Department of Energy
Office of Civilian Radioactive Waste Management
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QA: N/A
Project No. WM-00011

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OVERNIGHT MAIL

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COORDINATE LOCATIONS FOR SPECTRAL ANALYSIS OF SURFACE WAVES SURVEYS (SASW)

Reference: Ltr, Collins to Ziegler, dtd 8/16/05 (Request for Coordinate Locations for Spectral Analysis of Surface Waves Surveys)

The reference letter requested the coordinate locations for the SASW surveys, as well as the corresponding projection presented in the document: BSC 2002 (*Geotechnical Data for a Potential Waste Handling Building and for Ground Motion Analyses for the Yucca Mountain Site Characterization Project*, ANL-MGR-GE-000003, Revision 00).

Locations of the SASW surveys carried out at Yucca Mountain, Nevada, in the summers of 2000 and 2001 have been documented for three major locations in three ways.

For SASW survey lines in the immediate North Portal vicinity, locations were documented in Scientific Notebook, SN-M&O-SCI-022-V1, *SASW Measurements at Waste Handling Building Site* (MOL.20020520.0222). Locations of the survey center point were given in terms of the distance and direction from a borehole location or other surveyed location. Orientation of each of the SASW survey lines was also documented in the notebook by a compass direction. This information was used to develop Nevada State Plane Coordinates for the end points of each survey line. The location information is summarized in Enclosure 1 and shown schematically on Enclosure 2.

For SASW survey lines obtained within the Exploratory Studies Facility (ESF), locations were documented relative to the standard ESF location system (i.e., meters from the North Portal). Distances from ESF survey markers were documented in Scientific Notebook, SN-M&O-SCI-040-V1, *SASW Measurements Near the Top of Yucca Mountain and in the Potential Repository Block* (MOL.20020619.0461). In response to the request from the U.S. Nuclear Regulatory Commission, these locations have been converted to Nevada State Plane coordinates and are included in Enclosure 1 and shown schematically on Enclosure 3.

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For surveys carried out on the other areas adjacent to the North Portal and outside the ESF, the location of the center of the survey line was determined by Global Positioning System measurements, with two exceptions. The two exceptions are survey lines for which survey markers were not found: R-3 and CYM-2 (note that the CYM-1 to CYM-7 series of SASW surveys are alternatively referred to as C-1 to C-7 in the report BSC 2002 [*Geotechnical Data for a Potential Waste Handling Building and for Ground Motion Analyses for the Yucca Mountain Site Characterization Project*, ANL-MGR-GE-000003, Revision 00. Las Vegas, Nevada: Bechtel SAIC Company. ACC: MOL.20021004.0078]). Qualitative locations for these surveys can be determined from scientific notebook entries and are sufficient for the intended use of the data. Descriptions of each SASW survey line are documented in Scientific Notebooks, SN-M&O-SCI-023-V1, *SASW Measurements on the Top of Yucca Mountain* (MOL.20020607.0198) and SN-M&O-SCI-040-V1, *SASW Measurements Near the Top of Yucca Mountain and in the Potential Repository Block* (MOL.20020619.0461). The location information is summarized in Enclosure 1 (with the exception of R-3 and CYM-2) and shown schematically on Enclosure 3.

There are no new regulatory commitments in the body or the enclosure to this letter. If additional information is required, please contact Drew H. Coleman at (702) 794-5537 or e-mail drew_coleman@ymp.gov, or contact Jon P. Ake at (702) 794-5526 or e-mail jon_ake@ymp.gov, or contact Carol L. Hanlon at (702) 794-1324 or e-mail carol_hanlon@ymp.gov.

Mark H. Williams, Director
Office of License Application and Strategy

OLA&S:CLH-0056

Enclosures:
1. Locations of Spectral Analysis of Surface Waves (SASW) Surveys
2. Location Map of SASW Lines-GROA
3. Location Map of SASW Lines-Repository Footprint and ESF

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Enclosure 1

Locations of Spectral Analysis of Surface Waves (SASW) Surveys

Surface GROA SASW ID	End Point #1		End Point #2	
	Northing	Easting	Northing	Easting
SASW Site #1	765585	570725	765410	570685
SASW Site #2	765975	570798	765845	570730
SASW Site #3	765940	571035	765585	571055
SASW Site #4	765325	570660	765150	570565
SASW Site #5	766270	570530	765990	570375
SASW Site #6	766280	570515	766100	570415
SASW Site #7	766100	570415	765928	570320
SASW Site #8	765730	570205	765590	570125
SASW Site #9	765592	570218	965503	570165
SASW Site #10	765787	570310	765615	570212
SASW Site #11	765983	570420	765808	570320
SASW Site #12	766325	570620	766155	570525
SASW Site #13	766298	570680	766125	570582
SASW Site #14	764840	570508	764662	570610
SASW Site #15	766260	570950	766080	570850
SASW Site #16	766250	570975	766065	570870
SASW Site #17	766270	570705	766091	570613
SASW Site #18	766315	570632	766150	570540
SASW Site #19	766005	571000	765800	571010
SASW Site #20	765325	571035	765115	571040
SASW Site #21	765540	570680	765296	570550
SASW Site #22	765325	570545	765070	570408
SASW Site #23	766200	570710	766022	570613
SASW Site #24	766140	570692	765835	570525
SASW Site #25	765910	570560	765715	570425
SASW Site #26	765820	570515	765510	570348
SASW Site #27	765535	570330	765355	570235
SASW Site #28	765375	570240	765195	570140
SASW Site #29	765178	570555	765000	570455
SASW Site #30	766250	570858	766075	570760
SASW Site #31	765800	570692	765500	570520
SASW Site #32	765500	570520	765325	570420
SASW Site #33	765375	570445	765200	570350
SASW Site #34	765925	571120	765912	571480
SASW Site #35	765818	570712	764942	570221
SASW Site #36	766232	570722	765935	571220
SASW Site #37	765892	570325	765500	570105

Coordinates developed from pg 128 of scientific notebook
SN-M&O-SCI-022-V1, MOL.20020520.0222

ESF SASW Test Locations	Center Point	
	Northing	Easting
T1 @ 49+92	760835	561676
T2 @ 42+31	763329	561807
T3 @ 37+06	765049	561897
T4 @ 36+75	765150	561902
T5 @ 28+85	767739	562038

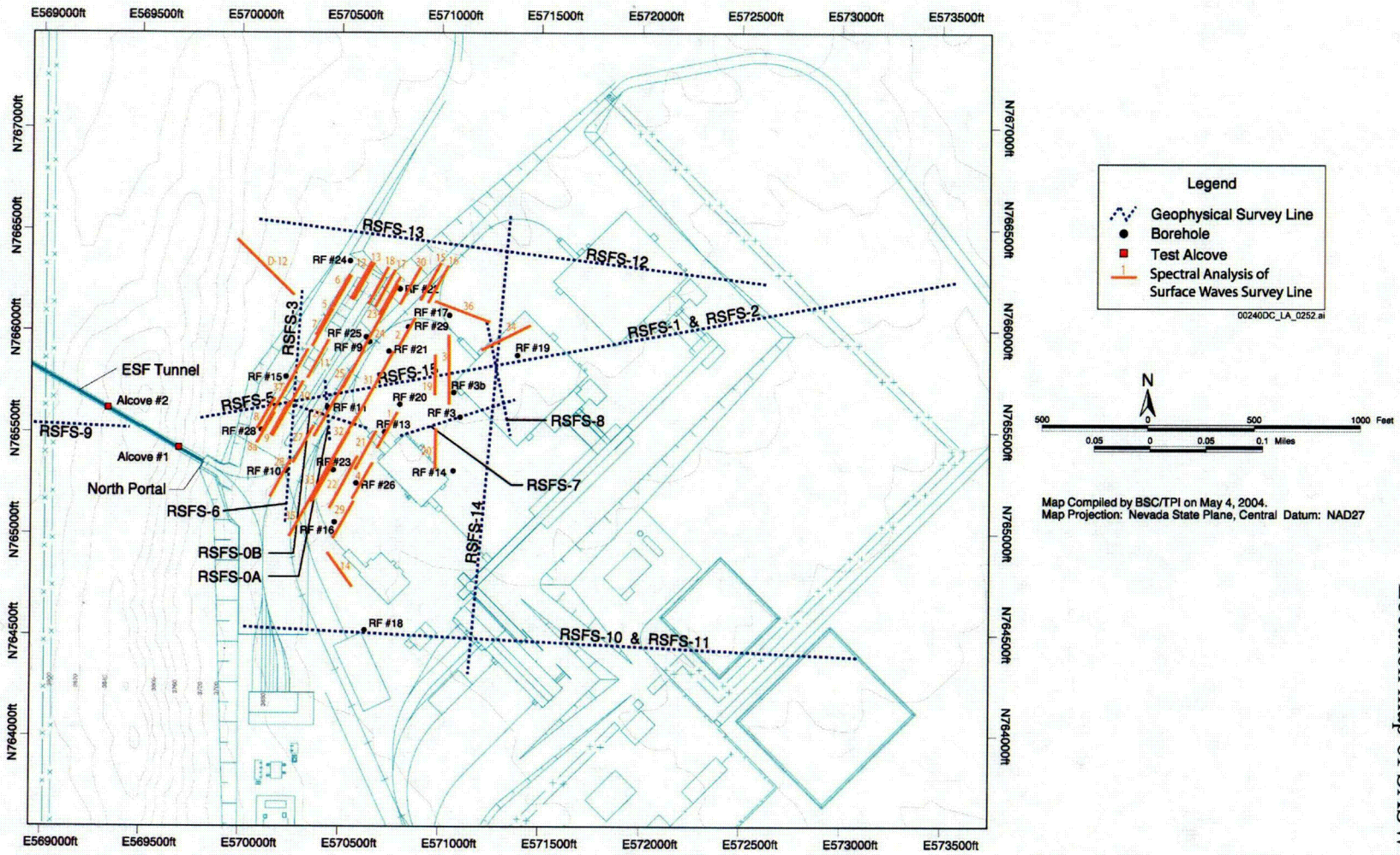
Coordinates developed based on tunnel test location.

Locations of Spectral Analysis of Surface Waves (SASW) Surveys

Repository Footprint SASW ID	Center Point	
	Northing	Easting
CYM-1	769638.48	559173.07
CYM-3	767658.75	558905.77
CYM-4	766634.15	558910.13
CYM-5	762424.71	558608.55
CYM-6	763696.82	558912.68
CYM-7	757378.28	558360.61
D1	771162.48	560284.44
D2	770115.35	561694.06
D3	767806.20	562675.53
D4	763928.47	563918.28
D5	762884.75	562092.62
D6	760437.18	561525.08
D7	758751.73	561754.25
D8	759229.56	559957.99
D9	765731.67	559435.69
D10	765654.64	559250.32
D11	771401.65	558957.80
R1	769610.53	559167.51
R2	767642.31	558905.97
S1	760730.79	558278.68
S2	759327.11	559991.06
S3	758309.51	558183.43
S4	763432.76	558848.91
S5	764467.86	558957.84
S6	761534.14	558673.43
S7	765495.49	558901.36
S8	768645.55	559003.56
S9	769852.14	559511.50
S10	767657.58	559080.58
S11	759423.66	559261.04
S12	758456.81	561921.80

Coordinates derived from TDMS DTN: MO0201GSC02001.000

All coordinates North American Datum of 1927, State Plane Coordinates, Nevada Central Zone
Units are U.S. Survey Feet



Enclosure 2.
Location map of SASW lines-GROA.

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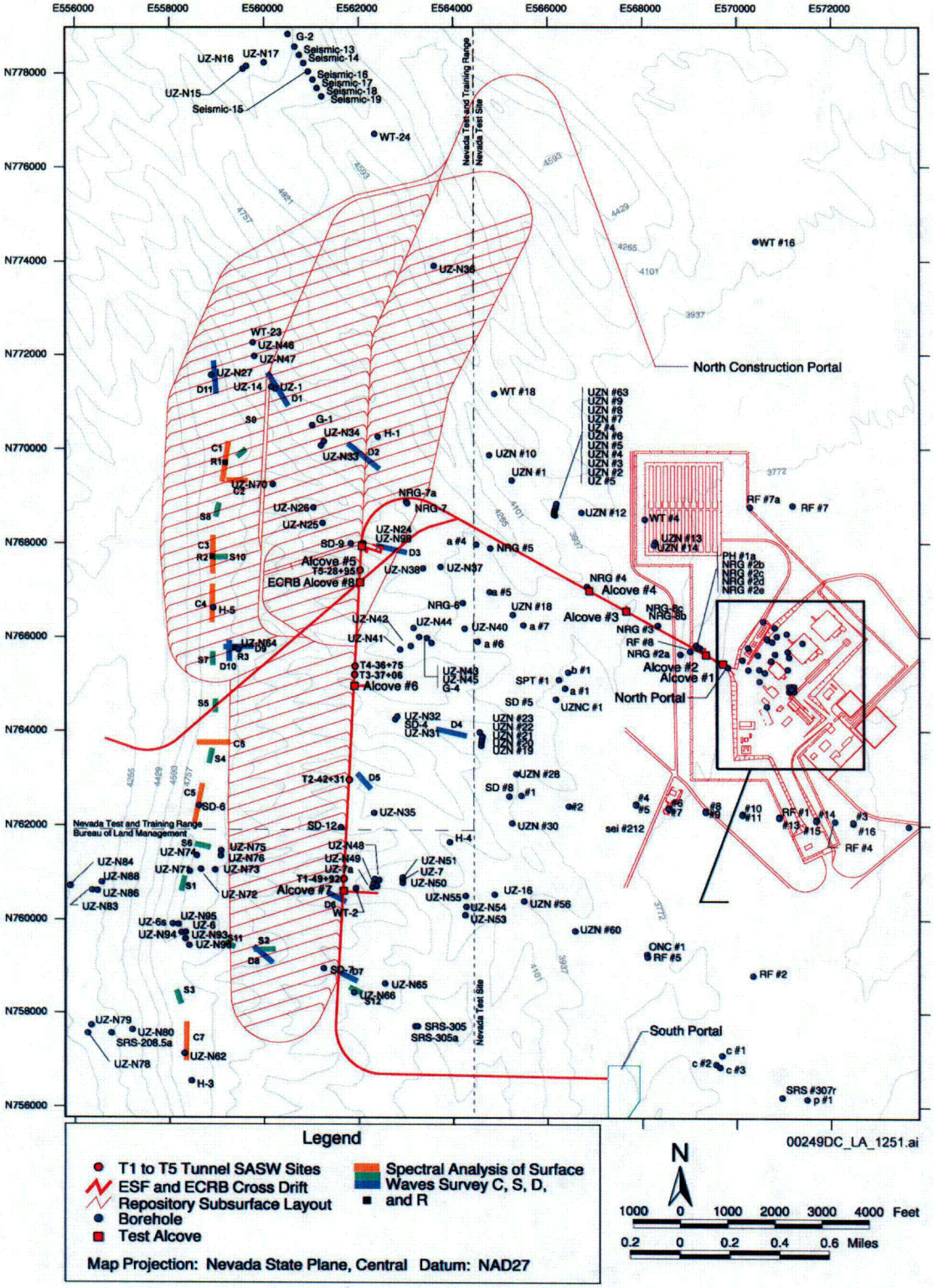
Enclosure 3.
Location map of SASW lines-repository footprint and ESF.



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