



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 30307
North Las Vegas, NV 89036-0307

QA: N/A

NOV 29 2000

OVERNIGHT MAIL

N. King Stablein
High Level Waste & Uranium Recovery
Division of Waste Management
Office of Nuclear Material Safety & Safeguards
U.S. Nuclear Regulatory Commission
Two White Flint North
Rockville, MD 20852

SUBMITTAL OF PARTICIPANTS' MONTHLY PROGRESS REPORT

As you have requested, the U.S. Nuclear Regulatory Commission is on distribution to receive a copy of the Yucca Mountain Site Characterization Project participants' monthly status report on a regular basis. Enclosed is the U.S. Geological Survey Progress Report for October 2000.

If you have any questions, please contact Bertha M. Terrell at (702) 794-1348.

Stephan Brocoum
Assistant Manager, Office of
Licensing and Regulatory Compliance

OL&RC:BMT-0297

Enclosure:
Ltr, 11/14/00, Craig to Kozai, w/encl

WM-11
NM5507

NOV 29 2000

cc w/o encl:

J. J. Curtiss, Winston & Strawn, Washington, DC
M. A. Lugo, M&O, Las Vegas, NV

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Alan Kalt, Churchill County, Fallon, NV
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George McCorkell, Esmeralda County, Goldfield, NV
Leonard Fiorenzi, Eureka County, Eureka, NV
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United States Department of the Interior

U.S. GEOLOGICAL SURVEY
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IN REPLY REFER TO:

INFORMATION ONLY

November 14, 2000

Wayne Kozai
Yucca Mountain Site Characterization
Project Office
U. S. Department of Energy
P.O. Box 30307
Las Vegas, Nevada 89036-0307

SUBJECT: Yucca Mountain Project Branch - U.S. Geological Survey (YMPB-USGS)
Progress Report, October 2000

Attached is the USGS progress report in the required format for the month of October, 2000.

If you have any questions or need further information, please call Raye Ritchey Arnold at (303)236-5050, ext 296.

Sincerely,

Robert W. Craig
Technical Project Officer
Yucca Mountain Project Branch
U.S. Geological Survey

Enclosure:

cc: J. Bresee, DOE/OCRWM-HQ/Forrestal
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ENCLOSURE

S. Morris, DOE, Las Vegas
R. Patterson, DOE, Las Vegas
R. Spence, DOE, Las Vegas
T. Sullivan, DOE, Las Vegas
M. Tynan, DOE, Las Vegas
D. Williams, DOE, Las Vegas
C. Glenn, NRC, Las Vegas (2 copies)
K. Ashe, M&O/Duke, Las Vegas
G. Bodvarsson, M&O/LBNL
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U.S. GEOLOGICAL SURVEY EXECUTIVE SUMMARY

October 2000

COORDINATION and PLANNING

Processing of some 60 documents prepared by U.S. Geological Survey authors continued during October, representing an increase over previous months. Informal-series reports included 10 Open-File Reports (OFRs) and 11 Water-Resources Investigations Reports (WRIRs), with eight of the OFRs covering geologic subject matter and eight of the WRIRs involving hydrologic topics. In addition, one administrative report (of geologic subject matter) was in processing. One USGS Fact Sheet (containing hydrologic subject matter) was being processed under the informal series. Formal-series reports included two Investigations-series maps, both geologic in subject matter, and two releases of geologic information in the Digital Data Series (DDS). Five journal articles in processing, including four on geologic topics, represented an increase over previous months. Six Proceedings papers (split between one of geologic and five of hydrologic subject matter) were being processed. Some 21 abstracts (with 13 on geologic topics) were in processing. The abstracts (largely intended for the Geological Society of America annual meetings or for the high-level waste-management conference), digital data release, journal articles, and Proceedings papers all contributed to the increased number of projects in processing.

GEOLOGY

Work in evaluation of lithostratigraphy of Nye county boreholes continued during October. Staff from USGS examined available bit-cutting samples (at the SMF) of the Phase II Nye County drilling. A presentation was prepared and delivered at the DOE/NRC Technical Exchange (held November 1, 2000) on current lithostratigraphic findings of the Nye County boreholes. In other lithostratigraphic work, revision in response to review comments of lithostratigraphic workbooks from the available Yucca Mountain boreholes continued.

The Underground Mapping Team continued work in investigations for the Waste Handling Building. That work included completion of logging and compilation of borehole logs.

HYDROLOGY

Unsaturated-Zone Hydrology

Elements of infiltration testing and seepage into Niche #3 continued in the Cross-Over Alcove. Application of water to the small-box test continued, although that application will be terminated soon. A trench experiment (with additional water application) is

planned in its place. The trench experiment will provide data regarding flow characteristics of the fault and will meet Determination of Importance (DIE) requirements.

In isotopic work in support of the Drift-Scale Test, staff attended the thermal-test workshop held in Berkeley on October 5—6 and participated in discussions on water distribution and chemistry. Strontium analysis began of water collected in June as part of the Drift-Scale Test. Semi-quantitative ICP-MS analyses have been performed on three samples. Data packages for strontium and uranium results from analyses of Drift-Scale Test water are in preparation.

Saturated-Zone Hydrology

Water-level monitoring continued with several efforts. Checker comments on the second- and third-quarter FY2000 water-level data packages were received. Work on the fourth-quarter FY2000 water-level data package continued. Drafting of water-level altitude worksheets for September was finished, and other preparations for the USGS water-level monitoring close-out were begun. Preparations for closing calibrations were initiated. Monthly depth-to-water measurements were made in Yucca Mountain boreholes at DOE request to maintain measurements until a transition plan (moving monitoring work to UNLV) is in place. On-going preparation of data packages and the calendar-year 1999 water-level report continued. The calendar-year 1999 water-level report was submitted for colleague review.

In work at the Alluvial Testing Complex, the last of the four interval hydraulic tests, which is being conducted through screen #2 (the second screen from the top in the alluvium), commenced on October 31. That interval will be pumped for seven days, until November 7, and then allowed to recover for another seven days. The pumping rate is approximately 19 gallons per minute, and the drawdown had reached approximately 69 feet on November 2. Short-term tracer tests are planned to start late in November.

Efforts to complete the work at the C-hole complex continued. The final flow-meter closing calibrations are underway, with the final meter sent to the calibration vendor in October. The flow meter and the calibration are expected in November, and the calibration-data milestone will be submitted at that time.

Numerous areas of work on the Death Valley regional flow system (DVRFS) continued during October. Refinements to the hydrogeologic framework model (HFM) included addition and editing of faults on the hydrostructural map for the DVRFS, and efforts also continued on the accompanying text. Work continued on preparation of a report documenting construction of the HFM. Several software packages were being evaluated for use in visualization of results of the flow modeling. Staff attended meetings in Tucson to discuss modeling work. Presentations were prepared for several venues, including a presentation about the hydrogeologic framework modeling for the Geological Society of America annual meetings, and others describing modeling work for the DOE/ERP UGTA meeting on October 24 and for the DOE/ERP year-end review on October 30. Results of the Pahute Mesa hydrogeologic framework modeling also were

presented. Scientific notebook entries were compiled to document recent work on the HFM involving output to the flow model, informal review of the HFM, and modification of stratigraphic contacts including volcanic zones, as well as the lower carbonate aquifer and Precambrian boundary. Work on ground-water flow modeling also continued. Modifications and upgrades were made to preprocessing packages, post-processing capabilities, and other software elements, including development of post-processing for visualization of 3-D model results and for the parameter-estimation package. Regional model runs continued during the month, and on-going model evaluation was conducted during calibration. Variations and additional detail were added to the recharge array, modifications were made to varying hydrogeologic unit anisotropy, and changes were made to the HFM in areas of large hydraulic gradients. Planning began on development of the horizontal anisotropy module for MODFLOW2000. Work continued on the draft modeling report.

In geologic investigations in support of the Death Valley regional studies, map interpretation and compilation are complete. The unit description list, correlation tables, and correlation diagrams have been revised and updated. Original map compilations covering the Amargosa Desert on the Death Valley Junction and Beatty 1:100,000-scale map sheets are being compiled, attributed, and merged into the final ArcInfo GIS coverages.

CLIMATE and PALEOHYDROLOGY

A range of efforts in support of paleohydrology continued during the period. Preparations for submittal of data from isotopic analyses of water from Nye County paleodischarge sites continued. Analyses also continued for oxygen, carbon, and strontium isotopes in investigations to validate carbonate sources. Isotopic and chemical analyses to determine ages of carbonate and opal fracture and cavity coatings in the Cross Drift continued. Preparations for discussion of results at the annual Geological Society of America meetings proceeded, as did preparation of abstracts for the High Level Radioactive Waste Management conference.

Various elements of work on fluid-inclusion investigations continued. Work began on data-collection tasks related to petrographic description of fluid-inclusion sections, measurement of temperatures and salinities in calcite-hosted inclusions, and determination of the timing of formation of inclusion-hosting calcite. Approximately 20 new sections were received and examined for paragenetic relations and fluid-inclusion petrography. Fluid-inclusion homogenization temperatures were determined for three samples. A short paper (*Evidence for a vadose-zone origin of secondary minerals at Yucca Mountain, Nevada*, by Whelan, Roedder, Paces, Peterman, and Moscati) was written for the High Level Radioactive Waste Management conference and submitted for review. Preparations for a presentation (*Calcite ^{18}O , fluid-inclusion, and paragenetic records of Yucca Mountain thermal event(s)*, authored by Whelan, Roedder, Paces, Neymark, Peterman, and Moscati) at the Geological Society of America annual meeting were begun. A rough draft of a intended journal article titled *Paragenetic relations and*

vadose formation of secondary minerals in the unsaturated zone of Yucca Mountain, Nevada, by Whelan, Paces, and Peterman, was completed during the period.

WATER-RESOURCES MONITORING

Ground-water levels were measured at 28 sites, and ground-water discharge was measured at one flowing well. Ground-water data collected during September were checked and filed. Periodic water-level measurements were obtained from the Site Characterization Program, and data were compiled on ground-water levels for seven sites for the period from July through September 2000. Data on ground-water levels and discharges compiled for the period from July through September were reviewed. A letter report describing ground-water data activities for the fourth quarter of FY2000 was prepared and submitted to DOE and the M&O on October 25 in completion of **milestone SSW700M5 [Letter Report: 4th Qtr FY00]**. Preparation of a trend-analysis report began; report scope and outline were refined, and compilation of historical ground-water levels, spring-flow discharges, precipitation, and water-use data from the study area began.

USGS Level 5 Milestone Report
October 1, 2000 - October 31, 2000
Sorted by Baseline Date

Deliverable	Due Date	Expected Date	Completed Date
SSW700M5 Letter Update: 4th Qtr FY00	10/31/00	10/25/00	10/25/00

YMP PLANNING AND CONTROL SYSTEM (PACS)

MONTHLY COST/FTE REPORT

Participant U.S. Geological Survey
Date Prepared 11/13/00 09:07 AM

Fiscal Month/Year October 31, 2000
Page 1 of 1

	<u>CURRENT MONTH END</u>						<u>FISCAL YEAR</u>		
WBS ELEMENT	ACTUAL COSTS	PARTICIPANT HOURS	SUBCONTRACT HOURS	PURCHASE COMMITMENTS	SUBCONTRACT COMMITMENTS	ACCRUED COSTS	APPROVED BUDGET	APPROVED FUNDS	CUMMULATIVE COSTS
1.2.21.2.1	0	0	0	0	0	0	25	0	0
1.2.21.3.2	0	0	0	0	0	0	110	0	0
1.2.21.3.S	0	0	0	0	0	0	75	0	0
1.2.21.3.U	0	0	0	0	180	0	363	0	0
1.2.21.5.2	49	184	123	0	29	0	598	0	49
1.2.21.5.3	191	1691	3073	0	525	0	1000	0	191
1.2.21.5.4	191	3313	455	0	197	0	1600	0	191
1.2.21.5.T	38	144	658	0	244	0	432	0	38
1.2.21.6.1	157	773	1037	0	562	0	1982	0	157
1.2.22.4.6	42	666	140	0	83	0	331	0	42
1.2.22.4.E	0	0	0	0	0	0	100	0	0
1.2.22.4.S	99	1736	27	0	82	0	1744	0	99
1.2.22.4.U	134	1665	1038	0	586	0	1969	0	134
1.2.22.5.2	0	0	0	0	0	0	25	0	0
1.2.22.6.T	14	0	0	0	0	0	350	0	14
	915	10172	6551	0	2488	0	10704	0	915

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - October 31, 2000

11/8/00 8:25:16 AM

	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
4889-21211 Science Support to Vol. 1 SR (LOE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
81912121U1 Science Support to Volume 1 - SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2016 Site Recommendation Rprt Vol. 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21319 Science Support to TSPA-SR (LOE)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
81912132U2 Science Support to TSPA - SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
GS2397 USGS TSPA for SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21350 Saturated Zone PMR Finalize Field Data	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21351 Saturated Zone PMR Comment Resolutio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21355 Saturated Zone PMR rev. 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191213SU7 Science Support to SZ PMR for SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2031 SZ Flow and Transport PMR-SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.3.S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21360 Unsaturated Zone PMR Finalize Field Dat	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21361 Unsaturated Zone PMR Comment Resolu	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21365 Unsaturated Zone PMR rev. 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191213UU7 Science Support to UZ PMR for SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21399 DEFERRED - Alcove Moisture Monitoring	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191213UUM DEFERRED - Alcove Moisture Monito	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2027 UZ Flow and Transport PMR-SR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.3.U	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4732-16300 Water Resources	35.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.83
81912152U5 Water Resources	35.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.83
4889-10715 Federal Occuational Safety & Health	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.39

U.S. GEOLOGICAL SURVEY

ESTIMATED COSTS FOR October 1, 1999 - October 31, 2000

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81912152U6 Federal Occupational Safety and Hea	8.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.39
4889-84099 DEFERRED - Precipitation Gage Monitori	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.28
81912152UM DEFERRED - Precipitation Gage Mo	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.28
GS9121 USGS ES & H Core Program - SR	48.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.51
1.2.21.5.2	48.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.51
4889-10535 Technical Data Management	36.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.31
81912153U3 Technical Data Management	36.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.31
4889-21111 Data Q/V & Software V for SR Products	149.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.14
81912153U5 Data Q/V & Software V for SR Produ	149.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.14
GS2470 USGS Tech. Data Mngmnt - SR	185.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	185.46
4889-10714 Records	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.99
81912153U4 Records	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.99
GS9197 USGS Dcmnt Cntrl, Rcrds & Mngmnt	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.99
1.2.21.5.3	191.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	191.45
4889-10710 TPO	99.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.58
81912154U4 USGS TPO	99.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.58
4889-10713 Project Control	55.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.67
81912154U5 Project Control	55.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.67
4889-11201 Regulatory Product Integrity	35.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.79
81912154U6 Regulatory Product Integrity	35.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.79
GS9135 USGS Project Planning & Control	191.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	191.04
1.2.21.5.4	191.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	191.04
4889-21599 DEFERRED - Water Level Monitoring Clo	19.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.31
4889-23099 DEFERRED - Surface Base Boreholes Cl	18.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.42
8191215TUM DEFERRED - Testing and Analysis C	37.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.74
8621 USGS Tst Coord/Sup for Site Activitie	37.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.74

U.S. GEOLOGICAL SURVEY

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	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
1.2.21.5.T	37.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.74
1.2.21.5	468.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	468.73
4889-10401 Support & Personnel Services	19.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.27
4889-10402 Procurement & Property Mgt.	14.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.61
4889-10403 Facilities Management - Space	74.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.69
4889-10404 Facilities Management - Computers/Phon	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-10405 Facilities Management - Other	20.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.71
4889-10406 Computer Support	20.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.67
81912161U3 Support and Personnel Services	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.96
4889-10409 DEFERRED - Space and Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
81912161UM DEFERRED - Space and Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
GS533 USGS Administrative Support - SR	150.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	149.96
4889-10711 Training Support	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.49
81912161U4 Training Support	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.49
GS9111 USGS Training Program - SR	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.49
1.2.21.6.1	157.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	157.46
1.2.21.6	157.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	157.46
1.2.21	626.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	626.19
4889-21501 Lithostratigraphic Support to Nye Co.	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.81
81912246U1 Lithostratigraphic Support to Nye Cou	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.81
4889-21502 Isotope/Hydrochemical Support to Nye Co	23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.36
81912246U2 Isotope/Hydrochemical Support to Ny	23.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.36
RMX25LA Nye County Drilling	42.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.17
1.2.22.4.6	42.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.17
4889-21357 Hydrogeologic Framework AMR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-21358 Water Level AMR	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.93
4889-22451 SZ AMRs/PMRs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191224SU1 Science Support to SZ AMRs/PMR fo	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.93

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	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
4889-12013 Alluvial Testing Complex	60.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.89
8191224SU3 SZ Investigations	60.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.89
4889-12015 Monitor Isotope/Hydrochemical Condition	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25
8191224SU4 SZ Isotope Hydrology	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.25
4889-11012 Regional Modeling Data Base	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.53
4889-11017 Hydrogeologic Framework Model - Refine/	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.78
4889-11020 Groundwater Flow Modeling	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.95
4889-11021 Technical Interactions - Regional Model	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.83
8191224SU5 Regional Model	29.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.10
GS522 USGS - SZ Flow & Trnsprt PMR - LA	99.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.16
1.2.22.4.S	99.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.16
4889-21345 Drift-Scale Test ESF	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.78
8191224UU7 Drift-Scale Test ESF	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.78
GS502 USGS - Near Field Envrn. PMR - LA	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.78
4889-21303 Crossover Alcove (Alcove 8)	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	29.15
4889-21384 ESF/Cross Drift Moisture Monitoring	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.99
4889-21385 ECRB (Bulkhead) Moisture Monitoring	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.38
8191224UU3 UZ Moisture Studies	51.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.52
4889-22424 Surficial Carbonate Source Validation - Cr	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-27009 CI-36 Validation in the ESF	10.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.72
4889-62213 Ages of Calcite/Opal Fracture/Cavity Coat	38.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.72
4889-62219 Fluid Inclusions in Calcite/Opal	20.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.85
8191224UU4 UZ Isotope Hydrology	70.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.28
4889-21368 Busted Butte Mapping (Mineback)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
8191224UU5 Mapping (USBR)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
GS520 USGS - UZ Flow & Trnsprt PMR - LA	121.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	121.80
1.2.22.4.U	133.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	133.58

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	OCT EST	NOV EST	DEC EST	JAN EST	FEB EST	MAR EST	APR EST	MAY EST	JUN EST	JUL EST	AUG EST	SEP EST	TOTAL
1.2.22.4	274.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	274.91
4889-22520 Update PC Plan Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
81912252U1 Update PC Plan Support	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
2004 Prep. LA Dcmntry Rcrd (Incl LSN Spp	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.22.5.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
1.2.22.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
4889-22607 Interpret WHB Geotechnical Data	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80
8191226TU4 Interpret WHB Geotechnical Data	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.80
4889-22602 Deferred - Field Effort for WHB Geotechni	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
8191226TUM DEFERRED - Field Effort for WHB G	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.50
GS8622 USGS Tst Coord/Sup for Site Activitie	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.30
1.2.22.6.T	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.30
1.2.22.6	14.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.30
1.2.22	289.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	289.21
1.2 OPERATING	915.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	915.40
CAPITAL EQUIPMENT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GRAND TOTAL	915.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	915.40
FTEs													
FEDERAL	57.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CONTRACT	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL	99.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

USGS Level 5 Milestone Report
October 1, 2000 - October 31, 2000
Sorted by Baseline Date

Deliverable	Due Date	Expected Date	Completed Date
SSW700M5 Letter Update: 4th Qtr FY00	10/31/00	10/25/00	10/25/00