

	CPC WASTE MANAGEMENT PROGRAM ALL-HSE-PGM-158	Retention Code: CG01-CA
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1.0 Purpose

This waste management program provides resources to operators managing waste on ConocoPhillips Canada (CPC) sites to enable them to manage wastes in compliance with Alberta and federal regulatory requirements as well as ConocoPhillips standards. This program supports the development of site-specific operating procedures for each business unit and functional department as applicable.

2.0 Scope

This waste management program applies to the disposal of all wastes (whether liquid, solid or semi-solid) that are generated by CPC or by its representatives during a project that is controlled by CPC. Management of air or gaseous emissions is excluded from the scope of this program.

This program provides instructions for the proper identification, classification, safe management, transportation and disposal of waste in accordance with applicable legislation and best industry practices, including:

- a) waste characterization and classification;
- b) storage and segregation.;
- c) disposal;
- d) personal protective equipment (PPE) and handling;
- e) minimization;
- f) tracking, monitoring and manifesting; and
- g) reporting and records.

3.0 Roles and Responsibilities

3.1. Environmental Operations Team

- a) Overall management of the CPC Waste Management Program.
- a) Verify the proper implementation of the CPC Waste Management Program.
- b) Evaluate the suitability of waste facilities for use by CPC and maintain the CPC Approved Waste Receiver List.
- c) Obtain and review CPC waste disposition and tracking records.
- d) Prepare waste disposition reports as requested by regulatory authorities.
- e) Submit waste information for annual corporate reporting.
- f) Develop and maintain waste vendor contracts and relationships for the benefit of CPC operations.

3.2. CPC Managers and Supervisors

- a) Manage and provide stewardship of wastes generated by their project or on their sites.
- b) Oversee that all contractors adhere to CPC policies, standards and practices when handling wastes generated at CPC sites.

3.3. CPC Workers

- a) Segregate and store all waste streams in accordance with this document and applicable site specific requirements.
- b) Characterize and classify all waste streams prior to transportation off site.
- c) Use only approved waste receivers from the CPC Approved Waste Receiver List.
- d) Accurately manifest and track all wastes using approved procedures.
- e) Reconcile waste manifests and identify discrepancies.

3.4. Contractors

- Execute and manage their work according to the terms of their contract.
- Manage wastes in accordance with CPC policies and procedures or have policies in place that meet or exceed CPC requirements and have been approved by CPC.

If a contractual agreement has been made for a contractor to use their own HSE documents, the owner representative will verify that they bridge appropriately with CPC methods and notify the HSE Performance Assurance team.

4.0 Procedures

4.1. Characterization and Classification

CPC waste streams must be characterized and classified using one of the following:

- a) Process knowledge and industry experience of routine waste streams as listed in Directive 58 or the Alberta User Guide for Waste Managers.
- g) Canadian Association of Petroleum Producers (CAPP) [Waste Profile Sheets](#).
- h) [CPC Waste Manifest Tool](#).
- i) Material safety data sheets (MSDS) of the original products.
- j) Laboratory analysis.
- k) Site specific procedures and manuals or guides.

4.1.1. Waste Classes

CPC generates a variety of different wastes, which will have different origins, composition and potential environmental impacts. Waste classes categorize each of these waste streams on the basis of composition and appropriate handling procedures.

Waste streams are assigned to a waste class allowing general waste management procedures to be developed for each of the waste classes, avoiding the need to develop separate procedures for each waste stream.

All waste should be categorized into one of the following three classes:

Table 1: Waste Classifications

	Classification	Composition/Properties
AB BC/SK/NWT	<ul style="list-style-type: none"> Dangerous oilfield waste (DOW) Hazardous and potentially hazardous 	Materials that potentially constitute a high degree of hazard to public health and the environment. See Table 2 below.
AB BC/SK/NWT	<ul style="list-style-type: none"> Non-dangerous oilfield waste (non-DOW) Non-hazardous 	Materials that are biologically or chemically reactive in the natural environment. Examples include paper, wood, household garbage, animal waste and digested sewage sludge.
All Provinces	<ul style="list-style-type: none"> Inert 	Materials that do not undergo any significant physical, chemical or biological transformation. Examples include glass, most metals, concrete and brick materials, broken clay and chinaware, most plastics and manufactured rubber products.

Table 2: Properties of Dangerous Oilfield Waste (DOWs)/Hazardous Wastes

Property	Description
Flammability	<ul style="list-style-type: none"> Flashpoint less than 61°C. Ignites and propagates combustion in a test sample.
Spontaneous combustion	<ul style="list-style-type: none"> Generates heat at a rate greater than it loses heat and reaches auto-ignition temperature.
Water Incompatibility	<ul style="list-style-type: none"> Generates flammable or explosive gases in contact with water.
Oxidizing Potential	<ul style="list-style-type: none"> Waste contributes oxygen for combustion at a rate that is equal to or greater than that provided by ammonium persulphate, potassium perchlorate or potassium bromate.
Toxicity	<ul style="list-style-type: none"> Oral toxicity LD50 not greater than 5,000 mg/kg. Dermal toxicity LD50 not greater than 1,000 mg/kg. Inhalation toxicity LC50 not greater than 10,000 mg/m³ at normal atmospheric pressure.
Corrosivity	<ul style="list-style-type: none"> Waste has a pH value less than 2.0 or greater than 12.5
PCB Content	<ul style="list-style-type: none"> Contains PCBs at a concentration equal to or greater than 50 mg/kg

Property	Description
Leachate Toxicity	<ul style="list-style-type: none"> • Waste is a liquid or solid that passes a 9.5-mm mesh opening, or a friable solid that can be reduced by grinding in a mortar and pestle to a particle size that passes a 9.5-mm mesh opening, or a mixture of these. • Waste contains at a concentration of 100 mg/L or higher any substance listed in Table 1 of the Schedule to the Alberta Users Guide for Waste Managers, published by AEP. • The leachate contains any substance listed in Table 2 of the Schedule to the Alberta Users Guide for Waste Managers, in excess of the concentrations listed in Table 2. • The leachate contains any of the following substances in a concentration greater than 0.001 mg/L: <ul style="list-style-type: none"> • hexachloro-dibenzo-p-dioxins • pentachloro-dibenzo-p-dioxins • tetrachloro-dibenzo-p-dioxins
Examples	<ul style="list-style-type: none"> • Waste types listed in Table 3 of the Schedule to the Alberta Users Guide for Waste Managers, published by Alberta Environment. • Commercial products or off-specification products listed in Part A of Table 4 of the Schedule to the Alberta Users Guide for Waste Manager. • Commercial products or off-specification products listed in Part B of Table 4 of the Schedule to the Alberta Users Guide for Waste Managers. • Containers as identified in AER Directive 058, Section 5.3, Dangerous Oilfield Waste Containers.

4.2. Storage and Segregation

4.2.1. Waste Storage

4.2.1.1. Storage Areas

Storage areas must have secondary containment, which may consist of, but is not limited to:

- a) Store material in safe, secure and weatherproof (where required) storage areas.
- b) Drip pans, drip pads, liners, paving or berms or other means of spill protection to prevent liquid hazardous wastes from impacting the environment; and
- c) Spill kits of sufficient size and content to respond to any event that could reasonably be expected to occur at the location.

Group and appropriately locate containers for general waste, recyclables and other miscellaneous items, to allow safe collection and storage of wastes.

4.2.1.2. *Storage Containers*

Waste containers must meet the following minimum requirements:

- a) Withstand the chemical composition of the waste (acids, etc.).
- b) Withstand physical attributes of the waste (sharp pieces, size, etc.).
- c) Have secondary containment for liquid wastes.
- d) Provide protection to personnel as appropriate (e.g., protection against vapours and fumes, etc.).
- e) Be equipped with lids.
- f) Be bear-proof when storing food wastes or for wastes that could act as a wildlife attractant.

Incorporate the following practices when using and handling waste containers:

- a) Inspect containers storing waste prior to use, for signs of damage. If containers are found with any signs of damage, remove from service.
- b) Empty and/or remove containers that are full, or nearly full, and replace with an empty container labelled for the same use. Never allow containers to overfill.
- c) Make surplus capacity or extra containers readily available to accommodate surplus waste material.
- d) Do not clean and reuse empty containers.

4.2.1.3. *Labelling*

Label all waste containers to assist in identification of their contents, as follows:

- a) Name of the waste.
- b) Include whether the waste is DOW/Hazardous Waste or non-DOW/Non-hazardous.
- c) Where possible, identify on the label potential safety issues, handling instructions and warnings (e.g., “flammable,” “oxidizer,” or “acid.”).
- d) Locate labels on the containers so they are visible and legible.

4.2.1.4. *Duration*

- a) Ensure that there are arrangements for replacement or emptying of containers in areas where there is consistent generation of waste material.
- b) Temporary storage of wastes (e.g., from spill or turnaround) must not exceed a period of three months.

**Alberta AER
Directive 58**

Waste must not be stored for longer than one year.

4.2.2. Waste Segregation

- Store incompatible wastes away from each other. For example, keep pyrophoric (self-igniting) wastes away from flammable waste streams.
- Segregate wastes
 - Do not mix different wastes unless specifically evaluated, approved and documented (manifested). Even if the wastes are compatible and you are allowed to dispose of them into the same container, ensure you document the characterization, classification and volume of each individual waste stream on the waste manifest.

4.3. Transportation and Disposal

4.3.1. Off Site Transportation

[Equivalent Level of Safety Permits](#) and/or completed manifesting or shipping document must accompany wastes when transporting from field sites to centralized CPC storage areas.

CPC personnel are not permitted to transport waste directly to a waste receiver.

4.3.2. Choosing Approved Waste Receivers

To protect CPC from the long-term liabilities of using third-party waste receivers, CPC audits and approves all utilized waste receivers as part of the Offsite Waste Disposal Standard.

Approved waste receivers are listed in the CPC Approved Waste Receiver List on the CPC [Waste Management website](#).

Contact HSE Performance Assurance at RSC:HSE Management System for approval to use a waste receiver that is not on the CPC Approved Waste Receiver List.

4.3.3. Waste Manifesting and Tracking

- a) All wastes (other than domestic garbage) must be tracked using manifests or shipping documents as listed below:

Province	Dangerous Oilfield/ Hazardous Waste	Non Dangerous Oilfield/ Non-Hazardous Waste	Inert Waste
AB	AER manifest	AER manifest or other shipping document	Recycle docket or other shipping DOCUMENT
BC	Movement document/ manifest	Other shipping document	
SK	Other shipping document	Other shipping document	
NWT	Movement document/ manifest	Movement document/ Manifest	Movement document/ manifest
Inter-Provincial	Movement document/ manifest	Movement document/ manifest	Movement document/ manifest

- b) The manifest template tool may be used to provide specific instructions on how to fill out the manifest. Other resources include TERVITA, CPC HSE Specialists, or HSE Performance Assurance.

- c) CPC representatives or delegates must complete the manifest or shipping document.
- d) The generator of the manifest must be retained by the field site and the field site must ensure the final copy of the manifest completed by the receiver is obtained. A copy of other shipping documents must also be retained by the field site.
- e) Discrepancies between waste details entered by CPC, or delegate, as the waste generator and the details entered by the waste receiver must be reconciled within 60 days. If the waste manifests cannot be reconciled, notify HSE Performance Assurance.

4.3.4. Disposal

4.3.4.1. Dangerous Oilfield/Hazardous Wastes

Dispose of wastes as follows:

- a) As much as possible, manage waste within the generating province.
- b) Contact HSE Performance Assurance if assessing the need to transport to another province.
- c) Do not dispose of in municipal landfills.
- d) Dispose of waste only at approved waste receiving facilities.

4.3.4.2. Non Dangerous Oilfield/Non-Hazardous Waste

Dispose of Class II wastes as follows:

- a) Dispose of waste only at approved waste receiving facilities.

4.4. Minimization

Waste reuse and recycling programs may be established to minimize disposal volumes. Recycling programs for steel, oil, wood, paper and plastics should be in place before the start of any activities.

4.4.1. Reuse

Effort should be made to reuse Class III materials onsite. For example, excavated soil should be used as backfill. Class III waste materials that are not immediately reused may be stored onsite for later reuse.

4.4.2. Recycle

To minimize the amount of waste generated onsite and disposed of using the approved waste receivers, the viability of implementing one of the approved provincial and federal recycling programs should be investigated.

The following measures may be taken to minimize the amount of waste generated and disposed of:

- a) Select materials and products based on evaluating several characteristics such as the amount of their reused and recycled content, zero or low off-gassing of harmful air emissions, zero or low toxicity, sustainably harvested materials, high recyclability, durability, longevity and their source (local production, certified company, etc.).
- b) Order the amount of materials needed as accurately as possible.

- c) Arrange “just in time” deliveries to reduce storage and material losses.
- d) Minimize the packaging used for materials delivered to site, as much as possible. Consider this in the selection of suppliers.
- e) Reject material deliveries if damaged or incomplete.
- f) Store material in safe, secure and weatherproof (where required) storage areas.
- g) Investigate alternatives to hazardous substances by reviewing best practices and contacting the relevant authorities.
- h) Investigate innovative approaches to waste management.
- i) Review the MSDS of all materials and substances prior to acquisition, to ensure that no banned substances are used.
- j) Select suppliers on the ability to return excess or damaged/ incomplete materials to them.

4.5. Business Unit/Functional Unit Specific Procedures

Business units and functional units may develop procedures for managing waste at specific sites or in specific areas. Where specific procedures are developed, they may include the following information:

- a) Requirements for accessing waste storage sites.
- b) Locations of waste storage bins (i.e., safe locations; downwind of operations, etc.).
- c) Waste specific segregation requirements.
- d) Specific labelling requirements in addition to the requirements of section 4.2.1.
- e) Collection frequency.
- f) Wildlife access prevention (i.e., use of bear proof bins and containers).
- g) Domestic waste handling procedure.
- h) Storage area inspection requirements.
- i) Use of CPC vehicles for transporting wastes.

5.0 Personal Protective Equipment

Personal Protective Equipment (PPE) appropriate for the hazards must be used when handling all wastes. Take other appropriate precautions when handling waste, such as segregating the waste from other waste types and observing appropriate personal hygiene procedures after handling the waste.

Specific precautions required for each type of waste produced may be available in site specific procedures and manuals or guides. Obtain additional information on PPE and handling precautions from HSE Operations.

6.0 Training

All personnel involved in any aspect of managing wastes, on behalf of CPC, must be trained and competent in their areas of responsibility. Minimum requirements include:

- Training and valid ticket for transportation of dangerous goods.
- Waste management training per the [HSE Training Matrix](#).

7.0 Waste Receiver Audits

Waste receivers are audited and evaluated according to the requirements of CPC’s [Off-Site Waste Disposal Practice](#).

8.0 Reporting and Records

Tervita tracks CPC waste on behalf of CPC and reports on the quantities and characteristics of all generated wastes, both dangerous/hazardous and non-dangerous/non-hazardous, as well as their final treatment and disposal methods if known.

Record	Owner	Classification	Retention
Waste manifests	Field Sites	HSE580	2 years
Other shipping documents	Field Sites	HSE550	3 years
Waste tracking reports	HSE Performance Assurance	HSE580	5 years
Waste disposition reports	HSE Performance Assurance	HSE580	5 years
Waste receiver audit reports	HSE Performance Assurance	HSE060	Superseded or Discontinued

9.0 References

Corporate ConocoPhillips	<ul style="list-style-type: none"> • Corporate ConocoPhillips Waste Management Standard
Federal	<ul style="list-style-type: none"> • Transportation of Dangerous Goods Regulations
Alberta	<ul style="list-style-type: none"> • AER Directive 058: Oilfield Waste Management Requirements for the Upstream Petroleum Industry • AER Directive 050: Drilling Waste Management • AER Directive 051: Injection and Disposal Wells, Well Classifications • AER Directive 055: Storage Requirements for the Upstream Petroleum Industry • Waste Control Regulation, Alta, Regulation 192/1996
British Columbia	<ul style="list-style-type: none"> • Oil and Gas Waste Management Regulation • Drilling and Production Regulation
Saskatchewan	<ul style="list-style-type: none"> • Oil and Gas Conservation Regulations • Hazardous Substances and Waste Dangerous Goods Regulations

Northwest Territories	<ul style="list-style-type: none"> Environmental Protection Act Guideline for the General Management of Hazardous Waste in the NWT
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10.0 Document Retention

The Document Controller must store all documentation associated with the newest version of the document. Documentation (with risk assessment information, if appropriate) associated with old revisions and cancelled documents must be kept in compliance with corporate retention schedules.

Record	Owner	Classification	Retention
HSE MS Programs and Procedures	HSE Performance Assurance Document Controller	ADM220	E + 2 years

Appendix A – Glossary

Acronyms

AER	Alberta Energy Regulator
DOW	Dangerous Oilfield Waste
HSE	Health, Safety and Environment
MSDS	Material Safety Datasheet
Non-DOW	Non-dangerous Oilfield Waste
PCB	Polychlorinated Biphenyl
PPE	Personal Protective Equipment

Definitions

Characterization of waste	Identification of the waste’s physical, chemical and toxicological characteristics.
Classification of waste	Determination, as per regulatory requirements, that oil sands waste is hazardous, by the designation “dangerous oilfield waste” (DOW) or non-hazardous, by the designation “non-dangerous oilfield waste (non-DOW).
Dangerous oilfield waste (DOW)	Oilfield waste exhibiting one or more properties as illustrated in Table 4.1a and Table 4.1b of AER’s Directive 058 . These properties may include: flammability, spontaneous combustion potential, water incompatibility, oxidizing potential, toxicity, corrosivity, PCB content and leachate toxicity.
Hazardous waste	Those wastes which, due to their nature and quantity, are potentially hazardous to human health and/or the environment and which require special disposal techniques to eliminate or reduce the hazard. This is the term used in any non-Alberta operation (similar to DOW in BC, Saskatchewan, etc.).
Inert waste	Any solid waste that, upon disposal to land, is not reasonably expected to undergo physical, chemical and/or biological changes to such an extent as to produce substances that may cause an adverse effect. Examples include demolition debris, concrete, asphalt, glass, cement returns, scrap metal, and dry timber or wood that has not been chemically treated.
Generator of waste	The responsible party for the waste stream from the creation of the waste (cradle) to the final disposition (grave).
Manifesting	The use of documentation which must accompany shipments of dangerous oilfield waste or hazardous waste on public roads to assist first responders in the event of an accident and to confirm the proper shipment of wastes.
Non-dangerous oilfield waste (non-DOW)/ Non-Hazardous Waste:	Materials are that are biologically or chemically reactive in the natural environment. Examples include paper, wood, household garbage, animal waste and digested sewage sludge. Oilfield wastes that don’t fit the definition of DOW.
Tracking	Process by which CPC monitors the handling, movement, treatment and disposal of waste. Both manifesting and tracking are required to ensure the quantities and characteristics of all generated wastes, as well as their final treatment and disposal methods are known by the generator.
Transportation of Dangerous Goods Act and Regulations (TDG)	The Transportation of Dangerous Goods (TDG) Act and Regulations (1992) and the Clear Language Edition (TDG CL) (2002) divide waste streams into nine classifications of dangerous goods and it controls the movement of dangerous goods on public roads. The TDG Act outlines the responsibilities of shippers, carriers and receivers of dangerous goods; it implements the TDG documentation requirements as well as labelling and placarding requirements.

Characterization of waste	Identification of the waste's physical, chemical and toxicological characteristics.
Upstream oilfield waste	An unwanted substance or mixture of substances that results from the construction, operation/production, oil and gas batteries, gas plants, crude oil terminals, compressor stations, pipelines, gas gathering systems, heavy oil sites, oil sands or other related facilities, and remediation or reclamation of well sites.
Waste	Waste is any unwanted substance or object, which is intended to be disposed of, or is required to be disposed of.
Waste tracking	A system for monitoring and recording the generation, handling, treatment and disposal of waste.

Appendix B – Revision Record

Page#	December 17, 2013	Previous Information	Risk Assessment
2	Added responsibilities for HSE Performance Assurance	None	Low – Clarification
3-5	Added additional guidance for the characterization and classification of waste including reference to CAPP Waste Profile Sheet and the CPC Waste Manifest Tool	None	Low – Documented additional guidance. Processes currently in place
5-6	Added additional guidance for storage	None	Low – Documented additional guidance. Processes currently in place
7-8	Added additional guidance for transportation and storage including use of Permits for Equivalent Level of Safety.	None	Low – Documented additional guidance. Processes currently in place