



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

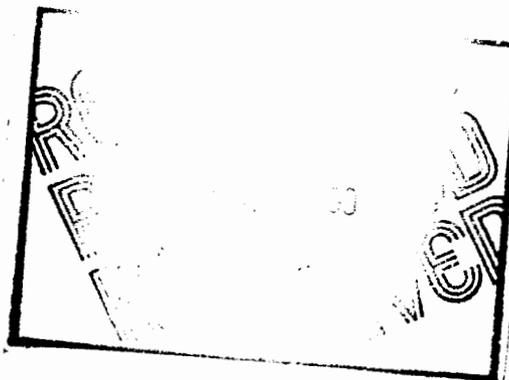
REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

January 17, 1990

Mr. Boyd Hamilton
Program Manager
Hazardous Waste Section
Hazardous Waste Bureau
Environmental Improvement Division
Health and Environment Department
P.O. Box 968
Santa Fe, New Mexico 87504-0968



FILED IN Bound
~~WASTE~~ MATERIAL AREA.

RE: U. S. Holloman Air Force Base, Alamogordo, New Mexico
RCRA Comprehensive Ground Water Evaluation (CME)
EPA ID No. NM6572124422

SWANTON

Dear Mr. Hamilton:

Enclosed please find a copy of the inspection report completed by U.S. Environmental Protection Agency (EPA), Region 6 staff of the EPA-lead CME inspection conducted at Holloman AFB on August 15-17, 1989. Region 6 staff did not note any regulatory deficiencies. However, the following four (4) possible technical concerns are noted, and EPA is hereby forwarding the report for your review.

Technical Deficiencies

1. During the CME inspection, the bailer and bailer rope were observed to have contact with the ground, wellhead, and bumper posts. The sampling crew should take care to prevent the bailer and bailer rope from contacting the ground, bumper posts and wellhead.
2. During the inspection, the sampling crew was observed to pour the purge water onto the ground. The water evacuated from the wells should not be poured onto the ground. The purged water should be containerized and either placed into the wastewater treatment system or held until the analytical results are available. If the results indicate the water is not contaminated, it can be poured onto the ground.
3. Since the bailers are stored between sampling events and they are cleaned before and after storage, equipment blanks should be collected to ensure that cleaning and storage procedures do not introduce contaminants.

4. During the inspection, it was noted that some of the samples appeared to have high turbidity values. If the turbidity is caused by sand, silt, or clay particles in the water; the wells should be developed again to reduce the turbidity.

During the August 1989, sampling event, crews for Holloman AFB collected samples from MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, S-2 and S-4. EPA split samples with Holloman for MW-1, MW-5 and MW-7. Analytical results from EPA's samples indicate that MW-1 contains 1300 ug/l Total Organic Halide (TOX) and traces in the ug/l range of EP toxic metals; MW-5 contains 4 mg/l Total Organic Carbon (TOC), 110 ug/l TOX and traces in the ug/l range of EP toxic metals; and MW-7 contains 3 mg/l TOC, 110 ug/l TOX and traces in the ug/l range of EP toxic metals. In addition, MW-7 contains 4 ug/l of 2,6-dibromo-4-nitro-phenol and four other unknown organic compounds. MW-5 contains two unknown organic compounds.

EPA planned to collect split samples for one up-gradient monitoring well and three down-gradient monitoring wells. Inclement weather conditions prevented EPA from collecting split samples for MW-6. Since MW-6, MW-4 and S-4 are located in remote areas of the waste management area, EPA recommends that these wells be sampled as soon as possible during each sampling event. EPA also recommends that the sampling crew use a larger sized plastic sheeting to cover the concrete pad. The crews cut the plastic sheeting to the exact size of pad.

Based on these findings, EPA recommends that New Mexico Environmental Division (NMEID) take appropriate actions. EPA will enter these findings into Hazardous Waste Data Management System (HWDMS). Should you have any questions regarding this inspection report or findings, please do not hesitate to contact me, or have your staff contact Bobby Williams at (214) 655-6480.

Sincerely,


for Randall E. Brown
Chief
RCRA Enforcement Branch

Enclosure

cc: Jack Ellvinger, NMEID

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

001

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006
 Lab Code: SKINER Case No.: SAS No.: 4847F SDG No.: 001
 Matrix (soil/water): WATER Lab Sample ID: 08124-015
 Level (low/med): LOW Date Received: 08/17/89
 % Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2600.00			P
7440-36-0	Antimony	16.40	U		P
7440-38-2	Arsenic	7.00	U	W	F
7440-39-3	Barium	75.70	B		P
7440-41-7	Beryllium	1.20	B		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	2920000.00		E	P
7440-47-3	Chromium	12.10		*	P
7440-48-4	Cobalt	4.50	U	N	P
7440-50-8	Copper	12.20	B		P
7439-89-6	Iron	1980.00		E	P
7439-92-1	Lead	12.60	B	W	F
7439-95-4	Magnesium	2890000.00			P
7439-96-5	Manganese	122.00		E	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	30.40	B	N	P
7440-09-7	Potassium	66700.00			P
7782-49-2	Selenium	9.00	U	NE	F
7440-22-4	Silver	7.50	U		P
7440-23-5	Sodium	6200000.00		E	P
7440-28-0	Thallium	26.00	U	NE	F
7440-62-2	Vanadium	35.30	B		P
7440-66-6	Zinc	30.10			P
	Cyanide				NR

Color Before: WHITE Clarity Before: CLOUDY Texture:
 Color After: WHITE Clarity After: CLOUDY Artifacts:

Comments: * B = Below contract DL but
 above instrument DL. 0002
 U = Below instrument DL
 FORM 1-78 7/88

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

002

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006
 Lab Code: SKINER Case No.: SAS No.: 4847F SDG No.: 001
 Matrix (soil/water): WATER Lab Sample ID: 08124-025
 Level (low/med): LOW Date Received: 08/17/89
 % Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28.90	U		P
7440-36-0	Antimony	16.40	U		P
7440-38-2	Arsenic	1.40	U		F
7440-39-3	Barium	2.40	U		P
7440-41-7	Beryllium	3.00	B		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	632.00	B	E	P
7440-47-3	Chromium	9.40	U	*	P
7440-48-4	Cobalt	4.50	U	N	P
7440-50-8	Copper	6.20	B		P
7439-89-6	Iron	36.10	B	E	P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	592.00	B		P
7439-96-5	Manganese	4.40	B	E	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.00	U	N	P
7440-09-7	Potassium	179.00	U		P
7782-49-2	Selenium	1.80	U	NW	F
7440-22-4	Silver	7.50	U		P
7440-23-5	Sodium	1780.00	B	E	P
7440-28-0	Thallium	1.30	U	N	F
7440-62-2	Vanadium	5.30	U		P
7440-66-6	Zinc	22.80			P
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:
 Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: 0003
 FORM 1-78 7/88

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

003

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: SAS No.: 4847F SDG No.: 001

Matrix (soil/water): WATER Lab Sample ID: 08124-035

Level (low/med): LOW Date Received: 08/17/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1100.00			P
7440-36-0	Antimony	16.40	U		P
7440-38-2	Arsenic	7.90	B		F
7440-39-3	Barium	46.70	S		P
7440-41-7	Beryllium	1.20	B		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	583000.00		E	P
7440-47-3	Chromium	9.40	U	*	P
7440-48-4	Cobalt	9.50	B	N	P
7440-50-8	Copper	14.00	B		P
7439-89-6	Iron	1100.00		E	P
7439-92-1	Lead	1.10	B	W	F
7439-95-4	Magnesium	241000.00			P
7439-96-5	Manganese	1000.00		E	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	13.90	B	N	P
7440-09-7	Potassium	21800.00			P
7782-49-2	Selenium	9.00	U	NW	F
7440-22-4	Silver	7.50	U		P
7440-23-5	Sodium	585000.00		E	P
7440-28-0	Thallium	6.50	U	NE	F
7440-62-2	Vanadium	39.90	B		P
7440-66-6	Zinc	26.70			P
	Cyanide				NR

Color Before: WHITE

Clarity Before: CLOUDY

Texture:

Color After: WHITE

Clarity After: CLOUDY

Artifacts:

Comments:

0004

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

005

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006

Lab Code: SKINER Case No.: SAS No.: 4847F SDG No.: 001

Matrix (soil/water): WATER Lab Sample ID: 08124-045

Level (low/med): LOW Date Received: 08/17/89

% Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.90	U		P
7440-36-0	Antimony	16.40	U		P
7440-38-2	Arsenic	1.40	U		F
7440-39-3	Barium	2.40	U		P
7440-41-7	Beryllium	1.20	B		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	213.00	B	E	P
7440-47-3	Chromium	9.40	U	*	P
7440-48-4	Cobalt	4.50	U	N	P
7440-50-8	Copper	4.50	U		P
7439-89-6	Iron	23.10	U	E	P
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium	72.40	B		P
7439-96-5	Manganese	5.00	B	E	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	7.00	U	N	P
7440-09-7	Potassium	179.00	U		P
7782-49-2	Selenium	1.80	U	N	F
7440-22-4	Silver	7.50	U		P
7440-23-5	Sodium	733.00	B	E	P
7440-28-0	Thallium	1.30	U	N	F
7440-62-2	Vanadium	5.30	U		P
7440-66-6	Zinc	5.20	U		P
	Cyanide				NR

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

0005

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

006

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-W8-0006
 Lab Code: SKINER Case No.: SAS No.: 4847F SDG No.: 001
 Matrix (soil/water): WATER Lab Sample ID: 08124-055
 Level (low/med): LOW Date Received: 08/17/89
 % Solids: 0.0

Concentration Units (ug/L or mg/Kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2290.00			P
7440-36-0	Antimony	16.40	U		P
7440-38-2	Arsenic	6.10	B		F
7440-39-3	Barium	45.40	B		P
7440-41-7	Beryllium	1.20	B		P
7440-41-7	Cadmium	3.40	U		P
7440-70-2	Calcium	699000.00		E	P
7440-47-3	Chromium	9.40	U	*	P
7440-48-4	Cobalt	8.70	B	N	P
7440-50-8	Copper	4.50	U		P
7439-89-6	Iron	2240.00		E	P
7439-92-1	Lead	2.00	B	W	F
7439-95-4	Magnesium	440000.00			P
7439-96-5	Manganese	2340.00		E	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	24.80	B	N	P
7440-09-7	Potassium	24500.00			P
7782-49-2	Selenium	9.00	U	NW	F
7440-22-4	Silver	7.50	U		P
7440-23-5	Sodium	1300000.00		E	P
7440-28-0	Thallium	6.50	U	NE	F
7440-62-2	Vanadium	18.50	B		P
7440-66-6	Zinc	16.50	B		P
	Cyanide				NR

Color Before: BROWN Clarity Before: CLOUDY Texture:
 Color After: BROWN Clarity After: CLOUDY Artifacts:
 Comments:

0006

- SWANTON 2/90

Items Requiring EID Action

Section 3, page 1, item IIA: I called Bobby Williams on this one. We don't really know if the upgradient wells are unaffected by the facility. We have no Appendix IX data on any of the new wells, including the upgradient wells M-1 and S-2. Include in comments to EPA.

Section 4, page 1, item IB: I have read that there were old USGS wells at HAFB down which garbage, possibly animal carcasses had been disposed. Bobby W was told that HAFB was going to plug these wells but doesn't know if it has actually been done. Include in comments to EPA.

EID does not have a copy of HAFB's assessment outline. Request a copy of AO from HAFB.

Wells S-2 and S-4 (old wells which have been incorporated in the new system (see map attached) were surveyed under a different coordinate system than the new wells. Request that HAFB provide coordinate data for S-2 and S-4 under the same system as the new wells.

Wells are too turbid. EPA recommends re-development. Ask EPA if it is directing HAFB to redevelop its wells.

Items of General Interest

1. HAFB's system uses dedicated teflon bailers. Five well volumes are bailed.
2. HAFB field-determines turbidity.
3. HAFB samples for POX (purgeable organic halogens) rather than TOX (total organic halogens) as a result of an agreement with EPA. This is because of the high chloride level in the groundwater.
4. All screens are about 10 feet in length.
5. EID recommended HAFB use 40/60 mesh colorado silica for filter pack in an effort to yield clean samples. HAFB chose to use 16/40 sand. The wells are turbid.
6. HAFB uses an E-line for determining well depth. HAFB determines both depth-to-water and total well depth.
7. HAFB uses an interface probe for immiscible layer detection.

8. Due to bad roads during rainy conditions EPA recommended that wells MW-6, MW-4 and S-4 be sampled first.
 9. HAFB is currently only sampling for pH, specific conductance, turbidity, temperature, POX, chloride, phenols, sulfate, nitrate, coliform bacteria, herbicides/pesticides and metals.
 10. EPA sampled for metals, TOC, TOX and phenols.*
 11. Trace levels of regulated metals were found in the wells EPA sampled (MW-7 and MW-5), results are attached. No regulated metals were found above the contract-specified lower limits but some were identified above instrumental limits. In MW-5 2,6-dibromo-4-nitro-phenol was found at 4 ppb.
- *12. EPA did not run an Appendix IX scan on the wells at HAFB

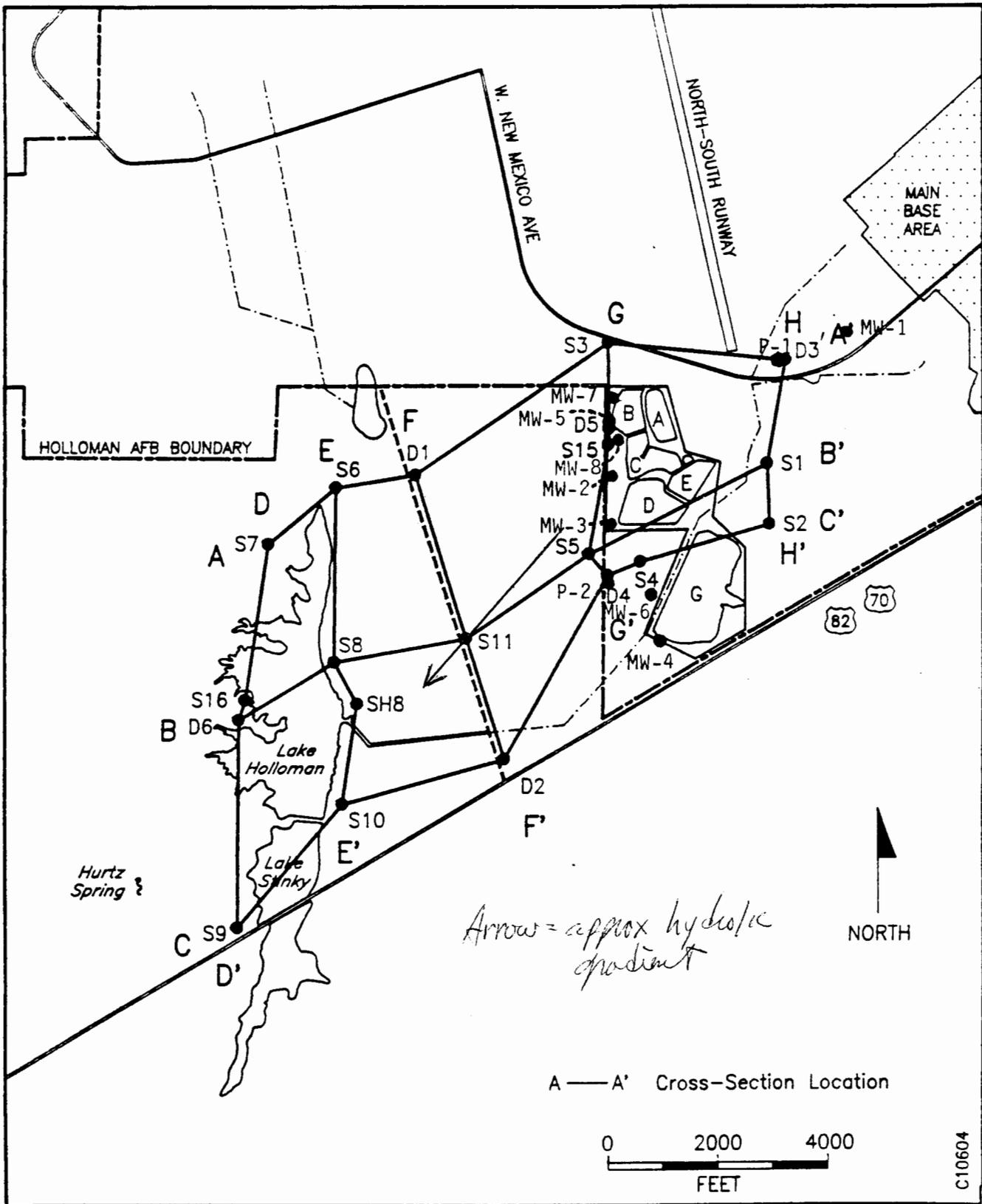


Figure 4-1. Location Map Showing Eight Geologic Cross-Sections (A-H), Holloman AFB, New Mexico