

INDEX OF USGS HYDROLOGIC DATA FOR NNWSI

JULY 1984

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HYDROLOGY DATA INDEX
REGIONAL HYDROCHEMISTRY

Principal Investigator: Larry Benson

File Location: Rm H-2119

<u>Category</u>	<u>Description</u>
1. Geochemical sampling of wells, Yucca Mountain area	<ul style="list-style-type: none">o Field chemical data since May 1983o Includes pH, conductance, alkalinity, temperature, sample descriptiono Wells C1, C2, C3, H3
2. Atmospheric precipitation samples, Yucca Mountain area	<ul style="list-style-type: none">o Description of samples taken since July 1983 (70 samples)
3. Surface-water samples, Yucca Mountain area	<ul style="list-style-type: none">o Description of one sample taken since August 1983
4. Laboratory analyses of water samples	<ul style="list-style-type: none">o Computer printouts of analytical results

HYDROLOGY DATA INDEX
GROUND-WATER FLOW ANALYSIS AND MODELING
--SUBREGIONAL FLOW MODEL

Principal Investigator: John Czarnecki

File Location: Rm H-2526

<u>Category</u>	<u>Description</u>
1. Development of 2D inverse flow	<ul style="list-style-type: none">o Location, source, and model value of observed hydraulic heado Finite-element mesh modal locations and element connectivitieso Simulation results
2. Application of model to changes in climate and increased pumpage for irrigation	<ul style="list-style-type: none">o Finite-element mesh datao Fluxes specifiedo Land-surface elevationso Simulated headso Finite-element source code

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GROUND-WATER FLOW ANALYSIS AND MODELING
--FRANKLIN LAKE PLAYA

Principal Investigator: John Czarnecki

File Location: Rm H-2526

<u>Category</u>	<u>Description</u>
1. Field data, Franklin Lake plays	<ul style="list-style-type: none">o Location of data-collection siteso Water-level measurements and hydrographs of observation wellso Tensiometer measurements (4 tensiometer nests)o Neutron logso Evapotranspiration datao Chemical analysis of water sampleso Surveying results

HYDROLOGY DATA INDEX
GROUND-WATER FLOW AND MODELING

--TRACER-TEST WELL DATA

Principal Investigator: Rick Waddell

File Location: Rm H-2121 (except as noted)

*Indicates hard copy and computer data

Category and description

1. Wells UE-25c#1, C#2, and C#3

Hole history--C#1 only

Logbook--Record of drilling and testing activities by F&S/USGS.

Cuttings descriptions--Unofficial log of hole during drilling, used for selection of core points, catching surprises. Kept at NTS.

Cuttings--official (archive) samples at NTS. Informal in Denver.

Lithologic description--provided by R. Spengler, who keeps his own notes.

Geophysical logs--originals at F&S, NTS; copies in Denver.

Typically include caliper, gamma, neutron, epithermal neutron, density,, porosity, spectral gamma, induction, acoustic, 3-D velocity (acoustic frac log), vibroseis, temperature, resistivity, dielectric.

Acoustic television--acoustic image of borehole wall, used for fracture ID, mapping. Saturated zone only.

TV videotape--unsaturated and saturated zone.

Laboratory analysis of core--porosity, bulk density, grain density, mercury injection, helium permeability (various gradients, over dry and saturated), water permeability (various gradients).

Core--maintained at NTS, pictures in Denver (C#1 only).

*Borehole deviation survey.

*Fracture maps, orientations. Orientation corrected for borehole deviation. Snow analyses of fractures.

*Pumping-test data

Drawdown, recovery, discharge--C1, C2, C3

Response in C1, P1--C2

Response in C1, C2, P1--C3

Tracejector and temperature* while pumping C1, C2, C3

Water chemistry--composite samples

*Injection test data--USGS, C1 only

Transducer calibration data, plots

Injection test data--TAM, C1 only

2. Wells UE-29a#1 and a#2, well and test data

*Hard copy and computer files

#UE-29a#2 only

Log book--Record of drilling and testing by F&S/USGS

Cuttings--formal sample at NTS, duplicates in Denver

#Core--kept at NTS

#Geophysical logs--caliper, density, epithermal neutron, gamma, SP and resistivity, 3-D velocity, vibroseis, temperature, magnetometer, acoustic televiewer

#Li concentration--LiCl used as tracer in drilling fluid, monitored for dilution

#Br concentration--NaBr placed below packer to check for leakage around bottom of casing during pumping of upper interval

Pumping test data--a#2 pumped; a#2, a#1 monitored, calibration data

*Lower interval (Tests 1, 2, 3)

*Upper interval (Tests 4, 5, 6)--casing perforated, packer placed at
bottom of casing in nonperforated zone

Pumping test data--a#1 pumped, a#1 monitored

Water chemistry--3 samples

Water-level measurements

Hole histories

3. Well UE-25b#1, long-term pumping test

Field notes

*Pumping test (pumped ~ 1 month, 2,800-3,000 feet)

*Pumped interval, USGS transducer

*Discharge data

*Non-pumped intervals, Lynes transducers

Bromide concentrations (NaBr placed in UE-25a#1, ~ 350' south)

Water chemistry

Acoustic televiewer (kept by J. Robison)

*Fracture maps and orientation. Corrected for borehole deviation.

Snow analysis

Borehole deviation survey (kept by J. Robison)

4. Well USW 11-4, static tracer tests

Field notes

*Borehole deviation survey

Seisviewer--stored by Jim Robison

*Fracture maps, orientations. Orientation corrected for borehole
deviation. Snow analysis

Temperature, while pumping

Temperature, non-pumping

Tracer, non-pumping, copy of log

*Spikes--center of mass, regression results, each spike separate

*Intervals--plots (hand and computer)

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SITE SATURATED-ZONE HYDROLOGY

Principal Investigator: Jim Robison

File Location: Rm H-2125 (except as noted)

Availability by well (abbrev.)

Category of well-drilling and testing data	G-1	G-2	G-4	H-1	H-3	H-4	H-5	H-6	b#1	p#1	VH-1	J-13	WT's
1. Published data report			X	X	X		X	X	X				
2. Published intnerpretive report				X								X	
3. Lithologic logs and observations			X	X	X	X	X	X	X	X	X	X	
4. Wireline logs and surveys	X	X	X	X	X	X	X	X	X	X	X		X
5. Borehole-flow surveys	X	X	X	X	X	X	X	X	X	X			X
6. Packer-injection tests	X		X	X	X	X	X	X	X	X			
7. Pumping tests			X	X	X	X	X	X	X	X	X	X	
8. Drilling-fluid balance		X	X	X	X	X	X	X					
9. Ground-water chemistry			X	X	X	X	X	X	X	X	X	X	
10. Single or infrequent water levels	X	X									X	X	
11. Periodic water levels			X							X	X		
12. Periodic water levels, multiple zones				X	X	X	X	X	X				

SITE SATURATED-ZONE HYDROLOGY (Cont.)

Description

1. Data report--report is printed and available for distribution
2. Interpretive report--report is printed and available for distribution.
3. Lithologic logs and observations--preliminary descriptions of cuttings and cores are available, mostly by geologists of Geologic Division.
4. Wireline logs and surveys--

Commonly available for Water Table (WT) holes:

Fluid density for fluid location

Induction electric

Caliper

Density, borehole compensated

Epithermal neutron porosity

Geophone

Gamma ray

Dielectric

Spectral

Gyroscopic directional survey

Television--videotape (most tapes in custody of R. W. Spengler,
Denver West facilities)

Additional logs commonly available for other holes:

Neutron

Neutron-neutron

Magnetometer

Temperature

Acoustic televiewer

Radioactive-tracer survey

5. Borehole-flow surveys--includes contractor-supplied logs, computation tables of velocities and volumetric rates, and graphs of results.
6. Packer-injection tests--includes data tapes (from data loggers), field tables of head change vs. time, and graphs of head change vs. time).
7. Pumping tests--includes data tapes (from data loggers), field tables of head change vs. time, and graphs of head change vs. time, usually involving drawdown and recovery associated with steady rates of pumping. Observations from pumped well only.
8. Drilling fluid balance
9. Ground-water chemistry--printouts of general chemistry and isotopic results from USGS Central Lab.
10. Single or infrequent water levels--from published reports or more recent measurements. Pumping of well or installation of equipment in well may prevent measurements on a regular basis.
11. Periodic water levels--field notes and calculations, graphs, computer tables and graphs from several wells, water-level report in process of approval.
12. Periodic water levels, multiple zones--as above, but two or more intervals monitored, by use of piezometers or inflatable packer in well.

HYDROLOGY DATA INDEX

SITE UNSATURATED-ZONE HYDROLOGY

Principal Investigator: Parviz Montazer

File Location: Rm H-2325

<u>Category</u>	<u>Description</u>
1. Well USW UZ-1	o Drilling activities, instrument-package emplacement, stemming activities, data outputs from Fluke and HP-115, gas sampling, climatologic data, miscellaneous tests.
2. Wells USW G-1, USW G-2, and UE25c#1	o Well and sample data.
3. Well USW H-1	o Laboratory analysis of core, moisture-characteristic curves.

HYDROLOGY DATA INDEX

FUTURE HYDROLOGIC CONDITIONS (PALEOHYDROLOGY)

Principal Investigator: Joe Downey

File Location: As noted

<u>Category</u>	<u>Description</u>
1. Paleobotany (rat middens) Investigator: Geoffrey Spaulding University of Washington File location: Seattle	o Radiocarbon dates, pollen analyses, macrofossil composition from middens, paleovegetation records of selected areas.
2. Paleofloods Investigator: Pat Glancy USGS, Carson City File location: Carson City	o Streamflow records from NTS area; precipitation records from selected sites near streamflow gages; crest-stage records for selected streams near NTS; stratigraphic data from trenches across dry stream cannels in the NTS area.
3. Paleolacustrine Investigator: Larry Benson File location: Rm H-2119	Core analyses from Desert Dry Lake, Kawich playa, and Walker Lake, Nevada. Each includes drilling log, sampling log,

photographs of core
(Walker Lake only) and
list of other workers
using the core to develop
data sets.

4. Paleoclimate

Investigator: Platt Bradbury

File location: Bldg. 25, DFC

Various data sets under
development to include
data on paleosols, paleo-
climate, micropaleontol-
ogy, and geologic features
as indicators of paleo-
climate.

5. Geologic mapping

Investigator: R. Hay

University of Illinois

File location: Urbana, Illinois

- o Geologic sections, maps
and general field data
from the Amargosa Desert
region, southwest of
Nevada Test Site.

HYDROLOGY DATA INDEX

GEOPHYSICS FOR HYDROLOGY (HEAT FLOW)

Principal Investigator: John Sass

File location: Flagstaff, AZ (USGS)

Category

Description

1. Heat-flow data

o Temperature logs, thermal-
conductivity analyses.