

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION PRESERVATION PROGRAMS

The information provided below is intended for emergency recovery and response, not general treatment recommendations.

ELECTRONIC MEDIA – HARD DRIVES

Priority Action:

- **Act quickly**
 - The sooner a data recovery attempt can be made, the better the chance for successful recovery of data
- **Do NOT attempt to recover the data yourself**
 - Salvage of electronic media and equipment is most successfully carried out by a firm specializing in data recovery
 - Some issues to consider when discussing a contract with a data recovery vendor include: protection of the data from a security and access perspective; what to do if data cannot be recovered; how the recovered data should be returned; whether the original hardware should be returned or disposed of with appropriate documentation, etc.

Recommendations:

- **Keep hard drives wet if that is the condition in which they were found**
 - Keeping hard drives wet will help prevent further corrosion of mineral deposits and crystallization on the platters
 - Keep hard disk drives in a sealed container to keep the drives wet
- **Do not rinse hard drives in clean water**
 - Best practice is to leave hard disks alone until they can be salvaged by a firm that specializes in data recovery
- **Do not dry hard disk drives out or subject them to high temperatures**
 - When hard disk drives get wet and then dry out, contaminants are usually left on the platters and heads. Any residue will cause physical degradation of the platters and will result in loss of data
- **NEVER attempt to power up wet or visibly damaged drives**
- **Handle gently**
 - Do not shake or disassemble hard drives that are wet or damaged
- **Pack drives well to insulate them from shock**
 - When shipping hard drives, package them in a box twice the size of the drive that has enough room for both the drives and packing material that will allow for NO movement. Do not let multiple packed drives come in contact with each other

Maintenance:

- Make backup copies of all important information and store copies offsite

Salvage information above based on advice from DriveSavers Data Recovery, 400 Bel Marin Keys Boulevard, Novato, California, USA 94949-5650, 800-440-1904

Contact information for selected vendors can be found at:

<http://www.archives.gov/preservation/disaster-response/vendors.html>

Basic Information to Consider When Developing a Contractual Agreement With Data Recovery Vendors:

- Data should be recovered using appropriate industry methods and procedures
- The contractor should supply a timetable, a fee schedule and written description of return arrangements for recovered information that will comply with the chain of custody, confidentiality, and security requirements that have been specified
- The contractor should describe procedures to the client for recovering and copying electronic data
- The contractor should provide a description of security procedures and equipment
- Contractor should document and certify the custody of media from receipt to destruction, and at no time should the media be out of the contractor's custody and control
- Contractor should include specifications for handling of original data and eradication of data so that no data can be reconstructed, and should provide certification to this effect
- A contract should require that any data found should be opened or viewed only by the contractor personnel as necessary to perform recovery operations, and under no circumstances will data be released to third parties
- The contractor should provide itemized documentation for each hard drive indicating whether data could be read and recovered
- A contract should require that that contractor supply a report indicating success level of the recovery effort
- Contractor should specify the method of shipping to ensure security and include a shipping manifest that contains all serial numbers for equipment to help identify data
- Recovered data must be transferred to the format specified by the client
- Once the contractor has been informed by the client that data has been received and reviewed, the contractor should destroy all original hard drives and backup copies and submit appropriate certification to the client.
- Destruction should take place in such a manner that no data can be reconstructed
- Backup copies may not be "wiped" or discarded

Related media:

[CD/DVD](#)

[Magnetic Diskettes](#)

[Audio, Video, and Data Storage Tape](#)

The information and links provided by NARA are offered as a service and do not imply endorsement of any company, institution, or person. The scale of the emergency and types of materials affected will determine the specific actions or techniques to be taken and whether in house salvage is possible or whether external resources and expertise are necessary.