Headquarters, Air Combat Command
Langley Air Force Base,
Virginia

Draft Final

1995 Sampling Report

Sewage Lagoons Long-term Groundwater Monitoring Program

49 CES/CEV
Holloman Air Force Base,
New Mexico

2/1/96

1995 SAMPLING REPORT
SEWAGE LAGOONS LONG-TERM GROUNDWATER MONITORING PROGRAM

HOLLOMAN AIR FORCE BASE, NM

DRAFT FINAL

Prepared for:

49 CES/CEV
Holloman Air Force Base, NM

and

HQ ACC/CEV
Langley Air Force Base, VA

Prepared by:

Radian Corporation
8501 North Mopac Blvd.
Austin, Texas 78720
512/454-4797

Under Contract No. DACW45-89-0515 with:

U.S. Army Corps of Engineers
Omaha District
Omaha, Nebraska

February 1996

TABLE OF CONTENTS

Page

1.0 Field Operations 1

2.0 Analytical Results 1

2.1 QA/QC Summary 1
2.2 Results Summary 1

3.0 Trends 4

4.0 Recommendations 4

Appendix A: Analytical Results
Appendix B: Groundwater Sampling Logs
Appendix C: Chain-of-Custody Forms

LIST OF FIGURES

Page

1 LTM Detection Monitoring Network 2

2 Potentiometric Groundwater Surface Map (October 1995) 3

LIST OF TABLES

1 Historical Program Sampling Event Summary 5

1995 SAMPLING REPORT

Ten wells were sampled for organochlorine pesticides and metals during the 1995 long-term monitoring (LTM) sampling event at the Holloman Air Force Base (AFB) sewage lagoons. The analytical results of this sampling were compiled and compared with established alternate concentration levels (ACLs) for each analyte (see Appendix A of this document for analytical results and ACLs). No analyte was detected at levels above its respective ACL in any sample. As a result, it is recommended that LTM continue, with the next event scheduled for the fall of 1996. The following paragraphs discuss the activities, results, and conclusions of the 1995 LTM sampling.

1.0 Field Operations

Groundwater samples were collected during September/October 1995 from each of the 10 wells in the sewage lagoons' groundwater monitoring network (shown in Figure 1). Samples, including quality assurance (QA), quality control (QC), and equipment blank samples, were collected following the procedures outlined in the *Long-term Monitoring Plan* (Radian, 1995) and analyzed for organochlorine pesticides and metals as specified in the *Program Overview,* Part I of this document. Samples were collected from the 10 wells with dedicated bladder pumps, which were pulled to the surface for inspection after sampling was completed at each well. All pumps were found to be in good condition. No operational difficulties were encountered during the 1995 sampling event. Following the sampling, a synoptic water level survey of wells in the vicinity of the lagoons and lakes was conducted; the resulting groundwater potentiometric surface map is presented in Figure 2.

2.0 Analytical Results

The following paragraphs contain a summary of the QA/QC evaluation of the analyses and a discussion of the analytical results of this sampling round.

2.1 QA/QC Summary

The QC programs and corrective actions detailed in the *Quality Assurance Project Plan (QAPP)* were followed. The *QAPP* is presented as Appendix B of the *Long-term Monitoring Plan* (Radian, 1995). Additional details of the project QA/QC program are documented in the *QAPP*. QA procedures included sending split samples to the U.S. Army Corps of Engineers (USACE) Missouri River Division (MRD) Laboratory for analysis. Results of the QA splits are not discussed in this report.

Overall, QA/QC data associated with this program indicate that measurement data are acceptable and defensible. Several pesticides (i.e., endosulfan sulfate and endrin) and metals (i.e., lead, nickel, and silver) were detected in the associated method blanks. However, blank detections were all below the *QAPP*-specified method detection limit and ACLs, and therefore, do not affect the reported analytical result interpretation. The QA/QC data indicate that the QC mechanisms were effective in ensuring measurement data reliability within the expected limits of sampling and analytical error. The *QAPP* measurement objectives were met.

2.2 Results Summary

All samples were analyzed for organochlorine pesticides and metals by the methods listed in Table 1. A new, updated method (SW-8081) for organochlorine pesticides analysis was selected to replace pesticides method SW8080 which was specified in the *Long-term Monitoring Plan.* Analytical results were compared with the ACLs for each analyte (see Appendix A for analytical results and ACLs). All metal and organochlorine pesticide analytical results from the 1995 LTM event were detected well below their respective ACLs.

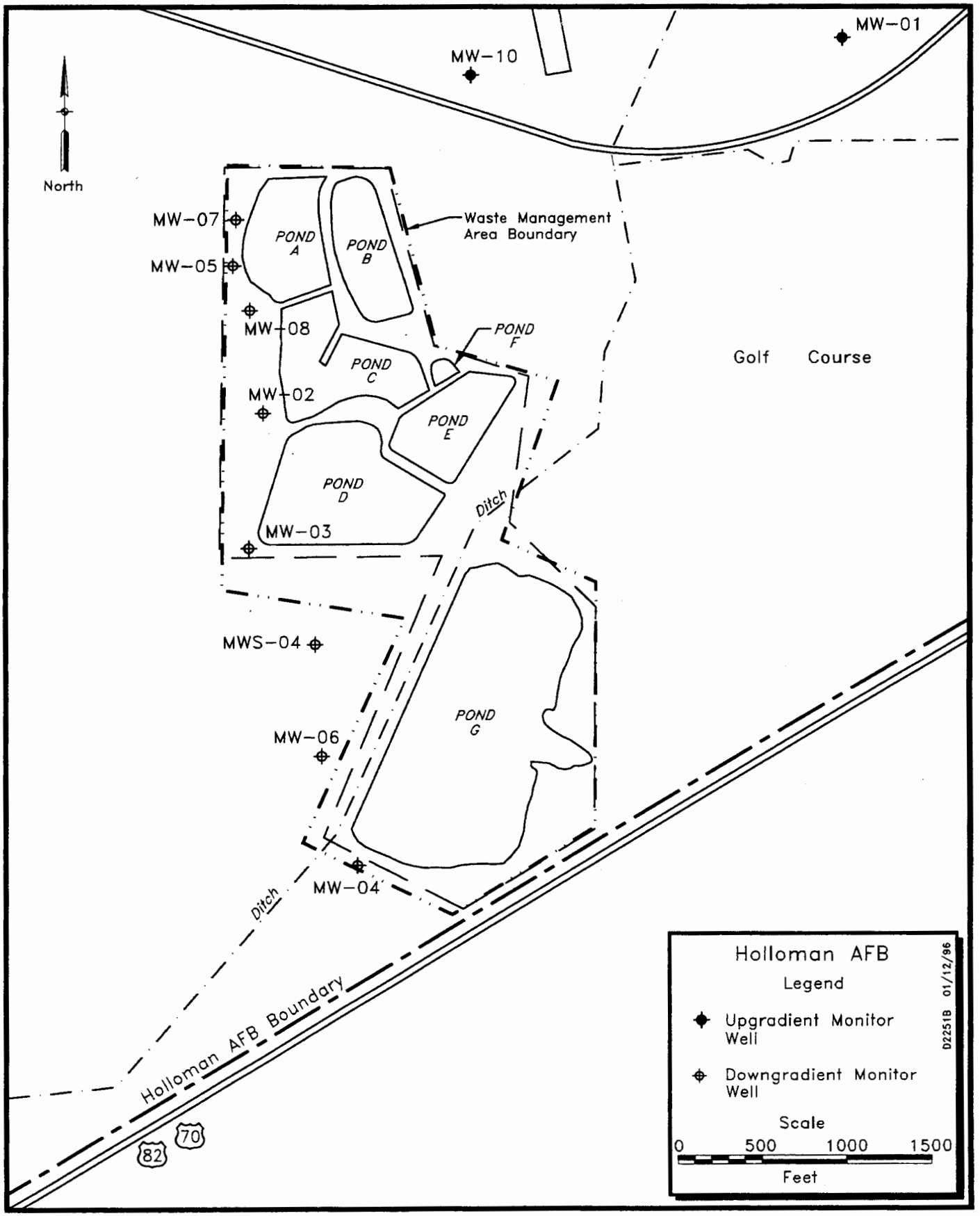

Figure 1. LTM Detection Monitoring Network

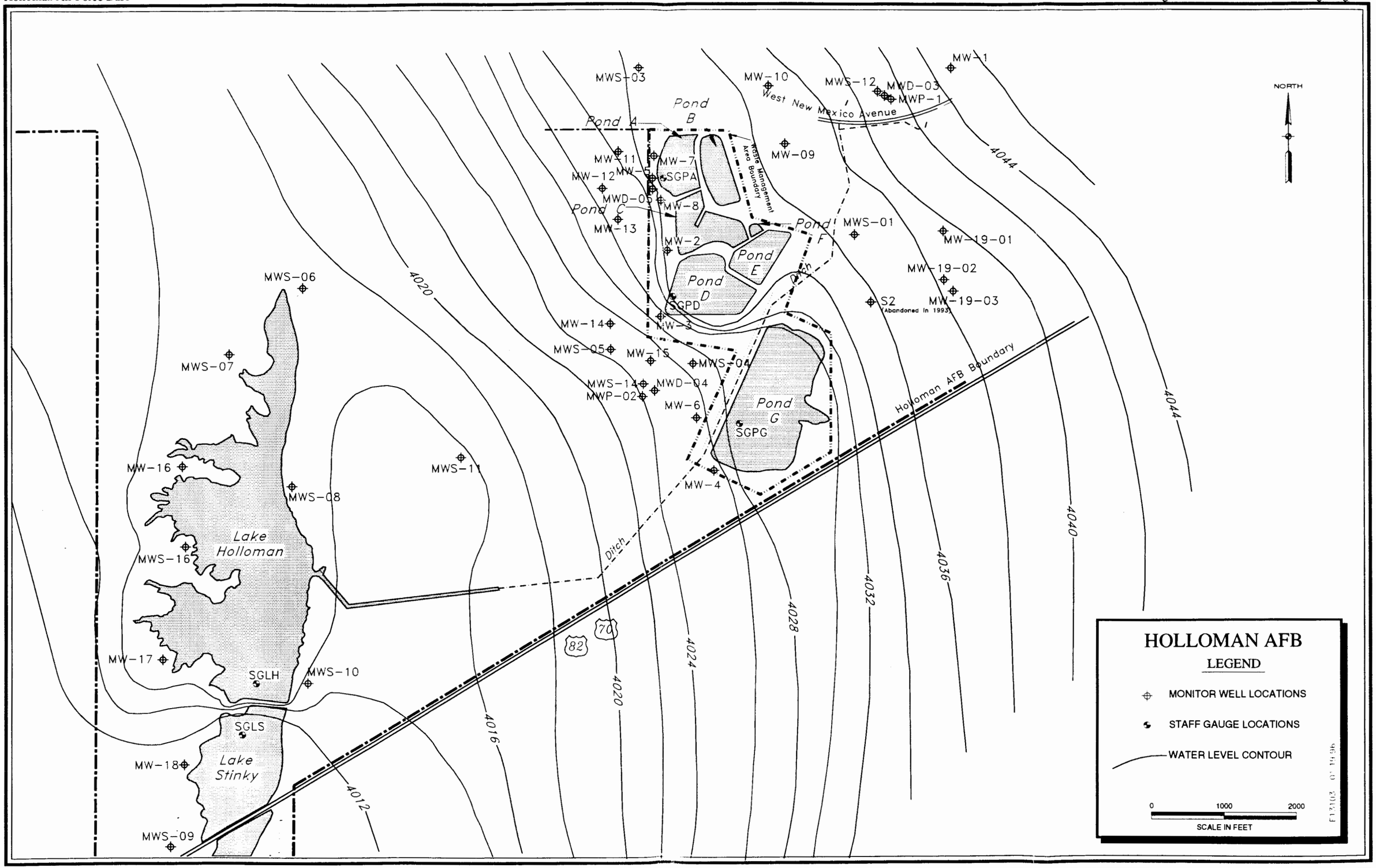

Figure 2. Potentiometric Groundwater Surface Map (October)