GUIDELINES FOR THE PREPARATION OF THE ENVIRONMENTAL IMPACT STATEMENT FOR THE TEMBEC 2009-2028 FOREST STEWARDSHIP PLAN

1.0 BACKGROUND

Tembec Enterprises Inc. is proposing to harvest softwood timber resources to provide the fibre requirements for an existing pulp and paper production facility. Forest management activities within Forest Management Licence Area # 01 will be described in a 2009 - 2028 Forest Stewardship Plan (FSP) and will include harvesting, road construction, access development, and reforestation, including site preparation. The 2009 - 2028 FSP will be developed in accordance with the Manitoba Conservation document, "Manitoba's Submission Guidelines for Twenty Year Forest Management Plans" (December 2007).

All environmentally significant developments, proposed or operating in Manitoba are regulated by The Manitoba Environment Act (Chapter E125, CCSM). Manitoba Regulation 164/88 sets out the types of developments which are subject to an assessment/licensing process prior to construction and operation. The forest management activities being proposed by Tembec are identified as Class 2 developments, and are hence subject to the assessment/licensing process set out in Section 11 of The Act.

2.0 ASSESSMENT PROCESS

The main components of the assessment process, as defined in The Act, are:

1. Upon receipt of a proposal, Manitoba Conservation notifies the public through advertisements in newspapers and files a copy of the proposal in the Public Registries, with the provincial Technical Advisory Committee (TAC) appointed under the Interdepartmental Planning Board, with the Canadian Environmental Assessment Agency (CEAA), and through CEAA with other federal departments. The advertisements and the circulation to government departments invite written comments or objections regarding the proposal.

2. In response to concerns with, or objections to the proposal, the Director may request that an Environmental Impact Statement (EIS) be prepared. If an EIS is required, the Director will provide to the applicant, and make available to the public, guidelines for the preparation of an EIS. These guidelines are developed in consultation with TAC and CEAA. The public may be provided with the opportunity to comment on the Draft Guidelines.

3. The Director will issue Final Guidelines for the preparation of the EIS to the applicant after considering comments from all reviewers on the Draft Guidelines and any other information that he/she considers relevant.

4. Following Manitoba Conservation's receipt of the EIS from the proponent, it will be filed in the public registries, and with TAC and CEAA. The availability of the document for review by the public will be advertised, and written comments and objections will be invited regarding the adequacy of the information in the EIS.

5. The Director may, after reviewing the EIS, the TAC report on the EIS**,** and any public comments received, issue a deficiency statement with instructions that the proponent conduct further assessment work.

6. When the Director determines that the EIS is acceptable, he/she may make a licensing decision, or may request the Minister of Conservation (Minister) to direct the Clean Environment Commission (CEC) to conduct a public hearing.

7. Following a public hearing, the Commission will, within 90 days, prepare a written report with conclusions and recommendations on whether a licence should be issued, and if so, what terms and conditions should apply. The CEC's report will be submitted to the Minister and subsequently forwarded to the Director for his/her consideration.

8. Following receipt of the CEC's Report, the Director's decision shall be made and announced in accordance with the requirements of **The Environment Act** and regulations.

9. Pursuant to **The Environment Act**, any licensing decisions by the Director may be appealed to the Minister.

3.0 INTENT AND SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The Environmental Impact Statement for the proposal will:

- to the extent possible, apply an ecosystem-based approach to forest management at the landscape level, and employ adaptive management strategies;

- reference the proposed forest management activities as described in the 2009 - 2028 FSP;

- describe the public and First Nation consultation program undertaken for the proposal, including the results of the consultation;

- describe the existing biophysical, socio-economic, and land use conditions within the areas to be managed by the FSP;

- describe the need and justification for the proposal;

- identify any potential environmental impacts of the proposal;

- identify any potential social, cultural, health and economic impacts directly related to any environmental impacts of the proposal;

- describe proposed measures intended to mitigate and/or compensate for any adverse impacts to the environment including terrestrial and aquatic ecosystems, human health, and present or currently planned resource use;

- propose mechanisms for monitoring environmental impacts of the proposed activities and subsequent research that may be necessary;

- evaluate whether forest ecosystems will be sustainable if the activities proposed in the 2009 - 2028 FSP are carried out; and

- propose mechanisms to involve the affected public, First Nation, and resource users in the impact assessment of site specific activities and the development of mitigation plans.

An Environmental Impact Statement would incorporate, consider and directly reflect, where applicable, the Principles of Sustainable Development as contained in the "Sustainable Development Strategy for Manitoba" (1994), and the policies which have been developed or are emerging under the "Land and Water Strategy", such as "Applying Manitoba's Water Policies" (1994), "Applying Manitoba's Forest Policies" (1994), and "Applying Manitoba's Natural Lands and Special Places Policies (1995). The EIS should also show how the policies and/or principles encompassed in the following documents will be addressed:

- "Manitoba's Forest Plan ... Towards Ecosystems Based Management" (KPMG, 1996);
- "Defining Sustainable Forest Management in Canada: Criteria and Indicators" (CCFM, 2003);
- "The Canada Forest Accord";
- "National Forest Strategy (2003-2008), A Sustainable Forest: The Canadian Commitment" (2003);
- "Timber Harvesting Practices for Forestry Operations in Manitoba" (MNR, 1996);
- "Consolidated Buffer Management Guidelines" (MNR, 1996);
- "Canadian Biodiversity Strategy" (DOE, 1995);
- "A Wildlife Policy for Canada (CWS, 1990)";
- "Forest Management Guidelines for Wildlife in Manitoba" (MNR, 1989);
- "North American Waterfowl Management Plan";
- "Policy for the Management of Fish Habitat" (DFO, 1991);
- "Forest Management Guidelines for Riparian Management Areas" (Manitoba Conservation and Manitoba Water Stewardship, 2008);
- "Manitoba Stream Crossing Guidelines for the Protection of Fish and Fish Habitat" (DFO & MNR, 1996);
- "Kyoto and Beyond" (Province of Manitoba Climate Change Action Plan, 2002);
- "Manitoba and Climate Change - Investing in our future" (Manitoba Climate Change Task Force, 2001); and
- Other Manitoba Guidelines:
    - "Forestry Road Management" (Manitoba Conservation, 2005);
    - "Brush Disposal Guidebook" (Manitoba Conservation, 2005);

- "Pre-Harvest Surveys" (Manitoba Conservation and Manitoba Water Stewardship, 2008); and
- "Protection of Softwood Understorey in Mixedwood and Hardwood Forests" (Manitoba Conservation, 2003).

The geographic scope of the investigation is Forest Management Licence Area # 01.

4.0 INFORMATION AND ASSESSMENT REQUIREMENTS

4.1 General

The information and assessment requirements for the proposal include:

1. Forest Management Area Description;
2. Environmental Impact Assessment;
3. Sustainability Assessment;
4. Mitigation;
5. Residual Impacts;
6. Monitoring and Research;
7. Public Input;
8. Technical Reference; and
9. Report Format.

During the Assessment, the proponent is encouraged to work closely with Manitoba Conservation's contact person for the proposal. The contact person will assist the proponent with any required interpretation of the EIS Guidelines and will provide on-going feedback to the proponent concerning the content and methodology of the assessment. In this way, any problems which may be revealed by the initial assessment work, which were not anticipated in the guidelines, can be dealt with, and the proponent will have the opportunity to identify and remedy any deficiencies as the assessment is proceeding. The proponent is also encouraged to consult with local interest groups and residents, including local First Nations communities that may be affected by this proposal, as well as other Manitobans who may have concerns.

When possible, information should be mapped or communicated using graphics. The scale of any graphic illustrations or maps presented in the EIS should be appropriate to the level of consideration given to the information during the assessment process.

4.2. Forest Management Area Description

Provide an overview description of the Biophysical Environment, Socioeconomic and Land Use Status, and the Existing and Past Forest Management Activities, within areas to be managed by the FSP. Use maps or graphical representation where appropriate, and provide information on all components listed below. If information on specific components is not available, indicate how and when the required data will be gathered.

4.2.1 Biophysical Environment

- General climate conditions.

- Geology, Topography, and Landforms:
  - an enduring features description on a natural region or ecoregion basis, indicating which enduring features are currently contained within the designated lands, and what protection standards and management regime are in place for the sites.
- Air:
  - local air quality; and
  - global carbon dioxide and oxygen budgets.

- Water:
  - streams, rivers, lakes and surface drainage;
  - wetlands, bogs, fens and marshes;
  - stream classification;
  - water quality that includes nutrients (nitrogen and phosphorus species), organic carbon species, and sediment load;
  - runoff and infiltration regimes;
  - location and characteristics of known groundwater sources, including recharge areas; and
  - shallow aquifers at risk of being cut off by road construction.

- Soils:
  - soil type and depth, including physical, chemical and biological properties;
  - soil stability as it relates to the potential for erosion;
  - soil structure as it relates to the potential for compaction;
  - nutrient status;
  - moisture regime; and
  - location of research sites.

- Vegetation:
  - productive forest land by site classification (based on soil characteristics and moisture status, and using the “Forest Ecosystem Classification for Manitoba” (1995) when feasible), cutting class, species, area, and volume;
  - classification and area (km^2) of non-productive forest land and non-forested land (use ecological land classification where feasible);
  - plant biodiversity;
  - threatened or endangered plant species or plant communities;
  - plant species at the extent of their range;
  - medicinal plants;
  - unique and protected ecosystems;
  - unique and non-protected ecosystems;
  - wildlife habitat, including sensitive habitats;
  - harvesting and gathering sites that are locally important; and

- location of research sites.

- Wildlife:
  - animal species (birds and mammals, plus available data for micro-organisms, insects, reptiles and amphibians), populations, habitat and seasonal use patterns;
  - threatened or endangered animal species;
  - animal species at the extent of their range;
  - critical habitat including but not limited to nesting, denning and calving sites, molting areas, wintering areas, and mineral licks; and
  - location of research sites.

- Aquatic Species:
  - aquatic species, specifying non-native species;
  - aquatic habitat that sustains or supports, or has a potential to sustain or support fish stocks for commercial, recreational or native fishing activities;
  - threatened or endangered aquatic species and habitats;
  - aquatic species at the extent of their range; and
  - location of research sites.

- Demographics:
  - general population measures; and
  - settlement patterns.

- Public and Workplace Health:
  - baseline mortality and morbidity data for the human population of the areas to be managed by the FSP; and
  - occupational injury and mortality data, including auditory and physical (both trauma and caused by vibration) as well as motor vehicle accidents.

4.2.2 Socioeconomic and Land Use Status

- Local economies.

- Local and regional infrastructure, including health care facilities.

- Community values (aesthetic, cultural and spiritual sites, as well as traditional lifestyles).

- Employment.

- Wild rice production.

- Mining claims and leases.

- Hydro and natural gas distribution systems.

- Commercial trapping, including existing trapper's trails.

- Commercial fishing, including existing fishermen's portages.

- Recreational hunting and fishing, including existing recreational portages.

- First Nations hunting and fishing for food.

- Crown Lands.

- Parks and special places:
    - Provincial Parks;
    - ecological reserves;
    - protected areas;
    - wildlife management areas;
    - wildlife corridors;
    - unique or sensitive areas; and
    - any adjacent protected areas.

- Recreational and aesthetic values.

- Tourism, including remote lodges and out camps.

- Wildlife outfitting.

- Public, including aboriginal, non-commercial use of forest resources, including:
    - hunting, trapping, fishing, and gathering, including for herbal medicines;
    - local use of timber for firewood, lumber, posts and poles;
    - campsites and cabins; and
    - all other non-harvesting forest uses.

- Social and cultural heritage resources, including sites or objects of ceremonial, archaeological, paleontological, historical or architectural value, as well as burial sites.

- Highways and roads, including existing traffic patterns and load limits, railroads, and air strips.

- Hiking, skiing, mountain bike, canoe routes, and snowmobile trails.

- Existing agreements and claims, including:
    - co-management agreements;
    - aboriginal and treaty rights, including but not limited to, resource access rights and treaty harvest areas;
    - treaty land entitlements; and
    - aboriginal/specific land claims.

4.2.3 Existing and Past Forest Management Activities

- Forestry road system:
  - location and description of all weather access and seasonal access forestry roads; and
  - reclamation of all weather access and seasonal access forestry roads.

- Water Crossings:
  - location, type, and condition of water crossings; and
  - former water crossing decommissioning success.

- Harvesting practices and associated activities:
  - species, volumes (compare to Annual Allowable Cut) and areas harvested;
  - operating/cutting area design, including shape, size, harvest methods and equipment used, leave areas, riparian management areas and buffers;
  - changes in the physical, chemical and biological properties of soils after harvesting;
  - potential alternative harvesting methods;
  - log storage landings and reclamation to minimize loss of productive forest;
  - location and number of residual chipping debris piles, and treatment and disposal methods; and
  - storage, handling, disposal or reuse of hazardous, non-hazardous, domestic, and recyclable solid and liquid waste, both on-site and off-site.

- Silvicultural Practices:
  - site preparation practices, including scarification techniques and draining;
  - pesticide application, including type, concentration and volume of pesticide used, method of application, and effectiveness of measures to protect applicators and the public from exposure to pesticides;
  - forest renewal, including species planted, regeneration success, and resulting species composition and ecosystem types;
  - stand tending, including thinning and pruning;
  - methods to maintain and protect biodiversity; and
  - methods to protect understory.

- Fire History:
  - fire management;
  - fire frequency, cause, and areas burned; and
  - regeneration after fire.

- Forestry Research :
  - tree improvement program; and
  - methods testing, including harvesting methods, site preparation methods, site improvement techniques, and pesticide research.

- Tree Growth:
  - rate of growth and growth variations for each tree species within the areas to be managed by the FSP; and
  - rotation periods for each tree species.

- Climate Change:
  - climate change implications and green house gas inventory calculated according to the guidelines developed by Environment Canada (http://www.ghgreporting.gc.ca/GHGInfo/Pages/page15.aspx) and the United Nations (http://www.ipcc-nggip.iges.or.jp/public/index.html).

4.3 Environmental Impact Assessment

The Environmental Impact Assessment should describe any potential environmental impacts, both positive and negative, associated with the proposal. All potential sources of impact from the activities described in the 2009 - 2028 FSP, including Road Construction, Access Management, Retirement and Reclamation, Harvesting Practices, Silvicultural Practices, and Research Activities should be considered. The environmental impacts should be related to, and assessed with respect to the Biophysical Environment, Socioeconomic and Land Use Status, and Existing and Past Forest Management Activities. In addition, any potential social, cultural, health, heritage resource, and economic impacts directly related to the environmental impacts of the proposal should be identified. The assessment should consider potential trans-boundary effects. In addition, the assessment should consider whether other environmental stresses such as global warming, ozone depletion, and air borne pollutants may affect the degree of any impacts from forestry activities.

Categorize all potential impacts as significant or insignificant, direct or indirect, and describe the location and severity of any impacts, as well as time frames within which they may occur. Where a range of impacts may result, these should be noted. "Worst case scenarios" should be considered for assessment purposes, where applicable. All assessment conclusions should be supported by technical information based on experience in Manitoba and/or elsewhere. Any deficiencies in the information about potential impacts should be clearly noted and addressed as stated in Section 4.7, Monitoring and Research.

4.4 Sustainability Assessment

Although the principles of sustainable development should be addressed throughout the EIS, specific information is requested on the following:

- Show how the 2009 - 2028 FSP addresses the policies and recommendations outlined in the documents “Manitoba’s Forest Plan ... Towards Ecosystems Based Management” (KPMG, 1996) and “Applying Manitoba’s Forest Policies” (1994).

- Evaluate whether proposed harvesting and regeneration practices will:

  - maintain the current species age class, structure and distribution at the landscape level;
  - protect the understory component (when present) of forest stands; and
  - produce a forest that will support ongoing harvesting at the proposed rate, in perpetuity.

- Evaluate whether sustainability of all forest values, including ecosystems and biological diversity, can be achieved in light of the proposed harvesting and regeneration practices, and proposed mitigation and protection measures.

- Assess the sustainability of forest ecosystems under the following scenarios:
  - increased or decreased frequency of fire;
  - increased or decreased insect and disease outbreaks;
  - depletion of soil nutrients; and
  - continued direct use of resources by aboriginal and non-aboriginal users.

4.5 Mitigation

Describe any steps which will be taken to mitigate or eliminate any impacts identified by the Environmental Impact Assessment, or to sensitive areas that may be identified in the future. This should include whether the proposed forestry practices will conform to the policies and principles encompassed in the documents listed in Section 3.0 of these guidelines. Mitigation of any impacts may involve identification of areas where timber harvesting cannot occur until a more detailed assessment is complete, or where constraints are such that no timber harvesting should take place. It may also involve changes to scheduling and/or location as well as alternative methods and options for:

- Road Construction, Access Management, Retirement and Reclamation;
- Harvesting Practices and Associated Activities;
- Silvicultural Practices;
- Forest Protection Practices; and
- Research Projects.

Where applicable, proposed mitigation measures are also requested for the following:

- Human Health Impacts:
  - any potential health impacts directly related to the biophysical, socioeconomic and land use impacts;
  - any potential impacts on health care services, caused by increased demand;
  - any human exposure to toxins; and
  - any workplace injury.

- Potential impacts associated with heritage resources:
  - heritage resources management strategy.

- Road Construction, Access Management, Retirement and Reclamation:
    - potential impact on other resource users within the areas managed by the FSP.

- Potential impacts to private forested land.

- Potential impacts associated with the location and number of residual chipping debris piles, and treatment and disposal methods.

- Potential impacts associated with the storage, handling, disposal or reuse of non-hazardous, domestic, and recyclable solid and liquid waste, both onsite and off-site.

- Potential impacts associated with pesticide applications.

- Potential impacts related to hazardous substances storage, handling and disposal:
    - includes but is not limited to gasoline and diesel fuel, pesticide and pesticide containers, lubricating products, and anti-freeze; and
    - mitigation will include spill prevention measures as well as contingency plans describing clean up measures to be used, should a spill occur.

- Any leachate from log storage, that is potentially toxic to aquatic species.

- Any adverse Socioeconomic Impacts:
    - mitigation may involve the distribution of economic benefits such as employment and training to any impacted parties.

- Any changes to the land base which may result from a land use review under The Provincial Parks Act.

4.6 Residual Impacts

Describe any impacts which cannot be prevented, eliminated, or mitigated, and outline any planned compensation programs.

4.7 Monitoring and Research

- **Impacts Monitoring:** Outline studies which may be required to clarify uncertainties regarding any impacts of proposed activities.

- **Mitigation Monitoring:** Outline programs proposed to determine the effectiveness of recommended mitigation measures.

- **Ecosystem Monitoring:** Outline monitoring which may be required to fill any data gaps with respect to Biophysical Environment, Socioeconomic and Land Use Status, and Existing and Past Forest Management Activities.

- **Forestry Research**: Describe any research which may be required to study:
  - methods to protect the understory when harvesting forest stands;
  - nutrient cycling;
  - hydrological relationships after harvest;
  - growth and yield;
  - effects of harvesting practices on biodiversity;
  - effects of harvesting on neotropical migrant species; and
  - feasibility of alternate road construction, access management, retirement and reclamation practices, silvicultural practices, harvesting practices, and forest protection practices.

4.8 Public Input

- Describe plans to inform the public, First Nations, and resource users of all future forest management activities in the areas managed by the FSP, and ways in which their concerns will be addressed.

- Describe mechanisms to allow public input from affected resource users, e.g. community monitoring committee.

4.9 Technical Reference

All assessment conclusions shall be supported by technical information. This information shall include:

- the credentials of the experts contributing to the EIS and comprising the study team;

- scientific reports and papers on topics relevant to the proposal, including technical studies of similar forest management activities conducted elsewhere; and

- original studies performed by qualified scientists or engineers, commissioned by the proponent, specific to the proposal.

4.10 Report Format

The Environmental Impact Statement shall include an executive summary and be written with a minimum of technical terminology. Where highly technical portions are essential, definitions or explanations shall be included. A glossary of terms shall also be provided. Deficiencies in scientific evidence should be clearly identified, including areas where there is no evidence specific to Manitoba. All null conclusions must be supported by credible analysis and documentation.

The Environmental Impact Statement shall make optimal use of maps, charts, diagrams, and photographs for presentation. Maps and diagrams should be presented at a common scale, appropriate to represent the level of detail considered, and where possible allow direct overlay for ease of reference. Specifically, maps indicating zones of impact on land and water use and areas of habitat should be of a common scale.

It is recommended that Tembec arrange to place a complete copy of the Proposal and EIS report onto a CD, in searchable pdf format, as to accommodate the accessing of that information on the departmental website. Please note, however, that in order to facilitate the placement of the information onto the department's website, the information must be broken down into individual pdf files, each being less than 5 megabytes in size. All file names must be in lower case characters only. Spaces or hyphens should not be used within the file name. An underscore should be used in place of a space or hyphen. The file name should also be kept as short as possible with some meaningful or descriptive title. The standard for file names is 10 characters or less, not including the extension.

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