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WORKING DRAFT

PROPOSED

Product Management Program for Saskatchewan Waste Agricultural Plastics

Submitted to Saskatchewan Minister of Environment on July 4, 2013

CleanFARMS Inc. and the Members of the
Saskatchewan Agricultural Stewardship Council (SASC)

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Executive Summary

It is estimated that approximately 2,950 to 3,635 tonnes of plastic grain bags, bale/silage wrap, twine and net wrap are currently generated annually in Saskatchewan and the use of these agricultural plastics is expected to grow considerably. While beneficial to farmers and producers, these plastics become a waste after a single use and require proper management.

Research indicates that up to 85% of this plastic is currently disposed of through on-farm burning in Saskatchewan. Most of the remainder is buried on farms or, in extreme cases, simply littered into the environment. This creates a growing environmental problem for Saskatchewan's farming and rural communities.

This document outlines a proposed Product Management Program for Saskatchewan Waste Agricultural Plastics to be managed by CleanFARMS Inc. on behalf of "first sellers" of agricultural plastics into the Saskatchewan marketplace. It contains information requested by the government to support the passing of regulation which would lead to an environmentally responsible and efficient recycling program for agricultural plastics for the benefit of Saskatchewan farmers, producers and citizens.

The Saskatchewan agricultural plastics industry stewardship program will be the first of its kind for grain bags, bale/silage wrap, bale twine and net wrap in Canada. It is fully expected that the program will be extended across the country as other provinces move to solve the same issues.

This proposed Product Management Program for Saskatchewan Waste Agricultural Plastics is the outcome of over three years of research and analysis. Throughout, there has been extensive dialogue and consultation with Saskatchewan producers, stakeholders and experts.

Program Framework

This product management program assumes a suitable regulatory framework is in place to ensure a "level playing field" among brand owners and first sellers of these products.

The SASC, with input from advisory committee members and other participating stakeholders, has developed the *Concept Draft – AGRICULTURAL PRODUCTS AND PACKAGING WASTE MANAGEMENT REGULATIONS* for consideration by the Ministry as part of its process to finalize and enact appropriate regulation to support this program. The suggested regulation has been modeled on existing stewardship regulations for other products in Saskatchewan and requires "first sellers" of designated agricultural plastics to establish and operate their own Ministry-approved program for the collection and recycling of the agricultural plastics they sell into the province of Saskatchewan ***or*** become a member of an industry stewardship organization who will operate the program on their behalf.

Four categories of agricultural plastics have been identified for inclusion; effective on the date the regulation is passed into law, including:

COLUMN 1 Agricultural Products	COLUMN 2 Effective Date
Large, bulky, single-use bags made from plastic and used to protect and temporarily store grains, pulses, silage and other agricultural products (commonly referred to as “grain bags”).	June 30, 2013
Single-use film wrapping made from plastic and used to contain and protect hay bales, silage and other agricultural products (commonly referred to as “bale wrap” or “silage wrap”).	June 30, 2013
Single-use twine made from plastic and used to contain hay and straw (commonly referred to as “bale twine”).	June 30, 2013
Single-use netting wrap made from plastic and used to contain hay and straw (commonly referred to as “net wrap”).	June 30, 2013

Through the submission of this product management program, CleanFARMS Inc. and the SASC is seeking approval in principle to operate on behalf of its current members and all Saskatchewan “first sellers” who will be required to meet the terms of the pending Regulation.

The program will be managed by CleanFARMS Inc., a federally incorporated not-for-profit organization. CleanFARMS operates as a national program with a network of provincial representatives and contracted experts. The company has three subcommittees of the Board including an Executive Committee, Audit Committee, and the recently formed Saskatchewan Agriculture Stewardship Council.

As part of this program, CleanFARMS intends to establish an ‘Advisory Committee’ that will meet at least once per year to ensure all stakeholders have an opportunity to provide input.

CleanFARMS also intends to establish an office located in Saskatchewan after the product management program is approved by government.

This product management program is built on the principle of ongoing cooperation within a ‘shared responsibility’ model where agricultural plastic manufacturers, sellers (importers, distributors, retailers), purchasers (farmers/producers), waste collectors/haulers, and processors (plastics recyclers) all play important roles.

Program Elements

The Saskatchewan Waste Agricultural Plastics Management Program assumes that all four categories of plastics identified in the Concept DRAFT Regulation will be managed under the program.

Specific details for the collection and recycling system will be negotiated and rolled out once the Regulation is law and the Saskatchewan Waste Agricultural Plastics Management Program has been approved. It is anticipated that program will be built on six key components as outlined below.

1 – Establishment of collection sites - A network of strategically located depot sites will be established. These sites will be accessible to all interested farmers to drop off the targeted agricultural plastics at a time that meets their convenience.

2 – Establishment of event-based collections - Special agricultural plastics collection days/events will be scheduled across the province.

3 – Distribution of FREE collection bags/bins - Farmers/producers will be provided with special bags or bins for the collection, temporary storage and transfer of twine, net wrap and bale/silage wrap.

4 – Marketing of plastics - Marketing of agricultural plastics, collected through the program, will be managed by a Saskatchewan-based Program Coordinator with direct support from CleanFARMS' cross-provincial team of experts.

5 – Establishment of efficiency and improvement fund - system efficiency and continuous improvement fund will be established to provide sufficient resources to analyze, develop and implement best practices, program innovations and other efficiencies.

6 – Establishment of technical advisory committee to assist in program design and roll-out - A technical advisory committee will be established to provide direct input into the details of the program during the roll-out phase.

The collection and recycling system operated by CleanFARMS Inc. will be provided without charge to farmers.

Education and Awareness Program

Ongoing promotional and educational activities will be used to support the program and, more importantly, to encourage farmer and producer participation in the collection and recycling system.

CleanFARMS has a comprehensive and well-developed education and awareness approach that has been specifically developed to meet the needs of farmers/producers and other stakeholders involved in the agricultural sector, both within Saskatchewan and across Canada. The approach will be further modified, as necessary, to meet the specific needs of the Saskatchewan Waste Agricultural Plastics Management Program.

Program Financing

The program will be fully financed through fees collected and remitted by participating “first sellers” in order to fund their obligations under the Regulation. The fees which will only be paid once in the supply chain and will be incorporated into the price of agricultural plastics sold into Saskatchewan, but may or may not be identified separately to purchasers.

Preliminary program cost estimates and resulting pricing implications for agricultural plastics are provided below. However, actual fees can only be determined as part of the roll-out plan based on final calculations and confirmation of the specific program details.

It is estimated that the total cost for the Saskatchewan Waste Agricultural Plastics Management Program will be in the order of $1,375,000 to $2,075,000.

Based on estimated sales of agricultural plastics, and general and anecdotal pricing information provided by industry representatives for Saskatchewan, the impact would be equivalent to 5% to 7% of the price of grain bags, bale/silage wrap, twine and net wrap.

Final calculation of fees can only be determined once the Regulation is passed into law and this Saskatchewan Waste Agricultural Plastics Management Program plan has been approved. At that time, CleanFARMS will initiate the development of a detailed roll-out plan for the early program years and will work with “first sellers” and members of the advisory committee to complete the calculation and timelines for implementing the fees and program roll-out.

Introduction

It is estimated that approximately 2,950 to 3,635 tonnes of plastic grain bags, bale/silage wrap, twin and net wrap are currently generated annually in Saskatchewan and the use of these agricultural plastics is expected to grow considerably.

While beneficial to farmers and producers, these plastics become a waste after a single use and require proper management.

Research indicates that up to 85% of this plastic is currently disposed of through on-farm burning in Saskatchewan. Most of the remainder is buried on farms or, in extreme cases, simply littered into the environment.

This creates a growing environmental problem for Saskatchewan's farming and rural communities. *These plastics when burned under open and uncontrolled fire conditions at low temperatures generate black plumes of smoke and toxic volatilization products, which become incorporated into the ambient environment, resulting in human and environmental exposure. In addition, large amount of greenhouse gases such as methane and carbon oxides and particulate matter are emitted into the atmosphere*[1]*.* Buried plastic is also a problem as plastics fill up landfills and do not decompose. They can also prevent the natural decomposition of other materials in a landfill because they act as barriers to the movement of gasses and moisture through the landfilled material.

Many of the province's waste management facilities have also taken steps to restrict the disposal of agricultural plastics on their sites, especially grain bags which are heavy, bulky and both difficult and costly to manage.

Fortunately, agricultural plastics can be safely managed and recycled into new, useful plastic products. Good markets exist for these waste plastics. Experience from other areas of Canada and in other parts of the world confirms that the collection, processing and recycling of agricultural plastics is both economically feasible and environmentally superior to disposal.

The Saskatchewan farming community and producer groups, municipal and regional waste authorities, advocacy groups and public have already sought temporary solutions to manage these products through recycling (see Appendix 1). Publicly funded pilot programs have been operating with modest success in some Saskatchewan regions. These include programs operated by the Moose Jaw River Watershed Stewards and the Provincial Council of Agriculture Development and Diversification ADD Boards (PCAB). These two initiatives have proven that

[1] Saskatchewan Ministry of the Environment, EPB 433- Health and Environmental Effects of Burning Waste Plastics, September 2012, page 1.

Saskatchewan producers are committed and willing to participate in recycling programs where available.

Saskatchewan farmers and producers have also proven their environmental commitment by participating in the pesticide and fertilizer containers recycling program and the province's other recycling systems for beverage containers, used tires, paint, electronics, used oil, oil filters, and oil containers.

CleanFARMS Inc., an industry stewardship organization that specializes in providing a broad range of environmental stewardship services to the farm sector across Canada, was approached by the Saskatchewan Ministry of Environment to provide guidance and support for the development of an appropriate regulatory framework and recycling program for agricultural plastics in Saskatchewan.

A local sub-committee (the Saskatchewan Agricultural Stewardship Committee – SASC) was established and tasked to develop and submit a product management program for designated agricultural plastics and to suggest a backdrop regulation to support the program.[2] SASC established an advisory committee to engage Saskatchewan's agricultural community and a broad range of stakeholders throughout the development process. The Ministry has advised April, 2014 as the anticipated launch date for the program.

This document outlines a proposed product management program for Saskatchewan Waste Agricultural Plastics to be managed by CleanFARMS Inc. on behalf of "first sellers" of agricultural plastics into the Saskatchewan marketplace. It contains information requested by the government to support the passing of regulation which would lead to an environmentally responsible and efficient recycling program for agricultural plastics for the benefit of Saskatchewan farmers, producers and citizens.

The Saskatchewan agricultural plastics industry stewardship program will be the first of its kind for grain bags, bale/silage wrap, bale twine and net wrap in Canada. It is fully expected that the program will be extended across the country as other provinces move to solve the same issues.

This proposed product management program for Saskatchewan Waste Agricultural Plastics is the outcome of over three years of research and analysis. Throughout, there has been extensive dialogue and consultation with Saskatchewan producers, stakeholders and experts.

[2] More detailed information about the SASC and advisory committee can be found at www.cleanfarms.ca/SASC.

Background

This proposed product management program for Saskatchewan Waste Agricultural Plastics is the outcome of over three years of research and analysis. Throughout, there has been extensive dialogue and consultation with Saskatchewan producers, stakeholders and experts.

There has also been extensive dialogue with CleanFARMS' international network of agriculture and plastics recycling representatives and experts. Highlights (and links to more information) about specific activities undertaken in Saskatchewan include:

- Saskatchewan Agriculture Film Plastic Recycling Study (2010)
- Saskatchewan Waste Stewardship Consultation (2011)
- SK Agricultural Products & Packaging Waste Stewardship Industry Consultation (2012)
- CleanFARMS Growers Survey (2012) - quantitative survey in three prairie provinces
- Saskatchewan Agricultural Stewardship Council (SASC) formed under the CleanFARMS umbrella and tasked to develop and implement an agricultural plastics recycling program
- Advisory Committee established
- Stakeholder and Advisory Committee Meetings (Jan 2013)
- SK Agricultural Plastic – Study of Potential Collection & Processing Options (April 2013)
- Saskatchewan Agricultural Plastics Recycling Producer Focus Groups (April 2013)
- Stakeholder and Advisory Committee Meetings (April 2013)
- *DRAFT Regulation, proposed product management program to be submitted (June 2013)*

Although CleanFARMS has extensive experience and relationships within the agricultural sector and the delivery of agricultural waste collection and management programs, this particular program will be new. The products to be managed will require special handling equipment and procedures. Subsequently, it is understood that this product management program for agricultural plastics represents a reasonable *starting point*. All stewardship programs in Saskatchewan, and beyond, have undergone change and adaptation after the program is rolled out as real-world experience replaces initial plans and projections. Ongoing dialogue and flexibility are two key elements of this product management program.

PART 1 – Program Framework

Regulation

The product management program assumes a suitable regulatory framework is in place to ensure a "level playing field" among brand owners and sellers of these products.

The need for a regulation is consistent with the principles of Extended Producer Responsibility which shifts the responsibility of proper waste management from the general taxpayer to the brand owners and sellers of these products.

Regulation is a critical component of stewardship programs to ensure fairness and equal application across all stewards (brand owners and first importers) and among consumers of the products (Saskatchewan farmers and producers).

The SASC, with input from advisory committee members and other participating stakeholders, has developed the *Concept Draft – AGRICULTURAL PRODUCTS AND PACKAGING WASTE MANAGEMENT REGULATIONS* for consideration by the Ministry as part of its process to finalize and enact appropriate regulation to support this program. The suggested regulation has been modeled on existing stewardship regulations for other products in Saskatchewan.

Key Elements of the Concept Draft – AGRICULTURAL PRODUCTS & PACKAGING WASTE MANAGEMENT REGULATIONS

- The Regulation **does not** place any obligations or restrictions on Saskatchewan farmers or agricultural producers. They remain free to purchase agricultural plastics from any supplier operating in Saskatchewan and their decision to participate in the recycling program remains voluntary. Instead, the Regulation is aimed at "first seller" which includes:
  (i) a manufacturer, distributor, owner or licensee of intellectual property rights of an agricultural product that is sold, offered for sale or otherwise distributed into or in Saskatchewan;
  (ii) a vendor of an agricultural product outside of Saskatchewan and who, as an ordinary part of his or her business, solicits and sells agricultural products to consumers in Saskatchewan;
  (iii) an importer of agricultural products into Saskatchewan for resale in Saskatchewan; or
  (iv) a purchaser of agricultural products outside of Saskatchewan for use in Saskatchewan.

- The Regulation requires these "first sellers" to establish and operate their own Ministry-approved program for the collection and recycling of the agricultural plastics they sell into the province of Saskatchewan ***or*** become a member of an industry stewardship organization who will operate the program on their behalf. (The Regulation does not specify which industry stewardship organization "first sellers" must join, leaving the decision to individual stewards).

- The Regulation provides a clear definition of the agricultural plastics to be managed. The table below lists the agricultural plastics that have been identified for inclusion effective on the date the regulation is passed into law. It is important to note that the effective dates in the Regulation do not necessarily coincide with when the material will be included in the recycling program. Phasing in of some materials into the recycling program may be required along with corresponding product levies/handling fees.

COLUMN 1 **Agricultural Products**	**COLUMN 2** **Effective Date**
Large, bulky, single-use bags made from plastic and used to protect and temporarily store grains, pulses, silage and other agricultural products (commonly referred to as “grain bags”).	June 30, 2013
Single-use film wrapping made from plastic and used to contain and protect hay bales, silage and other agricultural products (commonly referred to as “bale wrap” or “silage wrap”).	June 30, 2013
Single-use twine made from plastic and used to contain hay and straw (commonly referred to as “bale twine”).	June 30, 2013
Single-use netting wrap made from plastic and used to contain hay and straw (commonly referred to as “net wrap”).	June 30, 2013

- The Regulation does not specify precisely how the materials are to be managed, but outlines the expectations of the Ministry and the requirement for “first sellers” to submit an appropriate plan (product management program) outlining how the targeted materials will be managed according to those expectations. The Regulation also does not specify how the program will be funded by “first sellers” requiring instead that stewardship funding mechanisms be outlined in the final program plan to be approved by Minister.

Harmonization of regulations and approaches across Canadian jurisdictions is also highly preferred by participating “first sellers” and nearly all stakeholders consulted, but the Saskatchewan Waste Agricultural Plastics Management Program assumes that only the province of Saskatchewan is prepared to implement regulation at this time.

Guiding Principles

The government Regulation will establish key operating parameters that the product management program must meet. In addition, the program will be based on the following guiding principles.

1. Level playing field – Regulation will be implemented to ensure a level playing field (fair competition) and to minimize the potential for free-riders.

2. Voluntary participation by Saskatchewan farmers and producers – The program will provide an efficient and cost-effective solution to the management of designated waste agricultural plastics. The program will not place any obligations or restrictions on farmers or agricultural producers. They remain free to purchase agricultural plastics from any supplier and their decision to participate in the recycling program will remain voluntary.

3. Program efficiency and continuous improvement –The program will ensure convenience and cost will be balanced and will also include stakeholders' feedback to ensure continuous improvement is considered as the program progresses.

4. Stakeholder inclusion – CleanFARMS will establish an advisory committee comprised of key stakeholders in the value-chain for these products to ensure ongoing evaluation of the program and that it achieves its stated goals.

5. No cross-subsidization of products - Notwithstanding opportunities to obtain economies of scale, steward fees for each designated product must pay for the entire cost of managing that product. Any fees should not be used to subsidize other products except for the ultimate goal of planning and establishing more efficient programs.

6. Changing behavior and attitudes towards agricultural wastes - Wastes generated on the farm are resources that should be properly managed to achieve the best end use of the products. The programs will adopt a 4Rs hierarchy (reduce, reuse, recycle, recover) approach to these products. Education and awareness of the benefit of proper disposal of the designated products and of participation in these programs will be used as an approach to encourage participation.

7. Harmonization – Although this particular product management program focuses on the province of Saskatchewan, regulations and collaboration across jurisdictions will be pursued. Beyond regulatory issues, the program work with other provincial and jurisdictional programs is to achieve economies of scale in program delivery and administration

Program Governance & Management

The suggested *Concept DRAFT - AGRICULTURAL PRODUCTS AND PACKAGING WASTE MANAGEMENT REGULATIONS* includes the option for "first sellers" to:

> *(a) operate a product management program approved by the minister; or*
>
> *(b) enter into an agreement with a person to operate, on the first seller's behalf, a product management program approved by the minister.*

Through the submission of this product management program, CleanFARMS Inc. and the SASC is seeking approval in principle to operate on behalf of its current members and all Saskatchewan "first sellers" who will be required to meet the terms of the coming Regulation.

Governance

The program will be managed by CleanFARMS Inc., a federally incorporated not-for-profit organization. CleanFARMS is governed through the following key pieces of incorporation:

- Objects of Incorporation (approved through Industry Canada)
- By-laws
- Code of Conduct
- Internal Policies and Procedures

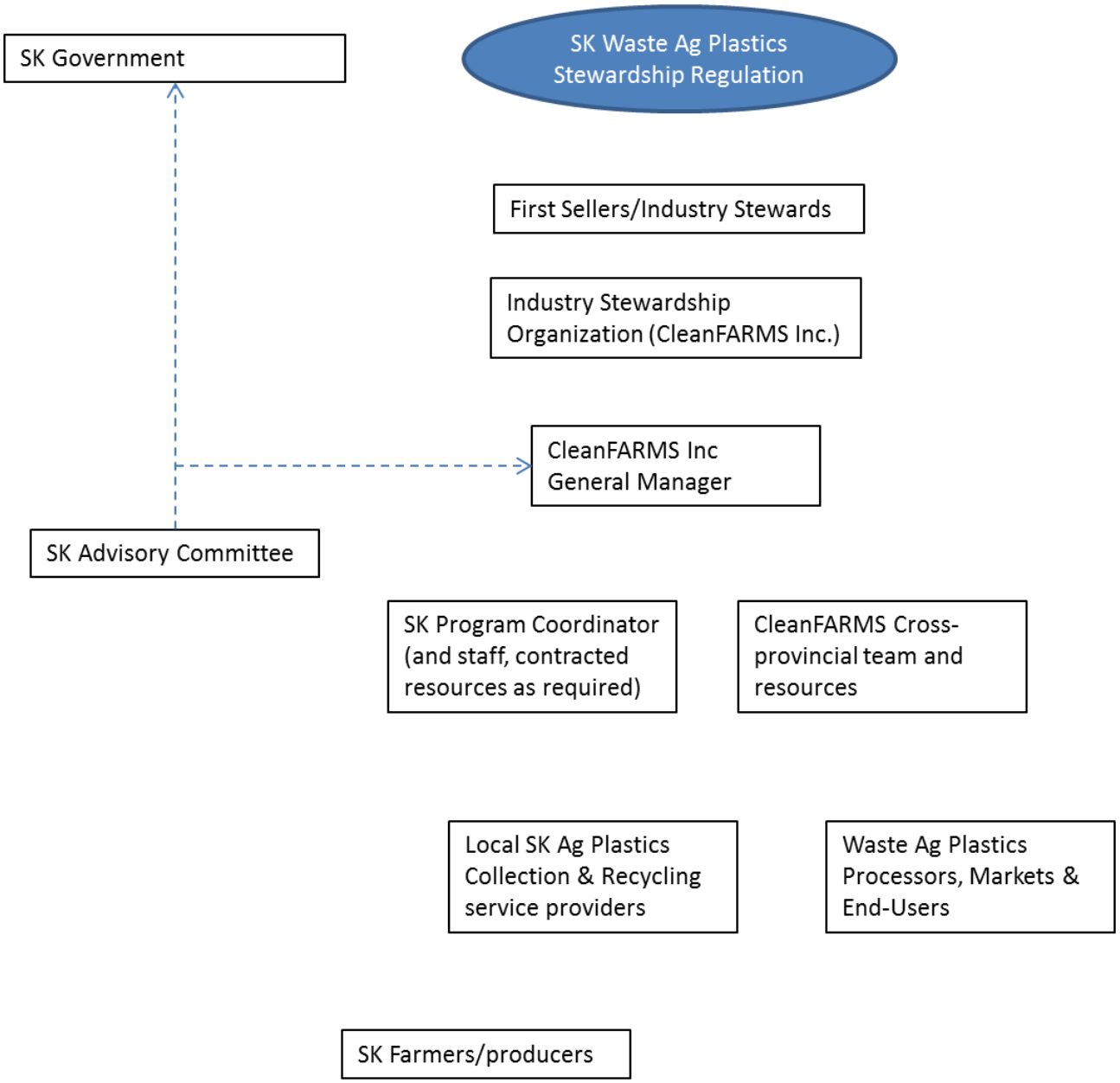
CleanFARMS' operates as a national program with a network of provincial representatives and contracted experts. The company has three subcommittees of the Board including an Executive Committee, Audit Committee, and the recently formed Saskatchewan Agriculture Stewardship Council.

As part of this program, CleanFARMS intends to establish an 'Advisory Committee' that will meet at least once per year to ensure all stakeholders have opportunity to provide input. CleanFARMS also intends to establish an office located in Saskatchewan after the product management program is approved by government.

CleanFARMS Inc. will remain accountable to its members, the general public and the Government of Saskatchewan through the terms of the approvals process outlined in the Regulation. CleanFARMS Inc.'s Board of Directors will continue to hold the overall responsibility for governance of the organization, establishing the overall policies and standards for its member programs and regulatory compliance in each jurisdiction in which it operates, including reviewing and approving overall strategic plans. The Board and/or its committees will monitor the performance and progress in meeting the Saskatchewan Waste Agricultural Plastics Management Program goals.

Other Roles & Responsibilities under the Saskatchewan Waste Agricultural Plastics Management Program

The principles of extended producer responsibility dictate that brand owners and/or “first sellers” of these products are ultimately responsible for the program. However, success is only achieved when every stakeholder participates. This program is built on the principle of ongoing cooperation within a ‘shared responsibility’ model where agricultural plastic manufacturers, sellers (importers, distributors, retailers), purchasers (farmers/producers), waste collectors/haulers, and processors (plastics recyclers) all play important roles.



Government's Role – Regulation, Enforcement & Program Approval & Monitoring

The Saskatchewan Waste Agricultural Plastics Management Program is based on the adoption of a suitable regulation to ensure a "level playing field" among brand owners and sellers of the targeted agricultural plastics being sold into the province. To be effective, regulation will require diligent enforcement. A strong partnership and collaborative approach between CleanFARMS Inc. and the Ministry of Environment will be necessary to maintain full compliance and level playing field.
Government will also monitor performance of the program and its operators. To assess performance, CleanFARMS will publish an annual report and submit it to the Saskatchewan Minister of Environment. The annual report will detail key performance indicators such as recovery rates, program costs and initiatives.

It is expected that the initial plan will be approved for 5 years and will require re-submission every 5 years to the Ministry of Environment.

First Sellers/Agricultural Plastics Industry Stewards

Under the Regulation "first Sellers" are defined as a person who:

(i) is a manufacturer, distributor, owner or licensee of intellectual property rights of an agricultural product that is sold, offered for sale or otherwise distributed into or in Saskatchewan;
(ii) is a vendor of an agricultural product outside of Saskatchewan and who, as an ordinary part of his or her business, solicits and sells agricultural products to consumers in Saskatchewan;
(iii) imports agricultural products into Saskatchewan for resale in Saskatchewan; or
(iv) purchases agricultural products outside of Saskatchewan for use in Saskatchewan.

"First sellers" of designated agricultural plastics will meet their regulatory obligations by either operating their own Minister-approved product management program or entering into an agreement with a person to operate, on the first seller's behalf, a product management program approved by the minister.

Those who choose to participate in the Saskatchewan Waste Agricultural Plastics Management Program as described herein by CleanFARMS Inc. will be provided with all the tools necessary to participate in the program. Their role will be to collect and report appropriate information related to agricultural plastics generation and recovery, and to collect and remit fees as part of the funding mechanism for the program. First sellers will also act as a conduit for information and education about the program and any associated fees.

Local/SK Contractors, Service Providers & Processors, Brokers &End Markets

As outlined in the section describing the system for the collection, processing and recycling system of agricultural plastics in Saskatchewan, it is anticipated that local contractors and third-party service providers will play a significant role in the program. Equipment vendors and suppliers will also be called on to participate as needed.

As part of the contractual arrangements, all operators participating in the program will be required to track and report information accordingly. Once collected, agricultural plastics will be shipped to recycled plastic processors, brokers and end-users throughout North America according to best market value opportunities at the time of shipping.

Farmers & Producers

Through early consultation and focus group research, it is clear that Saskatchewan farmers and producers want to "do the right thing" with their agricultural waste. In fact, Saskatchewan farmers have been actively lobbying government for solutions and more appropriate disposal options (see Appendix 1) – add APAS, SARM resolutions and any other support letters received). Further, a growing number of Saskatchewan farmers have been voluntarily participating in operating publicly-funded pilot programs.

The regulation will NOT mandate farmers to participate in the collection and recycling of agricultural plastics. However, all farmers and producers will be encouraged to participate based on the environmental benefit of the program and the fact that this program will, essentially, be the only legal option in Saskatchewan to manage these products at the end of their life.

Interested Constituents, Advocacy & the Public

Agricultural plastics are not the same as waste products managed through Saskatchewan's other stewardship initiatives. Agricultural plastics are purchased, used and disposed by farmers/producers. However, all Saskatchewan citizens are affected by the management of these products particularly when they are burned openly on the farm, since airborne contaminants from open burning drift across the province. Subsequently, it is important that the public and leading constituent groups understand the program and are provided proper transparency and accountability.

Saskatchewan Representation & Advisory Committee

An Advisory Committee will be established to facilitate ongoing dialogue, transparency and minimization of disputes wherever possible.

(2) The minister shall not approve a product management program unless the program:

(a) contains details of the management structure of the program;
(b) provides details respecting:
(i) the creation of an advisory committee to the operator of the product management program;
(ii) the role of the advisory committee in relation to the operation of the program; and
(iii) the manner in which Saskatchewan interests will be represented on the advisory committee; and

The Advisory Committee will be formed as a continuation of the committee established during the consultation and development phase of the program and will be a conduit for ongoing dialogue and communication with key constituents and ensures that SK interests will continue to be well represented within the umbrella of a national harmonized system.

Appropriate dispute resolution mechanisms will also be put in place to minimize conflict where necessary. Fortunately, many “first sellers” of agricultural plastics in Saskatchewan are already members of CleanFARMS and CleanFARMS has already invested significant effort and resources in developing a governance model, as well as, a Code of Conduct and Competition Guidelines for its members which will be extended to the Saskatchewan agricultural plastics program and will form the basis for an internal process for managing disputes among participating “first sellers”.

PART 2 – Program Elements

Agricultural Plastics

The Saskatchewan Waste Agricultural Plastics Management Program assumes that all four categories of plastics identified in Concept DRAFT Regulation will be managed under the program. The table below shows key characteristics of each category and estimated annual generation rates in Saskatchewan.

It is anticipated that over time other agricultural plastics and products may be added to the Regulation and this program as industry stewardship responsibilities evolve and stakeholders seek solutions to their waste management practices. However, at this time, the focus will be on developing an effective, efficient collection and recycling program for the categories outlined above. The four categories were chosen for inclusion at the start of the program for three main reasons:

- To provide farmers/producers with an environmentally appropriate option for the most commonly used plastics rather than just a single product solution.
- To provide sufficient volume of plastic to allow a cost effective recycling system
- To minimize the potential that substitute products will gain a price advantage over those that are included in the program. (This is especially true for net wrap and twine.)

Table 3.2 Characteristics of designated products

Product Category (Common Name)	General Description	Composition & Characteristics at point of sale	Estimated Annual Generation Rate in Saskatchewan
Grain Bags	Used by farmers/producers as cost-effective and convenient solution for temporary storage of various agricultural products.	Generally made from a combination of three separate laminated layers of low density polyethylene plastic; each bag can weigh up to 270 pounds when originally purchased.	1,130 tonnes. (This is considered to be a conservative estimate as the use of grain bags continues to grow).
Bale/silage wrap	Bale wrap is generally used to protect dry bales that are being stored outside and also to temporarily store hay that has a high moisture content. Silage wrap is used to store hay for use as silage.	Bale wrap is made from linear low density polyethylene resin and sold in rolls. Silage wrap is also made from low density polyethylene resin, but is commonly sold in tubes or flat sheets.	542 to 968 tonnes

Twine	Used to wrap bales of hay and straw after harvest	Plastic twine is made of strands of polypropylene or other plastic compositions twisted together to form a rope-like product. Sold in rolls and ranges in length. Common sizes are anywhere from 4,000 to 40,000 linear feet. The weight varies from year to year with current estimates indicating that 7,200 foot lengths weigh approx. 17 pounds on average.	1,068 to 1,325 tonnes
Net Wrap	Used to wrap and bind hay and straw similar to twine; for many farmers/producers, net wrap is becoming the preferred alternative to twine, partially because it is often easier and quicker to apply compared to twine, saving time and money.	Composed of high density polyethylene. Small strands are twisted and weaved together to form a grid-like pattern. It is often composed of recycled material and packaged in an LDPE sleeve. Net wrap is 1 mil thick and it is not uniformly thick throughout. It can vary in length from 7,000 to 11, 000 linear feet.	209 Tonnes

Agricultural Plastics Collection & Recycling Challenges & Opportunities

Although all four categories of products to be managed are made of plastics that are technically recyclable into marketable end products, each is unique in how it is used and handled. Each also has unique characteristics that must be taken into consideration in designing an appropriate collection and recycling program.

The table below summarizes some of the unique features and current recycling opportunities for each category of agricultural plastics to be managed under the Saskatchewan Waste Agricultural Plastics Management Program.

Category of Agricultural Plastic	Important On-Farm Usage and Handling Considerations & Subsequent Recycling Challenges	Recycling Opportunities
Grain Bags (Low Density Polyethylene)	▪ Grain bags are heavy, (averaging ~300lbs per bag). They are purchased in compact form, but once used they become bulky and difficult to handle and move around. Special equipment is required. Current practice is to use special hydraulic equipment to roll the used bags on-site to facilitate their transfer. ▪ These single-use bags allow grain to be stored in the field in which it is harvested until the farmer is ready to	▪ Grain bag recycling is relatively well-established in parts of SK through the efforts of MJRWS and PCAB pilot

	sell to market. Each individual producer will follow a unique schedule and process. ▪ Loading grain bags for shipping to market is time-consuming. Current practice is to load the rolled bags using special equipment, but more efficient and effective innovations may be worth investigating. ▪ Grain residue in the used bags attracts pests and rodents. This issue can be resolved with some degree of cleaning and compaction, but needs proper attention. ▪ It should be noted that on-farm disposal of these bags, while viewed by many farmers as "convenient", is subject to many of the same challenges. These bags are simply difficult to handle and move around once used.	programs supported by SK government funding. ▪ Current markets for this plastic exist in AB, BC and other parts of North America. ▪ Current revenue potential is in the range of $50-$100 per metric tonne (depending on cleanliness/quality of product received)
Bale/silage wrap (Low Density Polyethylene)	▪ These materials are generated in small amounts throughout the year as farmers remove the wrap from hay bales and silage to feed livestock. ▪ Unlike grain bags, used bale/silage wrap tends to rip and tear as it is removed from bales, especially in the winter as pieces are frozen to the ground. Gathering up pieces of torn wrap is time-consuming and requires some form of collection container that can be kept nearby as farmers remove the wrap. ▪ Pests, rodents, hay residue, soil, rocks, snow/ice and other ground cover are common contaminants in bale/silage wrap and create problems for the storage of wrap and also the acceptability of the material by recycling processors and end markets. ▪ Because wrap is generated in small amounts throughout the year, and the material is lighter and less bulky than grain bags, it is especially tempting for farmers to burn or bury this category.	▪ Although some bale/silage wrap has been successfully recycled in various parts of Canada (ON, AB), in SK nearly all bale/silage wrap is currently buried or burned. ▪ Current markets for this plastic exist in AB, BC, ON and US. ▪ Current revenue potential is in the range of $0 to $100 per metric tonne ▪ Quality is an issue with used bale/silage wrap due to contamination and degradation of the lightweight plastic used. Markets typically charge "tipping fees" due

		to low quality.
Twine (Polypropylene)	▪ Similar to bale wrap, twine is generated in small amounts throughout the year as farmers remove the wrap from hay bales and silage to feed livestock. ▪ Twine also tends to tear as it is removed from bales, especially in the winter as pieces are frozen to the ground. Gathering up pieces of twine is time-consuming and requires some form of collection container that can be kept nearby as farmers remove the twine. ▪ Used twine creates problems on the farm, contaminating soil, getting caught in equipment, creating tripping hazards, can be ingested by animals, etc. ▪ Pests, rodents, hay residue, soil, rocks, snow/ice and other ground cover are common contaminants in bale/silage wrap and create problems for the storage and the acceptability of the material by recycling processors and end markets. ▪ For the same reasons as noted above for bale wrap, twine is also especially tempting for farmers to burn or bury rather than recycle.	▪ Used twine that is clean and dry (<8% contamination) is in demand and commands a decent market value. Handling and transfer is a challenge that requires appropriate collection bags or bins. Plastic twine can vary in size and color, thus some recycling applications and end market uses may require separation by color and, in some cases, by size. ▪ CleanFARMS has initiated twine recycling projects in MB and ON. Recycling of twine has also seen modest success in parts of SK through the efforts of MJRWS and PCAB pilot programs. ▪ Current markets for this plastic exist in Minnesota, Oregon and New York, all in the USA. ▪ Current revenue potential is in the range of $100 to

		$290 (depending on cleanliness/quality of product received)
Net Wrap (High Density Polyethylene)	▪ Net wrap is used in similar applications as twine but requires different equipment and is subject to farmer/producer preference. Some farms use both net wrap and twine, depending on the application. ▪ The important on-farm usage and handling considerations for net wrap are similar as those noted above for twine. However, a key difference between twine and net wrap is the current situation with respect to recycling markets. Net wrap will be challenging to recycle from Saskatchewan in the short term. However, it is important to include this category in the program to avoid shifting farmer/producer purchasing patterns towards the non-recyclable material. In the short term, alternative end uses may be required for this one particular category. ▪ In SK and other provinces, nearly all net wrap is currently buried or burned.	▪ Recycling of net wrap is challenged at this time. It is difficult to handle, made from two different categories of plastics (which are indistinguishable and incompatible in the recycling process) and usually heavily contaminated with materials stuck to it. Best practices need to be developed for recycling of this material. In the short term, energy recovery may be the best available option. ▪ Current revenue potential is in the range of negative $50 (most processors charge a fee to accept this product)

On their own, each category of product will be challenging to recycle for different reasons and one, net wrap, may even require alternative end uses within the 4Rs hierarchy (reduce, reuse, recycle, recover) in the short term. However, as part of a broader system, the economic feasibility of recycling each category increases and it is fully expected that all four categories will be part of the system.

CleanFARMS has proven experience in successfully managing all aspects of collecting, processing and marketing agricultural plastics for recycling, including an empty pesticide container recycling system which operates in 1,000 collection locations in Canada and has achieved a 65% recovery rate. The organization's experience will be transferable to this program and will ensure that the four categories of agricultural plastics will be managed in appropriate end uses.

The collection of **net wrap** may require further analysis and development of appropriate recycling options and may be phased-in rather than started immediately. This effectively means that "first sellers" of all four categories will be required to participate in the development of solutions for the waste associated with their products, however, the application of any levy or "environmental handling fee" on net wrap, in particular, may be limited only to costs associated with researching and testing recycling options in the early stages until an appropriate collection system has been identified.

Agricultural Plastics Collection & Recycling System

Agricultural plastics are different than other components of the waste stream such as household products:

- They are purchased and used exclusively by farmers and producers;
- They are used only in profit-oriented, commercial agricultural settings and processes;
- They require specialized equipment for both their use/application and ultimate disposal; and,
- They are currently disposed of through on-farm burning and burial.

Fortunately, the processing and marketing of agricultural plastics is relatively straightforward. Stable recycling markets exist for most of the targeted materials[3]. CleanFARMS Inc. has significant experience and mature systems in place for managing the collection and recycling of agricultural plastics.

For the most part, tools and equipment to support the recycling of agricultural plastics are available. Many of the targeted products can be handled, transferred and shipped using equipment that is standard within the recycling sector. Grain bags do require special handling; however, grain bag rollers are available and have proven to be effective.

The main challenge is to develop a collection and recycling system that works within an environment where each individual farming operation uses different equipment, employs different production processes, follows different production schedules and has distinct methods and timing for dealing with their on-farm waste.

A Study of Potential Collection and Processing Options Study commissioned by the Saskatchewan Agricultural Stewardship Council in April 2013 was helpful in identifying the main cost components of a recycling program for agricultural plastics, but was not conclusive in identifying the most appropriate option for Saskatchewan. The Study noted two contrasting options in designing the collection and recycling program for agricultural plastics. The first option is to have farmers/producers deliver their agricultural plastics to central/regional drop-off sites. The second is to provide on-farm collection service to all SK farmers. Between those two points are a myriad of hybrids that can be developed and costs varied widely.

Not surprisingly, the Study concluded that providing on-farm collection is expected to be the highest cost option and would require a prohibitively high up-front handling fee to cover the cost of servicing each farm. Alternatively, while lowering the overall cost of the system, it is clear from farmer/producer feedback that requiring farmers to deliver their agricultural plastic waste to

[3] Net wrap may require additional analysis. CleanFARMS is currently developing markets for this material and other products which have similar challenges, such as seed and fungicide bags

centralized depots will have a significant impact on the convenience and cost to farmers. It could result in lower participation and material recovery, though this isn't always the case.

The province's existing grain bag recycling pilot programs (PCAB and Moose Jaw River Watershed) also provide valuable insight into the operational and economic realities of collecting and recycling grain bags in Saskatchewan. They are not fully instructive in how these factors may play out in a province-wide program collecting a wider range of plastics.

During the consultation, individual farmers/producers expressed different viewpoints on what level of collection service they expected relative to the amount they would see as an acceptable program cost. The proposed Product Management Program for Saskatchewan Waste Agricultural Plastics will provide for an adaptable and flexible collection infrastructure, especially in the early years, as the program is introduced and best practices are tested and developed.

Specific details for the collection and recycling system will be negotiated and rolled out once the Regulation has been made into law and the Saskatchewan Waste Agricultural Plastics Management Program has been approved. It is anticipated that program will be built on six key components as outlined below.

COMPONENT 1 – Establishment of collection sites

A network of strategically located depot sites will be established. These sites will be accessible to allow interested farmers to drop off the targeted agricultural plastics at a time that meets their convenience.

- Some preliminary work has been done to determine strategic siting of depots within agriculture-intensive areas of the province. Where feasible and appropriate, the program will build from existing infrastructure and success, where possible. Discussions will be held with MJRWS and PCAB to determine the possibility of incorporating their existing sites and infrastructure into the new collection system. Targeted discussions and negotiations will also be held with existing public sites (ex. waste disposal grounds) and other existing SK recycling program depots and consolidation sites to determine potential co-siting opportunities and/or other opportunities for collaboration.
- Staffing and hours of operation may vary between sites and will be determined as part of the individual negotiations.
- All four categories of agricultural plastics will be accepted at these sites.
- On-site equipment will vary as well and may include portable grain bag rollers for loan to farmers similar to the MJRWS and PCAB pilots.
- Optimal number of sites cannot be determined at this time and will be evaluated through the implementation period as part of the ongoing system development and review. The initial target will be to provide reasonable and adequate coverage across all 14 agricultural districts in Saskatchewan.

COMPONENT 2 – Establishment of event-based collections

Special agricultural plastics collection days/events will be scheduled across the province.

- CleanFARMS may combine these events with its successful obsolete pesticide container events where appropriate. Other stewardship organizations may be approached for collaboration. (For example, SSTC's scrap tire stockpile cleanup program is entering phase 3 and will be targeting private stockpiles from private land, including farms.)
- Pick-up services will be contracted to third party service providers wherever possible to encourage competitive marketplace and to avoid large capital expenditures before system optimization is fully understood.
- Pricing, terms, and incentives for special collection events will need to be negotiated and may vary by region. Competitive bid processes will be used to engage local recycling service providers, where necessary and appropriate, within the collection and recycling process.
- Routes, schedules, locations and procedures to be determined and are expected to evolve over time as best practices emerge.
- All four categories of agricultural plastics will be picked-up for recycling. (Information regarding alternative end use for net wrap will be required.)
- Farmers will be encouraged to register and/or request pick-ups according to guidelines to be established in collaboration with farmers as part of the program roll-out. (This may include requirement to request pickup only when a certain volume is available, coordinating specific pick-up days/events, etc.)
- Promotion and education activities will be part of any special pick-up days/events as a means to raise awareness and inform farmers/producers of the need and opportunity to recycle their agricultural plastics.
- Optimal number of pre-arranged pick-ups and/or special collection events cannot be determined at this time and will be evaluated through the implementation period as part of ongoing system development and review.
- It is possible that the use of contracted service providers will grow over time and reduce the number of drop-off sites required under the program. Starting with a limited number of scheduled on-farm and/or near-farm pickups will allow testing and learning at the beginning of the program to make a proper evaluation.

COMPONENT 3 – Distribution of FREE collection bags/bins

Farmers/producers will be provided with special bags or bins for the collection, temporary storage and transfer of twine, net wrap and bale/silage wrap.

- Special bags or bins will be provided FREE to farmers
- Agricultural plastics distributors and retailers will be asked to distribute the bags at point of sale to encourage farmer participation in the collection and recycling program

- Information on the program and instructions to participate will also be provided at the same time.
- In addition to improving convenience and simplifying handling and disposal of twine and wrap to the farmer/producer, these special bags are also expected to help improve the quality of material collected for recycling and ease the loading, transfer and shipping of the contents.

COMPONENT 4 – Marketing of plastics

Marketing of agricultural plastics collected through the program will be managed by a Saskatchewan-based Program Coordinator with direct support from CleanFARMS' cross-provincial team of experts.

- This will include negotiating prices/tipping fees and shipping arrangements and will ensure efficient shipping and marketing of collected plastics, as well as maximize recycling revenue to offset costs to consumers of levied products
- Leveraging CleanFARMS' expertise and experience in negotiating with plastics markets provides significant advantage to the program.

COMPONENT 5 – Establishment of efficiency & improvement fund

A system efficiency and continuous improvement fund will be established to provide sufficient resources to analyze, develop and implement best practices, program innovations and other efficiencies.

- May be used for pilot programs and research studies, hiring of specific technical expertise, training and workshops, ad hoc working groups to consult and deal with specific issues as they arise.

COMPONENT 6 – Establishment of technical advisory committee to assist in program design & roll-out

A technical advisory committee will be established to provide direct input into the details of the program during the roll-out phase after regulation has been passed and product management program has been approved. Representatives of Saskatchewan farmer/producer groups (ex. APAS, Dairy producers, Cattlemen, Stockholders) will form the core of the committee. Other helpful perspectives (ARMAS, SARM, SUMA, SSTC, SARCAN, Oil) will be invited. The purpose of the committee will be specifically to help CleanFARMS determine optimal locations for depots across Saskatchewan and also provide input and expertise to operational factors, such as, terms for third party collectors/recyclers.

The program operated by CleanFARMS Inc. will be provided without charge to farmers. Instead, the program will be fully financed through upfront fees as discussed in Part 4 – Program Financing. (Individual farmers may choose to pay outside agents to provide premium levels of

service. The program will allow for this flexibility to farmers who wish to receive higher level service than their peers, but it will not cover the cost of this higher level of service.)

It is important to note that, although the collection and recycling system will result in spin-off economic benefits to the SK economy, the primary focus will be on delivering an efficient and effective recycling program for agricultural plastics. All program decisions will be biased towards these considerations.

Targets & Environmental Performance

The 4Rs Hierarchy

There is little doubt that open and indiscriminate burning is the least preferred option for managing waste plastics because of the many adverse effects on the environment and human health. However, on-farm burning is still perceived by some farmers as the most convenient and effective solution. In fact, some farmers and producers remain unconvinced of both the dangerous health effects and of the net benefit of recycling rather than openly burning plastics.

The environmental impact of disposing/burying agricultural plastics on the farm or in publicly-funded landfills may be less immediate, but over the long-term, perhaps just as significant. However, the economic costs of managing waste agricultural plastics through municipal and regional waste management systems are immediate. Bulkier, heavier and more difficult to handle, these materials can fill up landfill cells quickly, resulting in significant cost to the system. Subsequently, many SK waste authorities have banned these materials from their landfill. On-farm burial of these wastes is a temporary solution at best; at some point the farmer runs out of room.

Consultation with Saskatchewan farmers confirms that despite the many upfront benefits to farmers, handling the waste from agricultural plastics used in production is challenging, time-consuming and often heavy work which typically requires special equipment. This is the same whether the plastic is burned, buried or diverted into the recycling stream. For example, during focus group discussions, a few farmers who currently burn their grain bags, indicated that they take extra steps to condense the bags, load them onto trucks, move them to a remote area on their farm, add fuel or other igniter fluid, and then return to burn the pile at times they feel will result in minimal complaints and/or fines. This is important to note because it demonstrates that

the perceived convenience of burning or burying agricultural plastics may, in fact, be more perception than reality.

The Saskatchewan Waste Agricultural Plastics Management Program provides a solution based on sound environmental stewardship principles following the 4Rs hierarchy of Reduce, Reuse, Recycle and Recover.

Reduce - Reducing the amount of waste associated with agricultural plastics is an ongoing practice. The industry has been effective in "lightweighting" the amount of plastic used to accomplish the same end goals and continues to seek such innovations. The Saskatchewan Waste Agricultural Plastics Management Program will encourage progress in this area and will provide a platform for Saskatchewan farmers and producers to provide input into new opportunities.

Reuse – Saskatchewan farmers have found innovative ways to reuse their waste agricultural plastics. Some have used grain bags instead of tarpaulins as temporary flooring or roofing cover. Others have found similar uses for bale/silage wrap. Such uses will not be discouraged. However, they are not seen as permanent or widespread solutions. At the end of their temporary use, these materials will still need to be managed as waste.

Recycling – The recycling of waste agricultural plastics into marketable end-use products will be the primary focus of The Saskatchewan Waste Agricultural Plastics Management Program. Contamination and quality may render some collected material unsalvageable. This is common in recycling and is anticipated to be an issue in the early stages of the program as farmers/producers get used to the recycling process and market requirements and best practices are developed and communicated.

Recovery or Alternative uses where necessary - Recycling of net wrap is a significant challenge at this time. Through CleanFARMS network of relationships and experience with plastics processors and end markets, it is expected that a solution will be found once the program is operational and sufficient volume has been collected to conduct proper test shipments and discussions. In the absence of recycling markets, the program will look to opportunities for energy recovery. (This is different than open burning in that the waste plastic will be used to displace other fuel sources and will be done in a controlled environment that minimizes pollution and adverse health effects.)

Recycling Targets & Expectations

Specific recycling targets will not be established in this current product management program. In the early years of the program, the primary focus will be to provide Saskatchewan farmers/producers with appropriate access and opportunity to recycle. CleanFARMS will aim to provide province-wide access with primary focus on areas of agricultural intensity. As the

system gets rolled out, the focus will shift to maximizing farmer/producer participation and improving overall material recovery and specific targets will be established in consultation with stakeholders and the Ministry.

The Continuing Importance of Burning & Disposal Bans

Neither the Regulation, nor the Saskatchewan Waste Agricultural Plastics Management Program provides any authority whatsoever to require Saskatchewan farmers to recycle their waste agricultural plastics. Farmers/producers will be provided a convenient and accessible system and will be strongly encouraged to participate. However, they will remain free to make their own decisions on how they manage their waste streams.

Ultimately, the success of the program will depend on the willingness and ability of individual farmers/producers to participate. Convenient access, proper education and awareness will be key drivers, but individual decisions will be measured against the perceived ease and convenience of alternative practices such as open burning and landfilling. Diligent and ongoing enforcement of existing by-laws and regulations to restrict these harmful practices will be necessary to ensure long-term success. Without a proper collection and recycling system in place, it is understandable that enforcement of existing laws has been less than optimal. However, as the Saskatchewan Waste Agricultural Plastics Management Program rolls out across the province, the opportunity and need exists to enforce existing legislation aimed at shifting farmer/producer disposal practices away from burning and landfilling of agricultural plastics. CleanFARMS, working in direct consultation with the advisory committee, will encourage Saskatchewan's provincial and municipal governments to continue their efforts to develop and enforce appropriate standards.

PART 3 – Education & Awareness Program for Saskatchewan

Education & Awareness Program

Ongoing promotional and educational activities will be used to support the program and, more importantly, to encourage farmer/producer participation in the collection and recycling system.

CleanFARMS has a comprehensive and well-developed education and awareness approach that has been specifically developed to meet the particular needs of farmers/producers and other stakeholders involved in the agricultural sector, both within Saskatchewan and across Canada.

The education and awareness program for the Saskatchewan Waste Agricultural Plastics Management Program will be built on the following fundamentals:

- Identifying the target audience
- Understanding the needs of the audience
- Testing and developing appropriate tools to reach the audience effectively
- Implementation of the tools

Details of each component are outlined further below.

Identifying the Target Audiences

Promotion and education activities will be targeted towards Saskatchewan farmers/producers, as the primary users of this program, to ensure awareness and encourage participation in the collection and recycling system for agricultural plastics.

Key agricultural stakeholders including manufacturers, agricultural retailers and municipal waste leaders, also play important roles in the program and will be instrumental in encouraging farmers to properly manage these products in accordance with the program infrastructure. Activities will be directed towards these stakeholders to ensure their support and sharing of messages for the program.

Saskatchewan citizens and consumers will also be made aware of the program and informed of the positive implications of having a recycling system for agricultural plastics with a particular emphasis of raising awareness of the strong commitment of Saskatchewan farmers/producers and the agricultural industry to the protection of Saskatchewan's environment.

Understanding the Needs of the Audience

1. Background Research

Surveys and focus group research has been undertaken on these products to understand current producer attitudes and behaviors with respect to these products. The research also

provided an understanding of the messages that would best resonate with farmers to motivate them to participate in this program.

CleanFARMS has also undertaken detailed focus group research in other areas of agricultural product management, most notably its pesticide container program. Beginning in 2009 and through to 2013, CleanFARMS has become keenly aware of farmer attitudes and behaviors with respect to farm waste resource management. Based on its research, CleanFARMS intends to implement key messaging and continually modify it through a program of continuous improvement.

2. Key Messages

The messages utilized in the education and promotion tools will be based on focus group testing commissioned in 2013 that indicated the following messages resonated best with Canadian farmers including:

- **A focus on the strong industry and farmer/producer commitment to the environment**
    - The proper management of these products is a key step in ensuring the sustainability and viability of Canadian agriculture; and,
    - Industry has adopted initiatives to further protect people and the environment above and beyond the strict regulations set by federal and provincial governments.
- **There are many benefits to recycling grain bags, bale/silage wrap, plastic twine and net wrap**
    - Returning agricultural plastics helps to keep your farm and your environment cleaner;
    - Burning agricultural plastics is harmful for the environment;
    - Returning your agricultural plastics is easy to do.
    - Agricultural plastics are recycled into a range of products including farm drainage tile, film bags, other agricultural products;
    - Returning your designated products ‘makes sense’ and is ‘the right thing to do’; and,
    - Be respectful as a good neighbour - do your part.
- **Proper recycling procedures**
    - Specific details on how to participate in the program

3. Steps to Maximize Program Participation

It is well established in the recycling industry that directions should be simple and straightforward in order to enable participants to participate properly and efficiently. CleanFARMS will draw on its experience and success in collaborating with farmers/producers to develop proper procedures and instructions for participation.

4. Developing Appropriate Tools To Reach The Audience

Research shows that agricultural retailers and farm newspapers are considered the most useful sources of information that farmers use to learn about issues that can affect their farm operation. The materials described below will be distributed through agricultural retail locations across Saskatchewan where farmers/producers purchase agricultural plastics and other supplies for their operations. This is also the opportunity to demonstrate that retailers are supportive of the program.

Journals, newspapers and trade and association publications targeted to Saskatchewan's agricultural community will also be used to distribute messages through paid and earned media.

Brochures/Point of Purchase – Program information brochures, magnets, point of purchase material, signage will be distributed to retail locations throughout Saskatchewan. These materials will emphasize that recycling agricultural plastics makes sense, is easy, and is the right thing to do.

Paid Print Media – A variety of print ads will be developed as a core tactic to drive awareness and provide key information messages such as how to properly prepare the container for return. Templates will be created in both colour and in black and white so it can be adapted to rural weekly newspapers, various grower association newsletters, and agriculture trade press.

Earned Media – Articles and news releases promoting the new program will be produced and made available to local and trade media. The articles should be fact and benefit based (as opposed to promotional) and accompanied by print-ready photography. Subject matter could include: what happens to recycled plastics.

Collection Signage/Posters – Collection signage will be made available to all collection locations. Having good quality signs at recycling depots (retailers and municipal collection sites) serves to not only communicate the depot location, but also demonstrates the formality/seriousness of the program. Collection signage will also include a positive message reinforcing farmers as good stewards, as well as a positive reminder for proper preparation of the designated products.

Website **–** A website will be developed for the Saskatchewan Waste Agricultural Plastics Management Program. The website will be linked to CleanFARMS website www.cleanfarms.ca and will provide information on how to participate in the program, the location of collection sites, and the benefits of recycling.

Radio ads - Rural radio are also an effective way to reach farmers. Listenership is high and farmers often have their radio on while in the field. Radio is also effective for reaching farm families, such as in the mornings when most people are listening. A series of 3-4 radio scripts may be developed for variety and extended messaging.

Tradeshows - CleanFARMS will also take advantage of tradeshows and industry meetings to communicate the importance and availability of the program.

All aspects of the education and awareness strategy to support the Saskatchewan Waste Agricultural Plastics Management Program will be customized to meet the particular needs of Saskatchewan and will be finalized in collaboration with contracted communication and marketing experts. CleanFARMS has established relationships with a number of independent firms specializing in communication and marketing programs aimed at farmers/producers and agricultural sector participants in western Canada.

All costs associated with the education and awareness activities will be incorporated into the calculations to determine the funding requirements of the program as outlined in Part 4 – Program Financing.

PART 4 – Program Financing

Funding Mechanism

The proposed product management program will provide a collection and recycling system for grain bags, bale/silage wrap, twine and net wrap. The program will be made available to farmers/producers throughout Saskatchewan to participate in at no charge. (Individual farmers may choose to pay outside agents to provide premium levels of service. The program will allow for this flexibility to farmers who wish to receive higher level service than their peers, but it will not cover the cost of this higher level of service).

The program will be fully financed through fees collected and remitted by participating "first sellers" in order to fund their obligations under the Regulation. Consistent with Saskatchewan's other existing stewardship programs, and similar to the pesticide container recycling program managed by CleanFARMS, participating "first sellers" will be required to finance their participation through fees charged according to the amount of product they sell into the Saskatchewan marketplace. These fees, discussed further below, will be the sole revenue source for program.

The fees which will only be paid once in the supply chain and will be incorporated into the price of agricultural plastics sold into Saskatchewan, but may or may not be identified separately to purchasers. The Regulation does not specify the fees to be collected, nor does it set out requirements on how "first sellers" are to incorporate the fees into their product pricing. Similarly, CleanFARMS retains no authority on how participating members incorporate fees into their product pricing.

The product management program will ensure that appropriate communication and education materials are made available to ensure that stakeholders are aware of the fees and understand how they relate to financing the agricultural plastics collection and recycling system.

Agricultural Plastics Recycling Fee Rate Setting Methodology

The Saskatchewan Waste Agricultural Plastics Management Program will derive 100% of revenue for its programs and activities from fees collected and remitted by participating “first sellers” on the sale of all new grain bags, bale/silage wrap, twine and net wrap entering the Saskatchewan marketplace. No public funding or tax revenue will be received by the program. This means that fees must accurately reflect the cost of managing each category of agricultural plastics according to the requirements set out in regulation.

Modeled after other stewardship programs in Saskatchewan and across Canada, the following rate setting methodology will be used to determine appropriate and equitable fees to be charged on each category of agricultural plastics.

A: Volumes to be managed under the program will be calculated – Initial estimates have been determined through research. As the program unfolds, data on actual volumes managed will be available and will be used in the calculation.

B: Net operational costs will be calculated for each category – These will include estimated collection costs, processing and shipping costs, and all associated research and development costs. Market revenues will be factored in to determine the net costs for each product category.

C: Common costs will be calculated and applied equally across all categories – This will include costs associated with program administration, education and awareness, as well as, a contribution to a contingency reserve fund.

D: Sales volumes for each category will be forecast – this will be based on program experience and industry information. Initial estimates have been calculated, but real world data will become available as the program develops.

The basic calculation will be as follows:

$$\frac{A \times (B + C)}{D} = \text{Fee assigned to each category}$$

The methodology and the resulting fees for Saskatchewan will be communicated to “first sellers” and stakeholders upon approval of the Saskatchewan Waste Agricultural Plastics Management Program.

Preliminary estimates of the costs of the program and resulting implications for the pricing of agricultural plastics are provided below. However, actual fees can only be determined as part of the roll-out plan based on final calculations and confirmation of the specific details of the program.

Preliminary Estimate of Program Costs & Implications for Pricing of Agricultural Plastics

The following estimates were uncovered through consultation, research and analysis completed between 2010 and 2013.

Preliminary Estimates of Common Costs

Common Costs	**Amount**	**Note**
Saskatchewan-based Staff & CleanFARMS expenses	$175,000	SK Coordinator and staff at 1.25 Full-time equivalent
Office Expenses	$10,000	
Education & Awareness	$100,000	
Insurance	$6,000	
Accounting	$10,000	
Technical	$30,000	
Legal	$10,000	
Membership services	$6,000	
Annual report	$8,000	
Travel	$10,000	
Committee meetings	$10,000	
Subtotal	**$375,000**	
Allocation to contingency reserve	$200,000	*Builds ~$1 million reserve in 5 yrs
Total Common Costs	**$575,000**	

Table Notes:

1. The above costs do not include the considerable cost and effort CleanFARMS has already incurred in developing its organizational structure and operations. This includes all legal/incorporation costs, governance structure development and operations, membership services, information technology systems, etc. This is of tremendous benefit to the program. Other operators would need to factor in these costs at the start-up of their programs.
2. Start-up costs associated with detailed negotiations and preparation for rolling out the collection program are not included in the above. These costs will be incurred only after the regulation is passed, but before handling fees are incorporated into product pricing. As a result, separate discussions will need to take place to determine how these costs will be funded.

Preliminary Estimates of Collection & Recycling System Costs & Implications for Pricing of Agricultural Plastics

The Study of Potential Collection and Processing Options Study commissioned by the Saskatchewan Agricultural Stewardship Council in April 2013 noted two contrasting options in designing the collection and recycling program for agricultural plastics. The first option is to have farmers/producers deliver their agricultural plastics to central/regional drop-off sites. The second is to provide an on-farm collection service to all SK farmers. Between those two points are a myriad of hybrids that can be developed and costs varied widely.

The study was able to confirm early estimates calculated by CleanFARMS based on their experience with the empty pesticide container program which determined that the total cost provide an appropriate collection and recycling system agricultural plastics across Saskatchewan will be in the range of $800,000 to $1,500,000. Factoring in the anticipated Common Costs noted above, results in an estimated total cost for the Saskatchewan Waste Agricultural Plastics Management Program in the order of $1,375,000 to $2,075,000.

Based on estimated sales of agricultural plastics, and general and anecdotal pricing information provided by industry representatives for Saskatchewan the impact would be equivalent to 5% to 7% of the price of grain bags, bale/silage wrap, twine and net wrap.

Final calculation of fees can only be determined once the regulation is passed into law and this Saskatchewan Waste Agricultural Plastics Management Program plan has been approved. At that time, CleanFARMS will initiate the development of a detailed roll-out plan for the early years of the program and will work with “first sellers” and members of the Advisory Committee to complete the calculation and timelines for implementing the fees and program roll-out.

PART 5 – Implementation Timelines & Program Reporting

Goals, Activities & Implementation Schedule

The long-term objectives of this initiative are as follows:

- To manage a program on behalf of CleanFARMS' membership that meets the requirements under the Saskatchewan Waste Agricultural Plastics Stewardship Regulation.
- To meet the Minister's requirements for maintaining a province-wide agricultural plastics stewardship program, including annual performance reporting.
- To educate Saskatchewan farmers/producers, "first sellers", residents, businesses and municipalities about the program and responsible end-of-life management of agricultural plastics.
- To provide Saskatchewan farmers/producers with convenient and environmentally sound solutions for managing obligated end-of-life agricultural plastics.
- To operate in a transparent manner by disclosing through an annual report the performance of the organization.

Pre-Launch Goals:

1. Work with Saskatchewan Ministry of Environment towards the establishment of the Regulation by (note target date to meet industry's needs for incorporating fees into pricing)

2. Identify implementation schedule and pre-program funding requirements and mechanisms
    a. Passing of regulation is step 1 and is a necessary precursor to moving forward with fee/program. Sufficient time will be required between enactment of regulation and fee/program implementation
    b. Until fees are in place, no funds will be readily available for communication, consultation, hiring, collection program negotiations, etc. Discussions are required to identify and allocate sufficient resources to complete this necessary work.

3. Subject to 2b above, communicate the elements of the regulation and PMP to "first sellers", farmers/producers, representative associations, other SK stakeholders and SK residents.

4. Subject to 2b above, modify CleanFARMS member registration, reporting forms and processes to extend to "first sellers" of agricultural plastics into SK. Distribute and communicate these forms to identified "first sellers" prior to fee launch date per regulation.

5. Subject to 2b above, arrange initial staffing and/or contracted management resources for SK program coordination, collection system and siting negotiations, etc.

6. Subject to 2b above, initiate Education and Awareness Plan as outlined

7. Subject to 2b above, extend CleanFARMS governance structure to accommodate program management, including invitations and discussions to determine Advisory Committee roles and responsibilities.

8. Launch fee effective (date)

9. Launch collection and recycling program June 2014

Year 1 Goals:

1. Register steward members, start collecting remitted fees and allocating revenues to program implementation.

2. Where feasible and appropriate, incorporate MJRWS and PCAB sites into fully-funded, province-wide collection system.

3. Expand network of collection sites to provide access across all agricultural districts in Saskatchewan.

    a. Discussions/negotiations will take place with regional/municipal waste sites, agricultural product retailers/distributors, other stewardship program operators and other possible sites to determine preferential locations.

4. Hire local SK Program Coordinator and staff/contracted resources as required and establish Saskatchewan office for program.

5. Call for “expressions of interest” to SK recycling collection service providers to determine potential cost of providing on-farm collection services as part of the system in the long-term.

6. Concurrent to process above, develop a pilot initiative to provide on-farm or near-farm collection days/events in select locations across the province. Consult with Advisory Committee to determine best locations for year 1.

7. Monitor collections and arrange shipping to markets at regular intervals based on least cost/highest revenue options to the program.

8. With support from Ministry of Environment, member “first sellers” and Advisory Committee participants continue to promote harmonization of program across Canada, with special emphasis on AB and MB as important neighboring jurisdictions.

9. Report year 1 progress to members, Minister of Environment, Advisory Committee, and SK constituents and determine year 2 priorities.
    - An annual report will be developed to communicate the Program to members, governments, the Advisory Committee and the general public. The annual report will meet the requirements and expectations of the Minister as outlined in the Regulation.

Appendix 1 – Resolutions and Letters Received from Stakeholders Related to Stewardship of Agricultural Plastics

Agricultural Producers of Saskatchewan

BE IT RESOLVED that, in consultation with APAS, the Saskatchewan government help develop a collection infrastructure for agricultural plastics in the province. (Resolution E5, August 13, 2010)

SK Waste Reduction Council

…the Saskatchewan Waste Reduction Council supports the creation of regulatory frameworks at provincial and federal levels under which the principles of Extended Producer Responsibility would be applied to the 'production to disposal' life cycle of agricultural plastics, including grain bags, silage wrap, twine, netting, containers and other plastic products used in primary agriculture. (SWRC Board motion, March 16, 2013)

SK Association of Rural Municipalities

Resolution No. 21 - 12A
RM of Sasman No. 336
Plastic Grain Bag Recycling Deposit

WHEREAS there are many grain farmers across Saskatchewan now using large plastic grain bags to contain their yearly crop; and

WHEREAS the usage of these bags are becoming more prevalent in farming practices; and

WHEREAS rural municipalities are finding that these large grain bags are being left in fields and ending up in municipal right-of-ways, causing public safety and environmental situations and a harborage for rats and mice;

BE IT RESOLVED that SARM lobby the Provincial Government to implement a recycling deposit fee of $300 on large plastic grain bags.

Resolution No. 20 - 12A
RM of Torch River No. 488
Plastic Grain Bags

WHEREAS used grainbags are creating a serious environmental problem as they are being burnt or being piled up in locations creating a breeding place for rodents;

BE IT RESOLVED that a user pay environmental fee at the point of sale which is substantial enough to cover the recycling cost and the deposit return fee be set.

Resolution No. 19 - 12A
RM of Lakeside No. 338
Plastic Grain Bags

WHEREAS the rat population in our province has escalated dramatically and RM's are stringently attempting to control it; and

WHEREAS grain bags, full and empty, are being left too long in fields, providing the perfect home for rats, and

WHEREAS there does not appear to be many regulations currently in place to deal with the proper use and disposal of grain bags other than no burning of the plastic and voluntarily transporting the bags to a regional roller;

BE IT RESOLVED SARM lobby the government to research ways to implement regulations that will encourage producers to use plastic grain bags more responsibly.

District #31 Provincial ADD Board

District #31 ADD Board

Box 116, Nipawin, Sask. S0E 1E0
Phone , 862-3380

April 8, 2013

Honourable Lyle Stewart
Minister of Agriculture
Legislative Buildings
Regina, Sask.
S4S 0B3

Dear Mr. Stewart:

RE: GRAIN BAG DISPOSAL

The use of grain bags by the farming community over the past several years has presented a disposal problem for many areas.

Our ADD Board is attempting to clean up the grain bags which have been accumulated but as always, a lack of funding is an impediment. The Board suggest that a deposit of $100 (or whatever number is chosen) be levied at point of sale. This deposit could then be used to assist in the cleanup of the bags at the farm site.

We understand some programs are in place at this time, but if we wish to address the situation on a long-term basis, we need to have continued funds in place.

We ask that you look into this matter with a view to implementing a deposit on the grain bags in Saskatchewan.

Yours very truly,

Tim Perkins
Chairman

Cc: Fred Bradshaw, MLA, Carrot River Valley
Nadine Wilson, MLA, Saskatchewan Rivers
✓ Provincial Council of ADD Boards