



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

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### EPA Five Year Review of the No Action Decision at the Ordot Landfill Superfund Site in Guam

#### I. INTRODUCTION

##### 1. Scope and intent of current five year review

This report is the policy five year review of the no action decision at the Ordot Landfill Superfund Site in Guam (EPA ID Number GUD980637649). This review included a survey of the RI/FS, the no action ROD, recent groundwater sampling results, a site visit with site photographs, and an interview with a Guam Environmental Protection Agency (Guam EPA) Project Manager.

The purpose of this five year review of the selected remedy is two fold. The first goal of this review is to confirm that the no action remedy selected in the ROD remains effective at protecting human health and the environment at the site. The second goal is to evaluate whether the original rationale for selecting the no action remedy remains valid.

##### 2. Summary of review results

The results of this five year review are that: 1) the original rationale for the no action remedy selected in the 1988 ROD is still valid and that the remedy remains protective of human health and the environment; 2) significant improvements have been achieved by the Guam Department of Public Works in the operating practices and general conditions at the Ordot Landfill; 3) preliminary groundwater sampling results do not show any conclusive evidence of contaminant migration from the landfill towards the sole source limestone aquifer; 4) EPA recommends further groundwater sampling of these wells to confirm that the sole source aquifer is not at risk from the landfill.

#### II. SITE SUMMARY

##### 1. Site history and description

Ordot Landfill (Ordot) is an operating municipal landfill located on the island of Guam, and is the only major municipal landfill on the island. It is currently operated by the government of Guam through the Department of Public Works. The site has been receiving uncontrolled municipal (and perhaps hazardous) wastes since before World War II. Although Ordot Landfill primarily received municipal waste, because it is the only major public waste disposal site on Guam, the Guam

Environmental Protection Agency feels that it has received hazardous waste during its history. Unfortunately, records have never been kept as to the nature and quantity of hazardous wastes disposed of at Ordot Landfill.

Ordot Landfill is located in the volcanic upland near the divide between the southern volcanic and northern limestone geologic provinces which comprise the island of Guam. The primary concern is that a suspected fault near the landfill could provide a hydrologic connection between the contaminants at Ordot Landfill and Guam's major drinking water aquifer located in the limestone province. A second basis for concern is the leachate runoff impacts on the adjacent Lonfit River, which flows into Pago River and ultimately Pago Bay.

The Ordot Landfill continues to be operated more as an open dump than as an engineered landfill. The landfill was established in a ravine which slopes steeply to the Lonfit River. Operations at the landfill use most of the 47 acres. The unused portions of the landfill are downgradient and adjacent to current operations. The toe of the landfill is approximately 1000 feet from the Lonfit River and leachate seeps have historically emerged from contact points along the landfill toe and the clay soils of the banks of the Lonfit River.

On March 26, 1986, EPA found Ordot Landfill in violation of the Clean Water Act for discharging landfill leachate to the Lonfit River without a National Pollutant Discharge Elimination System (NPDES) permit. EPA ordered Ordot Landfill to cease discharge. Ordot Landfill remains in violation of the EPA order.

## 2. Description of the selected remedy

In September, 1988, EPA determined, based on the available information, that remedial action at the Ordot Landfill site under CERCLA authority was inappropriate at that time.

That determination was made based on several facts: 1) Ordot Landfill is an operating municipal landfill; 2) all but approximately 4-7 acres of the 47 acre site are active waste disposal areas; 3) the 4-7 acres are downgradient of the active waste disposal areas or are immediately adjacent to active waste disposal areas; 4) any remedy for the inactive areas will likely be affected by activities at the active waste disposal areas or continued surface flows through the landfill; 5) the bulk of any environmental impacts from the landfill will result from activities at the active waste disposal areas; 6) the landfill, by applying standard operating practices to control landfill leachate, can effectively reduce or eliminate the surface flow of leachate to receiving waters; 7) EPA has issued an order under the Clean Water Act, 33 U.S.C. Section 1251 et seq., that requires the Guam Department of Public Works to cease discharge of leachate from Ordot Landfill to the Lonfit River; and 8) EPA

data, although too limited for comprehensive conclusions, has not demonstrated any imminent and substantial endangerment to human health or welfare or the environment.

EPA concluded that threats to human health and the environment currently identified at the landfill were due to poor operation practices and could best be mitigated through addressing operations and maintenance of the landfill. The Record of Decision concluded that landfill leachate control measures consisting of capping and surface water control implemented through enforcement of the Clean Water Act was appropriate. The responsibility for implementing these controls lies with the landfill operator, the Territory of Guam. The ROD also concluded that expenditures from the Superfund for those purposes were not appropriate.

EPA also concluded that any remedial action to address the inactive portion of the landfill potentially appropriate for response under CERCLA would be jeopardized or nullified unless operation practices at the active disposal areas were improved to reduce leachate formation and to prevent discharge of leachate. The design for improved operations at the active disposal areas must consider the inactive portion due to the nature of the site and thus would make a separate CERCLA remedial action unnecessary.

Based on these considerations EPA selected no action as the preferred alternative under CERCLA. As part of the preferred alternative, EPA continued to gather additional data to identify any adverse impacts on human health or welfare or the environment attributable to the landfill not currently identified and remediated by the continued monitoring program at Ordot Landfill.

## II. REMEDIAL OBJECTIVES

There were no remedial objectives specified in the no action ROD. There have been several monitoring wells installed between the landfill and the limestone aquifer to allow for monitoring and early detection of any movement of contaminants from the landfill into the aquifer. This monitoring was conducted by EPA in accordance with the continued monitoring objective in the ROD.

## III. ARARs REVIEW

Based on the conclusions of the endangerment assessment there were no ARARs considered in the 1988 ROD. There is no need for a current review of ARARs because the conclusions of the original endangerment assessment are still valid. The monitoring results from the RI/FS and the continued groundwater monitoring have been compared to MCLs which would be the most likely compliance requirement to change since the signing of the ROD. This comparison is summarized below in the discussion of site conditions.

#### IV. SUMMARY OF SITE VISIT

##### 1. Scope of site visit and activities conducted

A site visit and inspection was conducted by an EPA Superfund Project Manager and a Guam EPA representative on April 8, 1993. The inspection consisted of: (1) a walking inspection of the entire perimeter of the site and portions of the top deck; 2) a driving inspection of several of the landfill toe benches; 3) an inspection of the groundwater monitoring wells installed as an early warning system for contamination to the limestone aquifer; and 4) photographing site features and conditions for inclusion in this review report.

##### 2. Site conditions found on inspection

The walking inspection on April 8, 1993 found conditions and practices at the landfill to be significantly improved compared to historical conditions and practices. However, there were some problems still occurring. Underground fires are still occurring in the trash prism, but the extent of burning is greatly reduced and is confined to a much smaller area. There are still some leachate seeps at the toe of the landfill. These seeps were sampled by Guam EPA in 1992 after typhoon Omar but results were not available due to analytical equipment failure. The operations at the landfill are greatly improved. A diversion ditch has been installed upgradient of the trash prism which captures and diverts an artesian spring which previously flowed into the trash prism. This has improved the leachate control at the landfill. Also, trash cover practices and erosion control have been improved. The toe of the landfill has been stabilized and erosion reduced by cutting and compacting benches and lifts of local volcanic soils.

EPA also installed several groundwater monitoring wells in the limestone aquifer near the contact between the volcanic province and the limestone province. There were some installation problems in one well caused by collapse of rubblelized contact zone void spaces which crushed the well casing. Groundwater samples can still be collected from this well but the effective screen interval is not clear and grout has seeped into the inside of the well casing. The other wells are entirely functional.

Groundwater samples were analyzed for general water quality parameters, VOCs, pesticides, PCBs and metals. Some of the well results showed slight VOC contamination which was also found in the field blanks. Also, several of the well samples showed common drinking water chlorination byproducts which is consistent with the fact that the wells were developed, with tap water. No pesticides, PCBs or metals contamination was found.

3. Photographs of site taken during the inspection

Attached are photographs taken during the site inspection on April 8, 1993. There is also a map showing the position and direction of view for each photograph.

V. AREAS OF NONCOMPLIANCE

There are presently no apparent areas of noncompliance at the Ordot Landfill Superfund Site with regard to the no action remedy selected by EPA in the 1988 ROD. This does not address the extent of compliance achieved by the Guam Department of Public Works in response to the EPA Clean Water Act order.

VI. STATEMENT OF PROTECTIVENESS

The remedial action selected in the ROD signed in September, 1988 for the Ordot Landfill Superfund site was reviewed in April and September 1993. The remedy selected in the Record of Decision was found to be protective of human health and the environment at that time.

VII. NEXT REVIEW

The next five year review will be conducted in fiscal year 1998. However, EPA has sent a letter to Guam EPA encouraging Guam EPA to continue to monitor the groundwater wells in the limestone aquifer. This monitoring, if done, would occur before the next review.

VIII. IMPLEMENTATION REQUIREMENTS

Presently there are no implementation requirements pursuant to this review. Because recent groundwater results were not conclusive regarding possible contaminant migration towards the limestone aquifer, it is EPA's recommendation that monitoring of the groundwater wells continue. Guam EPA appears to be the appropriate agency to conduct this sampling.

  
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Remedial Action Branch

9/30/93  
Date