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MATERIAL RESOURCE EVALUATION
ADOBE DAM SITE
Maricopa County, Arizona

4-12-78

prepared for

Flood Control District of Maricopa County
3335 W. Durango Street
Phoenix, Arizona 85009

ENGINEERS TESTING LABORATORIES, INC.

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Flood Control District of Maricopa County
3335 W. Durango Street
Phoenix, Arizona 85009

12 April 1978

Attention: Mr. Jack Leavitt

Project: Material Resource Evaluation
Adobe Dam Site
Maricopa County, Arizona

Job No. 812-233
Inv. No. 1121025

In accordance with our agreement ETL No. 112-2364, this firm has performed soils and materials engineering services related to the subject project.

The results of soil exploration services, laboratory testing and evaluation of potential quality, quantity and in-situ value of the potential usable sand and gravel resources for the referenced project are presented in this report. The project site is located on State land which lies in all of Section 16 and all of Section 15, with the exception of the SE¼ of the SE¼ and the SE¼ and SW¼ of the NW¼ and the NW, NE, and SE quarters of the SW¼ and the NW, NE and SE quarters of the SW¼ of the SW¼ of said Section 15 in T.4N., R.2E., G.&S.R.B.&M. as shown on the site plan in Maricopa County, Arizona. The site is located at the proposed Adobe Dam and Reservoir. In general, the site is north of Deer Valley Road, south of Pinnacle Peak Road, west of 35th Avenue and east of 51st Avenue. Our evaluation is limited to the usable sand and gravel portions of the Recent and Quartenary alluvial deposits which are existent in this area. This evaluation does not include determination of the quantity or an evaluation of the market value of the remaining portions of the

alluvial materials which are composed primarily of sand and clay mixed soils, heavily cemented sands and gravels or sand and gravel containing greater than 10% fines having a Plasticity Index of 7 or greater.

The information obtained during our field exploration work and laboratory tests together with the following information prepared by the U. S. Army Corps of Engineers form the basis of our evaluation.

U. S. Army Corps of Engineers drawings reviewed were:

(1) "Adobe Dam, Damsite No. 4, Plan of Exploration, Plate 5",

(2) "Adobe Dam, Damsite No. 4, Soils Logs Pervious and Impervious Borrow Area, Plate 7, Plate 8 and Plate 9",

(3) "Adobe Dam Damsite No. 4, Soil Logs Foundations, unnumbered plate containing logs of Test Holes TH74-4, TH74-7, TH74-8 and TH74-9" and

(4) Four untitled, unnumbered drawings containing the logs of TH76-5, TH76-6, TH76-11, TH76-12, TH76-15, TH76-16, TH76-19, TH76-20, TH76-21, TT76-6, TT76-7, TT76-8, TT76-9, TT76-10, TT76-11, TT76-14, TT76-31, TT76-40, TT76-53, TH74-1, TH74-2 TH74-6, TP-2, TH76-1, TH76-2, TH76-22, TH76-23, TH76-24, TT76-1, TT76-2, TT76-3, TT76-12, TT76-13, TT76-15, TT76-16, TT76-20, TT76-42, TT76-43, TT76-44, and TT76-45.

EXPLORATION

Fifteen test holes were drilled and nine test pits were excavated within the subject site at the locations shown on the accompanying site plan in order to verify and expand on data accumulated by the U. S. Army Corps of Engineers and to obtain representative samples for testing the quality of the sand and gravel alluvial material. During test drilling and test pit excavation encountered materials were continuously examined and visually classified and, where applicable, sampled by a geologist from our office. In addition, existing banks along Skunk Creek and at a sanitary landfill in Section 16 were examined and the slopes visually classified and logged. The results of the test borings, test pits and cut logs are presented at the end of this report.

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Representative material samples obtained during the field exploration program were subjected to the following laboratory analyses:

Test	Sample(s)	Purpose
Percent passing No. 200 Sieve	Representative Samples (10)	Classification
Atterberg Limit Tests	Representative Materials (10)	Classification

The results of the laboratory analyses are presented at the end of this report.

SITE AND SOIL CONDITIONS

The proposed Adobe Dam and Reservoir is located west of 35th Avenue and north of Deer Valley Road along the drainage of Skunk Creek and an unnamed tributary to the west. The reservoir is bounded on the west and a portion of the south by Hedgpeth Hills. The ground surface within the reservoir area generally slopes down to the south and towards the unnamed drainage tributary in the western portion of the reservoir area. This tributary is at lower elevation than Skunk Creek. The unnamed tributary drainage has flat and very gentle side slopes sloping down to the thread of the stream, whereas Skunk Creek is incised into the floodplain. Skunk Creek is incised from 3 to 15 feet with side slopes ranging from 2:1 to near vertical. Ground surface for the majority of the reservoir is generally firm except along the active channel of Skunk Creek which contains some loose sands and gravels and some recently cemented sands and gravels. Vegetation in the valley floodplain consists of a sparse growth of brush and a moderate growth of weeds and grass due to the recent rainfall. Along Skunk Creek the vegetative cover is somewhat more dense.

The usable portion of the sand and gravel alluvium is generally located near Skunk Creek and a portion of the unnamed tributary to the west.

Material Resource Evaluation
Adobe Dam Site
Job No. 812-233

As disclosed by the test borings, test pits and observations along Skunk Creek, and as presented on the Soil Boring Data sheets, the subsurface profile across the site is somewhat variable. Near surface subsoils within a majority of Section 16 consist of silty sandy clays which are moderately to heavily cemented except along the thread of the drainage which traverses the center of the Section. In this area the near surface subsoils are silty to clayey sands containing various amounts of gravels. Underlying these near surface deposits are clayey sands and clayey sands and gravel exhibiting light to very heavy cementation and moderate to high plasticity. In Section 15, adjacent to and east of Skunk Creek, near surface subsoils consist of sand and sand and gravel containing various amounts of cobble size material and non to medium plasticity fines. The area west of Skunk Creek in Section 15 is underlain by silty sandy clay which, in turn, is underlain by silty to clayey sands and gravels which are lightly to very heavily cemented. No groundwater table was encountered.

METHOD OF CRITERIA FOR EVALUATION

Quality: The following are standards established by American Society for Testing and Materials (ASTM) and American Association of State Highway and Transportation Officials (AASHTO) for various types of mineral aggregates. In addition the Maricopa Association of Governments Uniform Standard Specifications for Public Works Construction (MAG-USSPWC) is presented. These standards are the most widely used and accepted criteria by private industry and government agencies.

1. Concrete:
   A. Fine Aggregate: AASHTO: M6
      1) Friable Particle — 1% maximum
      2) Material Passing No. 200 Sieve — 5% maximum
      3) 3/8 Sieve — 100% passing
      4) Well Graded from Coarse to Fine

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ASTM: C33

1) Clay Lumps	3% maximum
2) Material Passing No. 200 Sieve	5% maximum
3) 3/8 Sieve	100% passing

MAG-USSPWC 701.3.2:

1) Conforms to ASTM: C33
2) Uniformly washed and free of deleterious material

B. Coarse Aggregate: AASHTO: M80

1) Clay Lumps	0.25% maximum
2) Material Passing No. 200 Sieve	1% maximum
3) 2½ inch* Sieve	100% passing

ASTM: C33

1) Material Passing No. 200 Sieve	1% maximum
2) 4 inch* Sieve	100% passing

MAG-USSPWC 701.3.3

1) Conforms to ASTM: C33

*Maximum size depends upon size specified by user.

2. Asphaltic Concrete:

A. Fine Aggregate: AASHTO: M29

1) Material Passing No. 200 Sieve	10% maximum
2) 3/8 inch Sieve	100% passing

MAG-USSPWC 701.3.1

1) Non-plastic
2) Conforms to AASHTO: M29
3) Material Passing No. 200 Sieve — 8% maximum

B. Coarse Aggregate: AASHTO: M63 & 79

1) No. 16 Sieve — 5% maximum
2) 2 inch Sieve — 100% passing

3. Surface, Base and Subbase Course Material AASHTO: M147

1) Liquid Limit — 25% maximum
2) Plasticity Index — 6 maximum
3) Material Passing No. 200 Sieve — 25% maximum
4) 2 inch Sieve — 100% passing

ASTM: D1241

1) Liquid Limit — 25% maximum
2) Plasticity Index — 5 maximum
3) Material Passing No. 200 Sieve — 15% maximum
4) 2 inch Sieve — 100% passing

MAG-USSPWC 702.3

1) Plasticity Index — 3 maximum
2) Liquid Limit — 25% maximum

A majority of the local municipal building codes governing construction conform to the MAG-USSPWC. Based on the above information the following criteria has been used to designate which in-situ materials could be processed by normal procedures to produce the aforementioned mineral aggregates.

1. Material smaller than cobble size (three inches or smaller).

2. Material containing less than 10 percent by weight passing the No. 200 sieve prior to processing.

3. Material containing fines which have a plasticity of less than 6.

Using this criteria, the materials encountered at the site have been separated into two material types. The material classified as sand, gravel and cobbles containing less than 10% low plasticity fines and which is not heavily cemented could be economically processed to conform to the mineral aggregate criteria. The remaining material encountered at the site is very expensive to prepare and process for use as mineral aggregate and has been designated as unclassified general fill material.

Quantity: The total volume of usable mineral aggregate was computed by the end-area method at the twelve sections shown on the attached site plan.

The end-area cross-sections were based on the topography presented on the U. S. Army Corps of Engineers "Plan of Exploration" and an interpretation of the material thickness encountered in the field explorations performed by E.T.L. and by the U. S. Army, Corps of Engineers. The computations were performed by a designated end-area method.

The volume for the usable sand and gravel alluvium was computed by averaging adjacent end-areas and multiplying by the average distance between the two cross-sections except at the north and south limits of the subject site. At the north and south limit the distance from the boundary to the nearest Section was added to the distance between Sections and used as the corrected total distance between Sections.

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Based on the aforementioned quality requirements for mineral aggregate, the usable material was considered as that portion of the material smaller than cobble size. The quantity of cobbles was estimated by obtaining a weighted average of cobble quantity for each test hole or trench which presented details about material size. The cobble size material is normally separated and wasted on-site. Therefore, the total volume of usable mineral aggregate is equal to the total volume of mineral aggregate less the volume of cobble size material.

The volumetric quantity of the materials was computed in cubic yards and converted to a tonnage by the bulk density of the material.

Market Value: A royalty of $0.15/ton is presently paid to the State of Arizona for mineral aggregates removed from the nearby gravel pits. Material containing plastic fines is in low demand in the immediate area and very costly to process for use as mineral aggregate. In addition, the total quantity of this material is not recoverable due to the thickness of the material, amount of oversize (larger than gravel size) material and high degree of cementation. In addition, the total thickness of the material is not known. Therefore, a market value was not set for this type material.

CONCLUSIONS

The total quantity of usable mineral aggregate is estimated to be approximately 1,110,700 cubic yards or 1,888,200 tons. Therefore, the estimated total market value for the usable mineral aggregate is approximately $283,200.00.

Should you have any questions concerning the results of our exploration program or if we may be of further assistance to you, please do not hesitate to contact us.

Respectfully submitted,
ENGINEERS TESTING LABORATORIES, INC.

By: Kenneth L. Ricker, P.E.
/jm 4-12-76

Reviewed by: Glen K. Copeland, P.E.
copies to: Addressee (5)

10-37

Job No. 812-233

Boring No.	Depth, ft.	Soil Class.	Particle Size Distribution, %				Atterberg Limits			Moisture - Density Rel.			Specific Gravity	Permeability		'R' Value		
			Cobbles 3" to 12"	Gravel 3" to #4	Sand #4 to 200	Fines -200 *	PL	LL	PI	Dry Density pcf	Optimum Moisture %	Meth.		Dry Density pcf	K Ft./Yr.	Corrected 'R'	Expansion Pressure psf	
B1	4-7	GC				14.2	22	43	21									
B2	18-20	GC				41.4	19	59	40									
B3	12-14	GC				31.6	27	74	47									
B4	21-24	GC				4.2	23	43	20									
B5	0-3	CL/ML				61.2	21	32	11									
P2	14-16	GM				4.1	22	24	2									
P4	11-15	GC				12.0	21	59	38									
P5	7-11	GM				19.2	20	31	11									
P6	0-3½	CL				54.3	18	33	15									
P9	1-4	CL				63.3	20	33	13									

Boring No.	Depth, ft.	Remarks
		*Minus No. 200 sieve determination only.

LEGEND

Moisture Density Relationship
1. Tested D-1556/AASHTO T-217
2. Tested ASTMD-2922/D-3017
3. Tested ASTMD-2922/AASHTO T-217
4. Rock correction applied to maximum dry density. AASHTO T-224
5. Other_____

Specific Gravity
6. Minus # 4
7. Plus # 4

Classification/Particle Size
8. Visual
9. Laboratory Tested

SOIL PROPERTIES

Job No. 812-233

Boring No.	Depth, ft.	Soil Class.	Expansion/Compression					Water Soluble Matter, %		Shear Strength					Consolidation		
			Initial Dry Density pcf	Initial Moisture Content, %	Surcharge KSF	+ Expan. - Comp. %	Max. Swell Pressure KSF	Salts	Sulfates	Test Method	Initial Moisture Content, %	Dry Density pcf	C KSF	Ø Deg.	Initial Void Ratio	Surcharge KSF	Consol. %
P2	14-16	GM						0.01	-								
P5	7-11	GM						0.01	-								
P9	11-15	GM						0.01	-								

Boring No.	Depth, ft.	Remarks

LEGEND

Shear Strength Test Method
- DS Direct Shear
- DS Direct Shear (saturated)
- UC Unconfined Compression
- UU Unconsolidated Undrained
- CU Consolidated Undrained w/pore press
- CU Consolidated Undrained
- CD Consolidated Drained
- CR Cyclic Consolidated Undrained w/pore press

REMARKS

1. In-situ density.
2. Compacted density (Approx. 95% of ASTM:D698 max. density at moisture content slightly below optimum).
3. Compacted density (Approx. 95% of ASTM:D1557 max. density at moisture content slightly below optimum).
4. In-situ moisture.
5. Submerged to approximate saturation.
6. Consolidation % upon saturation.
7.

SOIL PROPERTIES

SOIL CLASSIFICATION AND LEGEND

COARSE-GRAINED SOIL

MORE THAN 50% LARGER THAN 200 SIEVE SIZE

Symbol	Letter	DESCRIPTION	MAJOR DIVISONS
	GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LESS THAN 5% - 200 FINES	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size.
	GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LESS THAN 5% - 200 FINES	
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES, MORE THAN 12% - 200 FINES	
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES, MORE THAN 12% - 200 FINES	
	SW	WELL-GRADED SANDS OR GRAVELLY SANDS, LESS THAN 5% - 200 FINES	SANDS More than half of coarse fraction is smaller than No. 4 sieve size.
	SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LESS THAN 5% - 200 FINES	
	SM	SILTY SANDS, SAND-SILT MIXTURES MORE THAN 12% - 200 FINES	
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES MORE THAN 12% - 200 FINES	

FINE-GRAINED SOIL

MORE THAN 50% SMALLER THAN 200 SIEVE SIZE

Symbol	Letter	DESCRIPTION	MAJOR DIVISIONS
	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	SILTS AND CLAYS Liquid limit less than 50
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
	OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY	
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	SILTS AND CLAYS Liquid limit greater than 50
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	

NOTE — Soils with 5 to 12 percent minus 200 fines should be classified with dual symbols

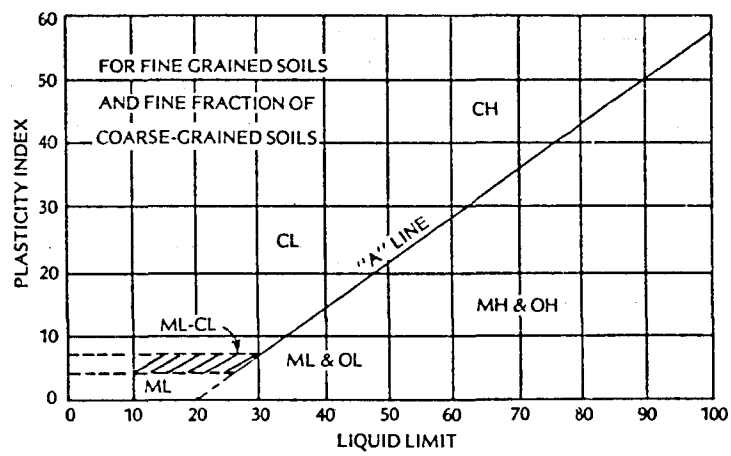
SOIL FRACTIONS

Component	Size Range
Boulders	Above 12 in.
Cobbles	3 in to 12 in.
Gravel	3 in. to No. 4 sieve
Coarse Gravel	3 in. to ¾ in.
Fine Gravel	¾ in. to No. 4 sieve
Sand	No. 4 to No. 200
Coarse	No. 4 to No. 10
Medium	No. 10 to No. 40
Fine	No. 40 to No. 200
Fines (silt or clay)	Below No. 200 sieve

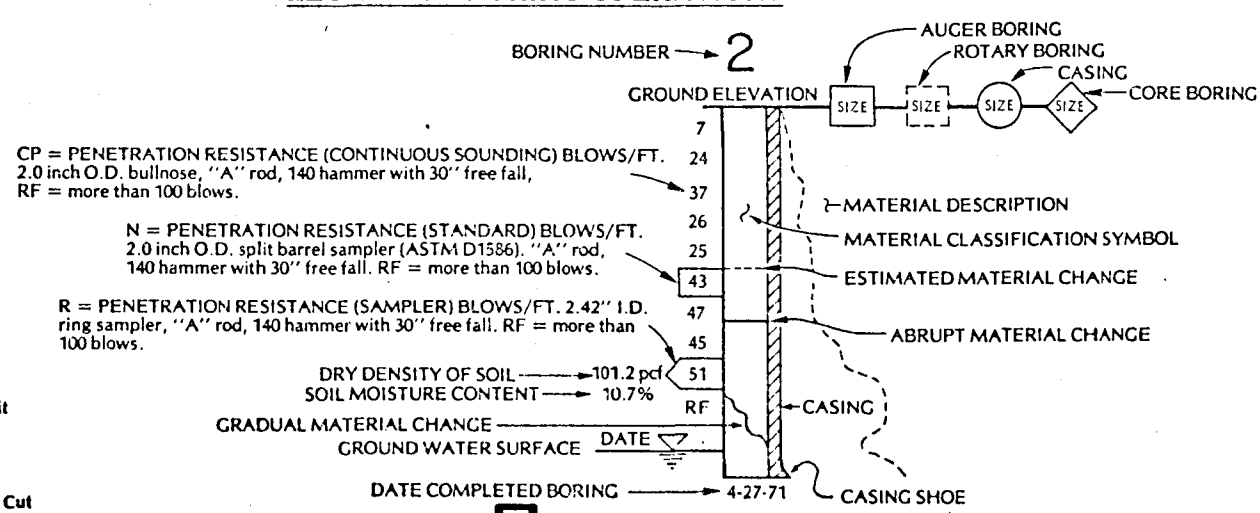
Soil Classification: ASTM D2487

Classification is visual unless accompanied by mechanical analysis and Atterberg limits. Percentage shown on log denotes visual approximation ± 5%.

PLASTICITY CHART



LEGEND OF BORING OPERATIONS



Sample Type

- R Ring
- T Shelby Tube
- S Standard Split Barrel
- B Block
- G Grab
- C Cutting
- V Vertical Face Cut

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-1 Job No. 812-233

Elev. Top of Hole: 1356.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SANDY SILTY CLAY; Brown; Trace	CL	6"			0	30	60	X	XX		X	X	X	XX
2							Gravel.					Tr	40	70							
3																					
4					slightly		CLAYEY SANDY GRAVEL & COBBLES;	GC/GM	-12"		35	30	15	10	XX	XX	XX		X		X
5					moist		Brown; Very heavy cementation				45	40	25	20							
6							coats the gravel; cobble (-6")														
7							@ 5.5'; drilling very difficult.														
8																					
9																					
10																					
1							Stopped @ 9'														
2							No groundwater encountered														
3																					
4																					
5																					
6																					
7																					
8																					
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

E

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-2 Job No. 812-233

Elev. Top of Hole: 1349.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SANDY SILTY CLAY; Brown	CL	½"				20	70	X	XX		X	XX	X X	XX
2							Non to light cementation, w/zones						30	80							
3							of moderate cementation.														
4																					
5																					
6																					
7																					
8																					
9																					
10																					
1																					
2																					
3																					
4							Trace fine gravel below 13'		1"			0	35	55	X	XX		XX	X	X	X
5												Tr	45	65							
6																					
7																					
8																					
9					slightly		SANDY CLAYEY GRAVEL; Brown	GM-GC	10"		0	55	20	15	XX	XX	X		X		XX
20					damp		Trace cobbles below 21'; cementation				Tr	65	30	25							
1							is light to moderate; clay content														
2							increases below 23'.														
3									10"		0	55	15	20	XX	XX		X	X		XX
4											Tr	65	25	30							
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-3 Job No. 812-233

Elev. Top of Hole: 1370.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		GRAVELLY SANDY CLAY; Tan to Light	CL	6"			25	15	50	X	XX		X	XX	X	XX
2							Brown					35	25	60							
3							Moderate to heavy cementation.														
4																					
5																					
6																					
7																					
8																					
9																					
10																					
1							Below 10' gravel percent sharply					15	15	60	X	XX		XX	X	X	XX
2							decreases.					25	25	70							
3																					
4																					
5							Less cementation below 15'.														
6																					
7																					
8																					
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site | No.: B-4 | Job No.: 812-233

Elev. Top of Hole: 1359.0 | Datum: Contour Map | Prepared By: GMD | Date: 3-28-78

Type/Size of Boring: 6" | Date: 3-28-78 | Driller: PL | Reviewed By: KLR | Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SANDY SILTY CLAY; Tan to Light	CL	1"			0	25	65	X	XX		X	XX	X	X
2							Brown; Heavily cemented; trace					Tr	35	75							
3							gravel.														
4																					
5																					
6																					
7																					
8																					
9																					
10																					
1							Increase in size and % of gravel	CL	2"			5	25	60	X	XX		XX	XX	X	X
2							below 11'.					15	35	70							
3																					
4																					
5																					
6																					
7																					
8																					
9				slightly			CLAYEY SANDY GRAVEL; Tan to Light	GC/GM	10"		0	55	20	15	XX	XX	X		X		XX
20				moist			Brown; Hard layer @ 23.0'.				Tr	65	30	25							
1																					
2																					
3																					
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

10-77

SOIL BORING DATA

Location of Boring: Adobe Dam Site · No. B-5 · Job No. 812-233

Elev. Top of Hole: 1371.0 · Datum: Contour Map · Prepared By: GMD · Date: 3-28-78

Type/Size of Boring: 6" · Date: 3-28-78 · Driller: PL · Reviewed By: KLR · Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					-PL		SILTY SANDY CLAY; Light Brown to	CL	½"				20	70	X	XX		XX	X	XX	XX
2							Tan						30	80							
3																					
4							Heavily cemented below 4'														
5																					
6									½"				20	70	X	XX		X	XX	X	X
7													30	85							
8																					
9																					
10																					
1							Sand increases in size and percent														
2							below 11'; silt also increases in		½"				35	55	X	XX		X	XX	X	X
3							percent over clay.						45	65							
4																					
5																					
6																					
7							Trace gravel below 15'.														
8																					
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6							Stopped @ 25'														
7							No groundwater encountered														
8																					
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-6 Job No. 812-233

Elev. Top of Hole: 1381.5 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well	Med.	Poor	Grain Shape Angular	Subangular	Rounded	Subrounded	Relative Density Low	Med	High	Dry Strength None	Very Low	Low	Medium	High	Very High	Plasticity None	Low	Medium	High	Consistency Soft	Firm	Stiff	Very Stiff	Hard	Cementation None	Light	Moderate	Heavy
1					-PL		SILTY SANDY CLAY; Brown to Tan	CL	½"				10	80		X			XX							XX				X		XX							X			
2													20	90																												
3																																										
4							Heavily cemented below 3'.																														X				X	
5																																										
6																																										
7					slightly		GRAVEL AND COBBLES; Brown	GP			45	45	5	5		X			XX			X	X				XX										X				
8					damp																																					
9																																										
10					-PL		SILTY SANDY CLAY; Tan	CL	½"				10	80		X			XX							XX				X						X				X	
1							Heavily cemented						20	90																												
2																																										
3							Abundant cementation nodules and																																			
4							some calcite crystals.																																			
5																																										
6																																										
7																																										
8																																										
9																																										
20																																										
1																																										
2																																										
3																																										
4																																										
5																																										
6							Stopped @ 25'																																			
7							No groundwater encountered																																			
8																																										
9																																										
30																																										

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

E

SOIL BORING DATA

Location of Boring: Adobe Dam Site No.: B-7 Job No.: 812-233

Elev. Top of Hole: 1370.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med. / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					-PL		SILTY SANDY CLAY; Brown	CL	1/4"				10	80	X	XX		X	XX	X	XX
2													20	90							
3																					
4																					
5																					
6																					
7																					
8							Lightly to moderately cemented														
9							below 8'													XX	XX
10																					
1																					
2							Cementation increases with depth														
3							to heavy; some nodules are present.													X X	XX
4																					
5																					
6																					
7																					
8																					
9																					
20							Cementation decreases to light to													XX	XX
1							moderate below 19'														
2																					
3																					
4																					
5																					
6																					
7																					
8							Stopped @ 25'														
9							No groundwater encountered														
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No.: B-8 Job No.: 812-233

Elev. Top of Hole: 1378.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well	Gradation Med.	Gradation Poor	Grain Shape Angular	Subangular	Rounded	Subrounded	Relative Density Low	Med	High	Dry Strength None	Very Low	Low	Medium	High	Very High	Plasticity None	Low	Medium	High	Consistency Soft	Firm	Stiff	Very Stiff	Hard	Cementation None	Light	Moderate	Heavy
1					-PL		SILTY SANDY CLAY; Brown to Tan	CL	½"				15	75			X	X	X									X			X				X					X			X
2													25	85																													
3																																											
4							Heavily cemented below 3½'.																															X				X
5							Cementation nodules and calcite																																			
6							crystals below 3.5'																																			
7																																											
8																																											
9																																											
10																																											
1																																											
2																																											
3																																											
4																																											
5																																											
6																																											
7																																											
8																																											
9																																											
20																																											
1																																											
2																																											
3																																											
4																																											
5																																											
6																																											
7							Stopped @ 25'																																				
8							No groundwater encountered																																				
9																																											
30																																											

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-9 Job No. 812-233

Elev. Top of Hole: 1364.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: 6" Date: 3-28-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1				slightly			SILTY CLAYEY SAND & GRAVEL; Light	SM-GM	2"			45	30	15	XX	XX	X		XX		X
2				moist			Brown to Tan	SC-GC				55	40	25							
3																					X
4							Heavily cemented below 2'.														
5																					
6																					
7																					
8																					
9																					
10																					
1																					
2																					
3																					
4																					
5																					
6							Gravel decreases in size and percent														
7							below 14'. Cementation decreasing.														
8																					
9																					
20					-PL		SILTY SANDY CLAY; Light Brown	CL	½"				10	80	X	XX		X	X	X	XX
1							Moderate to heavy cementation.						20	90							
2							Frequent cementation nodules, some														
3							calcite crystals.														
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-10 Job No. 812-233

Elev. Top of Hole: 1353.0 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: 6" Date: 3-29-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					moist		SILTY SAND, GRAVEL & COBBLES;	SM-GM	12"		35	30	20	5	X	XXXX			XX		XX
2							Brown	SC-GC			45	40	30	15							
3							Sand is fine to coarse; gravel is														
4							fine to coarse; cobbles small.														
5																					
6																					
7																					
8																					
9																					
10																					
1							Cobbles decrease in percent to trace														
2							below 10'.														
3																					
4					slightly		SILTY CLAYEY SAND & GRAVEL; Light	SM-GM	6"		0	45	50	15	X	XXXX			X		XX
5					moist		Brown to Tan; Moderate to heavy	SC-GC			Tr	55	40	25							
6							cementation; sand is fine to coarse;														
7							gravel is fine to coarse; some ce-														
8							mentation nodules.														
9							1' Thick layer of gravelly sandy clay														
20							@ 18'.														
1																					
2																					
3																					
4							Cementation coats the particles.														
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

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E

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-11 Job No. 812-233

Elev. Top of Hole: 1355.0 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: 6" Date: 3-29-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size. In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med. / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					-PL		SILTY SANDY CLAY; Brown to Tan	CL	½"				15	75	X	XX		XX	X	X X	XX
2							Trace medium to coarse sand.						25	85							
3																					
4																					
5																					
6																					
7							Heavy cementation below 6';														
8							cementation nodules.														
9																					
10																					
1																					
2																					
3							Cementation decreases to moderate														
4							below 12'.														X
5							Becoming sandy below 14'.														
6																					
7																					
8																					
9					slightly		CLAYEY SILTY SAND & GRAVEL; Brown	SC-GC	10"		0	35	35	20	XX	XXX			XX		X
20					moist		Trace cobbles; little cementation	SM-GM			Tr	45	45	30							
1							coating the particles; high percent														
2							clay; sand fine to coarse; gravel-														
3							fine.														
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No.: B-12 Job No.: 812-233

Elev. Top of Hole: 1353.0 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: 6" Date: 3-29-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SILTY SANDY CLAY; Brown to Tan	CL					15	75	X	XX		X	X	X X	X
2							Sand fine with trace medium.						25	85							
3																					
4																					
5																					
6																					
7							Heavily cemented below 7'.											XX	X	X	X
8																					
9							Cementation becomes very heavy below														
10																					
1							12'. Numerous cementation nodules											X	X	X	X
2							and frequent calcite crystals.														
3																					
4																					
5																					
6																					
7																					
8																					
9																					
20				slightly			GRAVELLY SANDY CLAY/CLAYEY SANDY	CL/				35	20	35	X	XXXX		X	X	X	X
1				moist			GRAVEL; Light Brown	GC-GM				45	30	45							
2							Heavy cementation; sand-fine to														
3							medium; with trace coarse gravel-														
4							medium.														
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site | No.: B-13 | Job No.: 812-233

Elev. Top of Hole: 1361.0 | Datum: Contour Map | Prepared By: GMD | Date: 3-29-78

Type/Size of Boring: 6" | Date: 3-29-78 | Driller: PL | Reviewed By: KLR | Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		GRAVELLY SANDY CLAY; Tan to Light	CL	2"			20	10	60	X	XX		XX	X	X	XX
2							Brown; Moderate cementation.					30	20	70							
3																					
4																					
5																					
6																					
7																					
8							Heavily cemented below 8'; cementa-														
9							tion nodules numerous.														X
10																					
1																					
2							Gravel percent & size increasing														
3							below 12'; below 12' calcite														
4							crystals also evident.														
5																					
6																					
7																					
8					-PL		GRAVELLY SANDY CLAY; Tan; CLAYEY	CL/GC	6"			35	20	35	X	XXXX		XX	XX	X	X
9							SANDY GRAVEL; Very heavily ce-					45	30	45							
20							mented calcite crystals; frequent														
1							particles are heavily coated with														
2							cementation.														
3																					
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-14 Job No. 812-233

Elev. Top of Hole: 1364.0 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: 6" Date: 3-29-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med. / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					slightly		CLAYEY SANDY GRAVEL; Light Brown	GC	3"			40	15	35	XX	XXX			X		X
2					moist		Moderate cementation;					50	25	45							
3																					
4																					
5																					
6																					
7																					
8							High silt & clay content below														
9							8½'; the gravel percent					35	20	35	XX	XXX			XX		X
10							decreases as does the size.					45	30	45							
1																					
2																					
3																					
4																					
5					-PL		SILTY SANDY CLAY; Light Brown	CL	¼"				10	80	X	XX		X	XX	X X	XX
6							Moderate to heavy cementation;						20	90							
7							nodules frequent.														
8																					
9																					
20					-PL		GRAVELLY SANDY CLAY; Tan to	CL	1"			20	10	60	X	XX		X	X	X X	XX
1							Light Brown; Medium to heavy					30	20	70							
2							cementation.														
3																					
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

E

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. B-15 Job No. 812-233

Elev. Top of Hole: 1362.7 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: 6" Date: 3-29-78 Driller: PL Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1							CLAYEY SANDY GRAVEL & COBBLES;	GC/GM	15"		35	30	15	10	XX	XX	XX		XX		X
2							Tan; Very heavily cement coats				45	40	25	20							
3							all particles.														
4																					
5							Cobbles @ 5'.														
6							Gravel & cobble size and percent				15	30	20	25							
7							decreasing below 6'.				25	40	30	35							
8																					
9																					
10																					
1																					
2							GRAVELLY SANDY CLAY; Tan to Light	CL	6"			20	10	60	X	XX		XX	X	X	X
3							Tan (almost white); Cementation					30	20	70							
4							nodules are frequent; few calcite														
5							crystals.														
6																					
7																					
8																					
9							Moderate to heavy cementation below					0	10	80	X	XX		X	XX	X	X
20							19'; gravel content decreases to					Tr	20	90							
1							trace.														
2																					
3																					
4																					
5																					
6																					
7							Stopped @ 25'														
8							No groundwater encountered														
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-1 Job No. 812-233

Elev. Top of Hole: 1390.0 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: Backhoe Date: 3-28-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med. / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					slightly		SILTY SAND; Brown	SM	2"			0	60	30	X	XXX	X	XX	XX		X
2					moist		Trace clay and gravel; sand fine.					Tr	70	40							
3																					
4																					
5																					
6																					
7					slightly		SILTY SAND, GRAVEL & COBBLES;	SM-GP	24"	0	45	35	10	0	XX	XX	X		X		XX
8					damp		Brown; Trace clay; moderate			Tr	55	45	20	5							
9							cementation; not much evidence of														
10							variation of size below 7';														
1							some stratification of gravel of														
2							similar size.														
3																					
4																					
5																					
6																					
7																					
8																					
9																					
20							Stopped @ 18'														
1							No groundwater encountered														
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-2 Job No. 812-233

Elev. Top of Hole: 1387.5 Datum: Contour Map Prepared By: GMD Date: 3-28-78

Type/Size of Boring: Backhoe Date: 3-28-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					slightly		SANDY CLAYEY GRAVEL AND COBBLES;	GC	24"	0	45	35	10	0	XX	XX	X		XX		XX
2					moist		Brown; Clay decreases with depth.			Tr	55	45	20	10							
3																					
4							1' thick layer of Silty Clayey														
5							Sand @ 4'.														
6																					
7							Moderate cementation; some strati-			0	45	35	10	0	XX	XX	X		X		XX
8							fication occurs when rocks of simi-			Tr	55	45	20	Tr							
9							lar size are layered.														
10																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8							Stopped @ 16'														
9							No groundwater encountered														
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Adobe Dam Site No.: P-3 Job No.: 812-233

Elev. Top of Hole: 1383.0 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: Backhoe Date: 3-29-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		GRAVELLY SANDY CLAY; Brown	CL	2"			20	15	55	X	XX		X	X	X	XX
2							Lenses of sand & gravel.					30	25	65							
3																					
4																					
5																					
6																					
7																					
8					slightly		SILTY CLAYEY SAND, GRAVEL &	SM-GM	24"	0	50	25	15	0	XX	XX	X		XX		X
9					moist		COBBLES; Moderate cementation;	SC-GC		Tr	60	35	25	10							
10							frequent layers and lenses of coarse														
1							sand & fine gravel.														
2																					
3																					
4																					
5																					
6																					
7																					
8							Stopped @ 15'														
9							No groundwater encountered														
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-4 Job No. 812-233

Elev. Top of Hole: 1389.0 Datum: Contour Map Prepared By: GMD Date: 3-29-78

Type/Size of Boring: Backhoe Date: 3-29-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size. In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Mod. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1							SILTY SANDY CLAY; Brown to Tan	CL	1"			0	15	75	X	XX		XX	X	X	X
2							Cemented.					Tr	25	85							
3																					
4							Very heavily cemented below 3½'.														
5																					
6																					
7																					
8																					
9							CLAYEY SILTY SAND, GRAVEL &	SC-GC	24"	0	30	30	15	15	XX	XX	X		XX		XX
10							COBBLES; Brown to Tan	SM-GM		Tr	40	40	25	25							
1							Several clayey layers are inter-														
2							bedded with the same gravel and														
3							cobbles at various depths.														
4																					
5																					
6																					
7																					
8							Stopped @ 16'														
9							No groundwater encountered														
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-5 Job No. 812-233

Elev. Top of Hole: 1387.0 Datum: Contour Map Prepared By: GMD Date: 3-30-78

Type/Size of Boring: Backhoe Date: 3-29-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SILTY SANDY CLAY; Light Brown to	CL	1"			0	20	70	X	XX		XX	X	X X	XX
2							Tan; Lightly cemented, trace gravel.					Tr	30	80							
3							Heavy cementation below 2½'.														
4																					
5																					
6					slightly		CLAYEY SILTY SAND, GRAVEL & COBBLES;														
7					damp		Tan to Light Brown; Moderate to	SC-GC	24"	0	30	30	20	10	XX	XX	X		XX		XX
8							heavy cementation; most of the	SM-GM		Tr	40	40	30	20							
9							particles have a coating of cement.														
10																					
1																					
2																					
3																					
4																					
5					moist		SILTY SAND, GRAVEL & COBBLES WITH	SM-GM	20"	0	25	25	30	10	XX	XXXX			XX		X
6							TRACE CLAY			Tr	35	35	40	20							
7																					
8																					
9																					
20																					
1																					
2																					
3																					
4							Stopped @ 16½'														
5							No groundwater encountered														
6																					
7																					
8																					
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-6 Job No. 812-233

Elev. Top of Hole: 1382.0 Datum: Contour Map Prepared By: GMD Date: 3-30-78

Type/Size of Boring: Backhoe Date: 3-29-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SILTY SANDY CLAY; Tan to Light Brown														
2							Trace gravel; sand medium.	CL	1"			0	25	65	X	XX		XX	X	X	XX
3							Heavily cemented below 2'.					Tr	35	75							
5																					
6					moist		SILTY CLAYEY SAND, GRAVEL & COBBLES;	SM-GC	24"	0	30	30	25	15	XX	XX	X		X		X
7							Tan to Light Brown; Very heavily	SC-GC		Tr	40	40	35	15							
8							cemented; the particles have a														
9							moderate to heavy coating of cementation.														
10							A layer of cobbles @ 10'.														
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8							Stopped @ 15'														
9							No groundwater encountered														
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-7 Job No. 812-233

Elev. Top of Hole: 1388.0 Datum: Contour Map Prepared By: GMD Date: 3-31-78

Type/Size of Boring: Backhoe Date: 3-31-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med. / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					-PL		SILTY SANDY CLAY; Light Brown to	CL	4"			0	20	70	X	XX		X	X	X	X
2							Tan; Heavily cemented below 3';					Tr	30	80							
3							trace gravel; moderate digging.														
4																					
5																					
6																					
7																					
8																					
9					slightly		SILTY CLAYEY SAND, GRAVEL & COBBLES;	SM-GM		8	25	30	20	15	X	XX	XX		XX		X
10					moist		Tan; Moderate to heavy cementation;	SC-GC	15'	Tr	35	40	30	25							
1							Very sandy (coarse) between 9 and														
2							11'; moderate coating of cement on														
3							the particles.														
4																					
5																					
6																					
7							Stopped @ 15'														
8							No groundwater encountered														
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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E

SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-8 Job No. 812-233

Elev. Top of Hole: 1383.5 Datum: Contour Map Prepared By: GMD Date: 3-31-78

Type/Size of Boring: Backhoe Date: 3-31-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					-PL		SILTY SANDY CLAY; Brown; Trace	CL	6"		0	0	15	75	X	XX		XX	X	X	X
2							grave; & cobbles; heavily cemented				Tr	Tr	25	85							
3							below 2'; increase gravel and sand														
4							below 9'.														
5																					
6																					
7																					
8																					
9																					
10																					
1																					
2				slightly			SILTY, CLAYEY SAND, GRAVEL &	SM-GM	20"	0	30	30	25	5	XX	XX	X		X		X
3				moist			COBBLES; Tan; Heavy cementation;			Tr	40	40	35	15							
4							thin cement coating on some particles.														
5																					
6																					
7																					
8																					
9																					
20							Stopped @ 15'														
1							No groundwater encountered														
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Adobe Dam Site No. P-9 Job No. 812-233

Elev. Top of Hole: 1380.0 Datum: Contour Map Prepared By: GMD Date: 3-31-78

Type/Size of Boring: Backhoe Date: 3-31-78 Driller: BN Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SILTY SANDY CLAY; Light Brown to	CL	10"		0	20	10	60	X	XX		X	X	X	X
2							Tan; Trace gravel.				Tr	30	20	70							
3																					
4							Heavily cemented below 3'.														
5																					
6																					
7					slightly		SILTY CLAYEY SAND, GRAVEL & COBBLES;														
8					moist		Tan to Light Brown.	SM-GM	24"	0	35	30	25	5	XX	XX	X		XX		XX
9							Heavily cemented to 13'.			Tr	45	40	35	15							
10																					
1																					
2																					
3																					
4							Moderate cementation below 13'.														
5							Moderate to heavy coating of cementa-														
6							tion on most particles.														
7																					
8																					
9							Stopped @ 15'														
20							No groundwater encountered														
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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E

SOIL BORING DATA

Location of Boring: Skunk Creek; 100' S of Pinnacle Peak Rd. No. A Job No. 812-233

Elev. Top of Hole: 1389.0 Datum: Contour Map Prepared By: GMD Date: 3-30-78

Type/Size of Boring: Observation Date: 3-30-78 Driller: None Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SILTY SANDY CLAY; Tan; Sand fine to	CL	20"			0	15	75	x	xx		x	x	x	xx
2							coarse; trace gravel.					Tr	25	85							
3																					
4																					
5				slightly			CLAYEY SILTY SAND, GRAVEL &	GM-SM	20"	0	40	30	10	10	x	xx	xx		x		x
6				moist			COBBLES; Brown			Tr	50	40	20	20							
7							Heavy cementation of material to														
8							6'. Cementation thickly covers														
9							the surface of the particles.														
10							Moderate cementation below 6'.														
1																					
2																					
3																					
4																					
5							Stopped @ 8½'														
6							No groundwater encountered.														
7																					
8																					
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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SOIL BORING DATA

Location of Boring: Skunk Creek; 400' S of Pinnacle Peak Road. No. B Job No. 812-233

Elev. Top of Hole: 1384.0 Datum: Contour Map Prepared By: GMD Date: 3-30-78

Type/Size of Boring: Observation Date: 3-30-78 Driller: None Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size. In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					slightly		CLAYEY SILTY SAND, GRAVEL & COBBLES;	SM-													
2					moist		Brown; The percent of fines varies	GM	20"	0	25	30	20	15	XX	XX	X		XX		XX
3							greatly over short horizontal dis-			Tr	35	40	30	25							
4							tances. Cementation is light; some														
5							cross-bedding.														
6																					
7																					
8																					
9																					
10																					
1																					
2					slightly		SAND, GRAVEL & COBBLES; Brown	SM-GM		0	30	35	25	0	X	XX	X		X		X
3					damp					Tr	40	45	35	Tr							
4																					
5																					
6							Stopped @ 14'														
7							No groundwater encountered														
8																					
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

NOTE: THE DATA PRESENTED ON THESE BORING LOGS REPRESENTS SUBSURFACE CONDITIONS ONLY AT THE SPECIFIC TEST LOCATIONS AND AT THE TIME DESIGNATED. THIS DATA MAY NOT REPRESENT CONDITIONS AT OTHER LOCATIONS AND/OR TIMES. THIS BORING DATA WAS COMPILED PRIMARILY FOR DESIGN PURPOSES. THIS DATA SHOULD NOT BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OR AS DEFINING CONSTRUCTION TECHNIQUES.

10-27

SOIL BORING DATA

Location of Boring: Skunk Creek; 1200' S of Pinnacle Peak Road. No. C Job No. 812-233

Elev. Top of Hole: 1380.4 Datum: Contour Map Prepared By: GMD Date: 3-30-78

Type/Size of Boring: Observation Date: 3-30-78 Driller: None Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well / Med. / Poor	Grain Shape Angular / Subangular / Rounded / Subrounded	Relative Density Low / Med / High	Dry Strength None / Very Low / Low / Medium / High / Very High	Plasticity None / Low / Medium / High	Consistency Soft / Firm / Stiff / Very Stiff / Hard	Cementation None / Light / Moderate / Heavy
1					slightly damp		CLAYEY SILTY SAND, GRAVEL & COBBLES; Brown Moderately cemented; heavily cemented below 8'; particles are coated with cementation.	SM-GM	20"	0	35	30	25		X	XX	X		X		X
2										Tr	45	40	35								
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
20																					
1																					
2							Stopped @ 20'														
3							No groundwater encountered														
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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10-27

E

SOIL BORING DATA

Location of Boring Skunk Creek;1600' S of Pinnacle Peak Road • No. D Job No. 812-233

Elev. Top of Hole 1383.0 Datum Contour Map Prepared By GMD Date 3-30-78

Type/Size of Boring Observation Date 3-30-78 Driller None Reviewed By KLR Date 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1					-PL		SANDY SILTY CLAY/CLAYEY SILTY	CL/SC	20"		15	20	15	40	X	XX		X	X	X	X
2							SAND; Tan to Light Brown				25	30	25	50							
3							Heavily cemented.														
4																					
5																					
6																					
7																					
8																					
9																					
10				slightly			SILTY SAND, GRAVEL & COBBLES;														
1				moist			Brown; Very heavily cemented	SM-GM	20"	0	30	35	20	5	XX	XX	X		X		X
2							and the particles have thick			Tr	40	45	30	15							
3							cement coatings.														
4																					
5																					
6																					
7							Stopped @ 13'														
8							No groundwater encountered														
9																					
20																					
1																					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
30																					

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E

SOIL BORING DATA

Location of Boring: Skunk Creek; 3200' S of Pinnacle Peak Road No. E Job No. 812-233

Elev. Top of Hole: 1372.0 Datum: Contour Map Prepared By: GMD Date: 3-30-78

Type/Size of Boring: Observation Date: 3-30-78 Driller: Reviewed By: KLR Date: 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	Penetration Resistance Blows/Ft. N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size. In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med. Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1							SAND, GRAVEL & COBBLES; Brown	GW-SW	24"	0	30	35	25	0	X	XXX			X		XX
2										Tr	40	45	35	Tr							
3																					
4																					
5							Stopped @ 2'														
6							No groundwater encountered														
7																					
8																					
9																					
10																					
1																					
2																					
3																					
4																					
5																					
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E

SOIL BORING DATA

Location of Boring Skunk Creek; 700' N of Deer Valley Road No. F Job No. 812-233

Elev. Top of Hole 1364.0 Datum Contour Map Prepared By GMD Date 3-30-78

Type/Size of Boring Observation Date 3-30-78 Driller None Reviewed By KLR Date 4-10-78

Depth Ft	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size. In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well Med Poor	Grain Shape Angular Subangular Rounded Subrounded	Relative Density Low Med High	Dry Strength None Very Low Low Medium High Very High	Plasticity None Low Medium High	Consistency Soft Firm Stiff Very Stiff Hard	Cementation None Light Moderate Heavy
1							SANDY SILTY CLAY/CLAYEY SILTY SAND;	CL/SC	15"		0	25	15	50	X	XX		X	X	X	X
2							Tan to Light Brown; Moderately				Tr	35	25	60							
3							cemented.														
4																					
5																					
6							SILTY SAND, GRAVEL & COBBLES; Brown	SM/GM	20"	0	30	35	20	5	XX	XX	X		X		X
7							Heavy cementation.			Tr	40	45	30	15							
8																					
9																					
10																					
1																					
2																					
3																					
4																					
5							Stopped @ 13'														
6							No groundwater encountered														
7																					
8																					
9																					
20																					
1																					
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3																					
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10-27

E

SOIL BORING DATA

Location of Boring Medagawich Landfill No. G Job No. 812-233

Elev. Top of Hole 1376.5 Datum Contour Map Prepared By GMD Date 3-30-78

Type/Size of Boring Observation Date 3-30-78 Driller None Reviewed By KLR Date 4-10-78

Depth Ft.	Penetration Resistance Blows/Ft. C	N	Sample Type	Dry Density pcf	Moisture Content	Graphical Log	Description	Soil Classification	Max. Size, In.	Particle Size Distribution % Boulders	Cobbles	Gravel	Sand	Silt & Clay	Gradation Well	Med.	Poor	Grain Shape Angular	Subangular	Rounded	Subrounded	Relative Density Low	Med	High	Dry Strength None	Very Low	Low	Medium	High	Very High	Plasticity None	Low	Medium	High	Consistency Soft	Firm	Stiff	Very Stiff	Hard	Cementation None	Light	Moderate	Heavy
1					-PL		GRAVELLY SANDY CLAY; Tan to almost	CL	10"		0	20	5	65		X			XX								X				X					X				X	
2							White; Trace cobbles; heavily				Tr	30	15	75																												
3							cemented.																																			
4																																										
5																																										
6																																										
7																																										
8																																										
9																																										
10																																										
1					slightly		SAND, GRAVEL & COBBLES; White	SP-GP		0	35	35	20	0	X				XX			X								X										X	
2					moist		Very heavily cemented; very dense;			Tr	40	45	30	Tr																											
3							almost a conglomerate.																																			
4																																										
5					-PL		GRAVELLY SANDY CLAY; Tan to almost	CL				25	5	60		X			XX								X			X						X				X	
6							White; heavily cemented.					35	15	70																											
7																																										
8																																										
9																																										
20							Stopped @ 18'																																			
1							No groundwater encountered																																			
2																																										
3																																										
4																																										
5																																										
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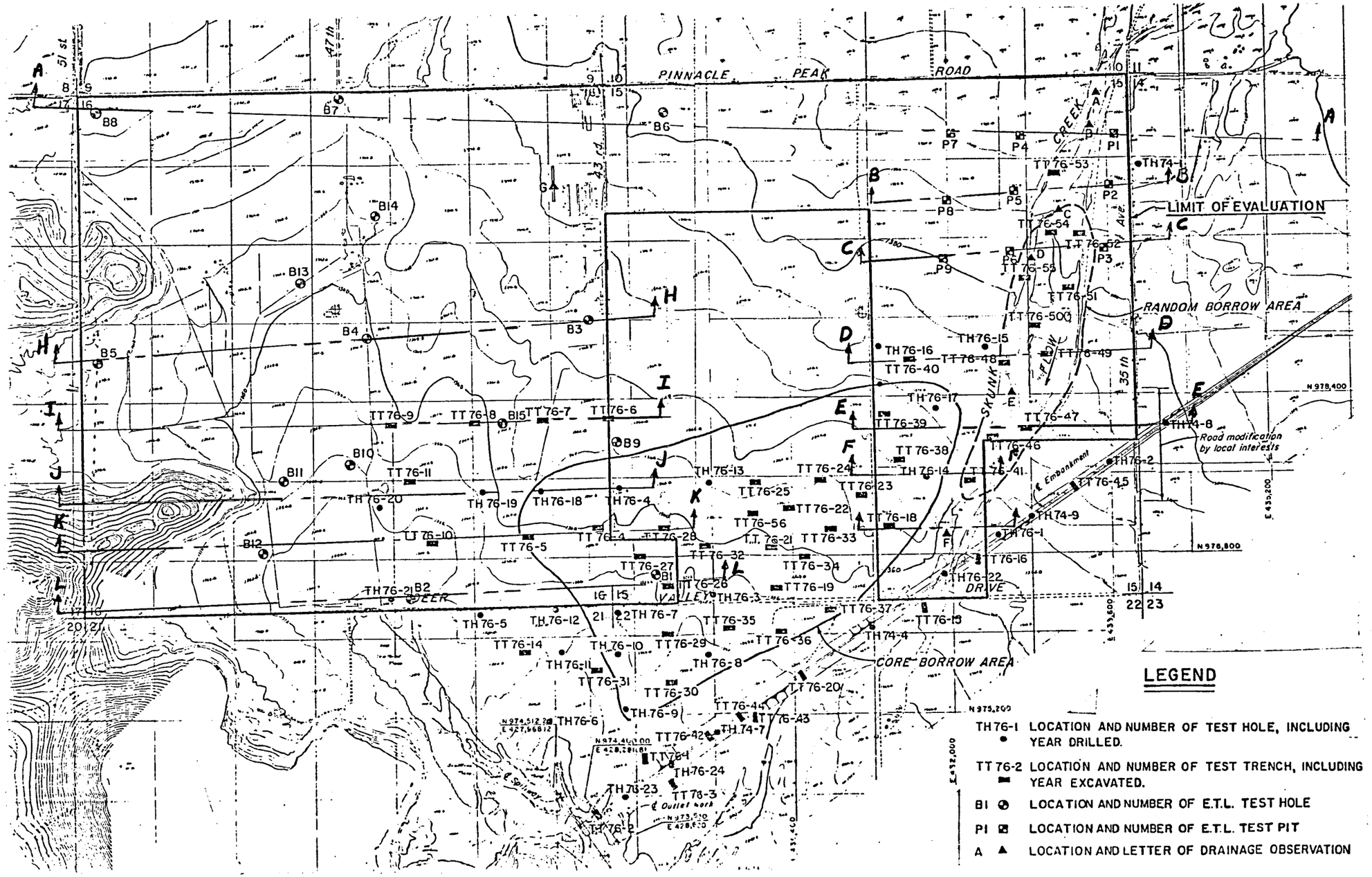
SITE PLAN/TEST BORING LOCATION