

See order for Mr
Johnson Ann. Casey
8-8-84

8/8/84

Draft

106

WM-16

THERMAL AND THERMOMECHANICAL
PROPERTIES DATA OF ROCK

- Data Locations Lists

8408200506 840808
PDR WASTE
WM-16 PDR

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REPORT NUMBER BMI/ONWI-522 STATUS Published

AUTHOR(S)/YR/ Lagedrost, J.F. and W. Capps, 1983

TITLE Thermal Property and Density Measurements of Samples
Taken From Drilling Cores From Potential Geologic Media

ORGANIZATION RESPONSIBLE Fiber Materials, Inc.

CONTRACT NO. E515-00800/Closed

CONTENT Thermal conductivity, expansion, specific heat and density
measurements on salt and nonsalt specimens from Richton
Dome, Vacherie Dome, Cypress Creek Dome, Gibson Dome, Salt
Valley, Permian Basin and Pomona Basalt

LOCATION ONWI Records Turnover Package

OF DATA Microfilm #50284

BMI

601 W. 5th Avenue

Columbus, Ohio 43201

Originals in Warehouse at 1764 Delashmut, Columbus, OH 43212

DATA FORM Data packages, oversize documents, specimen log book, reports,
charts, requirements, graphs, and memorandum

REPORT NUMBER USGS O.F. 83-476 STATUS Published

AUTHOR(S)/YR/ Sass, J.H.; A.H. Lachenbruch, and E.P. Smith, 1983

TITLE Thermal Data From Well GD-1, Gibson Dome, Paradox Valley,
Utah

ORGANIZATION
RESPONSIBLE U. S. Geological Survey

CONTRACT NO. E505-342

CONTENT Axial and lateral thermal conductivity measurements (using
needle probe technique) on 15 salt and nonsalt specimens
from Paradox Region, Boring GD-1, at depths ranging from
615-6300 feet (187-1920 m). In addition, in situ
temperature readings are reported for GD-1.

LOCATION Records Turnover Package
OF DATA Microfilm #50151
BMI
601 W. 5th Ave.
Columbus, Ohio 43201

DATA FORM Microfiche

REPORT NUMBER ONWI-450 STATUS Published

AUTHOR(S)/YR/ Pfeifle, T.W.; K.D. Mellegard, and P. Senseny, 1983

TITLE Preliminary Constitutive Properties for Salt and Nonsalt
Rocks From Four Potential Repository Sites

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Triaxial compression creep tests (3 per dome/basin),
triaxial/uniaxial compression constant stress-rate tests
(6 per dome/basin), indirect (Brazil) tension tests (3 per
dome/basin) on salt and nonsalt rock units from Richton
Dome, Vacherie Dome, Paradox Basin (Boring GD-1), and
Permian Basin (Borings Mansfield, Rex White and Grabbe), at
pressures of 0, 5, 10 and 15 MPa and temperatures of 24,
100 and 200 C.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.

One Concourse Drive

Rapid City, SD 57709

DATA FORM Binary data on hard disk

REPORT NUMBER ONWI-400 STATUS Published

AUTHOR(S)/YR/ Nelson, R.A.; J.G. Kocherhaus and M.R. Schnapp, 1983

TITLE In Situ and Laboratory Geotechnical Test Results from
Borehole GD-1 in Southeast Utah

ORGANIZATION
RESPONSIBLE Woodward-Clyde Consultants

CONTRACT NO. E512-01800/Active (E512-08200)

CONTENT Triaxial extension creep tests, triaxial/uniaxial compression
and triaxial extension constant strain-rate tests, and bulk
density determinations on halite and anhydrite samples from
Boring GD-1, Paradox Basin at 22 C and pressures of 0-6.2 MPa.
In situ testing consisted of hydraulic fracturing and
geotechnical drill stem tests.

LOCATION Woodward-Clyde Consultants

OF DATA One Walnut Creek Center

100 Pringle Avenue

Walnut Creek, CA 94596

Two filing cabinets, ONWI Project area, 4th floor

DATA FORM Notebooks, magnetic tapes, computer printout

REPORT NUMBER ONWI-400 STATUS Published

AUTHOR(S)/YR/ Nelson, R.A.; Kocherhaus, J.G.; and Schnapp, M.R., 1982.
TITLE In Situ and Laboratory Geotechnical Test Results From
Borehole GD-1 in Southeast Utah

ORGANIZATION Woodward-Clyde Consultants
RESPONSIBLE

CONTRACT NO. E512-01800/Active (E512-08200)

CONTENT Borehole drill stem (unloading) tests, short-term closure
(creep) tests, and hydraulic fracturing measurements in
Gibson Dome salt strata of Paradox Basin at depths of
3,130 to 4,945 ft (945-1,507m) from the surface (laboratory
testing also presented).

LOCATION ONWI Records Turnover Package
OF DATA Microfilm #162, 164, and 175
BMI
601 W. 5th Avenue
Columbus, OH 43201
Originals in Warehouse at 1764 Delashmut, Columbus, OH 43212

DATA FORM Report drafts, graphs, data package, analysis, worksheets, tables,
oversized documents, drill stem test report, paper, area
characterization report

REPORT NUMBER ORNL/TM-7052 STATUS Published

AUTHOR(S)/YR/ Morgan, M.T., and West, G.A., 1980
TITLE Thermal Conductivity of the Rocks in the
Bureau of Mines Standard Rock Suite

ORGANIZATION Oak Ridge National Laboratory
RESPONSIBLE

CONTRACT NO. W-7405-eng-26/Closed

CONTENT Thermal conductivity tests on 8 nonsalt rock types: quartzite,
basalt, granodiorite, granite, limestone (2 types), and
sandstone over the temperature range of 100 to 260 C, by
the cut-bar comparison method.

LOCATION All data in Appendix A of the report (personal communication
OF DATA with author)

DATA FORM Tables

REPORT NUMBER USGS O.F. 83-455 STATUS Published

AUTHOR(S)/YR/ Sass, J.H.; Lachenbruch, A.H.; and Smith, E.P., 1983
TITLE Temperature Profiles from Salt Valley, Utah, Thermal
Conductivity of 10 Samples from Drill Hole DOE3, and
Preliminary Estimates of Heat Flow

ORGANIZATION U.S. Geological Survey
RESPONSIBLE

CONTRACT NO. _____

CONTENT Axial and lateral thermal conductivity measurements (using
needle-probe technique) on 10 salt and nonsalt specimens from
Paradox Region, Salt Valley Area, Boring DOE-3, at depths
ranging from 1,200-4,075 ft (365-1,242m). In addition,
temperature readings from DOE-1, -2, -3, -5, -6, -7, -8,
and -9 are reported.

LOCATION ONWI Records Turnover Package
OF DATA Mircofilm 164 and 284
BMI
601 W. 5th Avenue
Columbus OH 43201
Originals in Warehouse at 1764 Delashmut, Columbus, OH 43212

DATA FORM Reports and log book

REPORT NUMBER Y/DA-7013 STATUS Published

AUTHOR(S)/YR/ Smith, D.D., 1976

TITLE Thermal Conductivity of Halite Using a Pulsed Laser

ORGANIZATION RESPONSIBLE Oak Ridge National Laboratory, Y-12 Plant

CONTRACT NO. W-7405-eng-26

CONTENT Thermal diffusivity, heat capacity and thermal conductivity tests were conducted on steel (AISI-106 Grade B), single halite crystals from Lyons, Kansas and "bed salt" from Avery Island salt dome over a temperature range of 24 to 650 C using a pulsed laser heat source.

LOCATION OF DATA All data contained in Appendix B of report (personal communication with author)

DATA FORM Tables

REPORT NUMBER UCRL-53128 STATUS Published

AUTHOR(S)/YR/ Durham, W.B., and Abey, A.E., 1981
TITLE Thermal Properties of Avery Island Salt to 573 K and
50 MPa Confining Pressure

ORGANIZATION Lawrence Livermore National Laboratory
RESPONSIBLE

CONTRACT NO. W-7405-eng-48/Active (E511-00530)

CONTENT Thermal conductivity, diffusivity, and linear expansion
measurements on two halite samples at temperatures from
24 to 200 C and pressures of 10, 30, and 50 MPa, from
the 500-ft level of Avery Island Salt Dome, Louisiana.

LOCATION Lawrence Livermore National Laboratory
OF DATA Building 231, Room 1547
P.O. Box 808
Livermore, CA 94550

DATA FORM _____

REPORT NUMBER UCRL-83789 STATUS Published

AUTHOR(S)/YR/ Durham, W.B., Abey, A.E., and Trimer, D.A., 1980
TITLE Thermal Conductivity, Diffusivity and Expansion of
Avery Island Salt at Pressure and Temperature

ORGANIZATION Lawrence Livermore National Laboratory
RESPONSIBLE

CONTRACT NO. W-7405-eng-48/Active (E511-00530)

CONTENT Thermal conductivity, diffusivity, and linear expansion
measurement on one halite samples at temperatures from
27 to 200 C and pressures of 0
500-ft level of Avery Island Salt Dome, Louisiana

LOCATION Lawrence Livermore National Laboratory
OF DATA Building 231, Room 1547
P.O. Box 808
Livermore, CA 94550

DATA FORM _____

REPORT NUMBER ORNL/TM-6809 STATUS Published

AUTHOR(S)/YR/ Morgan, M.T., 1979

TITLE Thermal Conductivity of Rock Salt from Louisiana Salt Domes

ORGANIZATION RESPONSIBLE Oak Ridge National Laboratory

CONTRACT NO. W-7405-eng-26/Closed

CONTENT 15 thermal conductivity and density tests on Avery Island and Jefferson Island domal salt over a temperature range of 40 to 300 C (however, only the results at 100 C are explicitly reported).

LOCATION OF DATA Laboratory Records
Oak Ridge National Laboratory
(615)574-6755
(personal communication with author)

DATA FORM Laboratory notebooks

REPORT NUMBER ONWI-104 STATUS Published

AUTHOR(S)/YR/ Hansen, F.D., and Mellegard, K.D., 1980
TITLE Creep of 50-mm Diameter Specimens of Dome Salt from
Avery Island, Louisiana

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Uniaxial/triaxial compression creep tests on 50-mm diameter
halite samples at pressures of 0 to 20.7 MPa and temperatures
of 24, 75, 85, 118, 183, and 212 C, on 24 specimens from the
500-ft level of Avery Island Salt Dome, Louisiana.

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on punched cards

REPORT NUMBER ONWI-250 STATUS Published

AUTHOR(S)/YR/ Mellegard, K.D.; Senseny, P.E., and Hansen, F.D., 1981
TITLE Quasi-Static Strength and Creep Characteristics of 100-mm
Diameter Specimens of Salt from Avery Island, Louisiana

ORGANIZATION RE/SPEC, Inc.
RESPONSIBLE

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Uniaxial/triaxial compression creep tests and uniaxial/triaxial
compression constant stress-rate tests on 100-mm diameter halite
samples at pressures of 0 to 20.7MPa and a temperature of 24 C
for creep testing, temperatures also included 70, 100, and 200 C)
on 35 specimens (9-constant stress rate; 26 creep test) from
the the 500-ft level of Avery Island Salt Dome, Louisiana.

LOCATION RE/SPEC Computer Center Fire Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on 9-track magnetic tape

REPORT NUMBER Y/OWI/SUB-78/22303/13 STATUS Published

AUTHOR(S)/YR/ Hansen, F.D., 1978
TITLE Quasi-Static Strength and Creep Deformational Characteristics
of Bedded Salt from the Carey Mine near Lyons, Kansas.

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. Subcontract 78/22303/Active (E512-02300)

CONTENT Nineteen indirect (Brazil) tension tests, five uniaxial compression tests and fourteen triaxial compression constant-stress-rate tests were conducted on halite specimens from the Carey Salt Mine near Lyons, Kansas, at pressures of 0-3.4 MPa and at temperatures of approximately 24, 100, and 200 C. In addition, fourteen triaxial compression constant stress (creep) tests were conducted on this halite at temperatures of 24 and 100 C, at stress-differences of 6 to 30 MPa, at confining stresses of 3.5 and 10.4 MPa.

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on data logger tapes

REPORT NUMBER Y/OWI/SUB-78/22303/9 STATUS Published

AUTHOR(S)/YR/ Carter, 1977 (RSI-0063)

TITLE Petrofabric Analysis of the Deformational Behavior of
Lyons, Kansas, and Jefferson Island, Louisiana Rock Salt.

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. Subcontract 78/22303/Active (E512-02300)

CONTENT Petrofabric studies of undeformed and deformed samples of halite
from Jefferson Island Salt Dome, Louisiana and the Carey Mine
in Lyons, Kansas.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.

One Concourse Drive

Rapid City, South Dakota 57709

DATA FORM Engineering units on punched cards and computer listing

REPORT NUMBER Y/OWI/SUB-77/22303/7 STATUS Published

AUTHOR(S)/YR/ Stickney, R.G., 1979
TITLE Case History Rock Mechanics Examination of the Jefferson Island
Salt Mine: III. Evaluation of Laboratory Specimen Dimensions
on the Uniaxial Strength and Deformational Characteristics of
Dome Salt

ORGANIZATION RE/SPEC, Inc.
RESPONSIBLE

CONTRACT NO. SUB-77/22303/Active (E512-02300)

CONTENT Uniaxial/triaxial compression constant-stress-rate tests
(11 samples), triaxial compression creep tests (18 samples),
indirect (Brazil) tension tests (17 samples) at pressures
from 0 to 14 MPa at ambient temperature on halite from the
1,500-ft level of Jefferson Island Salt Dome

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on punched cards

REPORT NUMBER Y/OWI/SUB-77/22303/5 STATUS Published

AUTHOR(S)/YR/ Hansen, F.D., 1978
TITLE Case History Rock Mechanics Examination of the
Jefferson Island Salt Mine: II. Laboratory
Evaluation of Strength and Creep Deformation
Characteristics of Dome Salt Under Confining Pressure

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. SUB-77/22303/Active (E512-02300)

CONTENT Three uniaxial compression and eight triaxial compression
constant stress rate tests, 17 indirect (Brazil) tension tests
and 13 triaxial compression creep tests at pressures of 0-41.4 MPa
on halite from the 1500 ft level of the Jefferson Island Mine,
Louisiana

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on punched cards and computer listing

REPORT NUMBER ORNL/SUB-4269-10 STATUS Published

AUTHOR(S)/YR/ Hansen, F.D., and Gnirk, P.F., 1975

TITLE Design Aspects of the Alpha Repository: III. Uniaxial
Quasi Static and Creep Properties of the Site Rock

ORGANIZATION RE/SPEC, Inc.
RESPONSIBLE

CONTRACT NO. SUB-4269/Active (E512-02300)

CONTENT Uniaxial compression constant-stress-rate tests, indirect
(Brazil) tension tests (75 samples), and uniaxial creep tests
(2 samples) on halite, anhydrite, and polyhalite from the
horizons of 1,900 ft and 2,700 ft (580 and 825 m) in borings
AEC No. 7 and No. 8.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.

One Concourse Drive

Rapid City, South Dakota 58809

DATA FORM Hand-coded voltages and engineering units in notebooks

REPORT NUMBER ONWI-224 STATUS Published

AUTHOR(S)/YR/ Carter, N.L., 1983

TITLE Creep and Creep-Rupture of Rock Salt

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Petrofabric data as related to the creep testing of
Avery Island domal halite and New Mexico bedded halite
from the Waste Isolation Pilot Project Site

LOCATION OF DATA RE/SPEC QA Vault
RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on magnetic tape & photographs

REPORT NUMBER ONWI-116 STATUS Published

AUTHOR(S)/YR/ Hansen, F.D., and Mellegard, K.D., 1980

TITLE Quasi-Static Strength and Deformational Characteristics
of Domal Salt from Avery Island, Louisiana

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Twenty-four uniaxial/triaxial compression constant-stress-
rate tests on specimens of halite from Avery Island,
Louisiana, at temperatures of 24 to 224 C, and pressures
of 0 to 20.7 MPa. In addition, 30 indirect (Brazil)
tension tests are also reported; samples are from the
500-ft level of the mine.

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on punched cards

REPORT NUMBER ORNL/SUB-3706/1 STATUS Published

AUTHOR(S)/YR/ Gnirk, P.F.; Hoskins, E.R., Pariseau, W.G., Russell, J.E.,
TITLE and Wawersik, W.R., 1972
Analysis and Evaluation of the Rock Mechanics Aspects
of the Proposed Salt Mine Repository

ORGANIZATION RE/SPEC, Inc.
RESPONSIBLE

CONTRACT NO. SUB-3706/Active (E512-02300)

CONTENT Uniaxial compression constant-stress-rate tests and indirect
(Brazil) tension tests on six rock units (Harper Sandstone;
ellington anhydrite/shale; Stone Corral dolomite/anhydrite/shale;
Hutchison salt and Herington dolomite, limestone), and uniaxial
compression creep tests on Minnescahshale and Hutchinson salt
conducted at room temperature on samples from the Lyons, Kansas,
area.

LOCATION Unknown
OF DATA

DATA FORM Unknown

REPORT NUMBER ORNL/SUB-3706/2 **STATUS** Published

AUTHOR(S)/YR/ Gnirk, P.F.; Pariseau, W.F.; Russell, J.E.; Wawersik, W.R.;
TITLE Callahan, G.D., and Hovland, H., 1973
Analysis and Evaluation of the Rock Mechanics Aspects
of the Proposed Salt Mine Repository

ORGANIZATION
RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. SUB-3706/Active (E512-02300)

CONTENT Uniaxial/triaxial compression constant-stress-rate tests
(7 samples) and triaxial compression creep tests (4 samples)
were conducted on artificial salt block specimens at
ambient temperature and pressures of 0 to 20.7 MPa.

LOCATION Unknown
OF DATA

DATA FORM Unknown

REPORT NUMBER ORNL-4555 STATUS Published

AUTHOR(S)/YR/ Bradshaw, R.L., and McClain, W.C., 1971

TITLE Project Salt Vault: A Demonstration of the Disposal of
High Activity Solidified Wastes in Underground
Salt Mines

ORGANIZATION RESPONSIBLE Oak Ridge National Laboratory

CONTRACT NO. W-7405-eng-26/closed

CONTENT (pp 7-10) Uniaxial compression tests (7 specimens) and
uniaxial compression creep tests (2 specimens) on various
domal and bedded salt, including the effect of irradiation
at temperatures of 20 and 200 C. In addition, bench-scale
block test on Hutchinson salt is reported (pp 27-30).
(Field test data also presented.)

LOCATION OF DATA Original - most of it contained in the report itself
(personal communication with author)

DATA FORM Graphs, diagrams, tables

REPORT NUMBER ORNL-TM-2102 STATUS Published

AUTHOR(S)/YR/ Lomenick, T.F., 1968
TITLE Accelerated Deformation of Rock Salt at Elevated
Temperature and Pressure and Its Implications for
High Level Radioactive Waste Disposal

ORGANIZATION RESPONSIBLE Oak Ridge National Laboratory

CONTRACT NO. N-7405-eng-26/closed

CONTENT Twenty-three uniaxial compression creep tests were conducted
employing specially shaped pillar-specimen of halite from
the Carey Salt Mine, Lyons, Kansas, and five other locations.
Tests were conducted at temperatures of 22.5 to 200 C and
at axial stresses of 14 to 60 MPa.

LOCATION Not known
OF DATA

DATA FORM Not known

REPORT NUMBER ORNL/SUB-4269/21 STATUS Published

AUTHOR(S)/YR/ Hansen, F.D., 1976
TITLE Experimental Consolidation of Granulated Rock Salt
With Application to Sleeve Buckling

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. SUB-4269/Active (E512-02300)

CONTENT Fifteen consolidation tests (8-constant stress-rate tests and
7 creep tests) were conducted on granulated rock salt at
temperatures of 21, 100, and 200 C.

LOCATION Unknown
OF DATA

DATA FORM Unknown

REPORT NUMBER ORNL-3027 STATUS Published

AUTHOR(S)/YR/ Gunter, B.D., and Park, F.L., 1961
TITLE The Physical Properties of Rock Salt as
Influenced by Gamma Rays

ORGANIZATION RESPONSIBLE Oak Ridge National Laboratory

CONTRACT NO. _____

CONTENT Twenty-one uniaxial constant stress-rate compression tests and
six uniaxial creep compression tests were conducted on bedded
and domal salt at temperatures of 20 and 200 C and a various
radiation exposure doses (0 - 5×10^8 r). Location of specimens
was unspecified.

LOCATION OF DATA Not known

DATA FORM Not known

REPORT NUMBER Y/OWI/SUB-4269/23 STATUS Published

AUTHOR(S)/YR/ Dropek, R.K., and Wawersik, W.R., 1976
TITLE Pressure-Temperature Creep Testing as
Applied to a Commercial Rock Salt

ORGANIZATION University of Utah (Subcontract to RE/SPEC, Inc.)
RESPONSIBLE

CONTRACT NO. SUB-4269/Closed

CONTENT Triaxial compression creep tests (14 multistage tests) and
triaxial compression constant-stress-rate tests (9 multistage
tests) were conducted on artificial block salt specimens at
temperatures of 24 to 129 C and pressures of 3.5 to 20.7 MPa.

LOCATION Unknown
OF DATA

DATA FORM Unknown

REPORT NUMBER ONWI-100 STATUS Published

AUTHOR(S)/YR/ Carter, N.L., and Hansen, F.D., 1980

TITLE Mechanical Behavior of Avery Island Halite:
A Preliminary Analysis

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Petrofabric investigation of nine specimens of Avery Island
halite that were deformed under compression constant-stress-
rate testing are examined. Test temperatures ranged from
25 to 200 C (see ONWI-116).

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc

One Concourse Drive

Rapid City, South Dakota 57709

DATA FORM Engineering units on punched cards, computer listing and pictures

REPORT NUMBER ONWI-190(1) **STATUS** Published

AUTHOR(S)/YR/ Van Sambeek, L.L., 1980
TITLE Avery Island Heater Tests:
Temperature Measurements for the First 300 Days

ORGANIZATION
RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02200/Active (8/84)

CONTENT Temperature readings at 176 locations for three heater
tests (sites A, B, C) at the Avery Island Salt Dome,
500-ft level, for 300 days after heater initiation.
Thermocouples were emplaced at nominal depths of 0.17
to 28 ft (0.6 to 8.5 m) below the existing floor and up to
11 ft (3.4 m) from the respective heater site.

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on data-logger tapes

REPORT NUMBER ONWI-190(2) STATUS Published

AUTHOR(S)/YR/ Van Sambeek, L.L.; Stickney, R.G., and DeJong, K.B., 1981
TITLE Avery Island Heater Tests: Displacement and
Stress Data for the First 300 Days

ORGANIZATION RE/SPEC, Inc.
RESPONSIBLE

CONTRACT NO. E512-02200/Active (8/84)

CONTENT Displacement (13 multipoint-rod-extensometers, 50 heave
plates, 4 closure point measurements) and stress-change
(33 vibrating-wire stressmeters) measurements are reported
for three heater tests (Sites A,B,C) at the Avery Island
Salt Dome, 500-ft level, for the first 300 days after
heater initiation.

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Engineering units on data-logger tapes and hand-coded forms

REPORT NUMBER ONWI-190(3) STATUS Published

AUTHOR(S)/YR/ Blankenship, D.A., and Stickney, R.G., 1983

TITLE Nitrogen Gas Permeability Tests at Avery Island

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02200/Active (8/84)

CONTENT In situ falling-head and constant-head gas permeability tests were conducted adjacent to Site C heater test at Avery Island Salt Dome at the 500-ft level. Tests were conducted at distances of 4, 8, 16, 24, and 48 ft (1.2, 2.4, 4.8, 7.3 and 14.6 m) from the heater, over an interval of 6 to 10 ft. (1.8 to 3.0 m) below the existing floor surface.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.

One Concourse Drive

Rapid City, South Dakota 57709

DATA FORM Engineering units on data-logger tapes and hand-coded forms

REPORT NUMBER ONWI-190(5) STATUS Published

AUTHOR(S)/YR/ Van Sambeek, L.L., Stickney, R.G., and DeJong, K.B., 1983

TITLE Avery Island Heater Tests: Measured Data
for 1000 Days of Heating

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02200/Active (8/84)

CONTENT Temperature readings (176 locations), displacement readings
(13 multipoint extensometers, 4 closure-points, 50 heave plates),
heat-flux (3 transducers), and stress-change (33 vibrating
wire stressmeters) measurements for three heater tests (Sites A,
B,C) at Avery Island Salt Dome, 500-ft level, for 1000 days
after heater initiation.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.

One Concourse Drive

Rapid City, South Dakota 57709

DATA FORM Engineering units on data-logger tapes and hand-coded forms

REPORT NUMBER ORNL-4555 STATUS Published

AUTHOR(S)/YR/ Bradshaw, R.L., and McClain, W.C., 1971
TITLE Project Salt Vault: A Demonstration of the
Disposal of High Activity Solidified Wastes
in Underground Salt Mines

ORGANIZATION RESPONSIBLE Oak Ridge National Laboratory

CONTRACT NO. _____

CONTENT Monitoring results of four test rooms in the Lyons, Kansas
Mine, termed Project Salt Vault. Monitoring included 23
vertical convergence monitoring lines, 28 horizontal convergence
points, 25 multipoint extensometers, and 6 stress meters,
together with various leveling targets and thermocouple
measurements.

LOCATION OF DATA Original - most of it contained in the report itself
(personal communication with author)

DATA FORM Graphs, diagrams, tables

REPORT NUMBER K-0143 STATUS In review
(Cat. No.)

AUTHOR(S)/YR/ Durham, W.B.; C.O. Boro; J.M. Beiriger and D.N.Montan, 1984
TITLE Thermal Conductivity and Diffusivity of Permian Basin
Bedded Salt at Elevated Pressure and Temperature

ORGANIZATION Lawrence Livermore National Laboratory
RESPONSIBLE

CONTRACT NO. E511-00530/Active (10/84)

CONTENT Thermal conductivity and diffusivity tests on five halite
samples from the borings G. Friemel #1 and Detten No. 1 in
the Permian Basin. Specimens were tested at pressures of
3.8 to 31.0 MPa at temperatures from 22-200 C.

LOCATION Lawrence Livermore National Laboratory, Building 231, Room 1547,
OF DATA on shelf, P.O. Box 808, Livermore, CA 94550

DATA FORM Floppy Disk

REPORT NUMBER K-0178 STATUS Work in progress
(Cat. No.)

AUTHOR(S)/YR/ Durham, W.G., et al, 1984

TITLE Thermal Conductivity and Diffusivity of Permian Anhydrite
and Dolomite at Elevated Pressure and Temperature

ORGANIZATION RESPONSIBLE Lawrence Livermore National Laboratory

CONTRACT NO. E511-00530/Active (10/84)

CONTENT Thermal conductivity, diffusivity and expansion on two
specimens each of anhydrite and dolomite from the Permian
Basin, Boring J. Friemel No. 1 at temperatures from 22-85
C and pressures 3-30 MPa.

LOCATION In a cabinet in Building 232, Earth Sciences Laboratory, at
OF DATA Lawrence Livermore National Laboratory, P.O. Box 808,
Livermore, CA 94550

DATA FORM Floppy Disk

REPORT NUMBER 0-1140 (RSI-0221) STATUS In review
(Cat. No.)

AUTHOR(S)/YR/ Senseny, P.E.; T.W. Pfeifle and K.D. Mellegard, 1984
TITLE Constitutive Parameters for Salt and Nonsalt Rocks From
the Detten, G. Friemel, and Zeck Wells in the Palo Duro
Basin

ORGANIZATION RE/SPEC, Inc.
RESPONSIBLE

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Triaxial compression creep tests, constant stress-rate
triaxial compression tests and indirect (Brazil) tension
tests on Permian salt and nonsalt rocks at elevated
temperatures (25-200 C) and pressures (0-15 MPa)

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Binary Data on hard disk

REPORT NUMBER 0-1318 (RSI-0252) STATUS In review
(Cat. No.)

AUTHOR(S)/YR/ Senseny, P.E., T.W. Pfeifle and K.D. Mellegard, 1984

TITLE Exponential-Time Constitutive Law for Palo Duro Unit 4
Salt From the J. Friemel No. 1 Well

ORGANIZATION
RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT 12 Triaxial compression creep tests on Permian halite from
Lower San Andres Formation Unit 4 from Boring J. Friemel
No. 1 (No. 2 Friemel) at depths of 2592-2709 ft. (790.0-
825.7 m). Tests were conducted at pressures of 5, 7.5, 10
and 15 MPa and at temperatures of 25, 50, 75, 100 and 200
C.

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Binary Data on hard disk

REPORT NUMBER 0-1449 (RSI-0259) STATUS In Review
(Cat. No.)

AUTHOR(S)/YR/ P. Senseny, and T.W. Pfeifle, 1985

TITLE Influence of Impurities on the Creep of Salt From the
Palo Duro Basin

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Eleven triaxial compression creep tests and petrofabric
determinations on Permian salt samples of varying impurity
level from the Woods/Holtzclaw well.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Binary Data on hard disk

REPORT NUMBER 0-1261, 0-1263, 0-1266, STATUS In review
 (Cat. No.) (BMI/SRP-5015) 0-1268

AUTHOR(S)/YR/ ARA, 1984

TITLE Laboratory Testing of Rock and Salt Samples for Static Moduli,
 Dynamic Moduli, and Uniaxial and Triaxial Compressive strength from the Detten
 No. 1 (PD-6 Well, G. Friemel No. 1 (PD-5) Well, Mansfield No. 1 (PD-4), and
 Zeeck No. 1 (PD-7) Well - Palo Duro Basin, Texas:Unanalyzed Data

ORGANIZATION
 RESPONSIBLE Applied Research Associates (Stone & Webster)

CONTRACT NO. Subcontract to E512-05000/Active

CONTENT This report contains the laboratory test procedures, graphical
 representations of the raw data, and test results for the Detten Well No. 1
 (Chapters 1 and 2), G. Friemel Well No. 1 (Chapters 3 and 4), Mansfield Well
 No. 1 (Chapters 5 and 6), and Zeeck Well No. 1 (Chapters 7 and 8) in the Palo
 Duro Basin, Texas. The laboratory tests were performed for static moduli,
 dynamic moduli, uniaxial compressive strength, and triaxial compressive
 strength determinations. These data are preliminary. They have been neither
 analyzed nor evaluated.

LOCATION ARA Laboratory Files, S. Royalton, VT
 OF DATA _____

DATA FORM Paper and Floppy Disk

REPORT NUMBER 0-1267 STATUS Work in progress
(Cat. No.)
AUTHOR(S)/YR/ ARA, 1984
TITLE Harman Unconfined, Triaxial and Velocity Tests Report

ORGANIZATION Applied Research Associates (Stone & Webster)
RESPONSIBLE

CONTRACT NO. Subcontract to E512-05000/Active

CONTENT Uniaxial compression tests, sonic wave velocities and
density measurements of Permian salt and nonslat rocks at
ambient temperature (23 C) from Boring Harman No. 1

LOCATION ARA Laboratory Files
OF DATA S. Royalton, VT

DATA FORM Papers and floppy disk

REPORT NUMBER 0-1269 STATUS Work in Progress
(Cat. No.)
AUTHOR(S)/YR/ SWEC, 1984
TITLE J. Friemel In-House Tests Report

ORGANIZATION RESPONSIBLE Stone & Webster Engineering Corp.

CONTRACT NO. E512-05000/Active

CONTENT Various index property tests including porosity, schmidt hardness, indirect (Brazil) tension tests, shale durability, atterberg limit and water content tests on various salt and nonsalt specimens from Boring J. Friemel No. 1 (No. 2 Friemel)

LOCATION ONWI Files in SWEC Lab
OF DATA Stone & Webster Engineering Corporation
Geotechnical Laboratory
P.O. Box 2325
Boston, MA 02107

DATA FORM Paper

REPORT NUMBER 0-1450 STATUS Work in Progress
(Cat. No.)

AUTHOR(S)/YR/ Terra Tek, 1985
TITLE Salt Index Properties

ORGANIZATION RESPONSIBLE Terra Tek (Stone & Webster)

CONTRACT NO. Subcontract to E512-05000/Active

CONTENT Thermal fracturing, bulk moisture content, loss upon heating
and insoluble residues on halite from various boring in the
Permian Basin

LOCATION Terra Tek, Inc.
OF DATA Salt Lake City, UT

DATA FORM Paper

REPORT NUMBER 0-1270 (Part A) **STATUS** In Review
(Cat. No.)

AUTHOR(S)/YR/ Bush, D.D. and N. Barton, 1984
TITLE In Situ Stress Determination by Hydraulic Fracturing,
Holtzclaw #1 Well

ORGANIZATION
RESPONSIBLE Terra Tek (subcontract with Stone & Webster Engineering Corp)

CONTRACT NO. E512-05000 (13697-G111F)/Active

CONTENT Impression packer measurements together with 5 hydraulic
fracturing measurements, three in nonsalt (at 1854, 2334, and
2794 ft/565.0, 711.4, and 851.6 m) and two in salt (at 2434
and 2585 ft/741.9 and 787.9 m) in the Permian Basin, Woods/
Holtzclaw No. 1 boring.

LOCATION Terra Tek Files
OF DATA Terra Tek Engineering
Salt Lake City, UT

DATA FORM Paper and Rubber-Impression Packer

REPORT NUMBER 0-1270 (Part B) STATUS In Review

AUTHOR(S)/YR/ SWEC, 1984

TITLE Report on the Borehole Televiwer used at Holtzclaw No. 1,
Well, Permian Basin

ORGANIZATION
RESPONSIBLE Terra Tek (subcontract with Stone & Webster Engineering Corp)

CONTRACT NO. E512-05000 (13697-G111F)/Active

CONTENT This report contains the description of equipment, logging
descriptions, interpretation of the borehole televiwer, and results of the
borehole televiwer used at Holtzclaw No. 1 Well, Permian Basin. The purpose
of the borehole televiwer is to detect jointing, fractures in hydrofractured
zones, and to identify bedding planes of various lithologies. Figures and
instructions on how to read the video tape recorder tapes are included in the
appendices.

LOCATION Terra Tek Files
OF DATA Terra Tek Engineering
Salt Lake City, UT

DATA FORM Paper and Rubber-Impression Packer

REPORT NUMBER 0-1354 (RSI-0243) STATUS In Review
(Cat. No.)

AUTHOR(S)/YR/ Senseny, P.E., Mellegard, K.D., and Pfeifle, T.W., 1984
TITLE Exponential-Time Creep Law for Avery Island Salt:
First Revision

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Four additional triaxial compression creep tests were
conducted on Avery Island halite at temperatures of 50 and 75 C
and at a confining stress of 15 MPa. Data from this testing
and previous efforts employed to evaluate new constants for
exponential creep law

LOCATION OF DATA RE/SPEC QA and Computer Center Fire Vaults
RE/SPEC, Inc.
One Concourse Drive
Rapid City, South Dakota 57709

DATA FORM Binary data on hard disk; engineering units on magnetic tape

REPORT NUMBER 0-1141 STATUS In review
(Cat. No.)

AUTHOR(S)/YR/ Handin, T., Carter, N.L., and Russell, T.E., 1984
TITLE Transient Creep of Repository Rocks,
Mechanistic Creep Laws for Rock Salt

ORGANIZATION RESPONSIBLE Texas A&M University

CONTRACT NO. E512-00900/Closed

CONTENT 15 triaxial compression constrain-strain-rate tests of Avery
Island halite at temperatures of 100, 150 and 200 C are reported
at strain-rates of 10^{-4} , 10^{-5} , and 10^{-6} strain per second, and
at pressures of 3.4 and 20 MPa. Samples were from the 500-ft.
level of the mine.

LOCATION Room 154, Geosciences Building, Texas A&M University,
OF DATA College Station, TX 77843

DATA FORM X-Y Plotting records and lab books

REPORT NUMBER 0-1355 (RSI-0235) STATUS In Review
(Cat. No.)

AUTHOR(S)/YR/ Hansen, F.D., 1984

TITLE Deformation Mechanisms of Experimentally Deformed Cleveland
Bedded Salt

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02300/Active (8/84)

CONTENT Petrofabric examinations of ten triaxial creep (constant-stress)
tests on halite specimens from the Cleveland Salt Mines. Tests
were conducted at a confining pressure of 15 MPa, at temperatures
of 25, 50, 75, 100 and 200 C, and at axial stress-differences of
5, 7.5, 10 and 15 MPa.

LOCATION RE/SPEC QA Vault

OF DATA RE/SPEC, Inc.

One Concourse Drive

Rapid City, South Dakota 57709

DATA FORM Photomicrographs

REPORT NUMBER 0-1445 STATUS Work in Progress

AUTHOR(S)/YR/ Kelsall, P., 1985

TITLE Assessment of Crushed Salt Consolidation and Fracture
Healing Laboratory Test Results

ORGANIZATION RESPONSIBLE IT Corporation (Formerly D'Appolonia)

CONTRACT NO. E512-03000/Active (10/84)

CONTENT Consolidation testing of crushed halite from Avery Island Salt
Dome and the Waste Isoaltion Pilot Project at elevated
temperatures (24 to 200 C).

LOCATION OF DATA Data is to be contained in Records Turnover Package in
preparation; data to be available at ONWI in October 1984.

DATA FORM Computer tapes, hard copy provided of final data

REPORT NUMBER K-0179 STATUS Unpublished
(Cat. No.)

AUTHOR(S)/YR/ Doe, T., Boyce, G., and Majer, E., 1985

TITLE Laboratory Simulation of Hydraulic Fracturing
Stress Measurements in Salt

ORGANIZATION RESPONSIBLE Lawrence Berkeley National Laboratories

CONTRACT NO. E511-18430/Closed

CONTENT Hydraulic fracturing of 15 cm (6 in.) diameter core
and 30 x 30 x 46 cm (12 x 12 x 18 in.) blocks of Avery
Island halite under pressures of 6.9 and 13.8 MPa.
A total of 54 tests were conducted (27 of each sample
type) including acoustic monitoring at ambient temperatures.

LOCATION S. Versluis' office soon to be transferred to ONWI files.
OF DATA Records Turnover Package

DATA FORM Computer printout

REPORT NUMBER 0-1452 STATUS Unpublished (Ph.D. thesis)
(Cat. No.)

AUTHOR(S)/YR/ Lindner, E., 1983

TITLE A Constitutive and Experimental Investigation of Load
History Influences on the Creep Behavior of Salt

ORGANIZATION
RESPONSIBLE University of Minnesota

CONTRACT NO. E512-00800/Active (E512-

CONTENT A series of multistage triaxial compression creep tests on
Avery Island halite from the 500-ft level. Twelve tests were
conducted at 5.18 MPa at temperatures of 25, 60, and 100 C.
at stress-differences of 13.8 and 21.1 MPa.

LOCATION ONWI Records Turnover Package

OF DATA Microfilm #315 and 317

BMI

601 W. 5th Avenue

Columbus, Ohio 43210

Originals in Warehouse at 1764 Delashmut, Columbus OH 43212

DATA FORM Data logs, printout, floppy disks, memorandum, handwritten notes,
and notebook

REPORT NUMBER N/A STATUS Unpublished
(Cat. No.)

AUTHOR(S)/YR/
TITLE

ORGANIZATION
RESPONSIBLE South Dakota School of Mines

CONTRACT NO. E512-04600/Closed

CONTENT

LOCATION
OF DATA

DATA FORM

REPORT NUMBER N/A STATUS Unpublished
(Cat. No.)

AUTHOR(S)/YR/ Voegele, M. D., 1982

TITLE An Investigation of Errors in Field Determined Permeability
Coefficients Caused by Stress Field, Temperature and Test
Technique Effects

ORGANIZATION RESPONSIBLE Science Applications, Inc.

CONTRACT NO. E512-06900/Closed

CONTENT Radial permeameter testing of three Avery Island halite samples
over a temperature range of 20 - 102 C and pressure heads of
352 - 6335 cm/wates

LOCATION Not known
OF DATA

DATA FORM Not known

REPORT NUMBER 0-1276 (RSI-0240) **STATUS** In Review
(Cat. No.) (BMI/ONWI-529)

AUTHOR(S)/YR/ Waldman, H., and Stickney, R.G., 1984
TITLE Measured Data From the Avery Island
 Site C Heater Test

ORGANIZATION
RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02200/Active (8/84)

CONTENT Temperature and displacement for 1858 days after heater
 initiation from the Site C heater test conducted at Avery
 Island Salt Dome, 500 ft level. Measurements included 45
 thermocouple stations at depths of 0.05 to 5.49 m below the
 excavation surface, at distances of 0.61 - 0.92 m; also,
 three multipoint extensometers and 52 leveling pin data are
 also reported

LOCATION RE/SPEC QA Vault
OF DATA RE/SPEC, Inc.
 One Concourse Drive
 Rapid City, South Dakota 57709

DATA FORM Engineering units on hand-coded forms

REPORT NUMBER 0-1306 STATUS In Review
 (Cat. No.)
 AUTHOR(S)/YR/ Rothfuchs, T.; Luekes, D.; Coyle, A.J.; and Kalia, H.N., 1984
 TITLE Annual Report on Asse Mine

ORGANIZATION RESPONSIBLE ONWI/GSF

CONTRACT NO. N/A

CONTENT This report describes experiments that simulate a nuclear waste repository at the 800 meter level of the Asse Salt Mine in the Federal Republic of Germany (FRG). The report describes the test equipment, the Asse Salt Mine, the pre-test properties of salt in the test gallery, and the mine prop . Also included are these data for the first 6 months of operation such as: brine migration rates, room closure, extensometer readings, stress measurements, temperatures, and related thermal mechanical behavior of salt.

LOCATION Original data is located at the Institut fur Tiedlagerung, Schachtanlage.
 OF DATA Asse, 3346 Remingen, West Germany.
Note: The originals are located there, but copies of the data are in ONWI under the control of A. J. Coyle.

DATA FORM Data tapes, daily logs of underground observations (Manual readings) pretest salt analyses

Instruments: Thermocouples, Sandia Stress Gauges, Gloetzi Cells, extensometers, ammeters, voltage meters, seismic measurements, flowmeter to measure gas pressures, graduated water traps to measure brine migration.

REPORT NUMBER 0-1255 STATUS In Review
(Cat. No.)

AUTHOR(S)/YR/ Westinghouse Electric Corporation, 1985
TITLE Brine Migration Test Equipment Final Report -
Asse Salt Mine

ORGANIZATION RESPONSIBLE Westinghouse Electric Corporation

CONTRACT NO. E512-06400/Active

CONTENT This report describes the design, installations and the initial
operation of the brine migration tests which are being conducted
in the Asse Salt Mine in the Federal Republic of Germany as part
of a US-FRG Cooperative Radioactive Waste Management Agreement.

LOCATION OF DATA Waste Technology Services Division of Westinghouse Electric
Corporation, Walta Mills Site, P.O. Box 280, Madison, PA
155663 0286, under the control of R. Bahorick.
Note: The originals are located at Westinghouse, copies of all
data will be obtained in the Records Turnover Package.

DATA FORM Drawings, lab tests, QA tests and certification reports.

REPORT NUMBER 0-1454 STATUS In Review
 (Cat. No.)

AUTHOR(S)/YR/ Coyle, A.J., and Kalia, H.N., 1984
 TITLE Quarterly Brine Migration Data Report, Third Quarter, 1983:
Brine Migration Investigation at Asse Mine in the Federal
Republic of Germany

ORGANIZATION RESPONSIBLE ONWI/GSF

CONTRACT NO. N/A

CONTENT Brine inflow, gas analysis, temperature readings (54 locations),
displacement (9 multipoint extensometers, 4 single-anchor
extensometers & 5 closure points), stress change measurements
(4 Gloetzl cells & 2 Sandia stressmeters), measurements at
Sites 1-4 at the Asse Salt Dome test facility for May 24 -
Sept. 9, 1984.

LOCATION OF DATA Original data retained at site by GSF; mailing address:
T. Rothfuchs, Institut Fuer Tieflagerung, Schachanlage Asse,
3346 Remingen, West Germany; copy of data logger readout data
 DATA FORM transmitted to Performance Assessment Dept., Code Curator, ONWI,
Tapes ASSE1 to ASSE4 (see reformatted tapes BMT 3 to 15D); copy of
handwritten logs - A. Coyle, Project Manager, ONWI; handwritten
logs/9 track computer tape (VSN-800/BLOCK-514)

DATA FORM See above

REPORT NUMBER 0-1455 STATUS In Review
 (Cat. No.)

AUTHOR(S)/YR/ Coyle, A.J., and Kalia, H.N., 1984
 TITLE Quarterly Brine Migration Data Report, Last Quarter, 1983:
Brine Migration Investigation at Asse Mine in
Federal Republic of Germany

ORGANIZATION RESPONSIBLE ONWI/GSF

CONTRACT NO. N/A

CONTENT Brine inflow, gas analysis, temperature readings (54 locations),
displacement (9 multipoint extensometers, 4 single-anchor
extensometers & 5 closure points), stress change measurements
(4 Gloetzl cells & 2 Sandia stressmeters), measurements at
Sites 1-4 at the Asse Salt Dome test facility for Sept. 9, 1983 -
Jan. 12, 1984

LOCATION Original data retained at site by GSF; mailing address:
 OF DATA T. Rothfuchs, Institut Fuer Tieflagerung, Schachtanlage Asse,
3346 Remingen, West Germany; copy of data logger readout data

DATA FORM transmitted to Performance Assessment Dept., Code Curator, ONWI,
Tapes ASSE5 to ASSE9 (see reformatted tapes BMT 16A to 29C); copy
of handwritten logs - A. Coyle, Project Manager, ONWI; hand-
written logs/9 track computer tape (VSN-800/BLOCK-514)

DATA FORM See above

REPORT NUMBER 0-1451 **STATUS** Work Completed
(Cat. No.)

AUTHOR(S)/YR/ Van Sambeek, L.L., 1985

TITLE Results of Phase II Accelerated Borehole Testing
Program at Avery Island

ORGANIZATION RESPONSIBLE RE/SPEC, Inc.

CONTRACT NO. E512-02200/Active (8/84)

CONTENT Test results including termocouple measurements and closure of
central annular hole during circular corejack tests (similar
to block tests) at temperatures of 27 and 60 C and pressures
of 27 and 60 C.

LOCATION OF DATA RE/SPEC QA Vault
RE/SPEC, Inc.
One Concourse Drive
Reapid City, SD 57709

DATA FORM Engineering units on hand-coded forms

8/8/84

Draft

THERMAL AND THERMOMECHANICAL

PROPERTIES DATA OF ROCK

- Topical Bibliography

1.0 Topical Bibliography: Published and Unpublished Reports

1.1 Published Reports

1.1.1 Site Specific

1.1.1.1 Thermal Properties - Laboratory Measurements

Lagedrost, J.F. and W. Capps, 1983. Thermal Property and Density Measurements of Samples Taken From Drilling Cores From Potential Geologic Media, BMI/ONWI-522, prepared by Fiber Materials, Inc. for the Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio.

Sass, J.H.; A.H. Lachenbruch, and E.P. Smith, 1983. Thermal Data From Well GD-1, Gibson Dome, Paradox Valley, Utah, Open File Report 83-476, U.S. Geologic Survey, Menlo Park, California.

1.1.1.2 Thermomechanical Properties - Laboratory Measurements

Pfeifle, T.W.; K.D. Mellegard, and P. Senseny, 1983. Preliminary Constitutive Properties for Salt and Nonsalt Rocks From Four Potential Repository Sites, ONWI-450, prepared by RE/SPEC, Inc. for the Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio.

Nelson, R.A.; J.G. Kocherhaus, and M.R. Schnapp, 1982. In Situ and Laboratory Geotechnical Test Results From Borehole GD-1 in Southeast Utah, ONWI-400, prepared by Woodward-Clyde Consultants for the Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio.

1.1.1.3 Field Testing Efforts

Nelson, R.A.; J.G. Kocherhaus, and M.R. Schnapp, 1982. In Situ and Laboratory Geotechnical Test Results From Borehole GD-1 in Southeast Utah, ONWI-400, prepared by Woodward-Clyde Consultants for the Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio.

1.1.2 Generic Reports

1.1.2.1 Thermal Properties - Laboratory Measurements

Morgan, M.T. and G.A. West, 1980. Thermal Conductivity of the Rocks in the Bureau of Mines Standard Rock Suite, ORNL-TM-7052, prepared by Oak Ridge National Laboratory for the Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio.

Sass, J.H.; A.H. Lachenbruch, and E.P. Smith, 1983. Temperature Profiles From Salt Valley Utah, Thermal Conductivity of 10 Samples From Drill Hole DOE3, and Preliminary Estimates of Heat Flow, Open File Report 83-455, U.S. Geological Survey, Menlo Park, California.

Smith, D.D., 1976. Thermal Conductivity of Halite Using a Pulsed Laser, Y/DA-7013, Union Carbide Corporation, Nuclear Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Durham, W.B. and A.E. Abey, 1981. Thermal Properties of Avery Island Salt to 573 K and 50 MPa Confining Pressure, UCRL-53128, Lawrence Livermore National Laboratory, Livermore, California.

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1.1.2.2 Thermomechanical Properties - Laboratory Measurements

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1.1.2.3 Field Testing Efforts

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1.2 Unpublished Reports

<u>Key to Unpublished Reports Listing</u>	
● *RE/SPEC, Inc.	Responsible organization *Asterik indicates that draft is completed and is being reviewed at ONWI
● <u>Permian Cycle 4 Salt Core Test Data Report</u>	Proposed report title
● Catalog No.: P-1318 (RSI-0252)	DOE Catalog Number ¹ Contractor's report number
● Date Available: 03/15/85	Latest revised estimate for date report will be published

1.2.1 Site Specific

1.2.1.1 Thermal Properties - Laboratory Measurements

*Lawrence Livermore National Laboratory
Thermal Conductivity and Diffusivity of Permian Basin Bedded Salt at Elevated Pressure and Temperature
Catalog No.: K-0143
Date Available: 08/01/84

Lawrence Livermore National Laboratory
Thermal Conductivity and Diffusivity of Permian Anhydrite and Dolomite at Elevated Pressure and Temperature
Catalog No.: N/A
Date Available: 05/15/85

¹ U.S. Department of Energy, Salt Repository Project Office, 1984, Catalog and Procedures Data/Information From the RWM-Salt Repository Project in Columbus, Ohio (Update March 23, 1984), prepared for the U.S. Department of Energy by the Office of Nuclear Waste Isolation, Battelle Memorial Institute, Columbus, Ohio.

1.2.1.2 Thermomechanical Properties - Laboratory Measurements

*RE/SPEC, Inc.

Constitutive Parameters for Salt and Nonsalt Rocks From
the Detten, G. Friemel, and Zeeck Wells in the Palo Duro
Basin

Catalog No.: 0-1140 (RSI-0221)

Date Available: 11/15/84

*RE/SPEC, Inc.

Exponential-Time Constitutive Law for Palo Duro Unit 4
Salt From the J. Friemel No. 1 Well

Catalog No.: 0-1318 (RSI-0252)

Date Available: 03/15/85

RE/SPEC, Inc.

Influence of Impurities on the Creep of Salt From the
Palo Duro Basin

Catalog No.: 0-1449 (RSI-0259)

Date Available: 04/15/85

*Applied Research Associates

Laboratory Testing of Rock and Salt Samples for Static
Moduli, Dynamic Moduli, and Uniaxial and Triaxial
Compressive Strength from the Detten No. 1 (PD-6) Well,
G. Friemel No. 1 (PD-5) Well, Mansfield No. 1 (PD-4)
Well, and Zeeck No. 1 (PD-7) Well - Palo Duro Basin,
Texas: Unanalyzed Data

Catalog No.: 0-1261, 0-1263, 0-1266, 0-1268 (BMI/SRP-5015)

Date Available: 10/15/84

Applied Research Associates
Harman Unconfined, Triaxial and Velocity Tests Report
Catalog No.: 0-1267
Date Available: 02/01/85

Stone & Webster Engineering Corp.
J. Friemel In-House Tests Report
Catalog No.: 0-1269
Date Available: 12/15/84

Terra Tek, Inc.
Salt Index Properties, Permian Basin
Catalog No.: 0-1450
Date Available: 03/15/85

1.2.1.3 Field Testing Efforts

Stone & Webster Engineering Corp.
Hydrofracture and Televiewer Survey Report
Catalog No.: 0-1270
Date Available: 12/15/84

1.2.2 Generic

1.2.2.1 Thermal Properties - Laboratory Measurements

None

1.2.2.2 Thermomechanical Properties - Laboratory Measurements

*RE/SPEC, Inc.
Exponential-Time Creep Law for Avery Island Salt: First Revision
Catalog No.: 0-1354 (RSI-0243)
Date Available: 10/01/84

***Texas A & M University**

**Transient Creep of Repository Rocks, Mechanistic Creep
Laws For Rocksalt**

Catalog No.: 0-1141

Date Available: 10/01/84

RE/SPEC, Inc.

**Deformation Mechanisms of Experimentally Deformed Bedded
Salt**

Catalog No.: 0-1355 (RSI-0235)

Date Available: 11/01/84

IT Corporation

**Crushed Salt Consolidation and Fracture Healing
Laboratory Test Results**

Catalog No.: 0-1455

Date Available: 06/15/85

Lawrence Berkeley National Laboratory

**Laboratory Simulation of Hydraulic Fracturing Stress
Measurements in Salt**

Catalog No.: K-0179

Date Available: Not known

University of Minnesota

**A Constitutive and Experimental Investigation of Load
History Influences on the Creep Behavior of Salt**

Catalog No.: 0-1452

Date Available: Not known (Submitted as PhD Dissertation
in 1983)

South Dakota School of Mines

Bench-Scale Creep Studies

Catalog No.: N/A

Date Available: Not known

Science Applications, Inc.

An Investigation of Errors in Field Determined Permeability
Coefficients Caused by Stress Field, Temperature and Test
Technique Effects

Catalog No.: N/A

Date Available: Not known

1.2.2.3 Field Testing Efforts

RE/SPEC, Inc.

Measured Data From the Avery Island Site C Heater Test

Catalog No.: 0-1276 (RSI-0240)

Date Available: 12/15/84

*Office of Nuclear Waste Isolation (ONWI)

Annual Report on Asse Mine

Catalog No.: 0-1306

Date Available: 01/31/85

*Westinghouse Electric Corporation

Brine Migration Test Equipment Final Report - Asse Salt
Mine

Catalog No.: 0-1255

Date Available: 01/31/85

*Office of Nuclear Waste Isolation (ONWI)

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1983: Brine Migration Investigation at Asse Mine in the
Federal Republic of Germany

Catalog No.: 0-1454

Date Available: 10/15/84

*Office of Nuclear Waste Isolation (ONWI)

Quarterly Brine Migration Data Report, Last Quarter,
1983: Brine Migration Investigation at Asse Mine in
Federal Republic of Germany

Catalog No.: 0-1455

Date Available: 01/31/85

RE/SPEC, Inc.

Results of Phase II Accelerated Borehole Testing Program
at Avery Island

Catalog No.: 0-1305

Date Available: 05/15/85