



Dynamically Managing Environmental Data

Department of Defense Environmental Monitoring and Data Quality Workshop

May 12, 2003

Ann Bernhardt, AMEC



Environmental Data Management System

AMEC offers the Environmental Data Management System (EDMS), a web-based solution to manage and visualize your program data. EDMS is a multi-component application designed to handle vast or complicated datasets securely via the internet.



The screenshot displays the EDMS website interface. At the top right, there is a graphic showing a landscape scene (a river and trees) being inserted into a map, symbolizing the integration of environmental data with geographic information. Below this, the title "Environmental Data Management System" is prominently displayed in large, bold, brown and teal letters. Underneath the title, there are four navigation buttons, each featuring a white water drop icon on a teal background. The buttons are labeled: "Overview & Key Data", "View Map", "Query Database", and "Administrative Record". At the bottom right of the page, there is a footer with the text "About | Comments/Contact Us | Site Map".

Environmental Data Management System

- Overview & Key Data
- View Map
- Query Database
- Administrative Record

About | [Comments/Contact Us](#) | [Site Map](#)

Web-based EDMS

Environmental Data Management System (EDMS)

- **Interactive Mapping:** “clickable” GIS map layers to evaluate contaminant sources, particle tracks, plumes, and chemical data results
- **Data Query:** query or view data, download reports
- **Data Exchange:** Upload, share, download spatial data layers, tabular data, and Administrative Record documents and metadata
- **Enterprise Level System:** Efficient, scalable infrastructure to store and access data.
- **Quality Data:** Contractor maintains ownership of its own data
- **Role Based Access:** Accommodates the broad range of stakeholder needs

Broad List of Stakeholders

- **General Public**
- **Citizen Task Force Members**
- **EPA-** Environmental Protection Agency
- **State DEP-** State Department of Environmental Protection
- **Contractors**
- **Military**

Scalable System

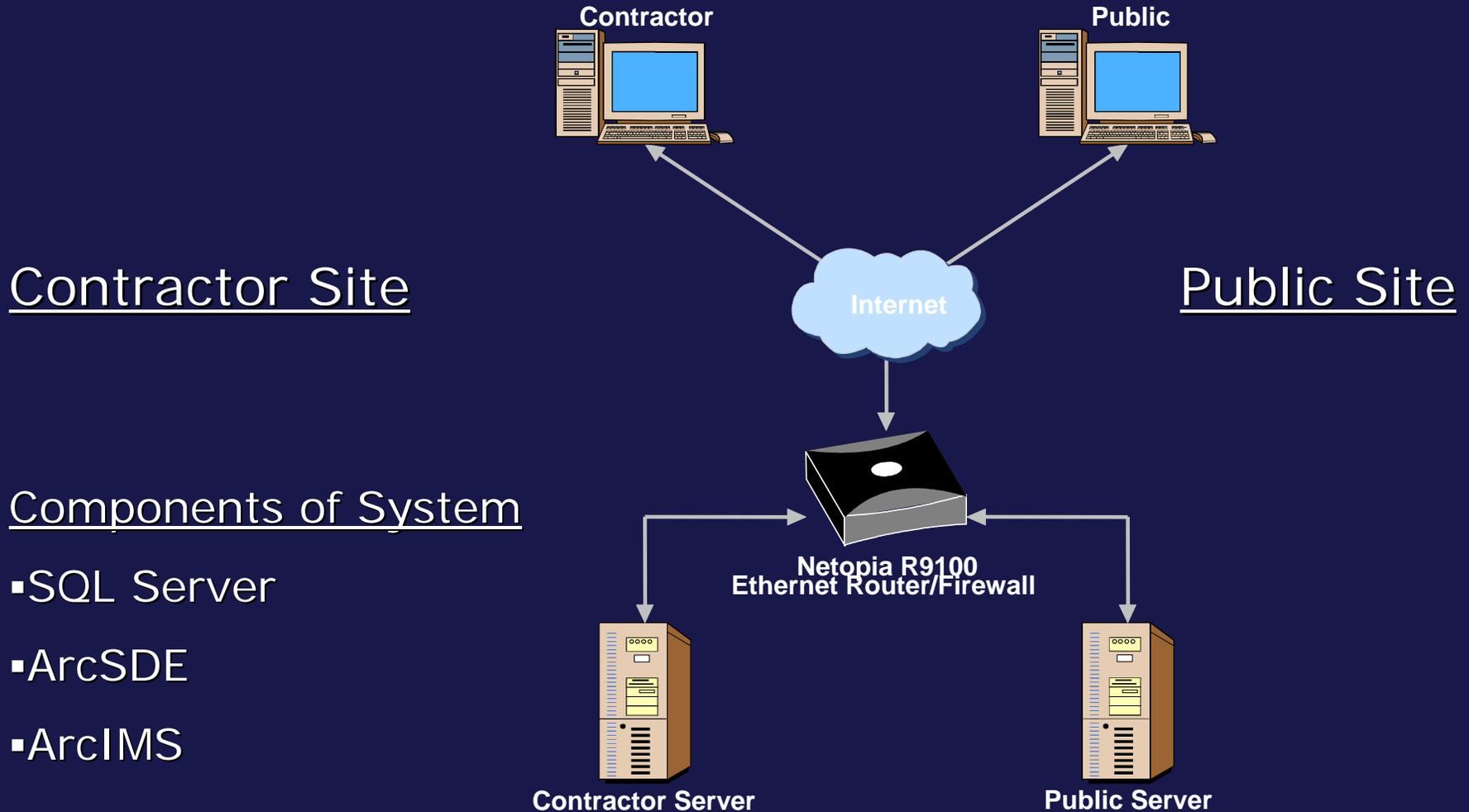
Various data types: chemical, geologic, geographic, spatial, unexploded ordnance (UXO) discovery, documents.

Scale:

- Millions of Tabular records from multiple contractors
- Thousands of Spatial Data Layers
- Thousands of Documents



EDMS System Configuration



Contractor Site

Public Site

Components of System

- SQL Server
- ArcSDE
- ArcIMS



Environmental Data Management System



Overview &
Key Data



View Map



Query Database



Administrative
Record

Key Program Information

Environmental Data Management System



Overview &
Key Data



View Map



Query Database



Administrative
Record



Overview & Key Data

As part of our investigation, the Impact Area Groundwater Study Program is sampling air, soil, groundwater and surface water in and around Camp Edwards. The **Environmental Data Management System** is a compilation of the raw data received from these sampling events.

The EDMS Web site is designed to facilitate the sharing of technical information regarding the investigation among the Groundwater Study Program, the Army Corps of Engineers, contractors and **regulatory agencies**. It contains strictly technical data presented as our scientists and engineers receive it.

The **Overview and Key Data** section is designed to assist those not familiar with the scientific and technological aspects of sampling reports. It explains the various types of samples and the analytes for which the samples are tested. It also provides a guide to reading the results and understanding how they apply to our investigation.

The other EDMS sections contain brief introductions, pop ups and links to explain terms and information that might be unfamiliar.

For general information on the investigation and its findings, please visit the

[Introduction](#)

[Sampling](#)

[Background Substances](#)

[Values](#)

[Contaminants Being Investigated](#)

[About View Map](#)

[About Query Database](#)

[About Administrative Record](#)

[General Program Information](#)

View Map



EDMS Data Administration

Massachusetts
Military Reservation

SAMPLE DATA

GIS DATA

VIEW MAP

REQUEST LOCID

CUSTOM QUERY

MY PROFILE

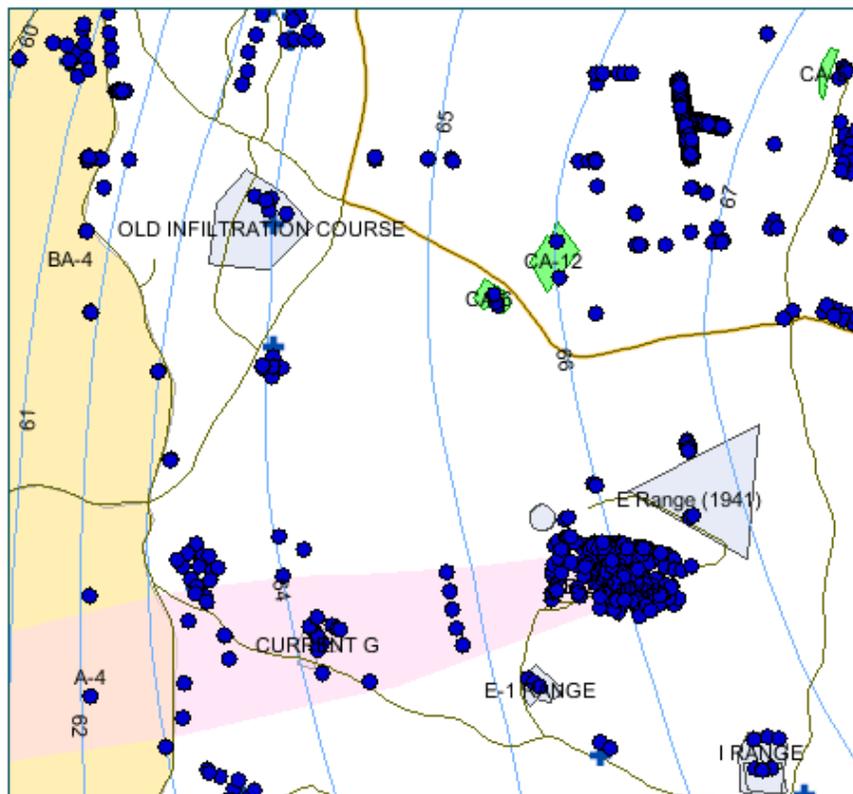
SITE MAP

HELP

LOGOUT

Home > View Map

View Map



Visible Layers

- 1997 Aerial Photos
- + Gun and Mortar Positions
- Target Locations
- Groundwater Contours
- MMR Model 9 Particle Tracks (AMEC)
- J-Range Model 8 Particle Tracks (AMEC)
- High Use Target Areas (HUTA)
- J-Range RDX Detection Area (AMEC - 5/22/02)
- J-Range Perchlorate Detection Area (AMEC - 5/21/02)
- J-Range HMX Detection Area (AMEC - 4/23/02)
- Demo Area 1 RDX Detection Area (AMEC - 9/23/02)
- Demo Area 1 Perchlorate Detection Area (AMEC - 9/23/02)
- Central Impact Area RDX Detection Area (AMEC - 8/20/02)

Search Chemical Data

EDMS Data Administration   

VIEW MAP DATA DOCUMENT MANAGEMENT My Profile

[Home](#) > [Data](#) > Search Chemical Data

Search Chemical Data

In this section you can search through Chemical data that have been added to the database.

Search **Clear**

LOCID	<input type="text"/>
LOCID Alias	<input type="text"/>
Area of Concern	SE Ranges Demo 1 Western Boundary
Contractor	AMEC, WESTFORD, MA ENVIRONMENTAL CHEMICAL CORP., OTIS ANG BASE, MA JACOBS ENGINEERING GROUP, INC., OTIS ANG BASE, MA
Sample Type	Air Field QC Miscellaneous Soil Tissue 72-hr Aquifer Test 72-hr Pumping Step Analysis Field QC Gauze Wipe Groundwater
Sample Date	from: <input type="text"/> <input type="text"/> <input type="text"/> to: <input type="text"/> <input type="text"/> <input type="text"/>
Analyte Category	Metallic Species Miscellaneous Assays Non-Metallic Inorganic Species Organics Physical/Meteorological Measurements
Analysis Method	Dioxins Explosives Herbicides Inorganics Metals A3111B - Metals by Flame Atomic Absorption Spectrometry, Direct Air-Acetylene Flame Method. A314A - Hardness by Calculation

Chemical Search Results



Chemical Data Search Results

Your query has produced **13** matching records.

The following list is the results from your query. Select the LOCID for a Sample Data Summary Report. Click on an arrow (^) to sort results by that column. Click again to sort by descending values.

Page: 1

Click the "Download Records" button to download the complete set of records in XML format.

LOCID ^	Alias ^	Sample Date ^	Sample Type ^	Begin Depth ^	End Depth ^	Sample Code ^	Sample No. ^	Parameter ^	Value ^	Units	Qualifier ^	EPA Flags ^	Val. Level ^
MW-198M2	MW-198	24-Jul-2002	Groundwater	120	125	Normal Environmental Sample	3	PERCHLORATE	0.63	UG/L	TR	J	II
MW-198M2	MW-198	04-Nov-2002	Groundwater	120	125	Normal Environmental Sample	2	PERCHLORATE	0.46	UG/L	TR	J	II
MW-198M2	MW-198	04-Jun-2003	Groundwater	120	125	Normal Environmental Sample	1	PERCHLORATE	23	UG/L	EQ		3
MW-198M3	MW-198	15-Feb-2002	Groundwater	100	105	Normal Environmental Sample	3	PERCHLORATE	40.9	UG/L	EQ		II
MW-198M3	MW-198	22-Jul-2002	Groundwater	100	105	Normal Environmental Sample	3	PERCHLORATE	65	UG/L	EQ	J	II
MW-198M3	MW-198	06-Nov-2002	Groundwater	100	105	Normal Environmental Sample	2	PERCHLORATE	170	UG/L	EQ		II
MW-198M3	MW-198	05-Dec-2002	Groundwater	100	105	Normal Environmental Sample	2	PERCHLORATE	200	UG/L	EQ	J	II
MW-198M3	MW-198	04-Jun-2003	Groundwater	100	105	Normal Environmental Sample	1	PERCHLORATE	310	UG/L	EQ		3
MW-198M4	MW-198	21-Feb-2002	Groundwater	70	75	Normal Environmental Sample	3	PERCHLORATE	311	UG/L	EQ		II
MW-198M4	MW-198	19-Jul-2002	Groundwater	70	75	Normal Environmental Sample	3	PERCHLORATE	170	UG/L	EQ	J	II
MW-198M4	MW-198	01-Nov-2002	Groundwater	70	75	Normal Environmental Sample	2	PERCHLORATE	75.9	UG/L	EQ		II
MW-198M4	MW-198	05-Dec-2002	Groundwater	70	75	Normal Environmental Sample	2	PERCHLORATE	60	UG/L	EQ	J	II
MW-198M4	MW-198	04-Jun-2003	Groundwater	70	75	Normal Environmental Sample	1	PERCHLORATE	46	UG/L	EQ		3

[Download Records \[XML\]](#)

[Download Records \[CSV\]](#)

[Map Results](#)

[New Search](#)

You may download records in either XML or CSV format. The data package obtained in XML format contains all of the data associated with all of the LOCIDs selected by the search. The data obtained in CSV format includes only those fields seen here, and is subject to the same 500 record limit.

Chemical Data Summary Report

EDMS Data Administration

[VIEW MAP](#) [DATA](#) [DOCUMENT MANAGEMENT](#) [ARCHIVE SEARCH REPORT](#)

[Home](#) > [Data](#) > Sample Data Summary Report

Sample Data Summary Report (LOCID MW-198M2)

Map Location

LOCID	MW-198M2
Type	Well
X Coord (Easting)	373356.57
Y Coord (Northing)	4617053.84

● Sample Location (LOCID)
● LOCID MW-198M2

Samples Per Month Chart

Month	Number of Samples
2/02	4
4/02	0
6/02	4
8/02	0
10/02	4
12/02	0
2/03	0
4/03	0
6/03	2

Parameter: (All Parameters)

Chart dates: From: 1 Jan

To:

- OR -

All dates

[<< Update Chart](#)

Sample Data

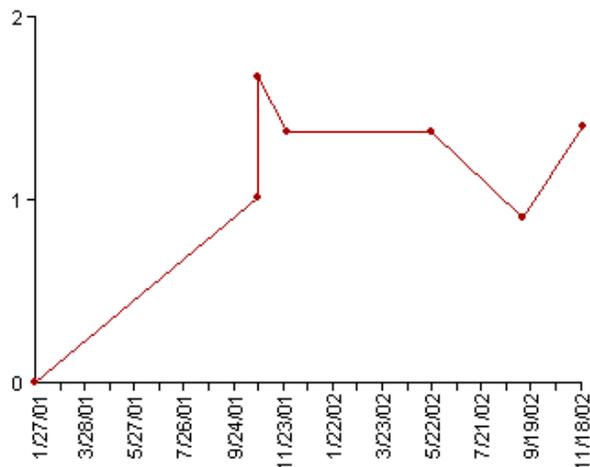
Sample Date	Sample Type	Begin Depth	End Depth	Sample Code	Sample No.	Parameter	Value	Units	Qualifier	EPA Flags	Val. Level
24-Jul-2002	Groundwater	120	125	Normal Environmental Sample	3	PERCHLORATE	0.63	UG/L	TR	J	II
04-Nov-2002	Groundwater	120	125	Normal Environmental Sample	2	PERCHLORATE	0.46	UG/L	TR	J	II
04-Jun-2003	Groundwater	120	125	Normal Environmental Sample	1	PERCHLORATE	23	UG/L	EQ		3

Sample Data Summary Report



Parameter Result/Date Chart

PERCHLORATE Measurement over Time



Parameter: **PERCHLORATE**

Chart dates: From: [] [] [] To: [] [] [] - OR - All dates

<< Update Chart

Sample Data

Sample Date	Sample Type	Begin Depth	End Depth	Sample Code	Sample No.	Parameter	Value	Units	Qualifier	EP
27-Jan-2001	Groundwater	179	189	Normal Environmental Sample	2	PERCHLORATE	0	UG/L	ND	
23-Oct-2001	Groundwater	179	189	Field Duplicate	1	PERCHLORATE	1.01	UG/L	TR	
23-Oct-2001	Groundwater	179	189	Normal Environmental Sample	1	PERCHLORATE	1.67	UG/L	TR	
27-Nov-2001	Groundwater	179	189	Normal Environmental Sample	2	PERCHLORATE	1.37	UG/L	TR	
21-May-2002	Groundwater	179	189	Normal Environmental Sample	2	PERCHLORATE	1.37	UG/L	EQ	
10-Sep-2002	Groundwater	179	189	Normal Environmental Sample	2	PERCHLORATE	0.9	UG/L	TR	
21-Nov-2002	Groundwater	179	189	Normal Environmental Sample	2	PERCHLORATE	1.4	UG/L	EQ	

Page: 1 (7 records total)

Document Management



EDMS Data Administration



Massachusetts
Military Reservation

[VIEW MAP](#)

[DATA](#)

[DOCUMENT MANAGEMENT](#)

[ARCHIVE SEARCH REPORT](#)

[My Profile](#) | [Site Map](#) | [Help](#) | [Logout](#)

[Home](#) > Document Management

Document Management

In this section you can interact with the documents that form part of the Administrative Record.

[Upload New Documents](#)

The ability to upload project reports, documents and records is available under Upload New Documents.

[Search for Documents](#)

Access to search project reports, documents, and records by searching on keywords.

[Incomplete and Unsubmitted](#)

The ability to review document metadata for unsubmitted documents or upload a PDF document for incomplete documents is available under List My Incomplete and Unsubmitted Documents.

[Index Report](#)

The Administrative Record Index Report displays a listing of all documents according to their classification.

[Upload Sample Data](#)
[Search Chemical Data](#)
[Search UXO Data](#)
[Download Full EDMS](#)

Document Search



[Home](#) > [Document Management](#) > Document Search

Document Search

Enter the metadata that describes the document(s) you wish to locate.

Basic Search		Reset	Search
Document ID	<input type="text"/>	?	
Indus Physical ID	<input type="text"/>	?	
Title/Subject	<input type="text"/>	?	
Area of Concern	<input type="text" value="A-4 Area"/> A-5 Area A-6 Area Ammunition Supply Points	?	
Creation Date	From: <input type="text"/> To: <input type="text"/>	?	
Type	<input type="text" value="Article"/> Contract/Scope of Work Data Email	?	
Revision Status	<input type="text" value="[No Selection]"/>	?	
Document Classification	<input type="text" value="AR Documents and/or Non-AR Documents"/>	?	
Author	<input type="text" value="[No Selection]"/>	?	
Author Organization	<input type="text" value="[No Selection]"/>	?	
Recipient	<input type="text" value="[No Selection]"/>	?	
Recipient Organization	<input type="text" value="[No Selection]"/>	?	
Full Text Query Keywords	<input type="text"/>	?	

Document Search Results



Document Search Results

These are the documents that matched your query. Click on an arrow (^) to sort results by that column. Click again to sort by descending values.

Name ^	Creation Date ▼	Type ^	Doc ID ^
Final Ammunition Supply Point Supplemental Work Plan	27-Jun-2003	Plan	4333
Final Ammunition Supply Point Supplemental Work Plan Transmittal Letter	27-Jun-2003	Letter	4334
Final Ammunition Supply Point Geophysical Survey and Investigation Report	02-Jun-2003	Report	4444
Final Ammunition Supply Point Geophysical Survey and Investigation Report Transmittal Letter	02-Jun-2003	Letter	4445
Ammunition Supply Point Supplemental Work Plan RCL Transmittal Letter	28-Apr-2003	Letter	4331
Ammunition Supply Point Supplemental Work Plan RCL RLSO	28-Apr-2003	Report	4332
Draft Ammunition Supply Point Supplemental Work Plan	20-Feb-2003	Plan	4327
Draft Supplemental Ammunition Supply Point Work Plan	19-Feb-2003	Plan	4432
Ammunition Supply Point Geophysical Investigation Report MOR 2	11-Dec-2002	Letter	4441
Ammunition Supply Point Geophysical Investigation Report MOR 2 Transmittal Letter	11-Dec-2002	Letter	4442
Ammunition Supply Point Geophysical Investigation Report MOR 2 RLSO	11-Dec-2002	Report	4443
Ammunition Supply Point Geophysical Investigation Report MOR 1	30-Aug-2002	Letter	4438
Ammunition Supply Point Geophysical Investigation Report MOR 1 Transmittal Letter	30-Aug-2002	Letter	4439
Ammunition Supply Point Geophysical Investigation Report MOR 1 RLSO	30-Aug-2002	Report	4440
Ammunition Supply Point Geophysical Investigation Report RCL 3	28-May-2002	Letter	4437
Ammunition Supply Point Geophysical Investigation Report RCL 2	12-Apr-2002	Letter	4436
Ammunition Supply Point Geophysical Investigation Report MOR 4	26-Mar-2002	Letter	4674
Ammunition Supply Point Geophysical Investigation Report MOR 3	11-Feb-2002	Letter	4673
Draft Final Ammunition Supply Point Geophysics Report 2	29-Nov-2001	Report	4434
Ammunition Supply Point Geophysics Report RCL 1	29-Nov-2001	Letter	4435
Draft Final Ammunition Supply Point Geophysics Report 1	25-Oct-2001	Report	4433
Ammunition Supply points at the MMR	21-Jun-2000	Letter	706
A Letter Regarding the Ammunition Supply Point at the Massachusetts Military Reservation (MMR)	02-Dec-1999	Letter	4246

Document Details



[Home](#) > [Document Management](#) > Document Details

Document Details

Document ID	706 (Indus Physical ID #329)	Download
Document Name	Ammunition Supply points at the MMR	
Creation Date	21-Jun-2000	?
Upload Date	19-Jul-2002	?
Document Type	Letter	
Revision Status	Final	
Areas of Concern	Ammunition Supply Points	
Confidential	No	
Authors	Lubber, Mindy S.	
Recipients	Delahunt, Congressman William; Keefe, Brigadier General George W.; Kennedy, Senator Edward M.; Knott, Lieutenant Colonel Joseph; Impact Area Groundwater Study Review Team	
Owner	ed_sudnik	?
Reviewer	No reviewer	?
Status	Submitted	?

Benefits of a Web-based Solution

- **Accommodate diverse data needs:** general information for public to raw data for Contractors
- **Defined levels of security:** open access to general information to secured access for data exchange
- **Empower Stakeholders:** work directly with the data
- **Centralize information:** ease of use, consistency among Contractors, data archive
- **Minimal O&M:** Contractors maintain data on the web site
- **Retain value of the data:** dataset fully referenced, standardized