

The effects of oil and gas wastes' management on environment's sustainable development

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ABSTRACT: Elimination and reduction waste production in processes of gas and oil production and exploration is necessary act not only to preserve environment, but also to reduce operation costs. In present era most of the traditional acts while encountering to wastes, are updating and considering. In most of the exploration and production processes of oil and gas, the cost of waste management form as a significant part of projects' costs. As wrong acts can have environmental and financial consequences, systematic wastes' management should be considered as a main aim by considering economic and environmental aspect of this issue. This paper suggests a firm for right waste management and according to priority order. The effective acts about wastes, is main components of environmental management of each system. The attention of international societies in right waste management to reduce damaging potential is increasing. The right waste management will follow by reduction of operation costs in projects. Waste management is applicable by sazmic , excavation and developing production to delivery operation phases. The basic of waste management is continuity and obeying hierarchy of management and arrangement operations. Specific operations of waste management are may be include the possibility of recycling, or improving conditions and it is on the basis of waste's type and features of operation site. Making a list which determines wastes' flows and record management costs can be effective in method determination to improve operations. A concise list of waste management operation, type of operations, methods of recycling and the location of final wastes and elimination ways is a data source in pollutant conditions besides being a valuable tool for implementing waste reduction programs and should be used in operation site to do right management.

Key words: Waste management, Environment, Exploration process, Oil

Methods of wastes encountering

The right waste management is initiated with pollution avoidance. Pollution avoidance includes elimination, change or reduction of operation that leads to air, waste or earth pollutions. This principle should be done continuously in planning and managing the gas and oil exploration and production facilities. If elimination isn't possible, the amount of waste production should be considered gradually. Waste management may be done through obeying applicable actions, means reduction of pollution source, recycling and improving the final wastes.

These actions are listed as follow

Source reduction: lower waste production through effective actions, such as: materials elimination; controlling and managing goods' lists, materials substitution, improving storing methods.

Recycling: using materials and productions that are usable again such as: chemical materials dishes, oil wastes to road building, firing the oil wastes to producing energy.

Improving: transforming usable wastes/or extracting energy from wastes, such as: metals recycling, recycling oil from bottom of the tanks, producing through production and exploration processes.

Implementing method: destruction, detoxified/ neutralization of rests through processes such as: biological method, recycling rests of sources by plant materials by heating methods' firing, heating analysis, chemical methods, and physical methods sustaining, and using centrifugal force.

Eliminating final rests: landfill of wastes in water or earth by proper methods.

The methods of encountering the final rests include: waste, leave them on the ground, distributing on the ground, injecting them in to the earth.

Ecological sensitivity potential to operation's location status is the key for selecting the proper managerial method for a specific waste. Doing this method needs information about geology, hydrology, aerology and biology. The assessing documents of environmental effects can be on useful source.

Stages of waste management

An especial arranging for waste management is directly dependant to waste type selection and eliminating methods according to ecological sensitivity, common needs, available installations in geographical zone and economic issues. Arranging should be done any according to operation views and contains indexes for encountering to every waste flows. In codifying such a program, an exploratory and production company can follow 10 fundamental steps:

First step: Management establishment

Management establishment should be done in a correct format. Responsible people, required sources and timing aims should be determined in a way that system management has full information about time and time range and also available facilities.

A total aims of waste management program should be presented with measurable results.

Second step: Location determination

The waste management program in a specific zone should contain a definition if geographical zone and description of activities and occupations that are existed in it. The primary hypothesis in selecting a zone should encompass both aspects of ecology and common activities of zone.

Third step: Waste recognition

Operation personnel should be introduced with all wastes' types that are exported or produced in the zone for each activity. A concise explanation about each waste (sources, oil percentage and its approximate volume ...) can be helpful in better management.

Fourth step: Continues analysis

Reviewing international and regional rules of host country, to determine type of wastes and correct management is necessary wastes that their rules aren't considered, need more considerations.

Fifth step: Waste classification

Physical, chemical and toxicity features of each waste should be determined. This information may be achieved through safe tickets of producer's information, MSDS2, the lab history and analysis. A system is formed for classifying wastes' flows according to health and environmental disadvantages.

Sixth step: Waste management assessment and ways for eliminating final rests

A list of existed potential for waste management should be collected and different managerial methods should be determined.

Availability of each method for different ecological zones should be offered in programming. Assessment should be including:

Environmental notes, location, engineering limitations, rules limitations, operational possibility, economic notes, the possibility of doing long term program ...

An acceptable list of different managerial methods and suitability of each method should be reviewed by personnel and expert management. The detrimental waste flows which are more disadvantages (such as radio activates materials) should be determined.

Seventh step: Waste reduction

Different options of waste reduction or elimination, reduction of volume and recycling should be considered in management reassessment, when a method was selected, a pilot test for primary assessment is needed. An overview of waste management program should reflect the completed implementations in waste reduction.

Eight step: Selecting primary waste management methods

In assessing different waste management methods, selecting the best method should be done from operation and location aspect.

An analysis can assess different methods on the basis of storing risks and transferring the final waste. Through these processes, operation personnel may confirm or change aforementioned implementations.

Ninth step: Implementing waste management program in a specific location

This step includes all the previous preferred method for waste management and eliminating final waste as a unit management program. The suggested implements of waste management should be summarized in usable documents in operation zone. Notes should be included only wastes of those locations. Explanation of each waste should determine the waste management method.

Tenth step: Over viewing program and updating

An effective waste management is a dynamic process. When a new method is suggested, it should be overviewed. A method should be determined for updating waste management program and implements should be done for corresponding to technologies. Arranging, implementing and over viewing should be done on the basis of following criteria:

Environmental preservation, reducing volume and poison of wastes and waste management over viewing and updating periodically

RESULTS

The main aim of waste management is ensuring of amount and pace of waste distribution in a way that doesn't have significant pollution in the environment. A systematic waste management considers environment and economic aspect. 10 basic steps in correct waste management should follow following criteria in priority order:

Management establishment, location determination, waste recognition, continues analysis, waste classification, waste management assessment and ways for eliminating final rests, waste reduction, selecting primary waste management methods, implementing waste management program in a specific location, over viewing program and updating.

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