

APPENDIX G
ADDITIONAL ANALYTICAL RESULTS FOR SWMU 15



DEPARTMENT OF THE ARMY
 OFFICE OF THE PROGRAM MANAGER FOR CHEMICAL DEMILITARIZATION
 ABERDEEN PROVING GROUND, MARYLAND 21010-5401

REPLY TO
 ATTENTION OF

SAIL-PMO-T

29 Apr 92
 PM - 1868

MEMORANDUM FOR Chief, CSDP Support Office

SUBJECT: Analysis of TEAD Ground Water Samples

1. Reference the enclosed EG&G Defense Materials, Inc. letter HS0477-92, dated 3 Apr 92, subject: Analysis of Ground Water Samples.
2. The enclosed results of analysis of ground water samples taken from TEAD South Area monitoring wells (S-4790 and S-4890) are provided for your information.

S-47-90 S-48-90
3. Questions concerning this memorandum may be directed to the undersigned at 882-8458.

Encls

TIMOTHY W. THOMAS
 TOCDF Project Manager



11600 STARK ROAD, TOOELE, UTAH 84074
PHONE (801) 882-8450 • FAX (801) 882-8085

HS0477-92

April 3, 1992

Mr. Robert F. Smith
Resident Engineer
Army Corps of Engineers
11670 Stark Road
Tooele, UT 84074

RE: Contract DACA87-89-C-0076 Tooele Chemical Agent Disposal
Facility (TOCDF)

SUBJECT: Analysis of Ground Water Samples

Dear Mr. Smith:

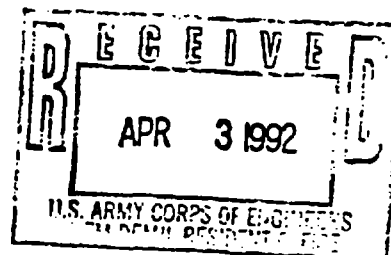
In response to your serial letter RC3527, dated March 9, 1992, enclosed are the results of the analysis of Ground Water Samples taken from TEAD South Area Monitoring Wells S-4790 and S4890. As requested, all results have been sent directly to Randall Vickers, Forsgren Associates.

Sincerely,


Henry F. Silvestri
General Manager

HTS/ELW/dlw

Enclosure



CERTIFICATE OF ANALYSIS

DATE: 03/26/92


EG&G DEFENSE MAT.
% WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-022573

SAMPLE: WATER SAMPLE S-4890 COLLECTED 3-3-92, 11:40 A.M. BY E.C.
FORD RECEIVED 3-3-92 FOR RADIOLOGICAL ANALYSIS.

RESULTS

=====	=====
Gross Alpha pci/l	5
Gross Beta pci/l	3



FORD ANALYTICAL LABORATORIES

CERTIFICATE OF ANALYSIS

DATE: 03/25/92

EG&G DEFENSE MAT.
% WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-000304

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-3-92 BY E.C. FORD RECEIVED 3-3-92 FOR
ANALYSIS STARTING AT 4 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

=====

-PESTICIDES/HERBICIDES

a-Endrin ppm	<.0001	<.0001
a-Lindane ppm	<.0001	<.0001
a-Methoxychlor ppm	<.0001	<.0001
a-Toxaphene ppm	<.0001	<.0001
b-2,4,5-TP (Silvex) ppm	<.0010	<.0010
b-2,4-D ppm	<.0010	<.0010


FORD ANALYTICAL LABORATORIES

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FORD ANALYTICAL LABORATORIES

CHEMICAL AND BACTERIOLOGICAL ANALYSIS

CERTIFICATE OF ANALYSIS

DATE: 03/05/92

EG&G DEFENSE MAT.
& WOODY WATTS
11600 STARK ROAD
TOCELE, UT 84074

92-000303

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-3-92 BY E.C. FORD RECEIVED 3-3-92 FOR
ANALYSIS STARTING AT 4 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

- TRIHALOMETHANE ANALYSIS

Bromodichloromethane ppm	<.001	<.001
Bromoform ppm	<.001	<.001
Chloroform ppm	<.001	<.001
Dibromochloromethane ppm	<.001	<.001
Total T.H.M. EPA Method 502.1	<.001	<.001


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CERTIFICATE OF ANALYSIS

DATE: 03/12/92

EG&G DEFENSE MAT.
 & WOODY WATTS
 11600 STARK ROAD
 TOOELE, UT 84074

92-022580

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
 AREA COLLECTED 3-3-92 BY E.C. FORD RECEIVED 3-3-92 FOR
 ANALYSIS STARTING AT 4 P.M. UNDER PO #92P0113.

S-4790 S-4890
 11:30 AM 11:40 AM

	S-4790	S-4890
Alkalinity, CaCO ₃ mg/l EPA310.2	174	165
Arsenic, As mg/l EPA206.2	.046	.023
Barium, Ba mg/l EPA 200.7	.100	.110
Cadmium, Cd mg/l EPA 213.1	<.005	<.005
Calcium, Ca mg/l EPA 200.7	34.90	38.28
Chromium, Cr mg/l EPA219.2	<.006	<.006
Color pt-co unit EPA 110.3	5	5
Copper, Cu mg/l EPA 210.1	<.01	<.01
Fluoride, F mg/l EPA 340.2	1.01	.74
Lead, Pb mg/l EPA 239.1	<.001	<.001
Mercury, Hg mg/l EPA 245.1	<.0011	<.0011
Nitrate, NO ₃ -N mg/l EPA300.0	.48	.93
Odor Units EPA 140.1	2	1
Selenium, Se mg/l EPA 270.2	.028	.049
Silver, Ag mg/l EPA 272.1	<.005	<.005
Surfactants ppm EPA425.1	<.4	<.4
Tot.Dis.Solids mg/l EPA 160.1	496	518

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CERTIFICATE OF ANALYSIS

PAGE: 2

91-022580

	S-4790	S-4890
	11:30 AM	11:40 AM

-----	-----	-----
Zinc, Zn mg/l EPA 289.1	<.01	<.01
pH Units EPA 150.1	8.36	8.29


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CERTIFICATE OF ANALYSIS

DATE: 03/12/92

EG&G DEFENSE MAT.
& WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-000296

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-2-92 BY E.C. FORD RECEIVED 3-2-92 FOR
ANALYSIS STARTING AT 4:30 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

	S-4790	S-4890
1,2-Dichloroethane ppm 502.2	<.001	<.001
1,1,1-Trichloroethane ppm 502.2	<.001	<.001
1,1-Dichloroethylene ppm 502.2	<.001	<.001
Benzene ppm 502.1	<.001	<.001
C. Tetrachloride ppm 502.2	<.001	<.001
Trichloroethylene ppm 502.2	<.001	<.001
Vinyl Chloride ppm 502.2	<.001	<.001
p-Dichlorobenzene ppm 502.2	<.001	<.001


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CERTIFICATE OF ANALYSIS
 DATE: 03/12/92

EG&G DEFENSE MAT.
 2 WOODY WATTS
 11600 STARK ROAD
 TCOELE, UT 84074

92-000297

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
 AREA COLLECTED 3-2-92 BY E.C. FORD RECEIVED 3-2-92 FOR
 ANALYSIS STARTING AT 4:30 P.M. UNDER PO #92P0113.

	RESULTS S-4790 11:30 AM	RESULTS S-4890 11:40 AM
1,1 Dichloroethane ppm	<.001	<.001
1,1,1,2-Tetrachloroethane ppm	<.001	<.001
1,1,2,2-Tetrachloroethane ppm	<.001	<.001
1,1,2-Trichloroethane ppm	<.001	<.001
1,1-Dichloropropene ppm	<.001	<.001
1,2,3-Trichloropropane ppm	<.001	<.001
1,2,3-Trichlorobenzene ppm	<.001	<.001
1,2,4-Trichlorobenzene ppm	<.001	<.001
1,2,4-Trimethylbenzene ppm	<.001	<.001
1,2-Dibromo-3-chloropropane p	<.001	<.001
1,2-Dibromoethane (EDE) ppm	<.001	<.001
1,2-Dichloropropane ppm	<.001	<.001
1,3,5-Trimethylbenzene ppm	<.001	<.001
1,3-Dichloropropane ppm	<.001	<.001
2,2-Dichloropropane ppm	<.001	<.001
Bromobenzene ppm	<.001	<.001

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CERTIFICATE OF ANALYSIS

PAGE: 2

91-000297

	RESULTS S-4790 11:30 AM	RESULTS S-4890 11:40 AM
=====	=====	=====
Bromochloromethane ppm	<.001	<.001
Bromodichloromethane ppm	<.001	<.001
Bromoform ppm	<.001	<.001
Bromomethane ppm	<.001	<.001
Chlorobenzene ppm	<.001	<.001
Chloroethane ppm	<.001	<.001
Chloroform ppm	<.001	<.001
Chloromethane ppm	<.001	<.001
Dibromochloromethane ppm	<.001	<.001
Dibromomethane ppm	<.001	<.001
Dichlorodifluoromethane ppm	<.001	<.001
Dichloromethane ppm	<.001	<.001
Ethylbenzene ppm	<.001	<.001
Fluorotrichloromethane ppm	<.001	<.001
Hexachlorobutadiene ppm	<.001	<.001
Naphthalene ppm	<.001	<.001
Styrene ppm	<.001	<.001
Tetrachloroethene ppm	<.001	<.001
Toluene ppm	<.001	<.001

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CERTIFICATE OF ANALYSIS
PAGE: 3

91-000297

	RESULTS S-4790 11:30 AM	RESULTS S-4890 11:40 AM
=====	=====	=====
Xylene ppm	<.001	<.001
cis-1,2-Dichloroethylene ppm	<.001	<.001
cis-1,3-Dichloropropene ppm	<.001	<.001
iso-Propylbenzene ppm	<.001	<.001
m-Dichlorobenzene ppm	<.001	<.001
n-Butylbenzene ppm	<.001	<.001
n-Propylbenzene ppm	<.001	<.001
o-Chlorotoluene ppm	<.001	<.001
o-Dichlorobenzene ppm	<.001	<.001
p-Chlorotoluene ppm	<.001	<.001
p-Isopropyltoluene ppm	<.001	<.001
sec-Butylbenzene ppm	<.001	<.001
tert-Butylbenzene ppm	<.001	<.001
trans-1,2-Dichloroethylene pp	<.001	<.001
trans-1,3-Dichloropropene ppm	<.001	<.001


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FORD ANALYTICAL LABORATORIES

CHEMICAL AND BACTERIOLOGICAL ANALYSIS

CERTIFICATE OF ANALYSIS

DATE: 04/03/92

EG&G DEFENSE MAT.
8 WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-022547

SAMPLE: WATER SAMPLE S-4790 COLLECTED 3-2-92 BY E.C. FORD RECEIVED
3-2-92 FOR RADIOLOGICAL ANALYSIS.

S-4790
11:30 AM

Gross Alpha pCi/l	7
Gross Beta pCi/l	10
Radium 226 pCi/l	<.6
Radium 228 pCi/l	<1.0


FORD ANALYTICAL LABORATORIES

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CHEMICAL AND BACTERIOLOGICAL ANALYSIS

CERTIFICATE OF ANALYSIS

DATE: 03/25/92

EG&G DEFENSE MAT.
¾ WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074


92-000299

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-2-92 BY E.C. FORD RECEIVED 3-2-92 FOR
ANALYSIS STARTING AT 4:30 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

-PESTICIDES/HERBICIDES

a-Endrin ppm	<.0001	<.0001
a-Lindane ppm	<.0001	<.0001
a-Methoxychlor ppm	<.0001	<.0001
a-Toxaphene ppm	<.0001	<.0001
b-2,4,5-TP (Silvex) ppm	<.0010	<.0010
b-2,4-D ppm	<.0010	<.0010


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CERTIFICATE OF ANALYSIS

DATE: 03/05/92

EG&G DEFENSE MAT.
% WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-000298

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-2-92 BY E.C. FORD RECEIVED 3-2-92 FOR
ANALYSIS STARTING AT 4:30 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

- TRIHALOMETHANE ANALYSIS

Bromodichloromethane ppm	<.001	<.001
Bromoform ppm	<.001	<.001
Chloroform ppm	<.001	<.001
Dibromochloromethane ppm	<.001	<.001
Total T.H.M. EPA Method 502.1	<.001	<.001


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FORD ANALYTICAL LABORATORIES

CHEMICAL AND BACTERIOLOGICAL ANALYSIS

CERTIFICATE OF ANALYSIS

DATE: 03/11/92

EG&G DEFENSE MAT.
3 WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-022548

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-2-92 BY E.C. FORD RECEIVED 3-2-92 FOR
ANALYSIS STARTING AT 4:30 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

	S-4790	S-4890
Alkalinity, CaCO3 mg/l EPA310.2	186	164
Arsenic, As mg/l EPA206.2	.051	.033
Barium, Ba mg/l EPA 200.7	.160	.110
Cadmium, Cd mg/l EPA 210.1	.010	.010
Calcium, Ca mg/l EPA 200.7	35.76	38.80
Chromium, Cr mg/l EPA216.2	<.020	<.020
Color pt-co unit EPA 110.3	5	5
Copper, Cu mg/l EPA 220.1	.03	.02
Fluoride, F mg/l EPA 340.2	.90	.73
Langlier Index	.12	-.19
Lead, Pb mg/l EPA 239.1	<.010	<.001
Mercury, Hg mg/l EPA 245.1	<.0011	<.0011
Nitrate, NO3-N mg/l EPA300.0	.42	.89
Odor Units EPA 140.1	3	1
Selenium, Se mg/l EPA 270.2	.026	.049
Silver, Ag mg/l EPA 272.1	.020	.020
Surfactants ppm EPA425.1	<.4	<.4

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CERTIFICATE OF ANALYSIS

PAGE: 2

91-022548

S-4790 S-4890
11:30 AM 11:40 AM

	=====	=====
Tot. Dis. Solids mg/l EPA 160.1	522	518
Cinc, Zn mg/l EPA 289.1	.03	<.01
pH Units EPA 150.1	8.12	7.83



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FORD ANALYTICAL LABORATORIES

CHEMICAL AND BACTERIOLOGICAL ANALYSIS

CERTIFICATE OF ANALYSIS

DATE: 03/12/92

EG&G DEFENSE MAT.
% WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-000301

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-3-92 BY E.C. FORD RECEIVED 3-3-92 FOR
ANALYSIS STARTING AT 4 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

1,2-Dichloroethane ppm 502.2	<.001	<.001
111Trichloroethane ppm 502.2	<.001	<.001
11Dichloroethylene ppm 502.2	<.001	<.001
Benzene ppm 502.1	<.001	<.001
3. Tetrachloride ppm 502.2	<.001	<.001
Trichloroethylene ppm 502.2	<.001	<.001
Vinyl Chloride ppm 502.2	<.001	<.001
p-Dichlorobenzene ppm 502.2	<.001	<.001


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CERTIFICATE OF ANALYSIS

DATE: 03/12/92

EG&G DEFENSE MAT.
% WOODY WATTS
11600 STARK ROAD
TOOELE, UT 84074

92-000302

SAMPLE: GROUND WATER SAMPLES FROM MONITORING WELLS FROM TEAD SOUTH
AREA COLLECTED 3-3-92 BY E.C. FORD RECEIVED 3-3-92 FOR
ANALYSIS STARTING AT 4 P.M. UNDER PO #92P0113.

S-4790 S-4890
11:30 AM 11:40 AM

	S-4790	S-4890
1,1 Dichloroethane ppm	<.001	<.001
1,1,1,2-Tetrachloroethane ppm	<.001	<.001
1,1,2,2-Tetrachloroethane ppm	<.001	<.001
1,1,2-Trichloroethane ppm	<.001	<.001
1,1-Dichloropropene ppm	<.001	<.001
1,2,3-Trichloropropane ppm	<.001	<.001
1,2,3-Trichlorobenzene ppm	<.001	<.001
1,3,4-Trichlorobenzene ppm	<.001	<.001
1,2,4-Trimethylbenzene ppm	<.001	<.001
1,2-Dibromo-3-chloropropane p	<.001	<.001
1,2-Dibromoethane(EDB)ppm	<.001	<.001
1,2-Dichloropropane ppm	<.001	<.001
1,3,5-Trimethylbenzene ppm	<.001	<.001
1,3-Dichloropropane ppm	<.001	<.001
2,2,Dichloropropane ppm	<.001	<.001
Bromobenzene ppm	<.001	<.001
Bromochloromethane ppm	<.001	<.001

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CERTIFICATE OF ANALYSIS

PAGE: 2

91-000302

S-4790 S-4890
11:30 AM 11:40 AM

	S-4790	S-4890
Bromodichloromethane ppm	<.001	<.001
Bromoform ppm	<.001	<.001
Bromomethane ppm	<.001	<.001
Chlorobenzene ppm	<.001	<.001
Chloroethane ppm	<.001	<.001
Chloroform ppm	<.001	<.001
Chloromethane ppm	<.001	<.001
Dibromochloromethane ppm	<.001	<.001
Dibromomethane ppm	<.001	<.001
Dichlorodifluoromethane ppm	<.001	<.001
Dichloromethane ppm	<.001	<.001
Ethylbenzene ppm	<.001	<.001
Fluorotrichloromethane ppm	<.001	<.001
Hexachlorobutadiene ppm	<.001	<.001
Naphthalene ppm	<.001	<.001
Styrene ppm	<.001	<.001
Tetrachloroethene ppm	<.001	<.001
Toluene ppm	<.001	<.001
Xylene ppm	<.001	<.001

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CERTIFICATE OF ANALYSIS

PAGE: 3

91-000302

S-4790 S-4890
11:30 AM 11:40 AM

	S-4790	S-4890
-----	-----	-----
cis-1,2-Dichloroethylene ppm	<.001	<.001
cis-1,3-Dichloropropene ppm	<.001	<.001
iso-Propylbenzene ppm	<.001	<.001
m-Dichlorobenzene ppm	<.001	<.001
n-Butylbenzene ppm	<.001	<.001
n-Propylbenzene ppm	<.001	<.001
c-Chlorotoluene ppm	<.001	<.001
o-Dichlorobenzene ppm	<.001	<.001
p-Chlorotoluene ppm	<.001	<.001
p-Isopropyltoluene ppm	<.001	<.001
sec-Butylbenzene ppm	<.001	<.001
tert-Butylbenzene ppm	<.001	<.001
trans-1,2-Dichloroethylene pp	<.001	<.001
trans-1,3-Dichloropropene ppm	<.001	<.001


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