

APPENDIX J

ENVIRONMENTAL PROTECTION

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APPENDIX X – ENVIRONMENTAL PROTECTION

Soil Testing Conditions

Anyone importing a minimum of 2 m³ of soil materials (clay or topsoil) into the municipal boundaries of the City of St. Albert (the City) must complete the following steps and undertake the testing noted below. Testing results, a description of use, and a project name/description must be submitted to the Environment Branch by the City Development Supervisor or Project Manager at least two weeks prior to the use of or transportation of the material. Soil must be imported within six months of being tested. Samples shall be submitted to an accredited laboratory which:

- Meets international standards (IOS/IEC) requirements to carry out specific tests;
- Has a quality management system in place; and
- Actively participates in a proficiency testing program.

One *in situ* composite sample for every 10,000 m³ must be taken per project and material type (clay or topsoil), by mixing all the individual grab samples collected from a defined area into a single composite sample. Collect 10 individual grab samples to combine for a single composite sample. If the project requires less than 10,000 m³, then only one composite sample will be required. Each sample will be compared to Alberta Tier 1 parameters applicable to the final land use for approval.

Testing must include the following parameters:

A. Clay Fill

- Heavy metals
- Hydrocarbons – BTEX, PHCs F1-F4
- Salinity

B. Topsoil

- Heavy metals
- Hydrocarbons – BTEX, PHCs F1-F4
- Salinity
- Invasive weed species
- Clubroot (if taken from an agricultural area or imported from outside the City)

Each parameter is compared to the [Alberta Tier 1 Soil and Groundwater Remediation Guidelines](#), except for noxious and prohibited noxious weed species and clubroot, which will not be approved when present. If the material is deemed unsuitable, another source must be identified, and the testing process must be repeated.

Dewatering

This section guides contractors on their legal obligations with respect to environmental management of dewatering during construction activities. This section relates specifically to construction sites where earthworks will intersect with groundwater.

Dewatering is the process of removal of any water that accumulates in earthwork excavations that intersect groundwater, because of, for example:

- Aquifers/high water table
- Seepage of soil water/groundwater

Water may also accumulate due to storm events or rainfall. In the case of stormwater dewatering, sediment bags must be used.

Dewatering and accessory activities may include but not be limited to:

- Cofferdam installation
- Shoring for dewatering and seepage prevention purposes
- Pumping/diverting water, either using a surface pump, or a dewatering well to lower the groundwater table
- Fish relocation
- Monitoring

Site de-watering can have a potential adverse impact on the environment. Improper disposal may have a negative environmental impact via sedimentation in watercourses or the introduction of contaminants into receiving bodies of water, including the sanitary/stormwater system. The discharge of contaminated water or sedimentation into the stormwater system or water bodies is regulated by federal, provincial, and municipal law. De-watering management practices must comply with all regulatory requirements. Testing of release water (excluding storm events/rainfall) must be completed prior to the initial discharge to sewer or sanitary systems, with results forwarded to the Development Officer, Project Manager, or the Utilities representative. The [Alberta Surface Water Quality Guidelines for Protection of Aquatic Life](#) must be followed.

All reasonable and practicable alternatives to environmental discharge for dewatering groundwater should be considered. Prior to commencing any discharge into the sanitary sewer system, application and approval must be granted in writing by both the City Utilities Branch Manager (or designate) and ARROW Utilities via a permit. The [St. Albert Sanitary Sewer Bylaw](#) must be followed.

Because groundwater in St. Albert can potentially have higher (naturally occurring) levels of metals, this water cannot be discharged to the storm system, or to surface waterbodies. It must be discharged to the sanitary system (an activity requiring approval) or sent for disposal to an approved facility, which may require issuance of a manifest to a designated City representative. The [St. Albert Storm Sewer Bylaw](#) must be followed.

Note: If dewatering wells are used, a professional dewatering contractor must be contracted for both the installation and decommissioning of all wells. Total volumes dewatered should be reported to the City Project Manager(s) at the end of the dewatering period. Proof of provincial dewatering approval must be presented if requested.

Pesticide Application

Under the City's Integrated Pest Management (IPM) Plan, pests are defined as any living organism that has an undesired effect. It is important to note that some organisms can exist in their environment and not be considered pests, and that thresholds determine when that organism becomes a pest and requires direct management.

Some pests are regulated pests that the contractor has a responsibility to monitor, control and/or eliminate as per the federal and provincial regulations. These can include prohibited and noxious weeds, invasive plants, insects or diseases. Common pests can include, but are not limited to:

- Turf, tree and vegetation diseases and their vectors;
- Prohibited, noxious and regulated species. These can include regulated weeds, animals, insects and diseases named under municipal, provincial or federal legislation;
- Invasive species, which can include plants, animals, insects and nursery stock of concern, which can jeopardize natural area health; and
- Insect and rodent pests that can affect structural assets and buildings.

Contractor involvement in IPM activities within the scope of the IPM Plan includes but is not limited to:

- Managing weeds and invasive species associated with new developments, construction or infrastructure projects, rehabilitation projects or other activities;
- Managing rodents associated with temporary construction trailers and in newly completed landscaping, and
- Managing structural pests associated with buildings and their associated infrastructure.

The IPM Plan uses an evidence-based decision-making framework for pest management decisions that can include a combination of techniques, including physical treatments, biological control, habitat manipulation and the judicious application of pesticides. The decision-making process, following the principles of the IPM Plan, must be documented and made available upon request.

Pesticide use is regulated both federally and provincially and refers to many types of pest control products that are made from active ingredients that are synthetic, naturally occurring, or biochemical. These can include herbicides to control weeds, insecticides to control bugs, fungicides to control plant diseases, and rodenticides to control rats and mice.

Pesticides can cause adverse effects or ineffective results if not used:

- In accordance with the Canadian product label;
- At a suitable stage of the pest's development;
- Under appropriate weather conditions; and
- In accordance with legislation and the City's IPM Plan that respects sensitive areas and the responsible use of pesticides.

All spills and releases of pesticides must follow Section 4.5.1.2.19.6 of the City of St. Albert Municipal Engineering Standards, and additional reporting may be required in accordance with the Pest Control Products Incident Reporting Regulations to the Health Canada - Pest Management Regulatory Agency (PMRA).

Anyone involved in the supervision or application of a pesticide on City property must:

- Develop and maintain documentation of their decision-making framework related to their planned pesticide application;
- Provide proof of a valid Pesticide Service Registration;
- Only use products registered for use in Canada by the PMRA and follow all label instructions;
- Demonstrate appropriate class(es) of pesticide applicator certificate(s) for the type of pesticide treatment being considered; and
- Prior to application Contractors must:
 - a) Notify the City of St. Albert at least 48 hours (excluding weekends and holidays) prior to the intent to use a pesticide on City property;
 - b) Wait to receive written confirmation before proceeding with a pesticide application on City property. Failure to do so could cause unwanted harm in a location identified to the City with health and/or environmental sensitivities;
 - c) Provide the City with a copy of the pesticide application record for each treatment site to the appropriate City contact within 48 hours following completion of the treatment. You must provide the copy of the pesticide application records following the activity; and
 - d) Place site signage as directed.

Control of Weeds and Invasive Species

Accidental transport of invasive species via construction equipment is a significant risk (examples include flowering rush, crayfish, and zebra mussels). All equipment, vehicles, tools and other items must be clean of soil, aquatic organisms and plant matter (especially seed heads) prior to entering project sites.

Decontamination of Construction Equipment Used Within the Bed or Banks of Waterbodies

Whirling disease is a fish disease that affects the salmonid family of fish, which include trout and mountain whitefish. The disease is caused by a parasite that affects the cartilage of the fish head, spine and gills. A marked "whirling" swimming behaviour may be observed in fish as the parasite invades cartilage and impairs the nervous system. While not harmful to humans, whirling disease can cause high levels of mortality to fish. The disease can be transmitted from infected locations to other waterbodies by the movement of infected water or sediment on gear, equipment, watercraft or vehicles.

The Sturgeon River is known to be located within a Yellow Zone area, posing a high to moderate risk of contamination. The Government of Alberta is committed to preventing the spread of whirling disease in Alberta beyond the infected watersheds. In addition to whirling disease, this process will minimize the spread of other fish diseases and aquatic invasive species, such as zebra mussels. To prevent the spread of Whirling Disease, the following requirements must be followed:

- Machinery must arrive on site in a clean condition and be free of invasive aquatic species, dirt, noxious weeds or prohibited noxious weeds; and
- Alberta Environment and Protected Area's (Alberta Environment) [Decontamination Protocol for Work in or Near Water](#) (the Decontamination Protocol) must be followed to meet regulatory conditions. The protocol can be found on the Government of Alberta website.

For construction equipment (i.e., personal gear, turbidity monitoring equipment, etc.), follow the decontamination best practices including following the Decontamination Protocol at the Stop the Spread of Whirling Disease website (found on the Government of Alberta website) associated with the Alberta Environment Risk Zone the project is occurring within.

Payment for Decontamination of Equipment

All costs associated with complying with decontamination protocols and reporting will be considered incidental to the work, and no separate or additional payment will be made.

Control of Clubroot

General Clubroot, caused by *Plasmodiophora brassicae*, is a serious disease of cruciferous crops (i.e., mustards, canola, etc.) which can result in severe yield losses. Clubroot has been declared a pest under provincial legislation.

All operations should be carried out in accordance with the following Provisions and Best Management Practices outlined in the Alberta Clubroot Management Plan (see Soil Testing Conditions section above).

Additionally, all heavy and earth moving equipment must be washed prior to mobilization to site. The City may inspect the equipment upon mobilization to site.

Soil Conservation and Stockpiles

Stockpile management is applicable on all construction sites where materials are stockpiled.

Controls typically used to manage stockpiles include:

- Mowing and/or trimming before weeds go to seed
- Stockpile duration restriction
- Plastic sheeting cover
- Sediment control fence
- Diversion of runoff
- Biodegradable erosion control logs
- Soil stabilization

If this activity is applicable to the scope of your services, practices to follow are:

- (a) Include management of soil stockpiles in the site erosion and sediment control plan.
- (b) Provide temporary stabilization of exposed soils if wind or water erosion, or both, could contribute sediment to off-site areas, including water bodies, streets, storm drainage systems and property. Stabilize the stockpile surface with surface roughening, temporary seeding and mulching, erosion control blankets, or soil binders;
- (c) Soils stockpiled for an extended period during the growing season should be mowed or trimmed regularly to prevent the growth and spread of weeds. If the stockpile is there for longer than 120 days, then it must be seeded and mulched with a temporary grass cover;
- (d) Stockpile locations should be located away from concentrated flows of stormwater, groundwater, drainages, inlets, water bodies, and other sensitive environmental areas;
 - i) For stockpiles on paved areas, rock socks must be used for perimeter control and all inlets with the potential to receive sediment from the stockpile (even from vehicle tracking) must be protected.
- (e) Assess and then strip topsoil from the project site and prevent admixing of topsoil and subsoil during stripping of the project site;
- (f) Identify approved stockpile material and prohibit stockpiling of any material not previously permitted;
- (g) Maintain a one metre separation between topsoil and subsoil stockpiles if possible;
- (h) Ensure that stockpiles are properly stabilized and contained to prevent any off-site impacts and ensure that stockpile slopes are not steeper than a 4H:1V ratio;
- (i) Place sediment control BMPs around the perimeter of the stockpile, such as sediment control logs, rock socks, silt fence, straw bales and sandbags;
- (j) Locate stockpiles in flat, contained areas of the project site;

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- (k) Record (i.e., sketch) all long term (greater than 30 days) stockpile locations and make these records available at the project site;
 - (l) For stockpiles in active use, provide a stabilized designated access point on the upgradient side of the stockpile;
 - (m) Control annual weeds on exposed soils before they can set seed to reduce the likelihood of spreading (see the Control of Weeds and Pests section above);
 - (n) Ensure equipment moving from areas with weeds or non-native species into natural areas is clean and free of weeds;
 - (o) Ensure any use of a registered herbicide is approved by the City representative in accordance with The City's IPM Plan (see the Pesticide Application section above);
 - (p) Frequently inspect and promptly repair/replace stock/spoil pile protections; and
 - (q) When the stockpile is no longer needed, properly dispose of excess materials, and revegetate or otherwise stabilize the ground surface where the stockpile was located.

The City reserves the right to request further erosion and sediment control measures.

Concrete Material and Saw Cutting/Coring Slurry

Concrete material, wastewater and saw cutting/coring slurry products are caustic. This material is a prohibited waste and is not allowed by federal and provincial regulation or municipal Drainage Bylaw to enter St. Albert's stormwater system or any waterway.

If this activity is applicable to the scope of your services, practices to follow are:

- (a) Ensure concrete washout water and saw cutting/coring slurry are contained and not allowed to enter St. Albert's stormwater system or any waterway;
- (b) Ensure saw cutting/ coring slurry or chute rinse water on the roadway is collected and removed via a vacuum collection system or built-in containment systems; and
- (c) Ensure concrete and chute rinse material is properly disposed of and does not enter a catch basin or waterway.