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U. P. Irrigation Research Institute, Roorkee
MATERIAL TESTING DIVISION

T.M.No. 61 TR(MT-34)

1. Name and address of sponsor
Executive Engineer
Jamrani Construction Divn.-5
Mukhani Adarsh Nagar
Talli Bamauri, Haldwani,
Nainital
2. Reference to sponsor letter
No. 778/J.B.Kha-S/A-4
dated 28.4.90
3. Reference to payment receipt
-
4. Material Received
One No. sample
5. Requirement
Gradation curve, crushing value,
abrasion value, soundness etc.
6. Test Results
Test results attached herewith.

(S.K.Sharma) 27-10-90
Assistant Engineer
M.T.Division

(V.K.Mehrotra)
30/10/90
Executive Engineer
M.T.Division

No. /Tech-IN/30/10/90 Dated

Copy forwarded to :

1. Executive Engineer, Jamrani Construction Division-5,
Mukhani Adarsh Nagar Talli Bamauri, Haldwani, Nainital.
2. Director, I.R.I., Roorkee
3. Cut file M.T.Division.
4. Assistant Engineer-IV, M.T.Division, Roorkee.

(V.K.Mehrotra)
30/10/90
Executive Engineer
M.T.Division

Test Report Regarding Coarse and fine Aggregate
of Jamrani Dam Project.

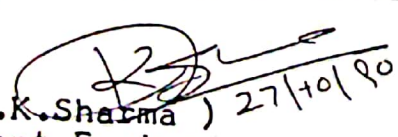
T.M.No.6/IR- (MT- 34)

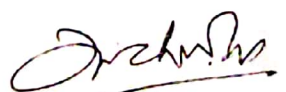
One number aggregate sample of pit No. 15-L was received from Executive Engineer, Jamrani Construction Division-V, vide his letter No. 778/J.B.K./M-4 dated 28.4.90 for mechanical analysis and various physical properties.

The sample was tested for mechanical analysis as per IS:2720-IV-1975 and results are given in the enclosed table. The gradation curve is also plotted in enclosed drawing no. 1. The classification curve is also plotted in enclosed drawing no. 1. The classification of sample has been done as per IS:1498-1970. The sample has been classified as "poorly graded gravel".

The coarse aggregate has been tested for its various physical properties i.e. crushing value, impact value, abrasion value, flakiness index, elongation index, soundness etc. as per I.S. specification laid down in IS:2386-1963. As per IS:383-1970 all the values are well within specified limit.

The fine aggregate has also been tested as per IS:2386-1963. The test results are given in the enclosed table. The sand has a fineness modulus of 2.38 and lies in IS: grading zone-II of IS:383-1970.


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Assistant Engineer
M.T.Division


(V.K.Mehrotra)
Executive Engineer
M.T.Division

(*) Aggregate of pit no. 15-L of Jamrani Dam Project, received vide Executive Engineer, Jamrani Dam Construction Division-IV, Jamrani vide letter No. 778/J.B.K./M-4 dated 28.4.90.

Classification of sample

Sl. No.	Lab. No.	Pit No.	Cobble above 80mm	Mechanical Analysis					Classification as per IS:1498-1970	
				Gravel		Sand		Fine below 0.075 mm		
				Coarse 80-20 mm	Fine 20-4.75 mm	4.75-2.0 mm	2.0-0.425 mm			
										0.425-0.075 mm
1.	1	15-L	43.0	29.50	10.90	0.30	10.20	5.80	0.30	G.P.

Physical properties of coarse aggregate

Sl. No.	Lab No.	Pit No.	Name of Test	Test results	IS:383-1970	U.S.B.R. (Concrete Manual)
1.	1/Crush	15-L	Crushing Value	15.6%	Less than 30%	-
2.	2/Impact	"	Impact Value	13.25%	Less than 30%	-
3.	1/Abrasion	"	Abrasion Value	25.0%	Less than 30%	Less than 40%
4.	1/Soundness	"	Soundness percent loss in weight after			
			5 cycles	0.87%	Less than 12% after each 5 cycles	Less than 10% after each 5 cycles
			10 cycles	0.74%		
5.	1/Flaki	"	Flakiness index			
			40-25 mm	21.6%	-	-
			25-20 mm	26.5%	-	-
			12.5-10mm	26.0%		
			10-6mm	46.7%		

40-25 mm 9.2%
 25-20 mm 33.8%
 12.5-10 mm 19.0%
 10-6 mm 33.0%

7.	1/Sp.Gr.	15-L	Specific Gravity	2.68
8.	1/W.A.	"	Water absorption	0.60
9.	1/B.D.	"	Bulk Density	1.77 gm/cc
10.	1/C.D.	"	Compacted density	1.92 gm/cc

Test Results of Sand

Sl. No.	Lab. No.	Pit No.	Name of Test	Test Results	IS:383-1970	U.S.B.R.
1	2	3	4	5	6	7
1.	1 (E)	15-L	Specific gravity	2.64		
2.	"	"	Water absorption	1.4%		
3.	"	"	Silt and clay	1.6%		
4.	"	"	F.M. of sand	2.38	Less than 3%	
5.	"	"	Sieve analysis	Percent passed	IS:Grading Zone-II	-
			10.0 -	100	100	
			4.75	100	90-100	
			2.36	98.4	75-100	
			1.18	87.4	55-90	
			0.60	55.0	35-59	
			0.30	15.6	8-30	
			0.15	3.0	0-10	
6.	"	"	Bulk Density	1.65 gm/cc		
7.	"	"	Compacted Density	1.77 "		

(S.K.Sharma)
 Assistant Engineer 27-10-90
 M.T.Division

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(V.K.Mehrotra)
 Executive Engineer
 M.T.Division

The above test results are on the basis of tests performed till now. However, the following tests are also required to be done. These shall be done in near future and shall be reported accordingly.

Coarse Aggregates :

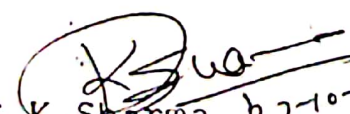
1. Deleterious Substances
2. Organic Impurities
3. Void in Aggregates
4. Petrographic Test :- Test completed and reported vide T.M.No. 57-TR(MT-133).

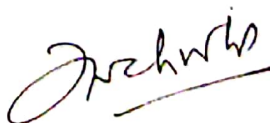
Fine Aggregates:

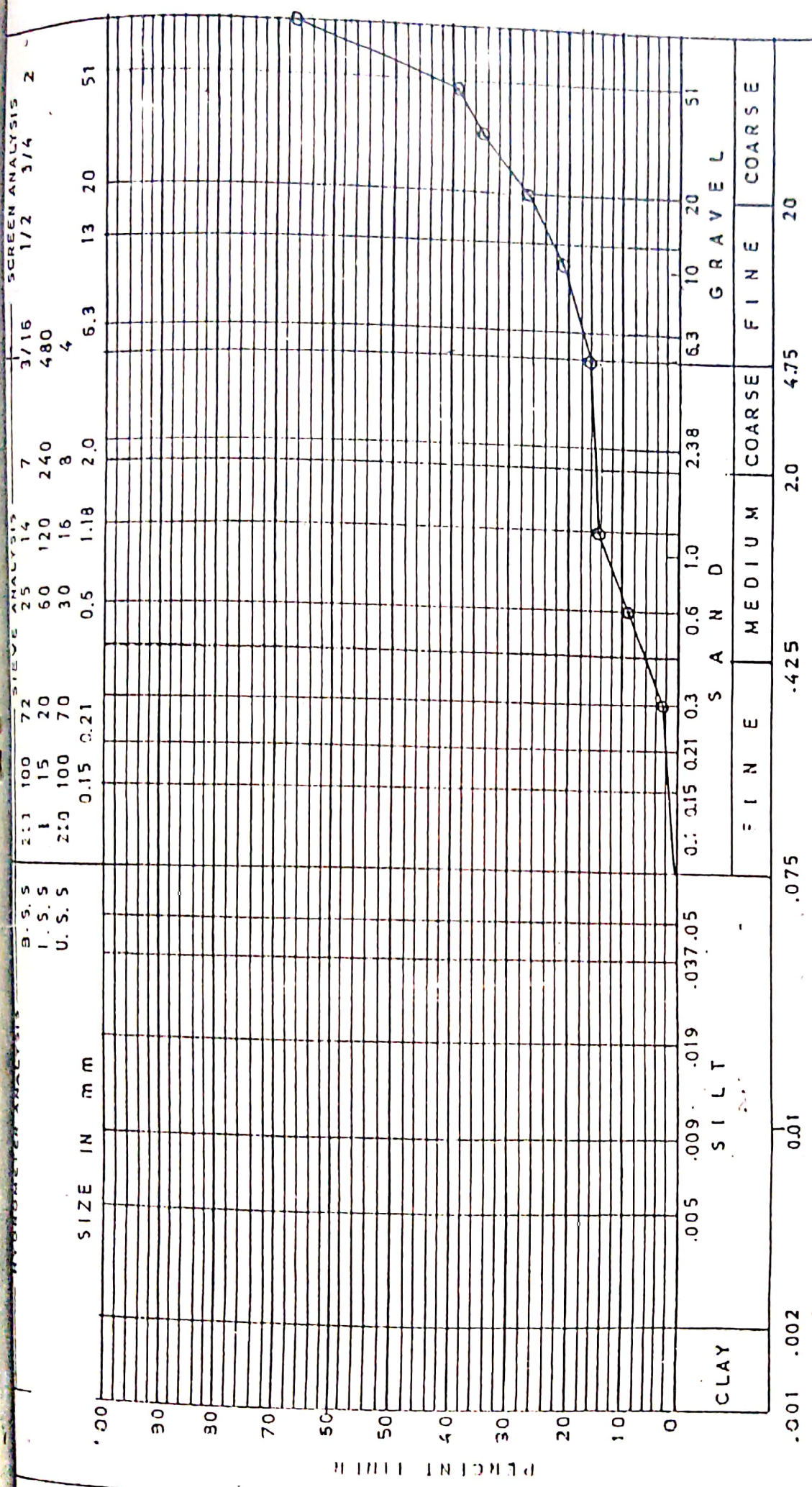
1. Clay lumps :
2. Coal and lignite
3. Organic Impurities
4. Mortar strength
5. Petrographic Test :- Test completed and reported by T.M.No.57-TR (MT-133)

Reference of Memorandums issued earlier

<u>Sl.No.</u>	<u>Full Name</u>	<u>No.</u>	<u>Date of issue</u>
1.	Mix Design Regarding- Roller compacted concrete for Jamrani Dam.	T.M.No.57- (MT-133)	March 1987
2.	Roller compacted concrete for Jamrani Dam.	No. J-3	May 1990


(S.K.Sharma) 27-10-90
Asstt. Engineer
M.T.Division


(V.K.Mehrotra)
Executive Engineer
M.T.Division



GRAIN SIZE IN mm		(I.S. CLASSIFICATION 1498 - 1970)	
1. MATERIAL RECEIVED ON 30.4.90 FROM EXECUTIVE ENGINEER, JAMRANI DAM CONSTN. DIV. V VIDE LETTER NO. 778/JBK/M-4 DATED 28.4.90. 2. LOCATION OF SAMPLE -- 15-L			
U.P.I.R.I. ROORKEE		GRADATION CURVES	
OF		JAMRANI DAM SITE	
DRAWN BY <i>[Signature]</i>		A.E. 10/10/90	
TRACED BY <i>[Signature]</i>		E.E. MZ	
ORG. NO. 4			