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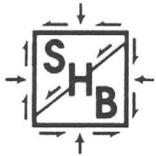
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SHB AGRA, INC.
Engineering & Environmental Services

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April 15, 1993

Arimetco International Inc.
6245 East Broadway, Suite 350
Tucson, Arizona 85711

SHB Job No. C93-6522

Attention: Mr. Harrison Matson

Re: **Misc. Testing**
Tucson, Arizona
SHB Lab No. 2054

Gentlemen:

Transmitted herewith are copies of laboratory test results performed on a sample recovered from the referenced project. The permeability test sample was remolded to 95% of maximum density as determined by Method ASTM D698-A (118.0 pcf).

Should you have any questions, regarding these results, we would be pleased to discuss them with you.

Respectfully submitted,
SHB AGRA, Inc.

By

Tom L. Romero

Manager Construction Services

Copies: Addressee (2)

SHB AGRA INC.
ENGINEERING & ENVIRONMENTAL SERVICES

PROJECT:	ARIMETCO INTERNATIONAL	JOB NO.	C93-6522
SAMPLE:	CLAY FOR DAM CORE	W.O. NO.	1
		LAB NO.	2054
		DATE	3/25/93

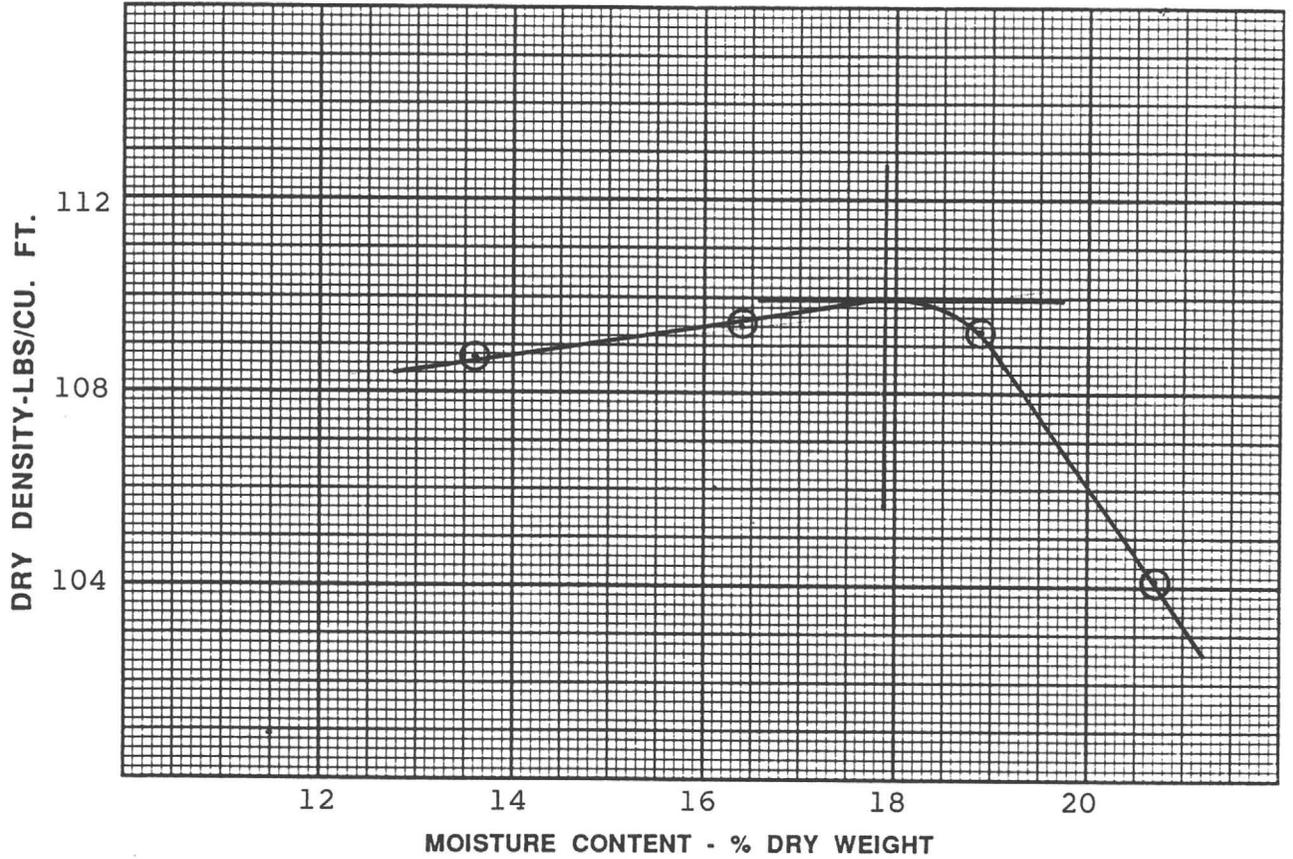
PERMEABILITY TEST (EM1110-2-1906/SW846-9100-1986)
 FLEXIBLE WALL PERMEABILITY (ASTM D5084-90)

WET DENSITY	129.7 pcf
DRY DENSITY	112.2 pcf
VOLUME	329.094 cc
INITIAL MOISTURE	17.9%
MOISTURE @ SATURATION	15.6%

HEAD		Q	TIME	K	K
inches	PSI	cc	sec.	cm/sec	ft/yr
19.76	32	10	109800	1.55E-08	1.60E-02
19.76	32	10	139500	1.22E-08	1.26E-02
19.86	32	6	85500	1.19E-08	1.23E-02
19.90	32	4	30600	2.22E-08	2.30E-02

SUMMARY OF MOISTURE DENSITY RELATIONSHIP TESTS

PROJECT Misc. Testing JOB NO. C93-6522



SOURCE	OPTIMUM MOISTURE CONTENT % DRY WT.	MAXIMUM DRY DENSITY LBS/CU. FT.	TEST DESIGNATION	TEST METHOD	LAB NO.
Clay for Dam Core	17.9	118.0	ASTM-698	A	2054

MOISTURE-DENSITY RELATIONSHIP TEST METHOD DATA								
ASTM D698 (Standard Proctor)								
METHOD	MATERIAL	MOLD		NO. OF LAYERS	BLOWS PER LAYER	HAMMER WEIGHT	HEIGHT OF FALL	COMPACTIVE EFFORT FT. LBS./CU. FT.
		DIAMETER	HEIGHT					
A	#4	4"	4.58"	3	25	5.5 lbs	12"	12,375
B	#4	4"	4.58"	3	25	5.5 lbs	12"	12,317
C	-3/4	6"	4.58"	3	56	5.5 lbs	12"	12,317
ASTM D1557 (Modified Proctor)								
METHOD	MATERIAL	MOLD		NO. OF LAYERS	BLOWS PER LAYER	HAMMER WEIGHT	HEIGHT OF FALL	COMPACTIVE EFFORT FT. LBS./CU. FT.
		DIAMETER	HEIGHT					
A	#4	4"	4.58"	5	25	10.0 lbs	18"	56,250
B	-3/8	4"	4.58"	5	25	10.0 lbs	18"	55,986
C	-3/4	6"	4.58"	5	56	10.0 lbs	18"	55,986