

# Informational Letter

## IL 98-2

26 March 1998

TO: All Oil, Gas, Oil Sands, and Pipeline Operators

### **SUSPENSION, ABANDONMENT, DECONTAMINATION, AND SURFACE LAND RECLAMATION OF UPSTREAM OIL AND GAS FACILITIES**

This document supersedes Informational Letter 96-3, which is hereby rescinded. Alberta Environmental Protection (AEP) and the Alberta Energy and Utilities Board (EUB) have reached agreement which further clarifies their responsibilities for the regulation of the suspension, abandonment, decontamination, and surface land reclamation activities at upstream oil and gas facilities. This agreement is set out in the attached Memorandum of Understanding (MOU) which is intended to clarify the jurisdictional roles of AEP and the EUB to reduce regulatory duplication and enhance protection of the environment and the public interest.

The MOU will alter the way in which the industry, EUB, and AEP have interacted previously in the area of site decontamination. In the future, oil and gas companies may have more interaction with AEP during the decontamination process. The EUB will continue to focus greater efforts on the prevention of contamination and the timely suspension and abandonment of non-economic facilities.

Questions regarding the MOU should be directed to the appropriate contacts shown in Section 8 of the attached MOU.

Céline Bélanger  
Chair  
Alberta Energy and Utilities Board

J. R. Nichols  
Deputy Minister  
Alberta Environmental Protection

Attachment

# Memorandum of Understanding Between AEP and EUB on Suspension, Abandonment, Decontamination, and Surface Land Reclamation of Upstream Oil and Gas Facilities 26 March 1998

## 1 ABOUT THIS DOCUMENT

This Memorandum of Understanding (MOU) details the division of responsibilities between Alberta Environmental Protection (AEP) and the Alberta Energy and Utilities Board (EUB) for suspension, abandonment, decontamination, and surface land reclamation of active and inactive upstream oil and gas facilities. It is intended to clear up uncertainties regarding roles and responsibilities, and to clarify expectations when upstream oil and gas facilities are suspended, abandoned, decontaminated, or where surface land reclamation occurs. It addresses jurisdictional and procedural issues for reclamation activities at active sites, such as flare pit reclamation and on-lease and off-lease spill reclamation. The MOU applies to all upstream oil and gas facilities, whether licensed/approved solely by the EUB, or jointly by AEP/EUB, including but not limited to, well sites, oil and gas batteries, gas plants, compressor stations, crude oil terminals, pipelines, gas gathering systems, oil production sites, and oilfield waste related facilities. It does not include facilities approved by the National Energy Board.

The MOU does *not* address issues regarding release notification requirements. These are addressed in a separate MOU and Informational Letter IL 98-1 entitled *A Memorandum of Understanding Between Alberta Environmental Protection and the Alberta Energy and Utilities Board Regarding Coordination of Release Notification Requirements and Subsequent Regulatory Response*. Drilling waste management, material storage, and oilfield waste management are addressed in EUB Guides 50, 55, and 58. Section 4 of this document provides an overview of some of the regulatory responsibilities for managing oilfield wastes.

## 2 DEFINITIONS

In order to understand the content of this MOU, you should be familiar with the following terminology. Figure 1 illustrates some of these terminology relationships.

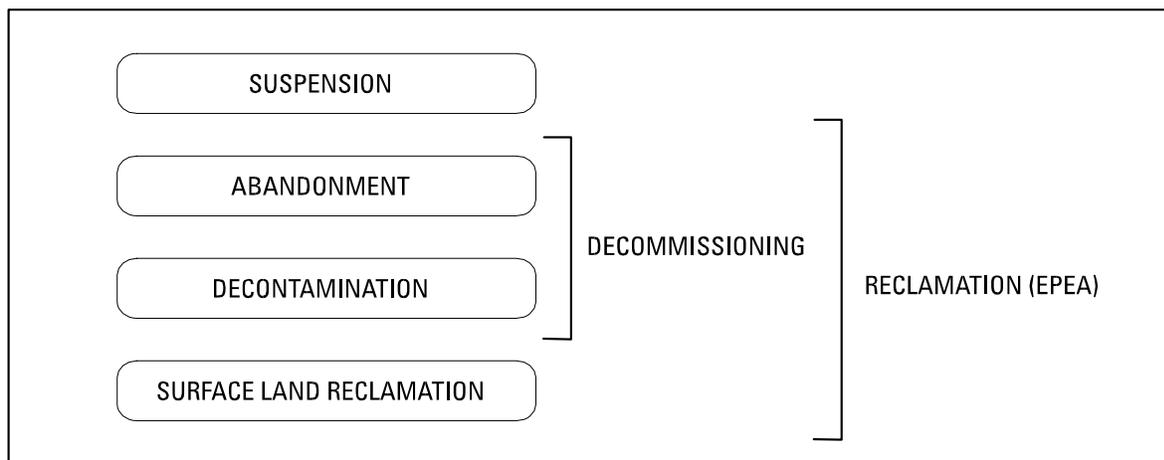


FIGURE 1: TERMINOLOGY RELATIONSHIP

***suspension:*** The cessation of normal production, operation, or injection activities at a facility pursuant to its EUB licensed use. The facility need not be rendered permanently incapable of its licensed use, but must be left in a safe and stable state during this period of suspension as prescribed by the appropriate EUB regulation(s) and guidelines.

***abandonment:*** The permanent dismantlement of the licensed facility so that it is permanently incapable of its EUB licensed use. This includes leaving downhole or subsurface structures in a permanently safe and stable condition in accordance with EUB requirements; the removal of associated equipment and structures; the removal of all produced liquids; and the removal and appropriate disposal of structural concrete.

***decontamination:*** The removal, reduction, or neutralization of substances, dangerous oilfield waste, and/or hazardous material from a site so as to prevent or minimize any adverse effects on the environment now or in the future. Decontamination is also referred to as *remediation*.

***surface land reclamation:*** The stabilization, contouring, maintenance, conditioning, reconstruction, or revegetation of the land surface to a state that permanently renders the land with a capability equivalent to its pre-disturbed state or for an alternate designated land use.

***decommissioning:*** The permanent closure of all or part of an industrial facility, including upstream oil and gas facilities, followed by the removal of process equipment, buildings and other structures, and the decontamination of the surface and subsurface.

***in situ treatment:*** A term used to describe a method of managing or treating contaminated soils, sludges and waters **in-place** in a manner that does not require the contaminated material to be physically removed or excavated from where it originates. Contaminated material treated in situ is not considered an oilfield waste.

***ex situ treatment/disposal:*** A term used to describe a method of treatment and/or disposal for contaminated soils, sludges, and waters (generated as a result of decontamination activities) once they have been physically removed or excavated from where they originate. Contaminated material treated/disposed ex situ is considered an oilfield waste.

***land treatment:*** The planned and controlled mixing of oilfield waste within the top 15 cm of the soil (not top soil) on an area of an upstream oil and gas facility, which must be a specified land as defined in the Conservation and Reclamation Regulation. The inherent soil processes are then used to biodegrade, transform, and assimilate the waste constituents.

***one-time land treatment:*** The activity of land treatment where oilfield waste is applied in a single application onto a specific area of an upstream oil and gas facility or another area related to that facility and is limited to occurring only once on that specific area during the entire lifetime of the facility.

***reclamation:*** The term is defined in the Environmental Protection and Enhancement Act (EPEA) to mean any or all of the following:



- § the removal of equipment or buildings and other structures, or appurtenances; the decontamination of buildings or other structures, or other appurtenances, or land or water;
- § the stabilization, contouring, maintenance, conditioning, or reconstruction of the surface of the land; and
- § any other procedure, operation, or requirement specified in the regulations.

A Reclamation Certificate will be issued for sites that fall within the EPEA definition of specified land (defined in the Conservation and Reclamation Regulation, sec 1(t)) when reclamation is completed to the satisfaction of AEP. Those facilities that are not on specified land will have to meet the remediation objectives set out by AEP (see section 7), but will not be issued a Reclamation Certificate.

***oilfield waste:*** An unwanted substance or mixture of substances that results from the construction, operation, or reclamation of a well site, oil and gas battery, gas plant, compressor station, crude oil terminal, pipeline, gas gathering system, oil production site, or oilfield waste-related facility.

***upstream oil and gas facilities:*** All facilities licensed or approved by the EUB, including but not limited to, well sites, oil and gas batteries, gas plants, compressor stations, crude oil terminals, pipelines, gas gathering systems, oil production sites, and oilfield waste related facilities.

***same production system:*** A term referenced in the MOU to limit off-site, one-time land treatment to a receiving site (any upstream oil and gas facility) that is within the same interconnected system of upstream production facilities (e.g., wells, pipelines, batteries, etc.) as the facility from which the land treatment material originated. The receiving site shall be connected to, or common to the upstream oil and gas facility from which the land treatment material originated and both facilities shall have the same licensee or approval holder.

***contamination:*** The condition or state of soil, water, or air caused by a substance release or escape that results in an impairment of, or damage to the environment, human health, safety, or property.

### **3 GENERAL ROLES AND RESPONSIBILITIES FOR SUSPENSION AND RECLAMATION OF UPSTREAM OIL AND GAS FACILITIES**

The EUB, AEP, and industrial operators all have separate roles and responsibilities when active and inactive upstream facilities are suspended or reclaimed or both. The following guidelines help clarify what is expected of each party during these processes:

#### **Industry operator responsibilities:**

- § suspend and abandon inactive upstream oil and gas facilities properly and safely according to EUB requirements,
- § contain and recover all free produced fluids to the expectations of the EUB,
- © assess the extent and degree of contamination, and develop and implement a remediation plan to the satisfaction of AEP,

- \$ decontaminate active and inactive upstream oil and gas facilities and any associated impacts occurring off-site (e.g., spills) to the satisfaction of AEP, as per the Remediation Objectives identified in section 7 of this document,
- \$ manage all upstream petroleum wastes according to EUB Guides 50, 51, 55 and 58,
- \$ manage in situ treatment of contaminated soils, sludges, and water to the satisfaction of AEP,
- \$ manage the ex situ treatment/disposal of contaminated soils, sludges, and water (oilfield wastes) generated as a result of decontamination activities to the satisfaction of the EUB as per Guide 58 and this MOU,
- \$ conduct surface land reclamation, and closure monitoring and reporting if necessary, to the satisfaction of AEP, and
- \$ obtain a Reclamation Certificate from AEP or AAFRD once an inactive upstream oil and gas facility has met the appropriate certification requirements.

**EUB responsibilities:**

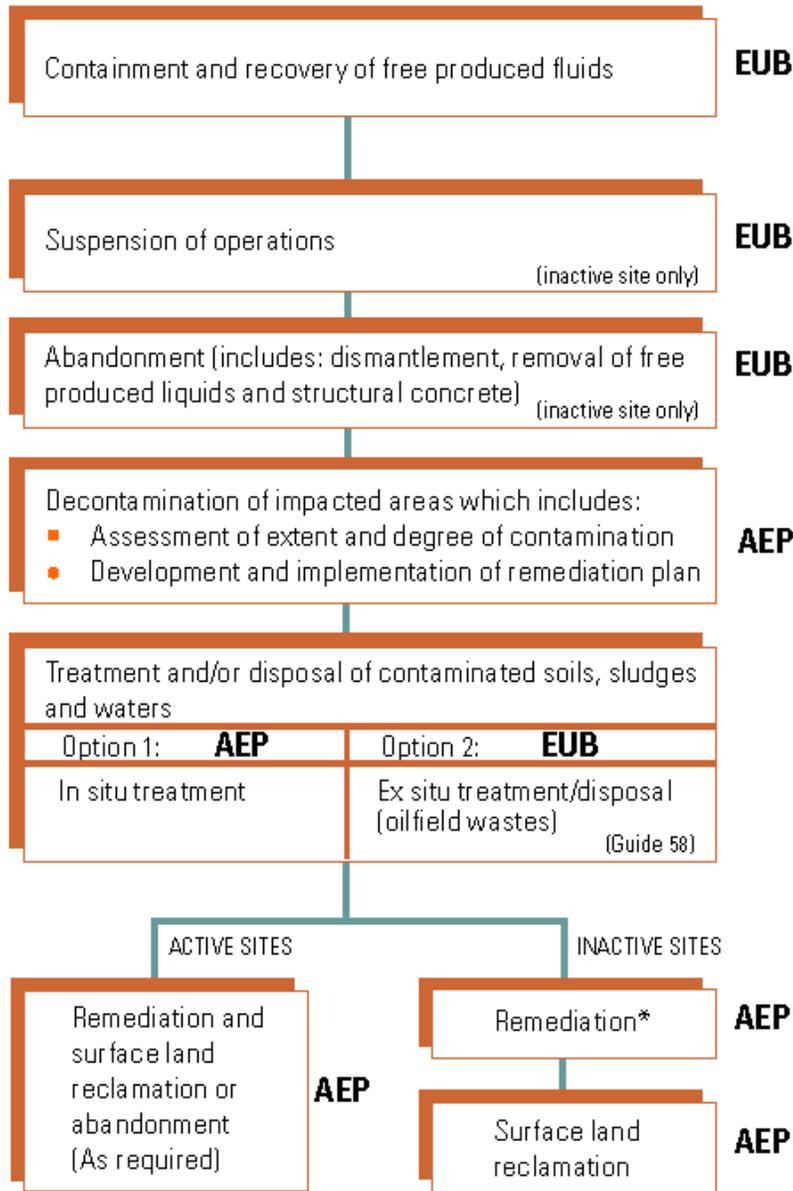
- \$ ensure inactive upstream oil and gas facilities are properly suspended and left in a safe and stable state,
- \$ make certain inactive upstream oil and gas facilities are properly abandoned and dismantled and that free produced liquids and structural concrete are removed,
- \$ develop guidelines for the management of drilling wastes and oilfield wastes and ensure these wastes are properly stored, treated, and disposed of according to EUB Guides 50, 51, 55, 58 and this MOU,
- \$ oversee the management of ex situ treatment/disposal for contaminated soils, sludges, and waters (oilfield wastes) generated as a result of decontamination activities, in accordance with EUB Guide 58 and this MOU, and
- \$ conduct inspections and take enforcement action when necessary.

**AEP responsibilities:**

- \$ develop soil and groundwater remediation objectives, and set policy for the application of risk assessments,
- \$ ensure that facility owners and operators decontaminate impacted sites, to meet remediation objectives referenced in section 7 of this document,
- \$ develop and maintain surface land reclamation requirements and ensure that facility owners and operators meet these requirements,
- \$ issue Reclamation Certificates (*AEP has delegated the authority to issue Reclamation Certificates and manage land based activity on public land in the White Area to Public Lands in Alberta Agriculture, Food and Rural Development (AAFRD). The Land and Forest Service (LFS) manages land based activity and has been delegated the authority to issue Reclamation Certificates for public land in the Green Area*), and
- \$ conduct inspections and take enforcement action where necessary.

**Figure 2** summarizes the division of regulatory responsibility, and procedure for suspending and reclaiming an inactive and active oil and gas facility.

**FIGURE 2: SUSPENSION AND RECLAMATION PROCEDURE, AND THE DIVISION OF REGULATORY RESPONSIBILITY FOR AN ACTIVE AND INACTIVE UPSTREAM OIL AND GAS FACILITY**



\* Regulations for remediation certification under development.

Note: Whether reclamation occurs on-lease or off-lease, the division of regulatory jurisdiction does not change.

Also attached in Appendix 1 are some examples of typical suspension and reclamation activities and the identification of which agency has the regulatory jurisdiction.

## 4 OILFIELD WASTES

### 4.1 General

It is the EUB's responsibility to maintain and administer oilfield waste management requirements for the upstream oil and gas industry. The EUB released ID 96-3 and Guide 58, *Oilfield Waste Management Requirements for the Upstream Petroleum Industry*, in November 1996. Any questions regarding these documents should be directed to the EUB.

All oilfield waste generated from suspension, abandonment, decontamination, and surface land reclamation of an active or inactive upstream oil and gas facility fall under the jurisdiction of the EUB. Contaminated soils, sludges, and waters that are physically removed or excavated (from where the waste originated) as a result of decontamination activities (e.g., earthen pit/pond reclamation, spill reclamation, underground, and above ground tank reclamation, etc.) are considered oilfield wastes. All oilfield wastes must be managed as an ex situ treatment/disposal (see definition) in accordance with EUB Guide 58 and this MOU.

Should an operator wish to use an alternative method not mentioned in Guide 58, an application must be made to the EUB Operations Group (see section 4.3). Sometimes operators may wish to deal with contaminated soils, sludges, and waters in situ. EUB ID 96-3 and Guide 58 do not apply to in situ treatment activities. In situ treatment activities fall under the jurisdiction of AEP, and any questions about this should be directed to them.

### 4.2 One-Time-Only Land Treatment of Oilfield Wastes

Approvals are not required for on-site, one-time land treatment of unrefined hydrocarbon contaminated soils or sludges (oilfield wastes). However, all land treatment activities including in situ land treatment must be conducted in accordance with section 16.0 of EUB Guide 58. Currently, one-time land treatment is only permitted to occur on the site where the waste material originated or was generated. All contaminated material moved from an originating site must be sent to an EUB-approved oilfield waste management facility, or to an AEP-approved facility capable of accepting the material.

Since the release of Guide 58, it has become acceptable for oilfield waste material to be moved off-site to a more suitable location for one-time land treatment, provided the following conditions are met:

- § land treatment is conducted according to EUB Guide 58,
- § the receiving site is within the same production system (see section 2 Definitions **A**ame production system<sup>®</sup> and the licensee/approval holder is the same for both locations,
- § the receiving site is specified land as per the Conservation and Reclamation Regulation under EPEA,
- § written consent is obtained from the landowner of the receiving site, and
- § notice of the off-site land treatment is provided to the EUB Waste Operations Team prior to the movement of material off-site. (*Notice must include the company name, contact number, date of movement, site of origin, total amount and characterization of the material land treated, a copy of landowner consent, and the legal description of the off-site land treatment location.*)

### **4.3 Use of Oilfield Waste Management Technologies/Alternatives Not in Guide 58**

Alternatives for the treatment and disposal of oilfield wastes other than those in Guide 58 may exist. If an operator wishes to propose a different method, an application must be made to the EUB Operations Group. A joint EUB/AEP working group is being formed to review these applications and proposals on a case-by-case basis.

## **5 RECLAMATION OF ON-LEASE AND OFF-LEASE SPILLS, RELEASES, OR PIPELINE BREAKS**

Whether a spill occurs on-lease or off-lease, the division of regulatory responsibility between AEP and the EUB for the reclamation process remains unchanged. Once a spill, release, or pipeline break (herein referred to as a **spill**) has occurred, the operator is responsible to report the spill to the appropriate agency (see EUB IL 98-1 for notification requirements). The EUB is responsible for ensuring that the operator contains the spill adequately and any free produced fluid is recovered. Upon notification, the EUB will assess the need for EUB staff to be on-site to oversee the operator's spill response, specifically the containment and recovery of any free produced fluids. Factors such as environmental and public sensitivity, spill volume, and concentration characteristics, operator expertise, complexity of the cleanup, and other details are examined prior to the deployment of EUB staff to a spill site.

In all cases, the operator is responsible for containing and recovering as much of the free produced fluids or waste product as possible before decontaminating the impacted spill area. Questions or inquiries regarding containment and recovery of free produced fluids should be directed to the local EUB Field Centre.

In emergency situations (where an operator cannot immediately respond), the EUB may take control of initial containment and recovery operations, until the operator responds. Costs incurred by the EUB will be recovered from the operator.

All contained/recovered spill fluids are considered to be oilfield waste, and must be managed according to EUB Guide 58.

Once any free produced fluid or waste product is contained and recovered, the operator must decontaminate any remaining contaminated soils or waters on the spill site. As the operator is accountable to AEP for this decontamination, any questions regarding this should be directed to AEP. AEP may not be on-site or directly involved in all spill situations. Upon being made aware of a spill (IL 98-1) AEP will assess the need for their presence at the spill site to oversee decontamination activities. AEP expects that all companies will utilize the remediation objectives referenced in section 7 of this document as the basis for decontaminating a spill site. Operators should reference section 7 when determining if soils or waters are contaminated and in determining a decontamination endpoint.

AEP will ensure that operators have properly decontaminated the spill area by conducting follow-up inspections or audits of the spill site, and/or by requesting an operator's written report on the spill and decontamination status. (This **Status** report is in addition to the seven day report requirement stipulated in IL 98-1). Any contaminated soils, sludges, or water physically removed or excavated from a spill site is considered to be an oilfield waste, and must be managed as an ex situ treatment/disposal activity, in accordance with EUB Guide 58 and this MOU.

Once a spill site has been decontaminated, surface land reclamation (see definitions) is then required. Questions regarding surface land reclamation should be addressed to AEP or AAFRD.

## **6 RECLAMATION OF EARTHEN PITS AND PONDS**

Recently, the EUB has taken steps to reduce the use of pits and ponds at upstream oil and gas facilities (see IL 96-4). Operators are no longer permitted to discharge any produced liquid to earthen pits or ponds and are encouraged to reclaim existing ones in a timely fashion. AEP requires that these pits/ponds be removed if an actual or potential adverse effect exists. Neither AEP nor EUB staff intend to be on-site to oversee pit/pond reclamation, however, the operator must maintain documentation to demonstrate that each pit/pond has been properly decontaminated and any resulting oilfield wastes have been appropriately treated/disposed.

Free produced fluids removed from a pit or pond are considered oilfield waste and must be managed in accordance with EUB Guide 58 and this MOU. Free produced fluids include any fluid that can be drawn off with a pump or vacuum truck.

Following the removal of produced fluids, the pit/pond must be decontaminated. AEP expects all operators to utilize the remediation objectives referenced in section 7 as the basis for decontaminating earthen pits/ponds. AEP has the regulatory jurisdiction for all pit/pond contaminated soils, sludges, and water that are treated in situ.

Contaminated soils, sludges, and water that are removed from a pit/pond and treated/disposed ex situ (see definition) must be managed as an oilfield waste in accordance with EUB Guide 58 and this MOU. All land treatment activities, and other bioremediation alternatives (biopiles and biocells) for contaminated pit/pond soils are considered an ex situ treatment/disposal and must therefore be managed as an oilfield waste as per EUB Guide 58 and this MOU. Land treatment and other bioremediation alternatives are complete once the contaminated soils and receiving soils have met the requirements of Guide 58 and this MOU. Questions on ex situ treatment/disposal of oilfield wastes generated as a result of pit/pond decontamination should be directed to the EUB.

Once a pit/pond has been decontaminated, and any associated oilfield waste has been adequately managed, the disturbed area(s) must undergo proper surface land reclamation (see definition). AEP and AAFRD are the regulatory agencies responsible for all surface land reclamation issues.

Any closure monitoring and reporting for earthen pits/ponds should be addressed by the operator in consultation with AEP. Operators are expected to document their reclamation activities and be able to verify the site has been adequately decontaminated.

## 7 REMEDIATION OBJECTIVES

At the majority of sites the remediation objectives will be the AEP 1994 *Alberta Tier 1 Criteria for Contaminated Soil Assessment and Remediation* and the 1995 *Canadian Water Quality Standards* (and updates). In situations where there is historic contamination and the property is, and will continue to be, zoned commercial/industrial, use of the commercial/industrial remediation objectives in the 1991 CCME *Interim Canadian Environmental Quality Criteria for Contaminated Sites* may be used for soil.

As an alternative to the generic approach, a proponent may choose to conduct a site-specific risk assessment study to derive risk-based remediation objectives or to support a risk management plan. Risk-based remediation objectives must be derived in accordance with the 1996 CCME A *Protocol for the Derivation of Environmental and Human Health Soil Quality Guidelines*. Site-specific risk assessment approaches must be approved by AEP and accepted by any affected parties.

## 8 CONTACTS

### *Suspension and Abandonment Issues (EUB):*

Appropriate Field Centre:	Bonnyville Area	(403) 826-5352
	Calgary South Area	(403) 297-8303
	Drayton Valley Area	(403) 542-5182
	St. Albert Area	(403) 460-3800
	Grande Prairie Area	(403) 538-5138
	Medicine Hat Area	(403) 527-3385
	Red Deer Area	(403) 340-5454
	Wainwright Area	(403) 842-7570

### *Decontamination Issues (AEP):*

Contaminated Sites & Decommissioning Branch	(403) 427-6182
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### *Oilfield Waste Treatment and/or Disposal Issues (EUB):*

General Inquiries	(403) 297-3426
Waste Operations Team	(403) 297-2496

### *Land Reclamation Issues:*

#### **Green Area**

Land Services Branch, Land and Forest Services, AEP	(403) 427-3570
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#### **Public Land in White Area**

Public Land Management Branch, AAFRD	(403) 427-3595
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**Non-Public Land in White Area**

Environmental Services, AEP

Appropriate Field Centre:

Calgary	(403) 297-8295
Camrose	(403) 679-1274
Edmonton	(403) 427-6212
Fairview	(403) 835-7139
Grande Prairie	(403) 538-5459
Hanna	(403) 854-5579
Lethbridge	(403) 381-5156
Medicine Hat	(403) 529-3685
Red Deer	(403) 340-7052
St. Paul	(403) 645-6394
Stony Plain	(403) 963-5351
Wainwright	(403) 842-7535
Westlock	(403) 349-3445

# APPENDIX 1

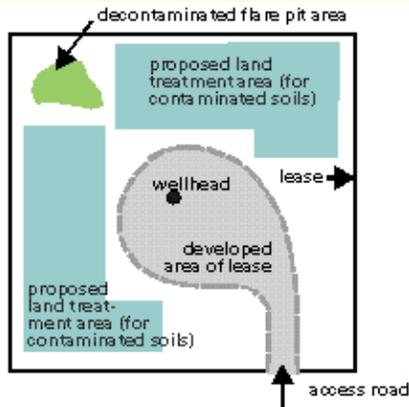
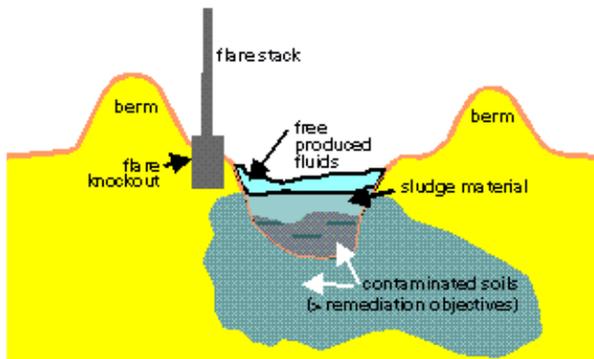
## Examples

The following examples provide a typical list of potential activities that may happen during the suspension, abandonment, decontamination, and surface land reclamation cycle on active and inactive upstream oil and gas facilities. The list associated with each example is not intended to show a step-by-step process for suspension, abandonment, decontamination, and surface land reclamation activities. The purpose of the list is to:

- \$** define the agency which has the regulatory responsibility for each specific activity. Any proponent undertaking these activities is not required to contact the agency before they do that activity unless required to do so by an Act, regulation, ID, IL, guideline, or approval condition, and
- \$** identifies the agency the proponent should contact if they require assistance on a particular activity.

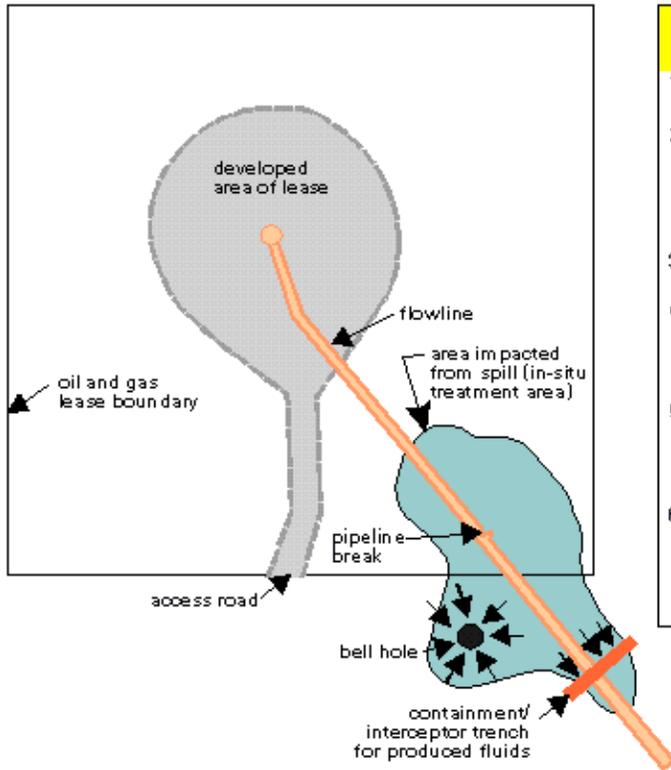
### EXAMPLE NO. 1: RECLAMATION OF EARTHEN PIT/POND (FLARE PIT) ON AN ACTIVE SITE

Land Treatment of Contaminated Material On-site



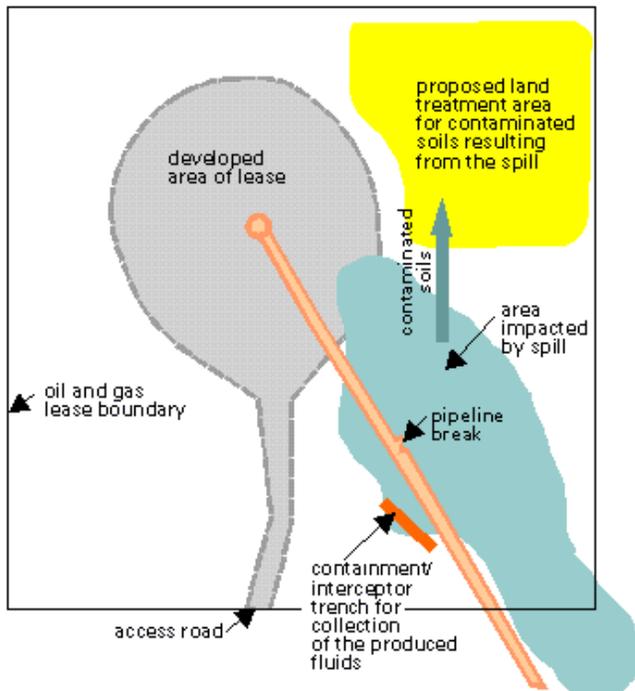
Activity	Regulatory Jurisdiction
1. Suspension of flare lines, fuel gas lines, knockout, etc.....	EUB
2. Removal of produced fluids from piping, knockouts, etc.....	EUB
3. Removal of produced fluids from the pit/pond.....	EUB
4. Disposal of free produced fluids - all sources (oilfield wastes).....	EUB
5. Decontamination of flare pit area, including the delineation and excavation of impacted soils and sludges .....	AEP
6. Land treatment of excavated contaminated or impacted soils (oilfield wastes).....	EUB
7. Ongoing management of land treatment areas until Guide 58 requirements are achieved .....	EUB
8. Land reclamation (recontouring, erosion control, revegetation, etc.) of flare pit area and land treatment area .....	AEP

**EXAMPLE NO. 2: IN-SITU TREATMENT OF A CRUDE OIL/PRODUCED WATER (EMULSION) SPILL AT AN ACTIVE SITE (ON-LEASE AND OFF-LEASE)**



Activity	Regulatory Jurisdiction
1. Suspension or repair of flowlines.....	EUB
2. Containment and recovery of free produced fluids from flowlines or spill area (eg. use of interceptor trenches and bell holes; or spill flushing of area).....	EUB
3. Treatment and/or disposal of free produced fluids.....	EUB
4. In-situ land treatment of residual hydrocarbon contaminated soils and remediation of residual salt contamination in spill area.....	AEP
5. Ongoing management of in-situ treatment program for spill area (until remediation objectives achieved).....	AEP
6. Land reclamation, (recontouring, revegetation, stabilization, etc.) of spill area once remediation objectives achieved.....	AEP

**EXAMPLE NO. 3: ON-SITE TREATMENT OF A CRUDE OIL SPILL AT AN ACTIVE SITE (ON-LEASE AND OFF-LEASE)**



Activity	Regulatory Jurisdiction
1. Suspension or repair of flowline.....	EUB
2. Containment and recovery of free produced liquids.....	EUB
3. Treatment and/or disposal of free produced liquids.....	EUB
4. Decontamination of spill area, including the delineation and excavation of impacted soils.....	AEP
5. Land treatment of excavated contaminated soils (oilfield wastes) from the spill area on a designated portion of the lease.....	EUB
6. Ongoing management of land treatment area until EUB Guide 58 requirements are achieved.....	EUB
7. Land reclamation, (recontouring, revegetation, stabilization, etc.) of spill and land treatment area.....	AEP