

# EXHIBIT B

07-Dec-05  
Page 2 of 2

## FUL22 Fuller-45 Estates %JJV

CLIENT	FIRST TAX ID	OTHER TAX ID	TYPE	AMOUNT
Susie Russell 1317 Strika Jumper Court Las Vegas NV 89119	Work #: (702)255-0500		R	4.9
Cesare E. Morganti Jr. 1147 Peakview Drive Castle Rock CO 80104	Work #: (303) 781-3520		R	4.9
John William Pascal 1244 Mariposa St. Denver CO 80204	Work #: (303)623-5300		R	1.225
James K. & Shirley F. Pelton 19544 County Road #46 Cheyenne Wells CO 80810	Work #:		R	4.9
Robert V. & Lisa K. Perry 18622 W. 56th Drive Golden CO 80403	Work #: (303)420-4132		R	1.225
Paula Romero Schmitt 4989 Rocky Rd. El Sobrante CA 94803	Work #: (510)834-3956		R	2.45
Dorothy L. Romero 1489 Treat Blvd. #1436 Walnut Creek CA 94596	Work #: (303)455-2208		R	2.45
John J. Vandemoer 5781 Circle Drive Westminster CO 80030	Work #: (303)887-1212		Option %	1
John B. Villano 2701 E. 112th Ave. Thornton CO 80233	Work #: (303)280-0056		Option %	1
Dennis E. Wenzel 929 Washington St. Denver CO 80203	Work #:		R	4.9

# EXHIBIT B

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## BUF22 Buffalo Estates %JJV

CLIENT	FIRST TAX ID	OTHER TAX ID	TYPE	AMOUNT
Bald Eagle Resources, T. Galloway 154 Blue Spruce Drive Evergreen CO 80439	Work #:	(303)989-3191	R	3.75
Bald Eagle Resources, S. Smith c/o Scott Smith 2025 S. Owens Ct. Lakewood CO 80227	Work #:	(303) 830-0100	R	0
Rudolph A. Baronne 8818 Winona Ct. Westminster CO 80030	Work #:	(303)373-7244	R	5
Vito & Appalonia Binetti 1848 E. Euclid Avenue Littleton CO 80121	Work #:	(303)797-2014	R	5
Don J. Binetti 3901 S. Helena Street Aurora CO 80013	Work #:		R	5
Laura Blackman 29 Via Barcelona Moraga CA 94556	Work #:	(510) 631-9829	R	2.5
Brian Boyanovsky % Chuck Mason 707 Newell Street Walla Walla WA 99362	Work #:	(509)525-1700	R	0
Brian Boyanovsky 22014 490th Street Albert City IO 50510	Work #:	238-8860	R	5
Nancy A. Branton 6040 W. 39th. Ave. Wheatridge CO 80033	Work #:	(303)458-8418	R	0.5
Theresa Tadonini Celesta 22 Longview Rd. Sparta NJ 07871	Work #:		R	0.5
Jeff & Sharon Haber 751 Detroit Street Denver CO 80206	Work #:	(303)321-2277	R	5

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# EXHIBIT B

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## BUF22 Buffalo Estates %JJV

CLIENT	FIRST TAX ID	OTHER TAX ID	TYPE	AMOUNT
Eileen J. Ito 2670 Newland St. Denver CO 80214			R	10
Rita Colleen Kennedy 4355 Everett Wheatridge CO 80033			R	2.5
Richard Rasmussen 4355 Everett St. Wheatridge CO 80033		(303)388-5603	R	2.5
Scott Kune 3798 S. Ceylon Way Aurora CO 80013		(303)693-9107	R	2.5
Joseph R. Kune 740 Everett St. Lakewood CO 80215		(303)936-7291	R	2.5
Charles W. & Gail M. Mason 707 Newell St. Walla Walla WA 99362		(509)525-9561	R	5
Linda J. McAninch 673 Blake Ct. Carol Stream IL 60188		(321)701-4495	R	2.5
Mary V. McCracken 11947 Lafayette Northglenn CO 80233		(303)538-2935	R	2.5
Cesare E. Morganti Jr. 1147 Peakview Drive Castle Rock CO 80104		(303) 781-3520	R	5
Susan M. Neill 20800 Bartlett Drive Brookfield WI 53045			R	5
Paul E. Raybin 673 Blake Ct. Carol Stream IL 60188		(312)701-4495	R	2.5

# EXHIBIT B

## BUF22 Buffalo Estates %JJV

CLIENT	FIRST TAX ID	OTHER TAX ID	TYPE	AMOUNT
Richard K. Riman 720 Harrington Rd. Rockville MD 20852-1029	Work #:	(301) 838-9996	R	5
Richard K. Riman 12351 N. Pine Vista Tr. Parker CO 80134-8219	Work #:	(303)733-9428	R	0
Mark Saltzman 1908 Flournoy Rd. Manhattan Beach CA 90296	Work #:	(310) 546-2995	R	2.5
Mary Pauline Tadolini 742 S. Youngfield Ct. Lakewood CO 80228	Work #:	(303)571-3857	R	0
Stephen C. Tadolini 428 DeFrance Drive Golden CO 80401	Work #:	(303)236-0751	R	0.5
Deborah K. Tadolini 3354 S. Flower Street Unit #55 Lakewood CO 80227	Work #:		R	0.5
Antoinette M. Tadolini & J. Norland 2220 Cedar Croft Road Acton CA 93510	Work #:		R	0.5
Junn-Kuo & Cecilia C. Teng 7858 S. Harrison Circle Littleton CO 80122	Work #:	(303)977-5080	R	5
Donald H. & Marie Tiernan 11 Welcome Rd. Saddlebrook NJ 07662	Work #:		R	0
Don Tiernan 1371 Kahaulani Drive Kailua HA 96734	Work #:	(808)282-5142	R	5
John J. Vandemoer 8791 Circle Drive Westminster CO 80030	Work #:	(303)687-1212	R	0.625

# EXHIBIT B

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**BUF22 Buffalo Estates %JJV**

CLIENT	FIRST TAX ID	OTHER TAX ID	TYPE	AMOUNT
John B. Villano 2701 E. 112th Ave. Thornton CO 80233	Work #: (303)280-0056		Regular %	0.625
Chih Ted Yang & Eveline Liu Yang 571 Sunrise Drive Golden CO 80401	Work #:		R	5
				<hr/> 100



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80022-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Fuller East Partnership  
Fuller 45 Partnership  
Buffalo Estates Partnership  
General Partnerships  
Mr. John J. Vandemoer  
Mr. John B. Villano  
Managing and General Partners  
8791 Circle Drive  
Westminster, Colorado 80030

Dear Mr. Vandemoer and Mr. Villano:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

In response to your comment about an alternative water supply, the Army and Shell Oil Company have reached an Agreement in Principle, enclosed with this letter, with South Adams County Water and Sanitation District (SACWSD) that includes the payment of \$48.8 million to SACWSD and requires that SACWSD water be supplied to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

*Readiness is our Profession*

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,



Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosure

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748

Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202

Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY

1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
PAYMENT TO BE MADE WITHIN 90 DAYS OF 1 OCTOBER 1996. SUBJECT TO  
THE AVAILABILITY OF FUNDS.

2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
FOLLOWING TERMS. OTHER TERMS AND CONDITIONS WILL BE THE  
SUBJECT OF FURTHER NEGOTIATION.

A. PAYMENTS WILL BE HELD IN TRUST FOR SACWSD. TRUSTEE TO  
BE CHOSEN BY THE ARMY & SHELL WITH SACWSD CONCURRENCE. ANY  
INTEREST THAT ACCRUES MUST BE RETURNED TO THE ARMY AND SHELL.

B. SACWSD MUST HOOK UP OWNERS OF DOMESTIC WELLS IN THE  
DIMP FOOTPRINT WHO CONSENT TO BE INCLUDED IN THE SOUTH ADAMS  
COUNTY WATER AND SANITATION DISTRICT AND WHO CONSENT TO BE  
HOOKED UP; AND SUCH HOOK UPS WILL BE COMPLETED NOT LATER THAN  
THE 24TH MONTH AFTER THE DATE OF THE INITIAL PAYMENT FOR THOSE  
WHO CONSENT BY THE 20TH MONTH AFTER THE INITIAL PAYMENT.  
THOSE WHO REQUEST TO BE HOOKED UP AFTER THE 20TH MONTH WILL  
BE HOOKED UP WITHIN A REASONABLE TIME. AS NOTED IN G, BELOW,  
SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN 130  
HOMES. SACWSD ALSO IS NOT RESPONSIBLE FOR EXTENDING THE MAIN  
WATER DISTRIBUTION SYSTEM BEYOND THE DIMP FOOTPRINT AS  
FINALLY DETERMINED IN THE ON-POST ROD. THE MAIN WATER  
DISTRIBUTION SYSTEM FOR THE HENDERSON AREA (12" DIAMETER PIPE  
SYSTEM) WILL BE COMPLETED BY THE 24TH MONTH AFTER THE INITIAL  
PAYMENT. SACWSD WILL RECEIVE FROM THE TRUST ACCOUNT \$3,950 FOR  
EACH HOME CONNECTED IN THE NEW SERVICE AREA AND \$2,265 FOR  
EACH HOME CONNECTED IN THE OLD SERVICE AREA, UP TO A TOTAL OF  
130 HOMES. ATTACHED IS THE MAP THAT SHOWS THE LATEST DIMP  
PLUME WHICH IS TO BE UPDATED PRIOR TO THE FINALIZATION OF THE  
ON-POST ROD.

C. SACWSD MUST CONTRACT FOR WATER RIGHTS OR SUPPLY BY  
NOT LATER THAN SIX MONTHS AFTER THE DATE OF THE FINAL PAYMENT.

D. PAYMENTS FROM THE TRUST TO SACWSD MUST BE TIED  
DIRECTLY TO THE ACQUISITION AND DELIVERY OF 4000 ACRE FEET OF

WATER AND THE HOOK UP OF WELL OWNERS IN THE HENDERSON AREA. ALL EXPENDITURES BY SACWSD PAID FROM THE TRUST ACCOUNT WILL BE SUBJECT TO AUDIT BY THE ARMY AND SHELL. UP TO \$43 MILLION MAY BE SPENT ACQUIRING AND DELIVERING THE 4000 ACRE FEET OF WATER AND UP TO \$4.65 MILLION MAY BE SPENT ON HOOK UPS IN THE HENDERSON AREA. THE REMAINING \$1.15 MILLION IS TO OFFSET INFLATION OR CONTINGENCIES. ANY EXPENDITURES CHALLENGED BY THE ARMY, SHELL, OR THE TRUSTEE WILL BE SUBMITTED TO THE ALTERNATIVE DISPUTE RESOLUTION (ADR) METHOD DESCRIBED IN E, BELOW.

E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96

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Henderson

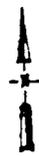
Brighton Annex  
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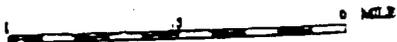
### Offpost Water Supply Features

- Interstate Highway
- DE & New Highway
- Roads & Paths
- Railroad
- Stream
- Airport Boundary
- Section Line
- South Adams County Water System (Current structures)
- Existing Wasteline (Zones B & V 1991)
- ■ ■ ■ Proposed 12" Main Water Distribution System
- DDMP Project Based on EHA May 1985 Contracting
- Source - TCMO Database Surveys 1989-95 and RMAED April 1994-95
- Delineation Limit (52-1.78 1998)



DRAFT

Scale 1:25,000



January 25, 1996

TOTAL P.02

5  
Dad

058  
Injustice

Happy Holidays



DEAR MR PRESIDENT

I AM WRITING TO YOU ABOUT THE GRAVE MISJUSTICE DONE TO THE PEOPLE OF MY COMMUNITY BY THE DEPT. OF THE ARMY AND SHELL OIL CO. WE HAVE BEEN INUNDATED WITH TOXINS OUR AIR, WATER AND SOILS FOR ALMOST 53 YEARS. ONLY IN 1988 DID THE ARMY OFFICIALLY DECLARE THEIR MISDEEDS. WHERE ELSE COULD BY PRODUCTS OF NERVE GAS HAVE COME FROM? NOW THEY WANT TO FINALLY PUT THIS TO REST. BUT THE FINAL REMEDY AS THEY CALL IT WILL NT GIVE US ANY CLEAN WATER. HOW CAN A COUNTRY SUCH AS OURS THE GREATEST IN THE WORLD HELP BOPAH, CHERNOBLE, GRENADA, MEXICO, SHOULD I GO ON? NOT HELP THEIR OWN PEACE LOVING TAX PAYING FLAG WAVING CITIZENS? WE DO NOT SEEK MUCH, BUT WATER PURE AND SIMPLE! WE DESIRE A SUPPLY OF 2500 ACRE FEET PER YEAR TO SUSTAIN US UNTIL THE MISDEEDS OF THE ARMY ARE NO MORE. THIS IS ESTIMATED AT FORTY YEARS. THIS WE ASK IN YOUR NAME FOR THE PEOPLE OF HENDERSON, CO. I UNDERSTAND WHERE ALL YOUR ENERGIES MUST GO FOR THE MOMENT. BUT IF YOU COULD LOOK INTO THIS MATTER BEFORE THE ARMY FINALIZES THIS IN MARCH OF 1996 WE WOULD BE GREATLY APPRECIATIVE. PLEASE HAVE A SAFE AND HAPPY HOLIDAY SEASON, YOU AND YOUR FAMILY.

THANK YOU  
BOB HANSON  
11001 E. 120 AVE  
HENDERSON CO 80640

9626925W

Henderson Coalition  
Jim Erger  
16521 East 121st Circle  
Brighton, Colorado 80601

December 4, 1995

Dear Resident:

In May of 1995 the United States Army (Army), Shell Oil Company (Shell), Colorado Department of Public Health and Environment (CDPHE), United States Environmental Protection Agency (EPA), and the United States Fish & Wildlife Service (USF&WS), agreed upon a Conceptual Remedy to be used in the cleanup of the Rocky Mountain Arsenal. The Conceptual Agreement means the five parties have agreed in principal how to cleanup the Arsenal. The final decision, called the Record of Decision (ROD), is to be issued in the spring of 1996.

However, the Conceptual Agreement does not address the issue of contamination of off-post water. The Stakeholders, which include Commerce City and Henderson have asked for 7500 acre feet of good quality water to replace the contaminated supply. The Conceptual Agreement states that the Army and Shell will provide a replacement supply of only 4000 acre feet, which is not intended to serve Henderson. In the past it was estimated that there was 2500 acre feet of ground water which could be served to the Henderson area. We think it is important that the 2500 acre feet of water be provided to Henderson in addition to the 4000 acre feet identified in the Conceptual Agreement.

It is imperative that residents and property owners in Henderson make their wishes for a clean, safe, reliable water supply known immediately.

Statements may be mailed to:

Program Manager for the Rocky Mountain Arsenal  
Rocky Mountain Arsenal  
Commerce City, Colorado 80022

In an effort to secure a clean, safe, reliable water supply, the Henderson Coalition was formed. The Coalition is sponsoring a meeting for residents to voice their opinions. The Army, Shell, EPA, CDPHE, and USF&WS have been invited to the Tuesday, December 12 meeting. The meeting will be held at 7:30 p.m. at the Adams County Regional Park, 9755 Henderson Road. A flier with the details is enclosed. The Coalition is also circulating petitions which can be signed at the December 12 meeting.

We need to show the policy makers that we are united in our efforts to get a clean, safe, reliable water supply to replace our poisoned, contaminated supply.

Following is the language used in the petition:

WE, THE UNDERSIGNED, BEING RESIDENTS AND/OR PROPERTY OWNERS OF THE AREA KNOWN AS HENDERSON, COLORADO, DIRECTLY NORTH OF THE ROCKY MOUNTAIN ARSENAL, DEMAND THAT THE UNITED STATES ARMY AND SHELL OIL COMPANY PAY FOR AND INSTALL A WATER SYSTEM TO PROVIDE WATER TO THE EXISTING HOMES AND FUTURE WATER NEEDS DUE TO THE CONTAMINATION OF OUR WATER SUPPLY. THE WATER PROVIDED TO THE AREA MUST REPLACE THE 2500 ACRE FEET OF CONTAMINATED WATER AND BE OF EXCELLENT QUALITY AND SUFFICIENT QUANTITY TO REPAIR THE DAMAGE TO OUR AREA. SINCE 1942 THE UNITED STATES ARMY AND SHELL OIL COMPANY HAVE BEEN CONTAMINATING OUR LAND AND WATER AND MUST BE HELD ACCOUNTABLE FOR THEIR ACTIONS.

Remember, the Army and Shell have polluted and poisoned our water for 53 years. At no time have they agreed with the Stakeholders that our supply should be replaced. CDPHE has provided bottled water to members of our community for years.

If this issue is not resolved before the ROD is signed, there will be no recourse.

It is up to us to secure the future of our community. Write a statement to the Program Manager of the Rocky Mountain Arsenal, sign the petition, and attend the meeting on December 12. Encourage your neighbors to participate. This could be the last opportunity to recover some of the damages to our community.

Sincerely,

*James L. Erger*  
James L. Erger  
Henderson Coalition

Encl.

**VERY**

**IMPORTANT**

**MEETING**

# **HENDERSON AREA RESIDENTS DIMP MEETING**

**Rocky Mountain Arsenal Pollutant and Contaminant  
Meeting: Tuesday, December 12, 1998 at 7:30 PM  
Place: Adams County Regional Park  
9755 Henderson Road, Brighton, CO**

**☠ Does your well have DIMP? ☠**

**☠ Why haven't the US Army or Shell Oil replaced the water  
they have poisoned since 1942 (53 years)? ☠**

**R.O.D. as proposed has not included any high quality replacement water  
for the Henderson Area or the necessary pipelines.**

**Sponsored by the Henderson Coalition.  
Agencies Invited: US Army, Shell Oil, Tri-County Health, Colorado  
Department of Health, South Adams County Water and Sanitation,  
Adams County Commissioners and EPA.**

**Henderson Coalition - Jim Erger, Chairman, 659-0549 (home),  
659-9288 (work).**

TO PROGRAM MANAGER  
ROCKY MOUNTAIN ARSENAL

I BELIEVE THAT YOUR FINAL DECISION CANNOT BE MADE WITHOUT A COMPLETE OVERHAUL OF THE HENDERSON RESIDENTS WATER SUPPLY IF WE ARE TO ONLY GET LIP SERVICE THEN WE WILL NEVER ACCEPT ANY FINAL REMEDY. WE DEMAND WATER THAT YOU HAVE TAKEN FROM US.

IF WE HAVE 2500 ACRE FEET IN OUR AQUIFER THAT HAS BEEN DESTROYED BY THE ARMY AND SHELL THEN NO AGREEMENT WILL BE ACCEPTED AS FINAL WITHOUT THAT SPECIFIC NUMBER WRITIN IN STONE. THE TOTAL COST OF THIS REMEDY SHOULD NO LONGER FALL UPON US. AS WE HAVE BORE THE PAIN AND UNDUE MONETARY HARDSHIP YOU HAVE PLACED UNTO ,US SINCE 1942.

THE YEARS OF LIES THAT YOU HAVE PERPETRATED UPON US HAVE BEEN EXPOSED. BUT WHAT GOOD DOES THAT DO US TO KNOW THE TRUTH IF WE ARE TOLD THAT IS DOES NOT MATTER? THAT WHAT MATTERS IS THAT THE GOVERNMENT CAN DO TO US WHAT IT WANTS AND ANYONE UNDER CONTRACT WITH SAME IS EXEMPT. WE REQUIRE, WE DEMAND JUST COMPENSATION! THIS WILL BE DONE BEFORE YOU REACH THE END OF YOUR ASSOCIATION WITH THE PEOPLE OF ADAMS COUNTY. ONLY THEN CAN WE ALL LIVE IN PEACE AND HARMONY WITH ONE ANOTHER AND OUR GOVERNMENT.

THANK YOU  
ROBERT S. HANSON  
11001 E. 120 AVE.  
HENDERSON CO. 80640



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80522-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Mr. Robert S. Hanson  
11001 E. 120 Avenue  
Henderson, Colorado 80640

Dear Mr. Hanson:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

The Army believes that the Agreement in Principle that the Army and Shell Oil Company have reached with South Adams County Water and Sanitation District (SACWSD) ensures a safe and adequate water supply for the community. The Agreement in Principle, enclosed with this letter, includes the payment of \$48.8 million to SACWSD and requires that SACWSD water be supplied to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosure

*Readiness is our Profession*

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748

Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202

Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY

1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
PAYMENT TO BE MADE WITHIN 90 DAYS OF 1 OCTOBER 1996. SUBJECT TO  
THE AVAILABILITY OF FUNDS.

2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
FOLLOWING TERMS. OTHER TERMS AND CONDITIONS WILL BE THE  
SUBJECT OF FURTHER NEGOTIATION.

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BE CHOSEN BY THE ARMY & SHELL WITH SACWSD CONCURRENCE. ANY  
INTEREST THAT ACCRUES MUST BE RETURNED TO THE ARMY AND SHELL.

B. SACWSD MUST HOOK UP OWNERS OF DOMESTIC WELLS IN THE  
DIMP FOOTPRINT WHO CONSENT TO BE INCLUDED IN THE SOUTH ADAMS  
COUNTY WATER AND SANITATION DISTRICT AND WHO CONSENT TO BE  
HOOKED UP; AND SUCH HOOK UPS WILL BE COMPLETED NOT LATER THAN  
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E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

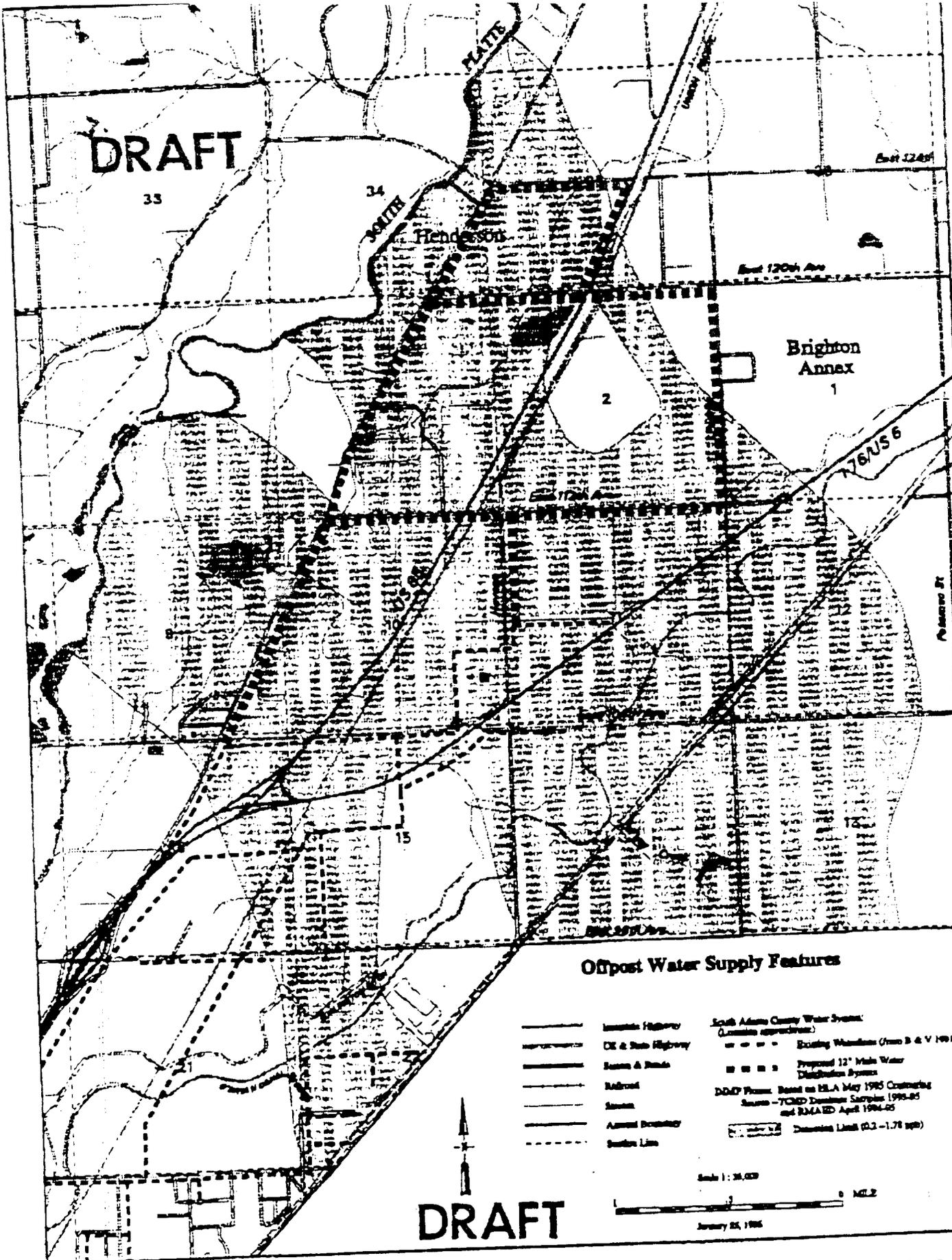
O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96



**Offpost Water Supply Features**

- |   |                    |   |
|---|--------------------|---|
| — | Interstate Highway | South Adams County Water System:<br>(Quantities approximate)  |
| — | US & State Highway | — · — · — Existing Waterlines (from B & V 1981)   |
| — | State & Road       | — · — · — Proposed 12" Main Water<br>Distribution System  |
| — | Railroad           | DD&P Plans: Based on EIA May 1985 Contracting<br>Survey - TCM&D Database Samples 1990-85<br>and RMAED April 1984-85 |
| — | Stream             | — · — · — Delineation Lines (0.2 - 1.78 mph)  |
| — | Airport Boundary   |   |
| — | Section Line       |   |

Scale 1:25,000  
 0 1/2 1 MILE  
 January 25, 1985

9390 W. 1st Ave.  
Lakewood, CO 80226  
232-1242 (FAX or phone)

*MECHAN*  
Ruth Methan  
Public Affairs Office  
Rocky Mountain Arsenal

FAX 289-0582

December 15 is the stated end of the comment period for the Proposed Plan. Technically the comment period could have ended in November, so the period has already been extended once.

Since my main interest is the safe and effective cleanup of Rocky Mountain Arsenal in the shortest practical time period, I am opposed to any extension of the comment period for the Proposed Plan.

In no way do I wish to imply lack of support for on-going evaluation of all studies of health or environmental effects of past and/or future actions. Results of studies should be made public and should be expected to impact the decision-making process when it comes to specific technologies. However, the Proposed Plan leaves room for such adjustments.

Thank you,

*Clara Ion Humphrey*

Clara Ion Humphrey

*rec'd 18 Jan*

9390 W. 1st Ave, Lakewood, CO 80226

On-Post Proposed Plan Comments  
Program Manager, Rocky Mountain Arsenal  
Attn: AMCFM-PH/Col. Eugene H. Bishop

Colonel Bishop:

As I have stated in the past, I believe the goal of remediation at Rocky Mountain Arsenal must be protection of human health and the environment. Generally, I think the Proposed Plan points in the right direction. However, there are some things which should be spelled out in the final Record of Decision.

1. Folks in the Henderson area which have wells contaminated by DIMP or other materials from RMA should be provided safe water and the needed delivery system. The cost should be included as one of the costs of remediation and given high priority for completion within the next year or two.

2. Environmental Monitoring should be combined with Health monitoring in order to assure stakeholders that remediation is indeed meeting the stated goal.

3. I'm concerned about the adequacy of the five year review process as outlined at the Restoration Advisory Board meeting last fall. In order to fully understand the effectiveness of the remediation program it is imperative that the official review include data on all work, monitoring data, public comments or complaints, and proposed scheduling. The first review should take place during 2001 with total review taking place each five years after that. Good public relations suggest an ongoing public review of progress, problems, and proposals such as take place at RAB meetings.

4. The HEX pits seem to pose a special problem at this time. If an acceptable solution can not be reached before the R.O.D. deadlines, I recommend that they be pulled out of the On-Post R.O.D. and become a separate operable unit!

5. A Trust Fund has been sold as a back-up guarantee for stakeholder concerns, but is still tentative. The Trust Fund must be guaranteed as part of the remediation! It must be available for emergency use or for use in case Congress refuses to fund Operation and Maintenance at a future time. I want remediation to be complete as soon as possible, but not at the expense of long-term health risks.

6. Public involvement should go beyond what is required, including open houses, progress reports, and other means which will answer questions and concerns of stakeholders. Failure to keep the public involved in the past has led to suspicion and opposition, neither of which will facilitate community acceptance.

*Charles Louis Humphrey*



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80224-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Ms. Clara Lou Humphrey  
9390 W. 1st Avenue  
Lakewood, Colorado 80226

Dear Ms. Humphrey:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

Your first letter was emphatic in that the period for comments on the On-Post Proposed Plan should not be extended for any reason. Although the Army agrees with the spirit of the letter to the effect that the remediation process should move fluidly and unimpeded by needless delays, several parties required more time to research the document adequately and to assess its contents. In order to allow additional time for comment without excessively delaying the Record of Decision (ROD), the comment period was extended by 30 days.

Your second letter contained additional comments, and responses are provided below, numbered consistent with your comments.

1. The Army and Shell have reached an Agreement in Principle with South Adams County Water and Sanitation District (SACWSD). The Army and Shell have committed to connecting Henderson area well owners to the SACWSD or alternative system if their wells are located within the detectable area of the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint north of RMA, which is currently being evaluated. The Agreement in Principle, enclosed with this letter, includes payment of \$48.8 million to SACWSD and requires that SACWSD water be supplied to consenting drinking water well owners within the DIMP plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to the Commerce City and Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

*Readiness is our Profession*

2. The primary goal of the Medical Monitoring Program is to monitor any off-post impact on human health due to the RMA remediation. Elements of the Program could include medical monitoring, environmental monitoring (including water, soil, and air monitoring), or health/community education. This Program will continue until the on-post soil remediation is completed. A Medical Monitoring Advisory Group has been established to evaluate specific issues covered by the Medical Monitoring Program.

3. The extensive, site-wide monitoring program that is planned will provide early detection of any problems with either soil or groundwater remediation. Additionally, the required periodic five-year review of the remedy will evaluate whether the remedy remains protective of human health and the environment. The Army agrees that the review should be comprehensive, and intends to continue the dialogue with the public in a forum like the Restoration Advisory Board, as you suggest.

4. Subject to the results of treatability testing and technology evaluation, approximately 1,000 bank cubic yards (BCY) of principal threat material from the Hex Pit will be treated by an innovative thermal technology. Solidification will become the selected remedy if evaluation criteria for the innovative technology are not met. The remaining 2,300 BCY of material will be excavated and disposed in the on-post hazardous waste landfill.

5. During the formulation and selection of the remedy, members of the public and some local governmental organizations expressed keen interest in the creation of a Trust Fund, as you do in your comment, to help ensure the long-term operation and maintenance of the remedy. The Parties have committed to good-faith best efforts to establish such a Trust Fund, as described in the On-Post ROD. Principal and interest from the Trust Fund would be used to cover the costs of long-term operations and maintenance throughout the lifetime of the remedial program. These costs are estimated to be approximately \$5 million per year (in 1995 dollars).

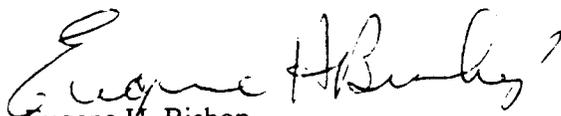
It is the intent of the Parties that if the Trust Fund is created it will include a statement containing the reasons for the creation of the Trust Fund, a time frame for establishing and funding the Trust Fund, and an appropriate means to manage and disburse money from the Trust Fund. The Parties are also examining possible options that may be adapted from trust funds involving federal funds that exist at other remedial sites. The Parties recognize that establishing a Trust Fund may require special congressional legislation and that there are restrictions on the actions federal agencies can take with respect to such legislation. Because of the uncertainty of possible legislative requirements and other options, the precise terms of the Trust Fund cannot now be stated.

A Trust Fund group will be formed to develop a strategy to establish the Trust Fund. The strategy group may include representatives of the Parties (subject to restrictions on federal agency participation), local governments, affected communities, and other interested stakeholders and will be convened within 90 days of the signing of the ROD.

6. As stated in the response to your Comment Number 3 above, the Army intends to continue the dialogue with the public throughout the remediation process at RMA.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,



Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosure

Copies Furnished:

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K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

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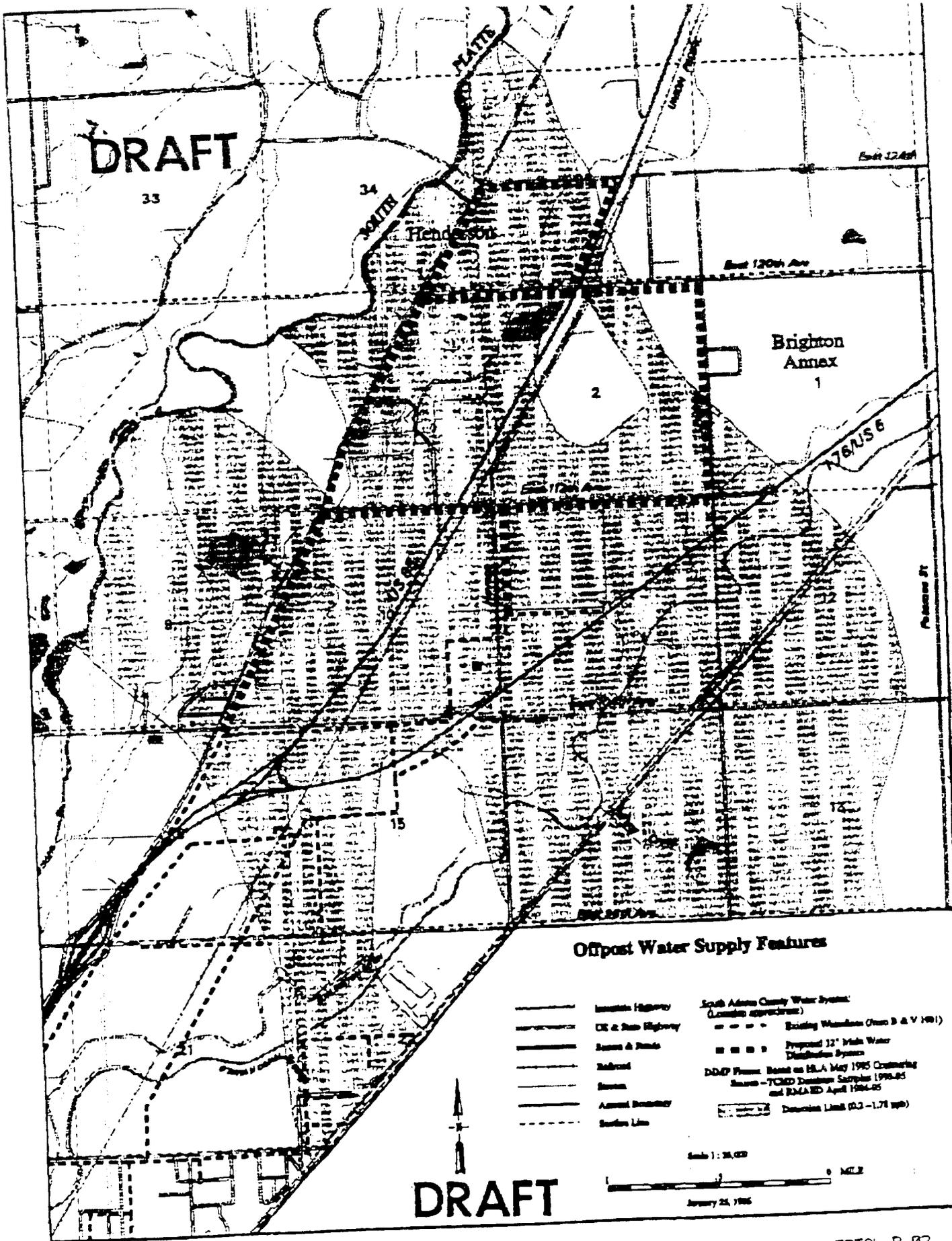
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version 10 - 26/01/96



**DRAFT**

33

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Henderson

Brighton Annex  
1

2

15

**Offpost Water Supply Features**

- Interstate Highway
- US & State Highway
- Arroyo & Road
- Railroad
- Stream
- Annual Boundary
- Surface Line
- South Adams County Water System (Location approximate)
- Existing Wastewater (Lines B & V 1981)
- □ □ □ Proposed 12" Inlet Water Distribution System
- DDOP Permit: Based on EIA May 1985 Containing  
 Stream - TCRD Duration Samples 1990-95  
 and RMAED April 1984-85
- Duration Limit (0.2 - 1.78 up)



**DRAFT**

Scale 1 : 25,000



January 25, 1985

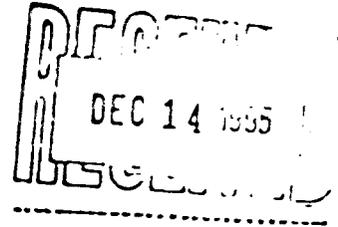
TOTAL P. 02

LEANIN' TREE

Original art by  
Tom Sawyer  
© 1987 Tom Sawyer  
Made in Bristol, CO, USA  
Printed on Recycled Paper



ROYAL FAMILY



9534802-1/1

May the meaning of the Season be deeper,  
its friendships stronger, and its hopes brighter  
as Christmas comes to you this year.

To Whom it may concern -  
We respectfully request that the US Army  
and Shell Oil Co. pay for and install  
a water system for the home in  
Henderson, Colorado. John Humphreys



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80220-745



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Mr. John Humphreys  
11690 Peoria St.  
Henderson, Colorado 80640

Dear Mr. Humphreys:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

The Army believes that the water supply issue for Henderson has been successfully resolved through the Agreement in Principle that the Army and Shell Oil Company have reached with the South Adams County Water and Sanitation District (SACWSD). The Agreement in Principle, enclosed with this letter, includes the payment of \$48.8 million to SACWSD and requires that SACWSD supply water to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosure

*Readiness is our Profession*

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748

Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202

Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
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**AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY**

**1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
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THE AVAILABILITY OF FUNDS.**

**2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
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**A. PAYMENTS WILL BE HELD IN TRUST FOR SACWSD. TRUSTEE TO  
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**C. SACWSD MUST CONTRACT FOR WATER RIGHTS OR SUPPLY BY  
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F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

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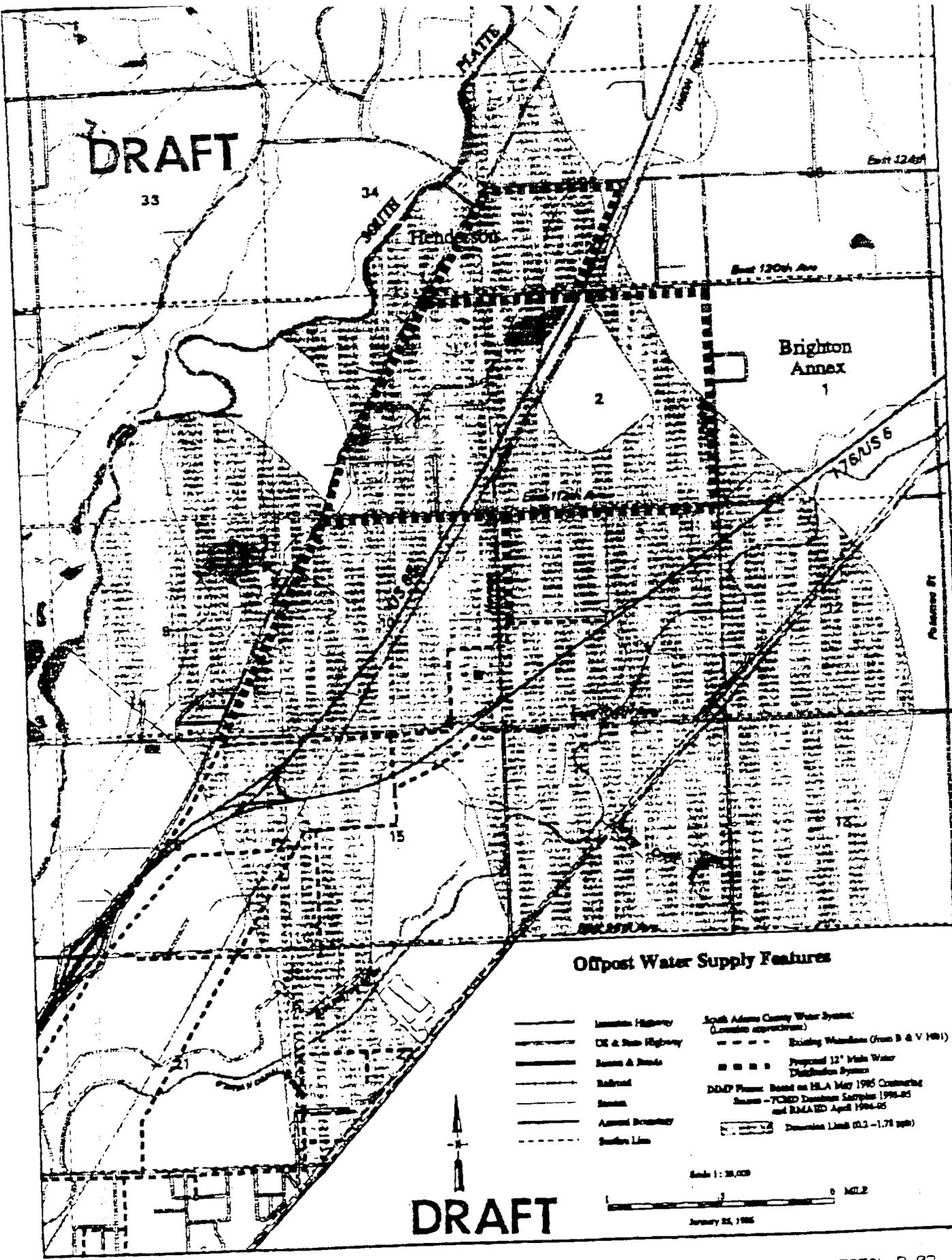
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version 10 - 26/01/96



DRAFT

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Henderson

Brighton Annex  
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2

15

Offpost Water Supply Features

- Interstate Highway
- US & State Highway
- Arroyo & Roads
- Railroad
- Stream
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- Section Line
- South Adams County Water System (Location approximation)
- Existing Mainlines (from B & V 1981)
- □ □ □ Proposed 12" Main Water Distribution System
- DMP Plans: Based on EIA May 1995 Contingent Status - TCRD Database Samples 1993-95 and RMAED April 1994-95
- Damaged Line (0.2 - 1.75 gpd)



DRAFT

Scale: 1:20,000



January 25, 1996

*rec'd 14 Dec 95*

• BARBARA S. BANKS  
• EDWARD IMATANI

December 13, 1995

• SUITE 1310 •  
ONE TABOR CENTER

1200 • 17TH STREET  
DENVER • CO • 80202

PHONE • 303-446-2717

FAX • 303-446-2716

Program Manager for the Rocky  
Mountain Arsenal  
Rocky Mountain Arsenal  
Commerce City, Colorado 80022

The undersigned represents James H. Imatani and Sumi Imatani, who own a residence in Henderson, Colorado. It is our belief that the United States Army and Shell Oil Company have caused contamination and irreparable damage to the water system that feeds the wells from which they obtain water for subsistence. The current plan set forth in the Conceptual Agreement fails to provide a substitute source of water. We hereby demand that an alternative source of water be provided in the plan for residents of the Henderson area. Otherwise, Mr. and Mrs. Imatani will effectively lose their residence.

Your consideration is most appreciated.

Very truly yours,

BANKS & IMATANI, P.C.

By: *Edward Imatani*  
Edward Imatani

EI:bds

cc: Mr. and Mrs. Imatani  
Henderson Coalition, c/o Jim Erger



**Banks & Imatani, P.C.**  
ATTORNEYS AT LAW

9534803-1/1



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80221-748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Mr. Edward Imatani  
Banks & Imatani, P.C.  
One Tabor Center, Suite 1310  
1200 17th Street  
Denver, Colorado 80202

Dear Mr. Imatani:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

The Army and Shell Oil Company have reached an Agreement in Principle, enclosed with this letter, with South Adams County Water and Sanitation District (SACWSD) that includes the payment of \$48.8 million to SACWSD and requires that SACWSD water be supplied to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The Parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

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Sincerely,

Eugene H. Bishop  
Colonel, U.S. Army  
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Enclosure

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Copies Furnished:

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Building 111, Commerce City, Colorado 80022-1748

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Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
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WATER AND THE HOOK UP OF WELL OWNERS IN THE HENDERSON AREA. ALL EXPENDITURES BY SACWSD PAID FROM THE TRUST ACCOUNT WILL BE SUBJECT TO AUDIT BY THE ARMY AND SHELL. UP TO \$43 MILLION MAY BE SPENT ACQUIRING AND DELIVERING THE 4000 ACRE FEET OF WATER AND UP TO \$4.65 MILLION MAY BE SPENT ON HOOK UPS IN THE HENDERSON AREA. THE REMAINING \$1.15 MILLION IS TO OFFSET INFLATION OR CONTINGENCIES. ANY EXPENDITURES CHALLENGED BY THE ARMY, SHELL, OR THE TRUSTEE WILL BE SUBMITTED TO THE ALTERNATIVE DISPUTE RESOLUTION (ADR) METHOD DESCRIBED IN E, BELOW.

E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

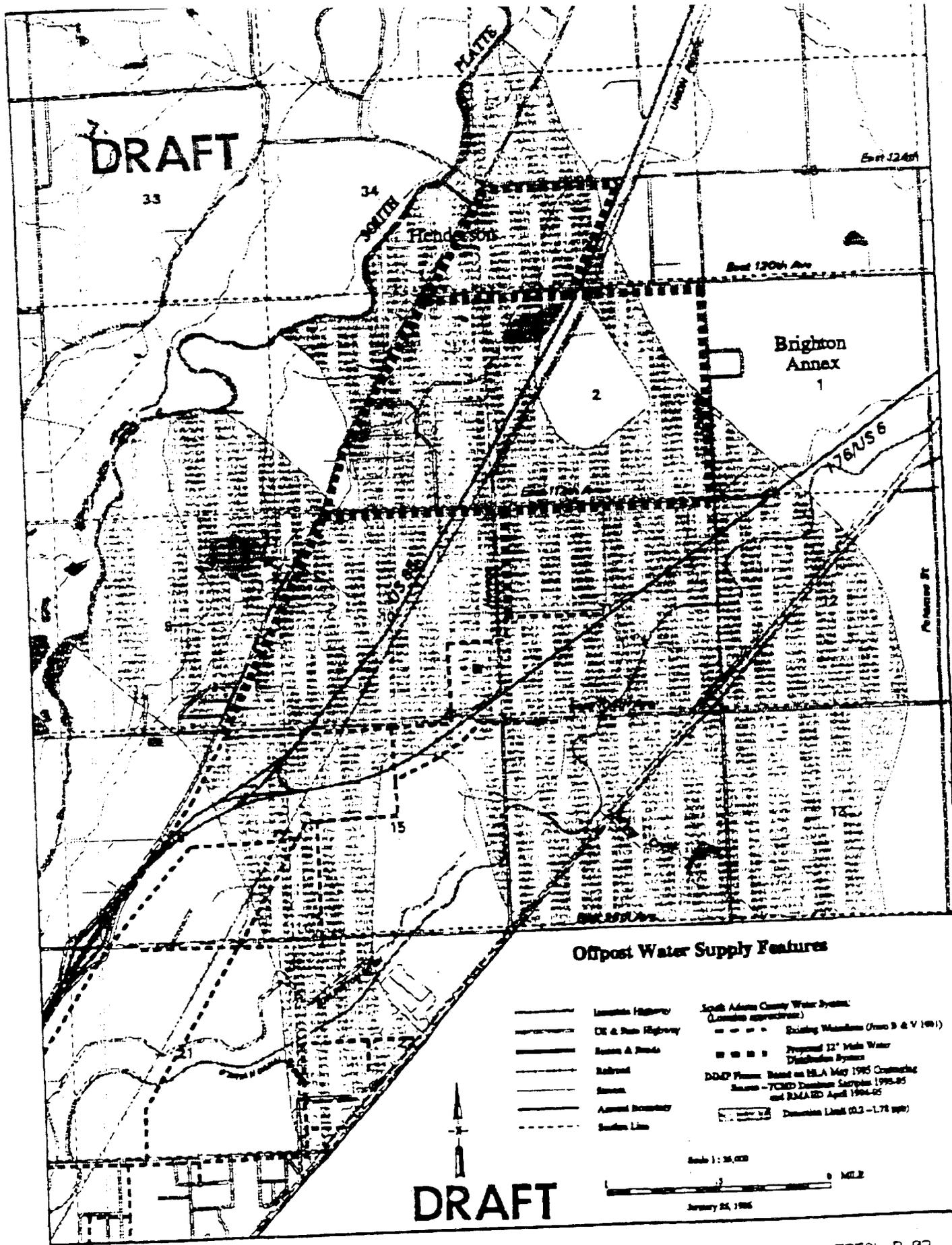
O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96



**DRAFT**

**DRAFT**

**Offpost Water Supply Features**

- Interstate Highway
- US & Bus Highway
- Route & Road
- Railroad
- Stream
- Aerial Boundary
- - - Section Line
- South Adams County Water System (Location approximate)
- - - Existing Wastewater (Ohio B & V 1981)
- □ □ □ Proposed 12" Main Water Distribution System

DD&P Plans: Based on EIA May 1985 Contingent  
 Issues - YCHD Division Surveys 1993-85  
 and RMAED April 1994-85

□ □ □ □ Division Limit (0.2 - 1.74 sq)



Scale 1 : 25,000



January 25, 1986

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# **SANDRA JAQUITH**

*Attorney at Law*

844 Downing Street  
Denver, CO 80218

303-832-3707  
FAX 303-832-3708

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January ~~19~~<sup>23</sup>, 1996

On-Post Proposed Plan Comments  
Kevin Blose, Program Manager  
Rocky Mountain Arsenal  
Attn: AMCPM-PM/Col. Eugene H. Bishop  
Building 111--RMA  
Commerce City, CO 80022-1748

Re: My AMENDED COMMENTS ON THE PROPOSED PLAN FOR THE ROCKY  
MOUNTAIN ARSENAL ON-POST OPERABLE UNIT

Dear Mr. Blose:

After submitting my Comments on the Porposed Plan for the Rocky Mountain Arsenal On-Post Operable Unit, on January 19, 1996, I found six typographical errors in my text. Please find below a corrected and amended set of my comments. I want my Comments, as corrected and amended, to be included in the RMA On-Post Record of Decision. If you have any questions concerning this request, please contact me at the phone number set forth above.

INTRODUCTION:

I am submitting the following comments as an individual. However, throughout the comments, I do make reference to a collective "we." The comments asserted under my collective "we" are derived from my participation in and/or my facilitation of the many public meetings held in relation to the subjects addressed in these comments. Although I do not claim to speak for the public, I would assert that I have been in direct communication with the many citizens affected by the Arsenal clean-up and I am in a position to pass on their concerns and comments.

GENERAL COMMENTS:

This public comment process is a fraud. This plan offers for public comment five alternatives for remediation and a proposed plan, which represents what is commonly called the preferred alternative in this phase of the CERCLA process. Unlike most preferred alternatives, this one has been accepted and agreed to by all five of the parties to this remediation as a negotiated compromise. (See paragraph 'A' of Conceptual Agreement.) I believe that this pre-selected remedy is contrary to §117 of CERCLA.

The effect of presenting a pre-selected plan instead of a preferred alternative is to make a sham of this public comment process. Since this proposed plan has been accepted by written agreement as the plan for remediation, it is not really a *proposed plan, it is the final agreement of the five parties.* Since each party agrees to support the Conceptual Agreement and Proposed Plan, how could a modification based on public comment be made? It has been presented by the Army, the lead agency, but it will receive little or no critical analysis from the other parties. We have already seen the effects in public meetings. No one seems willing to criticize the plan. We, as citizens, have been told publicly and privately that none of the key elements (meaning those set forth in the written agreement) will be changed unless there is a "train wreck". It was explained at the November, 1995 RAB meeting by the parties that since it is a *negotiated settlement*, if one element is changed then the whole agreement fails.

My understanding of the role of *public comment* on a preferred alternative is to give the public an opportunity to review all alternatives and to comment on why or why not the preferred alternative is acceptable or preferable or appropriate. This gives the public and the other parties an opportunity to effect changes in determining the final remedy. Since there will be no real changes between the proposed plan and the final remedy, we must conclude that public comment is irrelevant and constitutes an onerous and futile burden on the public.

We will only believe that this public comment constitutes *meaningful* public participation if significant changes are made to this proposed plan.

I am unhappy that there is essentially no clean-up, no de-toxification of the primary contaminants, in the proposed plan (the only possible de-toxification would come from the promise to treat the HEX Pits with an alternative technology.) The proposed plan offers a little solidification, some landfilling, but most of the contaminants will be capped with soil and/or concrete. This is *not a clean-up, it is a cover-up.*

The Rocky Mountain Arsenal ("RMA") has been described as containing the most contaminated square mile on the planet and, by this proposed plan, the contamination will be left in place.

I do not believe that this is protective of human health, wildlife, or the environment.

This remediation decision is being made without knowing what effect the contamination has had on the surrounding communities or the wildlife. Inadequate studies have been done in the surrounding communities regarding how to determine whether human health has been affected, and the studies on the effects of the contaminants on the wildlife have not been finished (most of them were only begun in the past five years even though the Army has been involved in the remediation process for at least twenty years.) It is my belief that the parties did not, and do not, want to know how the contaminants have affected human health and the wildlife.

Shell Oil Company has claimed throughout this process that the contaminants do not need to be treated or de-toxified. They have adamantly and continuously supported the cover-up of the contamination, even though there are no long-term proven technologies on landfills and caps. Not suprisingly, Shell has been instrumental in thwarting the studies of the health effects of these contaminants on wildlife. Shell has refused to support pilot projects on innovative treatment technologies. In doing so I believe that they have controlled and defined the final remedy at the Rocky Mountain Arsenal, to the detriment of all people of Colorado. It is not right that the polluters were allowed to decide not to clean up their mess. I am ashamed and appalled that the State of Colorado, through the Governor's office, pushed for and supported a remedy that does not clean-up the contamination at RMA.

The only possible explanation for this absurdity is that Shell Oil Company *refuses* to allow contaminants to be treated and de-toxified. And if Shell refuses, it is not done, since this proposed plan is based on unanimous agreement of the parties.

When, and by what authority, was a preferred alternative proposed *only upon unanimous agreement* of the polluters? In the original DAA, the Army recommended extensive de-toxification of the contaminants. The EPA and the State of Colorado supported extensive de-toxification of the contaminants. It was *only* Shell Oil Company that opposed de-toxification of contaminants. The proposed plan contains *no* detoxification. Shell Oil Company determined the remedy at RMA, a minimal and non-protective remedy. A remedy that will require diligent monitoring and maintainance if it is to be at all effective. And there is presently no mechanism to create a trust fund to ensure that such funds will be available for this purpose in the future.

1. ONE OPERABLE UNIT ("OU") IS NOT SUFFICIENT:

This on-post operable unit consists of 179 or 181 separate contamination sites (depending on how you define and count). There is no technical reason for heaping everything into one unit and it is likely illegal to not break it up. Certainly, such a

classification is burdensome on those citizens who seek to review, analyze and comment upon it.

The on-post operable unit should have been divided into smaller, related units so that the contamination problems could be reviewed, analyzed, and remediated in some sane and reasonable manner. Citizens, the EPA and even the State of Colorado have requested this hundreds of times.

One on-post operable unit is not effectively manageable. Even the site characterizations were inadequate due to the sheer size of the site and volume of the contaminants. And more importantly, it is virtually impossible to provide effective, complete, and meaningful public participation when the problem is as enormous as the RMA.

It seems that the many problems created by the overwhelming size and complexity of the on-post operable unit at RMA were purposely designed. It was Shell Oil Company that specifically refused to allow the on-post operable unit to be broken into smaller operable units. The sheer size ensured that it could not be analogized to other sites, whereas smaller units might have been so analogized. By maintaining one operable unit, every aspect of the remediation had to be simplified and minimalized in order to make it even minimally manageable.

The State of Colorado did NOT have enough staff to effectively review and address all issues. Nor did the EPA have enough staff to effectively review and address all issues. Only the polluters, Shell Oil Company and the Army could afford enough staff to effectively manage and address all issues. And, not surprisingly, this Proposed Plan substantially resembles Shell's original proposal for remediation.

This site is so huge and complex, and the corresponding Proposed Plan is so vague and simplified, that any meaningful comment is precluded. All details of actual remediation plans and processes, and changes thereto, should require meaningful public comment.

## 2. BASIN F WASTEPILE:

When Basin F Wastepile was placed in its present location, the public was told that it provided a temporary storage of the highly saturated and toxic soils. The liner was designed to last five years, and we were told that it was stored pending treatment (which I understood would be de-toxification of the contaminants).

The Proposed Plan recommends moving the soils of the Basin F wastepile to the landfill, in the process, the soils will be heated to remove excess moisture. This is ironic since one of the primary, proven technologies for removing pesticides from the soils is to heat them, though at a higher temperature than is necessary for simply removing the moisture. It is ridiculous to heat the soil to remove the moisture and not heat it enough to

remove the contaminants for treatment. I want the contaminants removed from the soils of the Basin F wastepile and de-toxified.

### 3. GROUNDWATER:

The groundwater and aquifer have been contaminated and Proposed Plan offers some treatment of the water but, for all intents and purposes, the water that flows under the RMA is too contaminated to be used. This has severely impacted the drinking water of the surrounding communities and their future growth.

Since at least 1980, the surrounding communities and their local governmental institutions have demanded a full clean-up of the RMA. Replacement drinking water was needed and demanded. Then, about a year-and-a half ago, it was made clear that the Army believed that replacement drinking water was not legally required as part of the remedy at RMA and that the remedy would not include replacement drinking water *and* de-toxification of contaminants. Those same governmental institutions that had once *demanded clean-up* suddenly supported minimal treatment including a cover-up of the contaminants. Compare Northern Coalition's October and December SAPC positions. Replacement drinking water was being held hostage and the surrounding communities seemed to choose replacement water, to protect their health, their community reputations and property values, and future growth. In short, they chose their survival and will pay the price of living next to the largest hazardous waste site in America.

Every citizen or member of the public with whom I have spoken is *unhappy* with the Proposed Plan but many Commerce City residents have accepted it in order to receive replacement water. Unfortunately, the replacement water offered in the Proposed Plan is less than that requested and is inadequate for the needs of the surrounding communities, including South Adams County Water and Sanitation District (SACWSD) and the Henderson area, where the water still contains excessive levels of DIMP.

More water should be supplied, including the 7,500 acre feet requested by SACWSD and additional water for the people of Henderson for drinking and agriculture, where appropriate. The water should be of the highest quality available.

### 4. BOUNDARY SYSTEMS:

The boundary water treatment systems are not effective enough, and the Colorado Basic Standards for Groundwater (CBSG) are not being met for inorganics (chloride and sulphate) at north boundary and chloroform at northwest boundary. Where possible, all contaminants, including DIMP, should be treated at the source as well as at the boundary.

No remedy is proposed for treating NDMA, the western plume, or arsenic, especially at Basin A Neck and the M-1 ponds. Proposed remedies are necessary, including meaningful public comment.

5. PUBLIC ATTENDANCE AT MEETINGS:

Members of the public should be allowed to attend or observe meetings of the parties on technical issues and other day-to day decisions concerning the RMA remediation. The parties have refused the many requests by members of the public to attend such meetings. Why are the parties so dedicated to hiding their deliberations and decision making from the public?

6. SOIL TREATMENT LIMITS:

The decisions to excavate soil to only 10 feet (5 feet at South Plants) and to limit "cap" the volume of soil to be remediated were arbitrary and capricious and, therefore, illegal. They were also never open to public comment. Soil excavation and de-toxification should go as deep, and include as much, as is necessary and practicable to detoxify them.

7. DIOXIN:

The proposed Plan is not a protective remedy because it does not address dioxin. Given the types of chemical production that occurred at RMA since the 1940s, there is every reason to believe that there are high levels of dioxins at RMA. To determine the extent of dioxin levels there should be full and extensive sampling, testing, analysis, and risk assessments subject to full and meaningful public review and comment.

8. HEX PITS:

The Proposed Plan provides no specific remedy but innovative treatment and detoxification have been promised by the parties. This remedy needs extensive analysis and public discussion before a remedy is chosen, open to public review and comment. In my opinion, and the opinion of many other stakeholders, the remedy should be treatment of the contaminants using an innovative technology including a closed system thermal treatment, preferably ECOLOGIC. This is the only site at which innovative technology and detoxification were promised in response to citizen concerns and demands. We fully expect the parties to honor this promise.

9. EMERGENCY PLAN:

The Proposed Plan provides no emergency plan, excavation plan, transportation plan, or traffic plan. All are necessary and should be designed with full and meaningful public participation.

10. SOUTH PLANTS:

The South Plants Tank Farm Light Non-aqueous Phase Liquid (LNAPL) plume is not specifically mentioned in the Conceptual Agreement and the present DAA recommends no action. The July,

1993 version of the DAA proposed to extract and treat the LNAPL and, as late as January, 1995, Shell supported the proposed treatment. This issue was dropped without explanation or comment. The LNAPL constitutes principal threat waste and should be treated to reduce contaminants.

The Conceptual Remedy provides that high levels of water will be maintained in the lakes to prevent the South Plants Plume from migrating into the lakes. There is evidence that the lake water levels are not achieving hydraulic containment. The plan is flawed and not in compliance with the Conceptual Agreement.

The South Tank Farms Plume (STFP) needs a pump and treat system rather than relying on elevated lake levels. It is a ridiculous waste of water rights to attempt to use a hydraulic pressure system that is already ineffective - and it is sure to fail completely during periods of drought. This proposed remedy is not protective.

It is proposed that the South Plants soils be excavated to 5 feet but they should be excavated as deep as is necessary to remove principal threat contamination. Soils will also be excavated from the M-1 Pits and solidified, so why aren't the excavated soils from the Lime Basins not also treated? At least solidify them, especially since they are loaded with lime - a key ingredient for the D.C.R. solidification process.

ALL of the groundwater from South Plants should be pumped and treated to provide some source control of groundwater. Why allow contaminated water to flow downstream causing contaminants to spread to clean water or to seep into lower aquifers? This was previously recommended in the DAA and proposed during the SAPC negotiations, but was dropped without comment or explanation.

#### 12. FORMER BASIN F:

The Proposed Plan recommends in-situ solidification which is an unproven technology. There is no basis for this treatment in the record and thus it is arbitrary and capricious. Performance standards have not been developed. Performance standards need to be developed, along with a contingency plan if this remedy fails. This needs to be re-evaluated and a proper record made to support the remedy, and should be open to full and meaningful public review and comment.

#### 13. LAND DISPOSAL RESTRICTIONS (LDRS):

I have grave concerns about the application of the Corrective Action Management Unit (CAMU) rule and the Area of Contamination (AOC) concept to avoid complying with Land Disposal Restrictions (LDRs). The application of the AOC concept at RMA goes well beyond the definition of AOC in the NCP preamble. The CAMU rule is currently being challenged and is obviously illegal. It is wrong to use these machinations to avoid federal regulation and LDRs.

14. BIOTA:

There is no selected remedy, only a selected process. A remedy needs to be chosen, with full and meaningful public participation and comment.

This should be made a separate Operable Unit. Short term destruction of biota would be justified to attain long-term habitat improvement by detoxification of contaminants.

15. TRENCHES:

The Shell Trenches are extremely toxic and must be treated and detoxified. It is a relatively small site but constitutes some of the worst contamination. The proposed cap and slurry are inadequate to remedy this site and the remedy is not protective.

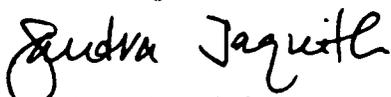
It is proposed that the Army Trenches be capped with concrete. This is absolutely inadequate. The Army Trenches contain Unexploded Ordnances (UXO) and it is *ridiculous* to leave UXO next to an international airport. A feasibility study needs to be done to remove the UXO and the soils on this site must be treated by detoxification of the high levels of contaminants.

16. LAKE SEDIMENTS:

There is no proposed remedy for lake sediments. This site needs to be made a separate Operable Unit for evaluation and development of a remedy with full and meaningful public review and comment.

In conclusion I hereby and formally request that all stakeholder comments and documents from the SAPC negotiations as well as all public comments from the public meeting held on the Proposed Plan at the Rocky Mountain Arsenal on November 18, 1995, by incorporated in written form, and in their entirety, into these public comments.

Sincerely,



Sandra Jaquith  
Community CO-Chairperson  
Remedial Advisory Board (RAB), Rocky Mountain Arsenal

Member of RMA, Site Specific Advisory Board (SSAB)



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80022-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Ms. Sandra Jaquith  
Attorney at Law  
844 Downing Street  
Denver, Colorado 80218

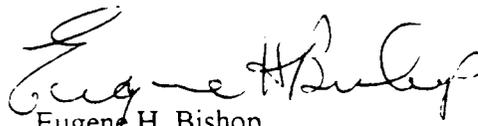
Dear Ms. Jaquith:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

Enclosed are responses to your comments in the order they appeared in your letter.

If you have additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

  
Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosures

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748  
Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202  
Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

*Readiness is our Profession*

## U.S. ARMY RESPONSES TO COMMENTS FROM MS. SANDRA JAQUITH ON THE ROCKY MOUNTAIN ARSENAL ON-POST PROPOSED PLAN

### General Comments

(Pages 1-3 of the letter)

The Army believes the public comment process for the On-Post Proposed Plan is a useful tool that can help shape and define the terms to which the parties agreed in the Agreement for a Conceptual Remedy for the Cleanup of the Rocky Mountain Arsenal (Conceptual Remedy). As you may recall, previous to the Conceptual Remedy, the parties were at a standstill and heading into litigation over the major differences seen as a basis for RMA remediation. The Conceptual Remedy, with the help of the Lieutenant Governor and an experienced mediator, helped the parties reach a conceptual agreement based on compromise without affecting the protectiveness of the selected remedy.

The Army also believes that the public has provided valuable input to the remediation process at RMA. As you are aware, the Conceptual Remedy does not contain specifics about the remediation that will soon begin. The parties are working hard to resolve the questions that remain, and the public input is important to that process. In addition, the Army has included more public participation in the selection process than what is required under the Comprehensive Environmental Response, Conservation and Liability Act (CERCLA) by encouraging any interested party to participate in the review and selection process during the past years. Many comments were reviewed and considered during the process. While no one will agree on every aspect of the Record of Decision (ROD), the Army believes that, with the help of the Parties and public, the selected remedy will be fully protective of human health and the environment.

The remediation process has been ongoing for more than 15 years and has included substantial reductions in toxicity, especially in groundwater. The Basin F Interim Response Action (IRA) treated more than 10 million gallons of highly contaminated liquids. In addition, the sludges and soils in contact with the contaminated liquid have been contained in the Basin F wastepile, which will be moved as part of the final remedy to an on-post, state-of-the-art, triple-lined cell(s) of the hazardous waste landfill. While landfills do not detoxify contaminants, they do protect people and the environment by cutting off exposure pathways.

The health effects on people and wildlife by many of the compounds produced at RMA have been studied for many years, and this information is available at the Joint Administrative Record Document Facility (JARDF). Studies have been completed by the Agency for Toxic Substances and Disease Registry (ATSDR) independently and in conjunction with the Colorado Department of Public Health and Environment (CDPHE). These studies showed no conclusive health impact on the communities surrounding RMA. Also, the final Public Health Assessment, produced by ATSDR, should be complete in the summer of 1996. The U.S. Fish and Wildlife Service (USFWS) has stated in numerous meetings that although adverse impacts have been identified in

wildlife within highly contaminated areas, the general population of wildlife is healthy based on the studies completed thus far. Other studies are continuing at RMA to more fully assess potential health impacts on wildlife.

A Medical Monitoring Program for the surrounding communities has been identified as part of the On-Post ROD to measure health effects, if any, during the remediation process.

Shell has consistently supported the remediation process in many ways. They have participated in many innovative studies (e.g., thermal desorption, enhanced soil vapor extraction, and air sparging) and have been instrumental in providing data that would support or dismiss various remediation technologies. Again, the Army reemphasizes that the Conceptual Remedy was not the product of one party dictating its agenda to the other parties. The Conceptual Remedy was a compromise for all parties involved in order to provide a fully protective, cost-effective, and implementable remedy.

During the formulation and selection of the remedy, members of the public and some local governmental organizations expressed keen interest in the creation of a Trust Fund, as you do in your comment, to help ensure the long-term operation and maintenance of the remedy. The Parties have committed to good-faith best efforts to establish such a Trust Fund, as described in the ROD. Principal and interest from the Trust Fund would be used to cover the costs of long-term operation and maintenance throughout the lifetime of the remedial program. These costs are estimated to be approximately \$5 million per year (in 1995 dollars).

The Parties intend that if the Trust Fund is created it will include a statement containing the reasons for the creation of the Trust Fund, a time frame for establishing and funding the Trust Fund, and an appropriate means to manage and disburse money from the Trust Fund. The Parties are also examining possible options that may be adapted from trust funds involving federal funds that exist at other remediation sites. The Parties recognize that establishing a Trust Fund may require special congressional legislation and that there are restrictions on the actions federal agencies can take with respect to such legislation. Because of the uncertainty of possible legislative requirements and other options, the precise terms of the Trust Fund cannot now be stated.

A Trust Fund group will be formed to develop a strategy to establish the Trust Fund. The strategy group may include representatives of the Parties (subject to restrictions on federal agency participation), local governments, affected communities, and other interested stakeholders and will be convened within 90 days of the signing of the ROD.

## **Specific Comments**

### **1. One Operable Unit (OU)**

The Army considers the definition of one On-Post OU the best approach to manage waste from different sites at RMA and to use alternatives that are more efficiently implemented on a large scale. There is no legal requirement to subdivide this site into more than one OU. The Army has, however, treated some individual contaminated sites in the IRA program.

The Army has long recognized that successful environmental restoration projects require input of interested community residents and has conducted more than 20 open houses and public meetings to enable those interested to voice their concerns.

### **2. Basin F Wastepile**

The Army has consistently tested the wastepile liner systems and found them to be in excellent condition. The Army believes that the Basin F wastepile, in its present state, will be in good operating condition at least until such time that it is moved to the new landfill. Although the wastepile liner itself cannot be tested without potentially disturbing its integrity, an identical liner system under Pond A, which was in constant contact with Basin F liquid for seven years, was tested during its closure and was found to be in excellent condition. These data provide a strong indication that the liner system will fully contain the waste as long as it is needed.

The temperature and process for drying, which is water evaporation, is very different from the temperature required for destruction or desorption of pesticides. As has been explained in the public meetings, thermal desorption or incineration processes operated at high temperatures would be needed to vaporize and destroy the pesticides. Additionally, pesticides have low vapor pressure, very low water solubility, and are immobile; they consequently pose a low risk with regard to migration and are good candidates for containment technologies.

### **3. Groundwater**

In response to your comment about an alternative water supply, the Proposed Plan states that the Army and Shell are committed to providing an additional 4,000 acre-feet of water to South Adams County Water and Saitation District (SACWSD). The Army and Shell have reached an Agreement in Principle, enclosed with these responses, with SACWSD that includes payment of \$48.8 million to SACWSD and requires that SACWSD water be supplied to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson Area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and

Henderson's water needs. If you have any questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

#### **4. Boundary Systems**

The boundary systems are effective with respect to all currently identified contaminants. DIMP and chloroform are treated at the RMA boundaries to levels below their respective standards. Remediation goals have been established for chloride and sulfate in concert with CDPHE and the U.S. Environmental Protection Agency (EPA). N-nitrosodimethylamine (NDMA) is currently being monitored; if this program identifies an NDMA problem, potential modifications required to achieve the remediation goals will be included in the remedial design.

#### **5. Public Attendance at Meetings**

The Army believes that it is not practical for members of the public to attend all technical and day-to-day operations meetings regarding the RMA remediation. The Army has found that smaller meetings can be more focused, where decisions and progress can be made more efficiently. However, the relevant information generated in meetings between the Parties is shared with the public in Restoration Advisory Board and Site-Specific Advisory Board meetings and via newsletters and other means (e.g., the Internet).

#### **6. Soil Treatment Limits**

The excavation depths of 10 feet (5 feet in South Plants) and the excavation volumes discussed in the Proposed Plan and incorporated into the ROD are based on the Remedial Investigation (contaminant types and concentrations in soil), the Risk Assessment (exposure pathways and risk-based contaminant limits), and the Feasibility Study (remediation criteria and selection of remedial alternatives). The Army believes these depths and volumes are appropriate in light of the extensive sampling that has been performed and the identified vertical distribution of contaminants.

#### **7. Dioxin**

Dioxin and furan sampling was undertaken by CDPHE, and the analytical results are presently being evaluated by the Biological Advisory Subcommittee (BAS). Although The Army believes that the currently identified contaminants of concern include all contaminants representing the greatest potential for risk, other contaminants may become a concern in the future (e.g., dioxin). In such an instance, the contaminant will be evaluated with respect to the remedy selected, designed, or implemented to ensure that the remedy remains protective of human health and the environment.

## **8. Hex Pit**

Subject to the results of treatability testing and technology evaluation, an innovative thermal technology will be used to treat approximately 1,000 bank cubic yards (BCY) of principal threat material from the Hex Pits. Solidification will become the selected remedy if evaluation criteria for the innovative technology are not met. The remaining 2,300 BCY will be excavated and disposed in the on-post hazardous waste landfill.

## **9. Emergency Plan**

Emergency plans are typically part of the post-ROD remedial design activities. The Parties and the public will be kept informed of contingency plans as they are written.

## **10. South Plants**

The reason for the elimination of light, nonaqueous-phase liquid (LNAPL) treatment is that the extractable volume of the plume was determined to be much less than had been expected. Shell performed a pilot-scale study for removal of LNAPL over a 6-month period and was able to remove only about 50 gallons of LNAPL. They concluded that the volume of extractable LNAPL was much less than previously estimated and that efficient removal and treatment could not be achieved at that extraction rate. It appears that a significant fraction of the LNAPL is contained in the soil pores and is not mobile. Because the LNAPL is not highly mobile, it would not be classified as a "principal threat." Because the LNAPL cannot be efficiently reversed, the preferred remedy is to allow the ongoing natural attenuation to continue and to monitor the plume. The remedy, accumulation of extractable volume, and potential extraction will be reevaluated as part of the 5-year site review.

Water levels at Lake Ladora and Lower Derby Lake will be maintained to support aquatic ecosystems. The biological health of the ecosystems will continue to be monitored. Lake-level maintenance or use of other means of hydraulic contaminant or plume control will be used to prevent South Plants plumes from migrating into the lakes at concentrations exceeding Colorado Basic Standards for Groundwater at the point of discharge. Groundwater monitoring will be used to demonstrate compliance.

There is no evidence of significant migration beyond the South Tank Farm Plume boundary at this time. Migration of contaminants in this area is very slow due to the hydrogeological conditions, and contaminants appear to be attenuated by natural processes, such as biodegradation, at the edge of the plume. Samples from the deeper aquifer show no evidence of contamination. Plume movement will be further reduced through construction of soil covers over South Plants, which will result in continued lowering of the water table and reducing hydraulic gradients.

The comparative analysis for the Lime Basins indicates that the landfill alternative is more cost-effective than a solidification alternative. Disposal in the enhanced landfill is protective of human health and the environment.

**11. Letter had omitted #11.**

**12. Former Basin F**

In situ solidification was identified as a representative process option for Former Basin F during the Development and Screening of Alternatives. During the Detailed Analysis of Alternatives (DAA), solidification formed part of a remedial alternative for that site and was retained for further evaluation. During the early stages of the DAA, in situ thermal treatment (RF heating) appeared promising as an in situ technology and was tested in pilot scale at the Former Basin F site. The pilot-scale test could not demonstrate effective treatment of pesticides, so that technology was removed from further consideration and was replaced by in situ solidification. Solidification/stabilization is not considered an emerging or unproven technology by EPA. As of the end of fiscal year 1993, both in situ and ex situ solidification had been selected in numerous RODs nationwide, although solidification is not frequently used to treat organic contaminants. Necessary testing will be performed prior to implementation of the in situ solidification treatment technology to ensure that stabilization chemicals are compatible with the waste, that the products are stable, and that treatability goals can be met. If the selected process is ineffective, an alternative technology may be adopted through the ROD amendment process. In addition, during the remedial design/remedial action process, contingency plans and public involvement will be important.

**13. Land Disposal Restrictions (LDR)**

While it is true the Corrective Action Management Unit (CAMU) rule is currently being challenged, the EPA supports the concept, and the State of Colorado in the Colorado Hazardous Waste Management Act (CHWMA) has adopted it. EPA's goal in establishing the CAMU Rule was to "provide remedial decision makers with an added measure of flexibility in order to expedite and improve remedial decisions" while "existing closure regulations and requirements for [Resource Conservation and Recovery Act] RCRA-regulated units, which require closure to occur in a manner that is protective of human health and the environment, remain in effect." Purpose and Context of the CAMU Rule, 58 Fed. Reg. 8654 (1993) (to be codified at 40 C.F.R. Parts 260, 264, 265, 268, 270, and 271). The on-site landfill that is central to the CAMU will meet applicable CHWMA requirements.

The area of contamination (AOC) is a CERCLA concept that is used to determine whether RCRA land disposal restrictions are applicable to CERCLA response actions. The use of the AOC concept at RMA is appropriate based on applicable laws, regulations and site conditions.

#### **14. Biota**

In addition to the human health exceedance sites that will be remediated (in which biota sites will be remediated as well), large areas of low contamination level surficial soil were identified for remediation, as shown in Figure 9.3-1 of the ROD. Additional areas of surficial soil contamination known as the "Area of Dispute" (see Figure 6.2-6) are currently being monitored to evaluate whether unacceptable levels of exposure (i.e., risk) exist for the "Area of Dispute" shown on that figure. The monitoring and evaluation process detailed in the ROD will continue ongoing efforts by the BAS to identify areas that may pose risk to biota and to refine the areas to be remediated. The public will be kept informed about the Parties' findings.

#### **15. Trenches**

The selected remedies for the Shell and Army Trenches were based on a combination of criteria described in the DAA, including short-term risks during remediation and implementability. The combination of RCRA-equivalent caps and slurry walls selected for these sites will effectively interrupt exposure pathways and minimize infiltration of precipitation through remaining contaminated material. The Army believes that these remedies will prevent exposure to or migration of contamination and that they are protective of human health and the environment over the short and long term.

#### **16. Lake Sediments**

Approximately 38,000 BCY of lake sediments will be removed and placed in either the on-post hazardous waste landfill or Basin A Consolidation Area as part of the selected remedy. This action addresses the potential human health and biota risks identified to date. The USFWS will continue monitoring the lakes to evaluate the need for additional action.

#### **Conclusion**

Public meeting comments on the Steering and Policy Committee documents are available at the JARDF. The only comments included as part of the On-Post ROD are comments made by the Parties and public on the On-Post Proposed Plan. However, many of the concerns raised during public meetings are contained within the Proposed Plan comments and Responsiveness Summary of the ROD.

AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY

1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
PAYMENT TO BE MADE WITHIN 90 DAYS OF 1 OCTOBER 1996. SUBJECT TO  
THE AVAILABILITY OF FUNDS.

2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
FOLLOWING TERMS. OTHER TERMS AND CONDITIONS WILL BE THE  
SUBJECT OF FURTHER NEGOTIATION.

A. PAYMENTS WILL BE HELD IN TRUST FOR SACWSD. TRUSTEE TO  
BE CHOSEN BY THE ARMY & SHELL WITH SACWSD CONCURRENCE. ANY  
INTEREST THAT ACCRUES MUST BE RETURNED TO THE ARMY AND SHELL.

B. SACWSD MUST HOOK UP OWNERS OF DOMESTIC WELLS IN THE  
DIMP FOOTPRINT WHO CONSENT TO BE INCLUDED IN THE SOUTH ADAMS  
COUNTY WATER AND SANITATION DISTRICT AND WHO CONSENT TO BE  
HOOKED UP; AND SUCH HOOK UPS WILL BE COMPLETED NOT LATER THAN  
THE 24TH MONTH AFTER THE DATE OF THE INITIAL PAYMENT FOR THOSE  
WHO CONSENT BY THE 20TH MONTH AFTER THE INITIAL PAYMENT.  
THOSE WHO REQUEST TO BE HOOKED UP AFTER THE 20TH MONTH WILL  
BE HOOKED UP WITHIN A REASONABLE TIME. AS NOTED IN G, BELOW,  
SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN 130  
HOMES. SACWSD ALSO IS NOT RESPONSIBLE FOR EXTENDING THE MAIN  
WATER DISTRIBUTION SYSTEM BEYOND THE DIMP FOOTPRINT AS  
FINALLY DETERMINED IN THE ON-POST ROD. THE MAIN WATER  
DISTRIBUTION SYSTEM FOR THE HENDERSON AREA (12" DIAMETER PIPE  
SYSTEM) WILL BE COMPLETED BY THE 24TH MONTH AFTER THE INITIAL  
PAYMENT. SACWSD WILL RECEIVE FROM THE TRUST ACCOUNT \$3,950 FOR  
EACH HOME CONNECTED IN THE NEW SERVICE AREA AND \$2,265 FOR  
EACH HOME CONNECTED IN THE OLD SERVICE AREA, UP TO A TOTAL OF  
130 HOMES. ATTACHED IS THE MAP THAT SHOWS THE LATEST DIMP  
PLUME WHICH IS TO BE UPDATED PRIOR TO THE FINALIZATION OF THE  
ON-POST ROD.

C. SACWSD MUST CONTRACT FOR WATER RIGHTS OR SUPPLY BY  
NOT LATER THAN SIX MONTHS AFTER THE DATE OF THE FINAL PAYMENT.

D. PAYMENTS FROM THE TRUST TO SACWSD MUST BE TIED  
DIRECTLY TO THE ACQUISITION AND DELIVERY OF 4000 ACRE FEET OF

WATER AND THE HOOK UP OF WELL OWNERS IN THE HENDERSON AREA. ALL EXPENDITURES BY SACWSD PAID FROM THE TRUST ACCOUNT WILL BE SUBJECT TO AUDIT BY THE ARMY AND SHELL. UP TO \$43 MILLION MAY BE SPENT ACQUIRING AND DELIVERING THE 4000 ACRE FEET OF WATER AND UP TO \$4.65 MILLION MAY BE SPENT ON HOOK UPS IN THE HENDERSON AREA. THE REMAINING \$1.15 MILLION IS TO OFFSET INFLATION OR CONTINGENCIES. ANY EXPENDITURES CHALLENGED BY THE ARMY, SHELL, OR THE TRUSTEE WILL BE SUBMITTED TO THE ALTERNATIVE DISPUTE RESOLUTION (ADR) METHOD DESCRIBED IN E, BELOW.

E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

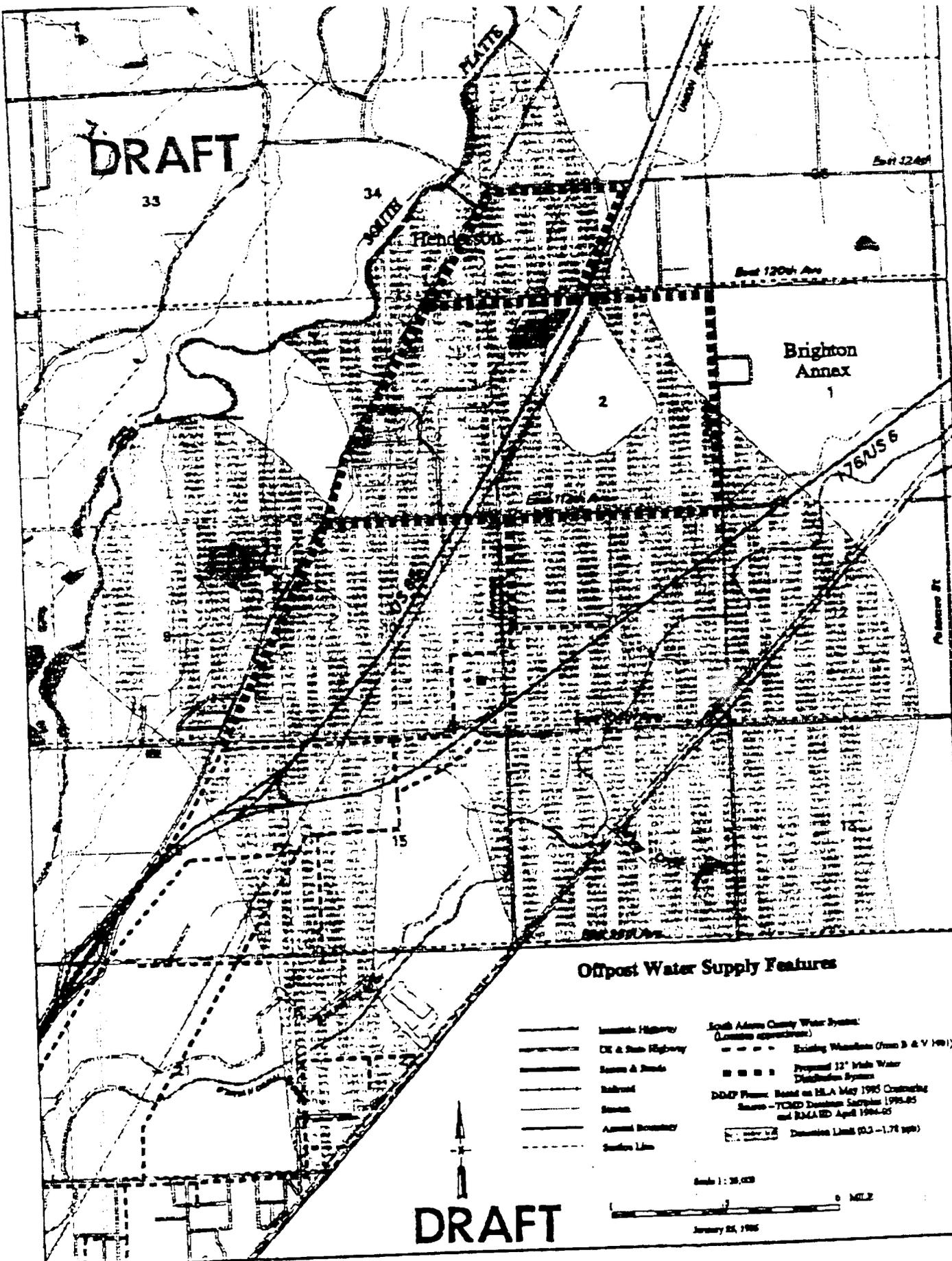
O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96

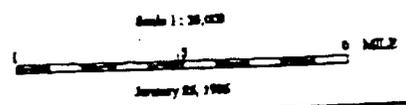


**DRAFT**

**DRAFT**

**Offpost Water Supply Features**

- |       |                    |   |
|-------|--------------------|---|
| ————— | Interstate Highway | South Adams County Water System:<br>(Location approximate)  |
| ————— | OR & State Highway | — · — · — Existing Waterline (from B & V 100)   |
| ————— | Express & Road     | ■ ■ ■ ■ ■ Proposed 22" Inlet Water<br>Distribution System   |
| ————— | Railroad           | DAMP Plan: Based on MIA May 1995 Contracting<br>Source - TCMD Database Surveys 1993-95<br>and RMAED April 1994-95 |
| ————— | Stream             | ▭ ▭ ▭ ▭ Dammed Line (0.3 - 1.75 mph)  |
| ————— | Airport Boundary   |   |
| ————— | Surface Line       |   |



Shirley Jentsch  
3544 Dyanna Dr.  
Thornton, CO 80241  
Thornton resident

On-Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal  
Attn:AMCPM-PH/Col. Eugene M. Bishop  
Building 111 - RMA  
Commerce City, CO 80022-1748  
Dec. 15, 1995

Gentlemen,

I appreciate the opportunity to provide comment on the proposed remediation of the Arsenal.

I feel the Army and Shell should negotiate with the South Adams County Water and Sanitation District and Henderson residents to resolve replacement water and distribution lines issues. Neither Mr. James Erger of Henderson nor Mr. Larry Ford of the water district appeared satisfied with the Army and Shell's plan at the RMA Public Meeting on Nov. 18th. Peoples whose lives and livelihoods are affected should have a seat at the table where decisions mutually agreeable to all should be negotiated.

I support the establishment of a Medical Monitoring Program and a Medical Monitoring Advisory Group as described on pages 11 and 12 of the Proposed Plan for the RMA On-Post Operable Unit. It should be a timeline priority that this program and group be fully operational and adequately staffed before remedial activities begin. They should have reasonable advance notification of all remedial procedures so they can evaluate possible risks and make recommendations. The public should be allowed to have access to information on issues discussed, recommendations made, and whether or not those recommendations were acted upon. This information should be timely and easily accessible. People have a right to be assured their health is being given top priority in remediation measures.

Because of the complexity and scale of remediation at RMA, I'd prefer a review every three years rather than every five. The cycle should be tied to the announcement of the ROD. Further, every three years the ROD would be reviewed in its entirety. AT the Dec. 7th RAS, I believe it was suggested that as a particular aspect was remediated, its five year review cycle would begin. This kind of piecemeal review cycle would make it extremely difficult for the public to keep updated and involved. I also believe the public's perception of what was meant by a five year review process is that the whole remediation plan is revisited every five years.

For me, confidence in preferred remediation proposals is strongly tied to the standards those proposals chose or were impelled to meet. The higher the standards, the stricter the requirements, the greater the confidence I have in the process. Without the personal technical expertise, I rely on my local government to represent my concerns in these issues. Therefore, I support standards setting and restrictions by state and county governments as those being in my best interests.

Thank you for considering these comments.  
Respectfully,

  
Shirley M. Jentsch



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80220-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Ms. Shirley M. Jentsch  
3544 Dyanna Dr.  
Thornton, Colorado 80241

Dear Ms. Jentsch:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

The Army and Shell Oil Company (Shell) successfully negotiated with South Adams County Water and Sanitation District (SACWSD) to arrive at an Agreement in Principle. This agreement, enclosed with this letter, includes payment of \$48.8 million to SACWSD and requires that SACWSD provide the water to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

The health effects on humans and wildlife to many of the compounds produced at RMA have been studied for many years, and this information is available at the Joint Administrative Record Document Facility (JARDF). Studies have been completed by the Agency for Toxic Substances and Disease Registry (ATSDR) independently and in conjunction with the Colorado Department of Public Health and Environment (CDPHE). These studies showed no conclusive health impact on the communities surrounding RMA. The final Public Health Assessment, produced by ATSDR, will be complete in the summer of 1996. The U.S. Fish and Wildlife Service (USFWS) has stated in numerous meetings that although adverse impacts have been identified in wildlife within highly contaminated areas, the general population of wildlife is healthy based on the studies completed thus far. Also, other studies are continuing at RMA to more fully assess any health potential impacts on wildlife.

A Medical Monitoring Program for the surrounding communities has also been identified as part of the Proposed Plan to measure health effects, if any, during the remediation. The primary goals of the Medical Monitoring Program are to monitor any off-post impact on human due to

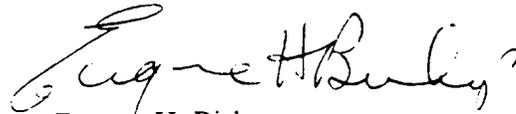
*Readiness is our Profession*

health the RMA remediation. This Program will continue until the soil remediation is completed. A Medical Monitoring Advisory Group has been established to evaluate specific issues covered by the Medical Monitoring Program. The Group is composed of representatives of the Army, Shell, the U.S. Environmental Protection Agency (EPA), CDPHE, Tri-County Health Department, ATSDR, the USFWS, Denver Health and Hospitals, and the Site-Specific Advisory Board. The Group also includes community representatives from the cities of Commerce City, Henderson, Denver, Montbello, and Green Valley Ranch. If you would like more information on the Medical Monitoring Program or wish to participate as part of the Medical Monitoring Advisory Group, please call Ms. Mary Seawell of the CDPHE at 303-692-3327.

Five-year site reviews are intended to evaluate whether the response action remains protective of humans and the environment. Statutory five year reviews are required no less often than each five years after the initiation of remedial action. The Army appreciates your comment that a piecemeal review process would be undesirable. The Army intends each periodic review to be performed on the site remedy as a whole.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,



Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosure

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748  
Mr Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202  
Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY

1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
PAYMENT TO BE MADE WITHIN 90 DAYS OF 1 OCTOBER 1996. SUBJECT TO  
THE AVAILABILITY OF FUNDS.

2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
FOLLOWING TERMS. OTHER TERMS AND CONDITIONS WILL BE THE  
SUBJECT OF FURTHER NEGOTIATION.

A. PAYMENTS WILL BE HELD IN TRUST FOR SACWSD. TRUSTEE TO  
BE CHOSEN BY THE ARMY & SHELL WITH SACWSD CONCURRENCE. ANY  
INTEREST THAT ACCRUES MUST BE RETURNED TO THE ARMY AND SHELL.

B. SACWSD MUST HOOK UP OWNERS OF DOMESTIC WELLS IN THE  
DIMP FOOTPRINT WHO CONSENT TO BE INCLUDED IN THE SOUTH ADAMS  
COUNTY WATER AND SANITATION DISTRICT AND WHO CONSENT TO BE  
HOOKED UP; AND SUCH HOOK UPS WILL BE COMPLETED NOT LATER THAN  
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PLUME WHICH IS TO BE UPDATED PRIOR TO THE FINALIZATION OF THE  
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C. SACWSD MUST CONTRACT FOR WATER RIGHTS OR SUPPLY BY  
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D. PAYMENTS FROM THE TRUST TO SACWSD MUST BE TIED  
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WATER AND THE HOOK UP OF WELL OWNERS IN THE HENDERSON AREA. ALL EXPENDITURES BY SACWSD PAID FROM THE TRUST ACCOUNT WILL BE SUBJECT TO AUDIT BY THE ARMY AND SHELL. UP TO \$43 MILLION MAY BE SPENT ACQUIRING AND DELIVERING THE 4000 ACRE FEET OF WATER AND UP TO \$4.65 MILLION MAY BE SPENT ON HOOK UPS IN THE HENDERSON AREA. THE REMAINING \$1.15 MILLION IS TO OFFSET INFLATION OR CONTINGENCIES. ANY EXPENDITURES CHALLENGED BY THE ARMY, SHELL, OR THE TRUSTEE WILL BE SUBMITTED TO THE ALTERNATIVE DISPUTE RESOLUTION (ADR) METHOD DESCRIBED IN E, BELOW.

E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

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H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

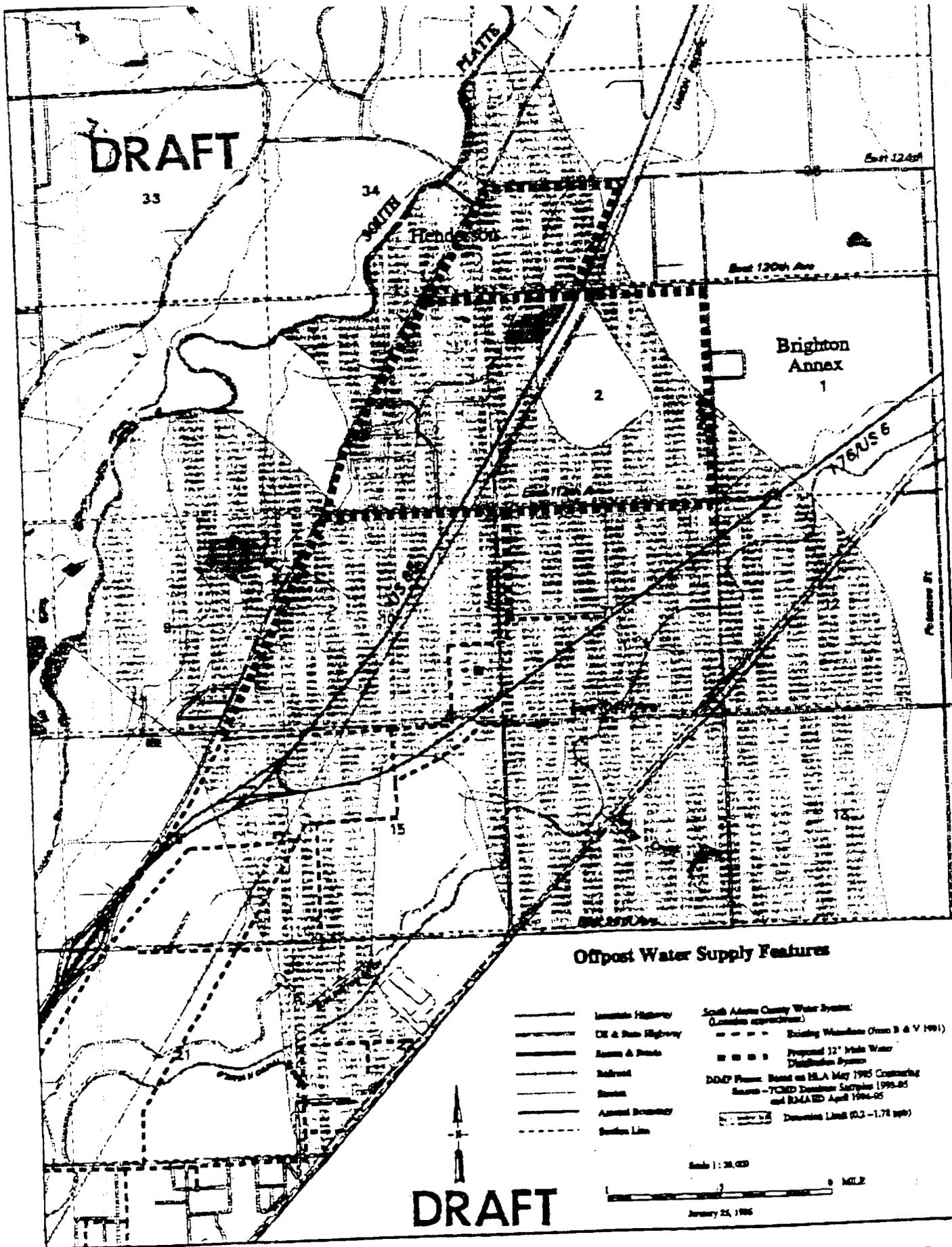
O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96



**DRAFT**

**DRAFT**

**Offpost Water Supply Features**

- Interstate Highway
- US & State Highway
- Arterial & Freeway
- Railroad
- Stream
- Aerial Boundary
- Section Line
- South Adams County Water System (Existing and Proposed)
- Existing Mainlines (From B & V 1981)
- □ □ □ Proposed 12" Main Water Distribution System
- DDMP Plan: Based on HLA May 1985 Containing Source - TCMO Domestic Supplies 1980-85 and RMAED April 1984-85
- □ □ □ Domestic Limit (0.2 - 1.78 mgd)

Scale: 1" = 1/2 MI.  
 0 1/2 MI.  
 January 25, 1986



*recd 18 Jan 96*

JOAN JOHNSON  
State Senator  
7951 York #3  
Denver, Colorado 80229  
Capitol: 866-4865  
Home: 288-9237

Senate Chamber  
State of Colorado  
Denver

COMMITTEES:  
Member of:  
Agriculture, Natural  
Resources and Energy  
Appropriations  
Capital Development  
State, Veterans and  
Military Affairs

January 17, 1995

On-Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal  
Attn: AMCPM-PM/  
Col. Bishop  
Building 111-RMA  
Commerce City, CO 80022-1748

Dear Col. Bishop:

The proposed draft Record of Decision for clean-up activities at the Rocky Mountain Arsenal proposes on site disposal of non-hazardous waste, without the normal facility construction requirements, such as liners, etc., for such waste disposal. Additionally, the Record of Decision fails to specifically include a commitment to follow the normal process required for the siting of a non-hazardous waste landfill facility.

While it is understandable that off site disposal of hazardous waste material is probably not feasible for political, cost and practical reasons, why would any non-hazardous waste material be left on site without fully complying with all normal landfill design and construction requirements? As there are reasonable off site alternatives, this material should be disposed off site, if possible.

If non-hazardous waste material is to be disposed of on site, then it should either be placed in the hazardous waste landfill facility that will be constructed on site, or in a separate non-hazardous waste on site facility permitted in accordance with the Solid Waste Act requirements of the State of Colorado.

The requirements of such an on site non-hazardous waste facility should not be less than would be required for all other facilities in Colorado. This includes the required public notice, hearings, etc., by Adams County, the affected local government.

At a minimum, the Record of Decision should include the commitment to study the relative comparative costs and benefits of on site versus off site disposal. This study should include allowing the public to fully participate in the making of the on site versus off site decision and should be completed prior to any decision being made in this area.

Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Joan M. Johnson". The signature is fluid and elegant, with a large initial "J" and a long, sweeping underline.

Joan M. Johnson  
State Senator



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCIAL CITY, COLORADO 80222-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

The Honorable Joan Johnson  
State Senator  
7951 York #3  
Denver, Colorado 80229

Dear Senator Johnson:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

Your letter proposes either offsite disposal of nonhazardous materials or construction of an on-site, nonhazardous waste facility in compliance with the Resource Conservation and Recovery Act. The Army understands your concern that this material be disposed properly and believes that the approach of placing the material under the Basin A cover will adequately immobilize any contaminants and provide a cost-effective method for disposal of nonhazardous materials. In addition, a large volume of fill material will be required to construct the Basin A Consolidation Area, and the RMA nonhazardous material will satisfy that need. Furthermore, by using this nonhazardous material onsite, there will be no negative impact from a very large number of trucks moving through the surrounding community. Cost for fill material is also minimized. Therefore, the Army chose to keep the nonhazardous material onsite to be used as fill material for the Basin A Consolidation Area.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

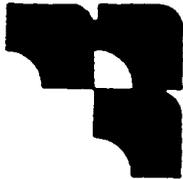
Eugene H. Bishop  
Colonel, U.S. Army  
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Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748

Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202

Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748



# MetroNorth

Chamber of Commerce  
11990 N. Grant Street, Ste. 218  
Denver, Colorado 80233-1122  
(303) 450-0335  
Fax 450-2610

2A Nov 95  
Bh

## 1995 Board of Directors

**Diane Schmidt**  
Board Chair  
Steve Cramer & Associates, LLC

**Mel Cozzens**  
Chair Elect  
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## ROCKY MOUNTAIN ARSENAL WATER SUPPLY RESOLUTION

BE IT RESOLVED that the Board of Directors of the MetroNorth Chamber of Commerce hereby supports the efforts of the Northern Community Coalition, the South Adams County Water and Sanitation District and the community of Henderson, Colorado, in their efforts to secure adequate water supplies.

The water supplies should not be limited to the 4,000 acre feet identified in the Conceptual Agreement for cleanup of the Rocky Mountain Arsenal. Rather, the supplies should be of high quality, and adequate quantity to address the contamination problems of both the South Adams County Water and Sanitation District and the affected community of Henderson.

The parties and affected communities should agree upon an acceptable amount of water. That agreement should not be delayed but should be resolved and included in the final decision on the Arsenal cleanup.

PASSED and adopted this 22nd day of November, 1995.

Signed Diane J. Schmidt  
Diane J. Schmidt, Chair of the Board



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80222-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Ms. Diane J. Schmidt  
MetroNorth Chamber of Commerce  
11990 N. Grant St., Suite 218  
Denver, Colorado 80233-1122

Dear Ms. Schmidt:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

The Army believes that an adequate amount of high-quality water will be provided to the affected communities. The Army and Shell Oil Company have reached an Agreement in Principle, enclosed with this letter, with the South Adams County Water and Sanitation District (SACWSD) that includes payment of \$48.8 million to SACWSD and requires SACWSD to supply water to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosure

*Readiness is our Profession*

Copies Furnished:

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G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE, AND ANY WATER AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

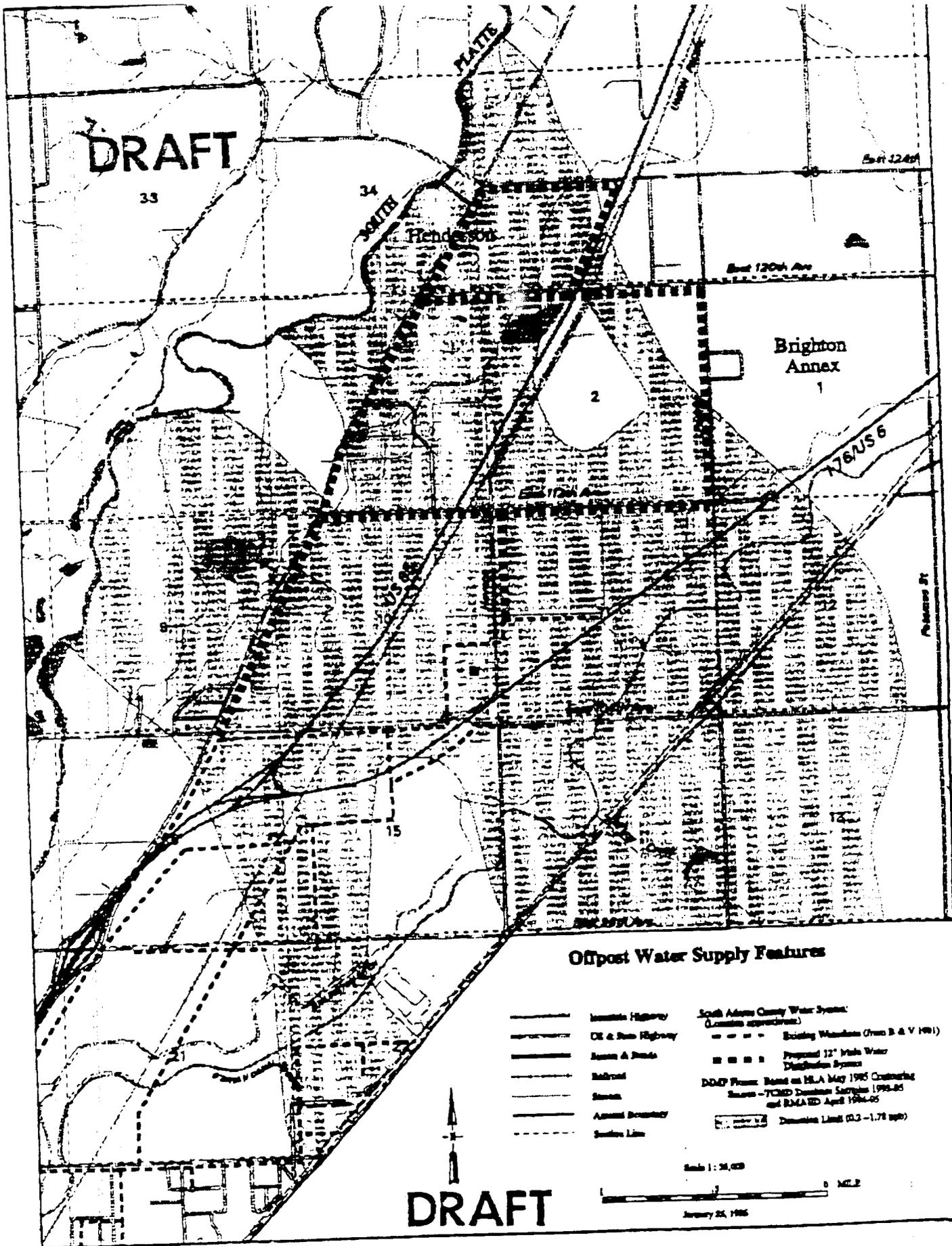
O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96



DRAFT

**Offpost Water Supply Features**

- Interstate Highway
- CE & Son Highway
- Arroyo & Road
- Railroad
- Stream
- Actual Boundary
- - - Section Line
- South Adams County Water System  
(Location approximate)
- - - Existing Mainline (From B & V 1991)
- ■ ■ ■ Proposed 12" Water Distribution System

DDAP Phase: Based on HLA May 1985 Contouring  
 Source - TCMED Database Samples 1983-85  
 and RMAED April 1984-85

Scale 1:24,000  
 0 MILE  
 January 26, 1986

DRAFT

*rec'd 22 Jan 96*

Dan Mulqueen  
1422 S. York  
Denver CO 80210

January 18, 1996

Proposed Plan Comments  
Program Manager for Rocky Mountain Arsenal  
Attn: Col. Bishop  
Building 111-Rma  
Commerce City, CO 80022-2180

Col. Bishop,

Thank you for the opportunity to comment on the Onsite Plan. The amount of time allowed for Public Comment is not adequate to fully express my concerns and questions regarding the Plan as presented, but due to the Army's reluctance to further extend this period, my comments are submitted on this date.

In the interest of conservation and economy, I request that all of your documents be printed on both sides. Recently, the Army distributed the Off-Post ROD in this format, but the majority of information for public review remains one sided and is bulky and wasteful.

I object to the preeminent role of Shell Oil Company in the decision making at the Arsenal. Shell's reputation and continuing world wide activities are well documented, and Army deference to Shell and their position are an embarrassment. The Federal Facilities Agreement was the appropriate venue to protect the taxpayer, when financial liabilities were established, not at the point of clean-up. I object that in many instances this FFA is relied upon to excuse compliance with NCP, CERCLA, and other laws in which the citizens seek protection.

The influence of this 20% payer on issues such as the cost of innovative treatment on a minute area (Hex Pits) has apparently caused the Army to back off on your pledge to the citizens as part of the Agreement on the Conceptual Remedy. I would also like an explanation for why Shell has not signed the Off-Post ROD. I object to the fact that citizens concerned for their communities and the environmental legacy passed to the children, must so often struggle against Shell, their contractors, lobbyists and lawyers, to have our voices heard at the Army's table.

I object to the adherence to the Agreement on the Conceptual Remedy as a Pre-selection of Remedy, proscribed by Congress in 42 USC 9617. As a participant Stakeholder in the SAPC negotiations, I do not believe citizen concerns were included in the Agreement except peripherally, and that the Parties signatory may not make every effort to enforce the components of greatest concern to the citizens, specifically: components 10 D, 17, 18 [Water must be provided, not simply a piping system], 19, 24[ to include Dioxins and Furans], 25 [ NDMA detection levels are too high, (reporting levels must be below human health exceedence and are known to be commercially available from Southwest in San Antonio, Texas)], 27[ include Dioxins and Furans especially in the USFWS biomonitoring programs and SFS/risk assessment process], and 28[ to add DIMP].

Citizen concerns expressed prior to but not addressed in this Agreement include: Dioxin and Furan sampling, preference for on-site treatment and applications of innovative and leading edge technologies, the cessation of public tours promoting the Refuge until remediation is complete, in-situ treatment of the South Plans Tank Farm Plume, and an emergency plan for the nearby communities more comprehensive than reliance on the "buffer" zone. Have these concerns been documented and where? Will these concerns as presented in the SAPC process be addressed and how?

The Agreement is incomplete in that it does not contain a Inter-Agency Agreement with the State of Colorado. If this Document is to follow, the citizens would request notification as well as the opportunity to provide their concerns and comments during the formation of such an agreement. We understand that this is a vital tool for keeping the project on track as well as maintaining accountability and generating public trust.

While all citizens support the provision of replacement water to residents affected by Arsenal contamination, I strongly object to the fact that citizen demands for treatment of wastes has been traded for this water. I refer specifically to statements contained in the transcript of the Public Meeting, Nov. 18, 1995, by Larry Ford and others, that less clean-up was accepted in exchange for an immediate source of pristine water. Based on this, if the replacement water is not acceptable to the community does the decision on remediation become reopened? These issues should be addressed in terms of Federal policies and guidances pertaining to Environmental Justice, and Certification of Adherence to these principals should be provided by each Federal Party.

I object to the use of the State CAMU authorization to sidestep RCRA Land Disposal Restrictions. We know that the EPA is now in the process of ending that Regulation effective early in 1997, and that the state CAMU will be less stringent and thus inappropriate then. To the public this seems to be the single driving force behind the insistence to sign the ROD during the summer of this year.

I object to the designation of the entire contaminated area of the Arsenal as a single AOC for purposes of application of LDRs. It is a stretch of the imagination that the area described is "contiguous" or "discreet", when there is endless variety in contaminants, their sources, and large areas of non-contaminated soil between them. Your designation ignores EPA guidance contained in the Superfund LDR Guide 5, as well as OSWER Directive 9347.3-08FS, which states that landfill siting must be protective of groundwater. The Basin A area, in which you plan to heap principal threat wastes, has a depth to groundwater of 0 feet in places.

While the De-Watering scheme may work here, it is speculative and requires a contingency plan to be included due to the unproven nature of this action as a permanent remedy. A contingency plan must also be developed in regards to the Hydraulic Containment of the South Plant Plumes [keeping the lakes full]. This proposal is unproved and speculative and should not go forward as a stand alone permanent remedy alternative to treatment. In this case both extraction and bioremediation have been proposed in past plans for the South Plant Plumes, and been determined feasible. The ROD should contain these contingencies.

page3

Is it the Army's intent to use the CAMU and/or AOC designations to avoid sampling and characterization of wastes prior to moving soils and structures? If this is the case, conflicts seem to occur with Worker Safety ARARS {29 CFR 1910.120[b] to [j], and others}, as well as with Land Use/Deed Restrictions(40 CFR 264.119 and 6CCR 1007-3, section 264.119) which requires exactly these types of characterizations. Although we may have traded off treatment of wastes at the Arsenal, it was never intended that sampling would not occur, It was our understanding that this sampling would be complete and comprehensive, including quantification and characterization of all detected compounds and elements ,whether on the COC list, or not. This action is very important to the future generations who will assume the burden we will have left buried, as clearly stated in the Principals for Environmental Cleanup of Federal Facilities [EPA].

The Structures Volume VI Report shows that not all buildings have been sampled and that often sampling was not complete for all contaminants. This report does not depict the levels of specific contaminants found, sampled for, methods, or detection levels. This makes the information incomplete and mostly unusable as the basis for comment.

The selection of sites and tests appears haphazard, for example, administration and infirmary areas were sampled relatively extensively while some process areas, warehouses and loading areas show no sampling whatsoever. Please explain this and the fact that the structures inventory does not agree at all times with the structures figures and maps provided in this volume. For example, structure 311, does not appear on maps. Further this building served as a storage area for Shell and has been rumored to have held "secret" projects and drums of 2.4.D. The sampling of this structure revealed contamination which lends credence to these stories, but there seems to be no follow through.

Again sampling and screening must be for all analytes not just for those targeted, because of the gaps in the historical record and the high likelihood of the existence of previously unknown and/or unexpected contaminants. Complete sampling should enhance the design parameters, thus increase confidence in the permanence of the remedy.

All no-action sites which were characterized using detection limits higher than action level need to be re-characterized using appropriate detection limits before these sites or buildings are excluded from clean up. This is particularly in regard to: Dioxins and Furans, NDMA, Dieldren[.002ppb] and elemental and agent compounds. Given the history of Chlorine Plant wastes introduced into First Creek, via the Sand Creek Lateral, and it being widely accepted that this activity spawn Dioxins when graphite electrodes are used, soils and sediments associated with SCL and First Creek must be sampled for these compounds and appropriate remediation instituted.

Over the past several years many citizens have requested information about ,and sampling for, Dioxins and Furans on the Arsenal. These requests have been rebuffed until this summer when the State agreed to send some archival soil and animal tissues for testing. The results are positive and confirm citizen concern regarding the presence of these dangerous chemicals on the Arsenal. A separate Operable Unit must be performed to include these and other missed or inadequately characterized contaminants.

page4

I object to the use of Land Use Restriction to close pathways of exposure on the Arsenal. This is contrary to mandate in the NCP which states that institutional controls shall not substitute for active response measures as the sole remedy, unless such active measures are determined to be not practicable. Under the Plan, unlined Basin A will receive additional quantities of principal threat and the ground water impacted is considered for some pump and treat, but pathway abatement is accomplished with a prohibition on the use of this water for potable use. ~~This will not eliminate exposure by inhalation of vapors, or biota exposure from utilization for non-potable use.~~

Also the NCP ~~mandates the use of 10-6 as the point of departure for EPA~~ guidance has ~~overridden~~ this requirement based on land uses as a wildlife refuge. ~~The~~ point of departure now is functionally 10-4. If this questionable interpretation is challenged or overturned subsequently [as the CAMU regulation is being now] the entire arsenal will have to be remediated.

The danger of miserly characterization and discounting generally held standards is that in time the ultimate costs will far outweigh the short term savings. Levels of remediation are lessened due to the Refuge designation. If cleanup is not adequate to support wildlife at very low cost, the Refuge fails and that land use becomes defunct. Under the law, non-productive Refuges may be transferred for development, and development pressure for this area is certainly going to be great. At that point a future generation will grapple with the decision to complete the cleanup or to assume the risks. The polluter's only hedge in this scenario is to hope for the highest degree of natural attenuation. This is an unacceptable position for the Army given the public trust and your announced commitment to "Cleanup" the Rocky Mountain Arsenal. Further there will be little attenuation of elemental contaminants such as mercury, arsenic, or asbestos, and any degradation of the significant quantity of organics will be at least matched by the recombination into other dangerous and exotic compounds.

I object to the Army's failure to include the following Colorado Laws as ARARS: The State Wildlife Act, C.R.S. 33-1-101 to 33-1-121; Wildlife Enforcement and Penalties Provisions, C.R.S. 33-6-101 to 33-6-130; and Wildlife Commission Regulations, 2 CCR 406-0 & 406-8. Because some Army decisions and actions may result in the killing or wounding of Colorado game and non-game animals, the Army should be accountable and adhere to the laws and penalties of the State willingly.

I finally must object to the plan for three areas which bring the magnitude of the problems into brutal focus. These are; The Shell Trenches, The Complex Trenches, and The Central Processing Unit. All three areas contain extremely dangerous contamination that may or may not be fully characterized, and which will remain in place and untreated forever, under this plan. Even assuming there will be no further spread into the environment and no exposure results, it is very discouraging that this is the best solution we might achieve here. I would hope that the Army and other parties will reflect on the explanation to be offered to future generations as to why this was the very best we could do here. I know that no justification for this legacy has been presented for future generations but I feel strongly that this should be clearly and prominently presented within the Final ROD.

Sincerely,  
Dan Mulqueen



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80022-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Mr. Daniel Mulqueen  
1422 S. York  
Denver, Colorado 80210

Dear Mr. Mulqueen:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the Army and the public.

Responses to your specific comments are provided in the enclosure.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosures

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748  
Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202  
Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

*Readiness is our Profession*

## **RESPONSES TO COMMENTS BY MR. DANIEL MULQUEEN ON THE ROCKY MOUNTAIN ARSENAL ON-POST PROPOSED PLAN**

For ease of comparing this response to your letter, the following responses reference the applicable page and paragraph number of your letter.

**Page 1, first paragraph:** The Army extended the public comment period by 30 days in an attempt to balance the concerns of those who wanted more time to comment and those who wanted no more delays to the Record of Decision (ROD).

**Page 1, second paragraph:** As you noted with the two-sided page format of the Off-Post ROD, the Army is also interested in conservation and economy and will publish the On-Post ROD in the same format.

**Page 1, third paragraph:** Shell Oil Company's (Shell) role in the RMA remediation, technically and financially, has been determined through the Army/Shell Settlement Agreement as well as the RMA Federal Facility Agreement (FFA), which are both binding legal agreements and which are both consistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Shell has consistently supported the remediation process in many ways. They have participated in many innovative studies (e.g., thermal desorption, enhanced soil vapor extraction, air sparging) and have been instrumental in providing data that would support or dismiss a particular remediation technology. The Army believes that Shell's technical expertise has been a valuable asset to the On-Post Remedial Investigation/Feasibility Study (RI/FS) process.

**Page 1, fourth paragraph, first sentence:** The Army is committed to the remedy outlined in the Agreement for a Conceptual Remedy for the Cleanup of the Rocky Mountain Arsenal (Conceptual Agreement). Subject to the results of treatability testing and technology evaluation, the Parties have agreed that 1,000 bank cubic yards (BCY) of principal threat material from the Hex Pit will be treated by an innovative thermal technology. The remaining 2,300 BCY of principal threat material will be excavated and disposed in the on-post hazardous waste landfill. Solidification will become the selected remedy if evaluation criteria for the innovative thermal technology are not met.

**Page 1, fourth paragraph, second sentence:** Shell has not signed the Off-Post ROD for two reasons. First, the Army is the lead agency and has the responsibility to carry out the remedy agreed upon in the ROD. It is not necessary for Shell to sign the ROD as a responsible party to the remediation. Second, Shell is bound by the Army/Shell Settlement Agreement and the FFA, as described above, and those legal documents provide the requirements Shell must meet.

**Page 1, last paragraph:** The Army is interested in public comments and concerns and has made substantial effort to hear those concerns through the Restoration Advisory Board, the Site-

Specific Advisory Board, and stakeholder meetings, and also through avenues of public comment such as the comments on the On-Post Proposed Plan. The Army has conducted more than 20 open houses and public meetings to enable those interested to voice their concerns. The public expressed concerns about many innovative technologies during the public process. Many participants preferred proven technologies and minimal disturbance of the site; however, some participants indicated preference for innovative technologies.

In response to your comment about an alternative water supply, the Army and Shell have reached an Agreement in Principle, enclosed with these responses, with South Adams County Water and Sanitation District (SACWSD) that requires that SACWSD supply water to consenting drinking water well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The Army hopes that the community will work with SACWSD in obtaining an acceptable water supply. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646.

N-nitrosodimethylamine (NDMA) studies are underway, and lowering the analytical detection limit is required by the Conceptual Agreement, which was signed June 13, 1995. The Army continues to work with its laboratory on the NDMA issue. Dioxin and furan sampling was undertaken by the Colorado Department of Public Health and Environment (CDPHE), and these results are currently being evaluated by the Biological Advisory Subcommittee (BAS).

**Page 2, first paragraph:** Please see the response to **Page 1, last paragraph** regarding dioxin and furan sampling. Public concerns were definitely considered in the development of alternatives. The concerns about the short-term impacts of excavation and treatment were evaluated against the potential long-term effects of containing the waste in place. There also was significant public concern about thermal processes such as incineration because of potential emissions. The Army believes the most protective remedy is one that minimizes the short-term risks of exposure to workers and the community because soil-borne contaminants are left in place and not excavated and exposed to the environment.

RMA tours will continue during the cleanup process, but will not be conducted in affected areas. The safety of visitors will be ensured through limited access and monitoring.

The Army assumes your comment regarding in situ treatment of the South Tank Farm Plume is a request for treatment. There is no evidence of significant migration of the South Tank Farm Plume beyond its plume boundaries. Migration of contaminants in this area is extremely slow due to the hydrogeological conditions, and contaminants appear to be attenuated by natural processes including biodegradation, at the edge of the plume. Samples from the deeper aquifer show no evidence of contamination. Plume movement will be reduced further by covering the South Plant

area, which will result in lowering of the water table and reducing hydraulic gradients. Continued plume monitoring will provide design refinement/design characterization support for the final remedy.

An emergency plan is typically part of the post-ROD remedial activities. The Parties and the public will be kept informed of contingency plans as they are written.

**Page 2, second paragraph:** The Army believes the public comment process for the On-Post Proposed Plan is a useful tool that can help shape and define the details of the Conceptual Agreement. As you may recall, prior to signing the Conceptual Agreement, the Parties were at a standstill and heading toward litigation over the major differences seen as a basis for remediation of RMA. The Conceptual Agreement, with the help of the Colorado Lieutenant Governor and an experienced mediator, helped the Parties reach an agreement based on compromise without affecting the protectiveness of the selected remedy. An interagency agreement was not necessary because the state was a signatory to the Conceptual Agreement.

The Army also believes that the public has provided valuable input to the selection of a remedy for RMA. As you are aware, the Conceptual Agreement does not contain specifics about the remediation that will soon begin. The Parties are working hard to resolve the many questions that remain, and the public has an important role in that process. In addition, the Army has included more public participation in the selection process than what is required under CERCLA by encouraging everyone to participate in the review and selection process during the past years. Many public comments were reviewed and considered during the process. While no one will agree on every aspect of the Conceptual Agreement, the Army believes that, with the help of the Parties and the public, the remedy will be fully protective of human health and the environment.

**Page 2, third paragraph:** The Army believes the supplemental water supply will be an extra layer of protection to people north of RMA in the unlikely event that all the caps, liners, and multiple groundwater treatment systems were to fail. In addition, many citizens were opposed to the treatment technologies that were proven to treat the multi-faceted wastes in some areas on RMA. The Army believes the selected remedy is fully protective of human health and the environment. The Army believes the selected remedy, including the provision of a water source, is consistent with the policies and guidelines pertaining to environmental justice.

**Page 2, fourth paragraph:** U.S. Environmental Protection Agency (EPA) goal in establishing the Corrective Action Management Unit (CAMU) Rule, which was adopted by the State of Colorado in the Colorado Hazardous Waste Management Act (CHWMA), was to "provide remedial decision makers with an added measure of flexibility in order to expedite and improve remedial decisions" while "existing closure regulations and requirements for [Resource Conservation and Recovery Act] RCRA-regulated units, which require closure to occur in a manner that is protective of human health and the environment, remain in effect." Purpose and Context of the CAMU Rule, 58 Fed. Reg. 8659 (1993) (to be codified at 40 C.F.R. Parts 260, 264, 265, 268, 270, and 271). The onsite landfill that is central to the CAMU will meet applicable CHWMA

landfill siting, construction, monitoring and closure requirements. The area of contamination (AOC) is a CERCLA concept that is used to determine whether RCRA land disposal restrictions (LDR) are applicable to a CERCLA response action.

**Page 2, fifth paragraph:** The extent of the AOC at RMA was based on the boundary of the area within which EPA estimated there might be some risk to biota, primarily due to the presence of dieldrin in surface soils in a contiguous area. The on-post hazardous waste landfill was sited according to CHWMA criteria, as described in the CAMU Designation Document and its appendices. Basin A will not receive soil defined as principal threat soil or human health exceedance soil; it will only receive soil with contaminant levels below human health criteria and structural demolition debris to be used as fill.

**Page 2, last paragraph:** The Army assumes that your comment about dewatering refers to the passive dewatering of the South Plants Central Processing Area and Basin A after soil covers are constructed at those locations. Groundwater monitoring will continue in order to evaluate the effectiveness of the selected remedy, including the capping and passive dewatering. Studies are currently ongoing to address potential needs for additional action in the lakes area. It should be noted that contaminants in the two areas are different. Please see also the response to your comment on **Page 2, first paragraph**.

**Page 3, first paragraph:** The soil, water, structures, air, and biota have been extensively sampled at RMA during the course of the RI/FS and have been sufficiently characterized to implement the selected remedy. Additional contingency sampling is part of the selected remedy and will be used if needed.

**Page 3, second and third paragraphs:** Representative structures were selected for sampling and analysis to represent the worst case conditions. Section 2.4 of the Structures Volume of the Detailed Analysis of Alternatives (DAA) provides a summary of structure material sampling and references other documents for further detail. Historical data on structure use is sufficient to classify individual structures according to past use and potential future use. Analytical results from structure material sampling indicate low concentrations of contaminants and support the conclusion that structure contamination does not pose a hazard to human health or the environment. Major and minor structures are represented on the DAA plates, including Building 311, which appears on Plate 1.2-1 in Section 2 of the South Plants insert. Building 311 began service as a cafeteria, and was later used for storage of soil cores. Samples taken in and around the structure do not indicate the presence of significant levels of contamination. The preferred alternative for this structure is demolition and disposal in the Basin A Consolidation Area.

**Page 3, fourth through sixth paragraphs:** The current list of structures analytes is derived from the Remedial Investigation/Feasibility Study (RI/FS), which included a much longer list of analytes. The fact that detection limits change during a program as extensive as RMA's is unavoidable. The Army recognizes that some of the risk-based remediation goals are below analytical detection limits. This fact is not unique to RMA, and that is why the term Practical

Quantitation Limit (PQL) has been established. A PQL is used as the remediation goal until the risk-based standard can be achieved by a laboratory. As stated in the response to your comment at **Page 1, last paragraph**, programs are ongoing to evaluate NDMA, dioxin, and furan at RMA. In the event other contaminants not included as contaminants of concern are identified as a concern (e.g., dioxin) during or after design or implementation, an evaluation will be conducted as required by CERCLA guidance (OSWER Directive 9355.3-02) to ensure that the remedial action is protective of human health and the environment. At a minimum, evaluations will be part of the 5-year site review. There is no scientific support for your claim that dioxins were generated by the processes at the Chlorine Plant and subsequently introduced into the Sand Creek Lateral and First Creek.

**Page 4, first paragraph:** Institutional controls will not be used as a sole remedy at RMA. The use of institutional controls, such as deed restrictions and land use restrictions to supplement engineering controls for long-term management, is consistent with the NCP, the FFA, and the RMA National Wildlife Refuge Act of 1992. As stated in the response to your comment on **Page 2, fifth paragraph**, Basin A will not receive soil or structural material for fill that exceeds principal threat or human health exceedance criteria. The Basin A cover will reduce infiltration and naturally lower the water table, thereby reducing contaminant leaching from the area.

Consumption of groundwater or surface water on-post will be restricted by institutional controls in accordance with the FFA. The Integrated Endangerment Assessment/Risk Characterization (IEA/RC) considered both human inhalation of vapors and biota exposure from use of nonpotable water. To assess vapor inhalation, groundwater was considered as a potential source (in addition to soil) because it may have contributed to the concentration of vapors in the soil column. The ecological risk characterization assessed risk to biota from exposure to surface water from the lakes (exposure to groundwater is not anticipated).

**Page 4, second paragraph:** Following EPA guidance,  $10^{-4}$  is the action criterion below which media do not generally need to be treated at any site, regardless of future use. Once treatment was required due to risk,  $10^{-6}$  was used as the point of departure for evaluating the effectiveness of the treatment technologies. The Army believes the selected remedy will be protective of human health and the environment; this protectiveness includes the wildlife residing or foraging at the Refuge.

**Page 4, third paragraph:** Please see the response to your comment at **Page 4, second paragraph**, regarding protection of wildlife. Regarding mercury, arsenic, and asbestos, all three were considered in the DAA and in the IEA/RC. All human health and biota exposures to mercury and arsenic are addressed through landfilling or containment. Asbestos abatement is ongoing.

**Page 4, fourth paragraph:** The Parties disagree on whether the substantive portions of the Colorado Wildlife Enforcement and Penalties Provisions (C.R.S. 33-1-101 et seq. And C.R.S. 33-6-101 et seq.) and Wildlife Commission Regulations (2 CCR 406-8) are applicable or relevant.

and appropriate requirements (ARARs). The U.S. Fish and Wildlife Service in cooperation with the Colorado Department of Natural Resources has agreed to advise the Army, as the lead agency, with respect to the substance of state wildlife laws and regulations, to ensure that, where indicated, such state laws and regulations are taken into account in connection with the implementation of the selected remedy to the extent they are not inconsistent with federal laws and regulations. The Parties each reserve all rights with respect to their respective legal and jurisdictional arguments relating to whether the above-cited state laws and regulations relative to wildlife should be treated ARARs. The On-Post Location-specific ARARs include the National Wildlife Refuge System Administration Act (16 U.S.C. 668dd et. seq.) that prohibits the taking or possessing of any animal or nest or egg within a National Wildlife Refuge, as well as the use of a Refuge for that purpose, except by people authorized to manage the site or unless the activities are allowed at the site. While not considered to be ARARs, the provisions of the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act apply to RMA. As additional protection, Section 44.2(b) of the FFA specifically prohibits the use of RMA groundwater or surface water for potable use, and Section 44.2(c) specifically prohibits consumption of all fish and game taken at RMA. The RMA National Wildlife Refuge Act of 1992 also contains these restrictions. FFA Section 44.4 gives the United States the additional authority to impose and enforce additional restrictions as necessary for the protection of human health and the environment.

**Page 4, last paragraph:** The Army believes that the Complex Trenches, Shell Trenches, and the South Plants Central Processing Area have been adequately characterized in the RI. The areas do have high levels of contamination, and the Army considered this fact in selecting the appropriate remedy for those areas. The Army believes that the selected remedy will be protective of humans and the environment.

AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY

1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
PAYMENT TO BE MADE WITHIN 90 DAYS OF 1 OCTOBER 1996. SUBJECT TO  
THE AVAILABILITY OF FUNDS.

2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
FOLLOWING TERMS. OTHER TERMS AND CONDITIONS WILL BE THE  
SUBJECT OF FURTHER NEGOTIATION.

A. PAYMENTS WILL BE HELD IN TRUST FOR SACWSD. TRUSTEE TO  
BE CHOSEN BY THE ARMY & SHELL WITH SACWSD CONCURRENCE. ANY  
INTEREST THAT ACCRUES MUST BE RETURNED TO THE ARMY AND SHELL.

B. SACWSD MUST HOOK UP OWNERS OF DOMESTIC WELLS IN THE  
DIMP FOOTPRINT WHO CONSENT TO BE INCLUDED IN THE SOUTH ADAMS  
COUNTY WATER AND SANITATION DISTRICT AND WHO CONSENT TO BE  
HOOKED UP; AND SUCH HOOK UPS WILL BE COMPLETED NOT LATER THAN  
THE 24TH MONTH AFTER THE DATE OF THE INITIAL PAYMENT FOR THOSE  
WHO CONSENT BY THE 20TH MONTH AFTER THE INITIAL PAYMENT.  
THOSE WHO REQUEST TO BE HOOKED UP AFTER THE 20TH MONTH WILL  
BE HOOKED UP WITHIN A REASONABLE TIME. AS NOTED IN G, BELOW,  
SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN 130  
HOMES. SACWSD ALSO IS NOT RESPONSIBLE FOR EXTENDING THE MAIN  
WATER DISTRIBUTION SYSTEM BEYOND THE DIMP FOOTPRINT AS  
FINALLY DETERMINED IN THE ON-POST ROD. THE MAIN WATER  
DISTRIBUTION SYSTEM FOR THE HENDERSON AREA (12" DIAMETER PIPE  
SYSTEM) WILL BE COMPLETED BY THE 24TH MONTH AFTER THE INITIAL  
PAYMENT. SACWSD WILL RECEIVE FROM THE TRUST ACCOUNT \$3,950 FOR  
EACH HOME CONNECTED IN THE NEW SERVICE AREA AND \$2,265 FOR  
EACH HOME CONNECTED IN THE OLD SERVICE AREA, UP TO A TOTAL OF  
130 HOMES. ATTACHED IS THE MAP THAT SHOWS THE LATEST DIMP  
PLUME WHICH IS TO BE UPDATED PRIOR TO THE FINALIZATION OF THE  
ON-POST ROD.

C. SACWSD MUST CONTRACT FOR WATER RIGHTS OR SUPPLY BY  
NOT LATER THAN SIX MONTHS AFTER THE DATE OF THE FINAL PAYMENT.

D. PAYMENTS FROM THE TRUST TO SACWSD MUST BE TIED  
DIRECTLY TO THE ACQUISITION AND DELIVERY OF 4000 ACRE FEET OF

WATER AND THE HOOK UP OF WELL OWNERS IN THE HENDERSON AREA. ALL EXPENDITURES BY SACWSD PAID FROM THE TRUST ACCOUNT WILL BE SUBJECT TO AUDIT BY THE ARMY AND SHELL. UP TO \$43 MILLION MAY BE SPENT ACQUIRING AND DELIVERING THE 4000 ACRE FEET OF WATER AND UP TO \$4.65 MILLION MAY BE SPENT ON HOOK UPS IN THE HENDERSON AREA. THE REMAINING \$1.15 MILLION IS TO OFFSET INFLATION OR CONTINGENCIES. ANY EXPENDITURES CHALLENGED BY THE ARMY, SHELL, OR THE TRUSTEE WILL BE SUBMITTED TO THE ALTERNATIVE DISPUTE RESOLUTION (ADR) METHOD DESCRIBED IN E, BELOW.

E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

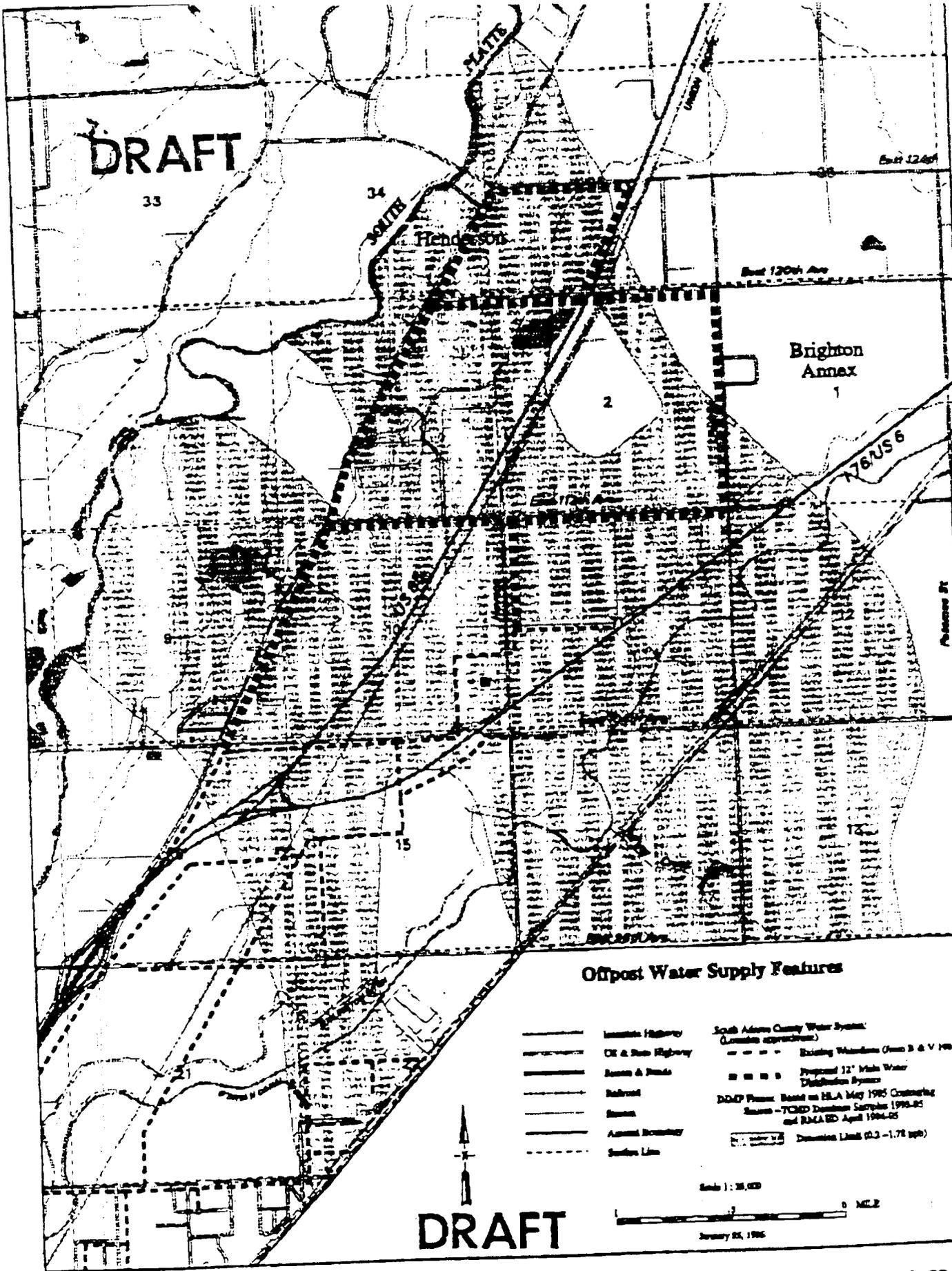
O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

version 10 - 26/01/96



**DRAFT**

33

34

Henderson

Brighton Annex

2

1

15

**Offpost Water Supply Features**

- Interstate Highway
- US & State Highway
- Access & Roads
- Railroad
- Stream
- Annual Boundary
- Surface Line
- South Adams County Water System (Location approximate)
- Existing Mainline (From B & V 1981)
- □ □ □ Proposed 12" Main Water Distribution System
- DDAD Project: Based on EMLA May 1985 Contingent Issues - TCMED Dominant Samples 1990-95 and RMAED April 1994-95
- □ □ □ Dominant Limit (0.2 - 1.78 ug/l)



Scale 1:25,000



January 25, 1996

**DRAFT**



*rec'd 18 Jan 96*

State Representative  
ALICE NICHOL  
891 East 71st Avenue  
Denver, Colorado 80229  
Home: (303) 287-7742  
Capitol: (303) 866-2931



**COLORADO**  
**HOUSE OF REPRESENTATIVES**

STATE CAPITOL  
DENVER  
80203

Member:  
Local Government Committee  
Transportation and Energy  
Committee

January 15, 1996

On-Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal  
Attn: AMCPM-PM  
Col. Eugene Bishop  
Building 111-RMA  
Commerce City, CO 80022-1748

Dear Col. Bishop:

The Proposed Plan and Conceptual Agreement on clean-up activities appears to envision disposing of most, if not all, of the non-hazardous waste on the Rocky Mountain Arsenal without the normal landfill liner requirements for such waste disposal. If non-hazardous waste material is to be disposed of on site, then the appropriate approval process, as well as siting and design standards as would be required of any private company for a non-hazardous landfill facility, should be followed. The same rules that would apply to any private company in landfill siting and construction, should also apply to the Army.

In fact, it is preferable that the Army dispose of all non-hazardous waste material from the Rocky Mountain Arsenal in a properly permitted, designed, and constructed off-site non-hazardous waste landfill. The amount of waste material left on site of the Rocky Mountain Arsenal after clean up activities are completed should be minimized, especially if it can be shown that an off site landfill alternative is more cost efficient than siting, permitting, constructing, and operating an on-site properly designed and constructed non-hazardous landfill. Given the tremendous overhead expenses that would be associated with any on site facility, it is hard to see how any off site facility wouldn't be more cost effective.

In summary, on site disposal of non-hazardous waste from clean-up activities at the Rocky Mountain Arsenal should only be allowed if it is cost effective, and if shown to be cost affective, only if the disposal facility on site is properly sited, permitted, designed and constructed in accordance with all applicable laws and other requirements. The alternative of utilizing of an off site non-hazardous waste landfill should be seriously considered, and at the very least, the

proposed Record of Decision should incorporate a commitment to perform a study of comparative costs and benefits of on site versus off site disposal alternatives, before any final decision is made in this regard.

Sincerely,

A handwritten signature in cursive script that reads "Alice Nichol".

Alice Nichol  
State Representative

AN/jw



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80222-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

The Honorable Alice Nichol  
State Representative  
891 E. 71st Avenue  
Denver, Colorado 80229

Dear Representative Nichol:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

Your letter proposes either off-site disposal of nonhazardous materials or construction of an onsite, nonhazardous waste facility in compliance with the Resource Conservation and Recovery Act. The Army understands your concern that this material be disposed properly and believes that the approach of placing the material under the Basin A cover will adequately immobilize any contaminants and provide a cost-effective method for disposal of nonhazardous materials. In addition, a large volume of fill material will be required to construct the Basin A Consolidation Area, and the RMA nonhazardous material will satisfy that need. Furthermore, by consolidating nonhazardous material onsite, there will be no negative impact from a large number of trucks moving through the surrounding community. Cost for fill material is also minimized. Therefore, the Army chose to keep the nonhazardous material onsite to be used as fill material for the Basin A Consolidation Area.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,

Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

*Readiness is our Profession*

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748

Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202

Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

**November 14, 1995**

**On Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal  
Atten: AMCPM-PM  
Col. Eugene H. Bishop  
Building 111 - RMA  
Commerce City, Colorado 80022-1748**

***Critique on PPRMA On Post Operable Unit***

**1. The PPRMA should be published in two distinct parts: Part A, Historical Record retained in the libraries as listed on page 4 (Park Hill Library also has the only final detailed analysis of Alternatives report on file as of this date) and Part 2, a portable record coordinated with the historical record.**

**Part 1 would be the official document which would eventually become the Record of Decision (ROD). Part 2 would be a series of base maps at 1:24000 scale which would be visual displays of the problems areas (soils, structures and water) coordinated with Part 1 in every decision. These maps would be portable for exhibit and discussion at all public or parties meetings.**

**2. It is strongly suggested that the discussion under Range of Developed Alternatives, Incorporation of the Conceptual Remedy on Pages 11 and 12 of the Plan and the summary on Page 17 should be carefully heeded by the parties.**

**3. The implementation of items 1 and 2 would suggest a joint meeting with the parties and other interested groups or persons to emphasis the need to arrive at the best public understanding of the plan.**

**4. With specific reference to a possible trust fund (see enclosed correspondence), a little research (by a naive layman) indicates some interesting facets of the financial aspects of the RMA cleanup. The trust fund would be supported by an original appropriation of 250 Million dollars held in escrow for 10 years at 6% producing \$197,750 million. Two years hence the next**

appropriation of \$125 million would be made at 6% for 10 years et cetera. This schedule at the end of 9 years would appear as follows:

Years	Capital (appropriation)	Int. @ 6%/10/years	End of 10 year period
1	250,000,000	197,750,000	2006
3	125,000,000	98,875,000	2009
5	125,000,000	98,875,000	2011
7	125,000,000	98,875,000	2013
9	<u>125,000,000</u>	98,875,000	2015
Capital	750,000,000	593,250,000	
Int. Through 2015	<u>593,250,000</u>		
Money Avail.	1,343,250,000	at the end of 2015	
Already spent	<u>750,000,000</u>		
	2,093,250,000		

Please notice that at the beginning of discussion under item 4 I mentioned escrow. The scheme would not be effective in the present fiscal year. The Army has been assured of its appropriations for this fiscal year. This situation would hopefully give a public private partnership an opportunity to bolster the trust fund with individual or corporate tax exempt donations. This would give the general public a direct chance to rehabilitate the environment we need to protect for our survival (and politicians). See comment plan item 4.1-3.

The fiscal control of trust fund should be overseen by General Accounting Office as an independent unbiased government agency.

5. Will this opportunity affect the time schedule for the ROD adversely?

Sincerely,  
  
 Waldo G. Smith, P.E.  
 SSAB, RAB  
 Enclosures



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
INSTALLATIONS LOGISTICS AND ENVIRONMENT  
110 ARMY PENTAGON  
WASHINGTON DC 20310-0110



October 18, 1995

2...  
ITEM 4.1

Mr. Dennis Gallagher  
Councilman, District One  
Room 451, City and County Building  
Denver, Colorado 80202

Dear Councilman Gallagher:

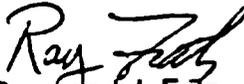
I would like to thank you and Mr. Smith for your letter of August 29, 1995, to President Clinton concerning the trust fund provision in the Agreement for A Conceptual Remedy for the Cleanup of Rocky Mountain Arsenal.

The Army is very proud of the Agreement reached on the cleanup of Rocky Mountain Arsenal and we appreciate your interest in the matter. As you know, the trust fund is one part of a multi-part agreement representing the cooperative efforts of many parties, public and private alike.

Pursuant to the Agreement, the Army will commit its good faith, best effort towards the establishment of the trust fund. As indicated in the Agreement, establishment of the fund will require special Congressional legislation and the Army is subject to certain restrictions with respect to legislative proposals. The Army is committed to fulfilling its responsibility under the Agreement in accordance with those restrictions.

Thank you again for the letter. Your enthusiasm for the trust fund and the cleanup agreement is appreciated. I welcome your continued participation in the process to clean up the Rocky Mountain Arsenal.

Sincerely,

  
Raymond J. Fatz

Acting Deputy Assistant Secretary of the Army  
(Environment, Safety and Occupational Health)  
OASA(I,L&E)

- advisory group will be convened within the next 180 days. Any health assessments completed by CDPHE and ATSDR will be formally reviewed by the Parties prior to issuance to the Medical Monitoring Advisory Group or the public.
- o The primary goals of the Medical Monitoring Plan are to monitor any off-post impact on human health due to the remediation and provide mechanisms for evaluation of health status on an individual and community basis, until such time as the soil remedy is completed.

19. Trust Fund

- o The Parties commit to good faith best efforts to establish a trust fund for the operations and maintenance of the remedy, including habitat and surficial soils. The Parties recognize, however, that establishment of such a trust fund requires special legislation and there are restrictions on the actions federal agencies can take with respect to proposing legislation and supporting proposed legislation. The funding amount will be determined in the Final DAA and would be funded by the U.S. Army and Shell Oil Company.

20. Criteria for Shutting Down Groundwater Boundary and Off-post Containment Systems

- o Existing wells within the boundary and off-post containment systems (BCS) can be removed from production when concentrations of constituents detected in the well are less than applicable or relevant and appropriate requirements (ARARs) established in the ROD and/or it can be demonstrated that discontinuing operation of a well would not jeopardize the containment objective of the systems. The containment objective of the systems will be outlined in the ROD. Wells removed from production and monitoring wells up-gradient and down-gradient of the BCS will be monitored quarterly for a period of five years to determine if contaminants reappear, except those wells turned off for hydraulic purposes will not be subject to the quarterly monitoring requirements. BCS extraction wells removed from production for water quality reasons will be placed back into production if contaminant concentrations exceed ARARs established in the ROD. Wells with concentrations less than ARARs established in the ROD can remain in production if additional hydraulic control is required.

21. Criteria for Shutting Down Internal Containment Systems (ICS)

- o Existing wells within the internal containment systems (ICS) can be removed from production when concentrations of constituents detected in the wells are less than

August 25, 1995

COMMENT PLAY  
ITEM 43

North Denver Community Center  
3627 W. 32nd Avenue  
Denver, CO 80211

Honorable William Jefferson Clinton  
President of the United States  
Washington, D.C. 20500

Dear Mr. President:

The attached letter of August 4, 1995 is indeed encouraging. Just maybe, we are witnessing democracy in action.

With reference to change, the accommodation to an innovative trust fund for the RMA cleanup would assuredly have interesting political repercussions. This action could serve as a demonstration of public private partnership all the way through government to the grass roots.

Specifically I visualize at least three important advantages of this concept:

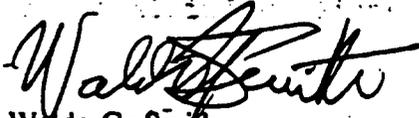
1. The elimination or at least a reasonable reduction in the yearly political hassle over appropriations for this purpose.
2. The process should be designed in such a manner so as to accommodate to an eventual rollover into O and M for the ultimate project: National Wildlife Refuge.
3. The development of a public private concern for the environment necessary to our economic security.

Item 3 above suggests that a simple short understandable platform for politicians could be: "We stand for a public private partnership to sustain the national security, the national economy and the national environment with liberty, life and happiness for the good of the U.S.A." (Paraphrase of the Declaration of Independence).

Sincerely,



Dennis J. Gallagher  
Councilman 1st District  
Denver County



Waldo G. Smith  
Aide to Councilman Gallagher

Enclosures

✓cc: Raymond J. Fatz, Acting Deputy Asst. Sec. Army

9532402-1/1-C

## DENVER AND THE WEST

ITEM 5

## Arsenal seeks water supply

By Renate Robey  
Denver Post Staff Writer

AURORA — The Rocky Mountain Arsenal wants to take over Fitzsimons Army Medical Center's water rights when the post closes due to defense cuts.

The arrangement won't cover drinking water for post residents or the hospital but could pertain to water from the High Line Canal that is now being used to irrigate about 50 acres of farmland near Fitzsimons' East Colfax Avenue gate. The land is planted in alfalfa.

Arsenal officials want to use the water to help clean up contamination at the site where Shell Oil Co. once manufactured pesticides and the U.S. Army made chemical weapons.

Arsenal officials have asked the Army for its rights to 525 acre feet of water. An acre foot provides enough water to supply a family of four for a year, or more than 25,000 gallons.

## Officials to bid on Fitzsimons' rights to help cleanup toxic land

Fitzsimons gets its drinking water from the Denver Water Board. Although the post is entirely within the boundaries of Aurora, when it opened in 1918 the city didn't have enough water to supply the post. As Fitzsimons is redeveloped for civilian use, the new users will rely on Aurora's municipal water supply.

The arsenal is one of three federal agencies interested in taking over parts of Fitzsimons. Federal agencies get priority when deciding what to do with surplus property.

The Air Force has asked the Army for about 125 acres of land at the 577-acre post, including military housing and other buildings. The Department of Veterans Af-

fairs has asked the Army for the main hospital and other related buildings. All three agencies have until the end of November to detail their plans for the site. Then the Army must decide who gets the site and the water rights.

The arsenal would use the water to replant some areas with prairie grasses after contaminated soil is dug up and removed.

There are also several lakes at the arsenal which need to be kept full as part of the cleanup efforts, and the Fitzsimons water would help do that. Maj Garry Brewer, chief counsel for the arsenal, said it will need about 3,000 acre feet of water and doesn't have nearly that much.

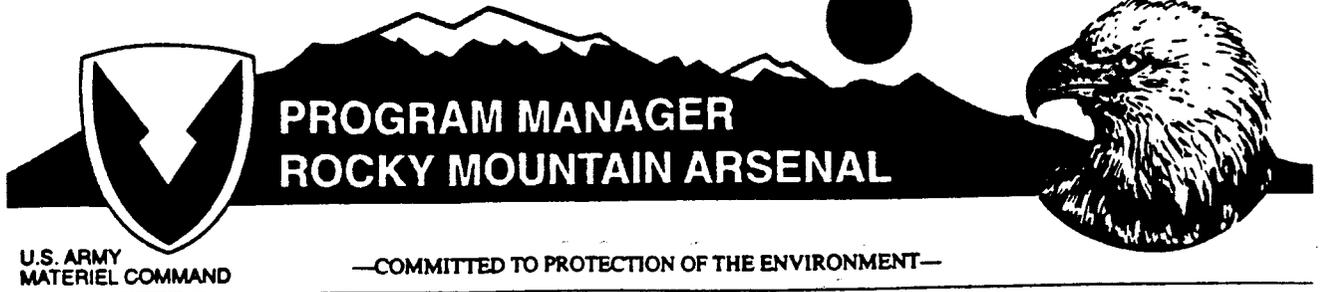
The arsenal wouldn't have to pay for Fitzsimons' water rights, Brewer said. The arsenal would simply take water from a different point in the canal than Fitzsimons does.

But farmer Raymond Hanson's alfalfa fields would pay the price. Hanson has farmed the area for hay for his livestock for 15 years. The practice is common on military bases with vacant sections that can be farmed or grazed.

Hanson, an Aurora rancher, has been farming surplus military land for decades. He started farming at the former Lowry Air Force Base in 1973. Since that base has closed, and Fitzsimons is on the way out, his future is in question. Hanson also lost another 1,500-acre chunk of hay-producing land because of development around Denver International Airport.

"It's a big disappointment," said Hanson. "Living this close to the city, it's a way of life."

COMMENT PLAN  
RA, 11, 12, 17



# Proposed Plan *for the* Rocky Mountain Arsenal On-Post Operable Unit

## ■ Citizen's Summary

### What is the purpose of this report?

The purpose of this Proposed Plan is to identify the U.S. Department of the Army's (Army's) preferred remedial alternatives<sup>1</sup> for contaminated water, structures, and soil at Rocky Mountain Arsenal so that the public can participate in the alternative selection process. The Arsenal is located in southern Adams County, Colorado, north of Denver.

The Army is submitting this Proposed Plan to the public in recognition of

the importance of public involvement in the environmental restoration of the Arsenal. Its submittal is consistent with Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Both CERCLA and the NCP require the investigation and remediation of contamination that poses a potential threat to human health and the environment. Documents that detail such investigations at the Arsenal are listed on pages 3 and 4.

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## Mark Your Calendar: Opportunities for Public Involvement

### Public Meeting

Saturday  
November 18, 1995

### Location

Rocky Mountain Arsenal  
Building 111-A  
Commerce City, CO 80022

### Time

9:00 a.m.

### Administrative Record Location

Rocky Mountain Arsenal  
Building 135, Room 16  
72nd Avenue and Quebec Street  
Commerce City, CO 80022

### Hours

Monday, Wednesday, and Friday  
Noon to 4:30 p.m.  
Tuesday and Thursday  
5 p.m. to 9 p.m.  
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10 a.m. to 4 p.m.

### Telephone

Phone: (303) 289-0136  
(800) 862-0754

### Public Comment Period

October 16 through  
December 15, 1995

### Send Comments to

On-Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal  
Attn.: AMCPM-PM/  
Col. Eugene H. Bishop  
Building 111—RMA  
Commerce City, CO 80022-1748

<sup>1</sup> Items shown in bold print are included in the glossary on page 29.

complete than the others. In addition, most of the highly contaminated soil is excavated and moved, which involves a higher short-term risk to workers and the surrounding community.

**Sitewide Alternative 4 is preferred because it is more effective in the long term than Sitewide Alternatives 1, 2, or 3 in reducing, through treatment, the toxicity and mobility of some of the most contaminated soil, and is more cost effective and implementable than Sitewide Alternative 5.** In this instance, the short-term risks of excavation and transport are balanced by the long-term effectiveness and the moderate cost of the alternative. This results in an overall effectiveness that is greater than that of the other alternatives. In addition, this alternative remediates risks to wildlife in the central sections of the Arsenal. The Supplemental Field Study and USFWS biomonitoring program address potential risks to wildlife outside this area. The preferred soil alternative is highlighted on Table 10 (page 25) and shown on Figure 4 (page 27).

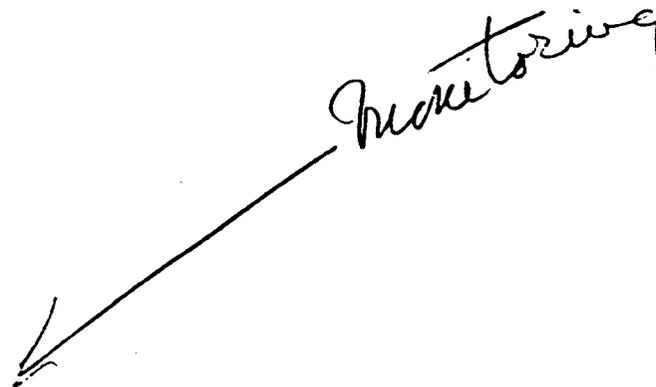
ronment by using a combination of treatment and containment as principal elements to permanently reduce the toxicity, mobility, and volume of contaminants in structures, soil, and groundwater; (2) comply with ARARs; and (3) be cost effective.

---

## ■ Summary

The preferred alternatives rank highest with respect to the criteria used to evaluate the alternatives and they are consistent with the NCP and the statutory requirements of CERCLA. In addition, the preferred alternatives are required to be reviewed every 5 years with regard to their protectiveness of human health and the environment and compliance with applicable regulations and continued on-post monitoring programs. Areas requiring long-term operation and maintenance (see page 11, Range of Developed Alternatives) consistent with the preferred alternatives are shown in Figure 5 (page 28). On the basis of the available information, the Army concludes that the preferred alternatives would (1) address the threats to human health and the envi-

*Monitoring*



*Recd 18 Dec 95*

**December 14, 1995**

**Waldo G. Smith, P.E.  
3627 W. 32nd Avenue  
Denver, Colorado 80211**

**On Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal  
Atten: AMCPM-PM  
Col. Eugene H. Bishop  
Building 111 - RMA  
Commerce City, Colorado 80022-1748**

***Critique on PPRMA On Post Operable Unit***

**1. The PPRMA should be published in two distinct parts: Part 1, Historical Record retained in the libraries as listed on page 4 (Park Hill Library also has the only final detailed analysis of Alternatives report on file as of this date) and Part 2, a portable record coordinated with the historical record.**

**Part 1 would be the official document which would eventually become the Record of Decision (ROD). Part 2 would be a series of base maps at 1:24000 scale which would be visual displays of the problems areas (soils, structures and water) coordinated with Part 1 in every decision. These maps would be portable for exhibit and discussion at all public or parties meetings.**

**2. It is strongly suggested that the discussion under Range of Developed Alternatives, Incorporation of the Conceptual Remedy on Pages 11 and 12 of the Plan and the summary on Page 17 should be carefully heeded by the parties.**

**3. The implementation of items 1 and 2 would suggest a joint meeting with the parties and other interested groups or persons to emphasis the need to arrive at the best public understanding of the plan.**

**4. Discussion of a trust fund to support the financial funding for the RMA clean-up brings up complications which invite closer investigation by the Treasury Department and the General Accounting Office in cooperation with the parties and other groups. Frankly, there could develop a situation which demanded a new accounting system to accommodate to the trust fund as ordinarily conceived as well as the present pay as you go shaky appropriations**

system.

*Any scheme would not be effective in the present fiscal year. The Army has been given appropriations for fiscal year 1995-96 (so I understand) in this situation would hopefully give public private partnership an opportunity to develop a trust with corporate or individual tax exempt donations. To avoid conflicting methods of disbursement of funds, the appropriations would continue to support O & M operations within the RMA clean-up; the revenue generated by trust fund (interest only) would only meet unforeseen contingencies which could stall the clean-up final completion in yr. 2008.*

*This accommodation to appropriations and trust fund should guarantee (provided political maneuvering is not condoned) that the O & M operations of the RMA clean-up will meet the deadline of 2008 A.D.*

*The fiscal control of the trust fund should be overseen by the GAO as an independent on bias government agency.*

5. *Does this opportunity (R2B 11/15/95 attached) affect the time schedule for ROD adversely?*

Sincerely,



Waldo G. Smith, P.E.

SSAB, RAB

Enclosures



DEPARTMENT OF THE ARMY  
OFFICE OF THE ASSISTANT SECRETARY  
INSTALLATIONS LOGISTICS AND ENVIRONMENT  
110 ARMY PENTAGON  
WASHINGTON DC 20310-0110



October 18, 1995

2...  
ITEM 4.1

Mr. Dennis Gallagher  
Councilman, District One  
Room 451, City and County Building  
Denver, Colorado 80202

Dear Councilman Gallagher:

I would like to thank you and Mr. Smith for your letter of August 29, 1995, to President Clinton concerning the trust fund provision in the Agreement for A Conceptual Remedy for the Cleanup of Rocky Mountain Arsenal.

The Army is very proud of the Agreement reached on the cleanup of Rocky Mountain Arsenal and we appreciate your interest in the matter. As you know, the trust fund is one part of a multi-part agreement representing the cooperative efforts of many parties, public and private alike.

Pursuant to the Agreement, the Army will commit its good faith, best effort towards the establishment of the trust fund. As indicated in the Agreement, establishment of the fund will require special Congressional legislation and the Army is subject to certain restrictions with respect to legislative proposals. The Army is committed to fulfilling its responsibility under the Agreement in accordance with those restrictions.

Thank you again for the letter. Your enthusiasm for the trust fund and the cleanup agreement is appreciated. I welcome your continued participation in the process to clean up the Rocky Mountain Arsenal.

Sincerely,

*Ray Fatz*  
Raymond J. Fatz

Acting Deputy Assistant Secretary of the Army  
(Environment, Safety and Occupational Health)  
OASA(I,L&E)

- advisory group will be convened within the next 180 days. Any health assessments completed by CDPHE and ATSDR will be formally reviewed by the Parties prior to issuance to the Medical Monitoring Advisory Group or the public.
- o The primary goals of the Medical Monitoring Plan are to monitor any off-post impact on human health due to the remediation and provide mechanisms for evaluation of health status on an individual and community basis, until such time as the soil remedy is completed.

19. Trust Fund

- o The Parties commit to good faith best efforts to establish a trust fund for the operations and maintenance of the remedy, including habitat and surficial soils. The Parties recognize, however, that establishment of such a trust fund requires special legislation and there are restrictions on the actions federal agencies can take with respect to proposing legislation and supporting proposed legislation. The funding amount will be determined in the Final DAA and would be funded by the U.S. Army and Shell Oil Company.

20. Criteria for Shutting Down Groundwater Boundary and Off-post Containment Systems

- o Existing wells within the boundary and off-post containment systems (BCS) can be removed from production when concentrations of constituents detected in the well are less than applicable or relevant and appropriate requirements (ARARs) established in the ROD and/or it can be demonstrated that discontinuing operation of a well would not jeopardize the containment objective of the systems. The containment objective of the systems will be outlined in the ROD. Wells removed from production and monitoring wells up-gradient and down-gradient of the BCS will be monitored quarterly for a period of five years to determine if contaminants reappear, except those wells turned off for hydraulic purposes will not be subject to the quarterly monitoring requirements. BCS extraction wells removed from production for water quality reasons will be placed back into production if contaminant concentrations exceed ARARs established in the ROD. Wells with concentrations less than ARARs established in the ROD can remain in production if additional hydraulic control is required.

21. Criteria for Shutting Down Internal Containment Systems (ICS)

- o Existing wells within the internal containment systems (ICS) can be removed from production when concentrations of constituents detected in the wells are less than

August 25, 1995

CONFIDENTIAL  
ITEM 43

North Denver Community Center  
3627 W. 32nd Avenue  
Denver, CO 80211

Honorable William Jefferson Clinton  
President of the United States  
Washington, D.C. 20500

Dear Mr. President:

The attached letter of August 4, 1995 is indeed encouraging. Just maybe, we are witnessing democracy in action.

With reference to change, the accommodation to an innovative trust fund for the RMA cleanup would assuredly have interesting political repercussions. This action could serve as a demonstration of public private partnership all the way through government to the grass roots.

Specifically I visualize at least three important advantages of this concept:

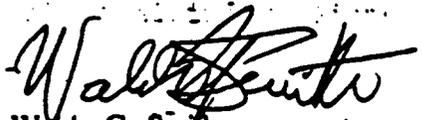
1. The elimination or at least a reasonable reduction in the yearly political hassle over appropriations for this purpose.
2. The process should be designed in such a manner so as to accommodate to an eventual rollover into O and M for the ultimate project: National Wildlife Refuge.
3. The development of a public private concern for the environment necessary to our economic security.

Item 3 above suggests that a simple short understandable platform for politicians could be: "We stand for a public private partnership to sustain the national security, the national economy and the national environment with liberty, life and happiness for the good of the U.S.A." (Paraphrase of the Declaration of Independence).

Sincerely,



Dennis J. Gallagher  
Councilman 1st District  
Denver County



Waldo G. Smith  
Aide to Councilman Gallagher

Enclosures

✓cc: Raymond J. Fatz, Acting Deputy Asst. Sec. Army

9532402-1/1-C

## DENVER AND THE WEST

ITEM 5

## Arsenal seeks water supply

By Renate Robey  
Denver Post Staff Writer

AURORA — The Rocky Mountain Arsenal wants to take over Fitzsimons Army Medical Center's water rights when the post closes due to defense cuts.

The arrangement won't cover drinking water for post residents or the hospital but could pertain to water from the High Line Canal that is now being used to irrigate about 50 acres of farmland near Fitzsimons' East Colfax Avenue gate. The land is planted in alfalfa.

Arsenal officials want to use the water to help clean up contamination at the site where Shell Oil Co. once manufactured pesticides and the U.S. Army made chemical weapons.

Arsenal officials have asked the Army for its rights to 525 acre feet of water. An acre foot provides enough water to supply a family of four for a year, or more than 25,000 gallons.

## Officials to bid on Fitzsimons' rights to help cleanup toxic land

Fitzsimons gets its drinking water from the Denver Water Board. Although the post is entirely within the boundaries of Aurora, when it opened in 1918 the city didn't have enough water to supply the post. As Fitzsimons is redeveloped for civilian use, the new users will rely on Aurora's municipal water supply.

The arsenal is one of three federal agencies interested in taking over parts of Fitzsimons. Federal agencies get priority when deciding what to do with surplus property.

The Air Force has asked the Army for about 125 acres of land at the 577-acre post, including military housing and other buildings. The Department of Veterans Af-

fairs has asked the Army for the main hospital and other related buildings. All three agencies have until the end of November to detail their plans for the site. Then the Army must decide who gets the site and the water rights.

The arsenal would use the water to replant some areas with prairie grasses after contaminated soil is dug up and removed.

There are also several lakes at the arsenal which need to be kept full as part of the cleanup efforts, and the Fitzsimons water would help do that. Maj Garry Brewer, chief counsel for the arsenal, said it will need about 3,000 acre feet of water and doesn't have nearly that much.

The arsenal wouldn't have to pay for Fitzsimons' water rights, Brewer said. The arsenal would simply take water from a different point in the canal than Fitzsimons does.

But farmer Raymond Hanson's alfalfa fields would pay the price. Hanson has farmed the area for hay for his livestock for 15 years. The practice is common on military bases with vacant sections that can be farmed or grazed.

Hanson, an Aurora rancher, has been farming surplus military land for decades. He started farming at the former Lowry Air Force Base in 1973. Since that base has closed, and Fitzsimons is on the way out, his future is in question. Hanson also lost another 1,500-acre chunk of hay-producing land because of development around Denver International Airport.

"It's a big disappointment," said Hanson. "Living this close to the city, it's a way of life."





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RAYMOND J. GARVEY



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80222-1748



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Mr. Waldo Smith  
North Denver Community Center  
3627 W. 32nd Avenue  
Denver, Colorado 80211

Dear Mr. Smith:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation in the process helps maintain the dialogue between the U.S. Army and the public.

In response to your query about dividing the On-Post Plan into two sections, the On-Post Record of Decision (ROD) format follows U.S. Environmental Protection Agency (EPA) guidelines and the format of the Off-Post ROD, and so no changes will be made to the layout of the document.

The Army agrees with you that the proposed remediation alternative should be carefully followed and that all parties should communicate effectively to arrive at the best possible public understanding of the plan. The Army is proud of its success in cooperating with the State of Colorado, Shell Oil Company, the EPA, the U.S. Fish and Wildlife Service, and local stakeholders to arrive at a ROD to remediate RMA, and looks forward to working with stakeholders as the remediation process extends into the future.

During the formulation and selection of the remedy, members of the public and some local governmental organizations expressed keen interest in the creation of a Trust Fund, as you do in your comment, to help ensure the long-term operation and maintenance of the remedy. The Parties have committed to good-faith best efforts to establish such a Trust Fund, as described in the On-Post ROD. Principal and interest from the Trust Fund would be used to cover the costs of long-term operation and maintenance throughout the lifetime of the remedial program. These costs are estimated to be approximately \$5 million per year (in 1995 dollars).

It is the intent of the Parties that if the Trust Fund is created it will include a statement containing the reasons for the creation of the Trust Fund, a time frame for establishing and funding the Trust Fund, and an appropriate means to manage and disburse money from the Trust Fund. The Parties are also examining possible options that may be adapted from trust funds involving federal funds that exist at other remedial sites. The Parties recognize that establishing a Trust Fund may require special congressional legislation and that there are restrictions on the

*Readiness is our Profession*

actions federal agencies can take with respect to such legislation. Because of the uncertainty of possible legislative requirements and other options, the precise terms of the Trust Fund cannot now be stated.

A Trust Fund group will be formed to develop a strategy to establish the Trust Fund. The strategy group may include representatives of the Parties (subject to restrictions on federal agency participation), local governments, affected communities, and other interested stakeholders and will be convened within 90 days of the signing of the ROD.

According to the U. S. Government Manual, "The General Accounting Office [GAO] is charged with examining all matters relating to the receipt and disbursement of public funds." The existence of a Trust Fund containing government funds and the use of such a fund is subject to GAO audit. Fiscal control of such a fund is not considered to be within GAO's delegated authority.

The Army intends to stay on the current schedule for the ROD so that the RMA remediation can go forward.

If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,



Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748  
Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202  
Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

On Post Proposed Plan Comments  
Program manager  
Rocky Mountain Arsenal (RMA)  
Attn: AMCPM-PM/Col. Eugene H. Bishop  
Building 111-RMA  
Commerce City, Colorado 80022-1748

December 12, 1995

Re: Proposed Plan for the RMA; On Post Operable Unit

To all to whom this may come to affect or may concern as stakeholders of the Rocky Mountain Arsenal, Denver, Colorado:

In May of 1974, diisopropylmethylphosphonate (DIMP) and dicyclopentadiene (DCPD) were detected in the surface water at the northern boundary of the RMA. Later that year the Colorado Department of Health (CDH) detected DIMP in a well north of the RMA. As a result, the CDH issued a cease and desist order directing the RMA to immediately stop the off-post discharge of DIMP and DCPD in surface and subsurface water.

In 1989, the Environmental Protection Agency issued a human Health Advisory for DIMP in drinking water of 600 parts per billion (ppb). Pursuant to a CDH request of the COLORADO WATER QUALITY CONTROL COMMISSION (1991), the Commission elected to adopt the CDH proposed DIMP standard of 8 ppb.

Finally, pursuant to the AGREEMENT FOR A CONCEPTUAL REMEDY FOR THE CLEANUP OF THE ROCKY MOUNTAIN ARSENAL, dated June 13, 1995, the parties agreed as follows:

- o As of the date of the On Post Record of Decision (ROD), and based on a .392 ppb detection limit, the U.S. Army will use the last available quarterly monitoring results to determine the DIMP plume footprint.
- o The U.S. Army and Shell Oil Company will pay for the extension of, and hook-up to the current distribution system for all existing well owners within the DIMP plume footprint referenced above.
- o Existing domestic well owners outside the DIMP plume footprint as of the date of the On Post ROD where it is later determined that levels of DIMP are 8 ppb or greater will be hooked up at the U.S. Army and Shell Oil Company's expense to the South Adams County Water and Sanitation District (SACWSD) distribution system or provided a deep well or other permanent solution.
- o The U.S. Army and Shell Oil Company agree to pay for, and provide or arrange for the provision of 4,000 acre feet of water, the details of which will be worked out between the U.S. Army, Shell Oil Company and SACWSD.

On September 7, 1995, I learned that the intention of the U.S. Army and Shell Oil Company, with respect to the referenced agreement provisions above intend as follows:

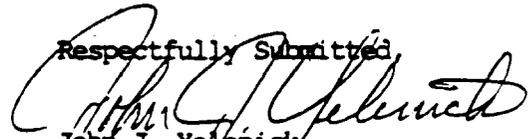
- o The Platt River will be designated as the northern-most perimeter for remediation of groundwater despite the fact that DIMP contamination has crossed north of the Platt River;
- o The distribution system hookup for "all existing well owners" within the DIMP plume footprint is actually intended only for domestic well owners. The hookup provision does not consider or restrict other forms of exposure to contaminated groundwater.

Pursuant to the FEDERAL FACILITY AGREEMENT, pg. 12, Groundwater means water in a saturated zone or stratum beneath the surface of land or water (Note: No differentiation between irrigation and drinking water). Page 5 paragraph 2.7 also affirms that "Groundwater and surface water flowing beyond the Arsenal boundaries will be of a quality that is protective of human health and the environment".

Given the extensive exposure to DIMP, wherein the quantitative exposure limitations have changed from 600 ppb in 1989 to 0.392 ppb in 1995 for neighboring households, I urge that the language of "hook-up to the current distribution system for all existing well owners within the DIMP plume footprint be strictly adhered to -- without limitation to the respective well use permit disclosure.

o The provision of 4,000 acre feet of replacement water will not be enough, in quantity, to mitigate the SACWSD loss of 4,300 acre feet of shallow well water, SACWSD loss of 700 acre feet of deep well water, and supply the anticipated DIMP plume footprint exposure areas with an additional 2,500 acre feet.

Respectfully Submitted,



John J. Yelenick  
Denver, Colorado

Member: RMA Restoration Advisory Board  
Member: RMA Site Specific Advisory Board

On Post Proposed Plan Comments  
Program Manager  
Rocky Mountain Arsenal (RMA)  
Attn: AMCPM-PM/Col. Eugene H. Bishop  
Building 111 -RMA  
Commerce City, Colorado 80022-1 748

December 13, 1995

Re: Proposed Plan for the RMA; On-Post Operable Unit.

To all to whom this may come to affect or may concern as stakeholders of the Rocky Mountain Arsenal, Denver, Colorado:

Pursuant to the requirements of the COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION and LIABILITY ACT (CERCLA) Sections 113 (k) (2) (B) (i-v) and 117(a), the NATIONAL OIL and HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN and the RMA FEDERAL FACILITY AGREEMENT, I hereby submit these written comments for inclusion into the Record of Decision; the Official Administrative Record for On & Off Post "Record of Decision".

WHEREAS the remedial action objective for the RMA On-Post Operable Plan is to "Ensure that groundwater reaching the RMA boundary will be of a quality that is protective of human health..."; 1

WHEREAS "Groundwater usage (either domestic and/or agricultural) is the primary contributor to carcinogenic risk, accounting for 45 to 99 percent of the total risk estimated for each zone. This indicates the major role of the groundwater - related exposure pathways. "; 2

WHEREAS the FEDERAL FACILITY AGREEMENT stipulates that "Response Actions will be sufficient to prevent the vertical and horizontal migration of on-post contaminated groundwater and surface water so that off-post surface water and groundwater may be used in areas outside of the Arsenal boundaries,"; 3

WHEREAS "Groundwater means water in a saturated zone or stratum beneath the surface of land or water. "; 4

WHEREAS "Alternatives that do not meet the requirements of the FEDERAL FACILITY AGREEMENT will be determined to not be implementable."; 5

I hereby submit for your consideration, data for the RMA indicating that there is a high probability that South Plants contamination is escaping the southern RMA boundary via groundwater migration of which the RMA On-Post Operable Unit preferred water alternative fails to address and mitigate.

For purposes of objectivity in presentation, I attach depictive EXHIBITS which I hereby incorporate into these, my comments, for the Record of Decision. My comments conclude with text by- Mr. James J. Snodgrass - Geophysicist with the UNITED STATES BUREAU of MINES who affirms the southern migration supposition through his independent assessment of this, and other documentation.

Background:

The SOUTH PLANTS CONTAMINATION SURVEY and REMEDIAL ACTION ASSESSMENT investigated seventeen suspected disposal sites (Task 2:1985 - 78 spill events) in the manufacturing complex and conducted a program to sample historically documented spill sites per the historical data classification by the UNITED STATES ARMY TOXIC and HAZARDOUS MATERIALS AGENCY (USATHAMA). High Priority was given to sites proximate to groundwater and historically documented with records. Low Priority was designated for sites without historical records of groundwater contamination yet still proximate to recorded spills. The designation UNCONTAMINATED SITES/NON-SOURCE AREAS was afforded to sites which may have been contaminated but without historical records to prove contamination; or in the alternative, if no responsible party could be identified as having contaminated the given site. 6

According to the STRUCTURES SURVEY REPORT, there are 982 structures on the RMA; approximately 53 percent were located on the South Plants sections #1 & 2; however, over half of the buildings and other structures' history documentation was incomplete. Low Priority and "Uncontaminated/Non-Source" designated sites had contamination test bore holes, whose depth reached only the surface of the water table levels under the auspices that "contaminants present below 5 feet, or in the saturated zone, are considered to be related to groundwater contamination by water table fluctuations and possible lateral migration." (Source: FINAL Phase I Contamination Assessment Report, July 1988 pg. 143) Literal 'In-Depth' investigations were necessary at all of these 'discounted' areas! Generally speaking, subsequent testing and geotechnical studies focused on the historical source sites rather than contaminant pathways, aka: "Secondary Sources/Non-Source" areas. 6

During the production phases at the RMA, the primary concern was the manufacture of the end items on schedule ... solid and slurry waste was often disposed of in the most convenient and expeditious manner, often without regard to its contamination status. 7

EXHIBIT A, Figure SPSA 2.4-5 demonstrates Volatile Aromatic Organics (VAO's moderate aqueous solubility, high volatility) in the South Plants groundwater (1979/1983) in magnitudes in excess of Certified Reporting Limits; EXHIBIT B, Figure SPSA 2.4-6 for VAO's (specifically ethylbenzene, xylene, and toluene) in 1988/1989; EXHIBIT C, Figure SPSA 3.3-8 for VAO's in the groundwater, 1988; EXHIBIT D, Figure SPSA 3.3-4 demonstrates Volatile Halogenated Organics (VHO's - moderate to high aqueous solubility and volatility) in the groundwater 1988. 8 Per EXHIBIT E, Figure SPSA 3.3-1, we see the southern migration pathway composite for 1979/1983. Per EXHIBIT F, Figure SPSA 3.3-2, the southern migration pathway composite for 1988 is illustrated. 9

My review of available documentation indicates a southern contaminant migration flow through sections #1 and #2. EXHIBIT G, Figure C.3-1 and EXHIBIT H, Plate 1 demonstrate the southern organic analyte plumes for the unconfined flow system 10. Specifically, EXHIBIT I, Figure SSA 3.5-1 demonstrates the VHO plume (composed specifically of 1,1,1 Trichloroethane, 1,1 dichloroethylene and trichloroethylene: See 8) in the RMA water bearing zones. 11.

EXHIBIT J, Figure SSA 3.4-21 delineates the total area of potential contaminants in soils based on analytical results, historical information and distribution mechanisms. The southern lakes of Ladora, Derby, and Mary and the 1964 lake sediment/solid waste trenches are encompassed. 12. The FINAL DETAILED ANALYSIS OF ALTERNATIVES/WATER DAA affirmed "The highest concentrations of contaminants are observed in wells located beneath the South Plants Central Processing Area and within the 'A' sand or other stratigraphically equivalent units ( See: Pg. 3-7 ); the 'A' sands of sections 1 & 2 and south sections 11 & 12.

The southern lakes are situated on relatively thick permeable alluvial deposits. The deposits pass directly under portions of the South Plants and extend south to Lake Ladora where the deposits act as an important semiconfined aquifer unit. 13

In response to avian mortality occurring on the lakes (approximately 1,200 ducks) 14, Lower Derby, Upper Derby and Lake Ladora were drained and the clay bottom was excavated to remove contaminated sediment (1964-1965). 15 It is important to note the absence of the clay lake bottom; the absence may promote communication between the potentially more permeable alluvial material (deposits of sand and gravel) and the underlying Denver Formation.

Most of the sediment was disposed in section #12, south of Lower Derby Lake amounting to approximately 115,000 cubic yards of soil. 16 The balance, and additional solid waste products from the RMA, were disposed in the trenches south of Lake Ladora. These trenches were not lined.

Inferred volumes of contaminated lake soils include 47,000 cubic yards to only a 3 foot depth in Lake Mary; 120,000 cubic yards to only a 3-4 foot depth in Lake Ladora; 240,000 cubic yards to only a 5 foot depth in Lower Derby Lake; 200,000 cubic yards to only a 3-4 foot depth in Upper and east Derby Lakes and 74,000 cubic yards to only a 3 foot depth in Rod & Gun Club Pond. A total of 15 analytes have been detected in the Lake sediments. 17 Pursuant to the FINAL PHASE I CONTAMINATION ASSESSMENT REPORT/SOUTH PLANTS, July 1988, pg. 145: The estimated contaminated soil vertical extent of 12.5 feet (Note: Groundwater level in the South Plants area occurs at an average depth of 5 feet (a range of 2 to 10 feet) amounted to an estimated volume of 3,085,000 cubic yards!

WATER BALANCE CALCULATIONS INDICATE THAT UPPER & LOWER DERBY LAKES HAVE UNACCOUNTABLE LOSSES OF WATER (25 of the 26 months monitored) AND IT APPEARS THESE LAKES RECHARGE TO THE WATER TABLE. 18 Lake Ladora and Lake Mary also recharge to the groundwater per the Comprehensive Monitoring Program 1975-1989, Dec. 1992 pg. -v-.

The alluvial deposits cross-section are graphically offered in two sections:

EXHIBIT K (with a groundwater flow rate of 192,000 gpd) and EXHIBIT K-1 commence at point 02011,12,13 (aka:SS2) to 11006 thence to alluvial well point 02026,27,28 (aka:SS2'). This cross-section is located immediately south of Lake Ladora and north of the 'lake bottom excavation trenches', situate on the section #2 south/section #11 north boundary known as Commerce City's 64th Avenue/RMA's 6th Avenue. On the same EXHIBIT K and K-2, point 02561 to point 01586 (aka:SS4) to point 02052 (aka:SS5) to point 01024,25,26 (aka:SS1 & SS7). (Note: This cross-section is located between Lake Ladora and Lower Derby situate on the section #2 east/section #1 west boundary known in Denver as Peoria north extension) thence from alluvial well point 01024,25,26 to alluvial well point 12008 to point 01051 to point 01021,22,23 to point 01001 (aka:SS6). This second of two segments/cross-sectional planes are located south of Lower Derby and north of the 'lake bottom excavation trenches', situate on the section #1 south/section #12 north boundary known as Commerce City's 64th Avenue/RMA's 6th Avenue.

Review of these cross-sectionals confirm ready southern migration pathways of sand and gravel. The extent of the sand subcrop, with variable lateral and vertical hydraulic conductivity 13, runs directly under South Plants manufacturing complex that can be seen in EXHIBIT L, Plate 2 (which also identifies additional cross-sectionals to the immediate north of the southern lakes - groundwater table interpositioned).

EXHIBIT M, Figure SSA 1.4-3 demonstrates the position of the coarse gravel and sand interbeds (See EXHIBIT M, Plate WSA 1.4-4) positioned in Eolian deposits with embedded paleochannels situate from the South Plants/South Lakes running through the southern RMA boundary (deposits of which may run to depths of 130 feet thick 19). The paleochannels are filled with coarse sand and gravel that can act as conduits for contamination flow 20; however, per the Modified Preliminary Assessment Site Investigation Report for Leased and Transferred RMA, Oct. 1994 at Pg3. 2-5, not all of the flow is restricted to these channels. Groundwater flow occurs over channel divides and through the Denver aquifer as well.

EXHIBIT N, Figure SSA 1.4-2 depicts the southern study area soils configuration showing a southern sandy loam gradient with 1 - 3 percent slopes, south. Testing results indicate that Lower Derby recharges the groundwater and Lake Ladora and Lake Mary receive groundwater in upgradient areas and lose it in downgradient areas. The direction of flow (up or down) is probably a more reliable indicator of groundwater flow conditions than the indicated magnitude of the gradient. Interpretations of the vertical distributions of contaminants is complicated by the heterogeneous nature of the Denver Formation resulting in variable potential for vertical (and horizontal) flow throughout the RMA.21 "The heterogeneous nature ... makes characterization of the confined flow system (predominantly occurs in permeable sandstone, siltstone and lignite of the unweathered Denver formation) at the scale of the entire site-difficult. The 1994 reclassification of (59%) the original 522 wells designated-confined ... is not appropriate for evaluating flow within the confined flow system of RMA and surrounding areas. 19 However, the potentiometric surfaces of aquifer zones in the confined flow system - indicates there is a potential for downward flow between the unconfined and confined flow system 19.

EXHIBIT O, Figure SSA 1.5-6 sets forth the alluvial aquifer saturated thickness for the southern study area. EXHIBIT P, Figure 4.4 demonstrates the general downward vertical gradient south of the South Plants/Southern Lakes toward the southern RMA boundary. EXHIBIT P-1, Plate 5.6-1 is a graphic depiction of the southern and western migration routes. The regional ground-water flow to the northwest is at an average hydraulic gradient of about 20 ft./mile ( 0.00379 ft./ft. ) to 32 ft./mile ( 0.0061 ft./ft. ) per ANNUAL GROUND-WATER REPORT FOR 1990 dated August 1991; version 1.1 pg.37. or 4/10's of 1% to 6/10's of 1%. The bedrock surface elevation under South Plants measures 5,270 feet dropping to 5,140 feet in a mile span to Section 11 demonstrating a gradient of 130 ft./mile (0.02462 ft./ft.) or approximately 2 1/2%. The southern gradient pathway is as much as 549.6% greater than the northwest gradient (0.00379 ft./ft. %change 0.02462 ft./ft.).

EXHIBIT Q, Figure 4.16 re-emphasizes this southern wayward geographic characteristic. [See: EXHIBIT K-Supplement where South Plants Average Hydraulic Gradient at 'South Plants Study Area southern perimeter equals 0.015 ].

#### Southern Boundary Contaminants:

Contaminants were detected in the water and sediments in the southern sections of sections #11 and #12. 22 EXHIBIT R, Figure 4-1 and EXHIBIT R-1, Figure 3-1 portray the groundwater and gas analyte detections. Individual analytes do not occur repeatedly in water entering RMA (from the southern boundary) per the FINAL REMEDIAL INVESTIGATION SUMMARY REPORT Version 3.2, January 1992 pg. A 3-82.

The topography of sections #11 and #12 contain a dozen wetlands and deep-water habitats of the United States. South and west of RMA sections #11 & #12 is the City of Denver's new residential and industrial 4,700 acre Stapleton development, including a food storage and distribution center at east 56th and Havana streets.

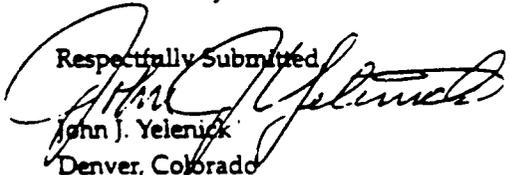
Located immediately south of the RMA sections #11 and #12 lie approximately 2 miles square of the identical community known as Monttello, where recent data indicates "live births of low birth weight infants tend to be clustered in census tracts southwest of the Arsenal where the ratio of black to white females of child-bearing age (15-44 years) is greater than 1.0. As you move away from this area in any direction, the number of live births of low birth weight infants and ratio of black to white females of childbearing age decreased" 23

"The Army arbitrarily and consistently relies on insufficient data to conclude that there is no evidence of contamination or no evidence of a significant migration pathway. The lack of data collected in the Remedial Investigation (RI) cannot be used as a basis for showing no contamination is present or that a particular pathway does not pose a significant threat" (State of Colorado comments on DRAFT FINAL REMEDIAL INVESTIGATION REPORT March 1989; tendered May 1, 1989 pg.3.)

My comments are a call for Environmental Justice given the high probability that South Plants contamination is escaping the southern RMA boundary via groundwater migration - reviewed and supported by Mr. Snodgrass - Geophysicist with the U.S. Bureau of Mines (Copy of his letter dated October 13, 1995 as EXHIBIT S).

The RMA On-Post Operable Unit preferred water alternative fails to address and mitigate the high probability that South Plants contamination is escaping the southern RMA boundary.

Respectfully Submitted

  
John J. Yelenick  
Denver, Colorado

Enclosures: EXHIBITS A - S

Member: RMA Restoration Advisory Board  
Member: RMA Site Specific Advisory Board  
Chairman, South Plants Groundwater Task Force

cc:

United States Environmental Protection Agency  
Region VIII  
999 18th Street - Suite 500 Denver, Colorado 80202-2466  
Attn: Mr. William P. Yellowtail  
Ms. Laura Williams  
Mr. Greg Hargreaves

United States Bureau of Mines Denver Research Center Building #20  
Denver Federal Center, Denver, Colorado 80225  
Attn: Mr. Linden Snyder  
Mr. James Snodgrass

Colorado Department of Public Health and Environment  
4300 Cherry Creek Drive South  
Denver, Colorado 80222-1530  
Attn: Mr. Thomas Looby  
Mr. Jeff Edson  
Ms. Mary Seawell

State of Colorado  
Office of the Attorney General  
1525 Sherman Street, 5th Floor  
Denver, Colorado 80203  
Attn: Ms. Victoria Peters

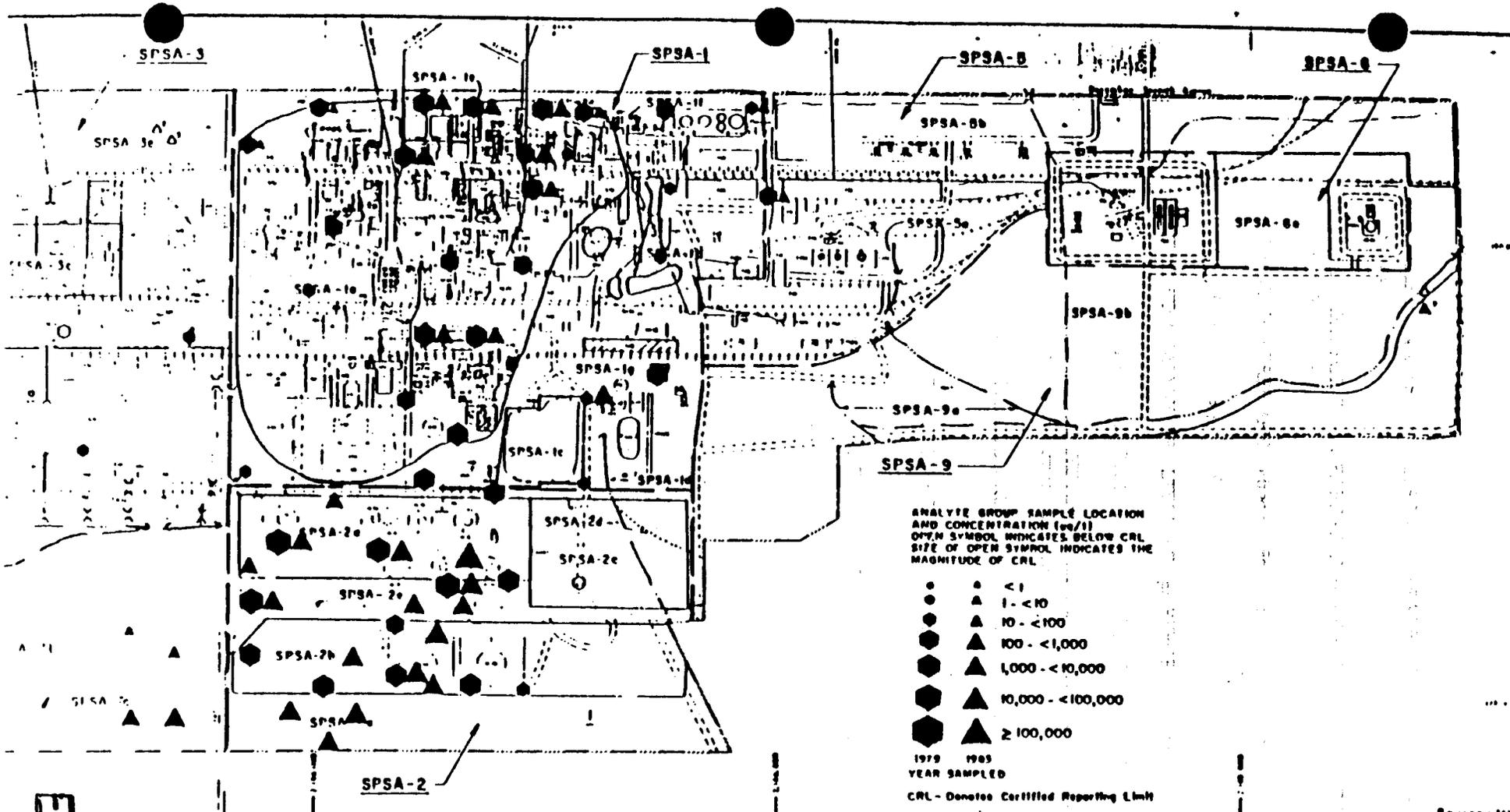
RMA Restoration Advisory Board  
% Ms. Sandra Jaquith, Co-Chairperson  
844 Downing Street  
Denver, Colorado 80218

RMA Site Specific Advisory Board  
% Mr. Rick Warner, Chairperson  
894 Dexter Drive  
Broomfield, Colorado 80020

City of Denver  
% Allegra (Happy) Haynes - District #11  
4611 East 23rd Avenue  
Denver, Colorado 80207

## References

- 1 FINAL DETAILED ANALYSIS OF ALTERNATIVES REPORT, Version 4.0, Executive Summary, August 1995, Pg.1
- 2 TECHNICAL SUPPORT FOR RMA OFF POST OPERABLE UNIT FINAL RECORD OF DECISION, September 19, 1995, pgs. 6-9
- 3 FEDERAL FACILITY AGREEMENT, effective February 17, 1989, pg.5 para. 2.7
- 4 CERCLA, 42 U.S.C. 9601(14) Section 101(14)
- 5 FINAL DETAILED ANALYSIS OF ALTERNATIVES REPORT, Version 4.0, Executive Summary Pg.52
- 6 SOUTH PLANTS CONTAMINATION SURVEY AND REMEDIAL ACTION ASSESSMENT, March 1995
- 7 HISTORY OF POLLUTION SOURCES AND HAZARDS AT THE ROCKY MOUNTAIN ARSENAL; Casimir Kuznear & William L. Trautmann, September 1980, pg. 12
- 8 FINAL REMEDIAL INVESTIGATION REPORT VOL.VIII dated July 1989, SOUTH PLANTS STUDY AREA, pgs. 2-24, 2-25
- 9 FINAL REMEDIAL INVESTIGATION REPORT VOL.VIII dated July 1989, SOUTH PLANTS STUDY AREA, pgs. 2-24, 2-25
- 10 FINAL DETAILED ANALYSIS OF ALTERNATIVES REPORT, WATER DAA, August 1995
- 11 FINAL REMEDIAL INVESTIGATION REPORT VOL.VIII
- 12 FINAL REMEDIAL INVESTIGATION REPORT VOL.VI
- 13 PROPOSED FINAL SOUTH PLANTS/BASIN A GROUNDWATER FLOW MODEL, Dec. 1994 pg. 4-2,1-6 & 5-4
- 14 STUDY OF AVIAN MORTALITY ON THREE LAKES AT RMA by George Sciple, Wildlife Research Laboratory May 28, 1952 pg.1
- 15 COMPREHENSIVE MONITORING PROGRAM, WATER YEAR 1975 to WATER YEAR 1989, Dec. 1992 Pg. 43
- 16 FINAL REMEDIAL INVESTIGATION REPORT VOL.III. SOUTHERN STUDY AREA, June 1989, Pg. 1-34, 1-21, 3-76, 3-24 and 1-45
- 17 FINAL REMEDIAL INVESTIGATION REPORT VOL.III SOUTHERN STUDY AREA, June 1989 Pg. 24
- 18 FINAL REMEDIAL INVESTIGATION REPORT VOL.III SOUTHERN STUDY AREA, June 1989 Pg. 1-45
- 19 GROUNDWATER MONITORING PROGRAM, 1993 pgs. 2-2, 4-7, 4-8, ES-3
- 20 RECORDS SEARCH LEASED AND TRANSFERRED RMA FACILITIES AND LAND, ATTACHMENT 4, Oct. 1994
- 21 GROUNDWATER MONITORING PROGRAM, 1993 pg. 4-48 and 4-49
- 22 FINAL REMEDIAL INVESTIGATION REPORT, SOUTHERN STUDY AREA, June 1989 pg. 3-85
- 23 REPRODUCTIVE, NEUROBEHAVIORAL AND OTHER DISORDERS IN COMMUNITIES SURROUNDING THE RMA: AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, Sept. 1, 1995 pg. 142



Source: MR

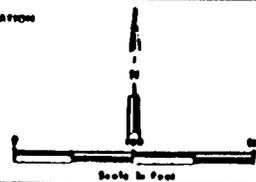
Note: The symbols in this map are associated with the following analyte groups:

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Note: The symbols in this map are associated with the following analyte groups:

SPSA-2 STUDY AREA LOCATION

01	02	03	04	05	06
07	08	09	10	11	12
13	14	15	16	17	18



Prepared for:  
 Program Manager's Office for  
 Rocky Mountain Arsenal Cleanup

FIGURE SPSA 2.4-3  
 Volatile Aromatic Organics  
 in Groundwater, 1979/1983

Rocky Mountain Arsenal  
 Prepared by: Ebasco Services Incorporated

EXHIBIT

A



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VOLUME VIII  
SOUTH PLANTS STUDY AREA  
SECTION 2.0  
FIGURES 2.2-1 to 2.7-1  
VERSION 3.3

July 1989  
Contract No. DAAA15-88-D-0024

Prepared by:

EBASCO SERVICES INCORPORATED  
APPLIED ENVIRONMENTAL, INC.  
CHEM HILL DATACHEM, INC.  
R.L. STOLLAR AND ASSOCIATES

Prepared for:

U.S. ARMY PROGRAM MANAGER'S OFFICE  
FOR ROCKY MOUNTAIN ARSENAL CONTAMINATION CLEANUP

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FIGURES 2.2-1 to 2.7-1  
VERSION 3.3

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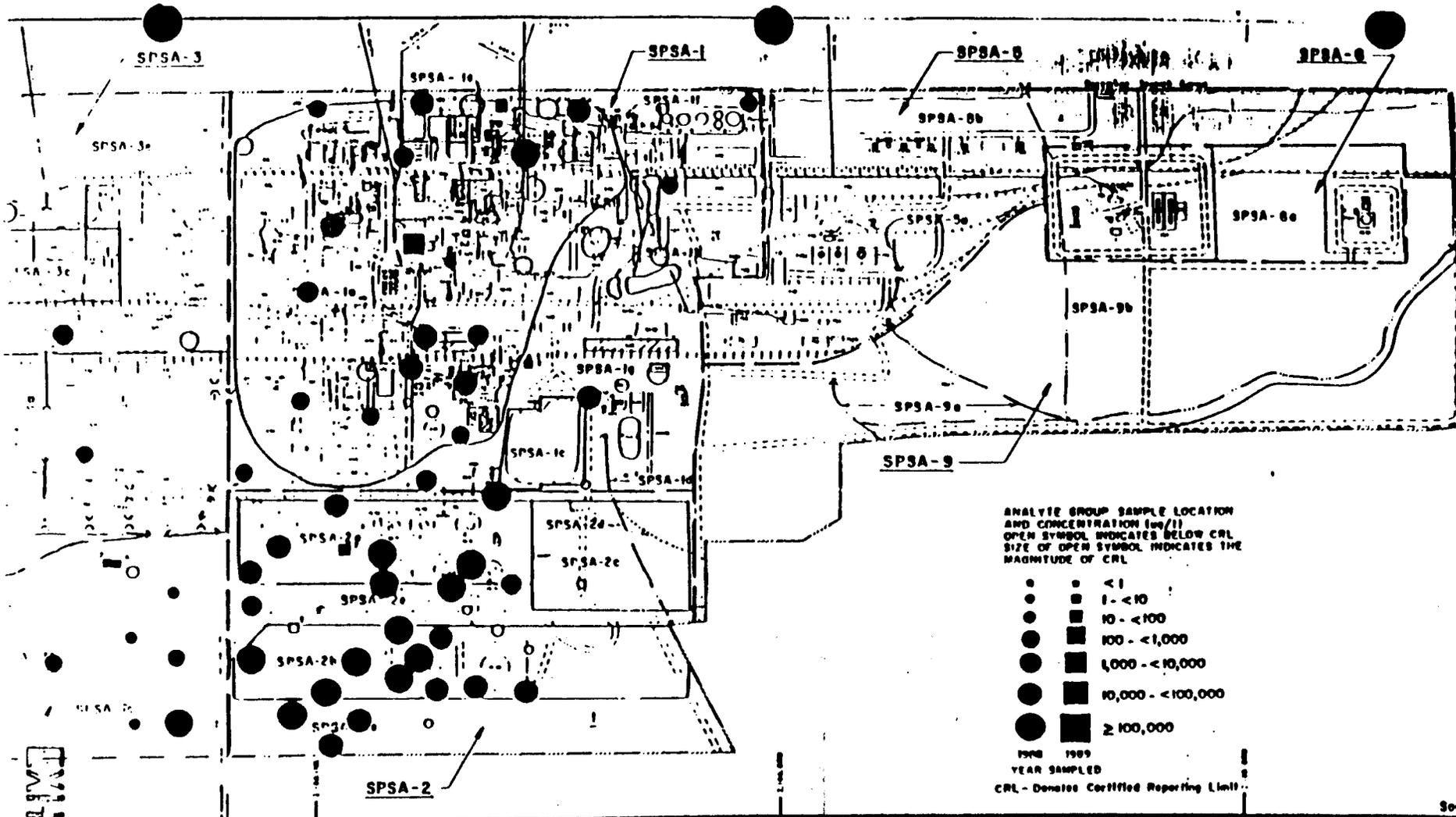
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**EXHIBIT**

B



Source: MHI

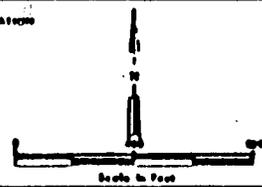
1. Location of historic  
 2. Location of historic  
 3. Location of historic

Note: The sample is from Water Bearing Zone 1  
 unless otherwise labeled. Superstrata 2  
 and 3 indicate sample from Water Bearing  
 Zones 2 and 3, respectively.

GC/MS Data

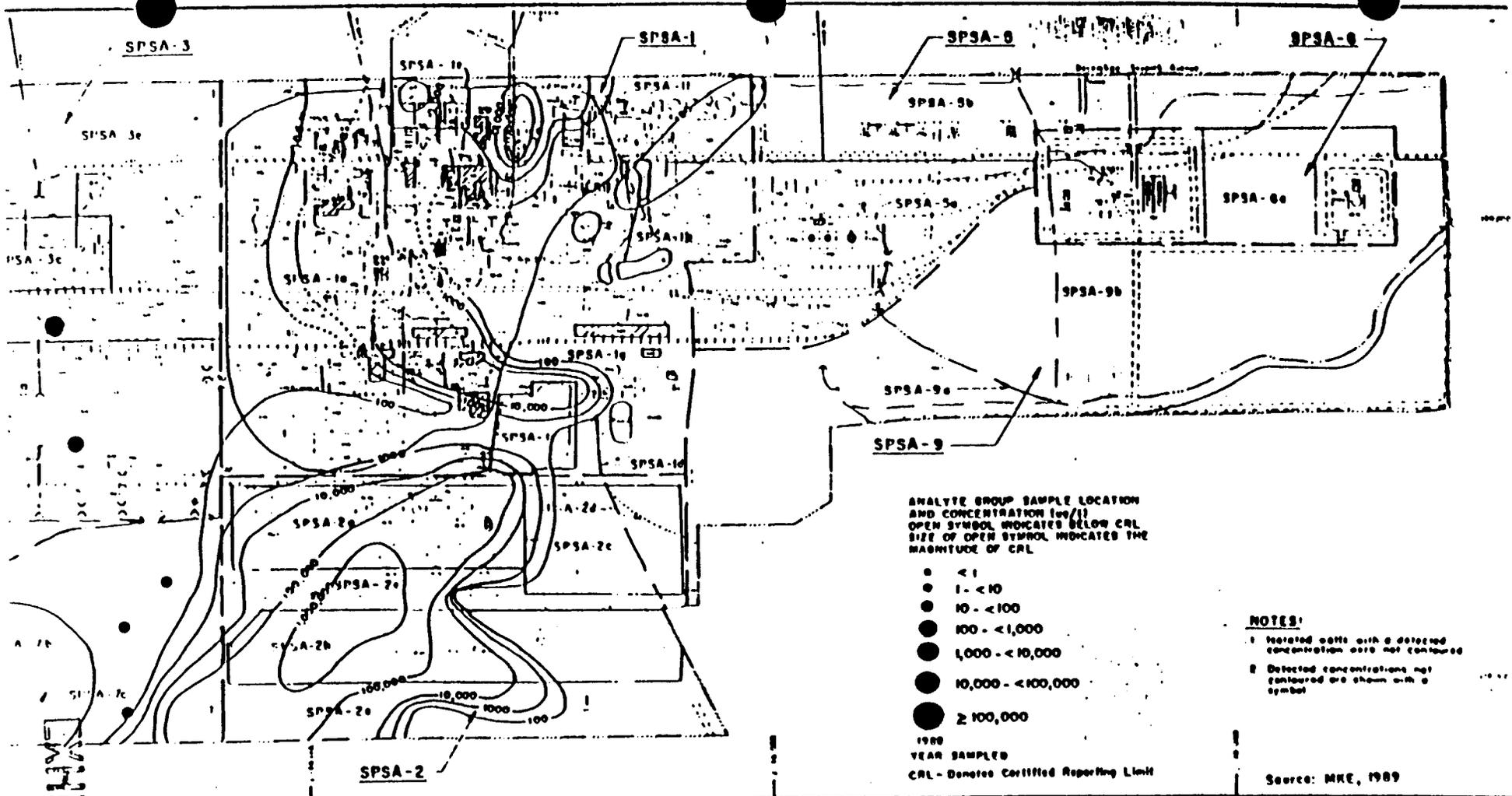
ROCKY MOUNTAIN ARSENAL  
 SOUTH PLAINS STUDY AREA LOCATION

11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30



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 Program Manager's Office for  
 Rocky Mountain Arsenal Cleanup

**FIGURE SPSA 2.4-6**  
 Volatile Aromatic Organics  
 in Groundwater, 1988/1989  
  
 Rocky Mountain Arsenal  
 Prepared by: Ebasco Services Incorporated



ANALYTE GROUP SAMPLE LOCATION AND CONCENTRATION (ug/l)  
 OPEN SYMBOL INDICATES BELOW CRL  
 SIZE OF OPEN SYMBOL INDICATES THE MAGNITUDE OF CRL

- < 1
- 1 - < 10
- 10 - < 100
- 100 - < 1,000
- 1,000 - < 10,000
- 10,000 - < 100,000
- ≥ 100,000

**NOTES:**

- 1 Isolated wells with a detected concentration were not contoured
- 2 Detected concentrations not contoured are shown with a symbol

1988  
 YEAR SAMPLED  
 CRL - Detected Certified Reporting Limit

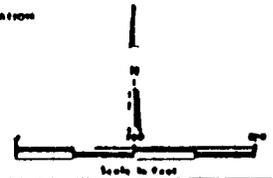
Source: MKE, 1989

Historically associated  
 type group  
 Site location of historic  
 structure with analyte group

10 - 1988  
 Inconcentration (ug/l)  
 Dashed where inferred,  
 Dotted where questionable  
 Dotted when inferred with 1989 data

ROCKY MOUNTAIN AREAL  
 SOUTH PLAINS STUDY AREA LOCATION

24	25	26	27	28
29	30	31	32	33
34	35	36	37	38
39	40	41	42	43



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 Program Manager's Office for  
 Rocky Mountain Areal Cleanup

**FIGURE SPSA 3.3-6**  
 Volatile Aromatic Organics  
 Plume in Groundwater, 1988  
 Rocky Mountain Areal  
 Prepared by: Ebasco Services Incorporated



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SOUTH PLANTS STUDY AREA

SECTION 3.0

TABLES AND FIGURES

VERSION 3.3

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R.L. STOLLAR AND ASSOCIATES

Prepared for:

U.S. ARMY PROGRAM MANAGER'S OFFICE  
FOR ROCKY MOUNTAIN ARSENAL CONTAMINATION CLEANUP

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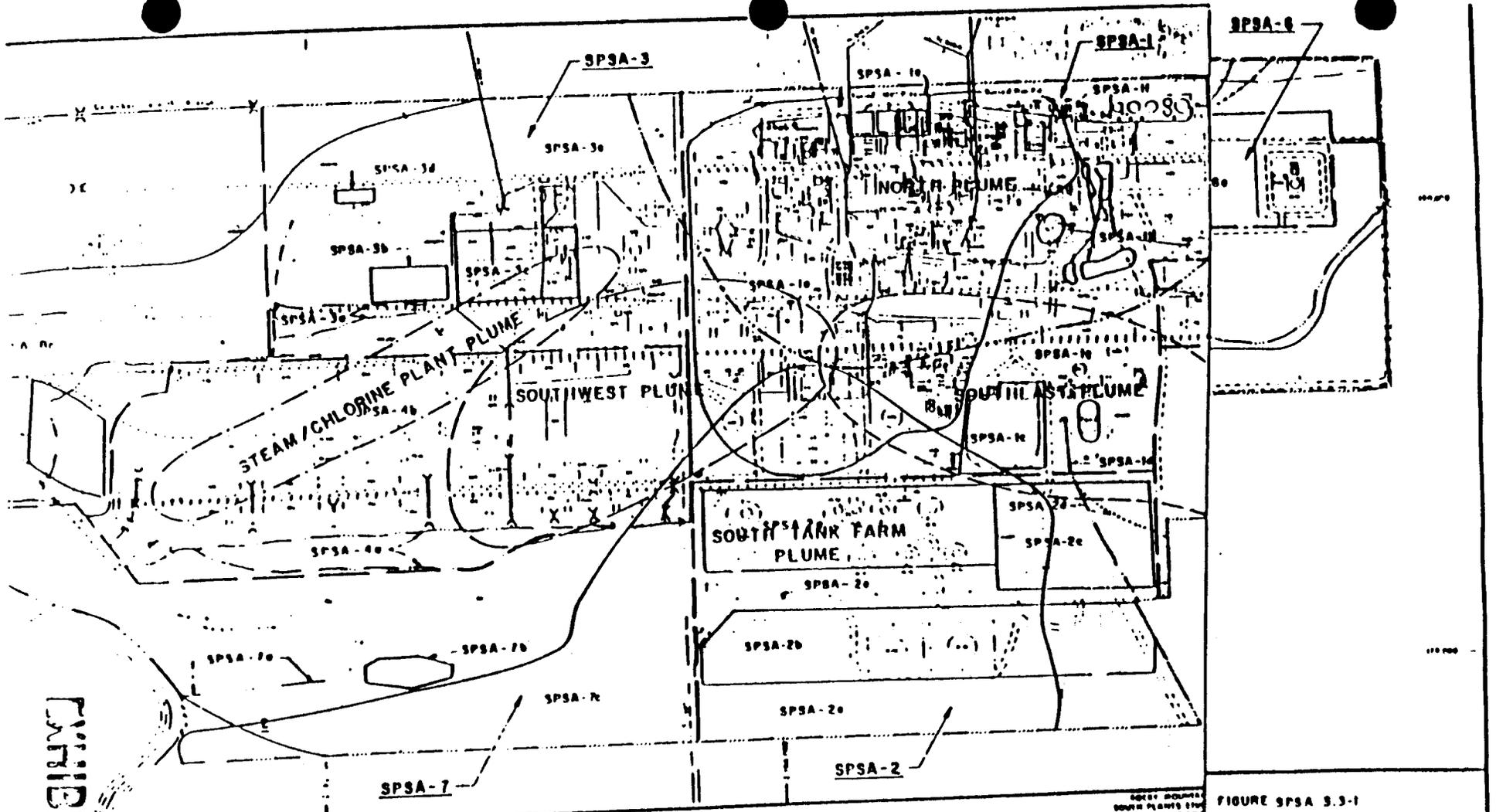
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EXHIBIT

D



EXHIBIT

- South Tank Farm Plume
- Southeast Plume
- Southeast Plume
- North Plume
- Steam/Chlorine Plume

SA-1  
 1:500  
 1:1000  
 Chemical Tank Line  
 Subarea Boundary  
 Site Boundary  
 State plane grid

SOUTH PLANTS STUDY AREA  
 SOUTH PLANTS STUDY AREA  
 1979/1985  
 1 2 3 4  
 5 6 7 8 9 10  
 11 12 13 14 15 16  
 17 18 19 20 21 22  
 23 24 25 26 27 28  
 29 30 31 32 33 34

**FIGURE SPSA 3.3-1**  
 Migration Pathways 1979/1985  
 Composite, South Plants Study Area  
 Rocky Mountain Arsenal  
 Prepared by Ebasco Services Incorporated

E



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ROCKY MOUNTAIN ARSENAL

Rocky Mountain Arsenal  
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SOUTH PLANTS STUDY AREA  
SECTION 3.0  
TABLES AND FIGURES  
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R.L. STOLLAR AND ASSOCIATES

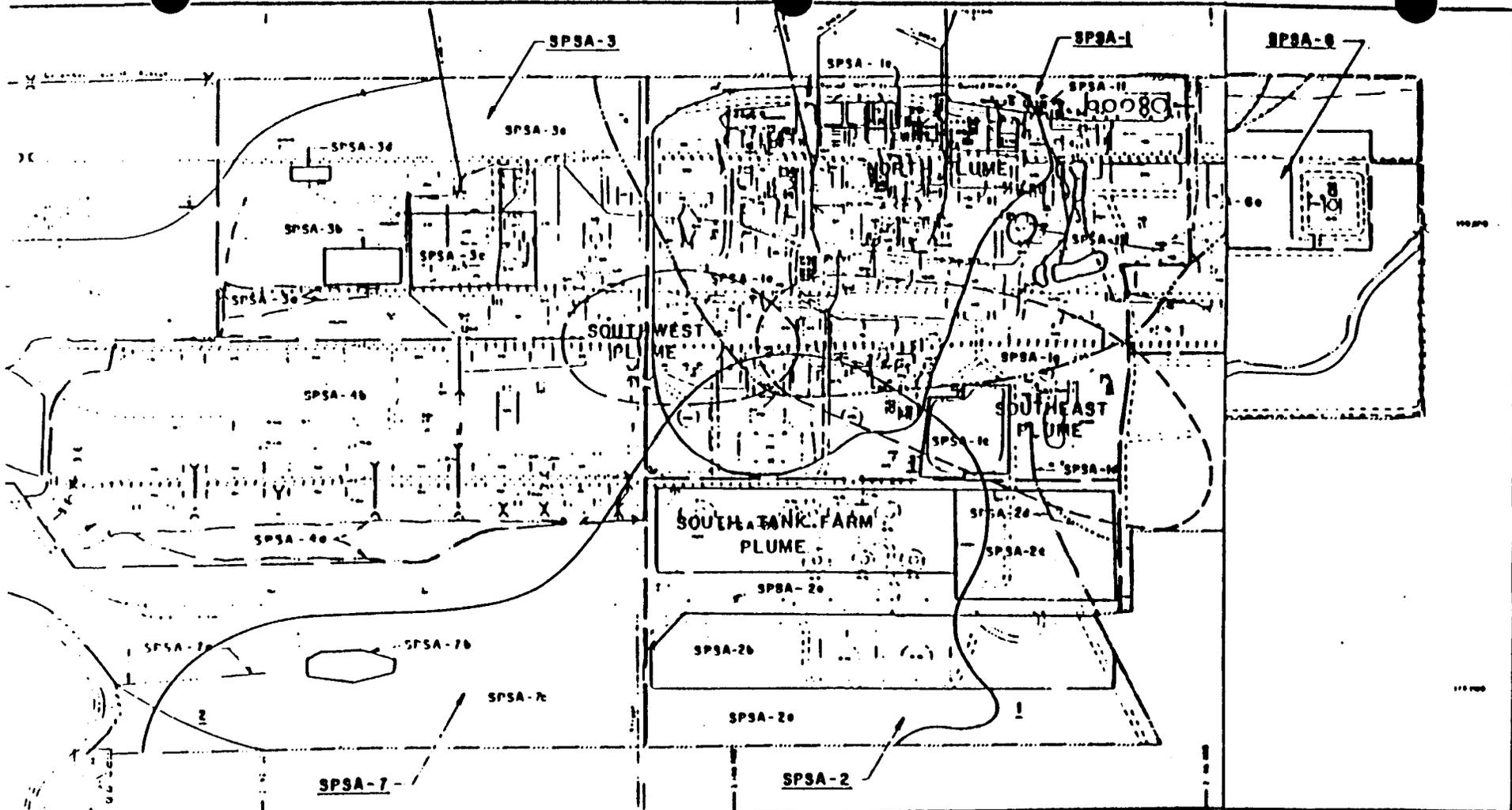
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FOR ROCKY MOUNTAIN ARSENAL CONTAMINATION CLEANUP

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EXHIBIT           E



- South Tank Farm Plume
- Southeast Plume
- Southeast Plume
- North Plume

SPSA PLUME MILEAGE SOUTH PLANTS STUDY AREA 1988

0	25	50	75	100
25	50	75	100	125
50	75	100	125	150
75	100	125	150	175
100	125	150	175	200

**FIGURE SPSA 3.3-2**  
 Migration Pathways 1988,  
 South Plants Study Area

Duck Mountain Arsenal  
 Prepared by Ebasco Services Incorporated



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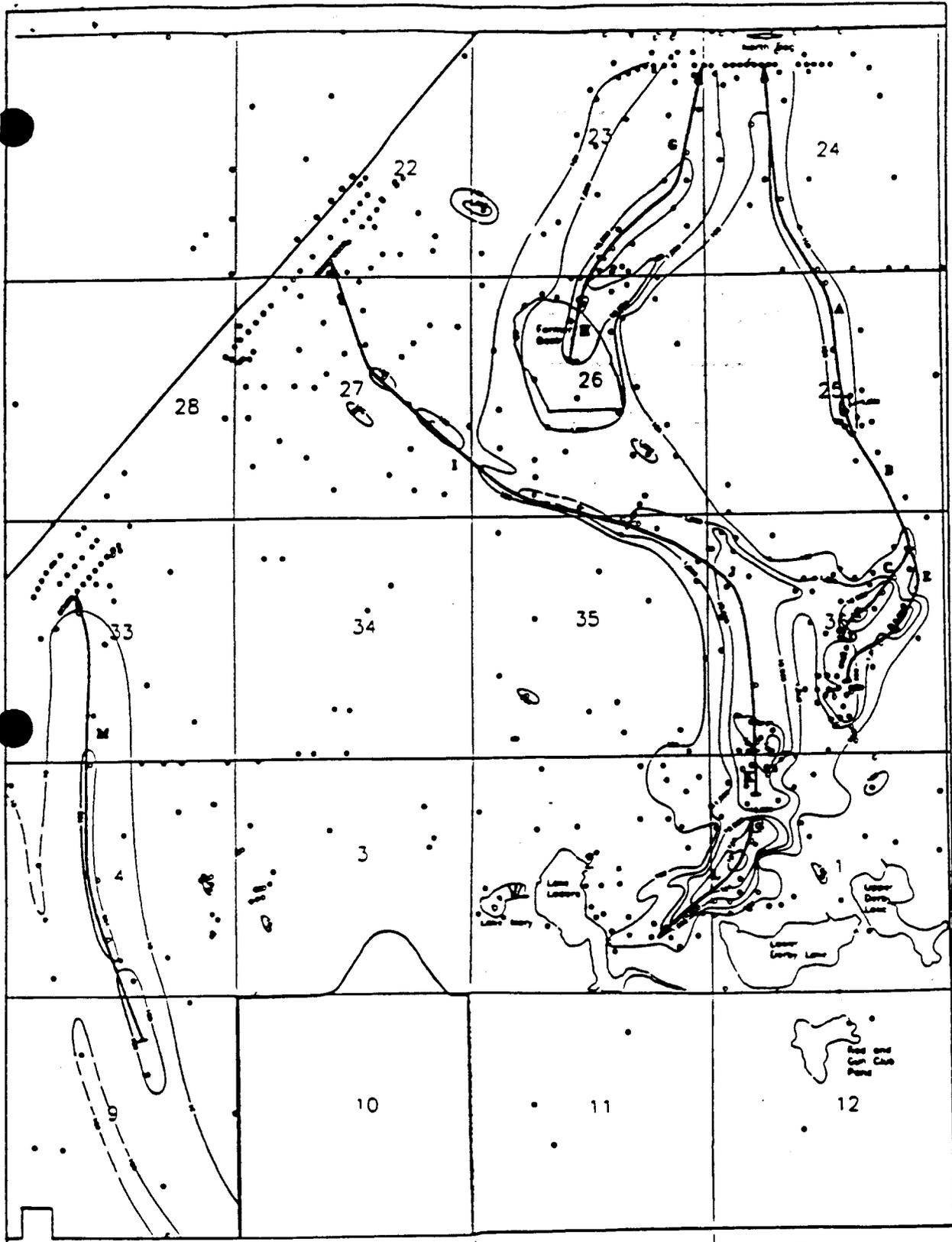
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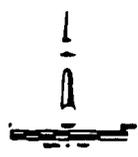
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Legend

- Monitoring Site
- Superfund Target Organic Analysis Concentration
- Flow Direction



# EXHIBIT

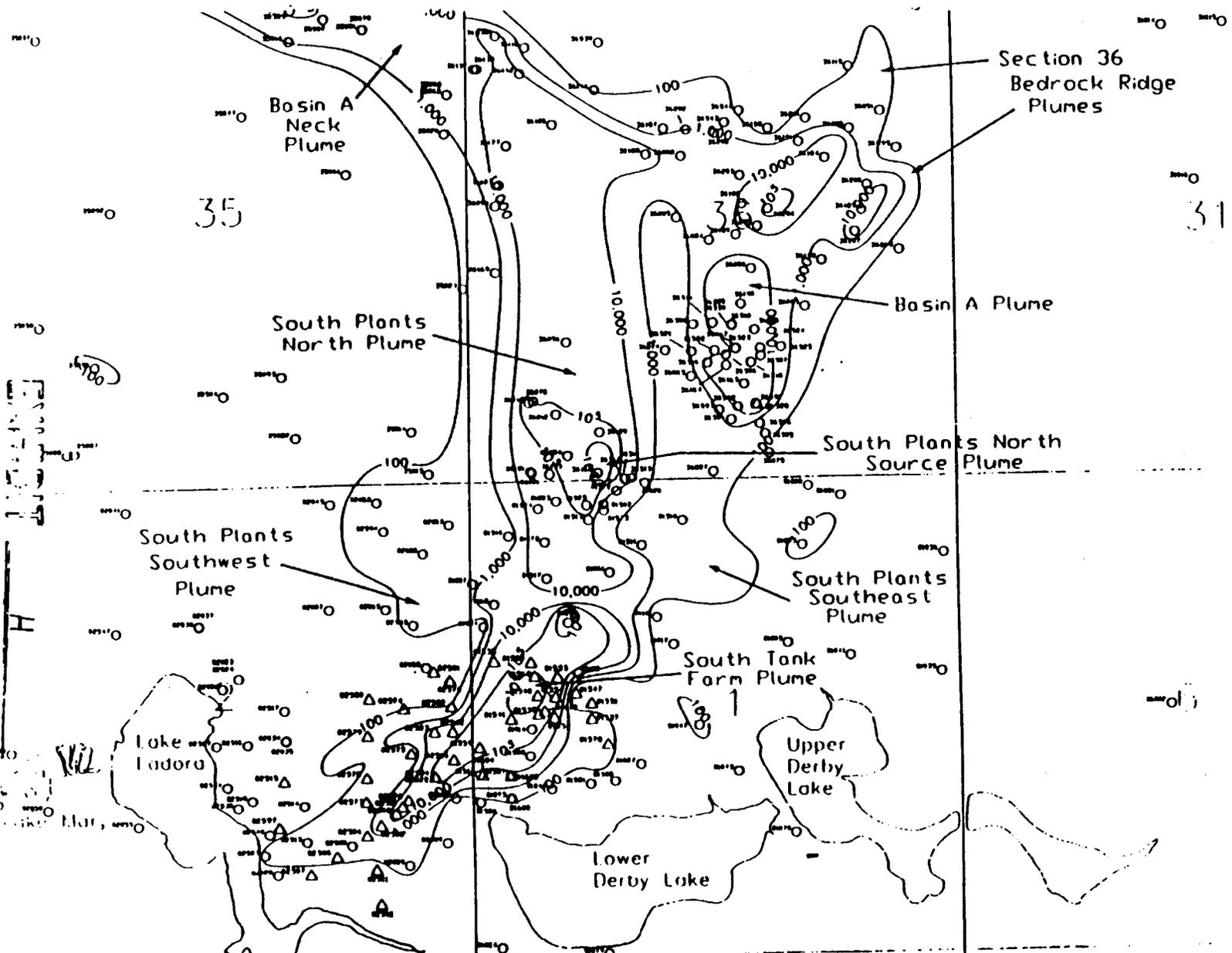
Prepared for:  
 U.S. Army Program Manager  
 for Rocky Mountain Arsenal  
 Prepared August 1995

FIGURE C 3-1  
 Selected Concentration Isopleth  
 Flow Paths

Rocky Mountain Arsenal  
 Prepared by: [unclear] (Environmental Corporation)

G





8

F:\PROJECTS\ARM\09\PLUME\PLUME\_1.DWG

Prepared for:

U.S. Army Program Manager  
for Rocky Mountain Arsenal

Prepared August 1995

PLATE 1

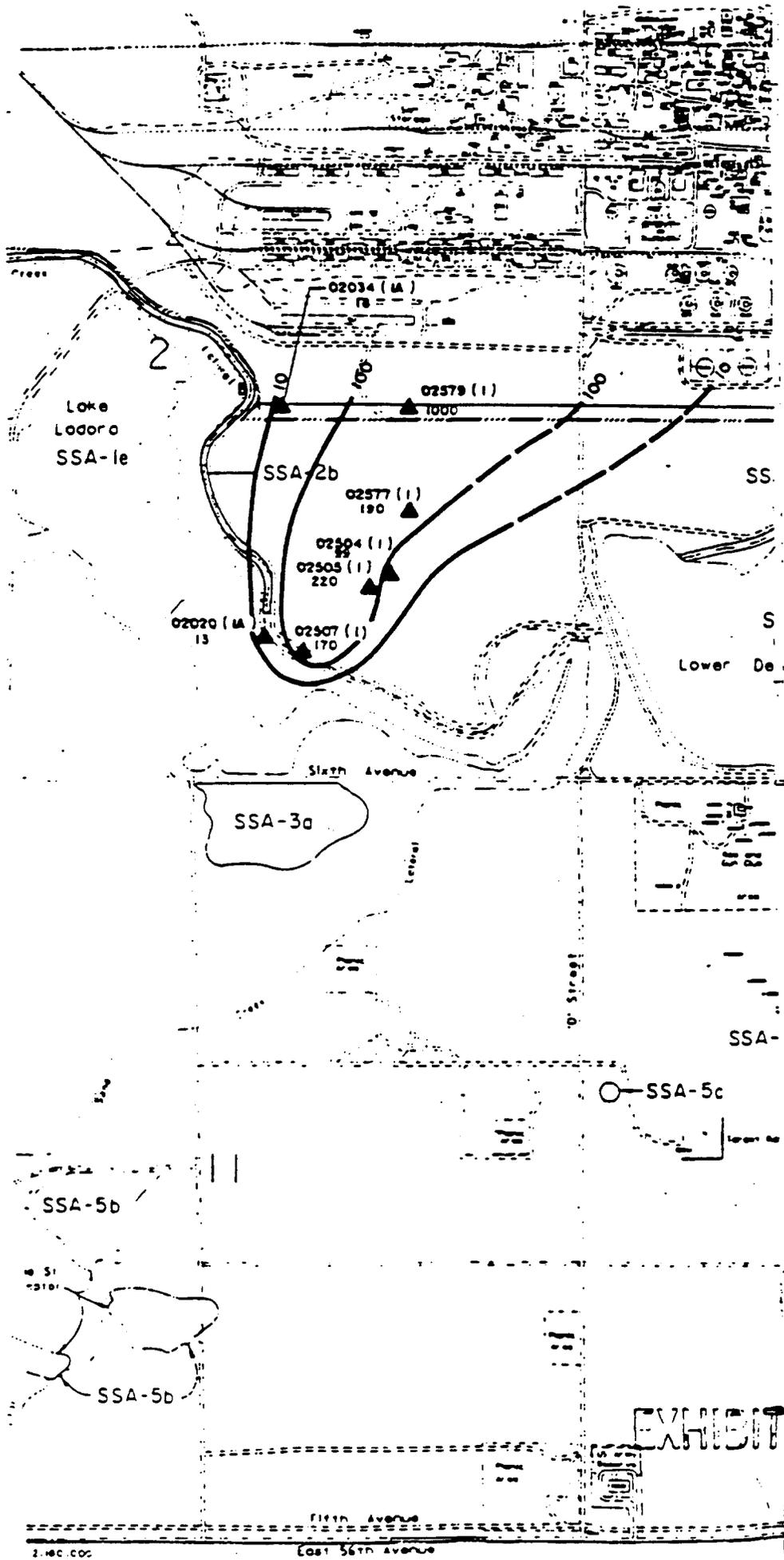
Summed Target Organic Analyte  
Plume Map for Unconfined Flow  
System

Rocky Mountain Arsenal

Prepared by: Foster Wheeler Environmental Corporation

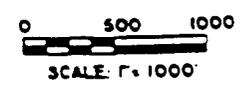
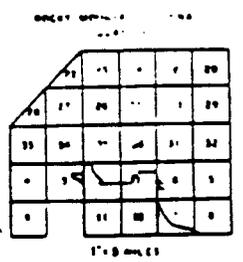
H

EXHIBIT



- LEGEND**
- == Improved Road
  - Unimproved Road
  - Railroad Tracks
  - Existing Structure
  - Former Structure
  - - - Fence
  - 6 Section Number
  - ~ Stream or Ditch
  - - - Study Area Boundary
  - 174.000 State Plane Grid
  - ▲ 02579 (I) 1000 Well (Water Bearing Zone) Detection in micrograms per liter (ug/l)
  - △ 02014 (IA) 3.0 Isolated Detection in micrograms per liter (ug/l)
  - Evidence Concentration Line, Concentration in (ug/l) (Dashed Where Inferred)
  - B B' Cross-section Location

**Notes:**  
 All data from Morrison Knudsen Engineers, (1988) and Environmental Science and Engineering, (1987)



Prepared for:  
 Program Manager's Office for  
 Rocky Mountain Arsenal Cleanup  
 I

**FIGURE: SSA 3.5-1**  
 Volatile Halogenated Organics  
 Plume in Water Bearing Zones IA & B  
 Rocky Mountain Arsenal

**EXHIBIT**



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EXHIBIT 10

SSA-2c  
3

SSA-2b

3

SSA-2b

SSA-5c

12

Remains of  
Inventory Roads

SSA-5b

SSA-2a

SSA-4

SSA-5a

SSA-2a

SSA-5a

**6** Section Number

Study Area Boundary

10,000 Feet Plus Grid

Total area of potential contaminants is only based on historical information and published worksheets

Total area of detected contaminants is sum of all data based on analytical results

SCALE 1" = 1000'

Prepared for:  
Program Manager's Office for  
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 5a-21  
Total Area of Potential Contaminants in SSA  
Based on Analytical Results, Historical  
Dredging, and Impregnation Worksheets  
Rocky Mountain Arsenal  
Prepared by:  
Ebasco Services Incorporated



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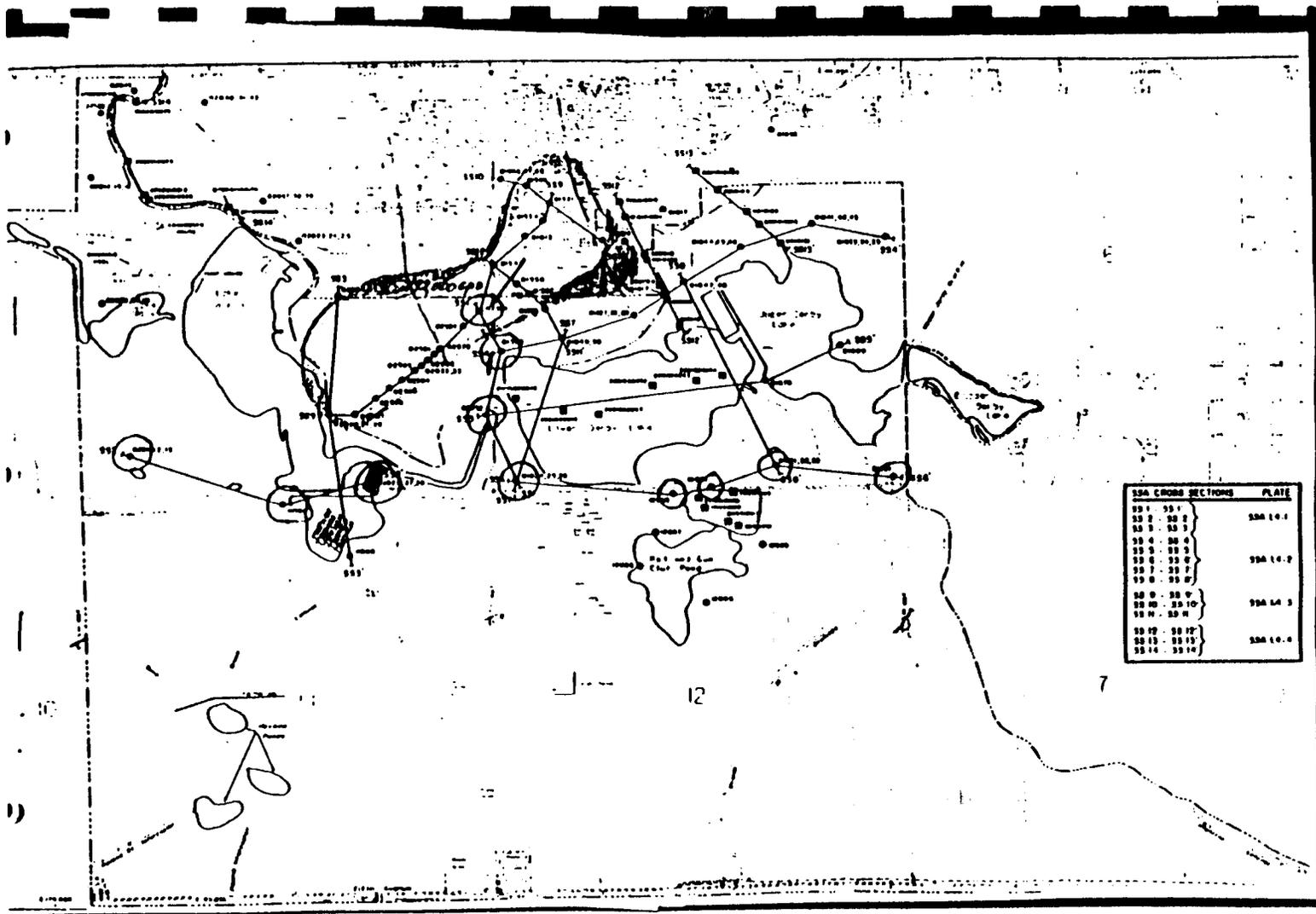
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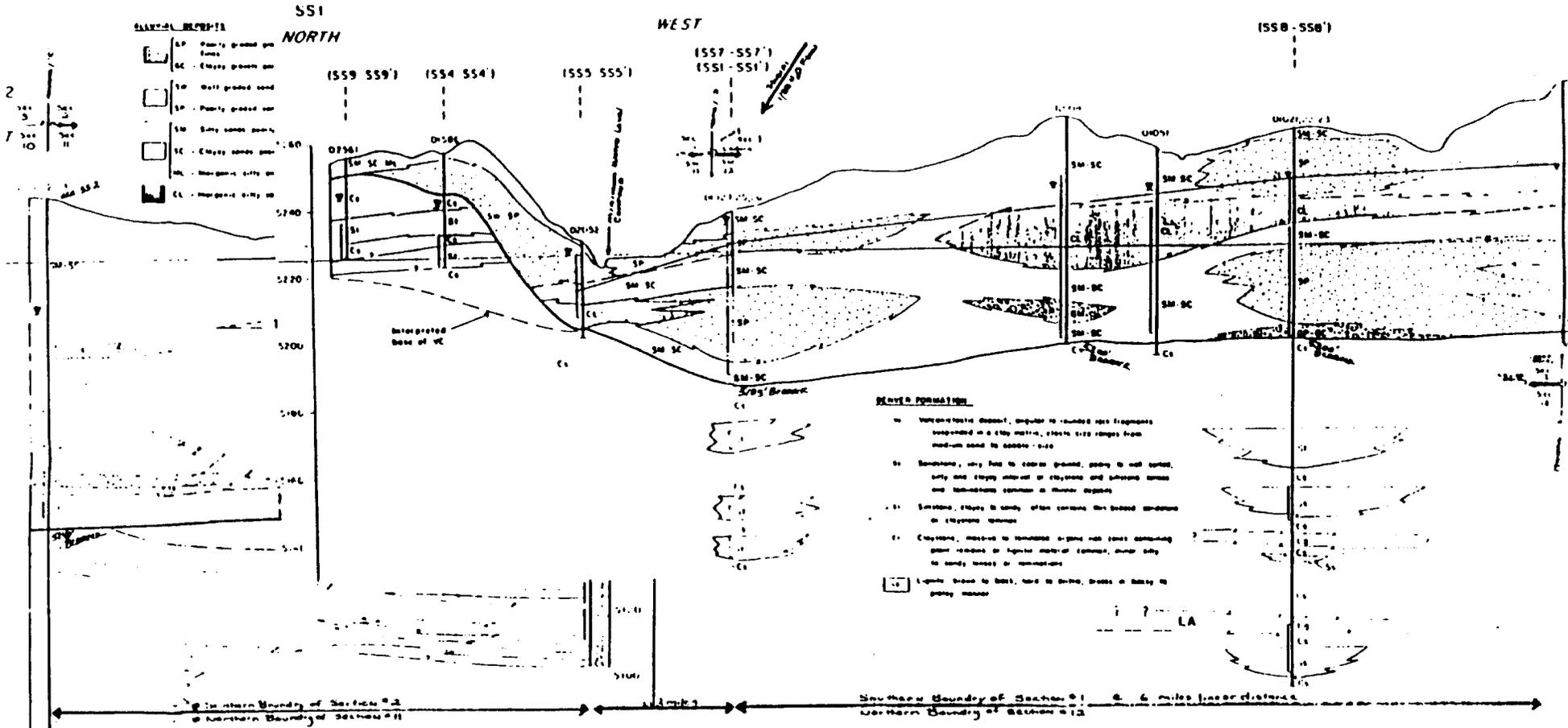
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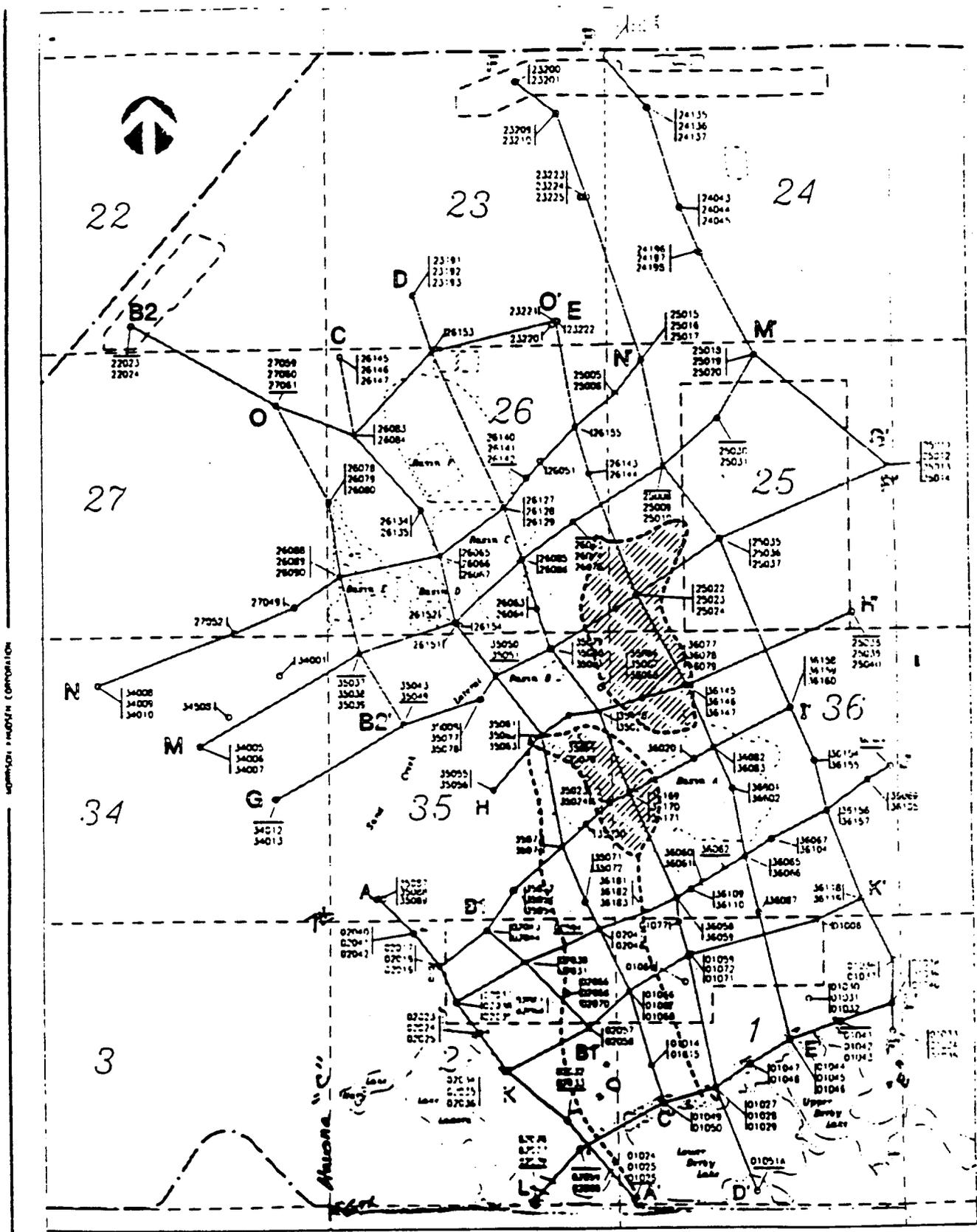
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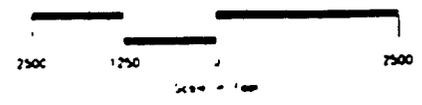
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MORFESON KNUDSEN CORPORATION

**Legend**

- Inferred Sand Extent
- Sand Subcrop



**Rocky Mountain Arsenal**

**A Sand Extent and Subcrop**

**PLATE 2**

**MORFESON KNUDSEN CORPORATION**  
ENVIRONMENTAL SERVICES DIVISION

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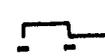
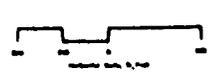
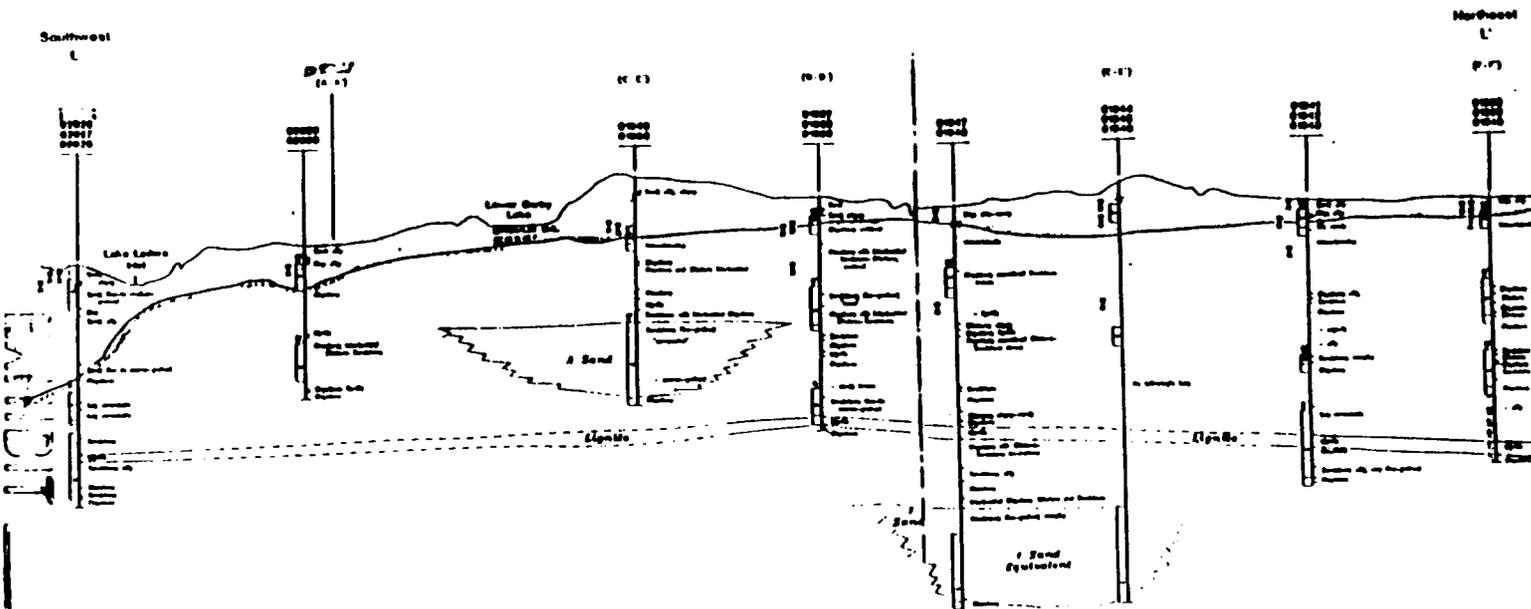
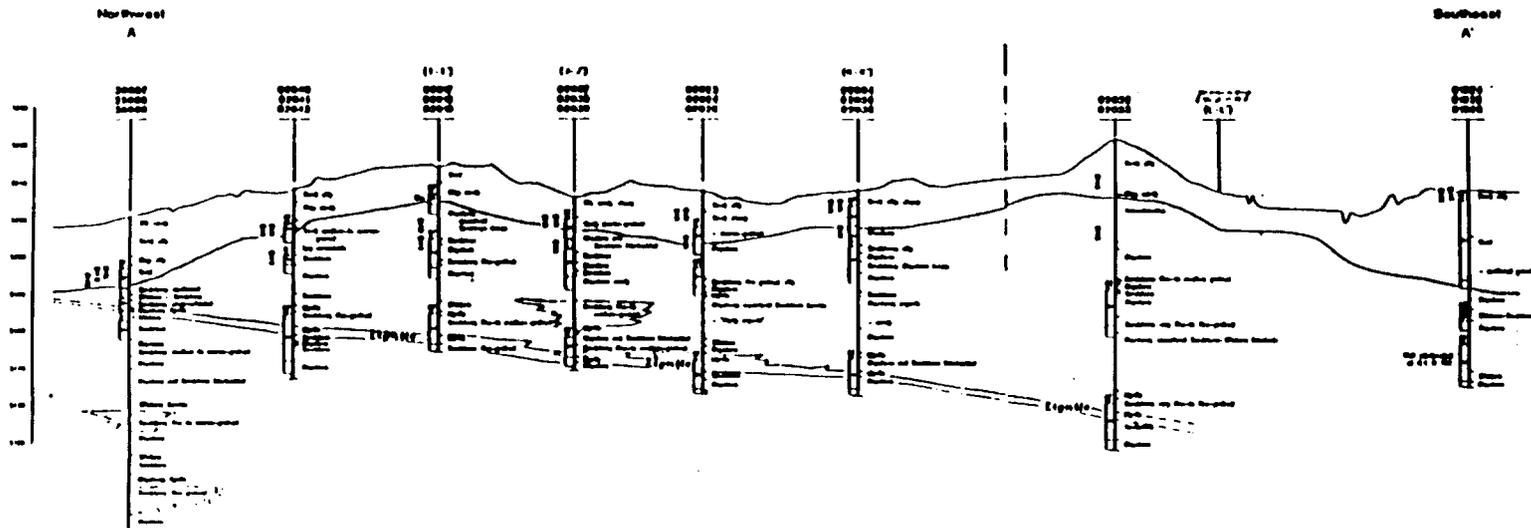
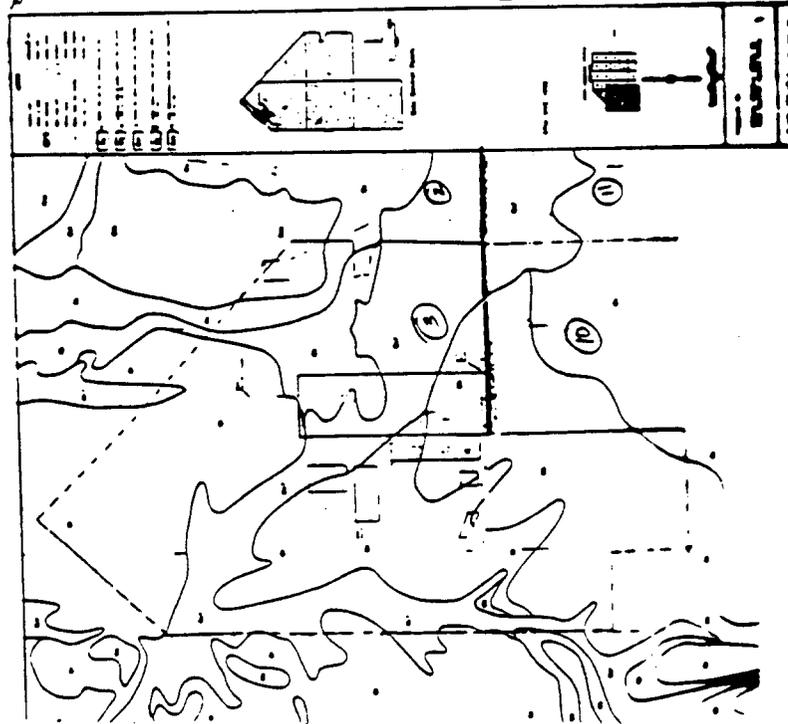
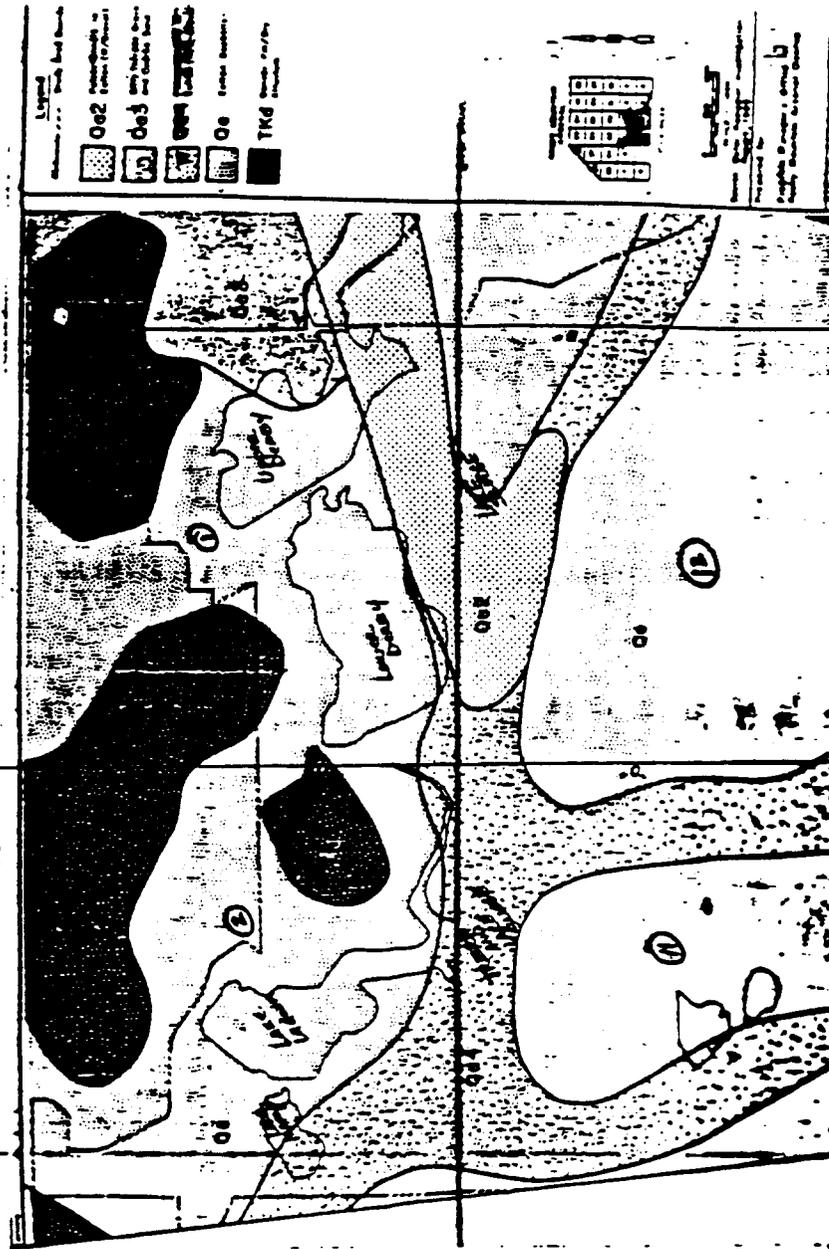


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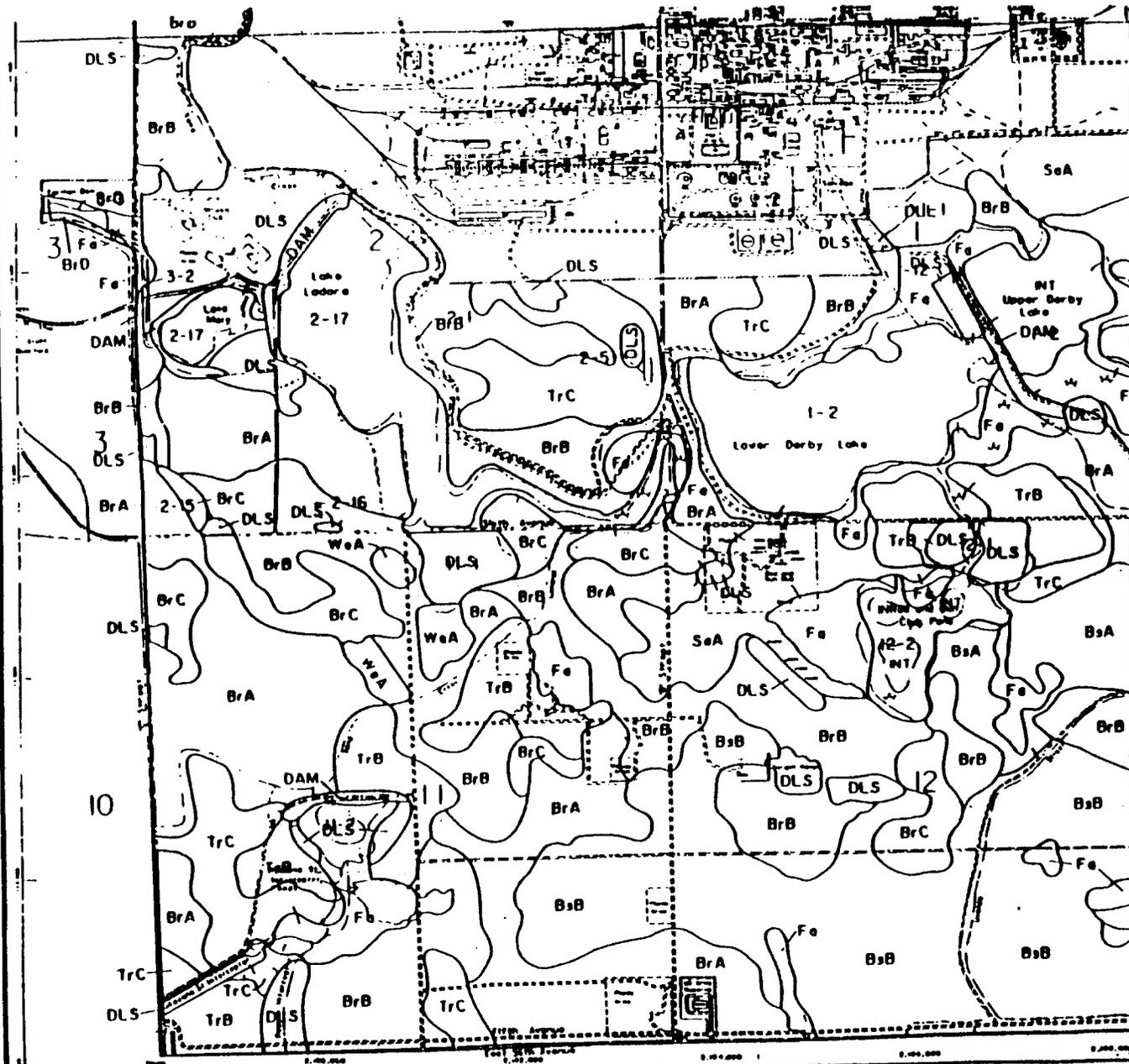
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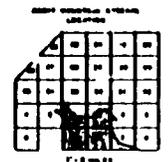
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N



- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Bluff
- Study Area Boundary
- 174,000 State Plane Grid
- MNT Boundary
- IN1 Interdiction Point
- Wet Spot
- 1 BrA Greater sandy loam, 0-1% slopes
- 2 BrB Greater sandy loam, 0-1% slopes
- 3 BrC Greater sandy loam, 0-2% slopes
- 4 BrD Greater sandy loam, 0-10% slopes
- 5 BrEA Greater Siltstone sandy loam complex, 0-1% slopes
- 6 BrB Greater Siltstone sandy loam complex, 0-1% slopes
- 7 DLS Disturbed land, loamy, 0-3% slopes
- 8 DLS Disturbed land, sandy, 0-3% slopes
- 9 Fe Aquic Hapustolls, sandy loam loam, 0-3% slopes
- 10 SaA Siltstone loam, 0-1% slopes
- 11 TrC Truflow loamy sand, 0-1% slopes
- 12 TrC Truflow loamy sand, 0-1% slopes
- 13 WEA Wet loam, 0-1% slopes



Source J.P. Walsh & Assoc. Inc., 1988

Prepared for:  
Program Manager's Office for  
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 14-2  
Soils Map of the  
Southern Study Area  
Rocky Mountain Arsenal  
Prepared by:  
Ebasco Services Incorporated



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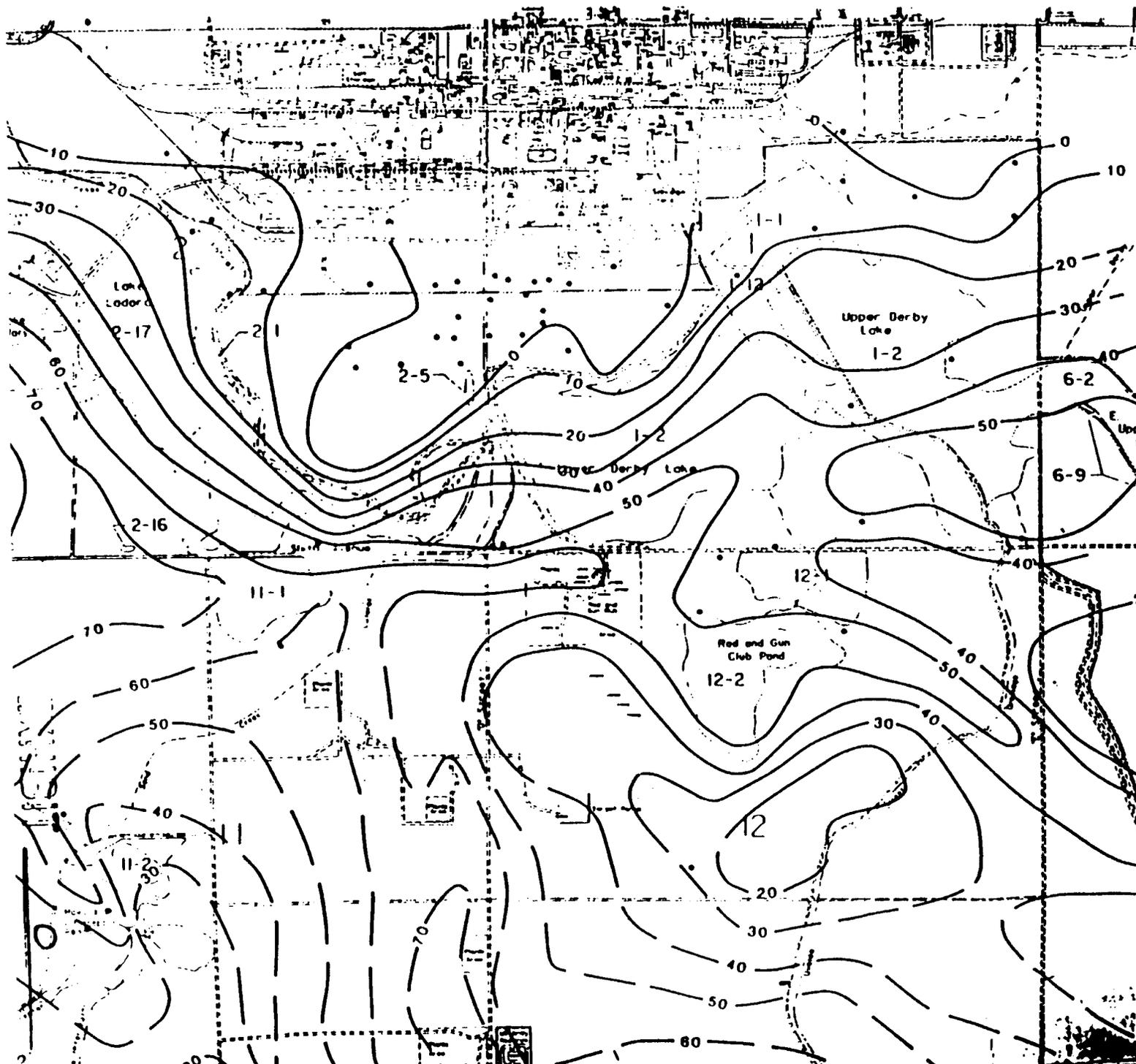
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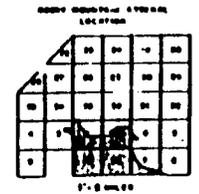
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- Map 4
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid
- Control Point
- Contour @ Saturated Thickness in feet
- Contour Interval is 10 Feet



Prepared for: [Redacted]  
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FIGURE 3-3A-1  
 [Redacted]  
 [Redacted]



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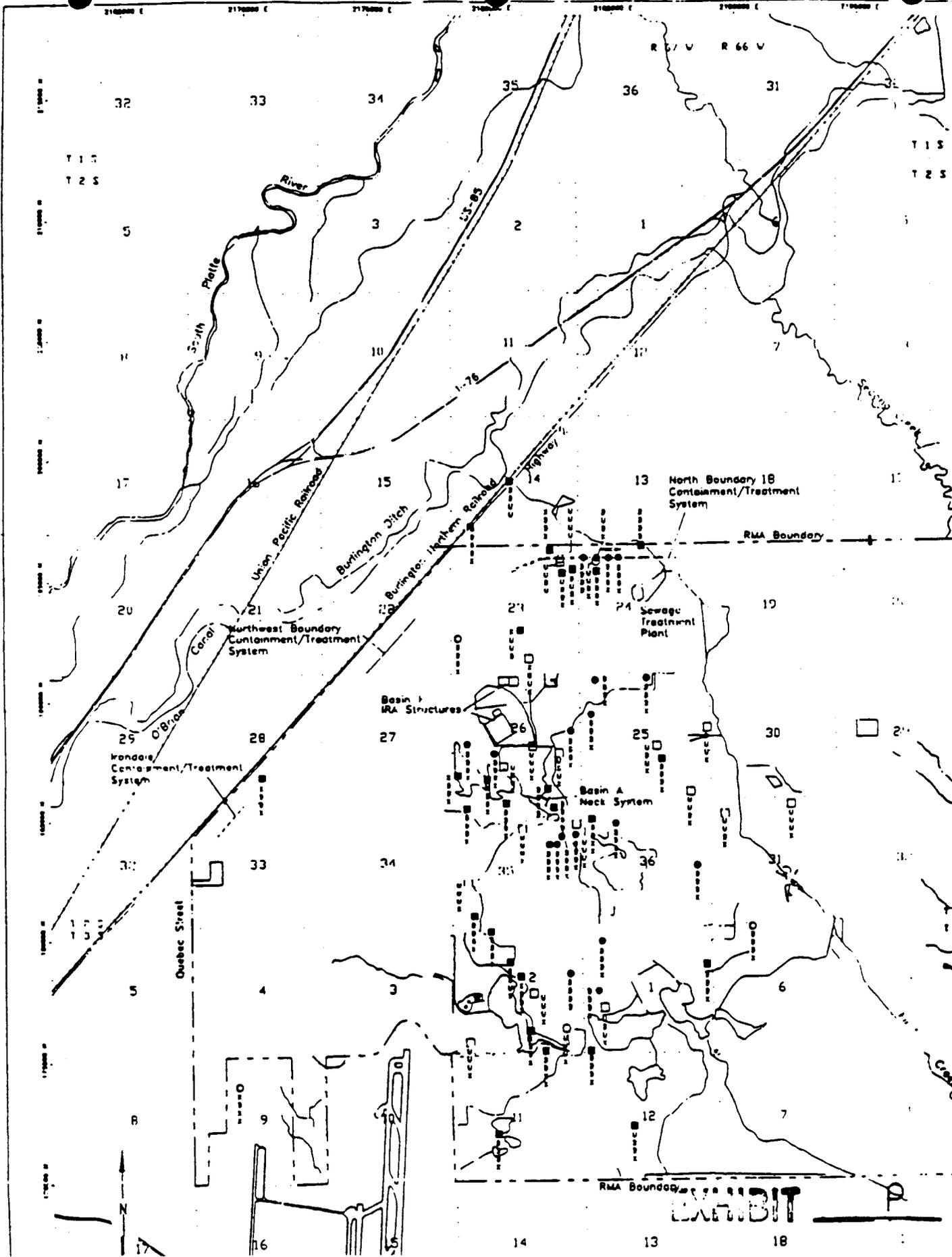
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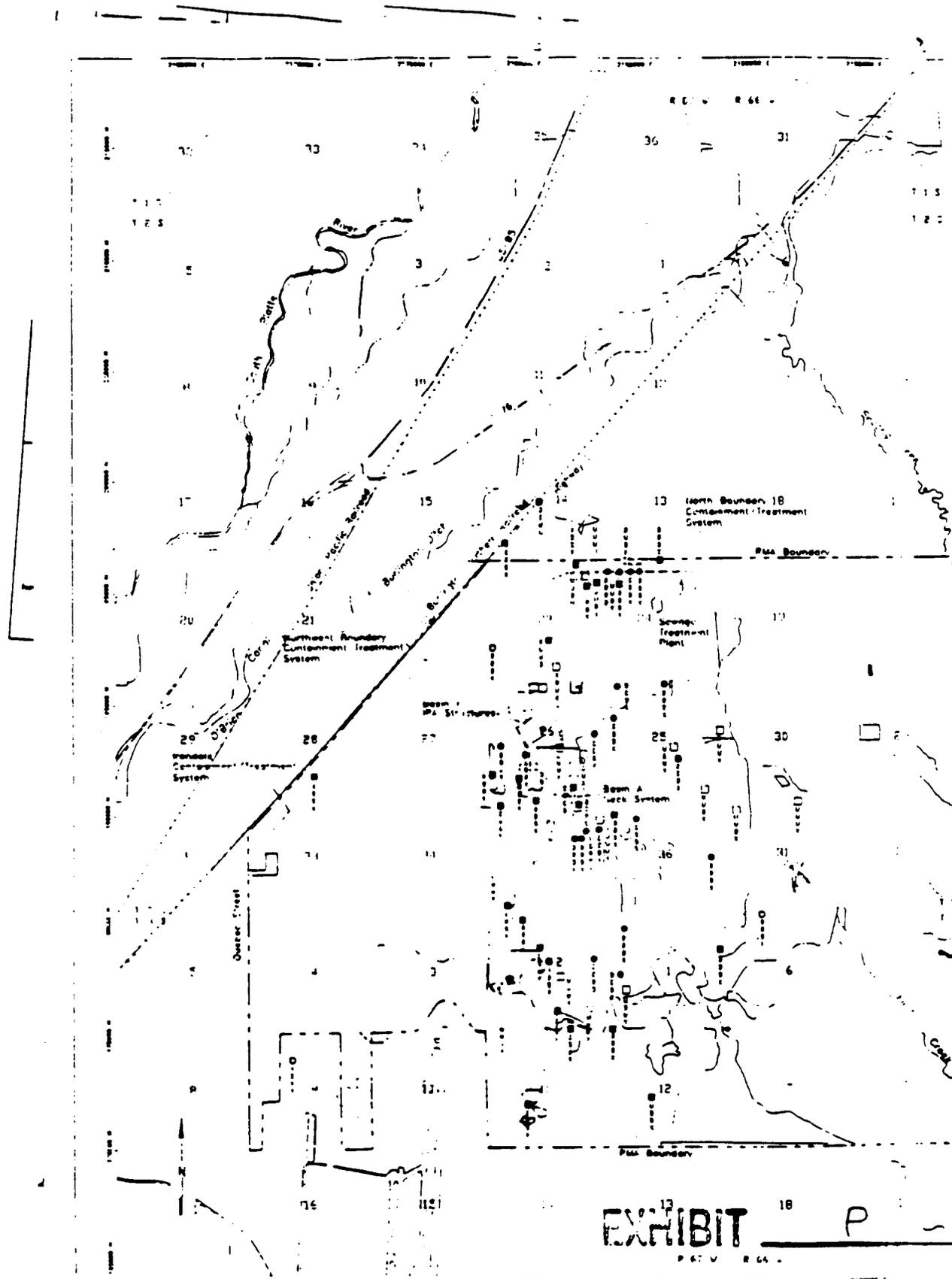
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**EXHIBIT**



18  
**EXHIBIT** P

**EXPLANATION**

- |   |                  |
|---|------------------|
| ○ Average Annual Upward Vertical Gradient   | ● Cluster Site   |
| ○ Unconfined Confined Well Cluster          | ○ First Quarter  |
| □ Unconfined Alluvial Unconfined            | ○ Second Quarter |
| □ Confined Alluvial Unconfined              | ○ Third Quarter  |
| □ Denver Formation Well Cluster             | ○ Fourth Quarter |
| ● Average Annual Downward Vertical Gradient | ○ Cluster Site   |
| ● Unconfined Confined Well Cluster          | ○ First Quarter  |
| ■ Unconfined Alluvial/Unconfined            | ○ Second Quarter |
| ■ Denver Formation Well Cluster             | ○ Third Quarter  |
|   | ○ Fourth Quarter |

Prepared for  
Program Manager for  
Rock, Mountain, Arsenal,  
Commerce City, Colorado  
Prepared by  
Pacific Western Technology, Inc.

Figure 3.4  
Approximate Vertical Gradient  
Direction at Cluster Sites,  
October 1, 1991 to  
September 30, 1992

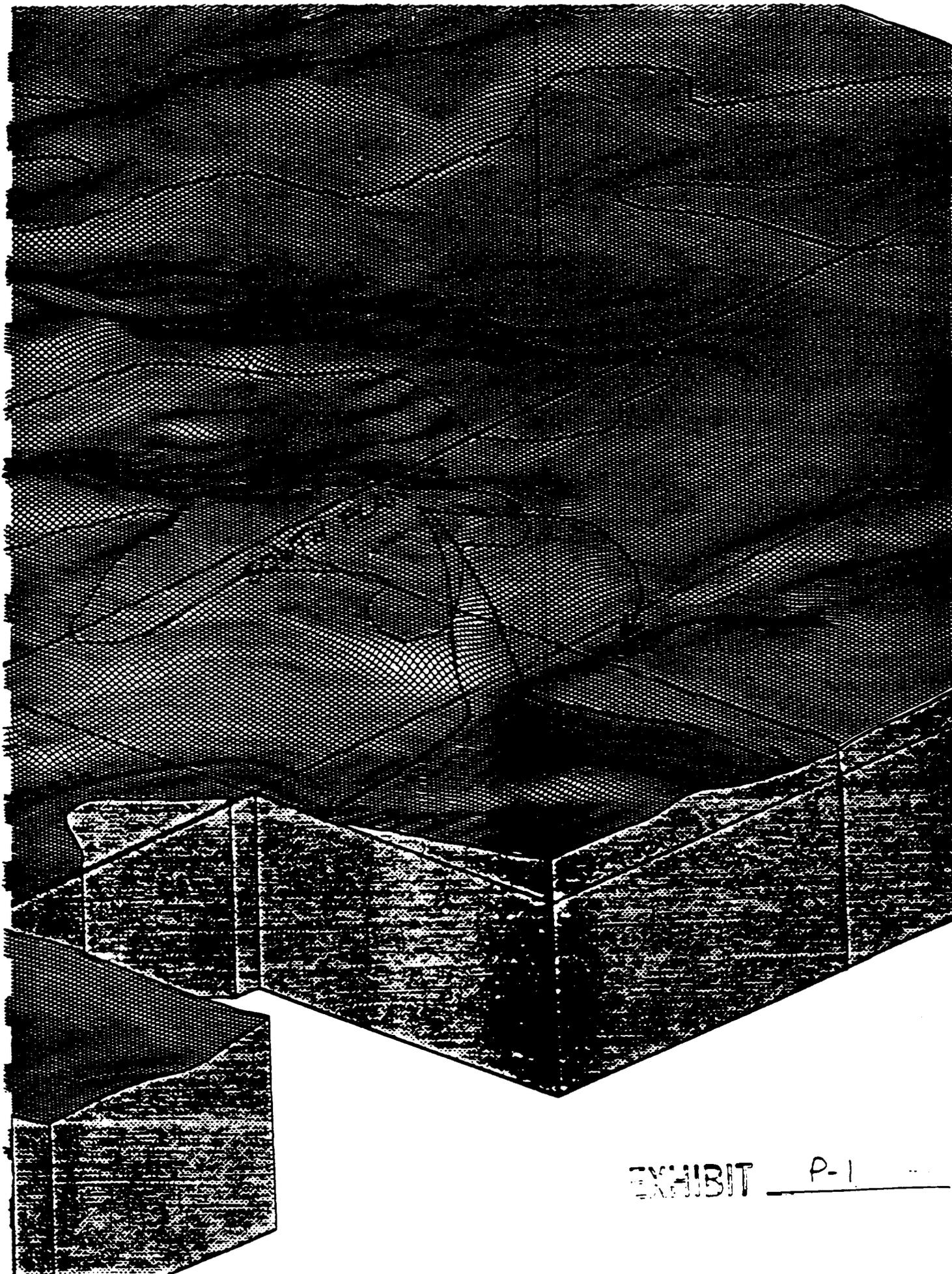
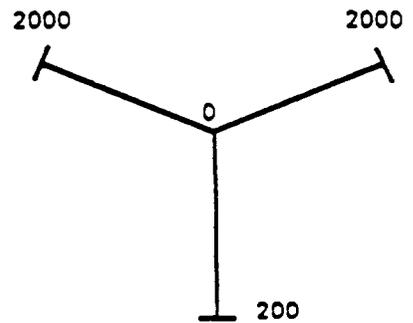


EXHIBIT P-1



Scale In Feet



Scale In Feet

Vertical Exaggeration 10X

**Prepared for:**

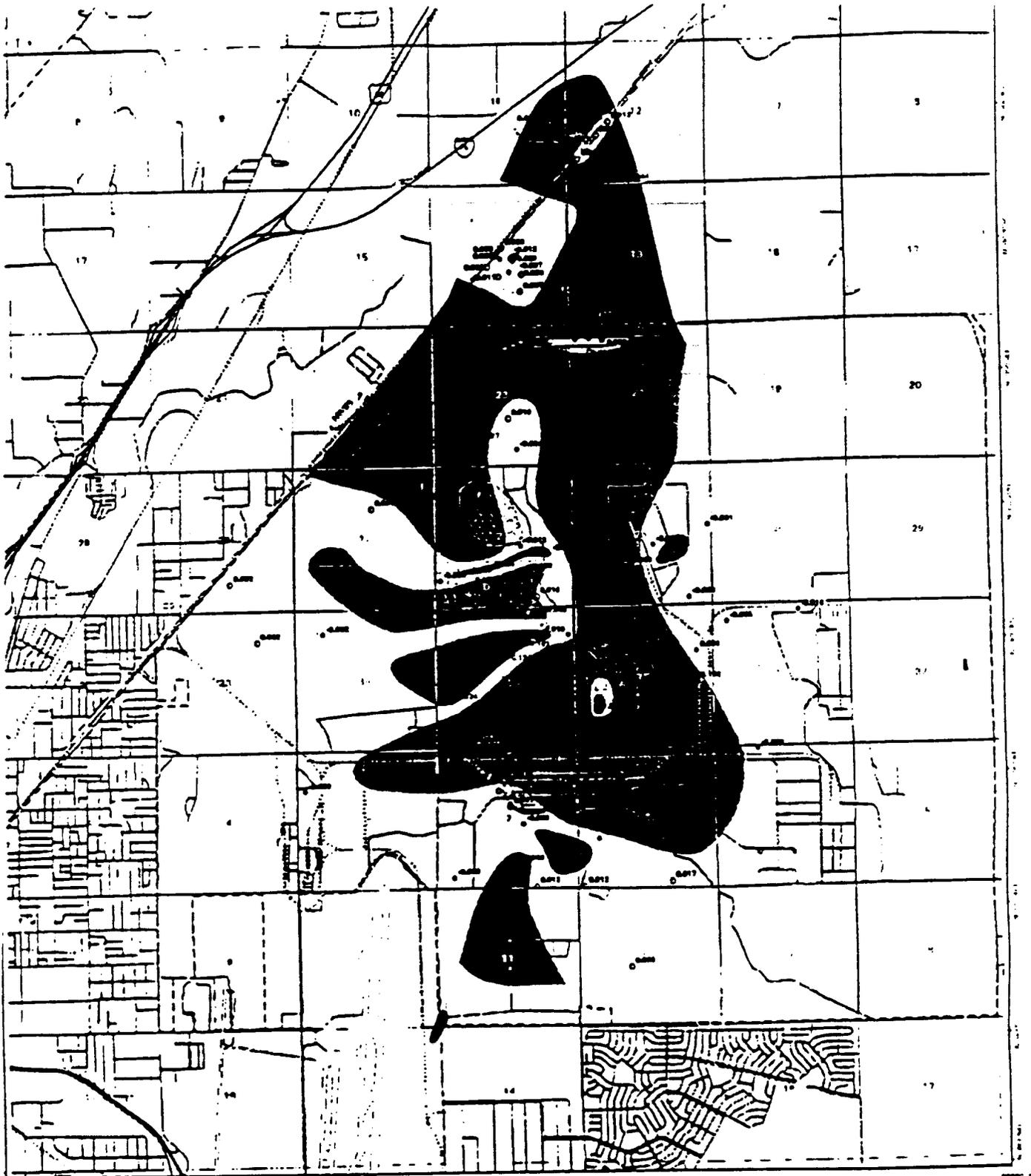
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Rocky Mountain Arsenal  
Contamination Cleanup

**PLATE 5.6 - 1**

**Integrated Soil and Groundwater  
Contaminant Distribution**

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated



Vertical Gradients		Explanation		Containment System	
	> 0.02 ft/m down	- - -	Arsenal boundary	- - -	Passive trench barrier wall
	0.02 ft/m down to 0.02 ft/m up	12	Section line	- - -	Hydraulic barrier physical barrier
	> 0.02 ft/m up	12	Section number	NBS	North Boundary System
- - -	Integration line (shaded where inferred)	0.200	Well cluster and gradient, downward gradient	NWBS	Northwest Boundary System
Vertical gradient on contour between an unconfined flow system well and the shallowest confined flow system well within 50 feet		0.300	Well cluster and gradient, upward gradient	ICS	Interdis Containment System
				FCPS	Fort Creek Pathway System
				NPS	Northwest Pathway System
				BANS	Basin A Nest System

Prepared for:  
 Program Manager for  
 Rocky Mountain Arsenal  
 Commerce City, Colorado

Prepared by:  
 Harding Lawson Associates

Figure 4.16  
 Generalized Vertical Gradient  
 Contour Map,  
 Water Year 1993

GWAR FY93



Modified Preliminary Assessment  
Site Investig. Report  
Leased & Transferred RMA  
Facilities & Land

Vol. 1

Oct 1994

Final Version

by Woodward-Clyde  
Consultants

EXHIBIT     R



Modified Preliminary Assessment  
Site Investig. Report  
Leased & Transferred RMA  
Facilities & Land

Vol. 2

Oct 1994

Final Version

by Woodward-Clyde  
Consultants

EXHIBIT R-1

October 13, 1995

Mr. John Yelenick  
3650 South Dahlia  
Denver, CO 80237-1002

Dear Mr. Yelenick:

Thank you for discussing your project at the Rocky Mountain Arsenal (RMA) with me in July. At the time, I was interested in pursuing a cooperative agreement for the Bureau of Mines to utilize the RMA site for our research in geophysical characterization of contaminated mine and mill sites. A preliminary assessment of the RMA, and review of the data available for the area in sections 11 and 12 south of the South Plant indicated that a fairly complex hydrologic regime exists in the area, and that there is a high probability that contamination is escaping the RMA boundary in a southerly direction. This conclusion is drawn based on the following documented information you provided:

1. Contamination in the area of the South Plant increased significantly from the period 1979-1983 to the period 1988-1989, even though the plant was inactive.
2. Disposal ponds at the South Plant are unlined, resting on permeable alluvium at groundwater level in the unconfined aquifer.
3. Contaminants were detected and theorized into sections 11 and 12 in 1989, and more recently at the southern boundary of the RMA.
4. A plume to the southwest of South Plant is documented, in addition to the groundwater "mound" existing under South Plant which causes radial flow in all directions.
5. While most sampling of soils and groundwater have been in the upper unconfined aquifer, contamination has also been found in the "A" sand beneath the South Plant central processing area.
6. Paleochannels of permeable sand occurring in the area are not well defined, and may be influencing groundwater flow, as well as the connectivity of the upper and lower aquifers. The aquitard above the "confined" aquifer may have been scoured allowing communication between the upper and lower aquifers.
7. Indications from recent studies (1994) indicate that ground-water flow occurs over channel divides (ridges) and through the lower Denver aquifer as well.
8. As recently as March of this year, the limited well coverage was insufficient to evaluate flow within the confined aquifer.

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As I indicated to you in our discussions, my work for the Bureau of Mines has applied non-destructive surface geophysical surveys to map the ground-water channeling at mine waste sites. I have discussed the relevant aspects of the RMA mentioned above with hydrologists and geologists at the Denver Research Center of the Bureau of Mines who concur that there is a high potential for contamination of groundwater off the south boundary of RMA from sources in the South Plant Area. Since the Federal Facility Agreement requires that groundwater quality at the RMA boundary must be protective of off-post receptors, it is recommended that the area south of the South Plant in sections 11 and 12 be evaluated to determine the source of contaminants measured at the southern boundary in the unconfined aquifer. The deeper confined aquifer in the Denver formation should also be sampled to determine if, and to what extent the two aquifers are in communication and whether contaminants are escaping the RMA in the lower ground-water system.

I would recommend an integrated geophysical survey in sections 11 and 12 similar to the work performed by John Nicholl, Jr. and Kathryn Cain (Proceedings, SAGEEP '92, v.1) in the Northwest Boundary Containment System. Interpretation of such surveys will provide a better model of the subsurface geohydrologic regime and determine the best locations for monitoring wells to intercept possible ground-water migratory pathways.

You may not be aware that my agency has been abolished and is scheduled for closure within 90 days from October 1. This is unfortunate since I feel that we had some unique resources to use in a geophysical characterization project such as yours; however, a cooperative effort is not feasible with the Bureau of Mines at this time. I would be happy to discuss or elaborate on my recommendations for additional characterization of migratory ground-water pathways at RMA.

Please feel free to call me at 236-0777 x691.

Sincerely,

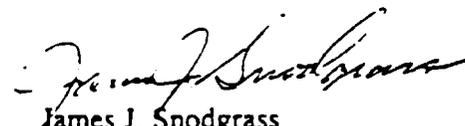
  
James J. Snodgrass  
Geophysicist  
11671 W. Asbury Pl.  
Lakewood, CO 80228

EXHIBIT 5

**James J. Snodgrass**  
*Environmental Geophysicist*

11671 W. Asbury Place  
Lakewood, CO 80228

Daytime: (303) 236-0777 x691 Evening: (303) 986-1868

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**Objective**

Position as Geophysicist or Consultant in an organization responsible for environmental site characterization and remediation planning.

**Career Summary**

My most recent efforts for the US Bureau of Mines developed near-surface geophysical methods to characterize abandoned mine wastes for remediation planning. I completed the required OSHA training for hazardous waste workers; consequently, my specific area of interest and expertise is the interpretation of hydrologic and geologic conditions at contaminated sites. Prior experience with the US Bureau of Mines entailed management of projects to develop and apply geophysical methods for mineral exploration, and for remote detection of geologic hazards. After graduation and command service in the Corp of Engineers, I entered private industry as a geophysicist with a seismic exploration contractor, attaining the position of Assistant Party Chief on a seismic crew, and enhancing my qualifications to conduct theoretical and applied research.

**Experience**

**Geophysicist- June, 1974 to Present**

US Bureau of Mines, Denver Research Center

- ◆ Principle Investigator for the project "Geophysical Methods to Characterize Minerals-Related Hazardous Waste Sites."
- ◆ Conceived, planned, and conducted research and applications for development of geophysical methods to characterize mine wastes.
- ◆ Interpreted geologic and hydrologic parameters for successful long-term remediation projects.
- ◆ Developed and demonstrated integrated geophysical approach to effect cost-efficient drilling and sampling programs.
  
- ◆ Developed theoretical and physical models to interpret guided wave propagation in coal seams.
- ◆ Developed a mine-transportable digital data acquisition system to implement seismic surveys in underground coal mines.
- ◆ Developed and demonstrated use of shear-wave sources and detectors for coal mine

seismic surveys.

- ◆ Established feasibility of in-seam seismic methods at operating underground coal mines.
- ◆ Developed and demonstrated a borehole radar probe to remotely locate faults.
- ◆ Developed a cross-borehole seismic system for application to coal exploration.
- ◆ Planned and coordinated field studies to demonstrate mining applications of borehole geophysical techniques.

Geophysicist- October, 1970 to June, 1974

US Bureau of Mines, Twin Cities Research Center

- ◆ Designed and implemented studies to determine seismic effects of underground mine blasting.
- ◆ Recorded ground vibrations from underground blasting; reduced and analysed data to correlate blasting parameters with experimental results.

Temporary Assistant- June, 1970 to October, 1970

US Bureau of Mines, Intermountain Field Operations Center

- ◆ Conducted mineral investigations in wilderness and primitive areas, including mapping, sampling, and records search and documentation.

Assistant Party Chief- January, 1967 to May, 1970

Geophysical Service, Inc.

- ◆ Established data quality assurance, determined processing parameters, and interpreted seismic surveys for oil exploration.

Combat Engineer Small Unit Commander- October, 1963 to October, 1966

- ◆ Platoon Leader and Company Commander of units responsible for engineering construction and support.

Education

Colorado School of Mines

B.S. - Geophysical Engineer

Other Qualifications

1990- OSHA-required 40-hour training for hazardous waste workers

EXHIBIT     S

## Publications

1. Snodgrass, J.J. and C.M. Lepper, 1993, Geophysical Characterization of Mineral Waste Sites. Proc. 15th Ann. Mtg. Assoc. of Abandoned Mine Lands Programs, Jackson, WY.
2. Snodgrass, J.J., and D.L. Boreck, 1993, Rock Mass Characterization using Geophysics for Slope Leaching. Proc. SAGEEP, San Diego, CA.
3. Snodgrass, J.J., 1989, Sonic Full-Waveform Applications to Stress Evaluation in Coal Mines. Proc. 3d Int. Symp. on Borehole Geophysics, Las Vegas, NV.
4. Snodgrass, J.J. and Newman, D.A., 1985, An In Situ Technique for the Assessment of Failure in Coal Pillars. Proc. 26th US Symp. on Rock Mech., Rapid City, SD.
5. Snodgrass, J.J., 1985, In-Seam Seismic Surveys Using Controlled-Waveform Source Transducers. Mining Engineering, SME-AIME, April.
6. \_\_\_\_\_, 1984, In-Seam Seismic Surveys Using Controlled-Waveform Source Transducers. SME-AIME Preprint No. 84-420.
7. Leckenby, R.J., and J.J. Snodgrass, 1984, In-Seam Geophysical Techniques for Coal Mine Hazard Detection. In Mine Ground Control, Bureau of Mines Information Circular 8973.
8. Snodgrass, J.J., and S.A. Suhler, 1983, In Situ Electromagnetic Probing of Coal Seams. SME-AIME Preprint No. 83-356.
9. Snodgrass, J.J., 1982, A New Sonic Velocity Logging Technique and Results in Near-Surface Sediments of Northeastern New Mexico. Bureau of Mines Technical Progress Report 117.
10. Snodgrass J.J., 1981, Dry Sonic Probe for Logging Coal and Roof Properties. Bureau of Mines Technology News No. 114.
11. Snodgrass J.J., 1981, Development of an Engineering Model Borehole Radar System for Void and Fault Detection. Proc. Symp. on Tunnel Detection, Colorado School of Mines, Golden CO.
12. Snodgrass, J.J., 1976, Calibration Models for Geophysical Borehole Logging. Bureau of Mines Report of Investigations 8148.
13. Snodgrass, J.J., and D.E. Siskind, 1974, Vibrations from Underground Blasting. Bureau of Mines Report of Investigations 7937.
14. Snodgrass, J.J., and D.E. Siskind, 1974, Bureau of Mines Research on Vibrations from Underground Blasting. Proc. 2d Rapid Excavation and Tunneling Conference, San Francisco, CA.

EXHIBIT

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15. Condon, J.L., and J.J. Snodgrass, 1974. Effects of Primer Type and Borehole Diameter on AN-FO Detonation Velocities. Mining Congress Journal.
16. Siskind, D.E., J.J. Snodgrass, R.A. Dick, and J.N. Quiring, 1973. Mine Roof Vibrations from Underground Blasts, Pilot Knob, Mo. Bureau of Mines Report of Investigations 7764.

EXHIBIT     S



DEPARTMENT OF THE ARMY  
PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL  
COMMERCE CITY, COLORADO 80221-745



June 11, 1996

REPLY TO  
ATTENTION OF

Office of the Program Manager

Mr. John J. Yelenick  
3650 South Dahlia  
Denver, Colorado 80237-1002

Dear Mr. Yelenick:

Thank you for your comments on the Rocky Mountain Arsenal (RMA) On-Post Proposed Plan. Public input is an important component of the remediation process, and your participation helps maintain the dialogue between the U.S. Army and the public.

In response to your letter of December 12, 1995, regarding an alternative water supply, the Army and Shell Oil Company have reached an Agreement in Principle, enclosed with these responses, with South Adams County Water and Sanitation District (SACWSD) that includes payment of \$48.8 million to SACWSD and requires that SACWSD supply water to well owners within the diisopropyl methylphosphonate (DIMP, an RMA byproduct) plume footprint by January 1999. Connection of any future well owners to the SACWSD water supply requires that the DIMP level in their water source be above the state standard. No exposure pathways to DIMP other than drinking water have been identified as a concern to human health. In addition, the Agreement in Principle requires SACWSD to provide 4,000 acre-feet of water to Commerce City and the Henderson area by 2004. The parties involved in the water negotiations believe that the settlement is fair and will permit SACWSD to secure an adequate water supply to satisfy Commerce City's and Henderson's water needs. If you have any further questions regarding the water supply, please contact

Mr. Tim Kilgannon of this office at 303-289-0259 or Mr. Larry Ford of SACWSD at 303-288-2646

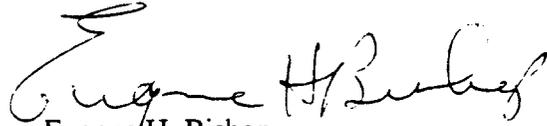
Responses to your comments in your letter of December 13, 1995, are enclosed.

*Readiness is our Profession*

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If you have any additional questions or concerns regarding the RMA On-Post Proposed Plan, please direct them to Mr. Brian Anderson of this office at 303-289-0248. Thank you again for your comments.

Sincerely,



Eugene H. Bishop  
Colonel, U.S. Army  
Program Manager

Enclosures

Copies Furnished:

Captain Thomas Cook, Litigation Attorney, Rocky Mountain Arsenal  
Building 111, Commerce City, Colorado 80022-1748  
Mr. Robert Foster, U.S. Department of Justice, 999-18th Street,  
Suite 945, North Tower, Denver, Colorado 80202  
Program Manager Rocky Mountain Arsenal, Attn: AMCPM-RMI-D, Document Tracking  
Center, Commerce City, Colorado 80022-1748

## RESPONSES TO COMMENTS BY MR. JOHN J. YELENICK ON THE ROCKY MOUNTAIN ARSENAL ON-POST PROPOSED PLAN

The Army appreciates your level of interest and effort in commenting on the On-Post Proposed Plan for RMA. The regional flow of groundwater, both in the shallow (unconfined) and deeper (confined) flow systems is from southeast to northwest. The volume of shallow groundwater flow crossing the southern boundary of RMA and flowing on-post is approximately 2,000 gallons per minute (gpm). The central part of RMA, including South Plants, is a topographically and hydrologically high area where all of the shallow groundwater flow is derived from within the central area and feeds into this regional flow. Within the central sections of RMA (i.e., 1, 2, 25, 26, 35, and 36) the total amount of groundwater flow is less than 50 gpm. The South Plants groundwater mound is a result of recharge on the topographic high in the bedrock. Groundwater flow associated with the South Plants mound is only about 10 to 20 gpm. Of this flow, only about 10 gpm flows south within Sections 1 and 2. This southward flow mixes with the much higher regional flow in the vicinity of the South Lakes and then flows toward the west and northwest boundaries.

Many statements made in your comments are correct and have been reported in whole or in part in previous reports prepared by the Army and Shell. However, due to several omissions in your conceptual model for groundwater flow, the final conclusion that groundwater flows off Rocky Mountain Arsenal to the south is incorrect.

For ease of comparing this response to your December 13, 1995, letter, the following responses reference the applicable page and paragraph of your letter.

**Page 1, last paragraph:** The comment has misstated the definition of high, low, and uncontaminated site types as discussed in the RMA On-Post Detailed Analysis of Alternatives and the Proposed Plan. High priority sites are those that had an established record of groundwater contamination beneath or near the site and that had few records concerning soil contamination. In these cases, groundwater had already been contaminated, and additional testing was necessary to learn more about the contamination source. Low priority sites had no records of either soil or groundwater contamination, due to lack of study, but were considered potentially contaminated based on records of spills and/or waste disposal at the site. Uncontaminated sites were those that could possibly have been contaminated due to their physical nature but for which preliminary investigation revealed no reason to suspect contamination. The uncontaminated designation was not dependent upon whether a responsible party could be identified.

**Page 2, first paragraph:** As a general rule, soil samples were collected from above the water table regardless of the site type designation. The sampling approach was developed by geologic, chemical and other environmental experts from around the United States. Samples were not generally taken from below the water table because it would be difficult to distinguish between soil and groundwater contamination by using this approach. For sites where wastes were disposed below the water table (e.g., burial trenches in Section 36), soil samples were collected

from the saturated zone. The relationship between the amount of contaminants present in groundwater, pore water, and aquifer soils was studied in a special investigation. The results of the study were used to assess potential contaminant pathways and transport mechanisms.

All sites were investigated regardless of their site type designation as high, low, or uncontaminated. The designation was used to compute a grid spacing or boring density for each site.

**Page 2, third paragraph:** The southerly flow of groundwater as shown on your Exhibit F terminates in the vicinity of Lower Derby Lake and Lake Ladora. The reason for this termination is discussed below in the response to **Page 4, first paragraph**.

**Page 2, fifth paragraph:** Your Exhibit J delineates potentially contaminated soil in the lake areas. It is not clear from your comment how you believe the lake sediment contamination is related to the contaminant levels present in groundwater upgradient in the South Plants Central Processing Area. No groundwater plumes associated with the lakes or excavated lake sediments have been detected. For clarification, the South Plants Central Processing Area is located in the northwest corner of Section 1, and it is beneath this area that elevated concentrations of contaminants occur in the groundwater (as you note in your comment). It is also in this area where groundwater contaminants have been detected in the A sand in the Denver Formation.

**Page 2, sixth paragraph:** There is no uninterrupted sequence of thick saturated alluvium that forms a pathway between the South Plants and the southern lakes, as you suggest. Saturated portions of the alluvium comprise a portion of the unconfined aquifer in the South Plants area. The weathered portion of the Denver Formation is also part of the unconfined aquifer. In some portions of the South Plants, the alluvial cover is very thin or has been removed. In many areas of South Plants, the alluvium is unsaturated; that is, the water table is below the bottom of the alluvium, and the groundwater flows at very slow rates within the Denver Formation.

**Page 2, seventh paragraph:** As a clarification to your comment, the permeability of the lake bottom affects the interchange between the surface water and the unconfined aquifer rather than the interchange between the unconfined and confined aquifers.

**Page 3, first paragraph:** The Army agrees that various estimates of the volume of contaminated soils have been computed for all source areas. This has largely been due to using different "depths of contamination" as the basis for the estimates (e.g., 5 feet, 10 feet, 15 feet). Regardless of the contaminant volume estimates for South Plants, however, this area has always been considered a source of groundwater contamination by scientists investigating RMA.

The preferred remedy of landfilling and covering/capping materials in the South Plants addresses all of the contamination of concern in the area. The volume of soil addressed by the remedy can be presented differently depending on the depth used for calculating the volume to be covered/capped.

**Page 3, second paragraph:** The lakes receive water from irrigation flows, surface runoff as a result of precipitation, and groundwater discharge. The lakes also recharge the unconfined aquifer. Some lake water evaporates. Chemical analyses of lake water have shown that the lake water is uncontaminated. Therefore, leakage of water from the lakes contributes clean water to the unconfined aquifer. The lake sediments became contaminated because certain compounds adhered to soil particles in South Plants that were washed into the lakes during rainstorms. Because these compounds adhere to the sediments, it is unlikely that contamination in these sediments will create groundwater plumes.

**Page 3, fourth paragraph:** The southerly groundwater flow has been well-established in numerous reports prepared by the Army. This pathway stops in the vicinity of the lakes. Please see the response to **Page 4, first paragraph**, below. Your Exhibit L shows the area where the A sand subcrops to the alluvium, which is approximately one-quarter to one-half mile north of the South Plants.

**Page 3, fifth paragraph:** Alluvial deposits with thicknesses of slightly more than 100 feet are present south of the lakes. The 130-foot-thick deposits to which you refer are in the Irondale Channel on the west RMA border. The saturated thickness of the alluvial deposits is slightly more than 60 feet in some areas of the southern sections of RMA. It is true that groundwater flow is not always restricted by buried channels, or paleochannels, and that groundwater may flow over channel divides; therefore, the water table elevations give the most accurate picture of groundwater flow direction.

**Page 3, last paragraph:** Groundwater flows from points of higher elevation or hydraulic pressure to points of lower elevation or hydraulic pressure, which is often called hydraulic head. The hydraulic gradient is the difference in head (or elevation) between two points, divided by the distance between the two points. As you suggest in your comment, the hydraulic gradient must be evaluated by hydrogeologists as a three-dimensional problem. Long-term monitoring has shown that contamination in the confined Denver Formation is restricted to the major source areas and underlies contaminated unconfined groundwater plumes. Because it is difficult to install a deep well through shallow contaminated zones, some of the contamination in the Denver Formation was introduced when wells were installed. This contamination is low in concentration and very limited in extent. There is no evidence of contaminant plumes in the confined flow system. Contaminant studies in one of the most permeable Denver Formation units (the A sand) that lies beneath a large source (South Plants) have shown that, even in this unit, contamination is localized and is not widespread.

**Page 3, last paragraph, last sentence:** The exchange of water between the unconfined and confined aquifers has been studied and numerically (computer) modeled numerous times during the past ten years. Throughout many areas of RMA, groundwater from the unconfined aquifer recharges the confined aquifer through vertical leakage. There is no evidence of lateral migration of contamination in the confined aquifer. Even if this were to occur, the strata of the Denver Formation are slightly dipping to the southeast so that as one travels from the southern portions

of RMA toward the Platte River, older and lower sections of the geologic column are crossed. Because the bedrock erosional surface drops toward the Platte River, it cross-cuts the Denver Formation, exposing successively deeper and deeper levels of the Denver Formation to the base of the alluvium. The result is that water in a permeable Denver zone eventually discharges into the alluvium on its way to the Platte River. For example, water in the A sand occurs at a depth of about 80 feet beneath the South Plants. This water discharges to the alluvium in Section 36 in the A sand subcrop area, which is located approximately one-quarter mile north of South Plants (see your Exhibit L).

**Page 4, first and second paragraphs:** This paragraph describes aquifer thickness, vertical gradients, regional hydraulic gradient, and the slope of the bedrock surface. Although you do not state how these features affect groundwater flow, it appears that this was your intent. Therefore, some of the concepts that pertain to these features are summarized below.

- Aquifer Thickness: A thicker aquifer can transmit more water than a thin aquifer can if the hydraulic gradients and the permeabilities of the thick and thin aquifers are the same. Hydraulic gradients are lower in areas where the aquifer is thick and higher where the aquifer is thin. Considering hydraulic gradient as the "driving force" behind groundwater flow, it takes more driving force to push an equal amount of water through a thin aquifer than through a thick aquifer. Variations in the aquifer thickness cause local changes in the groundwater flow directions, but groundwater cannot flow upgradient.
- Vertical Gradient: Vertical gradient data indicate whether groundwater is moving upward or downward in addition to its regional flow direction, such as toward the South Platte River. Downward gradients predominate in areas of groundwater recharge, and upward gradients indicate areas of groundwater discharge.

If a well was installed in the South Platte River, it would show an upward gradient, indicating that groundwater was feeding or recharging the river. It is because of this groundwater discharge that the river can flow even during dry periods with little or no rain

- Regional Hydraulic Gradient: The elevation of the water table in the southeast corner of RMA is approximately 5300 feet above mean sea level (ft M.S.L.), and the elevation of the water table at the South Platte River is approximately 5000 ft M.S.L. Therefore, groundwater flows "downhill" from the southeast corner of RMA toward the South Platte River. Superimposed on the regional gradient is a groundwater mound in the South Plants. The mound is created by leaking pipes and increased recharge from unlined ditches and ponded areas, and may also be the result of natural variations in the permeability of the alluvium and bedrock in the area. Groundwater in the area of the mound flows radially out from the mound in all directions. A groundwater divide has been created at the confluence of the regional flow system and the mound. As a result, groundwater entering RMA from the southeast is forced to turn either east or west around

the South Plants area. Water flowing south from the mound area is forced to change direction and join the regional flow system. The groundwater flow direction in the confined Denver Formation is also to the northwest toward the South Platte River.

- **Bedrock Slope:** The sloping surface of the bedrock forms the bottom of the alluvial aquifer. Groundwater flow directions are determined by the slope of the groundwater table (top of the aquifer) and not by the slope of the base of the aquifer. As stated above, the thickness of the aquifer, which is controlled in some areas by the topography of the bedrock surface, can locally alter the groundwater flow direction. However, variations in the bedrock surface do not turn groundwater around to flow uphill against the regional gradient.

Because of the factors reviewed above, it is clear that groundwater cannot flow upgradient (southward) from the southern boundary of RMA. Groundwater flow southward from RMA is physically impossible.

**Page 4, third through fifth paragraphs:** The Army understands your concerns about the health of residents in neighboring communities regardless of whether the contamination is ensuing from RMA. The effects on human health of many of the compounds produced at RMA have been studied for many years, and this information is available at the Joint Administrative Record Document Facility (JARDF). Studies have been completed by the Agency for Toxic Substances and Disease Registry (ATSDR) independently and in conjunction with the Colorado Department of Public Health and Environment (CDPHE). These studies showed no conclusive health impact on the surrounding communities from RMA. Also, the final Public Health Assessment, produced by ATSDR, should be complete in the summer of 1996.

A Medical Monitoring Program for the communities surrounding RMA has also been identified as part of the On-Post Proposed Plan. The primary goals of the Medical Monitoring Program are to monitor any off-post impact on human health due to the RMA remediation. This Program will continue until the soil remediation is completed. A Medical Monitoring Advisory Group has been established to evaluate specific issues covered by the Medical Monitoring Program. The Group is composed of representatives of the Army, Shell Oil Company, the U.S. Environmental Protection Agency (EPA), CDPHE, Tri-County Health Department, ATSDR, the U.S. Fish and Wildlife Service (USFWS), Denver Health and Hospitals, and the Site-Specific Advisory Board. The Group also includes community representatives from the communities of Montbello, Commerce City, Henderson, Green Valley Ranch, and Denver. If you would like more information on the Medical Monitoring Program or wish to participate as part of the Medical Monitoring Advisory Group, please call Ms. Mary Seawell of CDPHE at 303-692-3327.

**Page 4, sixth paragraph:** The Army has collected and analyzed thousands of soil, water, air, structure, and biota samples during the past many years and believes it has adequately characterized the nature and extent of contamination at RMA.

**Page 4, seventh and eighth paragraphs:** The Army believes that the selected remedy is consistent with the policies and guidelines pertaining to environmental justice. The selected remedy is protective of human health and the environment.

AGREEMENT IN PRINCIPLE REGARDING A WATER SUPPLY BETWEEN  
SOUTH ADAMS COUNTY WATER AND SANITATION DISTRICT (SACWSD),  
THE ARMY AND SHELL OIL COMPANY

1. PAYMENT BY THE ARMY AND SHELL WILL BE IN THREE ANNUAL  
INSTALLMENTS, \$16 MILLION, \$16 MILLION, AND \$16.8 MILLION. THE FIRST  
PAYMENT TO BE MADE WITHIN 90 DAYS OF 1 OCTOBER 1996. SUBJECT TO  
THE AVAILABILITY OF FUNDS.

2. PAYMENT OF THE ABOVE SUM IS CONDITIONED ON ADHERENCE TO THE  
FOLLOWING TERMS. OTHER TERMS AND CONDITIONS WILL BE THE  
SUBJECT OF FURTHER NEGOTIATION.

A. PAYMENTS WILL BE HELD IN TRUST FOR SACWSD. TRUSTEE TO  
BE CHOSEN BY THE ARMY & SHELL WITH SACWSD CONCURRENCE. ANY  
INTEREST THAT ACCRUES MUST BE RETURNED TO THE ARMY AND SHELL.

B. SACWSD MUST HOOK UP OWNERS OF DOMESTIC WELLS IN THE  
DIMP FOOTPRINT WHO CONSENT TO BE INCLUDED IN THE SOUTH ADAMS  
COUNTY WATER AND SANITATION DISTRICT AND WHO CONSENT TO BE  
HOOKED UP; AND SUCH HOOK UPS WILL BE COMPLETED NOT LATER THAN  
THE 24TH MONTH AFTER THE DATE OF THE INITIAL PAYMENT FOR THOSE  
WHO CONSENT BY THE 20TH MONTH AFTER THE INITIAL PAYMENT.  
THOSE WHO REQUEST TO BE HOOKED UP AFTER THE 20TH MONTH WILL  
BE HOOKED UP WITHIN A REASONABLE TIME. AS NOTED IN G, BELOW,  
SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN 130  
HOMES. SACWSD ALSO IS NOT RESPONSIBLE FOR EXTENDING THE MAIN  
WATER DISTRIBUTION SYSTEM BEYOND THE DIMP FOOTPRINT AS  
FINALLY DETERMINED IN THE ON-POST ROD. THE MAIN WATER  
DISTRIBUTION SYSTEM FOR THE HENDERSON AREA (12" DIAMETER PIPE  
SYSTEM) WILL BE COMPLETED BY THE 24TH MONTH AFTER THE INITIAL  
PAYMENT. SACWSD WILL RECEIVE FROM THE TRUST ACCOUNT \$3,950 FOR  
EACH HOME CONNECTED IN THE NEW SERVICE AREA AND \$2,265 FOR  
EACH HOME CONNECTED IN THE OLD SERVICE AREA, UP TO A TOTAL OF  
130 HOMES. ATTACHED IS THE MAP THAT SHOWS THE LATEST DIMP  
PLUME WHICH IS TO BE UPDATED PRIOR TO THE FINALIZATION OF THE  
ON-POST ROD.

C. SACWSD MUST CONTRACT FOR WATER RIGHTS OR SUPPLY BY  
NOT LATER THAN SIX MONTHS AFTER THE DATE OF THE FINAL PAYMENT.

D. PAYMENTS FROM THE TRUST TO SACWSD MUST BE TIED  
DIRECTLY TO THE ACQUISITION AND DELIVERY OF 4000 ACRE FEET OF

WATER AND THE HOOK UP OF WELL OWNERS IN THE HENDERSON AREA. ALL EXPENDITURES BY SACWSD PAID FROM THE TRUST ACCOUNT WILL BE SUBJECT TO AUDIT BY THE ARMY AND SHELL. UP TO \$43 MILLION MAY BE SPENT ACQUIRING AND DELIVERING THE 4000 ACRE FEET OF WATER AND UP TO \$4.65 MILLION MAY BE SPENT ON HOOK UPS IN THE HENDERSON AREA. THE REMAINING \$1.15 MILLION IS TO OFFSET INFLATION OR CONTINGENCIES. ANY EXPENDITURES CHALLENGED BY THE ARMY, SHELL, OR THE TRUSTEE WILL BE SUBMITTED TO THE ALTERNATIVE DISPUTE RESOLUTION (ADR) METHOD DESCRIBED IN E, BELOW.

E. AN INDEPENDENT QUALIFIED AGENT, WHO IS A SENIOR WATER RESOURCE EXPERT WITH EXPERIENCE IN ACQUIRING AND DELIVERING WATER, WILL BE SELECTED BY SACWSD, WITH THE CONCURRENCE OF THE ARMY AND SHELL, TO DIRECT THE SELECTION, ACQUISITION, AND IMPLEMENTATION OF A WATER SUPPLY ON BEHALF OF SACWSD THAT CAN BE OPERATIONAL BY 1 OCTOBER 2004. THE TERMS OF THE AGENCY WILL BE AGREED UPON SACWSD, THE ARMY AND SHELL. THE ARMY AND SHELL WILL CONCUR WITH THE DESIGN OF AND SUBSEQUENT BID PACKAGES FOR THE WATER DELIVERY SYSTEM. THE CONSTRUCTION FIRM OR FIRMS TO CONSTRUCT THE PROJECT OR PROJECTS WILL BE SELECTED BY COMPETITIVE BID BASED ON A SOLICITATION PROCESS CONCURRED IN BY THE ARMY AND SHELL. THE COSTS ASSOCIATED WITH IMPLEMENTING THIS SECTION WILL BE PAID FROM THE TRUST ACCOUNT. ANY DISAGREEMENT ARISING REGARDING THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO A FORM OF ADR CONSISTING OF SUBMISSION OF THE DISPUTE TO THREE WATER RESOURCE EXPERTS; ONE SELECTED BY THE ARMY AND SHELL; ONE SELECTED BY SACWSD; AND ONE SELECTED BY THE INDEPENDENT AGENT OR BY THE AGREEMENT OF THE TWO SIDES IF THERE IS NO INDEPENDENT AGENT. THE COST OF ADR WILL BE BORNE BY THE PARTIES WITH EACH SIDE PAYING FOR ITS EXPERT AND EACH SIDE PAYING 50% OF THE COST OF THE EXPERT FOR THE INDEPENDENT AGENT.

F. ALL FUNDS REMAINING IN THE TRUST ACCOUNT AT THE COMPLETION OF THE WATER PROJECT OR ON 1 OCTOBER 2004, WHICHEVER OCCURS FIRST, WILL REVERT TO THE ARMY AND SHELL. REVERSION INCLUDES ANY SAVINGS REALIZED BY SACWSD FROM COST SHARING PROJECTS WITH OTHER ENTITIES. REVERSION MAY BE DELAYED WHERE UNKNOWN OR UNEXPECTED CONDITIONS OR CIRCUMSTANCES PREVENT COMPLETION OF THE PROJECT BY 1 OCTOBER 2004. WHETHER, AND FOR HOW LONG, REVERSION SHOULD BE DELAYED WILL BE SUBJECT TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

G. SACWSD AGREES TO SATISFY THE OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 OF THE AGREEMENT ON A CONCEPTUAL REMEDY FOR THE CLEAN UP OF ROCKY MOUNTAIN ARSENAL. THE PAYMENTS TO SACWSD WILL CONSTITUTE COMPLETE SATISFACTION OF THE ARMY AND SHELL'S OBLIGATIONS CONTAINED IN ITEMS 16 AND 17 AND COMPLETE SATISFACTION OF ALL COSTS ASSOCIATED WITH THE TERMS AND CONDITIONS NECESSARY TO EXECUTE THESE OBLIGATIONS. ALL COSTS NECESSARY TO EXECUTE THE REQUIREMENTS OF THIS AGREEMENT, UNLESS OTHERWISE EXPRESSLY STATED, WILL BE PAID OUT OF THE TRUST ACCOUNT. SACWSD WILL NOT BE RESPONSIBLE FOR MONITORING REQUIREMENTS TO BE PERFORMED BY THE ARMY AND SHELL IN ACCORDANCE WITH ITEM 17 AND SACWSD WILL NOT BE RESPONSIBLE FOR HOOKING UP MORE THAN THE FIRST 130 WELL OWNERS. ANY ADDITIONAL HOOK UPS REQUIRED UNDER THE TERMS OF ITEM 17 WILL BE THE RESPONSIBILITY OF THE ARMY AND SHELL.

H. SACWSD WAIVES AND RELEASES THE ARMY AND SHELL FROM ALL RESPONSE COSTS AND CLAIMS FOR DAMAGES FOR ALL RMA CONTAMINANTS AND POLLUTANTS IN THE SACWSD WATER THAT ARE KNOWN OR DETECTED PRIOR TO, OR AT THE TIME OF, THE SIGNING OF THE ON-POST RECORD OF DECISION (ROD). PAYMENT OF RESPONSE COSTS, IF ANY, OWED TO SACWSD AT THE TIME OF THE SIGNING OF THE ON-POST ROD WILL BE DETERMINED BY AGREEMENT OF THE PARTIES PRIOR TO SIGNING THE FINAL AGREEMENT CONTEMPLATED BY THIS AGREEMENT IN PRINCIPLE..

I. ANY REUSABLE RETURN FLOWS ASSOCIATED WITH ANY WATER SOURCE ACQUIRED WILL BE MADE AVAILABLE TO SACWSD FOR REPLACEMENT OF DEPLETIONS UNDER ITS EXISTING AUGMENTATION PLAN FOR THE FIRST THREE YEARS FOLLOWING THE INITIAL DELIVERY OF WATER FROM THE NEW WATER SOURCE IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED, OTHERWISE RETURN FLOWS ASSOCIATED WITH THE NEW WATER SOURCE, AND ANY WATER UNUSED BY SACWSD FROM THE WATER SOURCE ITSELF, SHALL BE MADE AVAILABLE AT ARMY AND SHELL EXPENSE FOR THE REMEDIATION OF RMA FOR NOT LESS THAN 10 YEARS, IN ANNUAL AMOUNTS TO BE DETERMINED ACCORDING TO REASONABLE NEED. THE FINAL PERIOD TO BE AGREED UPON. AFTER REMEDIATION, ALL RETURN FLOWS WILL RETURN TO THE USE OF SACWSD. EACH PARTY WILL BE RESPONSIBLE FOR ANY NECESSARY APPROVALS. DISPUTES ARISING OVER THE IMPLEMENTATION OF THIS SECTION WILL BE SUBMITTED TO ADR AS DESCRIBED IN E, ABOVE.

J. SACWSD WILL WARRANT AND OTHERWISE DEMONSTRATE IT IS AUTHORIZED AND QUALIFIED TO ENTER INTO THIS AGREEMENT, ACQUIRE

AND PROVIDE WATER AND HOOK UP WELL OWNERS, SUBJECT TO THOSE WELL OWNERS' CONSENT TO INCLUSION WITHIN THE DISTRICT. SACWSD WILL BE RESPONSIBLE FOR PERMITTING, ADJUDICATION, AND OTHER REQUIREMENTS OF STATE AND FEDERAL LAW.

K. PARTICIPATION BY THE ARMY AND SHELL, OR BY THEIR REPRESENTATIVES, IN OVERSIGHT IN NO WAY CONSTITUTES AN EXPRESS OR IMPLIED WARRANTY OR REPRESENTATION REGARDING THE ADEQUACY, SUITABILITY, OR LEGALITY OF SACWSD OR THE INDEPENDENT AGENT'S ACTIONS TO OBTAIN OR PROVIDE WATER.

L. ALL PARTIES RESERVE ANY RIGHTS THEY MAY HAVE REGARDING NONPERFORMANCE BY THE OTHER PARTIES.

M. THIS AGREEMENT IS SUBJECT TO COMPLIANCE WITH ALL APPLICABLE LAWS AND WILL BECOME EFFECTIVE AND BINDING WHEN INCORPORATED BY REFERENCE IN THE ON-POST ROD.

N. THE AMOUNT AGREED UPON IS SUBJECT TO APPROPRIATE CREDITS FOR ANY ARMY AND SHELL CONTRIBUTIONS TO WATER OR INFRASTRUCTURE, SUBJECT TO SACWSD APPROVAL. APPROVAL WILL NOT BE WITHHELD UNREASONABLY. DISPUTES WILL BE SUBMITTED TO THE METHOD OF ADR DESCRIBED IN E, ABOVE.

O. ALL PARTIES WILL PUBLICLY SUPPORT THIS AGREEMENT.

P. ALL O&M COSTS ASSOCIATED WITH THE ACQUISITION AND DELIVERY OF WATER AND WITH THE HOOK UP OF WELL OWNERS WILL BE SACWSD'S RESPONSIBILITY. THE ARMY WILL SUPPORT ANY NECESSARY AMENDMENTS TO ALLOW THE KLEIN FUND ALSO TO BE USED FOR O&M COSTS FOR THE NEW WATER SYSTEM.

Q. QUARTERLY PROGRESS REPORTS WILL BE MADE BY SACWSD, OR ITS REPRESENTATIVE, TO THE RMA COUNCIL.

R. THE ARMY OR SHELL WILL PAY, IF NECESSARY, WITHIN 30 DAYS AFTER SIGNATURE OF THE ROD, A SUM NOT TO EXCEED \$1 MILLION TO PURCHASE AN OPTION ON WATER AGREED TO BY SACWSD, THE ARMY AND SHELL. THIS SUM WILL BE CREDITED AGAINST THE FIRST ANNUAL PAYMENT UNDER SECTION 1, ABOVE.

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DRAFT

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Henderson

East 124th

East 120th Ave

Brighton Annex

2

176US 6

Plains Rd

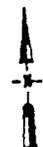
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### Offpost Water Supply Features

- Interstate Highway
- US & State Highway
- Route & Road
- Railroad
- Stream
- Aerial Boundary
- Section Line
- South Adams County Water System (Location approximate)
- Existing Wastewater (Over 8 & V 1981)
- Proposed 12" Main Water Distribution System

DAMP Project Based on MUA May 1985 Contingency  
Stream - TCMO Database Samples 1983-85  
and BMAAED April 1984-85

Damaged Limit (0.3 - 1.74 mph)



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Scale 1:25,000



January 25, 1986

TOTAL P.02