FortisBC (Electric) Wood Structure Maintenance

PEST MANANGEMENT PLAN

REFERENCE #FBCW – 25/30



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1.0 Introduction

1.1 FortisBC Electrical

FortisBC Inc. is an integrated regulated electric utility based in Kelowna, British Columbia. The company serves approximately 185,000 customers directly and indirectly in the southern interior of B.C. through its four regulated hydroelectric generating plants and approximately 7,000 kilometers of transmission and distribution power lines. Transmission lines carry high voltage electricity from FortisBC's four hydroelectric plants to more than 70 substations, where voltage is reduced for delivery to residential, commercial and industrial customers over distribution lines. Approximately 92,000 wood poles support the transmission and distribution lines, but most of the wood poles are for distribution line support.

As part of its Environmental Responsibility Policy, FortisBC is committed to ensuring that all activities associated with the delivery of safe and reliable power are completed in an environmentally responsible manner. Compliance with environmental regulations is part of the Policy commitments and is a duty that FortisBC takes seriously. The British Columbia *Integrated Pest Management Act* requires approved pest management plans (PMPs) for the management of wood rot and wood-boring insects. The PMP ensures compliance with the provisions of the *Integrated Pest Management Act,* and other applicable Federal, Provincial and regional laws and regulations; the responsible use of pesticides; the incorporation and use of integrated pest management; and public awareness of FortisBC's pest management programs.

The Company is cognizant that the presence of pests can adversely impact infrastructure integrity that can threaten worker and public safety and can compromise system reliability. In 2005, FortisBC developed a Wood Pole PMP for the management of wood rot and wood-boring insects that covered FortisBC's wood poles on all power line corridors, road frontage areas, generation facilities and electrical facilities throughout their service area as well as wood poles on FortisBC owned or leased property.

This PMP has been prepared to replace the existing PMP that expires on June 10th, 2020. As with the current PMP, this PMP incorporates the principles of integrated pest management and is designed to control and/or eradicate pest species that may cause wood rot or structural damage.

1.2 Geographic Boundaries of the Area to Which This Plan Applies [IPMR Section 58(1)(a)]

This PMP applies to FortisBC wood structures on all power line corridors, road frontage areas, generation facilities and electrical facilities throughout the FortisBC service area as well as wood structures on other FortisBC owned or leased property. A map of FortisBC's service area can be reviewed in Appendix 1.

1.3 Pest Management Plan

Under the British Columbia *Integrated Pest Management Act* a Pest Management Plan (PMP) is defined as a plan that describes:

- A program, for managing pest populations or reducing damage caused by pests, based on integrated pest management; and,
- The methods of handling, preparing, mixing, applying and otherwise using pesticides within the program.

According to the Act the term pesticide means a microorganism or chemical or other material that is used to prevent, destroy, repel, or mitigate a pest.

FortisBC, its contractors and agents, will use this PMP when carrying out wood structure maintenance throughout the FortisBC service area.

1.4 Person Responsible for Managing Pests [IPMR Section 58(1)(b)(c)]

Within FortisBC, the person responsible for managing pests and the principal contact for information relating to this PMP is:

Brenden Tostenson, R.P.F.
FortisBC Inc.
2850 Benvoulin Road
Kelowna, BC V1W 2E3
Ph: 1-866-436-7847

1.5 FortisBC Wood Poles

Transmission lines carry high voltage electricity (greater than 60,000 volts) from FortisBC's four hydroelectric generating plants to more than 80 substations, where the voltage is reduced for delivery to residential, commercial and industrial customers over distribution lines (less than 60,000 volts). FortisBC's right-of-way (ROW) transmission corridors extend 4,600 kilometers and traverse three mountain ranges from 400 meters to 1,300 meters in elevation, over a service area of 150,000 square kilometers through semi-arid deserts to interior rain forests. Much of the land through which these transmission lines run is used for a variety of public purposes, including recreational, agricultural, forestry and commercial.

The distribution lines traverse private, Crown and Federal lands. Most distribution lines run alongside public road allowances, and the remainder are located on public or private lands.

92,000 poles support the transmission and distribution lines of which 98% are wood and the remaining two percent are steel or concrete. 49,000 poles have third party contacts, where the poles are shared with other utilities such as TELUS. FortisBC maintains all joint use poles.

Wood is used for poles because it is strong, climbable, widely available, renewable, and economical. Wood poles are a proven product, produced and manufactured locally. Conversely, concrete and steel poles are not easily climbed and always require bucket trucks to access. Utility wood poles are purchased pre-treated and subsequent preservative use is for maintenance purposes.

Electricity is an essential part of each person's lives for economic, health, social and safety needs; therefore, a well-defined Wood Pole Pest Management Plan is critical for FortisBC to ensure reliable power supply to its customers.

2.0 Wood Structure Pest Management IPM Principles

Wood rot, wood pests and mechanical damage caused by pests to FortisBC wood poles must be managed by FortisBC to:

- Reduce wood pole failure, and
- Reduce the risks to public and worker safety, property damage, and increased service outages.

2.1 The Principles of Integrated Pest Management

To ensure effective pest management on all of its ROW corridors, FortisBC has adopted the principles of integrated pest management (IPM) into company programming. IPM means a process for managing pest populations that includes the following activities:

- **Planning (prevention)** and managing ecosystems to prevent organisms from becoming pests
- **Identifying** pest problems and potential pest problems
- **Monitoring** populations of pests and beneficial organisms; damage caused by pests and environmental conditions
- **Using injury thresholds** in making treatment decisions
- **Suppressing (pest treatment options and method selection)** pest populations to tolerable levels using strategies based on consideration of biological, physical, cultural, mechanical, behavioural and chemical controls in appropriate combinations and environmental and human health protection
- **Evaluating** the effectiveness of pest management strategies

FortisBC's Wood Pole Test & Treat program is an essential part of the IPM program for wood structures, ensuring a safe and reliable power supply system, while respecting the environment. The program inspects wood poles and uses wood preservatives to maintain and prolong the life of poles; this minimizes replacement costs and is crucial for safety and reliability.

Wood rot or structural damage from wood-boring insects can cause wood pole failure, and resulting risks to public and worker safety, property damage, and increased service outages. The financial and environmental cost of not treating wood poles is significantly greater than the cost of treating them. The use of wood preservatives reduces the number of trees that need to be harvested and can extend the service life of wood poles up to five times, depending on climate, location, and type of wood.

2.2 Prevention [IPMR Section 58(2)(a)]

Prevention of wood pole deterioration can be reduced by the following**:**

- Purchase of treated poles for new installations and when replacing poles that have failed,
- Pole selection criteria,
- FortisBC's pole Test & Treat (described under Section 2.3.1)

2.2.1 Purchase of Treated Poles

FortisBC tries to minimize wood pole deterioration (and reduce the need for using wood preservative pesticide treatments) by the purchase of high-quality wood and pre-treated wood poles. Western red cedar is the most common species purchased. Poles can be purchased that have been pressure and/or thermal treated with the oil-based wood preservative pesticides creosote, pentachlorophenol, copper naphthenate, or with the water-based wood preservative pesticides chromated copper arsenate, ammoniacal copper zinc arsenate.

Water-based preservatives form a hard-outer shell around the pole, whereas oil-based preservatives penetrate deep into the pole. The disadvantages of using the poles treated with a water-based preservative are that the hardened outer shell presents a climbing hazard for the powerline technicians. As a result, FortisBC prefers poles that have been treated with oil-based wood preservative pesticides.

2.2.2 Pole Selection Criteria

Pole types currently available for utility use are wood, steel, concrete, and composite. The challenge for FortisBC is to maintain its existing wood poles while at the same time considering wood pole alternatives for future replacements. The replacement structure must not only meet the requirements for transmission and distribution, but also the conditions of the environment, and the necessity to minimize costs.

Pole selection involves the following criteria:

- Pole use – transmission or distribution.
- Pole location – urban or rural setting.
- Physical constraints – terrain, semi-arid desert, rocky ground cover, forested areas, accessibility for ground crews.
- Compatibility with existing structures.

Not only must the pole be able to support the weight of the powerline given different weather conditions such as wind, snow, rain and sun, it must be able to withstand pest infestations and other factors that reduce the life of the structure. Beyond environmental conditions, proper placement requires that poles be buried or supported by guy wires such that they can withstand the weight of the lines and year-round weather conditions. In some cases, the poles are set in asphalt or concrete sidewalks or positioned inside an inverted culvert if soil conditions make it impossible for the ground to be dug out and the pole buried. Poles must also be placed in such a manner to allow for aerial man-lift maintenance or for a powerline technician to climb. Access is critical for both regular maintenance and for emergencies.

Concrete poles are challenging to climb and usually require bucket trucks to access. Concrete poles are very heavy and require the insertion of pegs for climbing. The presence of pegs makes it possible for members of the public to climb the poles and access the lines, creating an unacceptable safety hazard. Compared to wood, they are more easily damaged during transportation and installation.

Concrete and steel poles have a poor life cycle because their manufacturing, transportation and raw material extraction processes result in substantial environmental impacts, such as burning of fossil fuels. They are also significantly more expensive than wood poles.

Wood poles represent over 98% of the poles in FortisBC's service area, because they are climbable, widely available, are manufactured locally, derived from a renewable resource and represent a reduced public hazard.

2.3 Pest Identification [IPMR Section 58(2)(b)(i)(ii)]

There are two basic groups of pests that attack wood poles: above ground pests and below ground pests. Some pest species can be present both above and below ground.

The main pest species to be controlled under this PMP are:

- Wood-nesting ants (carpenter, cornfield and thatching),

- Termites (pacific dampwood and subterranean),
- Wood-boring beetle (powderpost, bark, buprestid and longhorn),
- Wood-decaying fungi (brown rot, white rot, soft rot).

In addition to the above, mechanical damage to wood poles may result in the need for remedial action. The most common causes of this damage are a result of nesting cavities and bill damage from woodpeckers, mechanical injury from vehicle impact, wear from repeated scrapings from truck trailers, farm machinery, lawn maintenance equipment, or constant strikes from water from irrigation equipment. An essential step in the IPM process is to correctly identify the pest problem, so that effective control programs can be implemented. The key to effective control is knowing the biology of the pest, including the life cycle, behavioural patterns, and habitat preferences. Once a problem species is identified, the pest manager can look up information on its biology.

Thorough knowledge of target species biology enables the pest manager to:

- Do an accurate job of monitoring a population by inspecting or trapping where a pest is most likely to be present.
- Plan preventative measures that modify the habitat to make it unattractive.
- Use the most appropriate controls at the correct time in the pest life cycle.
- Place controls where they will have the most effect.

2.3.1 Insect Pests

The presence of one or more of the following signs generally indicates an insect infestation:

- Obvious insect activity (i.e., their visual presence),
- Piles of sawdust-like material or wood fiber at the base of the wood poles,
- Round or oval holes on the surface of the pole,
- Galleries under the surface of the wood that may be filled with excrement or other material.

The species of insect can normally be identified by:

- Comparing specimens with an insect collection,
- Referring to pictures or pictorial keys,
- Recognizing characteristics of the damage, excrement or castings (called frass),
- Consulting experts for assistance with difficult or unfamiliar species.

Ants

Wood-nesting ants can be found throughout the FortisBC service areas. Ants are social insects and live in colonies. They hollow out nests in poles for shelter, but they do not eat the wood for food. The hollowing out can lead to loss of structural integrity in the wood

poles. The most common identification signs are ants moving around the base of the poles in search of food and piles of sawdust at the pole's base.

Ants tend to be more prevalent in areas that have a high-water table. In FortisBC's electric service area, they are found most predominantly, but not exclusively, in the west Kootenay, Grand Forks and Osoyoos areas. They commonly seek out areas of high moisture in and around wood poles and build their nests in damp wood. In most cases, decay is already present in wood before ants begin excavating nests.

Termites
Termites are social insects that live in large colonies. Termites eat wood, which is digested for them by protozoa (microscopic, one-celled organisms) living in their gut. In the fall, large swarms of winged females leave the nest to mate and start new colonies.

Wood-Boring Insects
Most damage by wood-boring insects (such as beetles and wasps) is caused by several different species of Powderpost beetles. They are attracted to damp wood and standing poles that already have internal decay. Pole failure is rare, but as the population increases, they may reduce much of the interior of infested wood to a powder.

Wood Decaying Fungi
Three fungal types, brown and white rot fungi and soft rot fungi, can attack the cell walls of the pole, reducing the strength of the pole. Most species enter the pole surface from the soil or through above ground checks or bolt holes. They break down the lignocelluloses complex that makes up the cell walls of the wood, causing structural weakening.

2.4 Monitoring Program [IPMR Section 58(2)(c)]

FortisBC’s obligation is to act before a structure fails. Preventative maintenance inspections and the application of remedial chemical treatments to eradicate decay is standard practice.

2.4.1 Pole Test & Treat Program

FortisBC's Pole Test & Treat Program is a preventative pest monitoring program. The Pole Test & Treat Program was adopted by FortisBC in 2004 and had been used successfully by West Kootenay Power for over 30 years in the same geographic area as covered by this PMP. The testing and treatment of wood poles involves an evaluation of the integrity of the pole's physical characteristics and serviceability despite deterioration or damage and taking measures to preserve the service life.

At regular intervals, FortisBC conducts testing and treatment of all in-service wood utility poles that are owned or operated by FortisBC. The FortisBC Pole Test & Treat has been designed to prevent the deterioration of the poles from decay fungi and insects. In the

program, wood preservative pesticides are applied (or re-applied) before the pests are present as a preventative measure.

The benefit of maintaining wood poles is to extend their service life, thereby minimizing costly replacements. The testing and treatment methods used are designed to ensure public, employee and contractor safety, provide appropriate reliability, and prevent high consequence failures.

The service life of wood poles is influenced by wood species, initial preservative treatment, climate, location, and maintenance practices.

2.4.2 Frequency of Monitoring

In-service wood poles shall be periodically inspected and maintained as required. Poles 16 years of age and older will be inspected as outlined later in this document and, if necessary, will receive remedial treatment. Following this inspection, in-service poles shall be inspected in an eight-year cycle. Under ordinary circumstances, poles newer than 15 years of age will receive only an aboveground visual inspection unless extraordinary circumstances apply. Reliability-centered maintenance principals of tracking degradation within a species, treatment, service territory, or maintenance program may alter inspection cycles to be more suitable and cost-effective.

The eight-year cycle constitutes a preventive program. Even though rot may not yet be present at the time of the maintenance cycle, the risk of incipient rot is significant. Long-term research has shown this to be the most effective (and an economic) cycle.

The length of the eight-year cycle was determined by considering a combination of the manufacturer's recommendations, research reports, wood pole type and size, climate and environment, and the practical requirements of the program. In general, the cycle is an industry standard, consistent between utilities.

2.4.3 Monitoring Methods & Data Collected

To decide whether wood poles can remain in service, be replaced, or be stubbed (reinforced with a short supporting column at the ground line), the selected poles are inspected by certified inspectors using conventional visual, sounding, and boring techniques.

The results of the inspections are used to determine what action to take in servicing a pole (i.e., action levels). The options include treatment, stubbing or pole replacement.

2.4.4 Above Ground Inspections

An inspection of all poles shall be made from the ground line to the top, before excavating for the below ground line inspection.

Above ground inspections include:

1. visual inspections to identify:
    - lateral breaks or cracks
    - above ground decay pockets
    - excessive spur cut
    - woodpecker holes
    - broken ground wires
    - signs of insect infestation
    - shell rot
    - pole top rot
    - rotten or split top
    - physical damage
    - broken crossarm or hardware
    - fire damage
2. probing and sounding to detect internal decay
3. drilling into the pole at ground line near the largest check, and at other locations where internal decay is suspected

If the pole is obviously not suited for continual service due to excessive shell-rot, or other serious defects, it shall not be excavated but shall simply be reported as a reject and recommended for replacement. If judged serviceable, it shall be excavated and further inspected.

This section is further broken down into external and internal inspections below.

2.4.4.1 External Inspections

External inspections are a visual inspection of the above ground zone of a pole or stub.

Defects that are too high up the pole to be properly inspected shall be documented in ArcFM, so a follow-up inspection can take place by a person qualified to climb the structure and inspect the defect.

Visual inspections above ground identify the following defects.

Shell Rot/Damage Such things as shell rot, lightning damage, physical damage, and fire damage can significantly reduce pole strength. Poles shall be identified for replacement based on the extent of shell rot or damage and the pole circumference.

Breaks Lateral damage (a break) occurs when a pole is over-stressed (e.g., after being struck by a motor vehicle), and can render the pole unsafe. A cracked pole should be recommended for replacement and reported immediately to the Line Construction Manager.

Woodpecker damage Generally, small woodpecker holes, particularly those that follow checks, do not significantly reduce the strength of a pole and do not have to be reported. A very large woodpecker hole, or several smaller woodpecker holes at the same general

location can weaken the pole significantly and may be an indication of insect infestation and/or unsound wood and must be reported.

Insect infestation can be recognized by obvious insect activity, piles of sawdust or sawdust-like material, round and oval holes on the surface of the pole, or galleries under the surface of the wood. Areas infested with insects shall be investigated by boring and probing.

2.4.4.2 Internal Inspections

Probing is used to detect decay in checks and pockets and can be done with a screwdriver or stiff wire. Rot should be suspected when wood yields after firm pressure is exerted on the wood within deep cracks and pockets. Suspicious areas shall be investigated by boring. **Note:** Jabbing sharpened bars into the surface of a pole or stub is not recommended as this may damage fungus resistant wood and allow rot to start in less resistant areas.

Sounding is used to detect internal decay of a pole or stub. Sounding shall be performed on all inspected poles. A hammer is used to strike the surface of the pole from the ground line to as high as can be reached. This shall be repeated for each quadrant of the pole. A sharp ring indicates sound wood, whereas a hollow sound or dull thud indicates hollow heart or decay. Seasoning checks, internal checks, and shell rot can affect the sound. Suspicious areas shall be investigated by boring.

Boring is done to determine the condition of the inner wood. Holes should be drilled using a bit diameter that is suitable for the treatment.

Shell thickness If internal decay is found above ground line by drilling, two additional holes shall be drilled, equally spaced around the circumference of the pole at the same horizontal plane. Shell thickness shall be measured through the inspection holes with a shell thickness indicator tool or other appropriate tool and the shell thickness measurements will be noted.

Note: Poles must be appropriately internally treated when stubbed.

2.4.5 Below Ground Inspections

Note: Do not excavate around a pole if it is unsafe to do so (e.g., the pole is rotted through at ground line, or a pole is not set deep enough in the ground). The minimum setting depth is 10% of the pole height plus two feet. Unsafe poles shall be reported immediately to the Line Construction Manager.

Below ground inspections include:

- excavating around a pole (as required for proper assessment and treatment of the pole),
- probing and sounding to detect internal decay,
- confirming internal decay by drilling,

- drilling for internal treatment.

2.4.5.1 External Inspections

The pole is excavated, and the old bandage is removed. If shell rot is present, it is shaved off from the pole using a scraper, wire brush, hatchet, or spud (small shovel).

2.4.5.2 Internal Inspections

Pockets and checks are probed, and any decay is removed. If there is no visible decay, but internal decay is suspected, drilling is done to confirm. If the effective circumference is equal or greater than the required circumference, drilling at the bottom of the excavation is done to check for decay further down the pole.

2.4.6 Backfilling & Clean-Up

After inspection and treatment, the excavated area shall be refilled and firmly tamped to avoid the possibility of subsequent settling. Do not backfill loose articles, turf, garbage or loose asphalt. To prevent damage to the bandage, protect the bandage with a shovel during backfill.

No debris, loose dirt, etc. is to be left in pole area in the case of city or private property poles. Private property turf, bushes, etc. are to be replaced with care.

2.5 Injury Thresholds & How Treatment Decisions are Chosen & Applied [IPMR Section 58(2)(d)]

FortisBC uses the principles of IPM to control wood rot and wood pests in its transmission and distribution poles. The result of the inspection process is a decision to replace, stub or use wood preservative pesticides to control these pests. Prior to undertaking a treatment on a utility pole, it is necessary to evaluate the serviceability of the pole. The strength of a pole is related to its physical properties – the larger the diameter and shell thickness, the stronger the pole.

The decision to carry out treatment or to recommend stubbing or replacement depends on the strength and circumference of the pole, the pole loading (equipment on the pole), and whether rot or other damage is present. This relationship is illustrated in Table 1 below.

Table 1: Criteria for Determining Treatment Options

Treatment Technique	Criteria for Decision Making
Stubbing (Non-chemical)	Wood poles are recommended for stubbing when: • The effective shell thickness below ground is less than the required value • The effective circumference at the ground line zone is less than the required value

	• The below ground line area of a pole is weakened beyond acceptable strength limits (causes of such weakening are biological decay and/or mechanical damage) • The above ground portion of the pole must be in good condition and meet the strength requirements
Pole Replacement (Non-chemical)	Poles are generally replaced due to pole maintenance inspections, or when other parts of the structure are replaced due to age, including cross arm timbers, insulators, and wires. Poles will only be replaced, when necessary, to reduce costs and support environmental objectives. Whenever possible, poles will be stubbed. Poles are recommended for replacement when: • The strength of the pole is inadequate • Extensive physical damage above ground is evident • The effective shell thickness above ground is less than the required value • Internal decay is evident at the band or bolt locations on a stubbed pole • The pole is unsafe to climb • The pole is relocated • A customer requests and pays for a pole to be relocated.
Wood Preservative (Chemical)	The injury thresholds for application of wood preservatives are: • The presence of insects in the wood, which would require immediate treatment • External treatment at the eight-year treatment cycle, if necessary. If there is no shell rot, no bandage is applied. If shell rot is present, a bandage is applied. If a bandage is already there, the monitoring crew will continue to bandage • Internal treatment at the eight-year treatment cycle, unless the pole is inside a no-treatment zone or other sensitive area.

2.6 Treatment Options & Selection Criteria [IPMR Section 58(2)(e)]

The three treat methods/options that may be considered under this PMP for wood pole maintenance include:

- Replacing wood poles
- Stubbing wood poles
- Wood preservative treatments (internal and external)

All methods/options will be carried out under the monitoring program.

2.6.1 Treatment Rationale

All wood poles will be tested and treated with a wood preservative every eight years, if necessary, unless there is an environmental restriction. The length of the eight-year cycle was determined based on the manufacturer's recommendations, research reports, wood

pole type and size, climate and environment, and the practical requirements of the Wood Pole Test & Treat Program.

There are many benefits to treating poles rather than replacing them:

- lower cost
- extended pole life
- fewer service outages
- enhanced public and worker safety
- less environmentally damaging
- conservation of trees
- reduced landfill waste
- reduced transport costs

2.6.2 Treatment Options – Non-Chemical [IPMR Section 58(2)(e)]

The non-chemical treatment options/methods that may be employed include stubbing and pole replacement. Table 2 provides a description and rationale and the benefits and limitations of each of these non-chemical treatment options/methods.

Table 2: Description & Rationale, Benefits & Limitations of Non-Chemical Options

Description & Rationale	Benefits/Limitations
Pole Replacement Pole replacement means the removal of an old pole due to damage or rot, and replacement with a new, pre-treated wood pole. The decision to replace a wood pole is based on the results of the shell rot and core rot formulas (i.e., the wood pole is below critical shell thickness, or the decay pocket is sufficiently large).	Poles are treated as long as possible before replacement for many reasons (See 2.5.1. *Treatment Rationale*). Also, with pole replacement, holes must be dug, which means greater soil and environmental disturbance, more use of resources, service interruptions, and greater safety risks to workers and the public caused by pole replacement. Consequently, treatment with preservatives means fewer safety hazards to the public and workers. An ancillary benefit of replacing a pole is that it may allow a new pole to be placed into a better location, for example, a spot with easier access, fewer environmental issues, or lower traffic for enhanced public safety.
Stubbing Stubbing is the physical reinforcement of the ground line area of a wood pole using a short column, or stub, which is fastened to the pole. Although stubs can be made of wood or steel, FortisBC prefers steel stubs, which are easier to maintain and are less conspicuous.	The major advantages of stubbing are that there are no adverse effects on fish, wildlife, or the environment, and no hazards to workers or the environment, other than the need to use power tools for installation. Stubbing allows a delay in replacing the pole for several years, thereby saving money and trees. The disadvantages of stubbing are that they require specialized installation equipment.

The primary objective for stubbing wood poles is to delay replacing the pole (usually effective for several years). It must be noted that stubbing does not involve the use of pesticides, therefore stubbing has no effect on the presence of decay fungi or insects. It is strictly a physical reinforcement of the wood pole.	

2.6.3 Treatment Options – Chemical [IPMR Section 58(2)(e)]

The chemical methods/techniques proposed for use under this PMP include external bandage treatments, liquid internal treatments, solid internal treatments, and external treatments with insecticides for ant control. A description, rationale for use, and the benefits and limitations of each of these application methods/techniques, is shown in Table 3.

Table 3: Description & Rationale, Benefits & Limitations of Wood Preservative Application Options

Description & Rationale	**Benefits/Limitations**
External Treatments: Bandages Bandages are paste formulations of wood preservative pesticides that are used as external, below ground treatments on the wood pole surface, the area most susceptible to decay. These bandages are used to stop bacteria and fungi. The active ingredients that may be used in the bandages are copper naphthenate, sodium fluoride and borax. Bandages can be either pre-made by the manufacturer (Cobra Wrap) or the active ingredient(s) (Cop-R-Plastic, CuRap 20) may be applied onto a piece of poly-backed kraft paper and then applied to the wood pole on site. Poles are only bandaged if external shell rot is already present. The treatment is designed to act as an external barrier to prevent fungi from penetrating the wood, or to prevent the exterior pole surface from decaying further. **Pre-Manufactured Bandages**	Both pre-manufactured bandages and bandages made on site are effective in preventing insect and fungal entry into the wood pole and in inhibiting below-ground decay on the pole surface. The advantage of the active ingredient, copper naphthenate, is that it is resistant to leaching by moisture due to its oil solubility. The disadvantage of the copper naphthenate is that it remains near the wood surface in the area where the bandage was applied, thus giving only limited effectiveness in eradicating internal decay, but proving excellent control of fungi on the wood pole surface. Using a combination of the copper naphthenate and sodium fluoride (Cop-R-Plastic) gives the advantage that the sodium fluoride moves fully into the

A gel-type preservative, contained within absorbent material covered on both sides by plastic, is incorporated into the pre-manufactured bandages. The copper naphthenate in the bandage remains in direct contact with the wood after the bandage is applied to the pole using staples, and slowly move into the outer surface of the wood pole (up to 5 cm into the sapwood). **Bandages Made on Site** These bandages require the applicator to apply a layer of the wood preservative paste to plastic-backed Kraft paper according to the label instructions. The procedure for applying the finished bandage is the same as with the pre-manufactured bandages.	sapwood, thus providing good control of interior decay. Site-made bandages are also cheaper than pre-made bandages. However, there is a greater potential for workers to get product on them when making bandages onsite, or to drop the product on the ground.
Internal Treatments: Liquid Liquid formulations are used for the internal protection of wood poles against fungal and insect attack. Following inspection, all wood poles receive internal liquid treatments, even if no decay is noted during the inspection, as a preventative measure against fungi that may gain entry through the drilled holes. However, if the pole is located within an NTZ, the pole will only be tested, not treated. Applicators drill several holes in the pole above and below the ground line. Using a low volume pressurized sprayer wand attached to a canister, the holes are filled with wood preservative. The holes are then sealed with plastic plugs. **Disodium octaborate tetrahydrate**, a water-soluble inorganic borate salt (Tim-Bor Professional) is used to control termites, carpenter ants and powder post beetles (and fungi) within the wood pole. The diluted product is injected under low	The fumigant moves vertically above and below the application point (with a small amount of lateral movement), which makes the treatment very effective against internal decay. The treatment is contained within the poles, so there is no effect on people or the environment. Treatment lasts a long time because the chemicals are trapped inside the wood pole and cannot escape. The preservatives generally only become active when the moisture content of the wood is also enough (30%) to breed fungi. Internal preservatives are more cost-effective than solid preservatives. Limitations include the fact that special handling and application techniques are required, the preservatives have adverse effects on aquatic life, and the preservatives are not as effective below ground because the moisture content is too high.

pressure into drilled holes near the insect colony, and the drilled holes are then sealed to prevent further pest entry. Depending on the wood species and the moisture content of the wood, the active ingredient can penetrate the wood to varying depths. The insects are killed by ingesting the disodium octaborate tetrahydrate. Boric acid is a low toxicity mineral applied in the form of borax or a boron-containing salt. It is used when a fumigant cannot be applied for environmental reasons. It is effective against fungi and insects such as carpenter ants, disrupting their digestive system.	Also drill bits are used repeatedly without being sterilized and could possibly carry pest organisms from pole to pole.
Internal Treatments: Solid Internal solid treatments consist of inserting a preservative in the form of solid rods or powder into the wood pole. Copper & boron Cobra Rods are most commonly used and are placed only in sound wood. Applicators drill holes in the pole above and below the ground line, insert the rods into the holes, and seal the holes with plastic dowels. These products are used primarily for fungal control, although carpenter ants are also controlled. Mode of action is through disruption of feeding and digestion. When the moisture content of the wood increases above 25% to 30% (where fungal development begins), the rods will slowly dissolve and form boric acid, which is toxic to fungi and some insects such as carpenter ants. The boric acid is	The rods have a very low toxicity to aquatic organisms and are the product of choice near bodies of water and sensitive riparian areas. Internal treatments using solid rods are very effective, as the released boric acid moves to areas of high wood moisture where the decay fungi and insects are normally located. Within FortisBC's service area, the dry climate is conducive to the slow breakdown of the rods, making them effective more than 6 years in many cases. Rods also pose less health risk to workers compared to fumigants, and boron application is easier than fumigant. With solid rods, there is no opportunity for spills. A disadvantage to rods is they are about 33% more expensive than wood fumigant.

water soluble and will move to all areas with high moisture content.	
External Treatments: Insecticides Insecticides may be used to control wood nesting ants in and around wood poles. This may be applied by a low-pressure sprayer to the ant trails surrounding the pole and into visible cracks and crevices on the surface of the pole.	For remedial control of organisms attacking wood or for protection of wood against future infestations. Can be used as a solution, powder or foam.

2.6.4 Treatment Options: Active Ingredients [IPMR Section 58(3)(c)]

Table 4 lists the active ingredient and trade names of the wood preservatives proposed for use under this PMP, the equipment required for their application, and the method/technique used for their application.

Table 4: Identification of wood preservatives proposed for use, application, active ingredient, equipment and methods/techniques by which they are applied.

APPLICATION	ACTIVE INGREDIENT	EQUIPMENT
External treatment: paste	• Copper naphthenate and sodium fluoride • Copper naphthenate • Copper naphthenate and borax • Copper Hydroxide • Sodium tetrahydrate decahydrate, copper hydroxide, carboxymethyl cellulose, Gluonic acid, Sodium gluconate	• Bandage • Stapler • Shovel • Scraper
External treatment: brush grade	• Copper naphthenate • Zinc naphthenate	• Brush
Internal treatment: Liquid	• Disodium octaborate tetrahydrate	• Drill / Hand Pump sprayer • Plug
Internal-External treatment: Liquid, powder or foam	• Disodium octaborate tetrahydrate	• Drill / Puffer • Plug • Sprayer
Internal treatment: solid	• Anhydrous disodium octaborate • Anhydrous disodium octaborate + copper +	• Drill • Hammer

	boric acid	
External Treatment: Paste / Pouch	Sodium Tetraborate decahydrate +copper hydroxide + copper salt + 2-aminoethanol	• Stapler • Shovel • Brush

2.7 Post Treatment Evaluation [IPMR Section 58(2)(f)]

All applications of wood pole preservation pesticides are undertaken under contracts issued to qualified companies in possession of a valid BC Pest Control Service Licence. A representative portion of the wood poles that are tested and treated with wood preservatives will be inspected to ensure compliance with the commitments made in this PMP and all regulatory requirements. The Line Construction Manager performs work (quality) audits on contractors.

Inspection contractors receive:

- A detailed inspection twice per year: one at start-up and one part way through the contract term (e.g. truck, equipment, tools, qualification of employees).
- A work observation (drive-by) periodically (observe work methods, check for safety items). Drive-by observations are not announced.

Quality of work is checked including:

- Compliance with contract and program requirements
- Use of proper techniques and practices
- Proper clean-up of area
- Records completed

As well, contractors are expected to audit their crews regularly and supply a copy of the audit results to the Line Construction Manager.

3.0 Environmental Protection Strategies and Procedures

All pest management activities undertaken under this PMP (both chemical and non-chemical) incorporate measures designed to protect the natural environment including:

- Strategies to protect community watersheds.
- Strategies to protect domestic and agricultural water sources.
- Strategies to protect fish and wildlife, riparian areas, bodies of water and wildlife habitat.
- Strategies to prevent contamination of food intended for human consumption.

3.1 Protection of Streams, Waterbodies, Wells and Water Intakes

FortisBC will ensure wood preservatives are not applied within established no-treatment zones (NTZ) according to the *Integrated Pest Management Regulation (IPMR)*.

No-treatment zone means an area of land that must not be treated with pesticide. As per Section 79 (1) of the *IPMR* requires the NTZs found in Table 5 be maintained when wood preservative pesticides are used under this PMP for wood pole maintenance.

Table 5: Size of No Treatment Zones (NTZ) required for various water sources.

Product	Fish bearing body of water/Fish bearing wet or dry stream	Non-Fish bearing body of water-wet	Non-Fish Bearing Body of Water-Dry (provided pole is greater than 10m from fish-bearing body of water)	Water Well	Point of Diversion from water intakes (where any side of land slopes upward)
[1] **Boron & Cobra Rod Solid Internal Preservative**	1-meter NTZ	0-meter NTZ [2]	0-meter NTZ [2]	1-meter NTZ	1-meter NTZ
Liquid Internal Preservative	3-meter NTZ	1-meter NTZ	0-meter NTZ (above and below ground line)	10-meter NTZ	10-meter NTZ upslope
External Brush-on Treatment	3-meter NTZ	1-meter NTZ	1-meter NTZ	10-meter NTZ	10-meter NTZ upslope
Ground line Bandages	3-meter NTZ	1-meter NTZ	1-meter NTZ	10-meter NTZ	10-meter NTZ upslope

1 Boron Rods include Cobra Rods and are listed in **Schedule 2** (excluded products) of the *Integrated Pest Management Regulations*.

2 Solid internal preservatives (boron & cobra rods) can be used in locations that may be below the water table for portions of the year, provided they are not fish-bearing, not connected to fish-bearing, and not a wetland. Entry level of drill must be above water level.

Groundwater Identification requires physically searching around each pole for wells or groundwater sources, **1m NTZ** search when using boron/cobra rods and a **10m NTZ** search when using Cu-Bor.

Added Precaution: Always read product labels prior to application to ensure proper no treatment zones are obtained.

3.2 Environmental Feature Protection Strategies and Procedures

Table 6: Strategies and procedures for the protection of environmental features.

Environmental Feature	FortisBC PMP Protection Strategy/Procedure
Community Watersheds – defined under the BC *Forest Range Practices Act* [IPMR Section 58(3)(b)(i)]	• Locations of community watersheds are verified by accessing information from the Ministry of Environment or local governments • Wood preservative pesticides will not be stored within a community watershed for more than 24 hours prior to their use, and removed from the community watershed within 7 days of their use, unless they are stored in a permanent structure • Wood preservative pesticide use will be discontinued if pesticide residues or pesticide breakdown products are detected at a community watershed water intake, and further use will not be undertaken until the BC Ministry of Health Services (Medical Health Officer) has been satisfied that all required measures have been implemented to preserve water quality • Prior to the use of pesticides, community watershed maps will be consulted to determine if pesticide treatments are within a community watershed or are within 100 meters upslope of any water intake, or 30 meters down slope of any water intake. These are available on the provincial interactive mapping site "*Online Cadastre"* (Community Watersheds layer) www.srmwww.gov.bc.ca/sgb/IMF/index.html
Domestic and Agricultural Water Sources (including water intakes and wells)	• Domestic and agricultural water sources, including water intakes and wells, will be protected by adhering to the NTZs listed in Table 5 • A visual survey of the 10-meter area around the pole to determine if there are wells or surface water intakes present
Groundwater Sources, Surface Water Intakes	• Efforts will be made to identify groundwater sources (watersheds, wells, surface water intakes) in advance of treatment by using the best available information from FortisBC maps, the Ministry of Environment document/data base entitled "*Guide to Using the BC Aquifer Classification Maps for the Protection and Management of Groundwater"*, and local governments • Visually surveying areas adjacent to poles requiring treatment to determine the presence of domestic or agricultural surface water
Fish and Riparian Areas	• A minimum 15-meter NTZ will be maintained around riparian areas and bodies of water when cleaning or fueling

	application equipment and refilling pesticide dispensing equipment • Prior to control measures being implemented, the boundaries of any required NTZ shall be established and marked • During below ground inspections, if water fills the excavation, only solid rods (i.e. boron rods) will be used in the above ground portion of the pole, and in compliance with the NTZs listed in Table 5 • Poles sitting in water will be inspected and treated only if permitted by designated NTZs (i.e. the water around the pole must not lead directly to fish habitat)
Wildlife, Sensitive Wildlife Habitat, and Species at Risk [IPMR Section 58(3)(b)(ii)]	• Woodpeckers and other cavity-nesting species of wildlife tend to be attracted to wood poles because they resemble standing dead trees woodpeckers prefer because of the presence of insects and grubs. FortisBC's efforts are aimed solely at the damage caused by woodpeckers, not in controlling the woodpeckers themselves. Generally, if only woodpecker damage is causing the loss of structural integrity, the cavities are filled with a non-pesticidal rubber epoxy compound, or the pole is replaced. The filling of the cavities also serves to prevent the collection of moisture and increasing the chances of decay. • In many cases, the presence of woodpecker holes also indicates an insect infestation and/or unsound wood that may necessitate the use of wood preservation pesticides. Since woodpeckers attack the top portions of wood poles, it is unlikely they would come into contact with wood preservation pesticides that are only applied at or near the ground line. • Birds very rarely nest in wood poles, but if an active nest is present, the wood pole will not be removed unless for safety or reliability reasons. Since the tops of poles are not treated during the Wood Pole Test & Treat Program, wood poles with a bird's nest on top can be treated. When a wood pole with an osprey nest on top needs to be replaced, personnel will relocate the nest under FortisBC's osprey nest relocation program.

Protection of Food Intended for Human Consumption [IPMR Section 58(3)(b)(iii)]	• Wood preservative applications are generally not made near areas where food for human consumption is found or grown (e.g., fruit trees, berries or vegetable gardens). • Where wood preservative use occurs near these areas, applicators will use extreme caution. • In addition, preparation of below ground pole bandages, and cleaning, fueling and refilling of equipment will not be undertaken within 10-meters of any food used for human consumption. • Research has shown that there is minimal leaching of wood preservative pesticides into surrounding soil or water. Treatment is never undertaken in standing water, such as cranberry bogs. • Near certified organic farms, it is the responsibility of the grower to maintain appropriate buffers between their organic crops and power poles. As recommended by the Certified Organic Associations of BC (Standard 3, Land and Resource Management), buffer strips 8 meters wide (containing a hedge row or trap crop where feasible) must be located between certified organic crops and wood poles.
Monitoring Weather Conditions	• There is no need to monitor or record the weather for the Wood Pole Test & Treat Program because treatments are done below ground or restricted to within the wood pole itself.
Procedures for Pre-Treatment Inspections and Identifying Treatment Area Boundaries	• Since the treatment area is the pole itself, not a land area, there is no pre-treatment inspection for identifying treatment area boundaries. However, NTZs are maintained around bodies of water and wells.
Private & Public Property	• In sensitive areas, such as adjacent to parks, schools, daycare centers, lawns, landscaped areas, flowerbeds or domestic animals on agricultural lands, the groundline bandage will be covered to prevent accidental exposure. This is accomplished by using a pole bandage seal, which is an enamel covered aluminum sheet which is secured to the pole with aluminum galvanized nails and covers the above-ground portion of the ground line bandage. • It is the policy of FortisBC to ensure that the area directly adjacent to the wood pole receiving treatment is left in the same condition as before treatment, on both private and public property.

4.0 Operational Information

Appendix 2 provides details on the following operational practices required to be included in a PMP.

- Procedures for safely transporting pesticides [IPMR Section 58(3)(a)(i)]
- Procedures for safely storing pesticides [IPMR Section 58(3)(a)(ii)]
- Procedures for safely mixing, loading and applying pesticides [IPMR Sections 58(3)(a)(ii) and (iii)]
- Procedures for the safe disposal of empty containers and unused pesticides [IPMR Section 58(3)(a)(iv)]
- Procedures for responding to pesticide spills [IPMR Section 58(3)(a)(v)]
- Identification of each pesticide that will be used under the plan, the manner of its application, and the type of equipment required for each manner of application [IPMR Section 58(3)(c)], see Section 2.6.4

5.0 Reporting, Notification and Consultation

5.1 Reporting

Accurate record keeping allow both FortisBC and the Administrator, *Integrated Pest Management Act,* to monitor the quantity of wood preservatives used, and to ensure compliance with the *Integrated Pest Management Act and Regulation,* the commitments made in this PMP, and the contents of the Pesticide Use Notice. FortisBC will ensure that each of the required records described below are maintained.

5.1.1 Confirmation Holder Use Records

Each contracting firm that applies wood preservatives for FortisBC must maintain daily records of their use.

Under Section 35 (4) of the *Integrated Pest Management Regulation (IPMR) it is stated:* a licensee who uses a wood preservative must keep records described in subsection (1) (a) to (h). The requirements below must be for each treatment location and day of use.

- If performed as a service, the name and address of the person the service was performed.
- If performed for another licensee, permit or confirmation holder, the number of the person's licence, permit, or confirmation.
- If the use was not a service, the name and the address of the owner of manager of the treatment location.
- Name and certification number of the pesticide applicator certificate holder who used the pesticide or supervised the use.
- The date and time of the pesticide use.

- The name of the pest targeted by the use or the purpose of the pesticide use.
- The trade name of each pesticide used and its registration number under the Federal Act.
- The method and rate of application and the total quantity used for each pesticide.

5.1.2 Annual Report for Confirmation Holders

In accordance with Section 39 of the IPMR, FortisBC will provide to the Regional Administrator, *Integrated Pest Management Act,* the following information for a calendar year by January 31 in the next calendar year for operations conducted under this PMP during the calendar year.

- The name and address of the confirmation holder, and their confirmation number
- Trade name and active ingredient of the wood preservative(s) applied, including registration number under the Federal Act
- Quantity of each active ingredient applied in kg
- Total area treated

5.2 Notifications

FortisBC commits to providing the following notifications with respect to this PMP:

5.2.1 Notification of PMP Confirmation

FortisBC will, within 7 days of the plan confirmation date, make available, for the term of the confirmation, a copy of the confirmation and the PMP with relevant maps at their local offices to allow inspection by the public.

5.2.2 Annual Notice of Intent to Treat

As per Section 42 of the IPMR, for the purpose of an annual notice of intent to treat, FortisBC will forward, in writing, to the B.C. Ministry of Environment, at least 21 days prior to treatment in each year during which the PMP is in effect, an Annual Notice of Intent to Treat (NIT) for the following year.

This NIT will identify:

- Name and business location of confirmation holder,
- Proposed treatment areas,
- Proposed treatments,
- Wood preservatives proposed for use and their method of application,
- The total area proposed for treatment.

5.2.3 Requests to Amend the Pest Management Plan

FortisBC will forward, in writing, to the Ministry of Environment, amendments requested for the PMP. Amendment requests to add new application techniques or similar changes will not require further public advertising or First Nations consultation, provided that the amendment request is within land owned or controlled by FortisBC. Amendments to add new active ingredients will require further public advertising and First Nations consultation.

5.2.4 Notification of Contraventions

Section 72(1)(d) of the IPMR requires that a confirmation holder give written notice to the administrator on a contravention of the *IPMA* or IPMR that involves the release of a wood preservative into the environment. FortisBC commits to abiding by this requirement.

Failure of the contractor to observe the following requirements may be cause for contractor dismissal:

- Violation of the requirements of the *IPMA* or the IPMR,
- Mixing of wood preservatives in inappropriate locations such as near environmentally sensitive zones,
- Failure to use adequate personal protective equipment when required by the product label,
- Application of wood preservatives within prohibited zones,
- Improper cleanup or reporting of spills,
- Application of wood preservatives by uncertified personnel without appropriate supervision,
- Improper disposal of unused wood preservatives or containers,
- Application of wood preservatives under inappropriate or unsafe conditions,
- Failure to properly complete and submit daily operating logs or records,
- Handling, storing, mixing, transporting, or applying wood preservatives in a manner that violates product labels.

5.2.5 Posting of Treatment Notices [IPMR Sec. 5, 24, 64(4)]

As per Section 64(4) of the *Integrated Pest Management Regulation* public notification is not required for pesticide use for wood pole preservation. Treatment notices are not posted on individual wood poles that are treated.
For each wood pole treated with a wood preservative, the applicator will maintain a record of the date and the wood preservative that was applied.

5.3 Consultation

5.3.1 Public Consultation Plan

Prior to submitting a Pesticide Use Notice to the Ministry of Environment for PMP confirmation, FortisBC will carry out a consultation process seeking public and First Nations input including feedback from individuals adjacent to FortisBC property who have the potential to be significantly affected by the PMP.

The objectives of conducting consultations when this PMP is at the draft stage are:

- To increase public awareness of the PMP process and of the principles of Integrated Pest Management which are embodied in the PMP.
- To ensure that the public and First Nations have an opportunity to identify concerns, and for FortisBC to address those concerns, before the PMP is finalized and is submitted for confirmation.
- To ensure a transparent and accountable review process for the PMP.
- To educate the public on the need to conduct wood pole maintenance.
- To explain how the planning process (described in the PMP) recognizes the need to protect human health and the environment.

The public will be consulted on the PMP development via notices in local community newspapers and/or on web editions of news sources for the areas to which this PMP applies. As per Section 61(1) of the IPMR, at least 45 days before submitting a Pesticide Use Notice, the first of 2 notices will be published, or posted, within a 2-week period in newspapers/web editions circulated in the various communities (or nearest communities).

As per Section 61 (3), if a proposed pesticide use under a pest management plan has the potential to significantly impact an individual or member of an organization or community, the confirmation holder must make reasonable efforts, starting at least 45 days before submitting a pesticide use notice to the administrator, to contact and consult those individuals.

During the public consultation process, the draft PMP will be accessible to the public online and in various locations, as stated in the public notifications.

5.3.2 Public Consultation Report

FortisBC will prepare a Public Consultation Report containing:

- A summary of public consultations, including the names and addresses of those who provided input, the nature of their concerns and/or recommendations, and the FortisBC response.
- A list of newspapers/web editions in which notification of the pending PMP submission appeared, along with the publication dates and a photocopy, tear sheet, screen shots of a representative advertisement.

5.3.3 Indigenous Consultation Plan

In addition to the objectives for public consultation outlined in Section 5.3.1, FortisBC will consult with Indigenous communities to avoid infringement on Indigenous rights, treaty rights, or cultural values during the vegetation management program. Consultation is also undertaken to request authorization to undertake pesticide applications on Federal Reserve lands.

FortisBC not only has an obligation to consult with First Nations, but it must also attempt to address their concerns and accommodate their cultural interests. Consultation processes must consider the BC Treaty negotiation process, and current litigation actions by Indigenous groups respecting Indigenous land use or sovereignty. These major issues can have an impact on the FortisBC vegetation management program.

Considering the above sensitivities and special concerns, FortisBC is committed to establishing and maintaining positive relationships with Indigenous communities through meaningful and respectful consultation.

In conducting these Indigenous consultations, FortisBC will refer to the procedures outlined in the *August 2011 publication entitled "Draft Guidelines for IPM Proponents Conducting Consultations with First Nations"*, published by the BC Ministry of Environment, Integrated Pest Management Program as well as their *"Indigenous Engagement: A Guide for Integrated Pest Management Act Proponents"*, published September 2023.

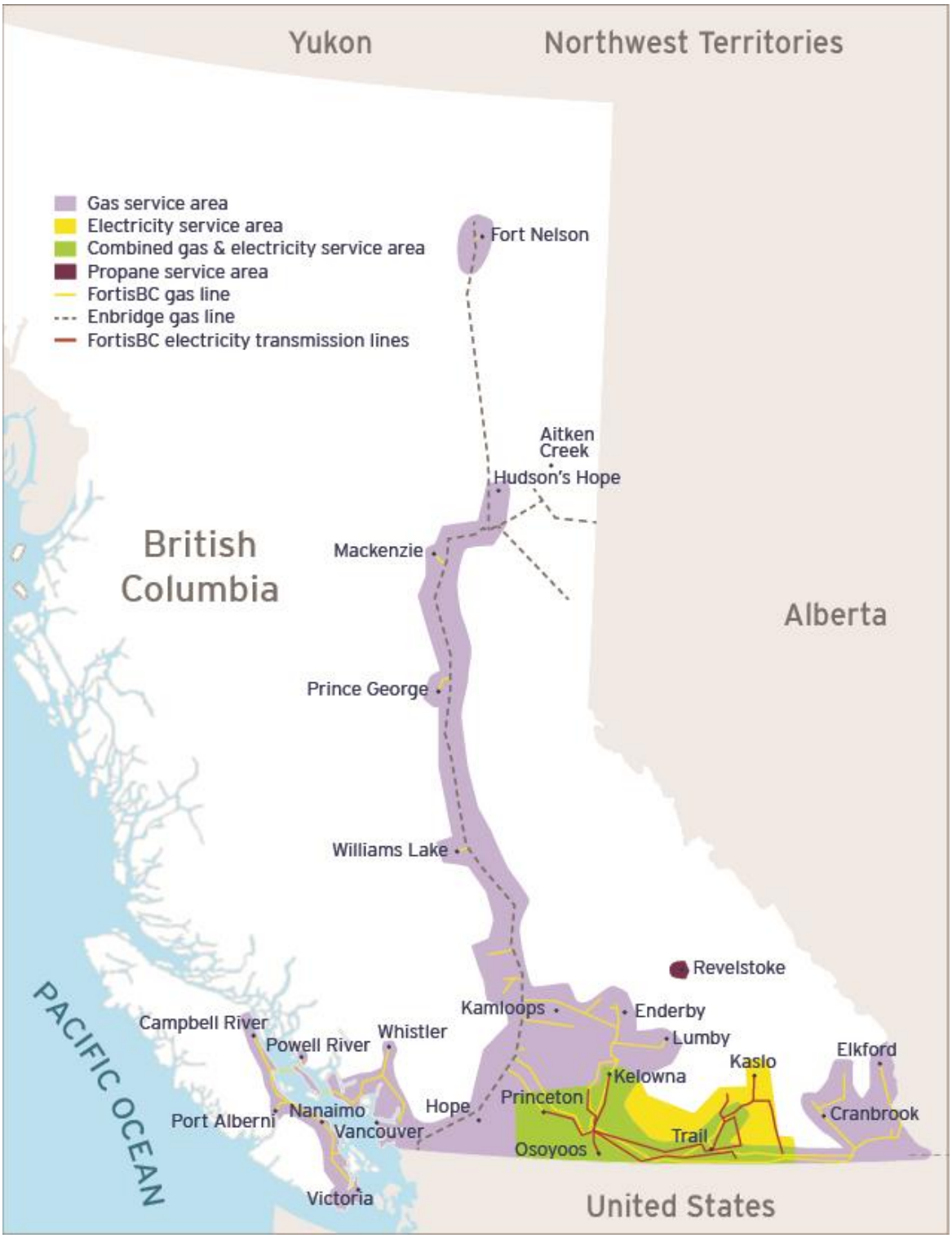
The FortisBC Indigenous communities' consultation plan is outlined below:

- Develop a draft pest management plan (this document) that incorporates all related government policies, procedures, standards and information into a single, comprehensive planning document that incorporates the principles of integrated pest management as the basis for decision making.
- The delivery of an introductory letter detailing the proposed Integrated Pest Management Plan to all required Indigenous communities, inviting their input into the development of the plan, providing groups with the PMP draft, maps and all additional material they require to properly assess the program.
- At minimum three efforts will be made with each Indigenous community.
- FortisBC will prepare a report that provides a summary of Indigenous consultations, including the names and addresses of those groups that provided input, descriptions of specific Indigenous interests and potential impacts, descriptions of any modifications implemented for accommodation purposes, a communications log, including copies of correspondence, meeting notes, and attempts to communicate.
- Summaries of engagement activities and outcomes.

5.3.4 Indigenous Consultation Report

To facilitate Ministry consideration of the adequacy of Indigenous consultations and of the FortisBC response to any issues raised, FortisBC will prepare a report that describes the consultation process and outcomes as described above. This report will be submitted to the Administrator, *Integrated Pest Management Act,* in conjunction with the submission of the Pesticide Use Notice application.

Appendix 1: The FortisBC Service Area



Appendix 2: Operational Practices in Wood Preservative (Pesticide) Use

This appendix provides details on the operational practices, including contractor responsibilities, on the handling and transport of wood preservative pesticides used for wood pole maintenance within the FortisBC service area.

Transportation of Wood Preservatives

The transportation of wood preservatives will comply with all current legislation, federal and provincial, governing their transport. In addition, the following procedures will be followed while wood preservatives are being transported for application under this PMP.

- Limited amounts of wood preservatives will be carried in any one vehicle. The quantity will be no more than what is necessary for each project.
- Wood preservatives will be carried in a secure lockable compartment, transported in original labeled containers that are separated from food and drinking water, safety gear and people.
- Spill containment and clean up equipment will be transported separately from wood preservatives, but near them, on each vehicle during transport and use.
- Appropriate documents such as Pest Control Service Operations Records, safety data sheets (SDS), this PMP and the PMP approval document, will be available during transport and use of wood preservatives.
- All documents and placards will be carried in, or placed on, transport vehicles if required under the *Transportation of Dangerous Goods Act* or the *BC Pesticide Control Act*.
- All wood preservative containers will be inspected for defects prior to transporting and will be secured against spillage or unauthorized removal.

Spill Equipment

Spill equipment will be ready and available at storage (including mobile storage), mixing and loading sites, and will include the following:

- Personal protective equipment, as recommended on the respective wood preservative labels.
- Absorbent material such as sawdust, sand, activated charcoal, vermiculite, dry coarse clay, kitty litter or commercial absorbent for oil/fuel; due to the nature of the pesticides used, spills and spill cleanup materials are not applicable.
- Long handled broom, shovel, and waste-receiving container with lid.

Spill Response Planning

A copy of an approved spill response plan will be available at each work site. All personnel working on a project involving wood preservatives must be familiar with its contents. If contractors working under this PMP have their own spill response plan, it must meet or exceed the contents of this plan.

The following procedures must be followed if a spill occurs:

- All personnel will be protected from wood preservative contamination by wearing appropriate protective clothing and safety gear.
- Any person exposed to a wood preservative will be moved away from the place of the spill and kept warm. First aid will be administered, as required.
- The source of the spill will be stopped.
- The spilled material will be stopped from spreading by creating a dam or ridge.
- The project supervisor will ensure operations cease until the spill is contained and the source is repaired.
- Absorbent material will be spread over the spill, if applicable, to absorb up any liquid.
- The absorbent material will be collected into garbage bags or containers, with the contents clearly marked.
- Contaminated soil or other material will be removed from the spill site and placed in garbage bags or containers, with the contents clearly marked.
- Where the wood preservative involved in the spill results, or may result, in its release into the environment, the person responsible for the product will immediately report it to the Provincial Emergency Program by telephoning 1-800-663- 3456 or, where that is impractical, to the local police or nearest detachment of the R.C.M.P.
- An approved representative of the PMP holder will be notified of the details related to the spill as soon as is practical by the project supervisor.

Wood Preservative Storage

No wood preservatives will be stored by FortisBC or by contractors at facilities owned or operated by FortisBC. The contractor will supply all wood preservatives.

Some contractors may store wood preservatives for extended periods of time in vehicles when performing several wood pole maintenance treatments for FortisBC. In these cases, the vehicle is considered to be a mobile storage unit. Persons responsible for the wood preservative storage will ensure that all wood preservatives are stored in a locked canopy or similar arrangement, separate from the driver and personal protective gear.

Wood Preservative Handling Procedures

All mixing and use of wood preservatives will be carried out by certified pesticide applicators in the Structural - Wood Preservation Category, or by individuals directly

supervised by a certified pesticide applicator in the Structural – Wood Preservation Category.

Mixing of wood preservatives must always be conducted in a safe manner. There will be no mixing or loading of wood preservatives within 10 meters of sensitive environmental features. Safety spill kits, spill response plans and first aid supplies will be present on site. Eye wash station(s) and protection clothing as recommended on the respective product labels shall be available on site. Product labels and SDSs will be available on site to ensure that all wood preservative use is consistent with labels. Wood preservatives will be kept, handled, stored, and transported in the container in which they were originally packaged and with the label originally affixed by the manufacturer, or in an appropriately designed and labelled container.

Protective Equipment

Protective clothing and equipment required during wood preservative handling will conform with Workers' Compensation Board Occupational Health and Safety Regulations. Equipment such as protective clothing, headgear, eye and face protection, gloves, footwear and respiratory protection equipment must be used where required.

Bystander and Worker Protection/Pesticide Treatment Signs

All of the conditions listed above under wood preservative handling are designed, in part, to protect bystanders and workers from exposure to wood preservatives. Because wood preservatives are only applied directly in to or around each wood pole, additional bystander protection measures (including the posting of treatment notices) will not be conducted.

Equipment Maintenance and Calibration

All wood preservative application equipment used in FortisBC property safe, clean, in good repair, and compatible and appropriate for the wood preservative being used. No calibration of equipment is required to apply wood preservatives. Bandages are pre-made, and those made on site are covered with a standard amount of preservative. For internal treatments, liquid is poured in until the drill hole is filled.

Disposal of Wood Preservative Containers and Residual Wood Preservatives

Disposal of empty containers shall occur according to the manufacturer's instructions as noted on the product label or provincial instructions and recommendations detailed in the BC Ministry of Environment, Lands and Parks document "*Handbook for Pesticide Applicators and Dispensers* "(1995). As a minimum, the following procedures will be followed for the disposal of wood preservatives and containers:

- Damaged containers are handled as outlined in the *Environmental Management Act*

and its *Hazardous Waste Regulation,* Section 42.

- Non-pressurized containers are triple rinsed. Pressurized containers do not require rinsing.
- At a minimum, empty wood preservative container shall also be:
    - Made so they cannot be reused by crushing, puncturing or damaging them; and,
    - Disposed of in a permitted sanitary landfill or other approval disposal site.

Due to the methods of application used for wood preservatives, residues do not occur.