

Sagatay Cogeneration LP

Whitesand First Nation

Renewable Energy Approval Amendment: Modifications Summary

March 29, 2018

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1.0 Amendment Summary

Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner are proposing to develop, construct and operate a Class 1 Thermal Facility in Armstrong, ON. The proposed project has undergone a number of design changes as a result of the negotiations with the IESO for a Power Purchase Agreement and refinement of the business case for the adjacent pellet mill facility.

In order to address long term economic and population growth in the communities of Armstrong and Whitesand First Nation, the electrical nameplate capacity of facility has been increased from 3.6 MWe to 5.5 MWe.

The technology to support the electrical generation has been changed from traditional high-pressure steam to Organic Rankine Cycle (ORC). The ORC technology can be operated without the need for a First Class Engineer or associated Second Class Engineer's as operators, effectively addressing significant labour costs and recruitment issues at the site. The shift to ORC will also allow for a thermal oil wood combustor versus high pressure steam boiler, which results in significant maintenance and operating costs.

In order to address the increased electrical generation on-site and an increase in the adjacent pellet mill heat demands, the maximum heat input of the biomass combustor will increase from 112.5 million kilojoules per hour to 173 million kilojoules per hour (nominal load of 116 million kilojoules per hour to support full production). The subsequent amount of biomass required to meet this maximum heat load will increase from an average of 235 green metric tonnes (GMT)/day to 300 GMT per day.

As part of meeting market demand and improving the business model, the adjacent pellet mill will be increasing from 60 000 tonnes/year production to 90 000 tonnes/year production. This increase will be done by adding a production line to the existing design.

Due to increase demand from regional forest products mills, the site will now be hosting a Wood Merchandising Yard (WMY), where all the wood fibre will be delivered to the facility in tree length form and sorted and processed based on quality and species. The WMY will allocate fibre for the pellet mill or the cogeneration plant and the logs will be now be processed (debarked/chipped) onsite to pellet mill feedstock specifications or to biomass fuel specifications.

The Emission Summary and Dispersion Modelling Report (ESDM) and Acoustical Assessment Reports (AAR) have been updated to reflect the increased facility production, change in technology and addition of new equipment.

All the proposed modifications will occur within the original Project Location and Project Study Area.

The project site was cleared during the fall of 2017 with initial civil works, installation of site lighting, roads, fire pond, stormwater and erosion control features installed. These will remain as per the original design are not subject to the Renewable Energy Approval (REA) amendment.

It is expected that final construction grade drawings will be completed during the summer of 2018 with construction to commence in fall 2018.

The following report identifies the major changes and provides rationale for the changes. It was determined that the proposed changes to the facility will not result in any significant impacts beyond what was originally identified in the original 2014 REA Reports and all existing mitigation and controls that were originally identified will be maintained and implemented as required.

2.0 Updated Project Description

Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing to develop, construct and operate a biomass fueled electric power and heat cogeneration plant, and wood pellet facility (“the Project”). The Project is located in an unorganized territory of the Thunder Bay District near Whitesand First Nation and Armstrong, Ontario. The unorganized territory is administered by the Armstrong Local Service Board and the Project will be located solely on the traditional territory of Whitesand First Nation.

The Project consists of the following main components:

- An adjacent Wood Merchandising Yard for log storage (to be operated by Sagatay Wood Pellets LP);
- A Woodyard with material processing buildings, handling and storage components, as well as access roads, a maintenance garage, diesel fuel storage/filling station, and waste oil building;
- A Biomass Cogeneration Plant, which will generate electricity for the Project and the nearby community, having a nameplate capacity of up to 5.5 MWe. It will also generate heat for use in the Pellet Plant and on-site buildings (to be operated by Sagatay Cogeneration LP);
- A Pellet Plant, which will create approximately 90,000 metric tons per year of residential and/or industrial grade wood fuel pellets (to be operated by Sagatay Wood Pellets LP);
- Wells to supply process water and domestic potable water for the facility;
- An on-site wastewater management system for facility process wastewater and domestic sewage;
- A fire water storage pond and pump building; and
- A transformer substation to interface between the cogeneration plant and the local grid operated by Hydro One Remote Communities.

The Biomass Cogeneration Plant is classified as a Class 1 Thermal Facility under Ontario Regulation 359/09 (O.Reg. 359/09) of the *Environmental Protection Act*. As such, the facility has a REA (4623-9W7K5Q) issued in December 2015. Pursuant to the original project scoping, in addition to the cogeneration plant, the intent is to have the woodyard, water supply, stormwater and wastewater component covered by the Renewable Energy Approval. Additional project components that are not considered part of the Cogeneration Plant (i.e Pellet Mill and Wood Merchandising Yard) are being permitted under an Environmental Compliance Approval (0428-9Z9R7B to be amended). The subject property was recently sold to Whitesand First Nation; a Ministry of Natural Resources (MNR) Class

Environmental Assessment for MNR Resource Stewardship and Facility Development Projects was completed as a requirement of this land sale.

3.0 Associated Reports

The following is list of all reports that were submitted with the original REA application. These reports have been reviewed and updates for each report are provided in Section 5.0. All original reports are accessible online at www.whitesandfirstnation.com.

- Project Description Report
- Natural Heritage Assessment
- Waste Assessment Report
- Surface Water Assessment Report
- Effluent Management Plan Report
- Design and Operations Report
- Construction Plan Report
- Decommissioning Plan Report
- Stage 1 Archeological Assessment
- Consultation Report
- Emission Summary and Dispersion Modelling (ESDM) Report
- Acoustical Assessment Report (AAR)

4.0 Summary of Proposed Changes

The following changes are the major changes being proposed for the facility and are the subject of the application for amendment. In addition to the changes, rationale is provided for each proposed change to describe why the amendment is being proposed.

4.1 Project Study Area

Existing	The Project Location also includes any temporary work areas required to construct the Project. The cogeneration plant, pellet plant, maintenance garage, wastewater management system, water storage pond, and associated equipment and temporary work areas will be contained within a boundary of approximately 35 ha [refer to Appendix 1 for previous site layout and Appendix 2 for proposed site layout].
Proposed Change	No change required.
Rationale	The Project Location and associated study area remain unchanged, any modifications will be within the approved study area and project boundaries as shown in Appendix 2.

4.2 Nameplate Capacity

Existing	The Project originally was designed with a nameplate capacity of up to 3.6 MW.
Proposed Change	The Project is proposing to change the nameplate capacity of up to 5.5 MWe.
Rationale	The Project is proposing to increase the nameplate capacity of the Cogeneration Plant up to 5.5 MWe to produce additional electricity to support increased production in the Pellet Plant and future community growth. There are no significant changes with the transmission equipment required for the site.

4.3 Cogeneration Plant Biomass Usage

Existing	The Project originally intended to use approximately 82, 315 GMT per year, 235 GMT per day.
Proposed Change	The Project is proposing to use approximately 106,500 GMT per year, 300 GMT per day.
Rationale	The increase in biomass usage by the Project is directly related to the proposed increase in electricity generation and associated heat demands for the larger pellet plant. The ESDM report confirms full compliance with Regulation 419 with the increased heat input requirements and fuel usage.

4.4 Cogeneration Process

Existing	The Project originally was designed to a Steam Rankine Cycle.
Proposed Change	The Project is proposing to change the cogeneration process to Thermal Oil Heat Source / ORC.
Rationale	The Project is proposing to change from the Steam Rankine Cycle to ORC to lower maintenance and operating costs. The cogeneration plant will require less down time for maintenance with ORC and does not require licensed operating engineers to manage and operate the plant, eliminating potential staffing issues of hiring a First-Class Engineer and associated operating engineers, reducing facility operational costs. Refer to Appendix 3 for process flow diagrams.

	<p>The AAR demonstrates full compliance with NPC-300 requirements using the new equipment design and layout.</p> <p>The proposed building footprint will be 410 m² smaller than the original proposal.</p>
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4.5 Woodyard

Existing	<p>The Project originally intended to have processed chips and hog fuel delivered to the site and the product would be delivered to chip pads.</p>
Proposed Change	<p>The Project is proposing that a Wood Merchandising Yard (WMY) to be located on the same property and will be operated by Sagatay Wood Pellets LP. All biomass will be delivered to the WMY as tree length and will be appropriately sorted, with high value wood to be sold to regional customers with the remaining wood to be used by the facility (as either cogeneration fuel or pellet plant feedstock). The WMY has a maximum storage capacity of 212 000 m³ (approximately nine months of full cogeneration and pellet plant production), with target capacity being around a four to six months supply of inventory. The wood will be stored on the ground on a gravel base.</p> <p>The WMY will send the wood to the facility (Sagatay Cogeneration) for additional processing, including four newly proposed buildings for processing:</p> <ol style="list-style-type: none"> 1. Slasher Building 2. Debarker / Chipper Building 3. Biomass Screening Building 4. Hog Fuel Process Building <p>The processed hog fuel and chips will then be moved to the hog fuel storage pile or the chip storage pile via conveyor belts.</p> <p>The addition of the WMY does not change original personnel requirements.</p>
Rationale	<p>The proposed inclusion of the new WMY and woodyard changes are a result of wood being delivered to the facility as tree length for processing on site versus off-site. Tree length harvesting and delivery to the WMY will result in better utilization of Crown forests as the facility will have the ability to sort high value wood and sell it to regional wood processing facilities.</p>

	<p>The biomass and pellet plant feedstock storage pads will be paved, and any stormwater generated will be addressed via sheet flow to the approved bio-swale. The amount of biomass (fuel and feedstock) stored on site will actually be a smaller volume than previously approved.</p> <p>The ESDM and AAR reports show full compliance with the proposed new equipment and layout.</p>
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4.6 Pellet Plant

Existing	The Project originally intended to produce approximately 60,000 metric tons per year of residential and/or industrial grade wood fuel pellets and would use approximately 139,000 m ³ /year of wood chips.
Proposed Change	The Project is proposing to increase pellet production to approximately 90,000 metric tons per year and would use approximately 187,115 m³/year of wood chips.
Rationale	<p>The increase in pellet production is required to improve the business case for the facility and address customer demands.</p> <p>The ESDM and AAR reports show full compliance with the proposed new equipment, production rates and layout.</p>

4.7 Stormwater

Existing	The current REA (and associated reports) identifies a number of requirements to address stormwater during construction and operation.
Proposed Change	There are no proposed changes to stormwater management.
Rationale	<p>The Project intends to fulfill all existing REA stormwater management requirements.</p> <p>Measures identified in REA Condition O – Stormwater Management and Erosion and Sediment Control have been implemented.</p>

4.8 Effluent Management

Existing	The current REA (and associated reports) identifies a number of requirements to address effluent from the process.
Proposed Change	There are no proposed changes to effluent management as there is

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	no increase in effluent created.
Rationale	<p>The Project intends to fulfill all existing REA effluent management requirements.</p> <p>Several measures identified in REA Condition N – Wastewater Management and Groundwater have been implemented, including N2, N3, N4, N5 and N9</p>

4.9 Specific REA Conditions

Condition	Current	Proposed	Rationale
B1 B2	<p>Construction and installation of the Facility must be completed with three (3) years of the later of:</p> <ul style="list-style-type: none"> (1) the date this Approval is issued; or (2) if there is a hearing of other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals. <p>This Approval ceases to apply in respect of any portion of the Facility not constructed or installed before the later of the dates identified in Condition B1.</p>	<p>Construction and installation of the Facility must be completed with three (3) years of the later of:</p> <ul style="list-style-type: none"> (1) the date this amended Approval is issued; or (2) if there is a hearing of other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals. 	<p>The Project construction and installation timelines have changed since the REA approval was issued (December 23, 2015). The proposed change will better reflect estimated construction and installation timelines.</p>
F1	<p>The temperature of the hot combustion gases in the Biomass Boiler, as verified by the continuous temperature monitoring system and other monitored process parameters, shall be demonstrated to reach at least 1000 degrees Celsius with a residence time of 1 second at all times.</p>	<p>The <i>Company</i> shall take reasonable steps to ensure that the operation of the <i>Combustors</i> meets the following targets:</p> <ul style="list-style-type: none"> (a) The temperature in the combustion chamber of each <i>Combustor</i> is greater than 1000 degrees Celsius; and (b) The residence time, of the products of combustion and the combustion air, in the combustion chamber is not less than one (1) second. 	<p>Align with current application and interpretation of Guideline A-13 per direction of Approvals Branch.</p>
M2	<p>The Company shall restrict the operation of the shipping/receiving trucks to</p>	<p>Remove condition.</p>	<p>Due to design changes, Acoustical Assessment Report demonstrates</p>

	the daytime hours from 7 am to 7 pm.		ability to conform with Guideline 24 hours a day.
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4.10 Notice of Project Change

A Notice of Project Change has been developed [Refer to Appendix 4] and will be distributed according to the requirements set out in Ontario Regulation 359/09 [Refer to Appendix 5 for Distribution List]. In addition to the distribution list, the Notice is anticipated to appear in the Chronicle Journal the week of May 21st.

5.0 Report and Study Updates

The following tables provide all updates that were made to associated reports with regards to the REA amendment. The updates reflect the changes to the facility as described in Section 4.0. The AAR and ESDM Report were both reissued with updated modeling data for this amendment, the previous reports are no longer valid.

Project Description Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..."
		"a Woodyard with material handling and storage components..."	"a Wood Merchandising Yard for log storage;" "a Woodyard with material processing buildings, handling and storage components..."
		"...having a nameplate capacity of up to 3.6 MW. It will also generate process steam and heat for use in the Pellet Plant and on-site buildings;"	"...having a nameplate capacity of up to 5.5 MWe. It will also generate heat for use in the Pellet Plant and on-site buildings;"
		"a Pellet Plant, which will create approximately 60,000 metric tons per year of residential and/or industrial grade wood fuel pellets;"	"a Pellet Plant, which will create approximately 90,000 metric tons per year of residential and/or industrial grade wood fuel pellets;"
1.1 Project Overview	6	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation ("Whitesand") as agent..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation ("Whitesand") as Limited Partner..."
		"The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	"The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
2.1 Name of the Project and Applicant	9	"Table 2 Name of the Project and Applicant Name of Applicant "...and Whitesand First Nation as Agent"	"Table 2 Name of the Project and Applicant Name of Applicant "...and Whitesand First Nation as Limited Partner"
2.3 Energy Source, Nameplate Capacity and Class of Facility	10	Table 3 Cogeneration Plant Average Daily Quantity: 235 GMT*/day Average Annual Quantity: 82,315 GMT*/year	Table 3 Cogeneration Plant Average Daily Quantity: 300 GMT*/day Average Annual Quantity: 106,500 GMT*/year
		Table 3 Pellet Plant Average Daily Quantity: 380 m3/day Average Annual Quantity: 139,000 m3/year	Table 3 Pellet Plant Average Daily Quantity: 512 m3/day Average Annual Quantity: 187,115 m3/year

Project Description Report Updates

Section	Page Number	Original Wording	Update
2.4 Contact Information	11	"The Project Applicant is Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent."	"The Project Applicant is Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner."
3.1.1 Woodyard	13	"The Project component relating to the woodyard can generally be characterized as the ancillary features that will be used to facilitate material transport, processing, conditioning, storage, and equipment operation and maintenance."	"The woodyard will be supplied with tree length wood from the adjacent Wood Merchandising Yard (WMY). The tree length wood is delivered to the WMY and appropriately sorted based on species and length, merchandisable wood will be sold to customers and process wood for the Project will be stored until needed. Wood delivered to the woodyard will be processed into chipped and hogged fuel. The Project component relating to the woodyard can generally be characterized as the ancillary features that will be used to facilitate log storage, material transport, material processing buildings, conditioning, storage, and equipment operation and maintenance."
		"Near the entrance of the site, there will be a truck scale to weigh transported materials, which will be delivered to the site in the form of hogged fuel, or chipped material."	"Near the entrance of the site, there will be a truck scale to weigh transported materials, which will be delivered to the site in the form of tree length wood."
		"The hogged material will be used as fuel for the cogeneration plant and the chipped material will be used as feedstock for the pellet plant."	"Tree length wood will be processed through a hog fuel process into hog fuel that will be used as fuel for the cogeneration plant and chipped material will be created by going through a slasher, debarker/chipper and biomass screening that will be used as feedstock for the pellet plant."
		"...to weigh transported materials, which will be delivered to the site in the form of hogged fuel, or chipped material."	"...to weigh transported materials, which will be delivered to the site in the form of tree length wood. The tree length wood will be processed into hog fuel and chipped material onsite. The hog fuel will be used as fuel for the cogeneration plant and the chipped material will be used

Project Description Report Updates

Section	Page Number	Original Wording	Update
			as feedstock for the pellet plant."
		N/A	The woodyard will have four buildings for processing tree length wood into hog fuel and chips. The following is a list of the approximate footprint of each building: <ul style="list-style-type: none"> • Slasher building: 456 m2 (4913 ft2); • Debarker / chipper building: 383 m2 (4121 ft2); • Biomass screening building: 155 m2 (1665 ft2); and • Hog fuel building: 174 m2 (1873 ft2).
3.1.2 Biomass Cogeneration Plant	14	"It will have a nominal capacity of up to 3.6 MW..."	"It will have a nominal capacity of up to 5.5 MWe..."
		"The Project is proceeding on the basis of using the steam Rankine cycle."	"The Project is proceeding on the basis of using a Thermal Oil Heat Source / Organic Rankine Cycle (ORC)."
		"Biomass quantities required for the cogeneration plant are estimated to be 82,315 Green Metric Tonnes (GMT) per year, or 235 GMT per day..."	"Biomass quantities required for the cogeneration plant are estimated to be 106,500 Green Metric Tonnes (GMT) per year, or 300 GMT per day..."
		"The steam Rankine cycle can generally be described in the following three steps: 1. biomass is combusted in a boiler to produce steam; 2. steam is used to drive a steam turbine, connected to an electrical generator, creating electricity; and, 3. steam is condensed and pumped for re-use in the boiler "	"The Thermal Oil Heat Source / Organic Rankine Cycle can generally be described in the following three steps: 1. biomass is combusted in a boiler to produce heat; 2. heat is used to vaporize organic fluid to drive a turbine, connected to an electrical generator, creating electricity; and, 3. the organic fluid is then condensed and cooled for re-use in the cycle"
	15	"The cogeneration component of the plant comes from the steam turbine exhaust, where steam at a lower pressure and temperature is used in the pellet plant biomass dryer system, and for heat in the on-site buildings."	"The cogeneration component of the plant comes from the ORC as it will supply thermal energy to the Pellet Plant biomass belt dryer and heat in the onsite buildings."

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Section	Page Number	Original Wording	Update
		"The total footprint of the cogeneration plant, including the heat source building, turbine building, cooling tower, ash collection/storage system, and ancillary equipment is expected to be approximately 1,330 m2 (14,315 ft2)."	"The total footprint of the cogeneration plant, including the heat source building, turbine building, ash collection/storage system, and ancillary equipment is expected to be approximately 920 m2 (9,900 ft2)."
		<p>"Generally, the equipment required for the cogeneration plant includes:</p> <ul style="list-style-type: none"> - a biomass dryer; - water treatment systems and storage tanks for process and domestic water supply; - a biomass dryer, furnace and boiler to generate steam; - steam turbine; - an oil tank and lubrication system; - an electrical generator; - a condenser and cooling tower; - water, wastewater, and steam distribution piping; - a steam/glycol heating system (to heat site buildings); - a fire suppression system; - pumps and fans; - a baghouse and exhaust stack; - an emission monitoring system; - wastewater management infrastructure (refer to Section 3.1.5); - a mechanical material handling system; - partitioned rooms (i.e., offices, lunch rooms, mechanical/electrical room); and - fuel tanks and a backup / emergency generator. 	<p>"Generally, the equipment required for the cogeneration plant includes:</p> <ul style="list-style-type: none"> - furnace and thermal oil heat source to generate hot thermal oil; - Organic Rankine Cycle turbine; - an oil tank and lubrication system; - an electrical generator; - air cooled heat exchangers; - water, wastewater and thermal energy distribution piping; - glycol heating system to heat site buildings - a fire suppression system; - a heating and ventilation system, including exhaust stacks; - pumps and fans; - ESP and exhaust stack; - an emission monitoring system; - an ash collection and storage system; - wastewater management infrastructure (refer to Section 3.1.5); - a mechanical material handling system; - partitioned rooms (i.e., offices, lunch room, mechanical/electrical room); and, - fuel tanks and a backup / emergency generator.

Project Description Report Updates

Section	Page Number	Original Wording	Update
3.1.3 Pellet Plant	15 - 16	"The pellet plant will utilize heat and electricity from the cogeneration plant to create approximately 8 metric tons per hour or 60,000 metric tons per year of residential and/or industrial grade fuel pellets. Biomass quantities required for the pellet plant are estimated to be 139,000 m3/yr, or 380 m3/day."	"The pellet plant will utilize heat and electricity from the cogeneration plant to create approximately 12 metric tons per hour or 90,000 metric tons per year of residential and/or industrial grade fuel pellets. Biomass quantities required for the pellet plant are estimated to be 187,115 m3/yr, or 512m3/day"
		"The total footprint of the pellet plant, including ancillary equipment and storage bins / silos is expected to be approximately 1310 m2 (14,100 ft2)."	"The total footprint of the pellet plant, including ancillary equipment and storage bins / silos is expected to be approximately 1310 m2 (14,100 ft2)."
3.2.1 Project Schedule	19	Table 4 Project Schedule Start of Construction: April 2015 Project Operation: 2016 - 2021 Decommissioning / Refurbishment: 2042	Table 4 Project Schedule REA Amendment Submission / Approval: April 2018 / September 2019 Start of Construction: September 2018 Project Operation: 2019 - 2044 Decommissioning / Refurbishment: 2045
3.2.3 Project Activities	20 - 25	Table 6 Project Activities by Phase Construction, Woodyard: "construction of the mechanical conveyor system, maintenance garage, biomass belt dryer, waste oil building, including foundations, and containment sump for waste oil building;"	Table 6 Project Activities by Phase Construction, Woodyard: "construction of the mechanical conveyor system, slasher building, debarker / microchipper building, hog fuel process building, maintenance garage, biomass belt dryer, waste oil building, including foundations, and containment sump for waste oil building;"
		Table 6 Project Activities by Phase Construction, Cogeneration Plan: "construction of the cogeneration plant building, including cooling tower, baghouse/exhaust stack, ash collection/storage system, and foundations;"	Table 6 Project Activities by Phase Construction, Cogeneration Plan: "construction of the cogeneration plant building, including exhaust stack, ash collection/storage system, and foundations;"

Project Description Report Updates

Section	Page Number	Original Wording	Update
		N/A	Table 6 Project Activities by Phase Operation and Maintenance, Woodyard: "log sorting, storage and merchandising in adjacent wood merchandising yard;"
		N/A	Table 6 Project Activities by Phase Operation and Maintenance, Woodyard: "log processing including slashing, debarking, chipping and/or hogging;"
		Table 6 Project Activities by Phase Operation and Maintenance, Cogeneration Plant: "- creation of steam through use of a boiler; - electricity generation from the steam turbine and generator; - cooling and condensing re-usable process steam; - operation of a steam/glycol heating system;"	Table 6 Project Activities by Phase Operation and Maintenance, Cogeneration Plant: "- creation of heat by combusting biomass; - heat is used to heat up an organic fluid and drive the ORC turbine; - electricity generation from the ORC turbine and generator; - operation of a glycol heating system;"
		Table 6 Project Activities by Phase Decommissioning, Woodyard: "dismantling of the mechanical conveyor system and ancillary equipment, biomass belt dryer, truck scale, truck dumpers, security equipment, fencing, gates, and signs;"	Table 6 Project Activities by Phase Decommissioning, Woodyard: "dismantling of the buildings, mechanical conveyor system and ancillary equipment, biomass belt dryer, truck scale, truck dumpers, security equipment, fencing, gates, and signs;"
4.0 Potential Negative Environmental Effects	27	Table 7: Potential Effects, Mitigation, Monitoring and Contingency Measures – Summary	This table will not change and all mitigation, monitoring and contingency efforts identified will continue to be implemented.
	35	Table 8: Potential Effects, Mitigation, Monitoring and Contingency Measures – Natural Heritage Assessment Environmental Impact Study	This table will not change and all identified mitigation, monitoring and contingency measures will continue to be implemented.
6.0 References	39	Neegan Burnside Ltd., October 2014. <i>Emission Summary and Dispersion Modeling Report.</i>	Neegan Burnside Ltd., March 2018. <i>Emission Summary and Dispersion Modeling Report.</i>

Project Description Report Updates

Section	Page Number	Original Wording	Update
Appendix A			Site Plan has been updated to reflect changes.
Appendix B			Detailed diagrams of the processes and equipment have been updated to reflect changes.

Natural Heritage Assessment Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	“Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing...”	“Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing...”
		"The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	"The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
		"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, material storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."	"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, log storage, material processing buildings, storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."
1.1 Project Overview	1	“Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing...” "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	“Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing...” "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
2.0 Description of Project Components and Activities	68 - 72	Cogeneration Plant: - construction of the cogeneration plant building, including cooling tower, baghouse/exhaust stack, ash collection/storage system, and foundations;	Cogeneration Plant: - construction of the cogeneration plant building, including exhaust stack, ash collection/storage system, and foundations;
		Cogeneration Plant: - creation of steam through use of a boiler; - electricity generation from a steam turbine and generator; - cooling and condensing re-usable process steam; - operation of a steam/glycol heating system;	Cogeneration Plant: - creation of heat through use of a boiler; - electricity generation from an Organic Ranking Cycle turbine and generator; - operation of a glycol heating system;

Natural Heritage Assessment Updates

Section	Page Number	Original Wording	Update
		Table 6 Project Activities by Phase Construction, Woodyard: "construction of the mechanical conveyor system, maintenance garage, biomass belt dryer, waste oil building, including foundations, and containment sump for waste oil building;"	Table 6 Project Activities by Phase Construction, Woodyard: "construction of the mechanical conveyor system, slasher building, debarker / microchipper building, hog fuel process building, maintenance garage, biomass belt dryer, waste oil building, including foundations, and containment sump for waste oil building;"
			Table 6 Project Activities by Phase Operation and Maintenance, Woodyard: "log sorting, storage and merchandising in adjacent wood merchandising yard;" "log processing including slashing, debarking, chipping and/or hogging;"
		Table 6 Project Activities by Phase Decommissioning, Woodyard: "dismantling of the mechanical conveyor system and ancillary equipment, biomass belt dryer, truck scale, truck dumpers, security equipment, fencing, gates, and signs;"	Table 6 Project Activities by Phase Decommissioning, Woodyard: "dismantling of the buildings, mechanical conveyor system and ancillary equipment, biomass belt dryer, truck scale, truck dumpers, security equipment, fencing, gates, and signs;"

Water Assessment Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	“Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing...”	“Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing...”
1.1 Project Overview	5	“Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing...”	“Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing...”
		<p>"The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."</p> <p>"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, material storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."</p>	<p>"The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."</p> <p>"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, log storage, material processing buildings, storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."</p>

Surface Water Assessment Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..."
1.1 Project Overview	1	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..." "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..." "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
		"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, material storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."	"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, log storage, material processing buildings, storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."
3.1.1 Woodyard	5	"The Project component relating to the woodyard can generally be characterized as the ancillary features that will be used to facilitate material transport, processing, conditioning, storage, and equipment operation and maintenance."	"The woodyard will be supplied with tree length wood from the adjacent Wood Merchandising Yard (WMY). The tree length wood is delivered to the WMY and appropriately sorted based on species and length, merchandisable wood will be sold to customers and process wood for the Project will be stored until needed. Wood delivered to the woodyard will be processed into chipped and hogged fuel. The Project component relating to the woodyard can generally be characterized as the ancillary features that will be used to facilitate log storage, material transport, material processing buildings, conditioning, storage, and equipment operation and maintenance." "The general components at the wood processing yard include: - A slasher building; - Debarker / chipping building;

Surface Water Assessment Report Updates

Section	Page Number	Original Wording	Update
			<ul style="list-style-type: none"> - Biomass screening building; - Hog fuel processing building
3.1.5 Transformer Substation	7	"...to step up the voltage of the electricity produced by the cogeneration plant from 5 kV to 25 kV."	"...to step up the voltage of the electricity produced by the cogeneration plant from 4.16 kV to 25 kV."
		"There transformers will step down the voltage used by the buildings from 5 kV to 600 V for distribution to the plant loads."	"These transformers will step down the voltage used by the buildings from 4.16 kV to 600 V for distribution to the plant loads."
			"Surface water runoff is the same as per original design, the design will remain the same."
Appendix B			Detailed diagrams of the processes and equipment have been updated to reflect changes.

Effluent Management Plan Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	“Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing...”	“Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing...”
1.0 Introduction	1	“Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing...” "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	“Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing...” "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
		"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, material storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."	"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, log storage, material processing buildings, storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..."
1.1 Project Overview	1	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..." "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..." "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
		"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, material storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."	"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, log storage, material processing buildings, storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."
2.5 Noise and Odour Receptors	9	"As noted in the Acoustical Assessment Report (Akoustik, 2014) under a separate cover.."	"As noted in the Acoustical Assessment Report (2018) under a separate cover.."
3.1.1 Woodyard	11 - 13	"The Project component relating to the woodyard can generally be characterized as the ancillary features that will be used to facilitate material transport, processing, conditioning, storage, and equipment operation and maintenance."	"The woodyard will be supplied with tree length wood from the adjacent Wood Merchandising Yard (WMY). The tree length wood is delivered to the WMY and appropriately sorted based on species and length, merchandisable wood will be sold to customers and process wood for the Project will be stored until needed. Wood delivered to the woodyard will be processed into chipped and hogged fuel. The Project component relating to the woodyard can generally be characterized as the ancillary features that will be used to facilitate log storage, material transport, material processing buildings, conditioning, storage, and equipment operation and maintenance."

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
		"...which will be delivered to the site in the form of hogged fuel, or chipped material meeting Pulp Mill Spec Wood Chip requirements."	"...which will be delivered to the site in the form of tree length wood to the WMY."
		"The hogged material will be used as fuel for the cogeneration plant and the chipped material will be used as feedstock for the pellet plant."	"The tree length wood will be delivered to the woodyard from the adjacent WMY and processed into hogged and chipped material with the hogged material being used as fuel for the cogeneration plant and the chipped material being used as feedstock for the pellet plant."
		N/A	"The tree length wood will be processed by being fed into the slasher, in the slasher building, and cut based on facility or customer specifications. Product for the Project will move to the debarker/chipper building where it will be debarked and chipped and sent to the biomass screening building. Once finished in the screening building, the chipped material will be sent to the chipped material storage pad. Wood designated as hog fuel will go the hog fuel process building and the created hog fuel will go to the hog fuel storage pile. "
		N/A	The woodyard will have four buildings for processing tree length wood into hog fuel and chips. The following is a list of the approximate footprint of each building: <ul style="list-style-type: none"> • Slasher building: 456 m2 (4913 ft2); • Debarker / chipper building: 383 m2 (4121 ft2); • Biomass screening building: 155 m2 (1665 ft2); and • Hog fuel building: 174 m2 (1873 ft2).
3.1.2 Biomass Cogeneration Plant	13 - 14	"Biomass quantities required for the cogeneration plant are estimated to be 82,315 Green Metric Tonnes (GMT) per year, or 235 GMT per day..."	"Biomass quantities required for the cogeneration plant are estimated to be 106,500 Green Metric Tonnes (GMT) per year, or 300 GMT per day..."
		"It will have a nominal capacity of up to 3.6 MW."	It will have a nominal capacity of up to 5.5 MWe."

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
		"The Project is proceeding on the basis of using the steam Rankine cycle."	"The Project is proceeding on the basis of using a Thermal Oil Heat Source / Organic Rankine Cycle (ORC)."
		"The steam Rankine cycle can generally be described in the following three steps: 1. biomass is combusted in a boiler to produce steam; 2. steam is used to drive a steam turbine, connected to an electrical generator, creating electricity; 3. steam is condensed and pumped for re-use in the boiler to repeat the cycle."	"The Thermal Oil Heat Source / Organic Rankine Cycle can generally be described in the following three steps: 1. biomass is combusted in a boiler to produce heat; 2. heat is used heat an organic fluid that drives an ORC turbine, connected to an electrical generator, creating electricity; and, 3. the organic fluid is then condensed and cooled for re-use in the cycle"
		"The cogeneration component of the plant comes from the steam turbine exhaust, where the steam at a lower pressure and temperature is used in the pellet plant biomass dryer system, and for heat in the on-site buildings."	"The cogeneration component of the plant comes from the ORC as it will supply thermal energy to the Pellet Plant biomass belt dryer and heat to the onsite buildings."
		"...where it will be stepped-up from 5 kV to 25 kV and connected to the local grid..."	"...where it will be stepped-up from 4.16 kV to 25 kV and connected to the local grid..."
		"The total footprint of the cogeneration plant, including the heat source building, turbine building, cooling tower, ash collection/storage system, and ancillary equipment is expected to be approximately 1, 330 m2 (14,315 ft2)."	"The total footprint of the cogeneration plant, including the heat source building, turbine building, ash collection/storage system, and ancillary equipment is expected to be approximately 920 m2 (9,900 ft2)."

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
		"Generally, the equipment required for the cogeneration plant includes: - a biomass dryer, - water treatment systems and storage tanks for process and domestic water supply; - a biomass dryer, furnace and boiler to generate steam; - a steam turbine; - an oil tank and lubrication system; - an electrical generator; - a condenser and cooling tower; - water, wastewater, and steam distribution piping; - a steam/ glycol heating system (to heat site buildings); - a fire suppression system; - a heating and ventilation system, including exhaust stacks; - pumps and fans; - a baghouse and exhaust stack; - an emission monitoring system; - an ash collection and storage system; - wastewater management infrastructure (refer to Section 3.1.6); - a mechanical material handling system; - partitioned rooms (i.e., offices, lunch room, mechanical/electrical room); and - fuel tanks and a backup/emergency generator"	Generally, the equipment required for the cogeneration plant includes: - water treatment systems and storage tanks for process and domestic water supply; - a furnace and thermal oil heat source to generate hot thermal oil; - an Organic Rankine Cycle turbine; - an oil tank and lubrication system; - an electrical generator; - air cooled heat exchangers; - water and wastewater distribution piping; - a glycol heating system (to heat site buildings); - a fire suppression system; - a heating and ventilation system, including exhaust stacks; - pumps and fans; - an ESP and exhaust stack; - an emission monitoring system; - an ash collection and storage system; - wastewater management infrastructure (refer to Section 3.1.6); - a mechanical material handling system; - partitioned rooms (i.e., offices, lunch room, mechanical/electrical room); and - fuel tanks and a backup/emergency generator

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
3.1.3 Pellet Plant	14 - 15	"The pellet plant will utilize heat and electricity from the cogeneration plant to create approximately 8 metric tons per hour or 60,000 metric tons per year of residential and/or industrial grade fuel pellets. Biomass quantities required for the pellet plant are estimated to be 139,000 m3/yr, or 380 m3/day."	"The pellet plant will utilize heat and electricity from the cogeneration plant to create approximately 12 metric tons per hour or 90,000 metric tons per year of residential and/or industrial grade fuel pellets. Biomass quantities required for the pellet plant are estimated to be 187,115 m3/yr, or 512 m3/day"
		"The pellet mill will then use process steam from the cogeneration plant to compress..."	"The pellet mill will then use heat generated from the cogeneration plant to compress..."
3.1.8 Air Emissions	19	"...secondary emissions control equipment will include an exhaust flue gas baghouse treatment system."	"...secondary emissions control equipment will include an exhaust flue gas Electrostatic Precipitator (ESP) System."
		"The hammermill will also have its own baghouse treatment system."	"The hammermill will also have its own cyclone-baghouse treatment system."
		"Further details regarding facility air emissions and controls are provided in the Emission Summary and Dispersion Modelling Report (Burnside, 2014) under a separate cover."	"Further details regarding facility air emissions and controls are provided in the Emission Summary and Dispersion Modelling Report (Neegan, 2018) under a separate cover."
4.1.2.1 Daily Operations	20 - 21	"Biomass delivery truck drivers will also frequent the site (approximately 20 trucks per day on average)."	"Tree length wood delivery truck drivers will also frequent the site (approximately 35 trucks per day on average)."
		"Biomass delivery truck drivers (delivering chipped and hogged material)..."	"Delivery truck drivers (delivering tree length wood)..."
4.1.3.2 Schedule Maintenance	22	"An annual preventative maintenance shutdown will also be required for the biomass furnace/steam boiler. The steam boiler makeup water supply requires closer monitoring and physical conditioning to prevent internal damage, so the feedwater system will include a water sampling system to monitor water quality and prompt required maintenance."	"An annual preventative maintenance shutdown will also be required for the biomass furnace. Every five to seven years, depending on requirements of the insurance underwriters for the Project, a longer (two week) maintenance outage will be performed as a major inspection and overhaul of the furnace heat source, turbine and auxiliaries."

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
		"A First Class Operating Engineer will be responsible for the power plant operation."	"An Operating Manager will be responsible for plant operations."
4.2.4 Air Emissions	29	<p>"The details of the assessment are provided in the Emission Summary and Dispersion Modelling (ESDM) Report (Neegan, 2014) under a separate cover."</p> <p>"For further details regarding air emission sources and concentrations, refer to the Emission Summary and Dispersion Modelling Report (Neegan, 2014) under a separate cover."</p> <p>"The highest concentration is predicted for the particulate matter at 50.1% of the criteria. Considering the conservative assumptions included in the model, the actual concentration is expected to be much lower. Benzo(a)pyrene and acrolein are predicted at 5.8% and 2.6% of their criteria, respectively."</p>	"The details of the assessment are provided in the Emission Summary and Dispersion Modelling (ESDM) Report (Neegan, 2018) under a separate cover."
4.2.5 Biomass Storage	29	"...biomass will be delivered to the site in the form of chipped and hogged material."	"...biomass will be delivered to the WMY in the form of tree length wood and will be processed onsite into chipped and hogged material."
		"These biomass materials will be stored on paved storage areas..."	"The tree length wood will be stored in the adjacent WMY, an unpaved area. Biomass materials will be stored on paved storage areas..."
		Table 4.3 Biomass Storage and Use Cogeneration Plant Estimate annual average quantity that will be accepted: 82, 315 GMT Estimated average rate at which it will be used: 235 GMT*/day	Table 4.3 Biomass Storage and Use Cogeneration Plant Estimate annual average quantity that will be accepted: 106,500 Green Metric Tonnes (GMT*) Estimated average rate at which it will be used: 300 GMT*/day

Design and Operations Report Updates

Section	Page Number	Original Wording	Update
		Table 4.3 Biomass Storage and Use Pellet Plant Estimate annual average quantity that will be accepted: 139,000 m ³ Estimated average rate at which it will be used: 380 m ³ /day	Table 4.3 Biomass Storage and Use Pellet Plant Estimate annual average quantity that will be accepted: 187, 115 m ³ Estimated average rate at which it will be used: 512 m ³ /day
8.0 References	52	Akoustic Engineering Limited, October 2014. <i>Acoustical Assessment Report for the Proposed Whitesande First Nation Cogeneration and Pellet Mill Project located near Armstrong, Thunder Bay District, Ontario</i> Neegan Burnside Ltd., October 2014. <i>Emission Summary and Dispersion Modelling Report</i>	Neegan Burnside Ltd., March 2018. <i>Acoustic Assessment Report</i> Neegan Burnside Ltd., March 2018. <i>Emission Summary and Dispersion Modelling Report</i>
Appendix A			Site Plan has been updated to reflect changes.
Appendix B			Detailed diagrams of the processes and equipment have been updated to reflect changes.

Construction Plan Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..."
1.1 Project Overview	1	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..." "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 3.6 MW..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..." "The proposed Class 1 Thermal Facility would have a nameplate capacity of up to 5.5 MWe..."
		"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, material storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."	"The general Project components include a biomass fueled electric power and heat cogeneration plant, wood pellet plant, maintenance garage, log storage, material processing buildings, storage and handling areas, wastewater management system, water storage ponds, wells, pump building, and transformer substation."
2.1 Timing and Operational Plan	3	"...construction of the Project is planned to commence in Spring 2015."	"...construction of the Project is planned to commence in Fall 2018."
		Table 2.1 Construction Schedule	
		Survey for Project Layout (pre-construction): 2 weeks Apr-2015 to Apr-2015	Survey for Project Layout (pre-construction): 2 weeks COMPLETE
		Install erosion and sediment control measures: 1 week Apr-2015 to Apr-2015	Install erosion and sediment control measures: 1 week COMPLETE
		Site Preparation, clearing and grubbing: 2 weeks May-2015 to May 2015	Site Preparation, clearing and grubbing: 2 weeks COMPLETE
		General earthworks (site grading): 1 month May-2015 to Jun-2015	General earthworks (site grading): 1 month COMPLETE
		Excavation for water storage pond, installation of liner, and pond filling: 1 month May-2015 to Jun-2015	Excavation for water storage pond, installation of liner, and pond filling: 1 month COMPLETE

Construction Plan Report Updates

Section	Page Number	Original Wording	Update
		Excavation for site buildings foundations: 3 weeks May-2015 to Jun-2015	Excavation for site buildings foundations: 3 weeks Sept-2018 to Oct-2018
		Construction of site foundations/footings: 6 weeks May-2015 to Jul-2015	Construction of site foundations/footings: 6 weeks Oct-2018 to Dec-2018
		Installation of water supply distribution system: 6 weeks Jun-2015 to Jul-2015	Installation of water supply distribution system: 6 weeks May-2019 to Jun-2019
		Construction of wastewater management system: 6 weeks Jun-2015 to Jul-2015	Construction of wastewater management system: 6 weeks May-2019 to Jun-2019
		Installation of remaining underground utilities: 3 weeks Jun-2015 to Jul-2015	Installation of remaining underground utilities: 3 weeks Apr-2019 to Apr-2019
		Installation of transformer substation: 6 months Jun-2015 to Dec-2015	Installation of transformer substation: 6 months Jan-2019 to Jun-2019
		Installation of equipment in the woodyard: 1 month Jun-2015 to Jul-2015	Installation of equipment in the woodyard: 1 month Mar-2019 to Apr-2019
		Construction of site buildings: 3 months Jul-2015 to Oct-2015	Construction of site buildings: 6 months Jan-2019 to June-2019
		Fine-grading and drainage features: 3 weeks July 2015 - Aug-2015	Fine-grading and drainage features: 3 weeks Mar-2019 to Apr-2019
		Finishing of granular access roads and paving: 3 weeks Aug-2015 to Sep-2015	Finishing of granular access roads and paving: 3 weeks Apr-2019 to May-2019
		Installation of security systems: 3 weeks Sep-2015 to Sep-2015	Installation of security systems: 3 weeks May-2019 to May-2019
		Installation of equipment in site buildings: 5 months Oct-2015 to Mar-2016	Installation of equipment in site buildings: 5 months Dec-2018 to May-2019
		Equipment commissioning: 2 months Mar-2016 to May-2016	Equipment commissioning: 2 months Oct-2019 to Dec-2019
		Site restoration: 3 weeks May-2016 to Jun-2016	Site restoration: 3 weeks Oct-2019 to Oct-2019

Construction Plan Report Updates

Section	Page Number	Original Wording	Update
2.1.1 Natural Heritage Timing Restrictions	4	"As noted in Table 2.1, clearing and grubbing is scheduled from May 1 to May 15, which is in compliance with the recommended mitigation strategy. If clearing and grubbing must occur during breeding bird season..."	"As noted in Table 2.1, clearing and grubbing has been completed.
2.3.10 Transformer Substation	9	"The transformer substation will be constructed to convert the voltage from the cogeneration plant at 5 kV to the voltage of the local grid at 25 kV."	"The transformer substation will be constructed to convert the voltage from the cogeneration plant at 4.16 kV to the voltage of the local grid at 25 kV."
2.3.11 Woodyard Equipment	10	"Remaining equipment in the woodyard such as the biomass belt dryer, truck scale, truck dumpers, mechanical conveyor system and ancillary equipment will be installed and connected to underground utilities and site building locations as appropriate. The majority of this equipment will be transported as partially assembled components for installation on site."	"Remaining equipment in the woodyard such as the biomass belt dryer, truck scale, truck dumpers, mechanical conveyor system, debarker / microchipper, refuse hog and ancillary equipment will be installed and connected to underground utilities and site building locations as appropriate. The majority of this equipment will be transported as partially assembled components for installation on site."
2.3.14 Granular Access Roads and Paving	11	"The pre-processed biomass storage pads and wood pellet shipping area will be hard-surfaced (i.e., concrete or asphalt)."	"The processed biomass storage pads and wood pellets shipping area will be hard-surfaced (i.e., concrete or asphalt), the whole tree log storage at the WMY area will not be hard-surfaced."
2.3.16 Site Building Equipment Installation	11 and 12	"Detailed preliminary drawings of the required equipment are provided in Appendix B."	"Detailed preliminary drawings of the required equipment are provided in Appendix B."

Construction Plan Report Updates

Section	Page Number	Original Wording	Update
		"Biomass Cogeneration Plant - a biomass dryer; - water treatment systems and storage tanks for process and domestic water supply; - a biomass dryer, furnace and boiler to generate steam; - a steam turbine; - an oil tank and lubrication system; - an electrical generator; - a condenser and cooling tower; - water, wastewater and steam distribution piping; - wastewater pipes and floor drains; - a steam/glycol heating system (to heat site buildings); - a fire suppression system; - a heating and ventilation system, including exhaust stacks; - pumps and fans; - a baghouse and exhaust stack; - an emission monitoring system; - fire protection equipment; - a mechanical material handling system; and - fuel tanks and a backup / emergency generator."	"Biomass Cogeneration Plant - furnace and thermal oil heat source to generate hot thermal oil; - an Organic Rankine Cycle turbine; - an oil tank and lubrication system; - an electrical generator; - air cooled heat exchangers; - water, wastewater and thermal energy distribution piping; - wastewater pipes and floor drains; - glycol heating system (to heat site buildings); - a fire suppression system; - a heating and ventilation system, including exhaust stacks; - pumps and fans; - an ESP and exhaust stack; - an emission monitoring system; - fire protection equipment; - a mechanical material handling system; and - fuel tanks and a backup / emergency generator." "Slasher Building" "Debarker / Chipper Building" "Biomass Screening Building" "Hog Fuel Processing Building"
Appendix A			Site Plan has been updated to reflect changes.
Appendix B			Detailed diagrams of the processes and equipment have been updated to reflect changes.

Decommissioning Plan Report Updates

Section	Page Number	Original Wording	Update
Executive Summary	ii	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..."
1.1 Background	1	"Sagatay Cogeneration LP, with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as agent is proposing..."	"Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner is proposing..."
		"a Woodyard with material handling and storage components, as well as access roads, a maintenance garage, diesel fuel storage / filling station, and waste oil building;"	"a Wood Merchandising Yard for log storage;" "a Woodyard with log storage, material processing, handling and storage components, Debarker / Microchipper building and Microchip Screening / Refuse Hog building, as well as access roads, a maintenance garage, diesel fuel storage / filling station, and waste oil building;"
		"a Biomass Cogeneration Plant, which will generate electricity for the Project and the nearby community, having a nameplate capacity of up to 3.6 MW."	"a Biomass Cogeneration Plant, which will generate electricity for the Project and the nearby community, having a nameplate capacity of up to 5.5 MWe."
		"a Pellet Plant, which will create approximately 60,000 metric tons per year of residential and/or industrial grade wood fuel pellets;"	"a Pellet Plant, which will create approximately 90,000 metric tonnes per year of residential and/or industrial grade wood fuel pellets;"
		"...with commencement of Project operation anticipated in 2016."	"...with commencement of Project operation anticipated in 2019."
2.3 Equipment Dismantling and Demolishing	5	Table 2 Dismantling and removal of equipment within and associated with the Site buildings: - Dismantling and sorting of all equipment within and associated with the cogeneration plant, pellet plant, maintenance garage, and fire pump building;"	Table 2 Dismantling and removal of equipment within and associated with the Site buildings: - Dismantling and sorting of all equipment within and associated with the cogeneration plant, pellet plant, Debarker / Microchipper building, microchip screening / refuse building, maintenance garage, and fire pump building;"

Stage 1 Archeological Assessment Report

No changes required for the Stage 1 Archeological Assessment Report.

Consultation Report

The Consultation Report (2014) does not require any changes as the information presented in the report was a summary of steps taken during the previously held consultation sessions.

Acoustical Assessment Report

The Acoustical Assessment Report (2015), previously submitted, has been completed and replaced with an updated Acoustical Assessment Report (2018).

Emission Summary and Dispersion Modelling Report

The Emission Summary and Dispersion Modelling Report (2014), previously submitted, has been completed and replaced with an updated Emission Summary and Dispersion Modeling Report (2018).

List of Appendices

Appendix 1 – Previous Site Layout

Appendix 2 – Proposed Site Layout

Appendix 3 – Process Flow Diagrams

Appendix 4 – Notice of Project Change

Appendix 5 – Distribution List for Notice of Project Change

Appendix One: Previous Site Layout

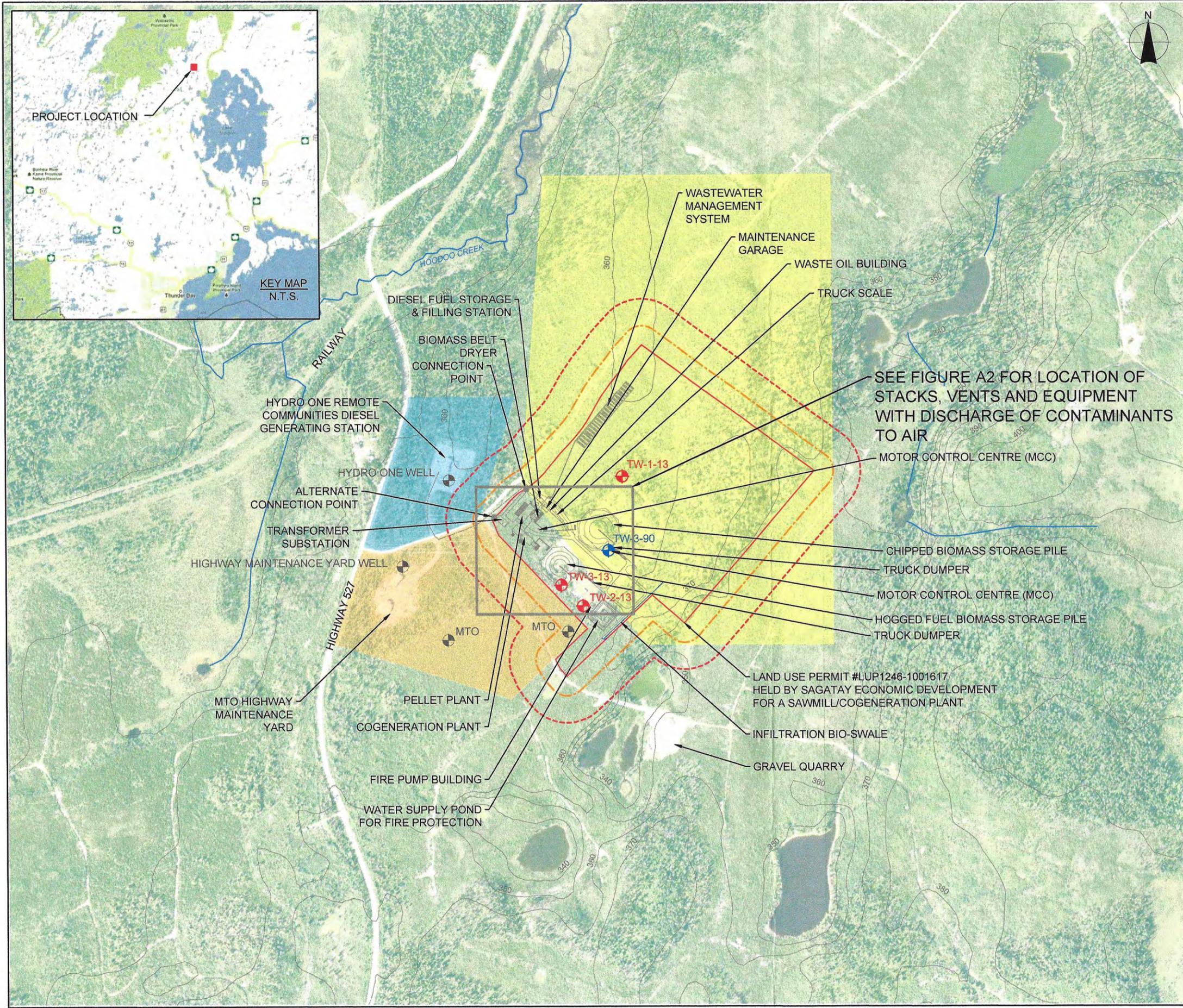


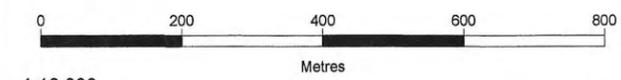
FIGURE A1

WHITESAND FIRST NATION COGENERATION & PELLET MILL PROJECT DESIGN & OPERATIONS REPORT

SITE PLAN

- LEGEND**
- PROJECT LOCATION
 - - - STUDY AREA 50m SETBACK
 - - - STUDY AREA 120m SETBACK
 - + MONITORING WELL LOCATION
By Others, 1990
 - + MONITORING WELL LOCATION
By Neegan Burnside, 2013
 - + PRIVATE WELL LOCATION
By Others
 - AREA WITHDRAWN PER SECTION 35 OF THE MINING ACT (ORDER No. W-TB-122/11)
 - CROWN LAND DISPOSITION CL10395
 - PART 1, REFERENCE PLAN No. P-8060-55 ON HIGHWAY No. 527
 - EXISTING ELECTRICITY DISTRIBUTION LINE
 - CONNECTION POINT
 - 350 EXISTING 10m CONTOURS INTERVAL (m asl)

Air Photo Source:
Background 2008 forest resource inventory air photo reproduced with the permission of Ministry of Natural Resources, © Queen's Printer for Ontario



1:10,000
August 2014
Project Number: 300030895
Prepared by: C. Sheppard

Projection: UTM Zone 16
Datum: NAD83
Verified by: C. Shilton



PRINTED: August 26, 2014, 10:27 AM

Appendix Two: Proposed Site Layout



LEGEND

- APPROXIMATE PROJECT BOUNDARY
- STUDY AREA 50m SETBACK
- STUDY AREA 120m SETBACK
- BUILDING
- POINT OF EMISSION
- BOUNDARY COORDINATES UTM NAD83
- TRUCK ROUTE
- LINE SOURCES

0 50 100 200 300 400
Metres

Satellite & Air Photo Source:
Background satellite / air photo circa 2008 obtained from Ministry of Natural Resources and Forestry

NEEGAN BURNSIDE

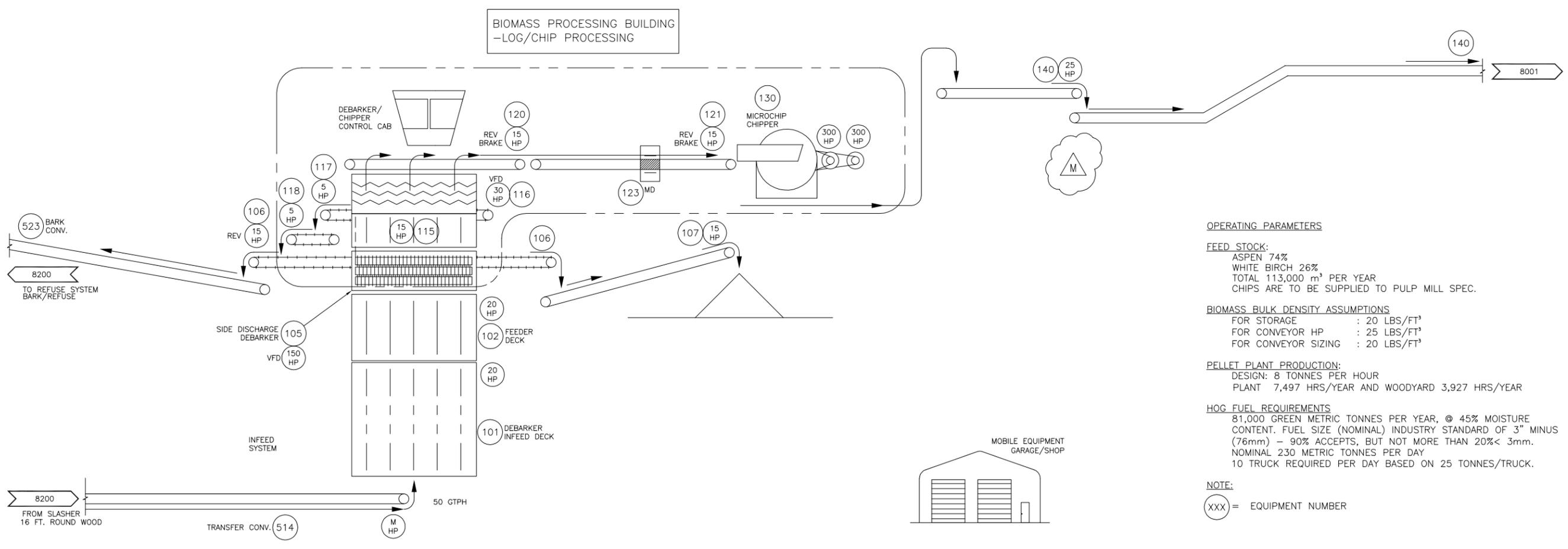
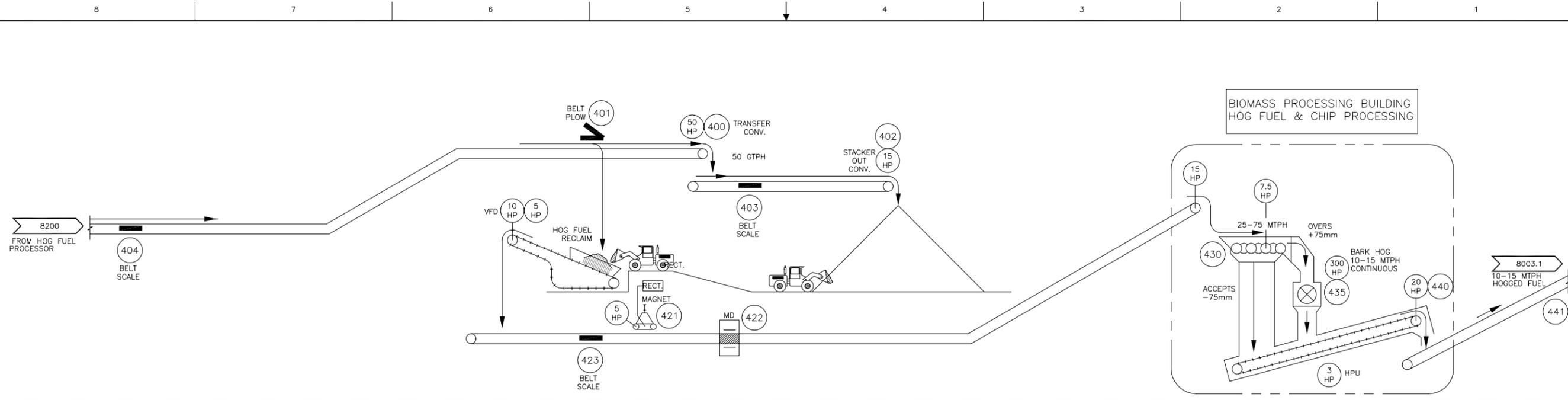
Client **WHITESAND FIRST NATION
COGENERATION AND PELLET MILL
PROJECT, ARMSTRONG, ON**

Figure Title **ENVIRONMENTAL APPROVAL
(NOISE)
SITE PLAN**

Drawn C.S.	Checked L.P.	Date MARCH 2018	Figure No. 2
Scale 1:5,000	Project No. 300040895.5000		

File: \\MONTY\Shared\AirGroup\Projects\Whitesand_ECA_030895.5000\Drawing Set\030895.5000 Environmental Approval Drawing Set.dwg Date Plotted: April 5, 2018 - 9:35 AM

Appendix Three: Process Flow Diagrams



OPERATING PARAMETERS

FEED STOCK:
 ASPEN 74%
 WHITE BIRCH 26%
 TOTAL 113,000 m³ PER YEAR
 CHIPS ARE TO BE SUPPLIED TO PULP MILL SPEC.

BIOMASS BULK DENSITY ASSUMPTIONS
 FOR STORAGE : 20 LBS/FT³
 FOR CONVEYOR HP : 25 LBS/FT³
 FOR CONVEYOR SIZING : 20 LBS/FT³

PELLET PLANT PRODUCTION:
 DESIGN: 8 TONNES PER HOUR
 PLANT 7,497 HRS/YEAR AND WOODYARD 3,927 HRS/YEAR

HOG FUEL REQUIREMENTS
 81,000 GREEN METRIC TONNES PER YEAR, @ 45% MOISTURE CONTENT. FUEL SIZE (NOMINAL) INDUSTRY STANDARD OF 3" MINUS (76mm) - 90% ACCEPTS, BUT NOT MORE THAN 20% < 3mm. NOMINAL 230 METRIC TONNES PER DAY
 10 TRUCK REQUIRED PER DAY BASED ON 25 TONNES/TRUCK.

NOTE:
 (XXX) = EQUIPMENT NUMBER

DWG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	DRAFTER	DESIGNER	PROJ.MGR.
		M	2017/05/16	GENERAL REVISIONS, ADDED EQUIPMENT NUMBERS	RMP	TKK	
		REV.	YYYY/MM/DD	DESCRIPTION			
				REVISIONS			

ISSUE STATUS
FOR REVIEW

DESIGNED BY:	INITIALS	DATE
TKK	TKK	2017/05/16
TKK	TKK	2017/05/16
RMP	RMP	2017/05/16
TKK	TKK	2017/05/16

SCALE: N.T.S.

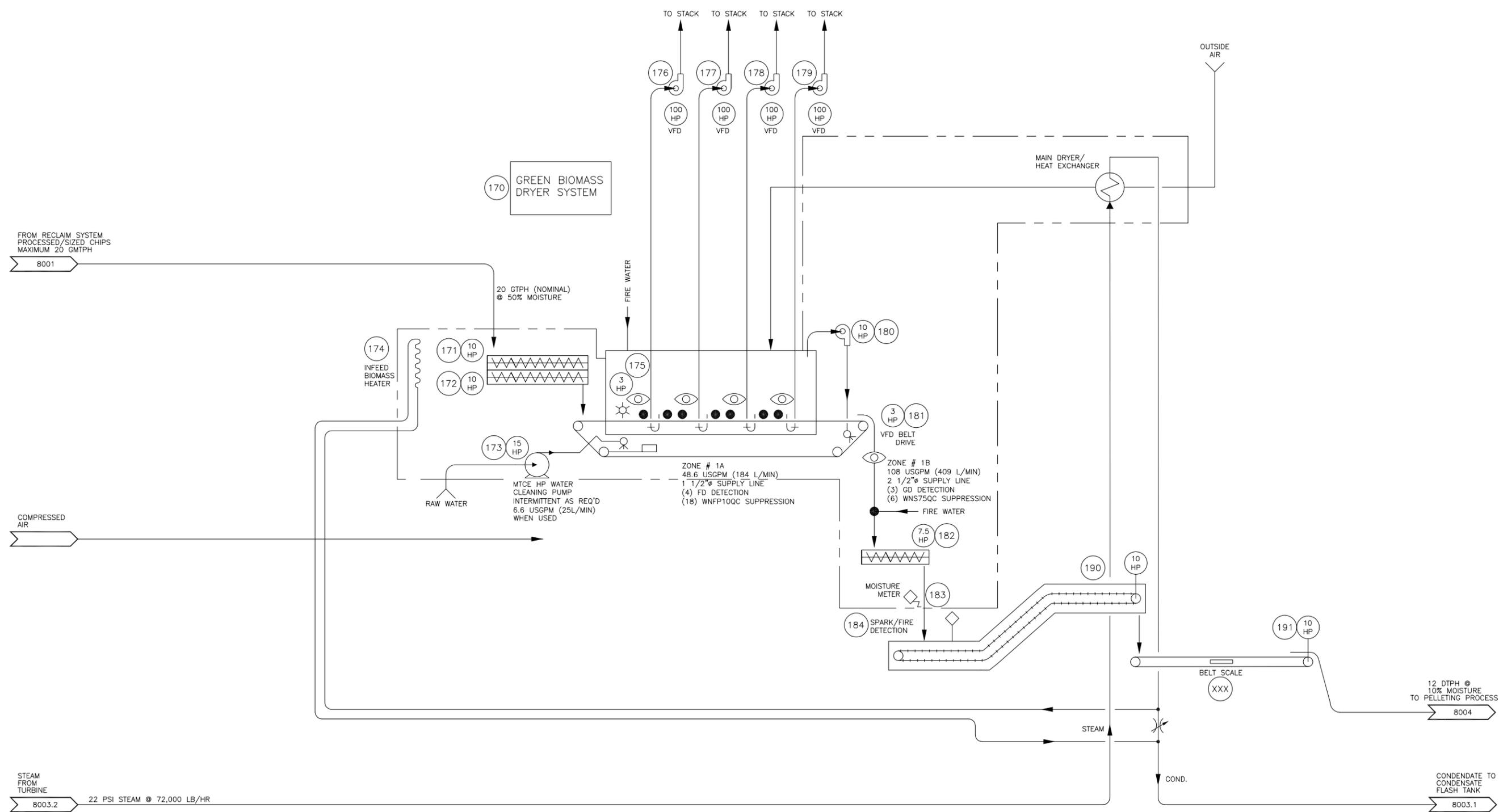
121-12538-01

PROJECT: WHITESAND FIRST NATION

TITLE: FLOW DIAGRAM
PRIMARY WOOD YARD
WHITESAND F.N. - COGEN/PELLET PLANT

CLIENT DWG. NO.: 8000

NOTE:
 (XXX) = EQUIPMENT NUMBER



L	2014/10/23	ADDED VFD NOTE TO DRYER FAN MOTORS	JPB		TKK
K	2014/09/30	REVISED CONVEYOR HORSEPOWER	JPB		TKK

M	2017/05/16	ADDED EQUIPMENT NUMBERS	RMP	TKK	TKK
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DWG. NO.	DESCRIPTION	REV.	YYYY/MM/DD	DESCRIPTION	DRAFTER	DESIGNER	PROJLMGR
	REFERENCES						

ISSUE STATUS
FOR REVIEW



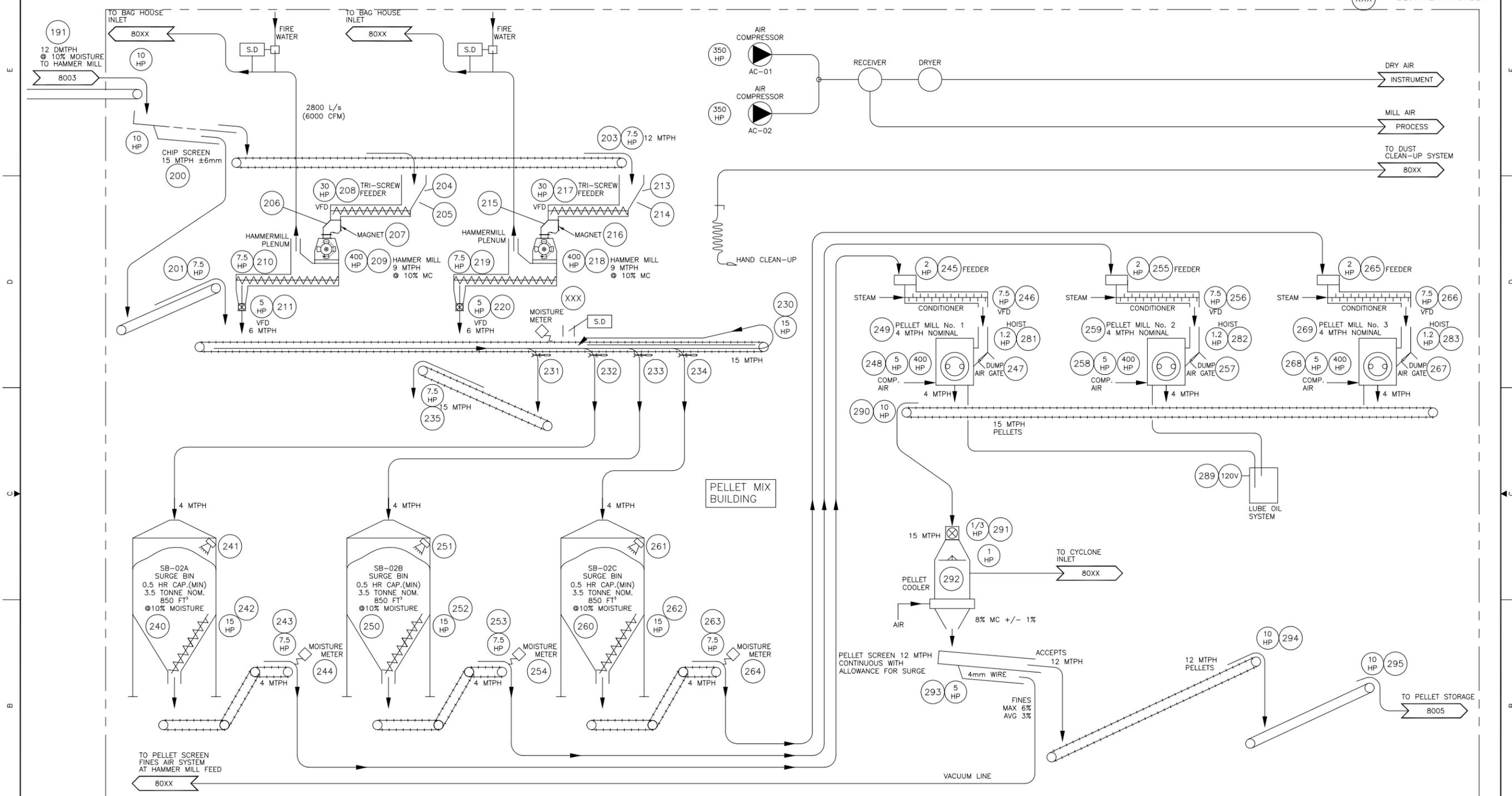
DESIGNED BY:	TKK	2017/05/16
DESIGN CHK'D. BY:	TKK	2017/05/16
DRAWN BY:	RMP	2017/05/16
DRAWING CHK'D. BY:		
PROJECT MANAGER	TKK	2017/05/16
KEYWORD		

SCALE: N.T.S.

121-12538-01

PROJECT	WHITESAND FIRST NATION
PROJECT NO.	
TITLE	FLOW DIAGRAM GREEN BIOMASS BELT DRYER WHITESAND F.N. - COGEN/PELLET PLANT
CLIENT DWG. NO.	8003

NOTE:
 (XXX) = EQUIPMENT NUMBER



DWG. NO.	DESCRIPTION	REV.	DATE	DESCRIPTION	DRAFTER	DESIGNER	PROJ. MGR.
		M	2017/05/16	ADDED EQUIPMENT NUMBERS	RMP	TKK	TKK

ISSUE STATUS
FOR REVIEW

DESIGNED BY:	INITIALS	DATE
TKK		2017/05/16
TKK		2017/05/16
RMP		2017/05/16
TKK		2017/05/16

SCALE: N.T.S.

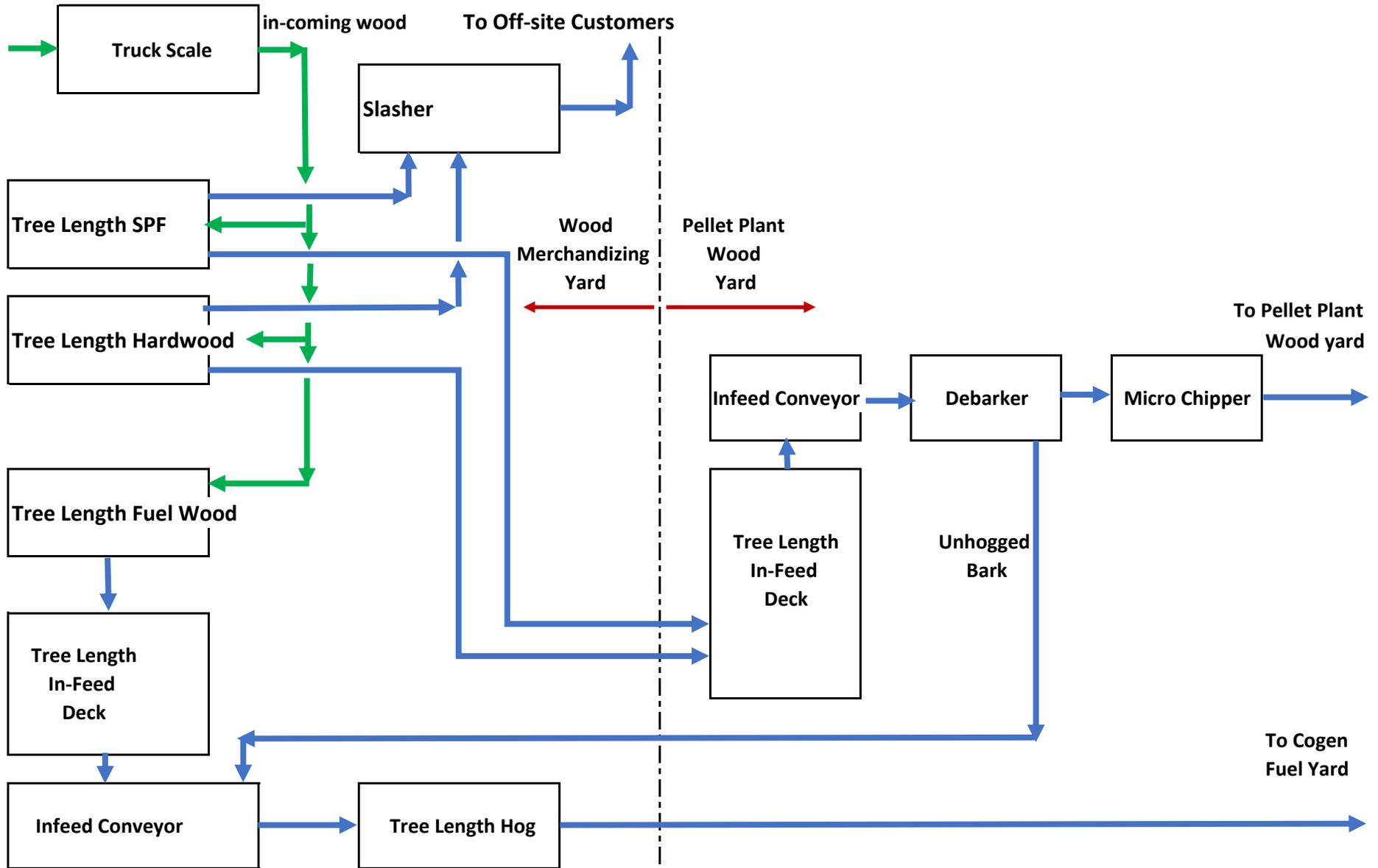
121-12538-01

PROJECT: WHITESAND FIRST NATION

TITLE: FLOW DIAGRAM FINE HAMMER MILL & PELLETING WHITESAND F.N. - COGEN/PELLET PLANT

CLIENT DWG. NO.: 8004

Whitesand First Nation Wood Merchandizing Yard - Block Flow Diagram



Appendix Four: Notice of Project Change

Notice of Proposed Change to an Approved Renewable Energy Project (REA No. 4623-9W7K5Q)
by Sagatay Cogeneration LP with its General Partner, Sagatay Cogeneration Ltd., and Whitesand First Nation as Limited Partner

Project Name: Whitesand First Nation Cogeneration and Pellet Mill Project
Project Location: Unorganized territory of the Thunder Bay District near Whitesand First Nation and Armstrong, Ontario (see map below)
Dated at: Armstrong, Ontario this 1st day of May, 2018.
EBR Registry Number: 012-3819

Sagatay Cogeneration Ltd. (“Sagatay”) was issued a Renewable Energy Approval (“REA”) by the Ministry of Environment and Climate Change on December 23, 2015 in respect to the Whitesand First Nation Cogeneration and Pellet Mill Project. Sagatay is proposing to make additional changes to the project and the project itself is subject to the provisions of the *Environmental Protection Act* Part V.0.1 and Ontario Regulation 359/09. This notice is being distributed to make the public aware of the proposed changes to the project.

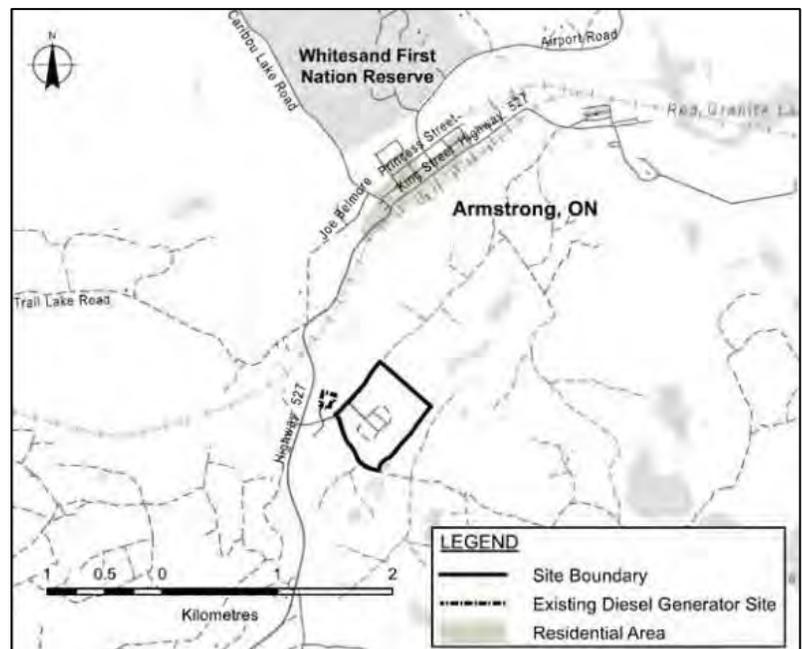
Project Description and Proposed Changes

Pursuant to the Act and Regulation, the Whitesand First Nation Cogeneration and Pellet Mill Project is a Class 1 Thermal Facility. An application has been made to the Ministry of the Environment and Climate Change to change the project and alter the terms and conditions of the existing REA. The proposed changes consist of: increasing the nameplate capacity from up to 3.6 MW to up to 5.5 MW to produce additional electricity to support increased Pellet Mill production and future community growth; increasing the amount of biomass used in the cogeneration facility to support the increase in electricity generation; changing the cogeneration process from the Steam Rankine Cycle to Thermal Oil Heat Source / Organic Rankine Cycle to reduce maintenance and operational costs; adding a Wood Merchandising Yard to process treelength biomass onsite; and increasing the production of residential and/or industrial grade wood fuel pellets produced by the Pellet Mill to address customer demands.

If approved with these changes, the Facility would have a total maximum nameplate capacity of up to 5.5 MW. The project location is shown on the map below. No changes are being proposed to the project location or site boundaries.

Documents for Inspection

Sagatay Cogeneration LP has been required to update the supporting documents that are required to form part of the application or which must otherwise be submitted to the Ministry of the Environment and Climate Change and available to the public. Sagatay has developed the “Renewable Energy Approval Amendment: Modifications Summary” which summarizes the proposed changes. A copy of the document and supporting documentation is available on the project website (www.whitesandfirstnation.com).



Project Contact and Information

For more information contact:
Robyn Gillespie, Arbora Management Services Inc.
807-621-9506
robyn@arbora.ca

Appendix Five: Distribution List for Notice of Project Change

Notice of Project Change Stakeholder Distribution List

May 1, 2018

The following is the distribution list of affected stakeholders for the Notice of Project Change. Every stakeholder listed will receive a copy of the Notice of Project Change, as required by the Ministry of Environment and Climate Change based on the original list of stakeholders from the 2014 REA.

Property Owners within 150 meters of the Project

Hydro One Remote Communities Diesel Generating Station

Ministry of Transportation Maintenance Yard

Aboriginal Communities

If an aboriginal community has a newsletter, a request for the notice to be published in the newsletter will be made

Whitesand First Nation

Gull Bay First Nation

Métis Nation of Ontario

Thunder Bay Métis Council

Local Services Board

Armstrong Local Services Board

Armstrong Local Roads Board

Ministry of the Environment and Climate Change

Director, Northern Region

District Manager, Thunder Bay