



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS 49TH FIGHTER WING (ACC)
HOLLOMAN AIR FORCE BASE, NEW MEXICO

HAFB2003

11 AUG 2003

MEMORANDUM FOR NEW MEXICO ENVIRONMENT DEPARTMENT

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FROM: 49 CES/CD
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SUBJECT: Submittal of Second Quarter 2002 Monitoring Report, 20,000-Pound Open Detonation Unit (ODU) and Quality Assurance/Quality Control Report

1. Attached is the Second Quarter 2002 20,000-pound ODU Monitoring Report and the Second Quarter 2002 Monitoring Quality Assurance/Quality Control (Atchs 1 and 2, respectively).
2. The monitoring reports contain the results of soil sampling following the detonation events of 05 April 02. These results were compared to decision criteria specified in Attachment J of the Operating Permit. Results from these analyses show that the ODU operations are effective.
3. If you have any questions or require additional information, please contact Ms. Debbie Hartell or Mr. Darvin St. John at (505) 572-3931.

Howard E. Moffitt
HOWARD E. MOFFITT
Deputy Base Civil Engineer

Attachments:

1. Second Quarter 2002 Monitoring Report 20,000-Pound Open Detonation Unit
2. Second Quarter 2002 Monitoring Quality Assurance/Quality Control Report

cc w/Atchs:

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*Headquarters, Air Combat Command
Langley Air Force Base,
Virginia*

Final

*Second Quarter 2002 Monitoring Report
20,000-Pound Open Detonation Unit*

*Holloman Air Force Base,
New Mexico*

June 2003



*49 CES/CEV
Holloman Air Force Base,
New Mexico*

**FINAL
SECOND QUARTER 2002 MONITORING REPORT
20,000-POUND OPEN DETONATION UNIT**

Prepared for:

Holloman Air Force Base
49 CES/CEV
550 Tabosa Avenue
Holloman AFB, New Mexico 88330

Prepared by:

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Under Contract No. DACW45-94-D-0003

Delivery Order 37, Work Authorization Directive 7

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

June 2003

TABLE OF CONTENTS

Section	Page
List of Figures	iii
List of Tables	iii
List of Acronyms	iv
1.0 INTRODUCTION.....	1
2.0 FIELD OPERATIONS.....	1
3.0 ANALYTICAL RESULTS.....	3
3.1 QUALITY ASSURANCE/ QUALITY CONTROL SUMMARY	3
3.2 RESULTS SUMMARY.....	5
3.2.1 Explosives Results	5
3.2.2 Metals Results.....	7
4.0 EVALUATION OF POTENTIAL RISK.....	8
4.1 METHODOLOGY.....	8
4.2 RESULTS OF RISK EVALUATION	9
5.0 CONCLUSIONS.....	10
6.0 REFERENCES	12

APPENDICES

A Analytical Data

B Risk Evaluation Calculation Sheet

LIST OF FIGURES

Figure		Page
Figure 2-1	Sample Locations	4

LIST OF TABLES

Table		Page
Table 2-1	Second Quarter 2002 Sample Locations	2
Table 3-1	Analytical Methods and Parameters.....	6
Table 3-2	Maximum Detected Concentrations, Frequency of Detections, and UTLs for Explosives and Metals	7
Table 4-1	Results of Carcinogenic and Noncarcinogenic Risk Calculations.....	11

LIST OF ACRONYMS

AFB	Air Force Base
DQO	data quality objective
EOD	explosive ordnance disposal
EPA	United States Environmental Protection Agency
HMX	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
$\mu\text{g}/\text{kg}$	micrograms per kilogram
mg/kg	milligrams per kilogram
NCP	National Contingency Plan
OD	Open Detonation
QA	quality assurance
QC	quality control
RDX	Hexahydro-1,3,5-trinitro-1,3,5-triazine
USAF	United States Air Force
UTL	upper tolerance limit
Work Plan	Final Work Plan Addendum

1.0 INTRODUCTION

During the second quarter of 2002, Holloman Air Force Base (AFB) performed the 16th quarterly sampling event at the 20,000-Pound Open Detonation (OD) Unit in accordance with Attachment J of the operating permit Sampling and Analysis Plan (USAF, 1996). Twelve locations were sampled for metals and explosive compounds and the analytical results were compared to the decision criteria outlined on page 33 of Attachment J of the operating permit. No sample results exceeded the decision criteria, and therefore, no changes to operations at the 20,000-Pound OD Unit are recommended. The following report summarizes the field operations, analytical results, potential risk, and conclusions from the 16th quarterly sampling event.

2.0 FIELD OPERATIONS

The second quarter 2002 detonation event occurred on April 2, and sampling was conducted on April 5, 2002. A total of 12 soil samples and one field duplicate were collected from 3 different strata within the boundaries of the 20,000-Pound OD Unit. Field and quality assurance/quality control (QA/QC) samples were obtained following the procedures outlined in the Final Work Plan Addendum for the 20,000-Pound Open Detonation Unit (Work Plan) (Foster Wheeler, 1999). Samples were analyzed for metals and explosive compounds as specified in the Work Plan.

During the field operations, the dimensions of each stratum were measured and recorded, and a grid was developed based on these measurements. Random sampling locations were determined following the guidelines established in the Work Plan. Sample locations are listed in Table 2-1.

Samples were labeled according to the following number sequence: OD-SO-s-x, where:

OD = open detonation

SO = soil

s = stratum (A, B, or C)

x = sequential sample number within each stratum (01, 02, 03, 04)

Table 2-1. Second Quarter 2002 Sample Locations

Stratum: A			
Number of Samples: 4			
Number of Potential			
Sampling Locations (n): 16			
Scale Factor (n-1): 15			
Sample Number	Random Number	Scaled Random Number	Grid-to-Node Sample
1	0.553	8.3	A8
2	0.418	6.3	A6
3	0.895	13.4	A13
4	0.264	4.0	A4

Stratum: B			
Number of Samples: 4			
Number of Potential			
Sampling Locations (n): 20			
Scale Factor (n-1): 19			
Sample Number	Random Number	Scaled Random Number	Grid-to-Node Sample
1	0.307	5.8	B6
2	0.722	13.7	B14
3	0.084	1.6	B2
4	0.799	15.2	B15

Stratum: C			
Number of Samples: 4			
Number of Potential			
Sampling Locations (n): 24			
Scale Factor (n-1): 23			
Sample Number	Random Number	Scaled Random Number	Grid-to-Node Sample
1	0.385	8.9	C9
2	0.567	13.0	C13
3	0.974	22.4	C22
4	0.339	7.8	C8

The area sampled was based on wind data recorded at the time of the March 22 and April 2, 2002 detonations. The assumption was made that any small particles from the detonation events would settle downwind of the detonation location. Figure 2-1 illustrates the strata layout and the sample locations associated with the April 5, 2002 sampling event. The wind data are presented below:

- March 22, 2002 (11:04)—wind direction 150 degrees/wind speed 5 knots
- April 2, 2002 (17:35)—wind direction 170 degrees/wind speed 5 knots

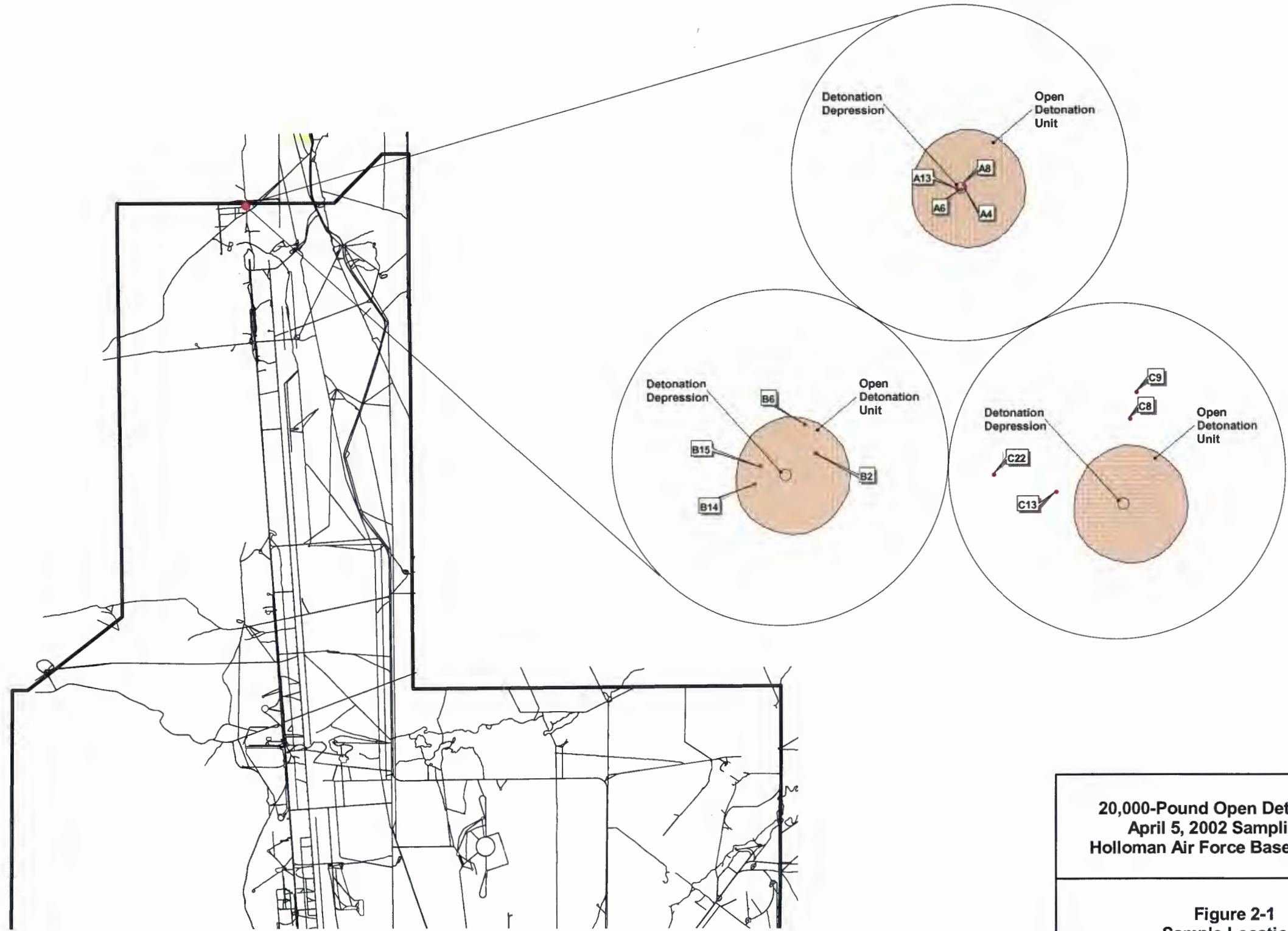
3.0 ANALYTICAL RESULTS

This section presents an evaluation of the QA/QC data associated with the analytical results for the second quarter 2002 monitoring event. Analytical methods for chemical analysis were taken from the latest revision of United States Environmental Protection Agency (EPA) Test Methods for Evaluating Solid Waste, SW-846, Third Edition and Updates (EPA, 1986).

3.1 QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

The QC data were reviewed to determine usability and achievement of project data quality objectives (DQOs). The review focused on laboratory method blanks, matrix and control sample spikes, surrogate recoveries, and holding times. Overall, QC data associated with this sampling event indicate that project measurement data are reliable and fulfill project DQOs.

The explosives data (EPA SW-846 Methods 8330 and 8332) for this monitoring event are reported to the method detection limit. A "J" qualifier signifying an estimated concentration was assigned to concentrations reported below the sample-specific detection limit (also known as the method reporting limit) and above the method detection limit. Explosive compounds that were not detected are reported with a "U" qualifier accompanying the sample detection limit.



LEGEND



Sample Locations



Open Detonation Unit



Streets and Roads



Installation Boundary



20,000-Pound Open Detonation Unit
April 5, 2002 Sampling Event
Holloman Air Force Base, New Mexico

Figure 2-1
Sample Locations



Foster Wheeler Environmental Corporation