

Final Technical Report  
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Mississippi Office of Geology  
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“The Mississippi Office of Geology Geological and Geophysical Data Preservation Program”

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## The Mississippi Office of Geology Geological and Geophysical Data Preservation Program

### Abstract

The Mississippi Office of Geology (within the Mississippi Department of Environmental Quality, MDEQ) was awarded a grant (Award #08HQGR0108) from the U.S.G.S. to do a data review of geological and geophysical data stored at the Office of Geology. During FY 2009 Office personnel examined cores, cuttings, and wireline data in an effort to inventory the data and propose a plan for long-term preservation.

Although several data sets were inventoried, the main thrust was on the samples and cores and in-house wireline data. These two data sets will continue to be worked, updated and appropriate databases updated, copied and stored on disc, various computers, and servers.

### Scope and Goals

The main goal of the Mississippi Office of Geology during this grant period was to inventory its holdings of subsurface and geophysical data. Initially, these data were considered to be of two types. The first data set was the cores and cuttings, currently housed at the Office of Geology's main warehouse and satellite warehouse. The second set of data was the extensive files of geophysical data comprised of wireline logs, mudlogs, core reports and miscellaneous data.

The goal of the study was to formulate a long-range plan for the preservation of the data, thereby assuring a complete and accurate data set for future use.

### Methodology

The methodology in the end was quite simple. It consisted of a manual examination of the cores and samples archived at the Mississippi Office of Geology. From this hands on examination, duplicate cores and samples were purged from the warehouses. These purged samples were either returned to the states from which they originated or were discarded. In the case of Mississippi samples, the operators were contacted and the duplicates were returned to them or discarded.

Corrections to the digital database furnished in the interim report is ongoing. Deletions of data no longer archived as well as entries we never had continue. Some metadata updates are being done to this sample database to make it compatible with other databases and the XML format.

Wireline data secured in water wells and test holes by the Office of Geology has progressed normally during the grant period.

The paper copies of these logs will continue to be filed by county and stored in fireproof cabinets. This allows use of these files by staff scientists and others until the scanned images are made available on the internet.

The digital database (a copy of which was submitted in the interim report) is currently being updated and will be copied and stored in various localities and servers.

## Results

There were no real problems or unknowns discovered during the examination of the data sets. The review of the initial data sets (cores, samples, and in-house wireline) did lead to other data not included in the initial grant proposal. All of these data are chronicled in Table 1.

It was surprising to uncover the amount of printed data (bulletins, maps, cross sections, etc.) stored in various files and boxes in the Mississippi Office of Geology warehouse. Also surprising is the amount of oil and gas data currently available online at the MDEQ website.

## Summary

After this detailed review of our data sets at the Office of Geology, it is clear the focus should remain on the sample data and in-house wireline data. Efforts should be placed on further work on the samples, cores and cuttings. Our plans are to continue to update our digital database with general metadata on the cores and samples. We added another 48 pallets of cores on 71 wells in Mississippi. These will be cataloged and worked into the current system. Deletions of data and wells we do not have will continue. This will ultimately lead to a clean database to be converted to XML format to be used in the national catalog. Continued reboxing of cores (although not a part of this grant) will allow us to create room in our main warehouse. As cores and samples are reboxed more cores will be moved into the warehouse, and databases will be continually updated.

Secondly, the in-house wireline data will be worked to assure data entry errors are eliminated. This database is being reviewed by our in-house data technicians to create a usable data entry and retrieval system. This database will then be reformatted to the XML format.

Plans for the bulletins, maps, cross sections, etc. are not critical at this time. We should make every effort to scan these publications that are out of print and make them available on the MDEQ website. The other bulletins, open-file reports, and information series should also be scanned and made available on disc and the website.

No plans are currently anticipated to redo the existing oil and gas data uploaded to the MDEQ website. These data are in readily accessible files and most of the commonly used data has been scanned by private companies for commercial use.

## Bibliography and links

National Geological and Geophysical Data Preservation Program:  
<http://datapreservation.USGS.gov>

Table 1

- 1 Oil and Gas data scanned and uploaded to MDEQ webpage
  - A Scout Cards
    - 1 Chevron
    - 2 Dan Morgan
    - 3 Occidental Petroleum Corp.
    - 4 Robert Steffey
    - 5 Kansas Geological Survey
    - 6 Mississippi Office of Geology
  - B Mudlogs
    - 1 Daily logs
    - 2 1" = 100' vertical scale
    - 3 2" = 100' vertical scale
    - 4 5" = 100' vertical scale
    - 5 Mud log show reports
  - C Geophysical Wireline logs
    - 1 Porosity logs
      - a) Density
      - b) Neutron
      - c) Neutron Density
      - d) Sonic
      - e) Permeability
    - 2 Miscellaneous Logs
      - a) Cyber look
      - b) Induction
  - D Cores and Cuttings
    - 1 Cores
    - 2 Whole Cores
    - 3 Half Cores
    - 4 Quarter Cores
    - 5 Core Chips
    - 6 Cuttings
  - E Core and Sample Data
    - 1 Core Analysis
    - 2 Core Description
    - 3 Core Photos
    - 4 Sample description logs
    - 5 Sample description report

- F     Miscellaneous Reports
  - 1   Daily Drilling Reports
  - 2   Directional Surveys
  - 3   Drill stem reports
  - 4   Gas Analysis
  - 5   Log Analysis
  - 6   Miscellaneous Reports
  - 7   Water Analysis
  - 8   Well Reports
  
- 2       Oil and Gas Data; not on website
  - A    10 5-drawer cabinets  
Miscellaneous Oil and Gas maps, logs, core analyses arranged by county
  - B    7 4- & 5-drawer file cabinets  
1" = 100' vertical scale wireline logs
  - C    4 4- & 5-drawer file cabinets  
Porosity logs and Permeability logs  
Sonic, Density, Neutron compensated  
Formation Density, Micrologs, Minilogs
  - D    2 9-drawer cabinets  
3x5 Scout Cards, may be on website. Not checked.
  
- 3       Aerial Photos; not on website
  - A    13 5-drawer cabinets  
Aerial photos from 1940's, 1950's, 1960's arranged by county
  - B    3 5-drawer cabinets  
Aerial photos from 1940's, 1950's
  - C    4 28-slot wooden flat files  
Aerial photos 1960's – 1970's
  - D    4 5-drawer flat files  
Miscellaneous maps, photos, county indexes
  
- 4       Mississippi Office of Geology Data
  - A    10 4-drawer fireproof cabinets  
Paper copies of wireline logs on water wells, test holes, and boreholes
  - B    3 5-drawer flat files  
Miscellaneous maps, cross sections, displays
  - C    131 – county bulletins and geologic reports; 40 out of print
  - D    16 – Information Series; 5 out of print
  - E    3 – Environmental Geology Series; 2 out of print
  - F    3 – Reports of Investigation
  - G    6 – Circulars
  - H    3 – Pamphlets; 2 out of print
  - I    1 – Fact Sheet
  - J    5 – Cross Sections; 1 out of print
  - K    31 – Maps and charts (not including those with other publications); 2 out of print

- L 192 – Open-file reports
- M 25 – County soil surveys (old series)
- N 6 – Early Geological reports and Soil surveys; 4 out of print
- O Topographic maps, base maps, various scales, statewide coverage
- P Cores, samples, and cuttings
  - 1 Cores, samples, and cuttings on 6,701 Oil and Gas Wells
  - 2 Samples and cuttings on 517 Landfill test holes
  - 3 Samples and cuttings on 1,464 test holes
  - 4 Samples and cuttings on 1,284 Water Wells