exhaust particulates, soot. ☐ Conduct air monitoring as appropriate (see Section O, "Air Monitoring").
☐	**OTHER HAZARDS**	☐ Describe other hazardous substances and safety measures under "Explanatory Notes, Clarifications," above.

☐	**CHEMICAL STORAGE** Check this when jobsite requirements include special provisions for chemical storage.	☐ Chemical storage cabinet, cage, storage room, or similar. ☐ Ensure incompatible chemicals are segregated. ☐ Provide secondary containment. ☐ Locate special safety equipment near chemical storage

Geosyntec Procedures: *HS-115-Hazard Communication, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, Others as applicable*

N. SITE CONTAMINANTS, CHEMICAL WASTES ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS: Contaminated purge groundwater and affected soils. Use care and splash-protection during sampling and handling purge groundwater and soils.

CHECK ALL THAT APPLY. Provide explanatory notes above.

☒ Soil/groundwater contaminants (historical release)	☐ Oxygen deficiency	☐ Asbestos
☐ Recent release, known high concentrations	☒ Chlorinated volatile organic compounds (VOCs)	☐ Lead paint
☐ Former chemical disposal site, landfill	☐ BTEX, petroleum derived VOCs	☐ Pesticides, herbicides, fungicides
☐ Urban fill, residual contaminants	☐ Fuel oils, petroleum, waste oil, lubricants	☐ Sensitizers
☐ Containerized waste (drums, process equipment)	☐ Metals, metal compounds, metal dusts	☐ Radioactive contaminants
☐ Buried drums (known or potential)	☐ Elemental mercury	☐ Other:
☐ Large containers, potential for spills	☐ Polyaromatic hydrocarbons (PAHs)	
☐ Emissions from active industrial processes	☐ Polychlorinated biphenyls (PCBs)	
☐ Emissions from welding/cutting/hot work	☐ Potential for flammable vapors	
☐ Carbon monoxide (vehicle/equipment exhaust)	☐ Potential for flammable gas (methane)	
☐ Contaminated building surfaces	☐ Corrosive, acids/caustics, strong irritants	
☐ Unexploded ordnance	☐ Sulfides, hydrogen sulfide (H_2S)	
☐ Explosive dust	☐ Cyanides, hydrogen cyanide (HCN)	

☐ **FOR SITE REGULATED AS "UNCONTROLLED HAZ. WASTE SITE," e.g. REGULATED BY HAZWOPER (OSHA 29 CFR 1910.120)**

- Implement site control plan via Exclusion Zone(s), Contaminant Reduction Zone(s) and Support Zone (aka EZ, CRZ, SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field experience.
- Site workers in EZ or CRZ to participate in Medical Monitoring program, as applicable.
- "Peripheral" site workers, engaged on-site, with no hazardous exposure: 24 hr. training required.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response.

Geosyntec Procedures: *HS-301-HAZWOPER, HS-108-Medical Monitoring Surveillance, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, HS-405-Drum Sampling, Others as applicable*

☒ **FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER**

- Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information
- Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate.
- Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable.

Geosyntec Procedures: *HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, Others as applicable*

☒	**OFF-SITE MIGRATION OF CONTAMINANTS**	☒ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☒ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.
☐	**SPILL CONTAINMENT, CONTAINERS**	☐ Describe above any site-specific procedures for spill containment, container handling, as applicable. ***Geosyntec Procedures****: HS-406-Unknown Hazardous Waste Drum Handling*

O. AIR MONITORING ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**AIR-TESTING PARAMETERS**	☒ VOCs, GASES ☒ PID, Lamp energy: ___ eV ☐ FID ☐ Carbon monoxide ☐ Hydrogen sulfide ☐ Oxygen (O_2)		☐ Flammable gas (LEL) ☐ Particulate (dust) ☐ Calibration kit for each parameter ☐ Other:
	ACTION LEVELS FOR O2/LEL	☐ Oxygen	≤19.5% - ventilate to raise O_2 to acceptable levels, or use Level B. ≥23.0% - ventilate to lower O_2 to acceptable levels, or use Level B and control fire hazards & ignition sources.	

☐		☐ LEL	Confirm at least 12% oxygen is present to ensure accuracy of LEL readings. At <10% LEL - Continue working, continue to monitor LEL levels At ≥10% LEL- Immediately withdraw from area. Resume work ONLY after LEL readings reduced to <10%.

☒	**ACTION LEVELS FOR TOXICS** (sustained breathing zone concentrations)	**Parameters**	**Level D, Modified D***	**Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*.**
		☒ VOCs	< 26.6 ppm	___ ppm to ___ ppm: Level C (air purifying respirator) > ___ ppm: Level B (air-supplied respirator)
		☐ Carbon Monoxide	< 35 ppm	≥35 ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Level B (air-supplied respirator)
		☐ Total Dust	< ___ mg/m^3	>___ mg/m^3 - Level C (air-purifying respirator)
		☐		
		☐		

*** Levels of Protection:**
Level D (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection)
Modified Level D (chemical protective clothing in addition to standard work clothes, no respiratory protection)
Level C (air purifying respirator or dust mask, in addition to chemical protective clothing)
Level B or A (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)

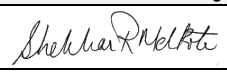
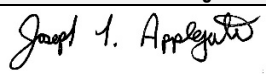
Geosyntec Procedures: *HS-111-Air Monitoring*

P. RADIATION HAZARDS (Other than Sunlight) ☐ Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☐	**IONIZING RADIATION**	Describe hazards, safety measures and monitoring procedures above in Explanatory Notes, Clarifications.
☐	**NON-IONIZING RADIATION**	Describe hazards, safety measures and monitoring procedures above in Explanatory Notes, Clarifications.

PART 3 – APPROVALS, ACKNOWLEDGEMENTS

A. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate for the work and associated hazards.			
	Printed Name	***Signature***	***Date***
THA PREPARED BY: (minimum one person)	Shekhar Melkote		10-13-2020
	Printed Name	***Signature***	***Date***
THA REVIEWED/ APPROVED BY: (minimum one person)	Joe Applegate		10-13-2020

>>> Please See Section B, “Field Crew Acknowledgements,” on Following Page <<<

B. FIELD CREW ACKNOWLEDGEMENTS

GEOSYNTEC FIELD CREW

Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.

Print Name:	Signature:	Employee No.	Date:

SUBCONTRACTOR'S FIELD CREW

Please sign below to acknowledge that this THA was made available to you, and you had an opportunity to ask questions about the information herein.

Print Name:	Signature:	Company Name:	Date:

ROUTE TO HOSPITAL

HOSPITAL NAME

HIGHLAND HOSPITAL
1000 South Avenue
Rochester, NY 14620
(585)341-6880

A		**100 Sunny Sol Blvd**, Caledonia, NY 14423-1080	
●		1. Start out going southwest on **Sunny Sol Blvd** toward **Iroquois Rd.** Map	**0.2 Mi** *0.2 Mi Total*
↰		2. Turn left onto **Iroquois Rd.** Map	**0.7 Mi** *0.9 Mi Total*
↰		3. Take the 1st left onto **Wheatland Center Rd.** Map	**3.2 Mi** *4.1 Mi Total*
↱		4. Turn right onto **North Rd.** Map	**3.8 Mi** *7.9 Mi Total*
↰	383	5. Turn left onto **RT-383 / Scottsville Rd.** Map	**9.1 Mi** *17.0 Mi Total*
↗		6. Turn slight right onto **Elmwood Ave.** Map	**1.2 Mi** *18.2 Mi Total*
↰	15	7. Turn left onto **Mt Hope Ave / RT-15.** Map	**0.5 Mi** *18.7 Mi Total*
↱		8. Turn right onto **Reservoir Ave.** Map	**0.2 Mi** *18.9 Mi Total*
↖		9. Turn slight left onto **South Ave.** Map	**0.3 Mi** *19.2 Mi Total*
■		10. **1000 SOUTH AVE** is on the right. Map	
B		**1000 South Ave**, Rochester, NY 14620-2733	

Total Travel Estimate: 19.19 miles - about 34 minutes

Geosyntec consultants | family of companies

Date: June 16, 2020
Revision: 4.1

Health and Safety

Fieldwork COVID-19 General Prevention Measures

Note: Major updates to the previous version (Rev. 3, April 3, 2020) are presented herein in green text.

Scope of this Document

To facilitate the safety and well-being of our employees while executing field operations as various government agencies begin to lift COVID-19 workplace restrictions in many sectors, the Corporate H&S Department has prepared this guideline to help employees minimize the risk of spreading or contracting COVID-19 during ***fieldwork operations***. This information complements Geosyntec's "COVID-19 Considerations & Mitigations for Ongoing Business Operations," and other guidelines and communications distributed via Geosyntec's COVID-19 SharePoint Portal.

We invite all staff to share their questions and ideas with Managers and Supervisors, Health and Safety Coordinators and Corporate Health and Safety Department. All Corporate Health and Safety staff are available to assist you with COVID-19 safety solutions on your projects, and we will continue to update and improve these guidelines as we learn more and receive your feedback.

Risk Analysis

The COVID-19 pathogen can be transmitted from infected individuals who *may* or *may not* be experiencing symptoms. So, all project/worksite locations and surrounding communities, and all coworkers and community members, represent a potential source of exposure for Geosyntec personnel. The virus is spread primarily by airborne respiratory droplets and aerosols containing the virus, which are emitted by infectious persons and can settle in the moth or nose of nearby people or be inhaled directly into the lungs. A secondary mode of infection is through *direct contact* between hands and contaminated surfaces (where droplets can also settle), and subsequent transfer to the mouth, nose, or eyes through touching. Our risk-reduction guidelines focus on avoidance or mitigation of elevated-risk situations through the core safety practices of ***physical distancing, use of face covers, personal hygiene, workspace sanitation***, and in certain situations, use of ***engineering controls*** and/or ***personal protective equipment***.

Situation-Based Protection Strategies

For each fieldwork deployment by Geosyntec staff, a site-/project-specific "COVID-19 prevention strategy" shall be developed through evaluation of work tasks and associated COVID-19 exposure risks, and engagement with field team members, client representatives, and other onsite stakeholders (owners, clients, subcontractors, suppliers, contractors), as appropriate for the work. The core focus of such a strategy will always be on three fundamental objectives:

- **Minimize the Magnitude of Possible Virus Contact/Exposure** - Minimize the *intensity* and the *duration* of potential exposure to the virus.
- **Minimize the Number of Interpersonal Contacts** – Limit the number of *direct person-to-person contacts*, as well as *indirect contacts* via shared *work surfaces* and *air spaces.*[1]
- **Maximize Mitigation Measures** - Utilize COVID-19 protections applicable to work tasks, utilizing *redundant* protections to the extent feasible.

Geosyntec employees engaged in the management and execution of fieldwork must apply the prevention/mitigation strategies delineated herein as appropriate and feasible for their work, and as

[1] Limit both the number of contacts, and more important, limit the number of persons with whom contact is made.

needed to adhere to applicable government mandates and client requirements, to minimize the risks of transmitting or contracting COVID-19.

1. Project Planning, Communication, Health and Safety Coordination[2]

- Information updates – Employees engaged in the management and execution of fieldwork projects are encouraged to stay up to date with the latest information and updates to Company operating procedures and due diligence/best practice norms regarding COVID-19; include this information at all safety meetings and incorporate related safe work practices into written safety plans (HASPs/THAs).

- Client requirements - For job sites under the control of another organization, obtain a copy of any relevant COVID-19 exposure control requirements and ensure we can fully comply; H&S can assist in evaluating such plans as needed. Understand contract requirements for Geosyntec to staff projects, anticipate disruptions of our ability to serve the project that are out of our control, and develop contingency plans for such situations.

- Government rules/restrictions – All project teams shall adhere to government mandates and restrictions relevant in the jurisdiction of your fieldwork. Information on such requirements may be obtained from Corp. H&S, Geosyntec personnel familiar with your work location, client contacts, or on-line resources made available on municipal, state and federal COVID-19 websites.

- Project management, planning, budgets – We anticipate that the COVID-19 pandemic, and associated protections needed during execution of fieldwork, will result in changes in how we plan for and budget fieldwork projects. Many aspects of fieldwork may be impacted, including pre-mobilization planning, field equipment and supplies, travel costs, accommodations, coordination with clients and subcontractors. Review of the Project Manager Checklist for H&S Compliance with COVID-19 planning in mind, particularly *Sections A and B--"Proposal and Pre-Contract Activity*" and *"Project Planning"*-- may be helpful in this regard.

- Prework coordination, HSCs, HASP/THA – Prior to the start of fieldwork on each project, conduct a pre-work safety orientation or "kickoff meeting" that includes each member of the project/field team (as well as with clients, subcontractors, other contractors, as applicable) to determine the scope of prevention measures for COVID-19 and other site hazards. Delineate key COVID-19 safety elements in the Written Safety Plan (HASP/THA) and monitor/implement these measures daily throughout the performance of field activities. Health and Safety Coordinators (HSCs) and Regional Safety Managers can assist.

- Designate an on-site "COVID Lead" – Designate an individual to oversee (observe and enforce) the COVID 19 preventative measures to be implemented by personnel on site. On short-duration projects, this role is most typically assigned to the individual designated as the on-site safety lead or field supervisor; for long-duration large projects, the role may preferably be rotated among onsite personnel to fully engage the entire field team, as well as share the responsibility.

- Work task innovations – All employees are encouraged to consider innovative ways of conducting their work to reduce the risks of contracting or transmitting COVID-19. Learn new communication capabilities through available technologies (WebEx, Skype, MS Teams, Office 365) and develop safety innovations for on-site field work. Modify your work tasks and use non-typical field practices to maintain physical distancing, personal hygiene, and work area sanitation.

[2] *This section repositioned from Section 10 in the previous edition of this document to the current Section1*

2. Assess Risks, Avoid/Mitigate Elevated-Risk Work Situations, 'Stop Work' Authority[3]

- Risk assessment – Per criteria established by OSHA's COVID 19 risk classifications (https://www.osha.gov/SLTC/covid-19/hazardrecognition.html#risk_classification), Geosyntec fieldwork is generally classified as ranging from "Lower Exposure Risk" to "Medium Exposure Risk." Geosyntec fieldwork does not include "High Exposure Risk" or "Very High Exposure Risk" in this classification as our work does not require close proximity of employees to confirmed or presumed COVID-19 patients – potential exceptions to this must be coordinated directly with the Regional H&S Manager on a case-by-case basis.

- Medium exposure risks - Where Geosyntec fieldwork involves entry into "Medium Exposure Risk" workplace environments, such as occupied residences, active/occupied health care facilities, extended-care/rehab/elder-care facilities, schools, correctional facilities, crowded public transportation areas, high-volume retail settings and similar high population density work environments, such work shall either be 1) eliminated or significantly curtailed (preferred), or 2) a strategy of "maximum mitigation" through focused and redundant protections (to the extent feasible) shall be implemented to minimize the potential intensity of exposure to the virus, and minimize the number of interpersonal contacts, both direct and indirect.

- Low exposure risks - In all low-risk situations, vigilance shall be maintained with regard to physical distancing, sanitation/hygiene, use of face covers, and other applicable controls in order to minimize the risk of COVID-19 disease transmission among workers.

- Personnel convergence points[4], movement of personnel and materials – For each project site, consider process flows of both materials and personnel, and make specific arrangements to minimize interpersonal contact and maximize physical distancing. Eliminate convergence points by such measures as: separate entrances and exits; "circular" routing of personnel footpaths; designate pick up/drop of points for materials and equipment; stagger personnel approaches.

- Hierarchy of controls – Geosyntec employees shall consider the typical "hierarchy of controls" for eliminating/mitigating COVID-19 hazards, as summarized below, with examples:
    - *Hazard Elimination* – Modify the scope of work to eliminate an elevated risk element, such as entry into a hospital with known COVID-19 patients.
    - *Hazard Substitution* – Deploy an on-site portable toilet as a substitute for using a rest room in a high-population-density facility (site facility or nearby travel stop).
    - *Engineering controls* – Use of Plexiglas barriers, or fans for ventilation, at points of personnel convergence.
    - *Administrative controls, safe work practices* – Maintain physical distancing; assign specific tasks to each on-site staff member (minimize multi-tasking) to limit interpersonal encounters; frequent disinfection of high-touch surfaces.
    - *Face Covers, PPE* – Use of face covers as barriers to minimize airborne release of respiratory droplets; use of disposable gloves; use of N95 respirator for "high-" and "very high-" exposure risks (per OSHA classification).

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[3] *This section repositioned from Section 7 in the previous edition of this document to the current Section 2*

[4] Wherever persons come together and engage in *direct* person-to-person interactions, or when individuals contact each other *indirectly* via shared work surfaces and air spaces. Such points of convergence represent opportunities for transmission of the COVID-19 virus, should an infected person be encountered.

- Vigilance, redundant controls – Because the presence or absence of the COVID-19 virus in any workplace situation cannot be confirmed "real time" during fieldwork, vigilance in the application of controls, and a "default strategy" of using of redundant controls[5] where feasible, will afford the greatest levels of risk reduction and worker protection.

- Stop-work authority - Inform staff and coworkers that they have the authority to stop work if they suspect an unacceptable risk to the health or safety of participants. All employees are encouraged and expected to report elevated hazards to their supervisor/project manager, and seek assistance from the H&S Department in evaluating the risk and recommending safe work practices.

3. Be On-the-Lookout for Symptoms

- Symptoms – COVID-19 symptoms include:
    - Fever of 100.4 deg. F (38 deg. C) or higher
    - Fatigue (extreme, non-typical)
    - Persistent cough
    - Sore throat
    - Shortness of breath
    - Headache
    - Chills
    - Shaking/shivering with chills
    - Muscle aches/pains
    - Gastrointestinal distress (diarrhea, nausea, vomiting)
    - Loss of taste or smell (new, recent)
    - In severe cases, *emergency warning signs requiring immediate medical attention* may include trouble breathing, persistent pain or pressure in the chest, confusion, inability to arouse, and bluish lips or face.

- Self-monitor for symptoms – Geosyntec has implemented a Health Status Self-Check Process for our employees, detailed in Section 5.2.2 Geosyntec's "COVID-19 Considerations & Mitigations for Ongoing Business Operations." Using this process as our main tool, we will practice self-notification and self-quarantine as our primary method for excluding ill or potentially-ill workers who may be infectious from being present on our jobsites. Where local regulatory requirements or client requirements require more stringent on-site health check measures we will comply.
  Based on self-check/on-site check results, personnel with possible COVID-19 symptoms will respond as follows:
    - On site - If you are on site and begin to experience symptoms, wear a face covering, immediately isolate yourself from all other site personnel and notify your supervisor and the project manager (who will inform HR and the Branch Manager). Leave the site as soon as possible and follow Geosyntec guidance for self-quarantine. The company also recommends you seek medical care from your personal doctor or health care provider.
    - Off Site/Work – If you begin experiencing symptoms while away from work DO NOT GO TO THE JOB SITE. Contact your supervisor and the project manager and follow Geosyntec company guidance for self-quarantine. The company also recommends you seek medical care from your own personal doctor or health care provider.

[5] Use of two or more control measures simultaneously, such as wearing face covers, maintaining physical distancing, and using fans for fresh air ventilation, all at the same time in a given workplace setting.

For either of the above cases the Geosyntec HR & H&S Departments, in coordination with the project manager, will recommend appropriate follow-up measures (contact tracing, quarantine) regarding other project personnel. Project managers will need to arrange for replacement personnel if anyone is required to leave the site for an extended period of time.

- Coworker with symptoms – If a Geosyntec coworker, subcontractor, client or client contractor exhibits symptoms, or has presumptive or confirmed COVID-19, avoid close contact and implement safe work practices (delineated herein) as applicable. Contact the project manager, who will inform HR, H&S and the Branch Manager; the HR/H&S team, together with the project team, will evaluate risks and recommend appropriate response.

- Daily tailgate safety meetings – On a daily basis: communicate with on-site coworkers to reinforce COVID-19 prevention measures in general and those specific to the work, re-discuss symptoms to be on the lookout for, and confirm with each individual on the project team that they are not experiencing any possible COVID-19 symptoms.

- Field screening/documentation of worker symptoms – Formal procedures for onsite screening of symptoms may be required for certain projects (due to client requirements and/or government regulation), or as viable best practice (large workforce, multiple subcontractors, transient labor). Screening questions may focus on a range of specific symptoms, include questions about personal contacts and recent travel, and may include individual temperature checks. For additional information, or if Geosyntec is required to implement such a program, contact the Corp. H&S Department for assistance/guidance. As appropriate for the work, a requirement for formal COVID-19 screening of subcontractor personnel, or of other on-site stakeholder personnel, may be included in contractual subcontract agreements or site access agreements. Onsite project-specific forms can be readily developed as stand-alone forms, or as a component of related procedures/documents, such as worker/visitor entry/exit logs, safety dash cards, visitor orientation forms, etc. Contact Corp. H&S for assistance.

4. Integrate Physical Distancing Strategies into all Fieldwork Activities and Meetings

- Interpersonal physical distancing – Physical distancing is a fundamental strategy (in conjunction with use of face covers and other control measures) for controlling person-to-person transmission of the COVID-19 virus. For all work activities, maintain a *minimum* distance of 2 meters/6 feet from all other field staff, visitors and general public when possible. Where physical distancing objectives are not workable, face covers shall be worn, and other protective strategies delineated herein, as applicable to the situation, should be deployed (such as Plexiglas barriers, fans/ventilation, more frequent hand washing, more frequent work area sanitization,).

- Meetings - Eliminate in-person meetings where possible. Video meetings and conference calls are preferable. Practice physical distancing when conducting onsite daily tailgate safety meetings, pre-work assessments, progress meetings and oversight observations of the work. Where in-person meetings are necessary, limit the meeting to key individuals who absolutely need to attend--all attendees shall practice physical distancing with a minimum of 2 m/6 ft between individuals.

- Indoor/enclosed spaces - Minimize or eliminate time spent in a field trailer, and in similar indoor/enclosed work areas, particularly areas frequented by other individuals (coworkers, on-site personnel, general public). Where possible, conduct work tasks and in-person meetings out-of-doors to reduce transmission of airborne disease agents.

- Social greetings - Avoid hand shaking, fist bumps, and other social greetings with direct contact or proximity to individuals within the physical distancing limits. Greet coworkers at a distance and don't exchange business cards.

- Onsite paperwork, office supplies - Develop procedures to minimize person-to-person contact through exchange of logs, forms, field documentation, and other paperwork. Don't share miscellaneous office supplies (pens, pencils, etc.) and periodically wipe/disinfect commonly used items (staplers, printers, etc.).

- Schedules, staff assignments - Adjust staff schedules and work assignments to facilitate physical distancing and minimize contact with high-touch surfaces. Such measures may include (but are not limited to):
    - Stagger schedules/shifts;
    - Perform only critical tasks;
    - Cross-train individuals for greater flexibility in staff assignments;
    - Limiting field teams to only essential personnel can help minimize personal interactions;
    - Increasing the size of field teams may:
        - Enable assigning a specific onsite role to each team member, thereby minimizing close encounters with coworkers;
        - Shorten the workday and limit overnight hotel stays.

- Site visitors – For ***transient visitors*** (such as site deliveries) make arrangements to minimize interpersonal contact by maintaining physical distancing and completing visits outside of site trailers and site facilities. Prevent package handling by multiple individuals, wear disposable gloves when receiving packages, dispose of packaging/wrapping promptly, disinfect exterior of items, and wash hands thoroughly after receipt. For more extended visits by ***service providers*** or ***business visitors***, use appropriate controls as appropriate for the visit, including physical distancing, face covers, limit meetings to minimum essential personnel, limit the duration of the meetings, include visitor in a health status self-check process or document symptom screening.

5. Maintain Personal Hygiene

- Regular hand-washing – Conduct regular and thorough handwashing (at least 20 seconds) with soap and water throughout the day. Where a water supply for hand washing is not readily available, set up a 'field handwashing station' were feasible/appropriate, and label water container "for handwashing only."

- Hand sanitizer - Where water for handwashing is not available, utilize hand sanitizer (with at least 60% alcohol) frequently, then wash hands with soap and water as soon as possible. After applying alcohol-based hand sanitizer, allow it to dry completely before bringing hands into close proximity to potential ignition sources, such as arcing electrical equipment, surfaces that could cause static discharge, and most importantly – SMOKING!

- Skin moisturizers – Frequent handwashing, and use of alcohol-based hand cleaners, or contact with chemical irritants in disinfectant cleaners, can result in dry/cracked skin. Periodic use of moisturizing creams can counteract that effect.

- Facial tissues - Carry a supply of facial tissues and use as much as possible for coughs/sneezes and dispose of used tissue in regular trash. "Covering your cough" is acceptable; use and disposal of tissues is more sanitary and therefore preferred.

- "Cover your cough" – When facial tissue is not ready at hand, cover your cough or sneeze by coughing/sneezing into the crook of your elbow--not into your hands. If you need to cough/sneeze into your hands, wash hands immediately.
- Personal hygiene supplies – In Geosyntec-controlled site trailers and other regularly-visited worksites, personal hygiene supplies including hand sanitizer, wipes, soap, and paper goods shall be maintained in adequate supply, as available for purchase.
- Minimize hand-contact with work surfaces and your face – Develop changes in your typical work practices and personal habits to eliminate or minimize the frequency of hand contact with surfaces in your work environment (e.g., avoid unnecessary contact with work surfaces, open doors with minimal hand/finger contact, grip handrails with fingers or at intermittent junctures rather than sliding your hand the full length; etc.). Limit habitual hand contact with your face. Contact your face only after thorough hand washing. If it's necessary to contact your face, use the back of your hand or knuckles rather than your palm or fingertips.

6. Work Area Cleaning, Sanitation, Protection, Modifications

- On-site trailers and similar indoor workspaces – On-site trailers/facilities at Geosyntec-controlled sites should be cleaned by custodial services at least once per day. Disinfect "high-touch" surfaces regularly during each workday. Cleaning and sanitation supplies shall be maintained in adequate supply and used regularly to clean/sanitize work surfaces.
- Clean "high-touch" work surfaces – Wipe high-touch work surfaces with sanitizing cleaners (preferred), detergents or soap & water at the start and end of each work shift and periodically throughout the day. High-touch items include cell phones, personal water bottles, desktops, computer keyboards, touch screens, tools, field equipment, coolers, doorknobs, railings, refrigerators, microwaves, light switches, thermostats, faucet/toilet handles, latches on portable bathrooms, and similar items. Items being used/shared by more than 1 person should be cleaned before transferring.
- Cleaners/sanitizers - Cleaning/disinfecting supplies may include commercial cleaners containing common EPA-registered household disinfectants, alcohol solutions containing at least 60% alcohol, or diluted household bleach solution[6] applied with commercial wipes or paper towels. See COVID cleaning and disinfection guidelines for more detail and full disinfection steps. Discard all used wipes/paper towels in regular trash.
- Chemical hazards of cleaners/disinfectants – Commercial disinfectant products shall be used in accordance with product labels, safety data sheets and manufacturer specifications, and appropriate PPE--typically nitrile or vinyl gloves--used as recommended. Safety Data Sheets (SDSs) for commonly used cleaners and disinfectants are provided for use by workers on our COVID-19 SharePoint site HERE. Note that many alcohol-containing products are flammable and should be used well away from ignition sources. Many disinfectants contain chemical irritants that can cause skin dryness/cracking/irritation. Wearing chemical protective gloves when sanitizing surfaces and/or periodic use of skin moisturizers can counteract these effects.
- Housekeeping – Proper housekeeping shall be maintained in all work areas. Minimize/eliminate clutter and accumulations of trash and debris, particularly trash items that have received human

[6] Per the CDC, a solution can be prepared by mixing: 5 tablespoons (1/3rd cup) bleach per gallon of water, or for smaller amounts 4 teaspoons bleach per quart of water.

contact (food wrappers, disposable cups, paper towels/tissues, etc.). Minimizing clutter will facilitate regular cleaning of high-touch surfaces. Empty trash receptacles daily.

- Protect frequently-used workspaces – In workspaces frequently accessed by on-site personnel, such as supply storage areas, treatment system control stations, toilet facilities, and hand washing stations, require that all personnel who enter these workspaces wear face covers to minimize the presence of respiratory droplets in the air or settled on surfaces.
- Work area modifications – Physical modifications of the work area should be considered as a means of limiting the intensity and/or frequency of possible exposure to the virus (should infected personnel be present), such as:
    - Use of physical barriers or caution tape to delineate travel pathways as a means of limiting interpersonal contacts and maintaining physical distancing;
    - Opening doors and windows to enhance fresh air ventilation;
    - Erecting canopies for outdoor tailgate meetings during inclement weather;
    - Erecting Plexiglas barriers at specific points of personnel convergence

7. Minimize Travel-Related Risks

Geosyntec has developed specific business travel protocols in Section 6.0 of our "COVID-19 Considerations & Mitigations for Ongoing Business Operations" procedure (referred to as "the Procedure," below). In addition, personnel performing fieldwork-related travel should also consider the following:

- Vehicle travel – See Section 6.1 of the Procedure; in addition: Regularly clean/disinfect high-touch surfaces (steering wheel, shift lever, door handles, tailgate, etc.) in personal vehicles, company field vehicles and rental vehicles. Try to travel one person per vehicle, but no more than two. If traveling with others in the same vehicle, exercise physical distancing as possible within the vehicle and wear face masks/covers.
- Fatigue management – Limit total travel and work time to no more than 14 hours per day. Additional provisions are provided in *HS 211 Fatigue Management Plan*.
- Minimize stops - Make as few stops as possible during travels to limit exposure to public spaces. Adhere to Journey Management Plan requirements (where applicable).
- Fuel/food/supply stops - When traveling by vehicle, and when stopping for fuel or other supplies is necessary, either clean/sanitize your hands upon completion of food/fuel stop, or wear gloves during the stop, then discard gloves and wash hands. Utilize physical distancing (6 ft/2 m) and wear a face mask/cover during the stop.
- Public restrooms/washrooms – Minimize or eliminate the use of public restrooms/washrooms, particularly in high-population-density locations (such as travel stops, occupied site facilities), as elevated-risk factors may include: recent use by many individuals; poor ventilation; small enclosed air-space; repeated use of high-air-velocity hand driers (which increase levels of airborne particulates). On-site portable toilets, with doors propped open between use for ventilation, represent lower exposure risk, particularly if used by limited number of on-site personnel.
- Minimize/eliminate cash transactions – To minimize interpersonal contact, and to maintain appropriate physical distancing, use credit-card transactions where possible. Avoid passing credit cards to vendors is possible (prefer swipe/chip reader situations). If you must pass the credit card to someone, wipe it with sanitizer upon receiving it back.
- Air travel - See Section 6.2 of the Procedure; in addition: To the extent possible, minimize/curtail air travel. Branch Manager approval is required for air travel. Adhere to existing restrictions on

domestic and international travel. Maintain physical distancing and use a face cover while at any airport. Have disinfectant wipes with you and wipe high-touch surfaces (head rest, tray, arm rest, lavatory latch). Wear protective gloves and a face mask or cover at all times while on airplane.

- Public transportation – See Section 6.4 of the Procedure; in addition: Avoid travel on trains, subways, buses, and other public transportation (i.e., ride share) where possible, especially in metropolitan areas with elevated levels of community transmission. If such travel is necessary, practice physical distancing, disinfect high-touch surfaces (seat, headrest, arm rest, hand-hold, etc.). Wear protective gloves and a face mask or cloth face cover during travel, and wash hands thoroughly upon completion of travel.

- Safe accommodations - See Section 6.3 of the Procedure; in addition: Book accommodations only at reputable hotel chains and verify with the hotel that appropriate protocols are in place to limit the potential exposure and spread of the virus by thorough cleaning and disinfection. Motels/hotels with direct access to each room, or house/apartment rentals (such as through Airbnb) may be preferable to minimize the number of contacts, direct or indirect, with other people. Added safety measures include:
    - Sanitize high-touch surfaces in your room with your own sanitizing cleaner (doorknobs, light switches, TV controller, desktops, etc.);
    - Avoid public areas/common spaces to the greatest degree possible;
    - Use hotel entrances closest to your room; avoid lobby, elevators, and other public spaces as much as possible;
    - Eliminate daily housekeeping room service;
    - Select hotels/motels with direct outside access to your room.

- Critically assess the need for travel – Coordinate with clients and colleagues about the need for travel and the potential for alternatives to face-to-face meetings and travel away from home, such as schedule changes and virtual meetings.

8. Utilize Safe Practices for Food & Beverage Provisions

- "BYOFB" – Each individual should bring his/her own food and beverages to all work sites to avoid stopping at a store or restaurant. When shopping for food, obtain food for several days in advance to minimize the number of trips to the grocery store.

- Suspend providing food in common areas – Refrain from delivering commonly shared foods—bagels, muffins, buffet lunch, coffee service areas etc. If any food is to be provided for a group, it must be individually packed and served (e.g. box lunches), and physical distancing must be practiced by all while food is consumed.

- Personal cooler – Use your own personal lunch pack or cooler with ice packs refrozen daily for safe food storage during each workday and avoid use of "community" refrigerators.

- Physical distancing during meals - Food should be eaten alone or at a minimum physical distance of 2 m/6 ft between persons. Dine in your vehicle or outside alone and avoid using the project trailer or common spaces in site facilities.

- Drinking water/beverage dispensers – Restrict drinking water sources onsite to individual bottled water only. Refrain from using shared water dispensers and coffee service. Have workers take measures, such as labeling bottles, to avoid drinking out of someone else's bottle.

9. Face Covers, Personal Protective Equipment (PPE)

- Face masks/covers used as emission barriers – Use of a nose/mouth face covering—dust masks, surgical masks, cloth face covers—is considered a fundamental protective measure for COVID-19. Face masks and covers capture potentially infectious respiratory droplets/aerosols produced by the wearer (i.e., from coughs, sneezes, speaking, etc.), thereby limiting exposure risks to coworkers by limiting airborne levels of droplets and settling of droplets onto surfaces. Therefore, use of acceptable nose/mouth face coverings[7] is authorized for unrestricted use by Geosyntec personnel for cases where the coverings are strictly used *as an emission barrier only* for COVID-19 exposure risk reduction, particularly where preferred physical distancing measures and other controls are impractical. See COVID-19 Considerations & Mitigations for Ongoing Business Operations, Attachment 2, "Facial Coverings," for information on proper usage, video instructions, and additional resources.

- A few additional pointers about face covers – Light-weight loose fitting paper masks may tend to blow around a bit on a windy day—a heavier weight and/or form-fitting cloth cover may be preferable. Masks that do not fit tightly over the nose are more likely to cause fogging of eyewear, particularly in cool weather. Wash cloth masks frequently, and when not in use, place in a zip-loc bag or similar container to keep it clean. When wearing a face cover, individuals may be inclined drink less fluids due to apprehension to lift the mask—remember, it is still essential that you drink sufficient fluids to prevent heat related illness.

- Use of NIOSH-approved N95 respirators for wearer inhalation protection - In situations where workers require inhalation protection from a confirmed source of airborne COVID-19 hazard (e.g., entry into a high-exposure-risk locations such as a COVID-19 patient room in a hospital – see Section 2), respirator use MUST be coordinated directly with your H&S manager to ensure that a proper risk assessment and device selection is conducted and that all elements of a respiratory protection program are implemented.

- Disposable gloves – Where contact with potentially contaminated surfaces may occur the prevention of "hand-to-face" transfer of material is important to mitigate exposure risk, and requires frequent hand washing and disinfection. Surgical-type gloves made of nitrile or vinyl[8] provide a means of simplifying this decontamination and is especially preferable in elevated-risk circumstances where proper washing/disinfection could become excessive or where access to cleaning stations is not readily available. Gloves must be removed and disposed of after a specific task, and upon removal wearers must wash hands (for a minimum of 20 seconds) or apply hand sanitizer (>60% alcohol) immediately.

[7] Acceptable nose/mouth face coverings for use as emission barriers (only) include: Loose-fitting masks (commonly termed "surgical masks"), tight-fitting masks where the device body is the filtering material and the design does NOT incorporate an exhalation valve of any kind (irrespective of protection rating, such as N95, P99, KN95, etc.), or even home-made or make-shift face covers (e.g., home-made masks, bandanas, balaclavas, etc.). In accordance with the CDC, an acceptable cloth face cover should: fit snugly but comfortably against the side of the face; be secured with ties or ear loops; include multiple layers of fabric; allow for breathing without restriction; and be able to be laundered and machine-dried without damage or change to shape. Note: Any negative pressure elastomeric respirator devices utilizing filter cartridges (e.g., ½-face or full-face respirators) are strictly prohibited for use as emission barriers - use of such devices is for wearer inhalation protection only and requires prior concurrence from the H&S manager.

[8] Latex gloves are also effective and acceptable for protection against COVID-19 but come with a risk of severe allergic reaction to latex from sensitized individuals.

- Other PPE – Face shields used in conjunction with cloth masks, of use of Tyvek-suits, may have useful applicability in some situations to minimize exposure risk, or may be required by regulation or the client.

10. Ventilation, Fresh Air, Air Circulation

In some fieldwork environments both indoors (such as site trailers, treatment system facilities, host facilities) as well as outdoors (staff congregation points), a possible viable infection-risk-reduction measure—used in conjunction with physical distancing and face covers--may be to optimize the amount of air movement and/or fresh air ventilation in both the breathing zone and general work areas. The ultimate purpose is to mitigate localized areas of elevated inhalation risk, particularly at points of personnel convergence where site restrictions or the specific nature of the work may compromise physical distancing or use of face covers. Suggestions/examples are listed below:

- Facilitate passive cross ventilation – Where multiple personnel may temporarily congregate (sampling hand-off points, outdoor tailgate meetings, under canopies set up outdoors for rain/sun protection) consider strategies that facilitate "comfortable cross ventilation:"
  - Place canopies in an open location (not shielded by buildings, vegetation) to maximize passive air currents;
  - Set up indoor and outdoor workstations in locations with natural ventilation—avoid areas with limited air movement, "stagnant air."
  - Keep doors of portable toilets open at all times between use.
- Maximize fresh air – In site trailers, and inside on-site/client facilities, keep doors and windows open at all times (as practical), limit the use of air conditioners--eliminate "cocooned air-conditioned environments" with limited fresh air. Where work is conducted in an indoor environment, locate congregation points near open windows, open doors, or "high-bay" areas with open vents and natural air movement.
- Active cross ventilation – Under ambient conditions of little or no existing air movement, use fans or blowers to increase air movement across the breathing zone at elevated-risk congregation points, such as:
  - In site trailers with doors/windows open;
  - During outdoor tailgate meetings near site trailer under canopy during rain;
  - Working in "close quarters" on boats/barges;
  - Louvered exhaust fan in an enclosed/indoor treatment system facility;
  - For some work tasks, such as indoor drilling with fuel-powered equipment, use of blowers/fans is standard procedure for mitigating airborne combustion emissions, and will have the added benefit of reducing the airborne levels (local accumulations) of COVID 19.

IMPORTANT NOTE: Where Geosyntec personnel may see increased use of electrical fans and blowers, increased reliance on fresh air and the outdoors for hygienic purposes, and decrease reliance on "cocooned air-conditioned environments," we must be more cognizant of measures to mitigate electrical hazards (take precautions in wet locations, use GFCI-protected power sources), and heat stress hazards (drink fluids, more frequent breaks, shaded break locations, cooling personnel by air-movement, personal wellness).

11. Maintain Healthy Lifestyle, Facilitate "Wellness"

- Personal wellness – Spend extra effort to stay well (e.g., eat healthy, get enough rest) to maintain a strong immune system; develop strategies to maintain emotional wellness.

- Exercise, stretching – Make time for solitary physical exercise, stretching, yoga or similar activities; avoid group activities where possible; maintain physical distancing; use only your own personal exercise equipment and accessories.
- Ergonomics – As employees are adjusting to new work strategies, which may entail working from home in a non-office environment, all employees are encouraged to consider strategies for maintaining appropriate work-station ergonomics.

Here are some additional resources to provide to employees and post in field office locations

- COVID-19 Factsheet
- Geosyntec COVID Procedure: "COVID-19 Considerations & Mitigation for On-Going Business Operations"
- Keep Calm and Wash Your Hands
- Wash Your Hands!
- Make a Field Hand Washing Station
- Making Hand Washing Solution from Liquid Bleach
- Know the facts about Coronavirus Disease 2019 and help stop the spread of rumors

COVID Travel Authorization Request Form

Employee:	Shekhar Melkote
Planned Start of Travel:	10/20/2020
Planned End of Travel:	10/22/2020
Destination:	Caledonia, NY
General Purpose (Project Name, Proposal Name, Marketing, Internal):	JCI Jones Chemicals, Inc. Caledonia, NY
Activity (Field Work, Meeting):	Routine Annual Monitoring Well Sampling

Please Answer the Following Questions:	Yes	No	N/A	
1. Does travel exceed 100 miles from origination, cross state lines, or require hotel stay, public transit, or international travel?	Yes			If "No," this form is nc
2. Is travel necessary to achieve the stated objective of the work?	Yes			
3. Could local resources near the destination reasonably perform the task in lieu of this employee?	No			
4. Personal considerations:				
4a. I or one of my travel companions is at high risk of serious illness from COVID-19.	No			
4b. I live with a person at high risk of serious illness from COVID-19.	No			
4c. I have shown symptoms of COVID in last 14 days or have been in close contact with an infected person in the last 14 days.	No			
5. Geographic considerations:				
5a. I have checked to see if the origination or destination states or localities have travel restrictions (e.g. quarantine periods) in place (see Tab 2.)	Yes			
5b. I have checked relative rates of transmission at the origination and destination to be aware of high incidence rates (i.e. "hot zones") (See Tab 2.)	Yes			
6. Travel Safety				
6a. Travel will be via personal or rental vehicle, with one person per vehicle. Rental vehicles will be sanitized at high-touch points.	Yes			If travel by air or publ

6b. I will minimize use of public restrooms, wear facial covering in commercial establishments, and practice good hygiene while traveling.	Yes		
6c. I will bring my own food and drink or else eat and drink from take-out where possible.	Yes		
7. Destination Safety			
7a. For hotel stays, I will stay at reputable hotel chains with robust sanitation protocols reviewed in advance.	Yes		
7b. I will refer to other hotel guidance in Section 6.4 of the Procedure (see Tab 3.)	Yes		
7c. During work, personnel will be able to maintain a 6 ft interpersonal distance and/or use facial coverings.	Yes		
7d. If visiting a Geosyntec office, I have notified a colleague there to expect my arrival.			NA
8. Other comments:			
Fieldwork will be outside. Site is vast with plenty of outdoor and open warehouse spaces . Any meetings could be held outside.			