

# LOAN DOCUMENT

PHOTOGRAPH THIS SHEET

①

INVENTORY

DTIC ACCESSION NUMBER

LEVEL

Rpt. on Bioventing Sys. Removal & Well . . .

DOCUMENT IDENTIFICATION

14 Mar 97

**DISTRIBUTION STATEMENT A**  
Approved for Public Release  
Distribution Unlimited

DISTRIBUTION STATEMENT

ACCESSION BY	
NTIS	GR&I
DTIC	TRAC
UNANNOUNCED	
JUSTIFICATION	
BY	
DISTRIBUTION/	
AVAILABILITY CODES	
DISTRIBUTION	AVAILABILITY AND/OR SPECIAL
A-1	

DISTRIBUTION STAMP

DATE ACCESSIONED

DATE RETURNED

DTIC QUALITY INSPECTED 4  
20001128 005

DATE RECEIVED IN DTIC

REGISTERED OR CERTIFIED NUMBER

PHOTOGRAPH THIS SHEET AND RETURN TO DTIC-FDAC

H  
A  
N  
D  
L  
E  
  
W  
I  
T  
H  
  
C  
A  
R  
E

**PARSONS ENGINEERING SCIENCE, INC.**

406 West South Jordan Parkway, Suite 300 • South Jordan, Utah 84095 • (801) 572-5999 • Fax: (801) 572-9069

March 14, 1997

Major Marchand  
AFCEE/ERT  
3207 North Road, Bldg. 532  
Brooks AFB, Texas 78235-5363

Subject: Report on Bioventing System Removal and Well Abandonment at Sites 204.1, 228, and 510.8, Hill Air Force Base (AFB), Utah (Contract F41624-92-D-8036, Order No. 0017)

Dear Major Marchand:

Please find enclosed one copy of the subject letter Report on Bioventing System Removal and Well Abandonment at Sites 204.1, 228, and 510.8, Hill Air Force Base, Utah. The original letter report has been submitted to Mr. Sam Johnson, the Hill AFB EMR underground storage tank project manager. The report has been prepared by Parsons Engineering Science, Inc. for the Air Force Center for Environmental Excellence and Hill AFB.

If you have any questions or comments regarding this report, please call me at (801) 572-5999 or John Ratz at (303) 831-8100.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.



Gene A. Wright, P.G., C.C.  
Task Manager

Enclosures

cc: J. Ratz  
File 726876.09221.C

**DEFENSE TECHNICAL INFORMATION CENTER  
REQUEST FOR SCIENTIFIC AND TECHNICAL REPORTS**

Title  
AFCEE Collection

**1. Report Availability** (Please check one box)

- This report is available. Complete sections 2a - 2f.
- This report is not available. Complete section 3.

**2a. Number of  
Copies Forwarded**

1 each

**2b. Forwarding Date**

July/2000

**2c. Distribution Statement** (Please check ONE box)

DoD Directive 5230.24, "Distribution Statements on Technical Documents," 18 Mar 87, contains seven distribution statements, as described briefly below. Technical documents MUST be assigned a distribution statement.

- DISTRIBUTION STATEMENT A: Approved for public release. Distribution is unlimited.
- DISTRIBUTION STATEMENT B: Distribution authorized to U.S. Government Agencies only.
- DISTRIBUTION STATEMENT C: Distribution authorized to U.S. Government Agencies and their contractors.
- DISTRIBUTION STATEMENT D: Distribution authorized to U.S. Department of Defense (DoD) and U.S. DoD contractors only.
- DISTRIBUTION STATEMENT E: Distribution authorized to U.S. Department of Defense (DoD) components only.
- DISTRIBUTION STATEMENT F: Further dissemination only as directed by the controlling DoD office indicated below or by higher authority.
- DISTRIBUTION STATEMENT X: Distribution authorized to U.S. Government agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance with DoD Directive 5230.25, Withholding of Unclassified Technical Data from Public Disclosure, 6 Nov 84.

**2d. Reason For the Above Distribution Statement** (in accordance with DoD Directive 5230.24)

**2e. Controlling Office**

HQ AFCEE

**2f. Date of Distribution Statement  
Determination**

15 Nov 2000

**3. This report is NOT forwarded for the following reasons.** (Please check appropriate box)

- It was previously forwarded to DTIC on ..... (date) and the AD number is .....
- It will be published at a later date. Enter approximate date if known. ....
- In accordance with the provisions of DoD Directive 3200.12, the requested document is not supplied because:  
.....  
.....

**Print or Type Name**

Laura Peña

**Signature**

Laura Peña

**Telephone**

210-536-1431

(For DTIC Use Only)

**AD Number** MO1-01-0353

**PARSONS ENGINEERING SCIENCE, INC.**

406 West South Jordan Parkway, Suite 300 • South Jordan, Utah 84095 • (801) 572-5999 • Fax: (801) 572-9069

March 14, 1997

Mr. Sam Johnson  
OO-ALC/EMR  
7276 Wardleigh Road  
Hill AFB, Utah 84056-5127

Subject: Report on Bioventing System Removal and Well Abandonment at Sites 204.1, 228, and 510.8, Hill Air Force Base (AFB), Utah (Contract Number F41624-92-8036, Delivery Order 17)

Dear Mr. Johnson:

This letter provides a brief description of bioventing system removal and the abandonment of vent wells (VWs) and vapor monitoring points (VMPs) at Sites 204.1, 228, and 510.8 at Hill AFB, Utah. The removal and abandonment activities were performed by Parsons Engineering Science, Inc. (Parsons ES) in September 1996 as part of the Air Force Center for Environmental Excellence (AFCEE) Extended Bioventing Contract.

Parsons ES installed bioventing systems at former underground storage tank (UST) Sites 204.1 and 228 in July 1992, and at Site 510.8 in August 1993. Parsons ES and Hill AFB (Base) requested no-further-action site closures for these sites from the Utah Department of Environmental Quality, Division of Environmental Response and Remediation (DERR) in July 1995. The DERR agreed that the vadose zone soils at these sites had been sufficiently remediated, and closure letters were issued by the DERR. The system removal and well abandonment effort was performed by Parsons ES as described in the letter work plan to you dated August 8, 1996, with the following exception. The abandonment of the groundwater monitoring well at Site 204.1 was not performed. This groundwater monitoring well had already been abandoned by Montgomery Watson, Inc., prior to the Parsons ES field mobilization in September 1996.

### Scope of Work

The specific activities performed are summarized below by site. General activities and information common to all of the sites are discussed following the site summaries.

#### Site 204.1

Mr. Sam Johnson  
March 14, 1997  
Page 2

- The electrical system associated with the blower unit was disconnected and removed. This included removal of electrical components on Building 207 such as the starter, disconnect switch, and associated conduit. The overhead wiring was retained by Hill AFB personnel for future use.
- The regenerative blower and its protective shed were removed.
- Vent well SB204A-04 was appropriately abandoned.
- Groundwater monitoring well T-204-1-MW-U-92-HF was to be abandoned, but this well had already been abandoned by Montgomery Watson, Inc. in August 1996.
- Vapor monitoring points SB204A-01, SB204A-02 and SBA204A-03 were appropriately abandoned.
- The ground surface was restored.

#### Site 228

- The electrical system associated with the blower unit was disconnected and removed. Because of the wiring complexity and the potential for future use, the power source electrical components on Building 228 were left intact.
- The regenerative blower and its protective shed were removed.
- Vent well T-228-2-VW-U-92-HF was appropriately abandoned.
- Groundwater monitoring well T-228-3-BH-U-HF was left intact as directed by Hill AFB.
- Monitoring point T-228-1-VP-U-92-HF was appropriately abandoned.
- The ground surface was restored.

#### Site 510.8

- The electrical system associated with the blower unit was disconnected and removed. This included removal of electrical components such as the starter, disconnect switch, and associated above-grade conduit located next to the blower shed. Subsurface wiring conduit from the blower shed to Building 510 was abandoned in place.
- The regenerative blower and its protective shed were removed.

- Vent well 510SVE-1 was appropriately abandoned.
- Groundwater monitoring well EA-MW1 was left intact as directed by Hill AFB.
- Vapor monitoring points MPA, MPB and MPC were appropriately abandoned.
- The ground surface was restored.

The bioventing system removal and VW and VMP abandonment for all three sites were accomplished in one field mobilization. The work was performed by Parsons ES personnel from the Salt Lake City office and qualified local subcontractors. A Utah-certified UST consultant provided oversight of the abandonment activities.

Bioventing system removal involved disconnecting the regenerative blowers from the VW piping and capping the blower outlets to prevent moisture and debris from accumulating in the blower system. The power supply to the blowers was disconnected and removed by a licensed electrician provided by Parsons ES. The blower systems were transported from each site to the new drum storage area at Operable Unit 2 as directed by Hill AFB.

Prior to the VW and VMP abandonment activities, utility digging clearances from the Base Red Stakes Services were requested and granted. The VWs and VMPs were prepared for abandonment by cutting the surrounding asphalt with a coring saw. The asphalt ranged from 4 to 6 inches in thickness. To cut the VW and VMP casings at the required depth of 2 feet bgs, it was necessary to excavate an area around each casing large enough to chip out the existing grout annular seal. An excavation was developed around each casing with a jack hammer and each casing was cut off at a depth of 2 feet below ground surface (bgs).

A Utah-licensed well driller performed the abandonment. The VWs were abandoned following the Utah Department of Natural Resources, Division of Water Rights (DWR) well abandonment procedures outlined in the State of Utah Administrative Rules for Water Well Drillers, 1995 (R655-4-11.4 and R655-4-12.1 through R655-4-12.12). The abandonment procedures included filling the well casings with bentonite grout using a grout pipe. After each VW casing had been filled with grout, the square-shaped excavated area was backfilled and hand compacted with roadbase material. Asphalt "hot-patch" was placed over the compacted roadbase material and pressed with a heavy roller to restore the surface. The asphalt cutting and restoration work was subcontracted.

The VMP tubing was cut off at the bottom of the excavation, and a 0.25" polyvinyl chloride cap was glued to the tubing to be left in place. Each excavated area was backfilled and hand compacted with roadbase, and was then restored with asphalt as described above. Excavation debris was disposed at an offsite public landfill by the subcontractor.

Mr. Sam Johnson  
March 14, 1997  
Page 4

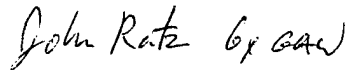
Please call Mr. Gene Wright, the Parsons ES Site Manager at (801) 572-5999 or Mr. John Ratz, the Parsons ES Project Manager, at (303) 831-8100 if you have any questions regarding the abandonment work. It has been a pleasure working on this successful project with Hill AFB Environmental Management and AFCEE.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.



Gene A. Wright, P.G.  
Certified UST Consultant (CC0020)



John W. Ratz, P.E.  
Project Manager

cc: Major Ed Marchand, AFCEE/ERT  
File 726876.0921.C