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Linear Thermal Expansion Data for Tuffs
from the Unsaturated Zone
at Yucca Mountain, Nevada

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ABSTRACT

Experiment results are presented for linear thermal expansion measurements on tuffaceous rocks from the unsaturated zone at Yucca Mountain, Nevada. Data were obtained both with and without confining pressure. The accuracy of the unconfined data collected between 50 and 250°C is better than 1.8 percent, with the precision better than 4.5 percent. The accuracy of the unconfined data collected between ambient temperature and 50°C is approximately 11 percent deviation from the true value, with a precision of 12 percent of the mean value. Because of experiment design and the lack of information related to calibrations, the accuracy and precision of the confined thermal expansion measurements could not be determined.

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1.0 INTRODUCTION

Yucca Mountain, located near the southwest corner of the Nevada Test Site (NTS) in southern Nye County, Nevada, is being evaluated as a potential site for underground disposal of nuclear wastes. At present, the physical, thermal, and mechanical properties of tuffaceous rocks from Yucca Mountain are being determined as part of the Yucca Mountain Site Characterization Project (YMP), for the U.S. Department of Energy (DOE). The purpose of characterizing these properties is to provide input for calculations that contribute to repository design and performance assessment. Figure 1 shows the geographic location of the NTS and of Yucca Mountain.

Preliminary data for the thermal and mechanical properties of the tuff units have permitted definition of a thermal/mechanical stratigraphy in which units are distinguishable based on differences in one or more of the thermal and mechanical properties. A comparison of these units with the formal stratigraphic units for Yucca Mountain tuffs is provided in Figure 2. More detailed discussions of the thermal/mechanical stratigraphy are provided in Ortiz et al. (1985) and Nimick and Schwartz (1987).

This report documents unconfined thermal expansion data obtained by Sandia National Laboratories (SNL), and confined thermal expansion data, obtained by a subcontractor to SNL, for the tuffaceous rocks that lie above the water table at Yucca Mountain. Included is a description of the experiment methods and the data-reduction process used, and a discussion of experiment uncertainties (accuracy and precision of measured values) and applicability of techniques.

The supporting documentation for thermal expansion values in this report has received extensive examination, so that values reported here should replace data published in Nimick and Schwartz (1987). Unless the data are contained in this report, the thermal expansion data previously published by SNL for thermal/mechanical units CHn2 and above are considered unreliable because of inadequate documentation in the SNL YMP Data Records Management System (DRMS).

Figure 1. Locations of the Nevada Test Site, Yucca Mountain, and Existing Deep Core Holes

DEPTH m ft	GEOLOGIC STRATIGRAPHY	THERMAL/ MECHANICAL UNIT	LITHOLOGIC EQUIVALENT
	ALLUVIUM	UO	ALLUVIUM
	TIVA CANYON MEMBER	TCw	WELDED DEVITRIFIED
	YUCCA MOUNTAIN MEMBER		
100	PAH CANYON MEMBER	PTn	VITRIC NONWELDED
500	PAINTBRUSH TUFF	TSw1	"LITHOPHYSAL"; ALTERNATING LAYERS OF LITHOPHYSAE-RICH AND LITHOPHYSAE-POOR WELDED DEVITRIFIED TUFF
200			
300		TSw2	"NONLITHOPHYSAL" (CONTAINS SPARSE LITHOPHYSAE); POTENTIAL SUBSURFACE REPOSITORY HORIZON
400		TSw3	VITROPHYRE
1500	TUFFACEOUS BEDS OF CALICO HILLS	CHn1	ASHFLOWS AND BEDDED UNITS. UNITS CHn1, CHn2, AND CHn3 MAY BE VITRIC (v) OR ZEOLITIZED (z)
500		CHn2	BASAL BEDDED UNIT
600		CHn3	UPPER UNIT
2000	CRATER FLAT TUFF	PPw	WELDED DEVITRIFIED
700		CFUn	ZEOLITIZED
2500		BFw	WELDED DEVITRIFIED
800			
		CFMn1	LOWER ZEOLITIZED
		CFMn2	ZEOLITIZED BASAL BEDDED
900	TRAM MEMBER	CFMn3	UPPER ZEOLITIZED
3000		TRw	WELDED DEVITRIFIED

Note 1: The figure shows the correlation between the thermal/mechanical stratigraphy and the geologic stratigraphy.

Note 2: The thicknesses of the units are averages for five deep core holes at Yucca Mountain.

Figure 2. Stratigraphy of Tuffaceous Units at Yucca Mountain (Source: DOE, 1989)

2.0 EXPERIMENT TECHNIQUES AND UNCERTAINTIES

2.1 Experiment Techniques

The linear thermal expansion data in this report were obtained from experiments that utilized differential (dual-pushrod) and standard (single-pushrod) dilatometry. Section 2.1.1 describes the differential dilatometry technique used to obtain unconfined thermal expansion data. The standard dilatometry technique used to obtain confined thermal expansion data is summarized in Section 2.1.2.

2.1.1 Unconfined Thermal Expansion

Unconfined thermal expansion experiments were performed under revisions A, B, and C of SNL Waste Management Procedure QAP XI-5, entitled Quality Assurance Procedure and Standard Operating Procedures For Thermal Expansion Measurements Using a Theta Corp. Model 6020 Dilatometer. The procedure is based on the principles of dilatometry described in ASTM E-228 and ASTM E-831 (ASTM 1971, 1982). The dates cited for these two ASTM procedures were the most recent versions at the time data were being obtained and analyzed. Both procedures have been revised since 1984, but the current revisions may not be applicable. Because QAP XI-5 is quite detailed, only part of this procedure is summarized here.

A block diagram of the Theta Model 6020 dilatometer used for the unconfined thermal expansion experiments is shown in Figure 3. This differential dilatometer system is comprised of a dilatometer head with parallel dual sensor rods constructed of fused silica; a specimen holder consisting of a fused silica tube and Type K thermocouple; a 1200°C split furnace (approximately 6 inches tall by 12 inches long with a 1 inch diameter opening) with a Type K thermocouple and programmable temperature control system; and an XY recorder.

Figure 3. Block Diagram of the Theta Model 6020 Dilatometer Used for Unconfined-Thermal-Expansion Experiments

Differential dilatometry measures the difference in expansion between a test sample and an accurately characterized reference material. The sample and reference are placed in the specimen holder, which is positioned approximately in the center of the furnace. To ensure uniform heating of the specimens, a refractory material is used to fill the cavity of the furnace opening. The test sample is heated to a predetermined temperature at a rate programmed into the temperature control system. The temperature of the test sample, as measured by a calibrated Type K thermocouple mounted between the sample and reference material, is recorded on the abscissa of the XY recorder.

The dilatometer head contains a linear variable differential transformer (LVDT) that measures the differential expansion. The configuration of the dilatometer head and specimen holder is shown in Figure 4. One pushrod supports the coil of the LVDT and contacts the reference material. The other pushrod, which contacts the sample, supports the core of the LVDT. The LVDT sensor assembly is mounted on springs attached to a carriage. An adjustment knob is used to slide the carriage forward until the pushrods come in contact with their respective specimens, as indicated by a deflection in the mounting springs. The pushrods move in an independent, frictionless manner, so that any change in sample length produces a voltage signal that is recorded on the ordinate of the XY recorder.

Before running an experiment, a total system calibration of the dilatometer was made using a platinum sample versus a fused silica reference. Comparison of the data obtained from the calibration measurements with the known thermal expansion coefficients for platinum served as a check on the calibration of the dilatometer.

The fused silica reference was a 1.000-inch-long National Institute of Standards and Testing (NIST) primary standard and the platinum sample was made from a NIST secondary standard. Platinum was selected for the whole system calibration because its thermal expansion coefficient is similar to that of the rock samples. The size of the platinum sample was machined to a length of $2.56 \pm .0026$ cm (1.00 ± 0.001 in) to be approximately the same length as the rock samples. The force exerted on the samples

Figure 4. Configuration of the Dilatometer Head and Specimen Holder Used for Unconfined-Thermal-Expansion Experiments

during calibration was not measured, but the position of the carriage adjustment knob was marked so that the force could be duplicated during thermal expansion measurements of the rock samples.

The displacement of the platinum specimen was measured in the interval of ambient temperature to 400°C using a heating rate of approximately 3°C/min. After temperature and displacement data were obtained, thermal expansion coefficients were calculated. Although there are many ways this can be done, the method used for these data is one in which average coefficients are calculated. The relevant equation is

$$\alpha = \frac{L_{T(2)} - L_{T(1)}}{L_0(T_2 - T_1)} \quad (1)$$

where α is the thermal expansion coefficient of the sample relative to the reference, $L_{T(2)}$ and $L_{T(1)}$ are the sample lengths at temperatures T_2 and T_1 respectively, and L_0 is the original sample length.

The value of α calculated using Equation 1 is the thermal expansion relative to the fused silica reference. To obtain the "true" value of the thermal expansion coefficient, correction for the expansion of the fused silica must be made. Because the sample and the fused silica reference were the same length, the correction is given by

$$\alpha' = \alpha + \alpha_{FS} \quad (2)$$

where α' is the true thermal expansion coefficient for the sample and α_{FS} is the thermal expansion coefficient of fused silica for the temperature interval of interest. The relevant values of α_{FS} are shown in Table 1.

The calibration checks were performed once each week when the dilatometer was in use except when an experiment run lasted longer than one week. In the latter case, the calibration check was made before and immediately following each experiment. If the results deviated from the theoretical thermal

expansion of platinum by ± 2.5 percent or less, the instrument was considered to be in-specification. If the results deviated from the expected theoretical output by between ± 2.5 percent and ± 5 percent, the instrument was recalibrated and the calibration results were indicated on data gathered between the most recent calibration check and the previous in-specification calibration check. If the deviation was greater than ± 5 percent, all data gathered after the previous in-specification calibration check to the time of the out-of-specification check were marked to reflect the out-of-specification calibration.

Table 1
Thermal Expansion Coefficients
For Fused Silica *

Temperature	
Interval ($^{\circ}\text{C}$)	Coefficient ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$)
25-50	0.52
50-100	0.56
100-150	0.61
150-200	0.63
200-250	0.63

*Expansion data for National Institute of Standards and Testing (formerly National Bureau of Standards) Standard Reference Material 739 (Fused Silica)

A total of 397 unconfined thermal expansion experiments were run on 78 rock samples. Table A-1 (Appendix A) lists the samples for which unconfined thermal expansion data were obtained. The samples ranged in size from 2.29 to 2.55 cm (0.90 to 1.00 in) in length, with a width and thickness of 0.48 to 0.50 cm (0.189 to 0.197 in). Of these experiments, 65 were conducted on samples in their natural state, while the remainder used samples that were saturated (submerged at ambient temperature and

pressure for more than 24 hours) with water. Either distilled water or water obtained from well J-13 on the NTS was used to saturate the samples. The samples were heated to a preselected temperature interval (25-50, 50-100, 100-150, 200-250, and 250-300°C) at a constant rate of $\leq 1^\circ\text{C}/\text{min}$, then allowed to cool to ambient temperature. The cooling rate, although not controlled, was estimated to be $\leq 1^\circ\text{C}/\text{min}$. The samples were not maintained at a constant saturation during heating and cooling.

A Data Compilation Form (DCF) for each sample used in the unconfined thermal expansion experiments is provided in Appendix B.

2.1.2 Confined Thermal Expansion

Confined thermal expansion experiments were performed using the test equipment and procedures described in ASTM STP 869 (Van Buskirk et al., 1985). The experiment configuration is shown in Figure 5. Invar end caps were bonded to the rock samples and elastomer and fluoroplastic jacketing was applied to seal the sample from confining fluids. The components of the sample assembly were stacked and bonded and placed in the experiment apparatus.

The experiment conditions (sample heating, pore pressure, and confining pressure) were applied and allowed to equilibrate. Heating and cooling rates were $\leq 1^\circ\text{C}/\text{min}$. The sample temperature was measured using Type K thermocouples located at each end of the sample. The method of attaching the thermocouples to the samples was not documented. The sample temperature, which was recorded on the abscissa of an XY recorder, was assumed to be the average of the two thermocouple temperatures. The typical temperature difference between the two thermocouples and the criteria for determining thermal equilibrium of the sample were not recorded. Each sample usually was permitted to experience several temperature hold-points to ensure that the pore pressure reached equilibrium in low-permeability samples. The confining pressure was measured by a pressure transducer and controlled to be constant.

Figure 5. Configuration for Confined-Thermal-Expansion Experiments

Standard (single-pushrod) dilatometry was used to measure the total expansion (sample plus system expansion). This was accomplished by four fused quartz rods placed orthogonally at the end of the sample. The rods extended out of the heated portion of the apparatus to LVDTs that converted the measured displacements to output voltages. The average of the four LVDT output voltages was recorded on the ordinate of the XY recorder.

The "true" expansion of the sample was obtained by compensating for the thermal expansion of the test system. System expansion, dominated by the expansion of the rods, was obtained by measuring the total expansion during experiments on standard reference materials, then subtracting the known expansion of the standards. These calibration experiments were done at the same confining pressures required for experiments on the rock samples. The standard reference material used was fused silica of the same dimensions as the rock samples. Mathematically, the system expansion is given by

$$\Delta L_{SYS} = \Delta L_{TOTAL} - \Delta L_{STD} \quad (3)$$

where ΔL pertains to the same temperature interval.

Expansion measurements on the rock samples were corrected for the system expansion using the following equation:

$$\Delta L_{ROCK} = \Delta L_{TOTAL} - \Delta L_{SYS} \quad (4)$$

where again, each ΔL pertains to the same temperature interval. The thermal expansion coefficient for the sample then is obtained using Equation 1 with ΔL_{ROCK} as the numerator.

For some confined experiments, available material was insufficient to obtain a sample with the nominal length of 10.2 cm (4 in). In such cases, the sample was machined to a nominal length of 5.1 cm (2 in), and was placed in the test apparatus in series with a 5.1 cm (2 in) sample of fused silica. For this

experiment geometry, the equivalent of Equation 4 is

$$\Delta L_{ROCK} = \Delta L_{total} - \Delta L_{SYS} - \Delta L_{FS} \quad (5)$$

where ΔL_{FS} is calculated as

$$\Delta L_{FS} = L_{O,FS} \Delta T \alpha_{FS} \quad (6)$$

and α_{FS} is given in Table 1.

Thirty-one rock samples were prepared as circular cylinders with an outside diameter ranging from 4.68 to 4.773 cm (1.843 to 1.879 in) and a 0.5 cm (0.197 in) nominal diameter axial hole through the center. The sample lengths were from 9.512 to 9.553 cm (3.745 to 3.761 in), with the exception of two samples that were 4.768 cm (1.877 in) long. To accommodate placement of the thermocouples, a hole approximately 1 cm (0.4 in) deep by 15 cm (0.06 in) in diameter was machined approximately about 0.25 cm (0.10 in) from the outside edge of the sample.

These samples, which are listed in Table A-2 (Appendix A), were used in 119 confined thermal expansion experiments. The samples initially were saturated with distilled water or water from well J-13 for 24 hours or longer at ambient temperature and pressure. The experiments were conducted at temperature intervals of 25-50, 50-100, 100-150, 150-200, and 200-250 °C and confining pressures of 7.8, 10, 10.3, and 10.7 MPa.

A DCF for each sample used in the confined thermal expansion experiments is provided in Appendix B.

Although both the confined and the unconfined thermal expansion measurements used fused silica as a reference material, there is a significant difference between the two techniques. As described in Section 2.1.1, the calibration of the measurement system for unconfined experiments was checked

periodically using a platinum standard. No equivalent checks were made on the confined-test system, so that independent determinations of the accuracy of the system cannot be made. Also, the procedure for short rock samples creates an additional interface, thus increasing the potential for error and uncertainty in the measurement.

2.2 Experiment Uncertainties

Following is a discussion of the uncertainties associated with the experiment techniques used to obtain the unconfined- and confined thermal expansion data. The uncertainty is specified in terms of accuracy and precision. Accuracy is defined as the deviation of a determination of a property from the "true" value for that property. Precision is the reproducibility of the successive determinations of a property. Additional information on the calculation of accuracy and precision of linear thermal expansion data is provided in Nimick et al. (1991).

2.2.1 Unconfined Thermal Expansion

Accuracy and precision data calculated from platinum calibration checks made during the period of data collection are provided in Table 2. The calibration runs used to obtain the data in Table 2 were selected at random from runs with heating rates of 3 °C/min. Calibration runs measured at higher heating rates were not used in the determination of accuracy and precision, because they were not as representative of the data on experiment samples, which were heated at either 1 °C or 0.5 °C/min. No measurements on platinum were made at these lower heating rates.

Thermal expansion data from ambient temperature to 50 °C had an accuracy of approximately $1 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$ (11 percent deviation from the true value) and a precision of 12 percent of the mean value. The data collected between 50 and 250 °C had greater accuracy and precision. The accuracy ranged

Table 2

Accuracy and Precision of Unconfined Thermal Expansion
Data as Determined from Calibration Checks Using Platinum

Temperature Range °C	Ambient to 50	50 to 100	100 to 150	150 to 200	200 to 250
Run	Coefficient of Thermal Expansion ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$)				
40	10.02	9.164	9.808	9.028	9.426
222	7.039	9.364	9.008	9.628	9.426
240	8.516	8.764	9.208	9.208	9.626
252	8.856	9.164	9.008	8.828	10.03
256	7.360	9.364	8.808	8.828	10.03
271	7.359	9.364	8.808	9.828	9.626
297	7.359	9.564	9.008	9.828	9.826
333	7.189	8.764	9.608	9.228	10.03
335	7.474	9.164	9.208	9.828	9.426
368	8.116	8.764	9.008	9.828	9.426
Mean value ($\bar{x}$)	7.929	9.144	9.148	9.406	9.687
Standard Deviation (s)	0.951	0.290	0.327	0.427	0.269
"True" Value ^a (T)	8.987 ^b	9.106	9.253	9.390	9.519
Accuracy ($\bar{x} - T$)	-1.058	0.038	-0.105	0.016	0.168
Precision ($s/\bar{x}$)	12.00%	3.17%	3.57%	4.54%	2.78%
^a Calculated using Equation 12 of Edsinger et al. (1986). ^b Assumes ambient temperature is 25 °C.					

from $0.016 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$ to $0.168 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$ (maximum of 1.8 percent deviation from the true value) and the precision ranged from 2.8 to 4.5 percent of the mean value.

The poor accuracy and precision for the lowest temperature interval may be attributed to assuming that the LVDT was exactly at zero at ambient temperature. To obtain more reliable thermal expansion coefficients for this temperature interval, it would be necessary to cool the sample 10 to 15°C below ambient temperature and then begin the expansion measurements. Although this was not done for any of the unconfined thermal expansion measurements, the values for accuracy and precision in Table 2 for the temperature interval from ambient temperature to 50°C are real and would apply to tuffaceous samples as well.

Generally, uncertainties in measuring unconfined thermal expansion are increased by using an analog device that includes an XY recorder and felt-tip pens. Using more sophisticated digital recording devices would reduce this type of uncertainty. These uncertainties are increased when heating is initiated near ambient temperature because there appears to be a thermal lag between the recorded temperature and the actual temperature of the sample or reference material. The temperature-lag problem probably was caused by a combination of an excessive heating rate and power surges in the heater when heating was started. If this assumption is correct, even a heating rate of 3°C/min might be too fast to obtain good data at the lower temperatures. This also may help to explain why the accuracy and precision of the low-temperature data are not as good as the accuracies and precision of higher-temperature data.

However, future experiments should examine the possibility that beginning a test at a temperature below ambient would improve the accuracy and precision.

The accuracy and precision of the data also might have been enhanced if the calibration checks using platinum were made at the same heating rate as the experiment samples, and by running all experiments at the slowest possible heating rate (0.5°C/min on the instrument used).

2.2.2 Confined Thermal Expansion

Documentation for confined thermal expansion experiments does not include enough information required to assess accuracy and precision. As mentioned in Section 2.1.1, no calibration checks were made, and no other measurements of the thermal expansion of reference materials were reported. Although the accuracy of the experiment method was not assessed by Van Buskirk et al. (1985), the data obtained from the confined thermal expansion experiments are considered to be reliable.

3.0 CONCLUSIONS

This report documents the linear thermal expansion data obtained on tuffaceous rocks from the unsaturated zone at Yucca Mountain, Nevada. The experiment techniques, and their associated uncertainties, are discussed for unconfined and confined thermal expansion measurements. Evaluation of the accuracy and precision of the data yields the following conclusions:

- the accuracy of unconfined thermal expansion data is better than 1.8 percent, with a precision better than 4.5 percent, for measurements made between 50 and 250 °C;
- the accuracy of unconfined thermal expansion data is approximately 11 percent deviation from the true value, with a precision of 12 percent of the mean value, for measurements made between ambient temperature and 50 °C;
- the greater uncertainty associated with measurements made at lower temperatures may result from a thermal lag between the recorded and actual sample temperatures, possibly induced by an excessive heating rate and power surges during the start of heating;
- this uncertainty might be mitigated by using digital recording devices, initiating the measurements at temperatures below ambient, using slow heating rates, and running calibration checks at lower temperatures; and
- confined thermal expansion measurements need to be designed to ensure that information regarding calibrations, accuracy and precision are acquired.

4. REFERENCES

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APPENDIX A

LIST OF SAMPLES

Appendix A provides a list of samples used in experiments to obtain the linear thermal expansion data presented in this report. The samples used in the unconfined thermal expansion experiments are listed in Table A-1; those used in the confined thermal expansion experiments are listed in Table A-2. These tables include the sample origin, sample depth, and DRMS data-set identification number for each sample.

TABLE A-1

**LIST OF SAMPLES USED FOR
UNCONFINED THERMAL EXPANSION EXPERIMENTS**

Sample Origin	Depth (ft)	Sample ID	DRMS Data-Set ID
UE-25a#1	166.0	PERP. A	51/L01B-2/1/78
UE-25a#1	166.0	PERP. B	51/L01B-2/1/78
UE-25a#1	186.0	PERP. A	51/L01B-2/1/78
UE-25a#1	186.0	PERP. B	51/L01B-2/1/78
UE-25a#1	212.0	PERP. A	51/L01B-2/1/78
UE-25a#1	212.0	PERP. B	51/L01B-2/1/78
UE-25a#1	212.0	PERP. C	51/L01B-2/1/78
UE-25a#1	664.5-665.3	A	51/L01B-5/1/80
UE-25a#1	664.5-665.3	B	51/L01B-5/1/80
UE-25a#1	730.3-730.9	A	51/L01B-5/1/80
UE-25a#1	730.3-730.9	B	51/L01B-5/1/80
UE-25a#1	1122.7-1123.3	A	51/L01B-5/1/80
UE-25a#1	1122.7-1123.3	B	51/L01B-5/1/80
UE-25a#1	1290.0	A	51/L01B-2/1/78
UE-25a#1	1366.5-1367.3	A	51/L01B-5/1/80
UE-25a#1	1366.5-1367.3	B	51/L01B-5/1/80
UE-25a#1	1544.0	A	51/L01B-2/1/78
UE-25a#1	1544.0	PERP. B	51/L01B-2/1/78
UE-25a#1	1544.0	PERP. C	51/L01B-2/1/78
UE-25a#1	1547.6-1548.1	A	51/L01B-5/1/80
UE-25a#1	1547.6-1548.1	B	51/L01B-5/1/80
UE-25a#1	1561.0	PERP. B	51/L01B-2/1/78
UE-25a#1	1569.0	PERP. A	51/L01B-2/1/78
UE-25a#1	1718.2-1719.0	A	51/L01B-5/1/80
UE-25a#1	1718.2-1719.0	B	51/L01B-5/1/80
UE-25a#1	1718.2-1719.0	C	51/L01B-5/1/80
USW G-1	377.0	A	51/L01B-5/1/80

TABLE A-1 (continued)

**LIST OF SAMPLES USED FOR
UNCONFINED THERMAL EXPANSION EXPERIMENTS**

Sample Origin	Depth (ft)	Sample ID	DRMS Data-Set ID
USW G-1	377.0	B	51/L01B-5/1/80
USW G-1	407.1	A	51/L01B-5/1/80
USW G-1	407.1	B	51/L01B-5/1/80
USW G-1	407.1	C	51/L01B-5/1/80
USW G-1	504.1	B	51/L01B-5/1/80
USW G-1	631.6	A	51/L01B-5/1/80
USW G-1	740.4	A	51/L01B-5/1/80
USW G-1	939.0	A	51/L01B-5/1/80
USW G-1	939.0	B	51/L01B-5/1/80
USW G-1	1151.1	B	51/L01B-5/1/80
USW G-1	1208.7	A	51/L01B-5/1/80
USW G-1	1208.7	B	51/L01B-5/1/80
USW G-1	1232.1	A	51/L01B-5/1/80
USW G-1	1288.9	A	51/L01B-5/1/80
USW G-1	1313.0	A	51/L01B-5/1/80
USW G-1	1342.0	A	51/L01B-5/1/80
USW G-1	1358.9	A	51/L01B-5/1/80
USW G-1	1358.9	B	51/L01B-5/1/80
USW G-1	1362.4	A	51/L01B-5/1/80
USW G-1	1374.0	A	51/L01B-5/1/80
USW G-1	1374.0	B	51/L01B-5/1/80
USW G-1	1395.8	A	51/L01B-5/1/80
USW G-1	1395.8	B	51/L01B-5/1/80
USW G-1	1399.8	A	51/L01B-5/1/80
USW G-1	1399.8	B	51/L01B-5/1/80
USW G-1	1404.9	A	51/L01B-5/1/80
USW G-1	1408.6	B	51/L01B-5/1/80

TABLE A-1 (continued)

**LIST OF SAMPLES USED FOR
UNCONFINED THERMAL EXPANSION EXPERIMENTS**

Sample Origin	Depth (ft)	Sample ID	DRMS Data-Set ID
USW G-1	1410.55	A	51/L01B-5/1/80
USW G-1	1413.1	A	51/L01B-5/1/80
USW G-1	1416.0	A	51/L01B-5/1/80
USW G-1	1416.0	B	51/L01B-5/1/80
USW G-1	1423.3	A	51/L01B-5/1/80
USW G-1	1451.1	A	51/L01B-5/1/80
USW G-1	1451.1	B	51/L01B-5/1/80
USW G-1	1470.2	A	51/L01B-5/1/80
USW G-1	1503.0	A	51/L01B-5/1/80
USW G-1	1514.8	A	51/L01B-5/1/80
USW G-1	1550.0	A	51/L01B-5/1/80
USW G-1	1571.2	A	51/L01B-5/1/80
USW G-1	1571.2	B	51/L01B-5/1/80
USW G-1	1605.2	A	51/L01B-5/1/80
USW G-1	1620.0	A	51/L01B-5/1/80
USW G-1	1652.0	A	51/L01B-5/1/80
USW G-1	1667.0	A	51/L01B-5/1/80
USW G-1	1705.5	A	51/L01B-5/1/80
USW G-1	1722.0	A	51/L01B-5/1/80
USW G-2	2498.9	A	51/L01B-5/1/80
USW G-2	2498.9	A1	51/L01B-5/1/80
USW G-2	2498.9	B	51/L01B-5/1/80
USW G-2	2581.1	A	51/L01B-5/1/80
USW G-2	2581.6	A	51/L01B-5/1/80

TABLE A-2

**LIST OF SAMPLES USED FOR
CONFINED THERMAL EXPANSION EXPERIMENTS**

Sample Origin	Depth (ft)	Sample ID	DRMS Data-Set ID
USW G-1	740.0	10/7/81	51/L01B-10/7/81
USW G-1	1373.0	A	51/L01B-10/7/81
USW G-1	1395.0	A	51/L01B-10/7/81
USW G-1	1450.0	A	51/L01B-10/7/81
USW G-1	1552.0	A	51/L01B-6/24/80
USW G-2	1139.0	DAT.1	51/L01B-4/21/81
USW G-2	1198.0	DAT.1	51/L01B-4/21/81
USW G-2	1594.0	none	51/L01B-9/7/82
USW G-2	1781.0	5/17/82	51/L01B-3/29/82
USW G-2	1852.0	none	51/L01B-3/29/82
USW G-2	1893.0	none	51/L01B-3/29/82
USW G-2	1974.0	none	51/L01B-3/29/82
USW G-2	2256.0	DAT.1	51/L01B-3/29/82
USW G-2	2291.2-2291.8	DAT.1	51/L01B-3/29/82
USW G-2	2321.0	4/21/82	51/L01B-3/29/82
USW G-2	2349.0	DAT.1	51/L01B-3/29/82
USW G-2	2454.4-2455.1	none	51/L01B-3/29/82
USW G-2	2498.0	A	51/L01B-10/7/81
USW G-2	2650.0	none	51/L01B-3/29/82
USW G-2	2696.0	none	51/L01B-3/29/82
USW G-4	1172.0	DAT.1	51/L01B-12/2/82
USW G-4	1177.0	DAT.1	51/L01B-12/2/82
USW G-4	1222.0	DAT.1	51/L01B-12/2/82
USW G-4	1295.0	DAT.1	51/L01B-12/2/82
USW G-4	1445.0	DAT.1	51/L01B-2/21/83
USW G-4	1548.0-1549.0	DAT.1	51/L01B-2/21/83
USW G-4	1650.0	DAT.1	51/L01B-2/21/83

TABLE A-2 (continued)

**LIST OF SAMPLES USED FOR
CONFINED THERMAL EXPANSION EXPERIMENTS**

Sample Origin	Depth (ft)	Sample ID	DRMS Data-Set ID
USW GU-3	431.0	none	51/L01B-9/7/82
USW GU-3	985.0	none	51/L01B-9/7/82
USW GU-3	1123.0	DAT.1A	51/L01B-9/7/82
USW GU-3	1490.0	DAT.1	51/L01B-9/7/82

APPENDIX B

DATA COMPILATION FORMS FOR LINEAR THERMAL EXPANSION DATA

This appendix contains a Data Compilation Form (DCF) for each sample used in the linear thermal expansion experiments.

The DCFs for unconfined and confined thermal expansion experiments can be distinguished by the experiment technique; unconfined experiments used dual-pushrod dilatometry, and confined experiments used single-pushrod dilatometry. Unconfined thermal expansion data were obtained at ambient pressure, which is reported as 0.1 MPa for both confining pressure and pore pressure. The "drained or undrained" field pertains to pore fluid. Since pore fluid is not applicable for unconfined experiments, a category of "undrained" is assigned for these experiments. The pore fluid was drained during the confined thermal expansion experiments.

(Note: N/A = not applicable; N/C = not compiled; N/D = no data available.)

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SERDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 166.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		8.5	9.6	13.6	18.6	20.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.55	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #113.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 166.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		7.3	9.2	12.6	18.6	20.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.53	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #114.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 186.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		4.5	6.6	10.6	16.6	36.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.55	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SANDB88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run 4.15

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 186.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		6.5	6.6	10.6	16.6	36.6	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/D	N/D	N/D	N/D	N/D	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	0.1	0.1	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.55	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #116.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. A

SAMPLE ORIGIN UE-25a#1

SAMPLE DEPTH (ft) 212.0

TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-7.5	-167.4	-19.4	-1.4	-3.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA-

SNL YMP

GATHERING ACTIVITY

TBD

DATA-SET ID

51/L01B-2/1/78

SNL DATA REPORT NUMBER

SAND88-1581

THIS DCF COMPLETED BY

Barry Schwartz

6313

1/25/88

Name

SNL Div.

Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #117.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 212.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.5	-107.4	-19.4	-4.4	-4.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #118.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. C SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 212.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		5.0	-103.7	-21.6	-1.6	-1.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.29	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #119.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 664.5-665.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		8.9	7.8	9.0	11.2	17.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #5.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 664.5-665.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		3.7	8.8	10.0	11.4	18.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #39.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
SAMPLE DEPTH (ft) 730.3-730.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		7.3	6.2	9.6	10.2	12.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #6.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 730.3-730.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		4.5	8.8	9.6	10.0	12.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3 EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.49	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND98-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Rev. #38

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1122.7-1123.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		7.3	7.8	9.4	9.4	12.0	16.2
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #7.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1122.7-1123.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/D	8.8	9.2	11.4	13.0	18.6
		N/A	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #37

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1290.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-7.5	-5.4	-13.4	-9.4	-4.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.53	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

^a. To obtain thermal expansion coefficients in units of $10^{-5}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Date of test is 3/30/79.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a# 1
 SAMPLE DEPTH (ft) 1366.5-1367.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		4.5	-43.4	-9.0	-1.7	1.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80
 SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #8.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1366.5-1367.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		2.5	-39.8	-13.0	-2.2	3.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #41.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1544.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		4.5	-14.4	-9.4	3.6	7.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.53	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficient, α , in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not completed, N/D = no data available, TBD = to be determined.

Run #210.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1544.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-1.5	-17.4	-5.4	0.6	5.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.55	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #211.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDE

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. CSAMPLE ORIGIN UE-25a#1SAMPLE DEPTH (ft) 1544.0TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) _a		0.5	-15.4	-6.4	4.6	4.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) _a		0.1	0.1	0.1	0.1	0.1	N/A
		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) _a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) _a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.55	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA-

SNL YMP

GATHERING ACTIVITY

TBD

DATA-SET ID

51/L01B-2/1/78

SNL DATA REPORT NUMBER

SAND88-1581

THIS DCF COMPLETED BY

Barry Schwartz

6313

1/25/88

Name

SNL Div.

Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #214 - run on 11/14/78.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1547.6-1548.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.5	-25.0	-1.8	4.0	6.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #32.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN UE-25a#1
SAMPLE DEPTH (ft) 1547.6-1548.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		5.7	-14.4	-7.0	2.4	6.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #3.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. B SAMPLE ORIGIN UE-25a#1
SAMPLE DEPTH (ft) 1561.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		-5.5	-12.4	-6.4	4.6	8.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #220.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID Perp. A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1569.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.5	-13.8	-6.1	0.6	7.3	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.29	N/A	0.5	0.5	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Natural-state	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/1/78

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #209.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1718.2-1719.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.9	-23.2	-7.6	-1.6	3.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND86-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #4.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN UE-25a#1
 SAMPLE DEPTH (ft) 1718.2-1719.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.5	-16.0	-13.6	-3.6	2.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
N/D	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
 Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

RUN #292

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID C SAMPLE ORIGIN UE-25a#1

SAMPLE DEPTH (ft) 1718.2-1719.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-0.7	-26.0	-3.4	-2.2	4.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/1/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #35.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 377.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		4.9	6.6	8.6	13.2	33.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA: SNL YMP
 GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9
^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TED = to be determined.

Run #177

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW C-1

SAMPLE DEPTH (ft) 377.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		6.5	6.4	8.2	12.8	23.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #178.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 407.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE	°C	25-50	50-100	100-150	150-200	200-250	250-300
DURING HEATING	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION		4.5	7.6	9.2	38.6	57.0	N/C
COEFFICIENT DURING							
HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL		0.1	0.1	0.1	0.1	0.1	N/A
UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a							
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE	°C	300-250	250-200	200-150	150-100	100-50	50-25
DURING COOLING	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION		N/C	N/C	N/C	N/C	N/C	N/C
COEFFICIENT DURING							
COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL		N/A	N/A	N/A	N/A	N/A	N/A
UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a							
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.46	0.46	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1561

THIS DCF COMPLETED BY Barry Schwartz 6913 11/23/87
Name SNL Div Date

^a To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$ multiply by 5/9
^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure

COMMENTS

N/A = not applicable N/C = not compiled N/D = no data available TED = to be determined

Rev. #166

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 407.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		7.7	8.4	8.6	13.6	43.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #197.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID C SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 407.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		6.5	7.8	8.6	14.2	50.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min.)	COOLING RATE (°C/min.)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	50	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA: _____ ONL YMP
 DETERMINING ACTIVITY: TED DATA-SET ID: 51/L01B-5/1/80

ONL DATA REPORT NUMBER: CAN088-1581

THIS DCF COMPLETED BY: Betty Schwartz 6313 11/23/87
 Name ONL Div Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9
^b Immersed in 100% distilled water for ≥ 24 hr at ambient temperature and pressure.

REMARKS

N/A = not applicable, N/C = not compiled, N/D = no data available, TED = to be determined

Rev. #213

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 504.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		7.3	11.4	14.6	49.0	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #228.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 631.6 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		5.7	6.6	9.0	29.2	60.0	47.8
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.

^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #214

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID 10/7/81 SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 740 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		8.1	8.3	10.9	9.7	N/C	N/C
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.7	0.7	0.7	0.7	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.520	4.750	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
≤0.6	N/A	Air	Drained	10.7	N/D	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-10/7/81

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 740.4 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		4.9	9.6	9.0	10.4	15.6	46.2
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #358.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 939.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		3.3	8.2	9.8	12.0	22.2	28.2
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #210.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 939.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		5.7	8.4	9.4	13.0	23.2	31.2
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/26/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ }^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #211.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDE

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1151.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) _a		6.9	8.0	9.4	12.4	19.2	38.2
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) _a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) _a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) _a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #241.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1208.7 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		2.5	8.2	11.6	12.4	19.2	40.0
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMF
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div Date

^a To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
^b Submerged in J 13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #171

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1208.7 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		4.1	7.2	11.2	12.0	19.6	41.6
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #172.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1232.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	'C	25-50	50-100	100-150	150-200	200-250	250-300
	'F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		-0.7	5.6	8.8	11.6	16.6	29.0
		N/D	N/D	N/D	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	'C	300-250	250-200	200-150	150-100	100-50	50-25
	'F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE ($^\circ\text{C}/\text{min}$)	COOLING RATE ($^\circ\text{C}/\text{min}$)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤ 1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND86-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9
 b. Submerged in D-12 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TED = to be determined

Rev. #350

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDR

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1288.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		0.5	7.8	8.4	5.6	3.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCI COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10⁻⁶F⁻¹, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #227.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1313.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		2.1	7.0	5.8	6.4	5.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	51	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA _____ SNL YMP
 GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80

END DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
^b Submerged in D-10 or distilled water for ≤ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TED = to be determined

Rev #232

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1342.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.5	4.8	4.2	2.6	-3.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 11/23/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #325.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1358.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		6.5	1.8	4.4	4.2	1.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9
^b Submerged in J-13 or distilled water for 2-24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TED = to be determined.

Rev. 0174

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1358.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		2.9	3.2	4.2	4.0	1.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #175.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1362.4 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		3.3	2.8	4.6	4.8	4.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #233.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1373.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		3.3	3.4	4.8	21.4	N/C	N/C
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.7	0.7	0.7	0.7	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.533	4.750	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
≤0.6	N/C	Air	Drained	10.7	N/D	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-10/7/81

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/3/87
Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1374.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		2.1	-4.6	4.4	5.0	3.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ }^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #169.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1374.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE	°C	25-50	50-100	100-150	150-200	200-250	250-300
DURING HEATING	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION		0.5	-2.6	3.8	4.6	2.6	N/C
COEFFICIENT DURING							
HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL		0.1	0.1	0.1	0.1	0.1	N/A
UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a							
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE	°C	300-250	250-200	200-150	150-100	100-50	50-25
DURING COOLING	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION		N/C	N/C	N/C	N/C	N/C	N/C
COEFFICIENT DURING							
COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL		N/A	N/A	N/A	N/A	N/A	N/A
UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a							
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRE-TEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #170.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1395 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		8.7	9.1	7.5	N/C	N/C	N/C
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.7	0.7	0.7	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.520	4.750	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
≤0.6	N/C	Air	Drained	10.7	N/D	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-10/7/81

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1395.8 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.5	-34.0	-12.4	0.2	0.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE ($^\circ\text{C}/\text{min}$)	COOLING RATE ($^\circ\text{C}/\text{min}$)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #180.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1395.8 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		1.3	-36.2	-7.0	0.6	0.6	N/C
		N/C	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHFRING ACTIVITY IBD DATA-SET ID 51/101B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TRD = to be determined.

Run #181.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1399.8 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		1.3	6.6	7.4	8.6	10.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of 10⁻⁶°F⁻¹, multiply by 5/9.

^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #344.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1399.8 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-47.5	-27.2	-11.2	-3.7	-2.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA: SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THI DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #345

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1404.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		-33.1	-13.8	-22.2	-8.4	-4.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ }^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #351.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID E SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1408.6 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		-24.3	-26.8	-27.6	-8.2	-2.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	0.1
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE ($^\circ\text{C}/\text{min}$)	COOLING RATE ($^\circ\text{C}/\text{min}$)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤ 1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determine

Run: #363.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDE

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1410.55 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		2.5	-16.8	-30.6	-7.2	-3.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #362.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1413.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-4.7	-16.2	-16.6	-5.2	-0.6	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/D	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	0.1	0.1	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #352.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1416.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		-9.5	-10.6	-14.6	-2.2	2.8	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/D	N/D	N/D	N/D	N/D	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	0.1	0.1	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/26/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10⁻⁶F⁻¹, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #360.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1416.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		5.7	-20.8	-19.8	3.8	5.0	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/D	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	0.1	0.1	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Contains Pumice, Run #361

THEMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1423.3 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-24.7	-22.0	-20.8	-6.4	-3.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #223.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1450 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/D	14.4	11.7	-0.4	-33.7	N/C
		N/A	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	0.7	0.7	0.7	0.7	N/A
		N/A	0.7	0.7	0.7	0.7	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.522	4.750	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
≤0.42	≤0.30	Air	Drained	10.7	N/D	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-10/7/81

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1451.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	-26.8	-21.4	-5.4	-2.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #185.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEFDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1451.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-2.3	-21.6	-13.2	-0.2	2.8	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #187.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1470.2 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		4.9	-14.6	-29.0	-4.4	-0.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #257.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USM G-1
 SAMPLE DEPTH (ft) 1503.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	'C	25-50	50-100	100-150	150-200	200-250	250-300
	'F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-3.5	-28.4	-8.8	-1.0	1.6	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/D	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	0.1	0.1	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	'C	300-250	250-200	200-150	150-100	100-50	50-25
	'F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE ($^{\circ}\text{C}/\text{min}$)	COOLING RATE ($^{\circ}\text{C}/\text{min}$)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	50	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80
 SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Harry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-12 or distilled water for 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #247

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1514.8 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		2.1	-21.0	-23.2	-6.4	-0.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #245.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1550.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-7.5	-19.4	-15.4	-3.4	-1.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined

Run #253.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDR

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1552 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		7.0	6.1	5.0	-0.3	-15.1	N/D
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.34	0.34	0.1-0.0	0.0	0.0	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.535	4.763	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.33	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-6/24/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/15/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1571.2 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-13.9	-55.4	-24.6	-5.8	-5.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #242

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-1
SAMPLE DEPTH (ft) 1571.2 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE	°C	25-50	50-100	100-150	150-200	200-250	250-300
DURING HEATING	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION		0.5	-31.6	-15.8	-8.2	-5.8	N/C
COEFFICIENT DURING							
HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL		0.1	0.1	0.1	0.1	0.1	N/A
UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a							
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE	°C	300-250	250-200	200-150	150-100	100-50	50-25
DURING COOLING	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION		N/C	N/C	N/C	N/C	N/C	N/C
COEFFICIENT DURING							
COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL		N/A	N/A	N/A	N/A	N/A	N/A
UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a							
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #243.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1605.2 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		0.5	-17.8	-19.4	-5.6	-3.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10⁻⁶°F⁻¹, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #255.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1

SAMPLE DEPTH (ft) 1620.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-5.1	-25.0	-15.8	-6.6	N/C	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #199.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1552.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-3.9	-19.0	-20.6	-4.8	-2.0	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	51	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TED DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER CANDBB-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
^b Immersed in J-13 or distilled water for 2-24 hr at ambient temperature and pressure

NOTES

N/A = not applicable, N/C = not computed, N/D = no data available, Tbd = to be determined.

Rev. 02/85

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1667.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-6.7	-17.4	-18.8	-6.0	-2.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #248.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1705.5 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-7.1	-7.4	-18.8	-4.6	-3.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #339.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-1
 SAMPLE DEPTH (ft) 1722.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		-3.9	-17.2	-23.6	-5.2	-1.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/26/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined

Run #244.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT-1 SAMPLE ORIGIN USW G-2

SAMPLE DEPTH (ft) 1139 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		8.6	7.5	9.1	7.3	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.7	0.7	0.7	0.7	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.512	4.75	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.52	0.43	Air	Drained	10.7	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TED DATA-SET ID 51/LU1B-4/21/81

SNL DATA REPORT NUMBER SAND86-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/15/87
Name SNL Div. Date

- a To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b Submerged in J-13 or distilled water for 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TED = to be determined.

THERMAL EXPANSION EXPERIMENT'S DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 1198 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		7.6	8.0	9.6	6.8	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.7	0.7	0.7	0.7-0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.517	4.750	N/A	N/A	N/D	N/D

HEATING RATE ($^\circ\text{C}/\text{min}$)	COOLING RATE ($^\circ\text{C}/\text{min}$)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.52	0.43	Air	Drained	10.7	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-4/21/81

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/15/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 1594 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		9.4	10.0	8.6	13.6	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		≤0.4	≤0.4	≤0.4-0.0	0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.535	4.770	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	0.35	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-9/7/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/7/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID 5/17/82 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 1781 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		9.2	3.2	0.8	-6.5	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.3	0.3-0.0	0.0	0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.540	4.768	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/4/87
 Name SNL Div. Date

^a To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.

^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 1852 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		9.7	1.0	4.8	-44.9	-18.0	N/D
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.3	0.3-0.0	0.0-0.3	0.3	0.3	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.530	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.1	N/C	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/4/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 1893 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		4.4	2.1	-5.4	-18.8	-31.3	N/D
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.3	0.3-0.1	0.1-0.0	0.0	0.0	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.533	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.3	0.2	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/4/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 1974 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		8.6	2.1	0.0	-20.9	-28.5	N/D
		0.0	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.3	0.3-0.0	0.0	0.0	0.0	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.553	4.768	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/4/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2256 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		8.1	6.1	-0.6	-25.7	N/C	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		0.3	0.3	0.3-0.0	0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTEST SAMPLE MASS (g)
9.545	4.765	N/A	N/A	N/D	N/L

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.33	N/C	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10⁻⁶°F⁻¹, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2291.2-2291.8 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		6.0	5.7	2.5	-6.2	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.35	0.35	0.35-0.0	0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.538	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.46	0.40	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID 4/21/82 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2321 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		6.0	5.6	4.2	-12.9	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.36	0.36	0.36	0.36-0.1	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.530	4.768	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.4	0.4	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/7/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2349 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		7.0	5.0	3.7	-12.7	-5.2	N/D
		N/A	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.0	0.0	0.0	0.0	0.0	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.530	4.763	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
≤0.55	0.4	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2454.4-2455.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		4.4	4.0	-17.3	-6.0	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		0.3	0.3	0.3-0.0	0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.540	4.768	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION ^a	TYPE OF PORE FLUID
0.35	0.35	Air	Drained	10	Partial	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/7/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of 10⁻⁶°F⁻¹, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2498 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		3.9	4.1	3.7	-6.0	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		0.7	0.7	0.7	0.7	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) _a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.522	4.750	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
≤0.30	0.60	Air	Drained	10.3	N/D	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-10/7/81

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/4/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2488.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10^{-6}C^{-1}) ^a		0.9	-13.0	-8.8	0.4	4.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10^{-6}C^{-1}) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10^{-6}C^{-1}) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10^{-6}C^{-1}) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.53	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10^{-6}F^{-1} , multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #191.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A1 SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2498.6 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		-0.7	-13.4	-7.2	2.2	6.6	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	≤1	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ }^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #249.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID B SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2498.9 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.5	12.6	-9.0	1.8	5.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.1	N/A	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #193.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2581.1 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.5	-7.4	0.0	5.8	9.2	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.54	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #182.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID A SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2581.6 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.5	-10.6	-0.4	5.4	9.4	N/C
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	0.1	0.1	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Dual Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
2.5	N/A	0.48	0.48	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
1	N/D	Air	Undrained	0.1	Saturated ^b	N/A

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-5/1/80

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 1/25/88
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Run #184.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEEDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2650 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		5.4	3.2	1.6	-11.9	-0.6	N/D
		N/A	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.0	0.0	0.0	0.0	0.0	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.535	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.5	0.5	Air	Undrained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/7/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

Data from Cycle 1.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW G-2
 SAMPLE DEPTH (ft) 2696 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		2.8	3.8	N/C	N/C	N/C	N/D
		N/D	N/D	N/D	N/D	N/D	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		0.0	0.0	0.0-0.1	0.0	0.0	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ } ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.533	4.770	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.7	N/C	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-3/29/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/4/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ } ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMF SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW GU-3
 SAMPLE DEPTH (ft.) 431 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		7.6	5.8	6.4	11.1	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		0.3	0.3	0.3	0.3	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \text{ }^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.528	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.18	0.27	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA: SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-9/7/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/7/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \text{ }^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDE

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID None SAMPLE ORIGIN USW GU-3
 SAMPLE DEPTH (ft) 985 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10^{-6}C^{-1}) ^a		11.6	6.0	9.0	9.5	N/D	N/D
		N/D	N/D	N/D	N/D	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10^{-6}C^{-1}) ^a		0.4	0.4	0.4-0.0	0.0	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10^{-6}C^{-1}) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10^{-6}C^{-1}) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.533	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.19	0.38	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-9/7/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/7/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10^{-6}F^{-1} , multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 A SAMPLE ORIGIN USW GU-3
 SAMPLE DEPTH (ft) 1123 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		7.6	6.9	6.4	9.5	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/D	N/A	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	0.1	N/A	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.533	4.681	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.21	0.38	Air	Drained	7.8	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA-GATHERING ACTIVITY TBD SNL YMP DATA-SET ID 51/L01B-9/7/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW GU-3
 SAMPLE DEPTH (ft) 1490 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		8.2	3.7	-1.8	N/D	N/D	N/D
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
4.768	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.21	N/D	Air	Drained	10	Partial	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA-GATHERING ACTIVITY TBD SNL YMP DATA-SET ID 51/L01B-9/7/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
 SAMPLE DEPTH (ft) 1172 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		9.7	9.2	7.3	N/D	N/D	N/D
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.535	4.770	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	0.3	Air	Drained	10	Partial	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-12/2/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
SAMPLE DEPTH (ft) 1177 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		10.8	8.5	6.9	N/D	N/D	N/D
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.533	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.22	0.17	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-12/2/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
 SAMPLE DEPTH (ft) 1222 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	57-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		8.5	9.6	7.3	N/D	N/D	N/D
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		0.1	0.1	0.1	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.525	4.773	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	0.2	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-12/2/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEFDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
 SAMPLE DEPTH (ft) 1295 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		14.6	9.7	9.2	N/D	N/D	N/D
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		0.1	0.1	0.1	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6}^{\circ}\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
4.768	4.763	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	0.2	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-12/2/82

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6}^{\circ}\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
SAMPLE DEPTH (ft) 1445 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10^{-6}°C^{-1}) ^a		10.8	9.2	-42.3	N/D	N/D	N/D
		N/D	N/D	N/D	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10^{-6}°C^{-1}) ^a		0.1	0.1	0.1	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10^{-6}°C^{-1}) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10^{-6}°C^{-1}) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.528	4.770	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	0.2	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/21/83

SNL DATA REPORT NUMBER SAND86-1561

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
Name SNL Div. Date

- ^a To obtain thermal expansion coefficients in units of 10^{-6}°F^{-1} , multiply by 5/9.
^b Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDB

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
 SAMPLE DEPTH (ft) 1548.0-1549.0 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	^{°C}	25-50	50-100	100-150	150-200	200-250	250-300
	^{°F}	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING (10 ⁻⁶ °C ⁻¹) ^a		10.8	7.1	N/D	N/D	N/D	N/D
		N/D	N/D	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		0.1	0.1	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	^{°C}	300-250	250-200	200-150	150-100	100-50	50-25
	^{°F}	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING (10 ⁻⁶ °C ⁻¹) ^a		N/C	N/C	N/C	N/C	N/C	N/C
		N/A	N/A	N/A	N/A	N/A	N/A
ESTIMATED EXPERIMENTAL UNCERTAINTY (10 ⁻⁶ °C ⁻¹) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)							

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.528	4.763	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	N/D	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA- SNL YMP
 GATHERING ACTIVITY TBD DATA-SET ID 51/L01B-2/21/83

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 5313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of 10⁻⁶F⁻¹, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

THERMAL EXPANSION EXPERIMENTS DATA COMPILATION FORM FOR THE YMP SEPDE

PART 1. SAMPLE LOCATION AND IDENTIFICATION

SAMPLE ID DAT.1 SAMPLE ORIGIN USW G-4
 SAMPLE DEPTH (ft) 1650 TEST NO. 1

PART 2. PARAMETERS

HEATING CURVE DATA

TEMPERATURE RANGE DURING HEATING	°C	25-50	50-100	100-150	150-200	200-250	250-300
	°F	77-122	122-212	212-302	302-392	392-482	482-572
LINEAR THERMAL EXPANSION COEFFICIENT DURING HEATING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		11.8	9.6	-18.1	N/D	N/D	N/D
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/D	N/D	N/D	N/A	N/A	N/A
PORE PRESSURE (MPa)		0.1	0.1	0.1	N/A	N/A	N/A

COOLING CURVE DATA

TEMPERATURE RANGE DURING COOLING	°C	300-250	250-200	200-150	150-100	100-50	50-25
	°F	572-482	482-392	392-302	302-212	212-122	122-77
LINEAR THERMAL EXPANSION COEFFICIENT DURING COOLING ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/C	N/C	N/C	N/C	N/C	N/C
ESTIMATED EXPERIMENTAL UNCERTAINTY ($10^{-6} \cdot ^\circ\text{C}^{-1}$) ^a		N/A	N/A	N/A	N/A	N/A	N/A
PORE PRESSURE (MPa)		N/A	N/A	N/A	N/A	N/A	N/A

PART 3. EXPERIMENT CONDITIONS

EXPERIMENT TECHNIQUE Single Push Rod Dilatometer

SAMPLE LENGTH (cm)	SAMPLE DIA (cm)	SAMPLE WIDTH (cm)	SAMPLE THICKNESS (cm)	PRETEST SAMPLE MASS (g)	POSTTEST SAMPLE MASS (g)
9.543	4.765	N/A	N/A	N/D	N/D

HEATING RATE (°C/min)	COOLING RATE (°C/min)	TYPE OF ATMOSPHERE	DRAINED OR UNDRAINED	CONFINING PRESSURE (MPa)	INITIAL SAMPLE SATURATION	TYPE OF PORE FLUID
0.2	N/C	Air	Drained	10	Saturated ^b	Water

PART 4. REFERENCE AND SUPPORTING INFORMATION

QA LEVEL OF DATA-GATHERING ACTIVITY TBD SNL YMP DATA-SET ID 51/L01B-2/21/83

SNL DATA REPORT NUMBER SAND88-1581

THIS DCF COMPLETED BY Barry Schwartz 6313 12/8/87
 Name SNL Div. Date

- a. To obtain thermal expansion coefficients in units of $10^{-6} \cdot ^\circ\text{F}^{-1}$, multiply by 5/9.
 b. Submerged in J-13 or distilled water for ≥ 24 hr at ambient temperature and pressure.

COMMENTS

N/A = not applicable, N/C = not compiled, N/D = no data available, TBD = to be determined.

APPENDIX C

INFORMATION FROM, AND CANDIDATE INFORMATION FOR, THE SITE AND ENGINEERING PROPERTIES DATA BASE AND THE REFERENCE INFORMATION BASE

All data presented on the Data Compilation Forms in Appendix B are intended for entry into the YMP Site and Engineering Properties Data Base (SEPDB). No information in this report was obtained from the SEPDB.

As stated in Section 1 of this report, thermal expansion data previously published by SNL should be replaced by the thermal expansion data presented herein. The thermal expansion data previously published by SNL, and not contained in this report, for thermal/mechanical Units CHn2 and above (depths $\leq 1,836$ ft in UE-25a#1, $\leq 1,801$ ft in USW G-1, $\leq 2,722$ ft in USW G-2, $\leq 1,560$ ft in USW GU-3, and $\leq 1,761$ ft in USW G-4), are considered unreliable because of inadequate documentation in the SNL YMP Data Records Management System. Thermal expansion data reported in Nimick and Schwartz (1987) previously were not entered into the SEPDB.

No information in this report is intended for direct entry into the Reference Information Base (RIB). Figure 2 of this report is presented in the RIB Version 4, Revision 0 of Item 1.1.1 (DOE, 1989).

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