WM-64

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NEIL GOLDSCHMIDT
GOVERNOR

Department of Energy

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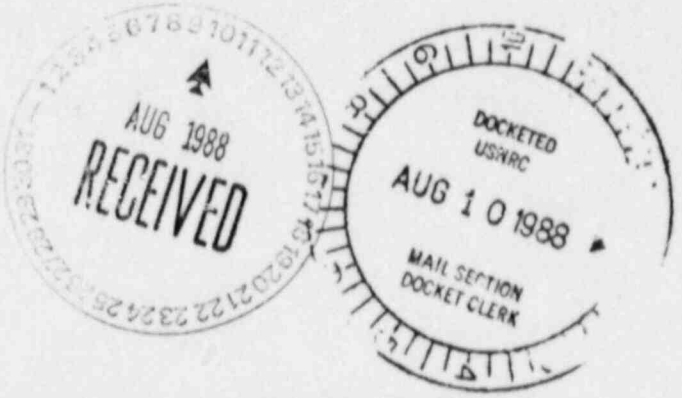
August 5, 1988



John Arthur, Manager
UMTRA Project Office
U.S. Department of Energy
P.O. Box 5400
Albuquerque, NM 87514

Dear John:

In the Oregon correspondence dated July 8, 1988, we identified our concerns to U.S. DOE on the proposal to use "out of spec" material for bedding and erosion protection for the Lakeview disposal site. During your visit to Lakeview on July 12-13, it was our impression that based on the MK test results and a visit to the Pepperling quarry, we had agreed to reject this rock and obtain the necessary material from a more suitable source.

We have since lost another month of valuable construction time. I also sense that MK is still promoting the alternative of using the rock crushed from the Pepperling quarry as an alternative. To make this decision would serve only to jeopardize licensing of the site and the credibility of our efforts to date. The fact is, better quality rock does exist in the immediate Lakeview area. It appears that MK is not able, or perhaps is unwilling, to make the decision that will allow us to complete the project this fall.

Attached are the quality data presented to Oregon and US DOE for the two quarries. Table I gives the data for the twelve samples collected in 1988 from the Pepperling quarry. Under the column entitled "absorption", not one of the twelve samples meets our minimum requirement. For the soundness requirement, only the sample taken by ICC, dated 5/5, passed. (Most of the samples submitted for soundness testing were divided into fine and coarse fractions. Although some of the coarse fractions were within the specification, the fine fraction failed and on this basis it is my understanding that per the contract, the material is rejected.)

How do we interpret what this data tells us about the quality of the proposed Pepperling material. In our July correspondence, we pointed out that there did not seem to exist sufficient quanties of good quality rock left in the quarry prior to the 1988 crushing activities. Table II provides the MK-E results for the joint May, 1987 NRC, US DOE, and Oregon sampling exercise of the stockpiled rock.

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Certified By Peggy C. Ford

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The data in this Table is as it appears in the MK-E report (June, 1987) and differentiates quality of material. Those samples that were labeled "Bad" by MK-E in the first column, are portions of the stockpile that were to be rejected and were not to be placed on the disposal cell because the material had "poorer durability characteristics". If we compare the absorption and soundness (where available) values for the samples labeled "Bad" with the values obtained in 1988 from the Pepperling quarry, Table I, they are very similar.

However, it is very important to notice that all absorption values for accepted stockpile material in Table II either meet the absorption requirement, or are less than 1% and very close to the 0.75% specification. Likewise, for the available soundness tests, all acceptable material also meets the 5% specification.

Our decision to reject the material crushed at the Pepperling quarry in 1988, is a sound one.

Attached as Table III, are durability test results for eight samples from the Sheer quarry. I understand that after your July visit we are in general agreement that rock material in this quarry is superior to that available from the Pepperling quarry. The data also reflect this. All samples are within the requirement set for soundness tests. With the exception of three samples, all absorption tests passed. The three that didn't, were close to the 0.75% specification, and at 1.0% or less. In addition, all test results for specific gravity and abrasion passed.

Our recommendation is to proceed with the Sheer quarry to obtain the remainder of the erosion protection material required for the Lakeview disposal site. We are confident that under the direction of the MK-E geologist, material can be obtained that will meet our needs as well as those of the NRC. A timely decision will also allow completion of all construction activities this season.

Should you have any questions, please contact Felix Miera at the Lakeview site.

Sincerely,

David Stewart-Smith
by FMM

David Stewart-Smith
Radioactive Materials Manager

cc: Bill Dixon, ODOE
Felix Miera, ODOE
Jolene Garcia, USDOE
Ed Hawkins, US NRC

TABLE I

PEPPERLING QUARRY

AFTM STANDARD			C127		C127		C88		C131			
Date	Vender Testing Laboratory	Sample Identification	Specific Gravity (ssd)		Absorption		Soundness		LA Abrasion			
			Greater Than 2.65		Not More Than 0.75%		Less Than 5% After 5 cyc.		Less Than 25% Loss After 100 cyc, 100/500 Ratio Less Than 20%			
			Result	Per Spec.	Result	Per Spec	Result	Per Spec.	100 cyc.	500 cyc.	Ratio	Per Spec
05/05/88	Soils Testing Lab Medford, OR	Verbal by ICC	2.840	Pass	1.24	Fail	1.28%	Pass	2.8	13.3% Pass	21%	Fail
06/08/88	" "	#1 Initial (Top)	2.685	Pass	2.980%	Fail	Fn. 27.1 Cr. 13.0	Fail Fail	4.3 Pass	27.3 Pass	0.25	Fail
06/21/88	" "	1st 3rd (Top B-2)	2.715	Pass	2.53	Fail	Fn. 6.7 Cr. 5.4	Fail Fail	4.1	15.7 Pass	26%	Fail
06/21/88	" "	2nd 3rd (Top B-2)	2.771	Pass	1.37	Fail	Fn. 7.0 Cr. 3.7	Fail Pass	4.4	15.7 Pass	28%	Fail
06/21/88	" "	3rd 3rd (Top B-2)	2.736	Pass	1.48	Fail	Fn. 8.5 Cr. 5.7	Fail Fail	3.5	16.8 Pass	21%	Fail
07/01/88	" "	2rd 1/3 (Slope B-1)	2.776	Pass	2.98	Fail	Fn. 17.3 Cr. 1.9	Fail Pass	3.9	14.9 Pass	26%	Fail
07/28/88	" "	1st B-1	2.767	Pass	1.24	Fail	Fn. 7.0 Cr. 1.2	Fail Pass	3.9	14.6 Pass	27%	Fail
07/28/88	" "	2nd B-1	2.758	Pass	1.00	Fail	Fn. 11.9 Cr. 3.9	Fail Pass	4.1	15.8 Pass	26%	Fail
07/28/88	" "	3rd B-1	2.788	Pass	1.43	Fail	Fn. 9.7 Cr. 6.9	Fail Fail	4.2	15.5 Pass	27%	Fail
MS-F 06/22/88	Soils Testing Lab Medford, OR	Pepperling Quarry 1st/3rd Type B	2.825	Pass	1.04	Fail	Fn. 6.4 Cr. 1.4	Fail Pass	1.8	13.5	0.23	
MS-F 06/24/88	Soils Testing Lab Medford, OR	Pepperling 2nd 1/3 Addit. Type B	2.79[illegible]	Pass	1.10	Fail	Fn. 11.1 Cr. 1.9	Fail Pass	3.9	15.2 Pass	26	
MS-F 07/06/88	Soils Testing Lab Medford, OR	Pepperling 3rd 1/3 Addit. Type B	2.81	Pass	2.13	Fail	Fn. 9.8 Cr. 3.2	Fail Pass	3.7	15.5 Pass	25	

TABLE 2

SUMMARY OF LABORATORY TEST RESULTS

FOR SAMPLES OBTAINED MAY 11-13, 1987

Sample	Specific Gravity	Absorption %	Sulfate Soundness % Loss (5 Cycles)	L.A. Abrasion % Loss (100 Rev)
A-1	2.82	0.64	3.07	4.7
A-2	2.72	0.77	1.36	5.4
A-2 [Good]	2.83	0.11	0.58	4.4
A-1,A-2,A-3,CTA1,CTA2[Bad]	2.645	1.16	11.36	6.7
A-3	2.67	0.76	0.54	4.7
CTA1 & CTA2	2.70	0.58	1.44	4.7
B-1	2.82	0.48	0.56	3.9
B-2	2.83	0.15	0.13	4.1
B-2 [Good]	2.85	0.16	0.94	3.4
B-1,B-2,B-3, B-4 [Bad]	2.60	1.56		6.6
B-3	2.71	0.25		3.5
B-4	2.78	0.39		3.4
C1A & C1B [Good]	2.68	0.47		3.6
C1A & C1B [Bad]	2.56	2.57		7.2
C1A & C1B	2.83	0.31		5.5
D1A, D1B & D1C	2.73	0.54		3.4
D1A, D1B & D1C [Good]	2.82	0.06		4.4
D1A, D1B & D1C [Bad]	2.60	2.24		7.0

TABLE III

SHEER QUARRY

	ASTM STANDARD			C127		C127		C88		C131			
				Specific Gravity (SSD)		Absorption		Soundness		LA Abrasion			
	Date	Vender Testing Laboratory	Sample Identification	Greater Than 2.65		Not More Than 0.75%		Less Than 5% After 5 cyc.		Less Than 25% Loss After 100 cyc. 100/500 Ratio Less Than 20%			
				Result	Per Spec.	Result	Per Spec	Result	Per Spec.	100 cyc.	500 cyc.	Ratio	Per Spec
MS-F	08/02/88	Soils Testing Lab Medford, OR	TB-001	3.024	Pass	0.27	Pass	Cr. 0.7	Pass	3.3	14.3 Pass	23	
MS-F	08/02/88	" "	M-B-002	3.066	Pass	0.26	Pass	Cr. 0.2	Pass	2.6	12.0 Pass	22	
ICC	Verbal 07/22/88	Century West Test Lab, Bend, OR	Ledge	2.86	Pass	0.70	Pass	Cr. 2.4	Pass	Not given	14.4 Pass	-	
ICC	Verbal 07/22/88	" "	Stockpile	2.90	Pass	1.0	Fail	Fn. 0.8	Pass	" "	16.3 Pass		
MA-F	07/21/88	Soils Testing Lab Medford, OR	B-1A	2.867	Pass	0.86	Fail	Fn. 4.2 Cr. 0.9	Pass Pass	3.2	14.1 Pass	0.23	
MA-F	07/21/88	" "	B-1B	2.898	Pass	0.94	Fail	Fn. 4.8 Cr. 1.4	Pass Pass	3.3	14.1 Pass	0.23	
MA-F	07/21/88	" "	B-2A	2.890	Pass	0.65	Pass	Fn. 2.2 Cr. 1.0	Pass Pass	3.0	12.6 Pass	0.23	
MA-F	07/21/88	" "	B-2B	2.901	Pass	0.59	Pass	Fn. 4.0 Cr. 0.8	Pass Pass	2.9	13.5 Pass	0.22	
			Average		Average		Average	Cr.	Average				
								Fn.					