

Purpose of the Plan/Manual

The Waste Management Plan ("Plan") is designed as a Project wide reference in effective waste handling and disposal and provides a set of guidelines for general Project use. The target users are field personnel in particular and technical staff involved in planning and implementing Project waste management facilities and practices.

The Plan is also a guidance document for Engineering, Procurement and Construction (EPC) contractors and other designated major contractors (referred to as "Contractor") required to prepare their own waste management plans for major construction activities. The more activity-specific Contractor plans will detail the various types of wastes to be generated, projected volumes, and preferred/alternative treatment and disposal methods for each waste, and will be consistent with this Plan.

COTCO is responsible for ensuring that EPC Contractors' waste management plans meet the objectives of this Waste Management Plan.

COTCO will submit the EPC Contractors' waste management plans to the Republic of Cameroon's Pipeline Steering and Monitoring Committee for its review.¹ The purpose of this review is to:

- Communicate the contents of individual EPC Contractor plans to the Pipeline Steering and Monitoring Committee;
- Identify and resolve issues/situations in individual EPC Contractor plans that potentially represent discrepancies with this Waste Management Plan;
- Facilitate implementation of EPC Contractor plans; and
- Facilitate overall monitoring of the Project's waste management-related activities by the Pipeline Steering and Monitoring Committee.

The process associated with reviewing each EPC Contractor waste management plan is as follows:

1. COTCO will submit the EPC Contractor waste management plan to the Pipeline Steering and Monitoring Committee.
2. After a review period of 10 business days, the Pipeline Steering and Monitoring Committee will determine if any areas are in conflict with this Waste Management Plan. At the request of either party during this 10-day period a meeting will be organized to discuss the EPC Contractor's waste management plan. If no written response or request for a meeting is issued within the 10 business days, the EPC Contractor waste management plan will be considered to be acceptable as submitted.

¹ EPC Contractor plans will be submitted in English along with a French translation. The governing text for EPC Contractor plans will be the English text.

Following the completion of the above review process, COTCO will submit the final revised text of each EPC Contractor waste management plan to the Pipeline Steering and Monitoring Committee.

Objectives of the Plan/Manual

The objectives of the plan are to:

- Assist Project and Contractor personnel in managing their wastes effectively and within the requirements of established Project policies and applicable waste regulations; and
- Act as a communication tool for Project policy on waste management.

Overall Philosophy

Where practicable, all personnel should seek opportunities to minimize the amount of waste generated through the use of such practices as process changes, raw material changes, or other commonly accepted waste minimization options. The waste minimization concept can be summarized as the following hierarchy:

- If possible, don't generate the waste.
- If generated, try to recycle/reclaim the waste.
- If it can't be recycled/reclaimed, treat it to "destroy" the waste or render it non-waste like.
- If there is still a waste, dispose of it in an environmentally acceptable manner.

Because it is realized that waste minimization and/or recycling alternatives may not always be practical, environmentally sound treatment and/or disposal is an acceptable option for the handling of Project wastes. Project facilities (landfills, incinerators, etc.) will be preferred over third party facilities, when available.

The plan has been developed based on industry best practices and internationally accepted standards and guidelines such as the "Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal," March 1989, and E&P Forum's "Exploration and Production Waste Management Guidelines," 1993.

Unnecessary generation of waste, including hazardous wastes should be avoided at all times. One way to limit the generation of wastes is to control the types of hazardous materials used. A list of hazardous materials that the Project and its Contractors do not plan to purchase/use unless absolutely necessary is included in Table 2.0.1-1. By restricting the use of these materials, the generation of wastes containing PCBs, chlorinated solvents, or other "restricted" materials should be limited.

Management of Change

This Waste Management Plan is intended to provide guidance during all phases of the Project and consequently will need to be updated periodically. The Plan will be developed and revised as the Project moves forward and more design details are set and procedures are identified. For example, events that could trigger the need to revise or amend the Plan include:

- Completion of the final facility design;
- Incorporation/consideration of Contractor-specific waste management plans;
- Moving into the Drilling Phase;
- Moving into the Operations Phase; and
- Additions or changes in the waste streams generated, the treatment options available, or other changes in knowledge or technology.

As such, the Plan will be periodically reviewed and modified, if necessary, to help make sure that it is complete and accurate. Immediately prior to the commencement of the Project's operations phase, the Plan will be further modified and expanded to address operations-specific waste streams and waste management requirements.

In the event of a significant oil spill, a site-specific action plan will be developed and will address collection, storage, and treatment requirements for spill-generated waste to facilitate subsequent transport and disposal. This site-specific plan may require modifications to waste management practices discussed in this Plan based on the particular issues associated with an individual spill.

General

The Plan is intended to be user-friendly and is designed to be a simple reference tool for guidance on how to manage waste streams generated during the course of the Chad Export Project. The Plan may be used as a stand-alone guidance document; however, it is anticipated that individual sites (e.g., pump stations, etc.) will prepare site-specific plans incorporating additional information to facilitate the management of the wastes actually generated at the site. The site-specific plans will build onto the information in this Plan and contain quick references to the waste management options chosen (from this document) for each waste stream.

In addition, each Contractor will prepare a waste management plan(s) for review and approval. For example, during the construction phase of the Project, individual contractors will produce site-specific waste management plans covering their activities. Each Contractor plan will be consistent with the procedures and concerns addressed in this Plan.

Plan Outline

Section 2.0 discusses the overall management of wastes, provides a list of wastes that may be generated, provides a list of hazardous materials which use should be restricted, provides a glossary of waste management terms, and summarizes general waste management concerns. Section 2.1 provides waste specific guidelines for the wastes identified. Section 2.2 provides a template for a site specific Quick Reference Chart for Waste Stream Management.

Section 3.0 provides a listing of approved waste management facilities (e.g., landfill sites) for the Project. Key site specific information on each of the facilities is provided.

Section 4.0 provides waste inventory and tracking information (and forms) for creation of a Project waste tracking system. Information on frequency and type of testing to be performed and classification of wastes is included.

Section 5.0 provides information on the types of materials that may be able to be distributed to the local communities for recycle or reuse.

Section 6.0 provides descriptions of several candidate waste treatment technologies that may be appropriate, on a case-by-case basis, for some of the waste streams generated and also describes several of the waste disposal options available for some wastes. As appropriate, the discussion includes information on some of the limitations and considerations for implementing the options described.

Section 7.0 describes procedures that should be followed to temporarily store waste from the time it is generated until it is sent for disposal or recycle.

Section 8.0 provides an overview of a typical Incinerator Operating Plan. [To be fully developed later]

Section 9.0 provides an overview of a typical Landfill Operating Plan. [To be fully developed later]

Using the Plan

This Plan provides general guidance to assist personnel in the proper handling and disposal/recycle of the wastes likely to be generated. The Plan is designed to be relatively comprehensive and will be revised or expanded as new information or activities require. As such, not all topics addressed in this Plan will necessarily apply to each waste stream or each site nor apply each time a routinely generated waste stream is generated. Other appropriate approaches in accordance with generally accepted international practices may also be proposed; if used they would be cause for an update to the Plan.

The following steps are suggested for identifying the appropriate waste management option(s) for a specific waste stream:

1. When a waste is generated, refer to the index in Section 2.1 and select the topic that appears to most closely “match” the waste generated. It may be necessary to review several topics. If no topic appears to match the waste, contact the site’s *Environmental Representative* for guidance.
2. If a Topic guideline is provided for the type of waste to be managed, follow the guideline, as appropriate, in addition to the “common” waste management procedures. Proper use of the guideline includes assessing appropriate waste minimization, treatment, and/or disposal options for a specific site and/or waste stream.

Each Topic guideline includes a hierarchy of waste management options, in the typical order of preference. It is recognized that there will be cases when options at the top of this hierarchy will not be practical (e.g., not available in country). The Project incorporates waste management infrastructure (e.g., landfills and incinerators) to help ensure waste treatment and disposal methods protective of the environment are available for its wastes.

3. If the waste is not being treated and disposed on-site, refer to the list of approved waste management facilities (Section 3.2) to identify where to send the waste.
4. Complete a waste tracking form (Section 4.1) so that waste inventories/records can be maintained.

Other sections in the Plan are provided to assist the user in the proper management of the wastes. Each user should become familiar with sections of the Plan that are applicable to the wastes being generated.