

IVMA OF BC 2018 FORUM EMBRACING CHANGE

Pesticide Containers and Waste Management

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Pesticide Containers and Waste Management

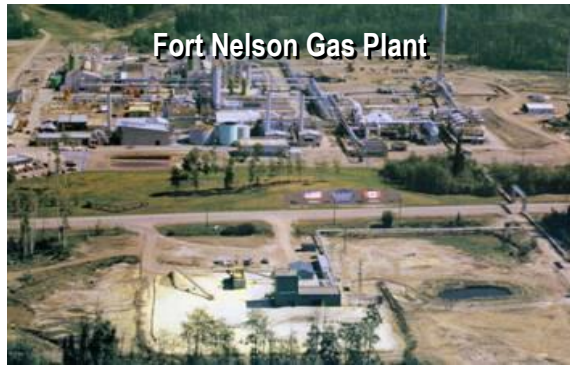
ABSTRACT

- ▣ A look at a company's development of a "bridging" program to pull the waste handling components of PMPs into the industrial waste management program. Although pesticide triple rinsed containers are declassified from being hazardous waste, accountability for this waste stream as industrial waste, including selection of disposal or recycling receivers, and tracking is part of sound program management.

FOCUS

- ▣ Integrated Pest Management (IPM) control methods generate waste containers; focus on pesticide containers
- ▣ legislation related to waste management aspects
- ▣ life cycle accountability to improve our otherwise robust vegetation management program

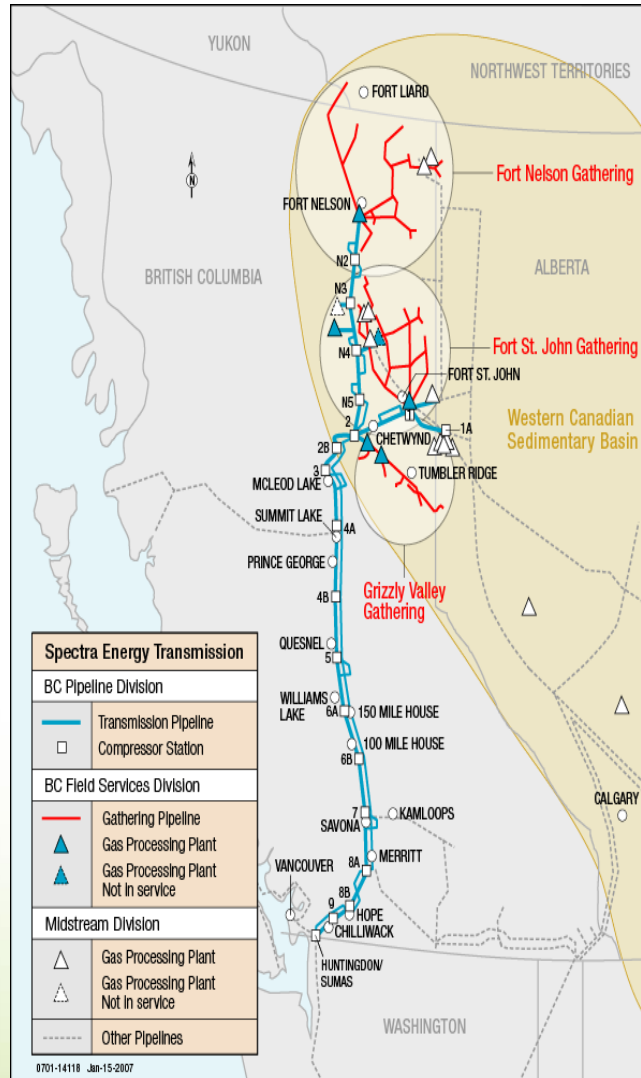
BC Pipeline & Field Services System



Fort Nelson Gas Plant

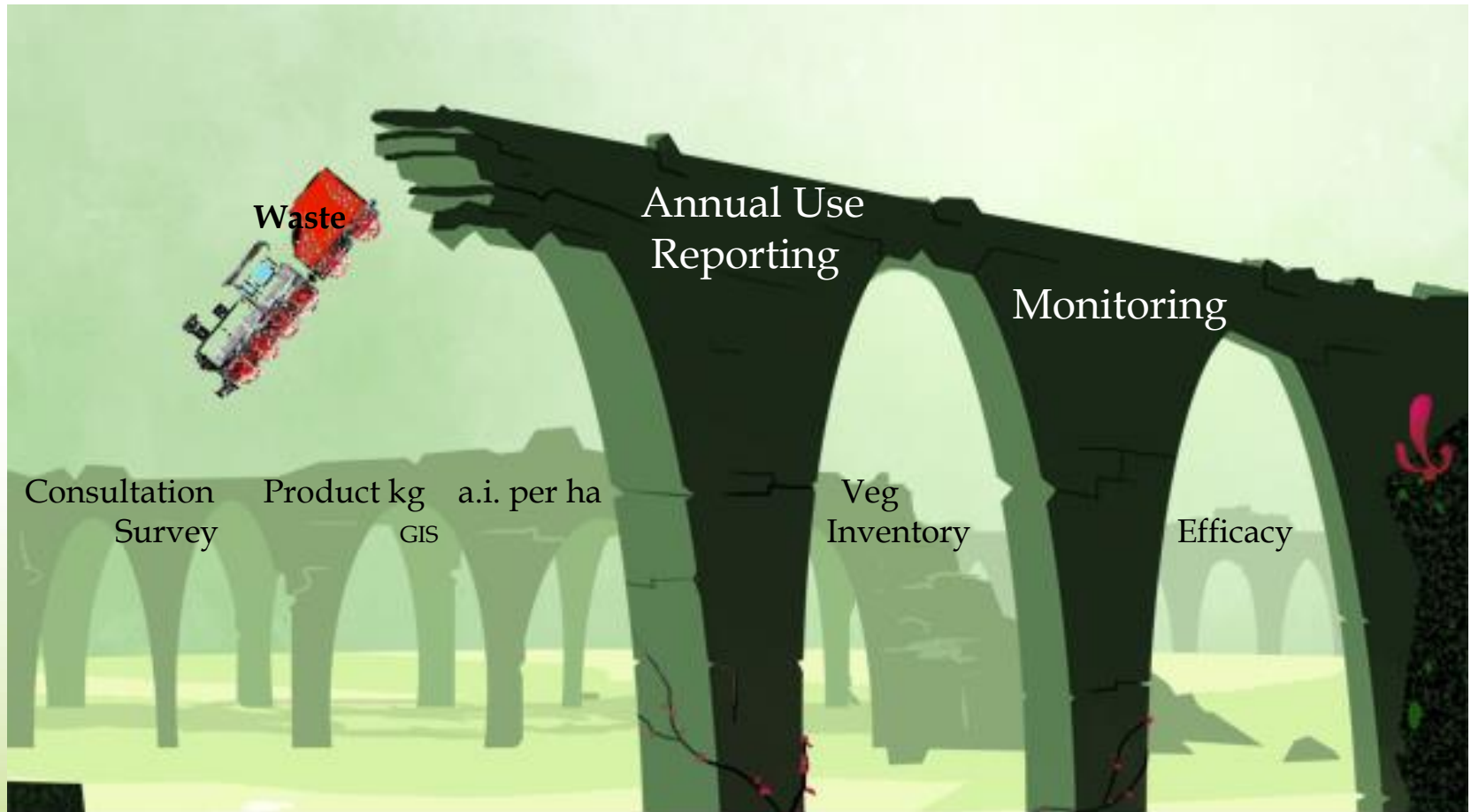


McMahon Gas Plant



- **Gathering**
 - 3,000 km of raw gas gathering P/L
- **Processing**
 - Gas processing plants (9), booster compressor stations
- **Transmission**
 - 2,800 km P/L compressor and meter stations

Pesticide Containers and Waste Management



Pesticide Containers and Waste Management

The image shows a handwritten table with 14 columns. The columns are: DATE (Month/Day/Year), TREATMENT AREA (Facility Name or Pipeline Location/Description), PRIORITY (High/Low), DATE (Date of Site Visit), TYPE/CLASS (Classification of Waste in Lab/Field), TYPE/CLASS (Classification of Waste in Lab/Field), TREATMENT (Specify any Special Handling, Storage, or Disposal of Waste), WASTE (Specify any Special Handling, Storage, or Disposal of Waste), TRACE NAME (or NAME OF CHEMICAL), IF TREATMENT (Specify any Special Handling, Storage, or Disposal of Waste), ANALYST (or ANALYST'S SIGNATURE), DATE of Application (Date of Application), APPLICANT (Name of Applicant), ANALYST (Name of Analyst), and OTHER (Additional Information, Change to P12 or P13 and Notes, and other Comments). The table contains several rows of handwritten data, including dates like 10/15/10, 10/16/10, 10/17/10, and 10/18/10, and various waste descriptions and treatment notes. A large yellow text overlay reads 'So, How is the Waste Handled?'.

DATE (Month/Day/Year)	TREATMENT AREA (Facility Name or Pipeline Location/Description)	PRIORITY (High/Low)	DATE (Date of Site Visit)	TYPE/CLASS (Classification of Waste in Lab/Field)	TYPE/CLASS (Classification of Waste in Lab/Field)	TREATMENT (Specify any Special Handling, Storage, or Disposal of Waste)	WASTE (Specify any Special Handling, Storage, or Disposal of Waste)	TRACE NAME (or NAME OF CHEMICAL)	IF TREATMENT (Specify any Special Handling, Storage, or Disposal of Waste)	ANALYST (or ANALYST'S SIGNATURE)	DATE of Application (Date of Application)	APPLICANT (Name of Applicant)	ANALYST (Name of Analyst)	OTHER (Additional Information, Change to P12 or P13 and Notes, and other Comments)
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
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10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
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10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100	Box 100
10/15/10	Box 100 & 710 Box 100	Y	10/15/10	Box 100	Box 100	Box 100	Box 10							

Herbicide Use - Daily Operations Record Notes and Codes

Target Species: Chinook, Coho, Steelhead, Trout, Salmon

Wood Species: Identify all high risk invasive plants in the area (e.g. in PMPs). This may include:

This record must be completed daily for each pesticide application. Note: Daily Operation Records must correspond with PMP conditions, contract requirements and applicable legislation. Contractors shall submit copies of the TRW and Site Plan to the EPA's TRA Program Manager.

All Daily Operations Records will be retained for a period of 3 years by the contractor for inspection at any time.

Pesticide Containers and Waste Management

- ▣ Our program is covered under 2 PMPs
- ▣ Single service provider model (Asplundh)
- ▣ Internal area vegetation management teams with one Vegetation Program Lead (Dan Tisseur, Environmental Advisor)

Pesticide Containers and Waste Management

Current Situation for Waste Handling related to our PMPs

- ▣ Outline requirements for waste handling to comply with applicable legislation
- ▣ Our Field activities have been inspected and found to be in compliance with the IPMR
- ▣ IPMR does not require waste handling reporting
- ▣ waste containers may be hazardous waste, but this has not been applicable to our operations (therefore not reportable under the BC Hazardous Waste Regulation)
- ▣ We've not accounted for waste tracking in our statistical collection under either program (Vegetation Management or Waste Management)

Pesticide Containers and Waste Management

What types of waste are we talking about?

Herbicide Use - Daily Operations Record Notes and Codes

Wood Species: Identify all high risk sensitive plants in the area (e.g. in PMP). This may include:

All Daily Operations Records will be retained for a period of 3 years by the contractor for inspection at any time.

Some Legislation Content

- ▣ 'Pest control product' means a product registered under the Pest Control Products Act (Canada)
- ▣ PMRA requires that label instructions are followed (such as rinse and puncture)
- ▣ IPMR s58(3) states a PMP... must include...
 - (iv) procedures for the safe disposal of empty pesticide containers and unused pesticides

Some Legislation Content

Waste Pesticides and Pesticide Containers are regulated as:

- ▣ ‘hazardous waste’ (per BC HWR): specifically lists waste pest control product containers ... unless the product was labelled “Domestic”
- ▣ If a pesticide is regulated under a TDG class, a waste container with residual pesticide is a hazardous waste if no longer used for its original purpose
- ▣ Waste containers with original product are classified according to the Safety Data Sheet or Label, and disposal procedures may be identified
- ▣ Mixtures require further determination and proof of classification

Some Legislation Content

- ▣ The BC HWR outlines actions under the definition of 'Containers' to empty, pressure rinse, rinse ... pesticide containers
- ▣ They become non-regulated if handled according to the Table in s42 of the BC HWR
 - Conditions whereby containers may be landfilled, recycled or buried in an approved landfill or burial location (landowner)

Treatment - Rinsing

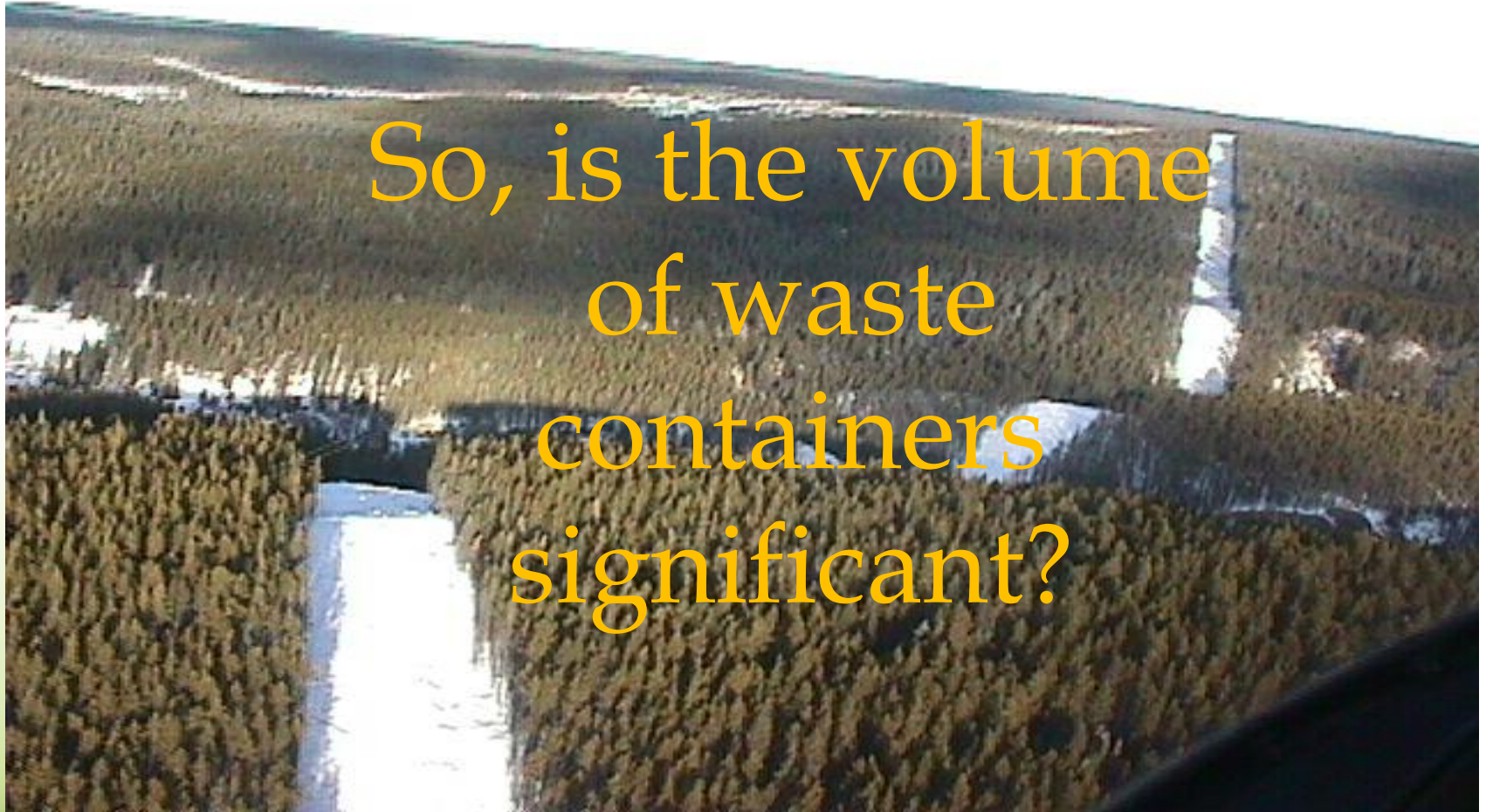
HWR s42

TABLE
Methods for Rinsing Waste Pest Control Product Containers

Item	Type of Container	Rinsing Method
1	Rigid plastic or metal (nonpressurized)	Pressure rinse, or single rinse 3 times
2	Rigid plastic or metal (pressurized)	No rinsing required
3	Glass bottle	Rinse 3 times
4	Paper bag	Rinse
5	Plastic bag	Rinse
6	Containers labelled "Domestic"	No rinsing required
7	Any container type not listed above	As approved

Pesticide Containers and Waste Management

So, is the volume
of waste
containers
significant?



TDG - Industrial Waste

- The Waste Container quantity in 2017 was approx 311 – 10L jugs, or 112 kgs
 - compared to the 74 Million kg of industrial waste coordinated and tracked by Enbridge”

HOWEVER

- We cannot account for the container waste since there are no records

Goal is to be accountable for all industrial waste

TDG - Industrial Waste

Waste Containers tracked by IWTeam 2017:

• Scrap Metal (Drums)	310 kg
• Empty Containers Metal	1,864 kg
• Empty Containers Plastic	7,288 kg
• Empty Containers Plastic (Drums)	51 kg
• Empty Containers Plastic (Totes)	850 kg
TOTAL Containers:	10,363 kg

By Comparison, the 311 plastic jugs used during our 2017 IPM Program equate to 112 kg

Pesticide Containers and Waste Management

Pesticide volumes vary year to year with IVM cycles

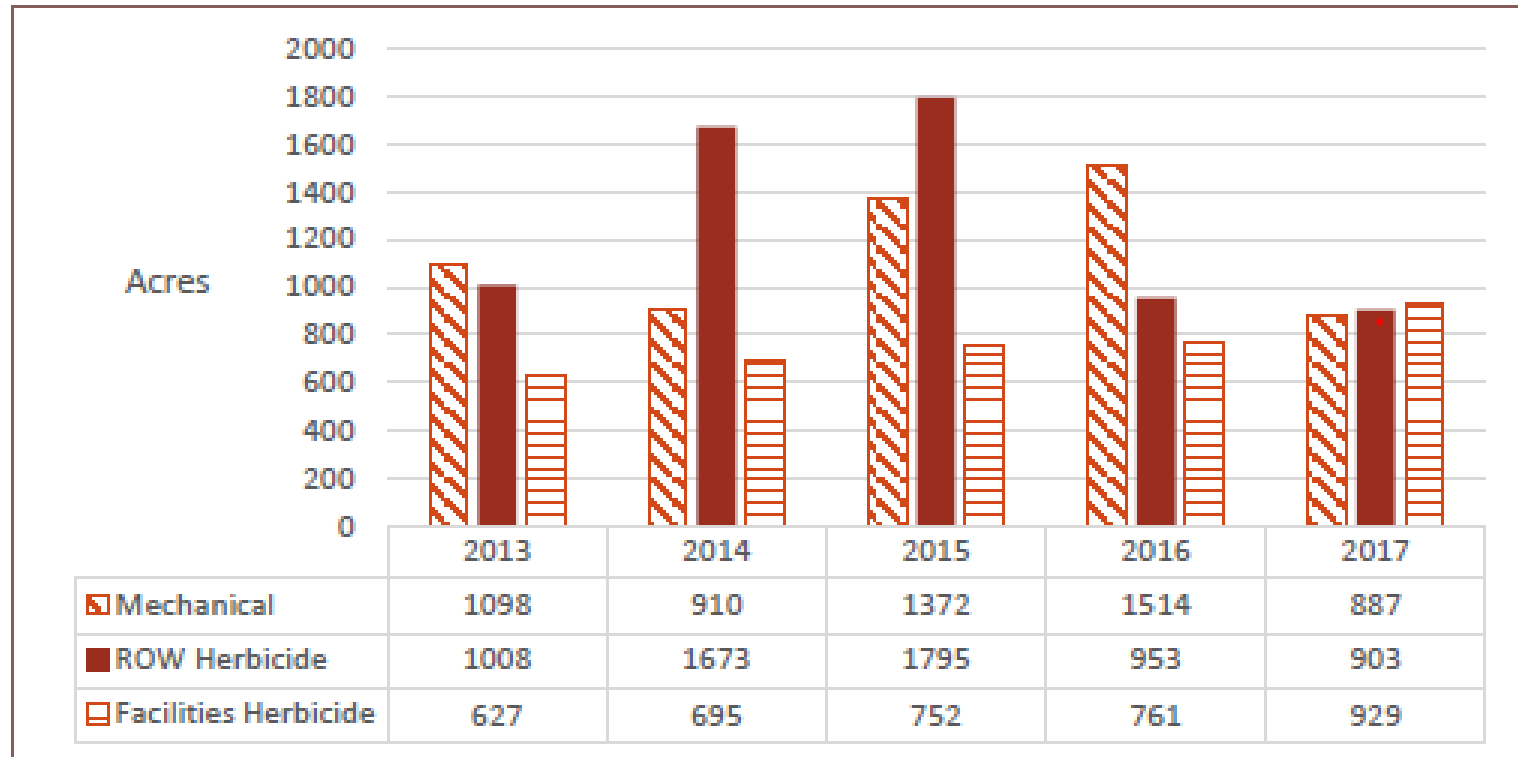
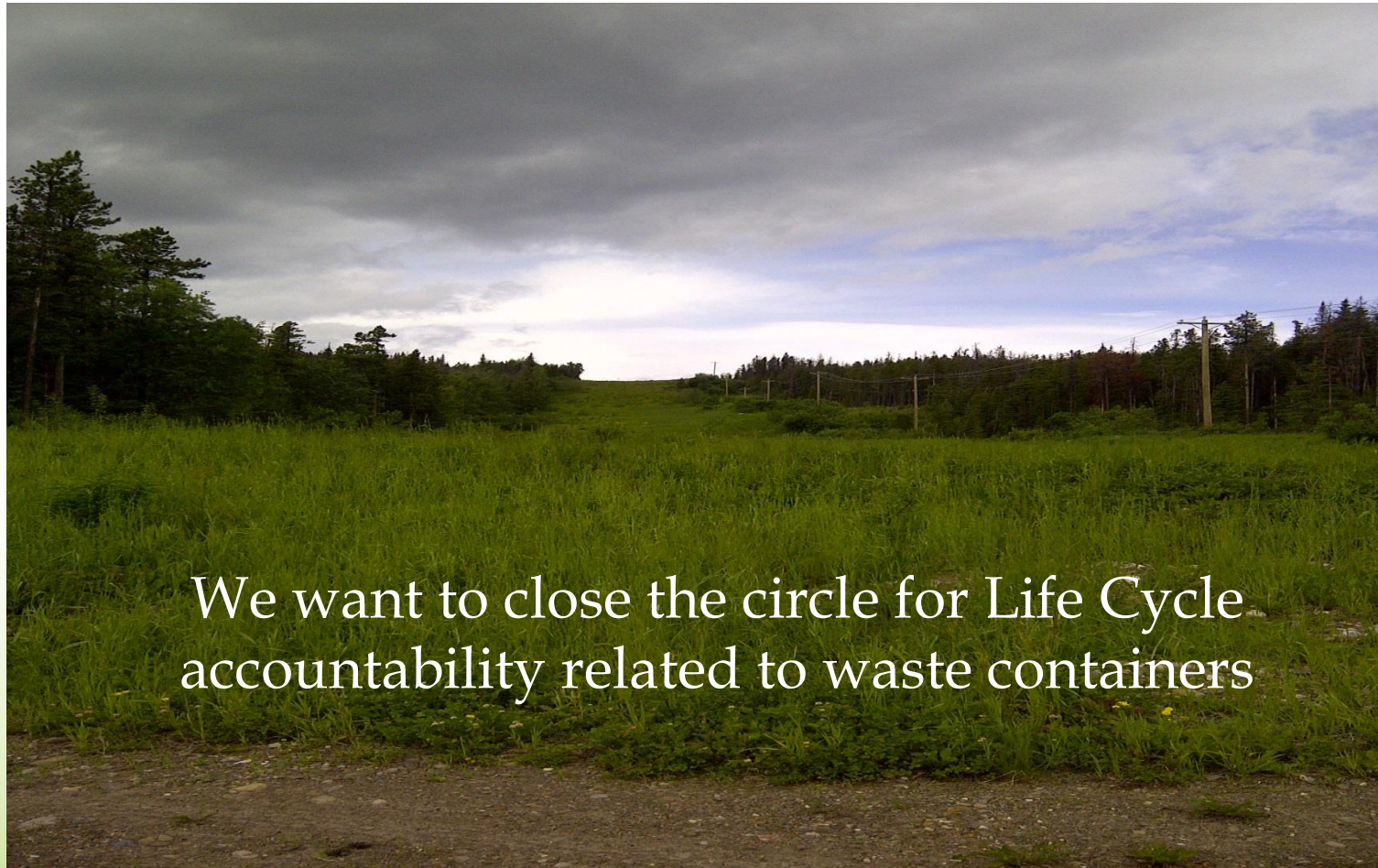


Figure 1. Acres separated by mechanical, right-of-way and facility treatments

Pesticide Containers and Waste Management



We want to close the circle for Life Cycle accountability related to waste containers

Pesticide Containers and Waste Management



Industrial Waste Process – Plan for Improvement

Improve waste data collection and include:

- Assisting our service provider with selection of disposal/recycle sites
- Implement a data management component to collect and track transport documentation
- capture waste generation from our IPM activities, similar to our service providers who handle our waste from asbestos or lead abatement, NORMs, or metals recycling

Industrial Waste Process – Plan for Improvement

- Explore use of programs for waste collection such as Clean Farms, primarily used in the Agricultural sector but are very willing to work with us. They have worked with CP Rail and other companies in the past
- Others: Recycling Hotline BC
- Disposal – approved landfill

Containment, Storage and Transportation

- ▣ cleanfarms collection sites in BC



Continuous Improvement

- ▣ Industry Best Management Practices
 - Improve expectations and requirements on industry-wide scale
 - Can reference waste management reporting in contracts
 - Create procedures within internal SOPs



Pesticide Containers and Waste Management

Thank You!
Questions?

- More Information?
- CONTACT

WasteMGMGT@Enbridge.com

Legislation

FEDERAL

- Canadian Environmental Protection Act (CEPA) – National Pollutant Release Inventory (NPRI) requires tracking of full life cycle of candidate substances
- Pest Control Products Act (PMRA)
- TDG Act and Regs
- NEB: OPR Under federal regulation (Onshore Pipeline Regulation S.10.5.2), that vegetation will be controlled to permit clear visibility from the air and ready access for maintenance and potential emergency conditions.

BRITISH COLUMBIA

Environmental Management Act

- Oil and Gas Waste Regulation (subject to the provisions of the Hazardous Waste Regulation)
- Hazardous Waste Regulation
- Agricultural Waste Control Regulation
- IPM Act and Regulation

Legislation

BRITISH COLUMBIA

- ❑ BC Integrated Pest Management Act and Regulation, administered under the Ministry of Environment (MOE). There are two scenarios by which IVM programs utilize chemical controls: by registration, and by implementation of a Pest Management Plan (PMP) which is developed for a five (5) year term, or under a contractor service licence (only applicable if treating less than 20 hectares for industrial vegetation, or less than 50 hectares of noxious weeds).
 - Pipeline / Field Service and Transmission operates under the PMP structure, and Midstream (BC) operates under the contractor service licence (third party).
 - Certification for pesticide applicators pursuant to this regulation
- ❑ Environmental Management Act and Hazardous Waste Regulation (Administered through the Ministry of Environment)
 - Addresses management of waste pesticide product and containers with residual pesticide
- ❑ BC Weed Control Act (Administered through the Ministry of Agriculture)
 - Noxious weeds and invasive plants are targeted for control through the regional weed inspector under this program
- ❑ WCB OHS Regulations

Industrial Waste Leaving a Site

The Generator is accountable for classifying and completing the appropriate industrial waste shipping document

This could be a:

- TDG Shipping Document
- Carrier Bill of Lading (BOL), or
- Movement Document (also referred to as a 'waste manifest')

- BCG ID and License to transport HW is required for volumes over 5L or kg

Shipping Doc Selection for Type of Waste

Substance	Document Required	Characteristics	Classification	Other Considerations
Dangerous Good	Shipping Document	Flammable, Toxic, Corrosive	TDG classes 2, 3, 4, 6 and 8	All requirements of TDG apply
Hazardous Waste that is a Dangerous Good	Hazardous Waste Movement Document (manifest)	Flammable, Toxic, Corrosive (Waste Pesticides and Pesticide Containers)	TDG classes 3, 4, 6 and 8	Provincial variation changes name and document required
Hazardous Waste that is not a Dangerous Good	Hazardous Waste Movement Document (manifest)	Waste Oil (Refined HC>3%) BTEX > limits (non-flammable), Waste Pesticides and Pesticide Containers	Non TDG, used oil or leachable toxic waste (LTW) incl. HC-contam.soil Waste containing pesticide	Provincial variation changes levels of BTEX and other substances
Waste that is neither a Dangerous Good nor Hazardous Waste	Shipping Document (Bill of Lading)	Non-flammable, no BTEX, HC<3% Triple-Rinsed Pesticide Containers	Non- Regulated	AB upstream requires tracking of all soils.

Containment, Storage and Transportation

Who is cleanfarms?



- cleanfarms is a non-profit environmental stewardship organization who works collaboratively with members, partner agencies, and the government to ensure that Canadian farmers can actively contribute to a healthy environment and a sustainable future. Our programs create meaningful change, and offer a tangible way to address agricultural waste management and resource in the community

Containment, Storage and Transportation

Who is cleanfarm?



- ▣ programs primarily on behalf of Canada's crop protection industry members who include leading developers, manufacturers, distributors and retailers of pest control ... supported by members and other partners who share our vision and commitment to the environment.
 - >5.2 million empty pesticide and fertilizer containers were collected (2017yr)
 - 300,000 empty seed and pesticide bags returned (2017yr)
- ▣ plastic waste - sorted, shredded and melted into useful materials like farm drainage tile.

Containment, Storage and Transportation

▣ cleanfarms container sorting categories

Get started by separating your containers into these categories:

- Small (23L or less) jugs

Drop off your clean, empty pesticide and fertilizer containers at your nearest collection site.

After the containers are collected and processed, the plastic from the containers are then recycled into valuable materials that can be used back on the farm, such as farm drainage tile.

- Non-deposit, bulk pesticide containers (larger than 23L) totes/drums

Return your drained, empty containers with all bungs and/or closures in place to the point of sale, usually an ag-retailer.

Cleanfarms will usually work with your ag-retailer to facilitate the recycling of these containers.

- Deposit, bulk pesticide containers (larger than 23L)

Return these container to the point of sale.

Your ag-retailer will usually work with the manufacturer to facilitate the recycling or re-use of these containers.

Storage of Pesticides

WHAT IS REQUIRED BY THE IPM ACT AND REG?

S33 Storage in the Field

- ▣ Container (original or authorized alternate)
- ▣ labels
- ▣ Secured (locked)
- ▣ Signed (authorized access)
- ▣ Vented to the atmosphere

WHAT CAN WE DO BETTER?

- ▣ Modify daily inspection records to quantify and track waste containers (those with residual and those cleaned / punctured)
- ▣ Assist with shipping documentation
- ▣ Record and report to generator details for disposal/recycle

Regulators

FEDERAL

- TSB / NEB – Onshore Pipeline Regulations
- Environment Canada
- Health Canada

PROVINCIAL

- BC Ministry of Environment & Climate Change Strategy
- Oil and Gas Commission (OGC)

MUNICIPAL

Containment, Storage and Transportation

IPMR Div6 S34 (3)

- ▣ **Containment, storage, transportation, disposal and use of pesticides**

A person who uses a pesticide must use it in a manner that

a) minimizes hazards to human health and the environment, and

b) Is in accordance with the applicable standards prescribed...(re)

i) handling, mixing, applying or disposing of pesticides, and

ii) the handling and disposal of containers used for pesticide