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Final
Geotechnical and Foundation Report
Cotton Lane Bridge
Over The Gila River
Goodyear, Arizona
MCDOT Contract No. No. 2004-109
Work Order No. 69083
R.A.M. Project No. G11082

RICKER • ATKINSON • McBEE & ASSOCIATES, INC.

Geotechnical Engineering • Construction Materials Testing

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For:
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R·A·M·M

Michael Baker Jr., Inc.
2929 North Central Avenue, Suite 800
Phoenix, Arizona 85012

December 2, 2005

Attention: Brian Bombardier, P.E.

Subject: Final
Geotechnical and Foundation Report
Cotton Lane Bridge
Over The Gila River
Goodyear, Arizona
MCDOT Contract No. 2004-109
Work Order No. 69083

R.A.M. Project No. G11082

Attached to this letter is the Final Geotechnical and Foundation Report for the Cotton Lane Bridge Over The Gila River, in Goodyear, Arizona. The bridge will provide access to developments south of the Gila River. The bridge will be a 17-span precast, prestressed concrete I-girder structure supported on drilled pile foundations.

The attached report was prepared based on project and site data available at this time and was prepared in a manner and to the standards of local geotechnical engineering practice, AASHTO LRFD and MCDOT. Our services did not include evaluations for the presence of hazardous materials or area subsidence resulting from groundwater withdrawal.

If you have any questions, please do not hesitate to call.

Respectfully submitted,
RICKER, ATKINSON, MCBEE & ASSOCIATES, INC.

Registered Professional Engineer (Civil) CERTIFICATE NO. 10971 KENNETH L. RICKER Date Signed 12-2-05 ARIZONA U.S.A.

Registered Professional Engineer (Civil) CERTIFICATE NO. 20182 DAVID A. THOMAS Date Signed 12-2-05 ARIZONA U.S.A.

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Registered Professional Engineer (Civil)
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KENNETH L.
RICKER
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Laboratory Analysis –Final Phase

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GEOTECHNICAL FOUNDATION REPORT

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INTRODUCTION

This report presents the results of our geotechnical engineering services and foundation report for the Cotton Lane Bridge Over The Gila River, in Goodyear, Arizona. The scope of our services included reviewing available geotechnical data along the alignment and performing an initial field exploration program, laboratory analysis and geotechnical engineering evaluation, analysis and recommendations. We would be pleased to discuss with you any additional recommendations you may require. In addition, we are available to review project specifications and plans for conformance with our recommendations at no charge to you.

The design recommendations for drilled pile foundation presented herein are based on a drilled pile load test performed by Kiewit Western Company at the direction of MCDOT. The load test program, including the drilled pile design, construction, test results and evaluation are presented in R.A.M. Project No. G11603 addressed to Kiewit Western Company.

This firm should be notified for additional evaluation and recommendations should the project design parameters, site use, or conditions encountered during construction differ from those presented herein.

PROPOSED CONSTRUCTION

The proposed Cotton Lane Bridge will be a 17-span, precast, prestressed concrete I-girder structure with a cast-in-place concrete deck, piers and abutments. The bridge will be about 121.5 feet wide with span lengths about 121.4 feet. The area upstream and downstream will be channelized with the channel elevation at about 883.3 feet along the center line of Cotton Lane. The channel will have bank protection on both sides and may contain a low flow channel. We understand that local scour depth at the drilled piles will be 29.2 feet for the 100 year event and 31.4 feet for the 500 year event.

The abutment structure will be supported on 3 drilled pile supports and will have a factored abutment load of 1800 kips per drilled pile. The bridge piers will have four 6-foot diameter columns which extend about 6 feet below finished channel grade. Each column will be supported on a single drilled pile. The factored drilled pile design load will be 1600 kips for each outside

column and 3300 kips for each inside column. Approach fills heights of about 15 feet will be constructed adjacent to both abutments.

SITE CONDITIONS

The Cotton Lane Bridge site over the Gila River is in the existing active flood plain of the Gila River. The flood plain is characterized as a very broad streambed containing numerous braided low flow channels, sand bars, gravel bars, and various zones and isolated areas containing salt cedars and other small trees and weeds. The flow in the river varies considerably throughout the year and the time between wet seasons can be unpredictable due to the size of the watershed and the many dams and recharge facilities upstream of the Cotton Lane crossing. The river flows east to west and is typically dry in the summer months except for some standing water in low pond areas. The north side of the river flood plain is bordered by flood irrigated agricultural land on very low terrace and/or over bank flood areas. The ground in this area raises slowly to the northeast. On the south side of the flood plain the ground rises more rapidly to a higher low terrace of the river. The transition area contains a moderate to heavy growth of weeds, brush and trees. This terrace is also flood irrigated agricultural land which is bounded on the south by various bedrock hills and mountains.

FIELD EXPLORATIONS

The field exploration program at the bridge site was performed in two phases. The initial phase included drilling 17 test borings to depths of 76.0 to 150.5 feet below existing ground surface. The final phase included drilling 19 test borings to depths of 100.0 to 150.0 feet below the existing ground surface. The locations of the test borings are shown on the Site Plan in Appendix A. The location of the initial test borings had a zigzag pattern across the bridge. The final test borings were drilled such that a test boring was drilled at each end of a bridge pier and abutment. The test borings were drilled with an AP1000 percussion hammer drill (Becker drill rig) using a 10-inch diameter double wall drive pipe. The pipe was advanced into the soils using a diesel pile hammer mounted on the drill rig. As the pipe was driven into the ground, pressurized air was forced through the annular space between the two pipe walls and out holes in the pipe shoe. Air removed the drill spoil from inside the inner pipe wall up to the ground surface and into a cyclone connected by a hose to the top of the drill pipe. The cyclone allowed the drill spoils and

water to settle out of the air/water/spoil return. The drilling equipment and crew were provided by Layne Christensen Company.

The test boring locations were determined in the field by a field technician from our firm based on the surveyed location of the center of each abutment and pier provided by MCDOT. During the field explorations, representative disturbed samples from the cyclone, and driven disturbed and undisturbed samples, were obtained at 5-foot intervals. The test borings were logged and soils field classified by our field technician who also directed the field crew. The relatively undisturbed samples (ring samples) and disturbed samples (standard penetration tests (STP)) were obtained by driving a 3-inch diameter, ring-lined, open-end sampler and a 2-inch diameter, split spoon samples, respectively, into the soil with a 140-pound hammer dropping 30 inches. In addition, the number of blows per foot required to drive the drill pipe into the soil was recorded. The results of the test borings are presented in Appendix A.

LABORATORY ANALYSIS

Representative samples obtained during the field exploration were subjected to the following laboratory tests.

		Number of Samples Tested	
Type of Test	Type of Sample	Initial Phase	Final Phase
Consolidations	Undisturbed	9	7
Direct Shear	Undisturbed	27	16
Sieve Analysis and Atterberg Limits	Representative	70	77
pH/Minimum Resistivity	Representative	15	16
Moisture/Dry Density of Rings *	Undisturbed	61	35
Moisture Content *	Split Spoon/ Disturbed Ring	358	449
Soluble Salts, Sulfates & Chlorides **	Representative	15	16

* Reported in the Test Boring Logs.
** Performed by Motzz Laboratory, Inc.

The results of the laboratory analysis are presented in Appendix B.

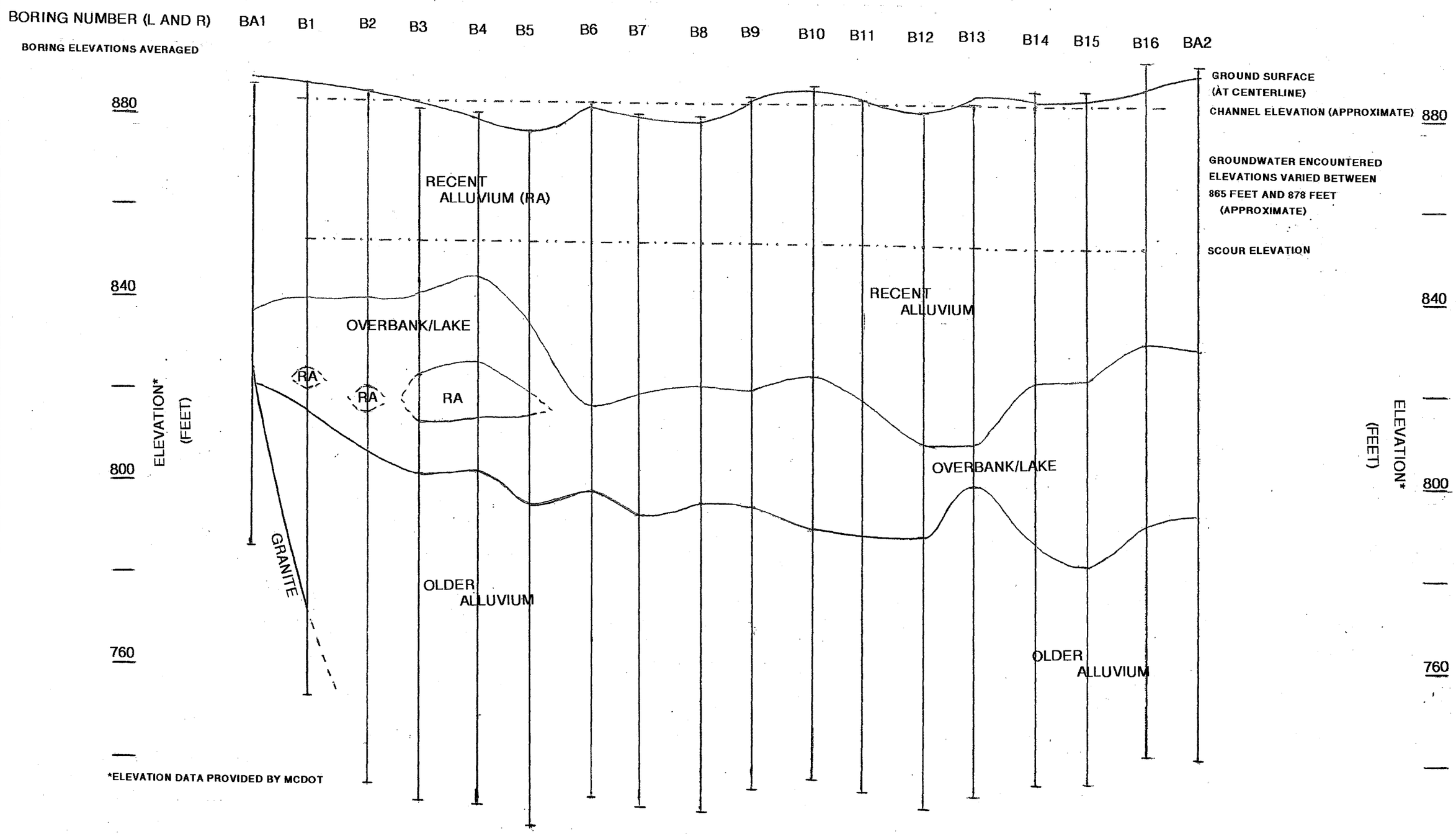
SUBSURFACE CONDITIONS

The subsurface conditions encountered at the locations of test borings were variable. The results of each test boring are presented in Appendix A. Based on all of the test borings, an average subsurface profile (Page 5) was developed along the center line of Cotton Lane at each foundation location. The profile has been generalized and does not indicate changes within the four basic units encountered. The uppermost unit which was encountered in all of the test borings was a recent alluvium unit which consisted of a surface zone of loose sand and silty sand which was underlain by a medium dense to dense deposit of sand and gravel with a trace of silt and some cobbles. This deposit contained varying percentages of cobbles and an occasional boulder and was underlain by dense to very dense sand and gravelly sand with various amounts of silt and cobbles.

The second unit identified was an overbank/lake unit which was also encountered in all of the test borings below the recent alluvium unit. This unit consisted of a very stiff to hard silty clay with some sand and a trace to occasional gravel. This deposit had some sand interbeds and in Test Borings B1L, B2L, B3R, B3L, B4R, B4L, B5R and B5L thicker deposits of recent alluvium were encountered in the overbank/lake deposit.

The third unit identified was an older alluvium which was encountered below the overbank/lake deposit in all test borings except Test Borings BA1R and BA1L where older alluvium was not encountered. This unit consisted of a clayey sand, and silty sand and gravel with various mounts of cobbles. Some of the clasts in this unit were moderately to highly weathered in places. This unit extended to the remaining depth of exploration except in Test Borings BA1R and BA1L, as previously described, and in Test Borings B1L and B1R.

AVERAGE SUBSURFACE PROFILE



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Final

NOTE: STRATA CHANGES/ROCK DASHED WHERE INFERRED REPRSENTATIVE OF AVERAGE OF STRATA/ROCK CHANGES

NOT TO SCALE

The fourth unit identified was a granite. The granite was decomposed to highly weathered, moderately soft at the surface and becomes hard with depth and broken to highly fractured with jointing 60 to 90 degrees from the horizontal. This unit was encountered in Test Borings BA1R, BA1L, B1R and B1L at depths of 62.5 feet, 66.0 feet, 105.5 feet, and 116.5 feet, respectively and extended to the remaining depths of exploration.

Groundwater was encountered in all of the test borings at depths ranging from 2.5 feet to 19.0 feet below existing grades at the time of field exploration.

Based on all of the test borings and the average subsurface profile, the following identified subsurface profiles were developed and have been used in foundation design and lateral design of drilled piles:

				Shear Strength		Lateral Design	
Location	Unit	Depth Interval * (feet)	Submerged Unit Weight (PCF)	Ø (^{0})	C (psf)	Modulus (pci)	Soil Type
Abutment No. 1	Recent Alluvium	0 – 62	56	39	0	25	Sand
	Granite	> 62	90	0	500	--	--
Piers 1 to 5	Recent Alluvium	0 – 45	56	39	0	25	Sand
	Overbank/Lake	45 - 65	59	31	200	64	Silt
	Recent Alluvium	65 – 75	56	39	0	25	Sand
	Overbank/Lake	75 – 80	59	31	200	64	Silt
	Older Alluvium	> 80	67	43	0	64	Sand
Piers 6 to 13	Recent Alluvium	0 – 60	56	39	0	25	Sand
	Overbank/Lake	60 – 85	59	31	200	64	Silt
	Older Alluvium	> 85	67	43	0	64	Sand
Piers 14 to 16 and Abutment No. 2	Recent Alluvium	0 – 65	56	39	0	25	Sand
	Overbank/Lake	65 – 100	59	31	200	64	Silt
	Older Alluvium	> 100	67	43	0	64	Sand

* Measured from Elevation 883.3 feet (finished channel grade).

Silt has $E_{50} = 0.004$

FOUNDATION RECOMMENDATIONS

General:

Abutment No. 1 will be supported on drilled pile foundations socketed into the granite bedrock. Piers 1 to 16 and Abutment No. 2 may be supported on drilled piles designed for side friction and a reduced end bearing based on the parameters developed in the drilled pile load test program (R.A.M. Project No. G11603). The foundation design procedures presented in Chapter 10 of the AASHTO LRFD Bridge Design Specifications (Third Edition, 2004) were used. The 2005 interim revisions were reviewed but no revisions had been made to Chapter 10.

Axial Capacity – Drilled Shaft Piles in Soil:

The following data contains drilled pile design recommendations for Piers 1 to 16 and Abutment No. 2. The required depth of pile embedment and pile diameter should be calculated for both design axial and design lateral loads to determine the most critical factor design load case. The recommendations presented are based on currently available bridge geometry and factored loads. If bridge plans and/or loads change significantly, we should be notified for review and possible supplemental recommendations. Since the site soils are variable and are below the groundwater table, the following design procedures for vertical capacity were used:

- Side Resistance (q_s) on the pile in the recent alluvium and the older alluvium units was calculated using the following equation (Touma and Reese – 1974) (AASHTO Table 10.8.3.4.2-1).

$$q_s = K \sigma'_v \tan \phi_f$$

The side resistance is multiplied by the side surface areas of the pile and the length of each interval using the average σ'_v for that interval and the average ϕ_f for the interval. The interval values were then summed to determine the capacity (Q_{ss}) for the units. K = 1.5 was used based on the drilled pile load test.

- Side resistance (q_s) on the pile in the overbank/lake unit was calculated using the following equation.

$$q_s = \alpha S_u$$

The side resistance is multiplied by the side surface area of the pile for the average S_u calculated in that interval. The interval values were summed to develop the capacity (Q_{sc}). An $\alpha = 0.57$ was used based on the drilled pile load test.

- End Bearing (Q_T) was calculated using the following equation.

$$Q_T = q_T A_T$$

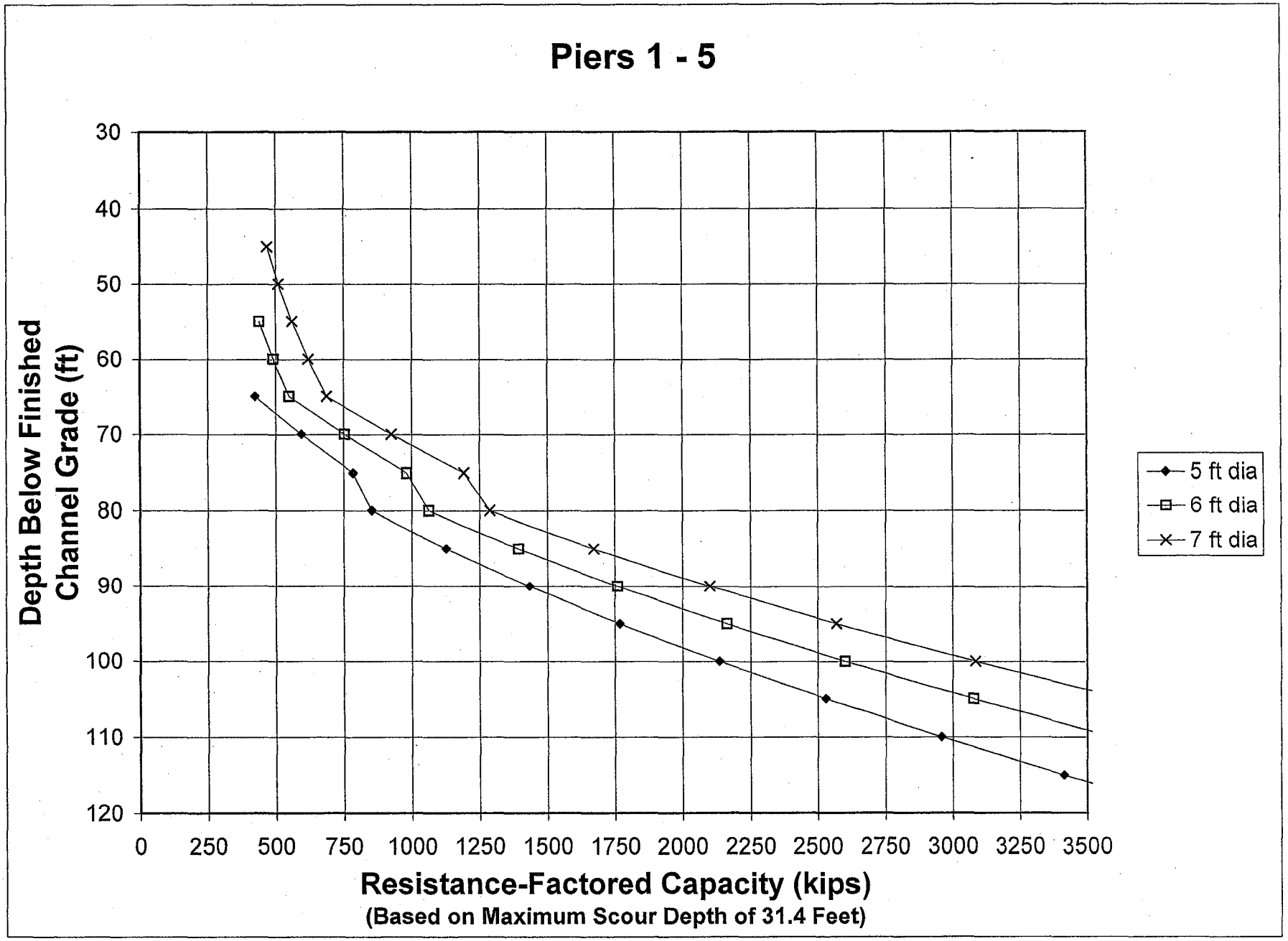
Where Q_T – 12.5 ksf based on the observed value from drilled pile load test at a tip movement of approximately 1/8 inch. This value is substantially reduced and takes into account only those movements which occur at the pile tip as the resistance of the pile in side friction is developed.

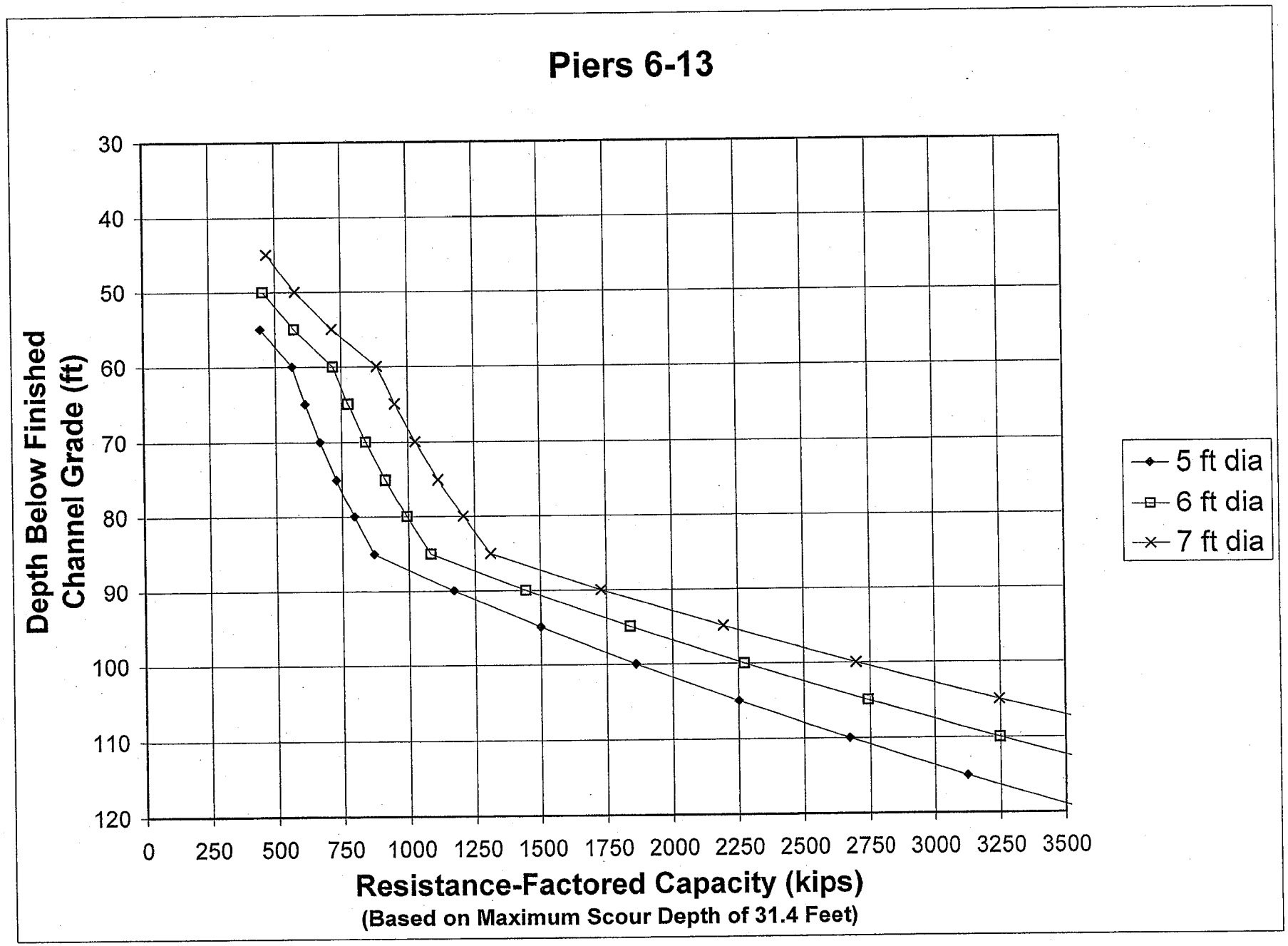
- Allowable pile capacity Q_{all} was calculated using the following equation.

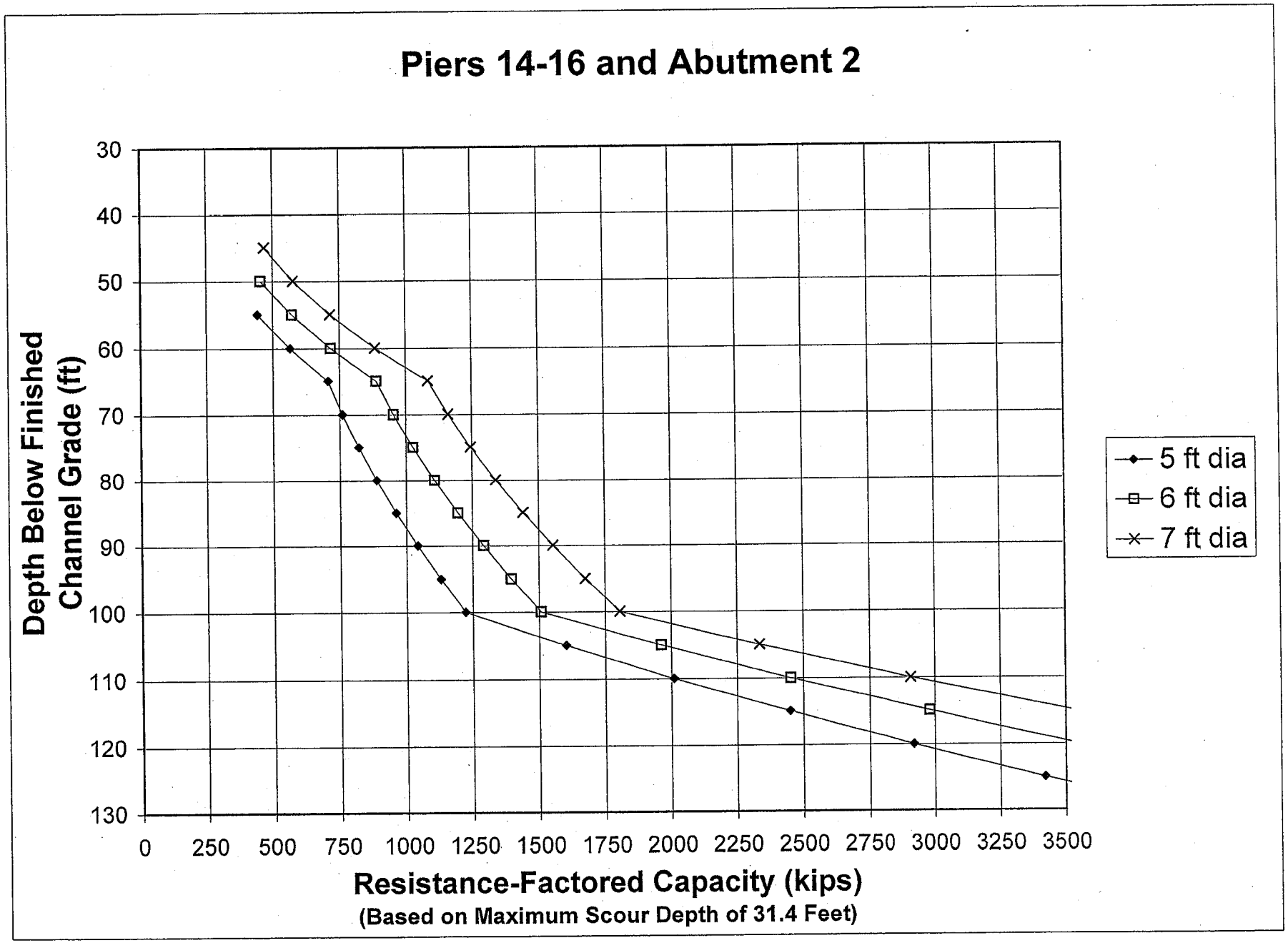
$$Q_{all} = [Q_{SS} + Q_{SC} + Q_T] \text{ x Resistance Factor}$$

Resistance factor as shown in AASHTO Table 10.5.5-3 for values based on a load test and applied to the side resistance and the end bearing = 0.8

The allowable drilled pile capacities shown on the drilled pile resistance-factored capacity charts (Pages 9, 10 and 11) should be considered maximums for the factored loads presented earlier and a maximum local scour of 31.4 feet. The capacity charts include a reduced capacity for the downdrag friction load on the drilled piles at the abutments as a result of approach fill settlements.


Piers 1 - 5
Depth Below Finished Channel Grade (ft)
30
40
50
60
70
80
90
100
110
120
0
250
500
750
1000
1250
1500
1750
2000
2250
2500
2750
3000
3250
3500
Resistance-Factored Capacity (kips)
(Based on Maximum Scour Depth of 31.4 Feet)
5 ft dia
6 ft dia
7 ft dia


Piers 6-13
Depth Below Finished Channel Grade (ft)
30
40
50
60
70
80
90
100
110
120
0
250
500
750
1000
1250
1500
1750
2000
2250
2500
2750
3000
3250
3500
Resistance-Factored Capacity (kips)
(Based on Maximum Scour Depth of 31.4 Feet)
5 ft dia
6 ft dia
7 ft dia


Piers 14-16 and Abutment 2
Depth Below Finished Channel Grade (ft)
30
40
50
60
70
80
90
100
110
120
130
0
250
500
750
1000
1250
1500
1750
2000
2250
2500
2750
3000
3250
3500
Resistance-Factored Capacity (kips)
(Based on Maximum Scour Depth of 31.4 Feet)
5 ft dia
6 ft dia
7 ft dia

Using the load transfer curves measured in the load test, it is possible to estimate the amount of vertical load associated with a given amount of vertical movement of the drilled shaft. Smaller diameters than the load test pile were approached by the normalized movements on the z- and w-axes. A tip movement was estimated, and the corresponding tip resistance on the q-w estimated. Then, the pile was discretized into several sections. Working from bottom to top, the load transfer to the soil was calculated, and for each section compression was calculated and added to the total movement. This process was repeated until a total vertical load approximately equal to the design load was developed. For a load of approximately 3200 kips on the 6 foot diameter shafts, with lengths given by the capacity charts above, the estimated vertical movement of the drilled shaft is approximately 0.40 to 0.45 inches. This value includes compression of the 31.4-foot portion within the scour zone.

Piles should be spaced no closer than 6.0 diameters center-to-center (CTC) at abutments and piers. If closer spacing is required, group reduction factors should be applied to the pile capacity charts in accordance with AASHTO. This reduction factor is 1.0 for 6.0 diameters CTC and 0.65 for 2.5 diameters. The reduction factor should be multiplied by the allowable capacity of a single pile. No piles shall be placed closer than 3.0 diameters CTC.

The drilled shaft contractor should be provided a copy of the drilled pile load test (R.A.M. Project No. G11603) for his own evaluation of the constructability of drilled piles at the site.

The drilled piles shall be constructed in accordance with MCDOT Standard Specifications. A groundwater table was encountered at shallow depths below existing grade. The groundwater will vary considerably as discussed earlier. These conditions will exist during bridge construction.

Axial Capacity of Drilled Piles With Rock-Socket:

Based on the results of the field explorations, drilled piles at Abutment No. 1 will encounter granite bedrock at a depth of about 62.5 feet to 66.0 feet below the ground surface (approximately Elevation 821 to 825 feet). The previous Resistance Factored Capacity Charts indicate that the drilled piles will not have capacities that meet the factored loads before granite

bedrock is encountered. Therefore drilled piles with rock sockets will be required. The axial resistance resulting from side resistance and tip resistance of the drilled piles was determined using AASHTO 10.8.3.5. and a resistance factor of 0.5 (AASHTO Table 10.5.5-3). The resistance factored capacity of 64 D^2 kips may be used in design where D is the drilled socket diameter and the rock socket must be at least 2D long.

Estimated settlements are less than 3/8 inch for the anticipated loading conditions. Piles should be spaced no closer than 6.0 diameters center-to-center (CTC) at the abutment. A group reduction factor should be applied to the pile capacity charts in accordance with AASHTO. This reduction factor is 1 for 6 diameters CTC and 0.65 for 2.5 diameters. The reduction factor should be multiplied by the resistance factored capacity. The minimum drilled pile diameter should be 4.0 feet. All abutment fills which will be penetrated by a drilled pile should not contain any material larger than 6 inches in size. Larger material may be difficult to drill through and result in additional cost.

Seismic Considerations:

Based on ADOT Report Number: AZ92-344 the project site is in the Sonoran Zone, is tectonically stable and has very little tectonic activity. The report indicates the following:

Maximum Credible Earthquake – Magnitude 6.5
Peak Ground Acceleration – 0.027 to 0.030 with a 90% Non-Exceedance in 50 Years

Based on AASHTO Section 3.10, the following may be used in design:

Seismic Performance Zone – 1 (Table 3.10.4-1)
Site Coefficient – Type I; S= 1.0 (Abutment No. 1 and Pier 1) (Table 3.10.5.1-1)
Type II; S= 1.2 (Piers 2 to 16 and Abutment No. 2) (Table 3.10.5.1-1)

Lateral Earth Pressures:

The following tabulation presents the recommended lateral earth pressures and base friction values which should be used in the lateral design of retaining walls. Lateral capacities of drilled piles should be based on the following P-Y curve parameters and on a computer program such as COM624G or LPILE1. AASHTO 10.8 does not contain group reduction factors for lateral loads.

Therefore, we recommend using the group reduction factors previously presented for vertical group capacity (10.8.3.9). The lateral pressures following are equivalent fluid pressures for average anticipated conditions.

Active Pressures:
Backfill ----------30 psf/ft
Restrained Wall Pressures:
Backfill ----------50 psf/ft
Passive Pressures:
Continuous- Compacted Fill---------- 250 psf/ft

				Shear Strength		Lateral Design	
Location	Unit	Depth Interval * (feet)	Submerged Unit Weight (PCF)	Ø (^{0})	C (psf)	Modulus (pci)	Soil Type
Abutment No. 1	Recent Alluvium	0 – 62	56	39	0	25	Sand
	Granite	> 62	90	0	500	--	--
Piers 1 to 5	Recent Alluvium	0 – 45	56	39	0	25	Sand
	Overbank/Lake	45 - 65	59	31	200	64	Silt
	Recent Alluvium	65 – 75	56	39	0	25	Sand
	Overbank/Lake	75 – 80	59	31	200	64	Silt
	Older Alluvium	> 80	67	43	0	64	Sand
Piers 6 to 13	Recent Alluvium	0 – 60	56	39	0	25	Sand
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	Older Alluvium	> 100	67	43	0	64	Sand

* Measured from Elevation 883.3 feet (finished channel grade).

Silt has $E_{50} = 0.004$

P-Y Curve Parameters of Rock Socket:
Initial Slope ---------- ES = $2X10^6$ psi ---------- (0 to 0.000 4D)
Secondary Slope------ ES = $1X10^5$ psi ------ (greater than 0.000 4D)

The above equivalent fluid pressures are for vertical walls with horizontal backfills and do not include temporary loads imposed by compaction equipment or permanent loads resulting from

backfill swell pressures, hydrostatic pressures or surcharge loads. All retaining walls should contain weep holes to reduce the potential for the buildup of hydrostatic pressures.

Compaction of the backfill soils against footings or walls designed to provide passive resistance should be accomplished to a minimum 95 percent of the maximum AASHTO T99 density to develop this resistance with low strains.

Fill materials below and adjacent to retaining walls should be select granular fill soils meeting the requirement of MCDOT Standard Specifications.

APPENDIX A
FIELD EXPLORATIONS

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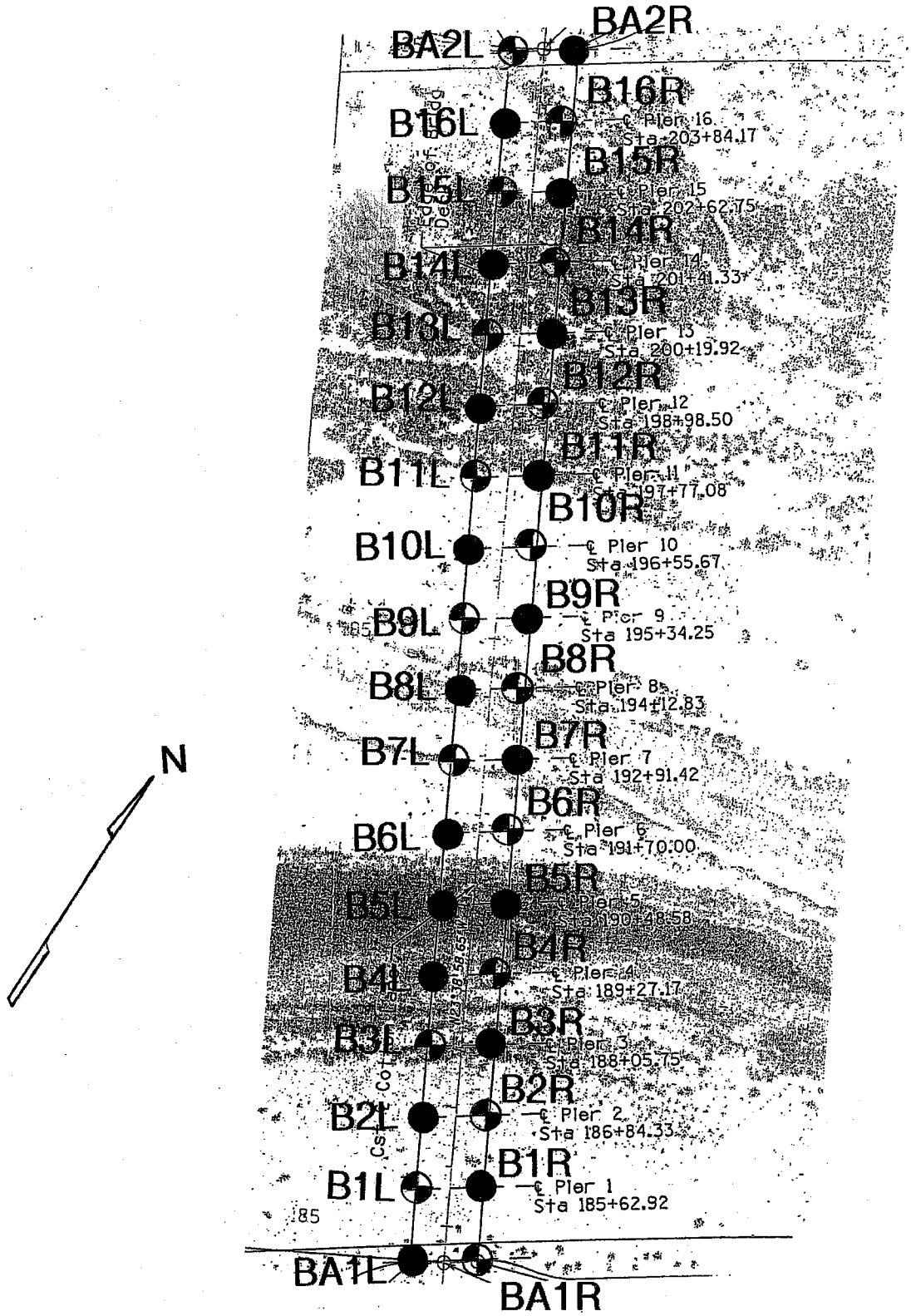


Test Boring Location Initial Phase ⊕

Test Boring Location Final Phase ●

Not To Scale

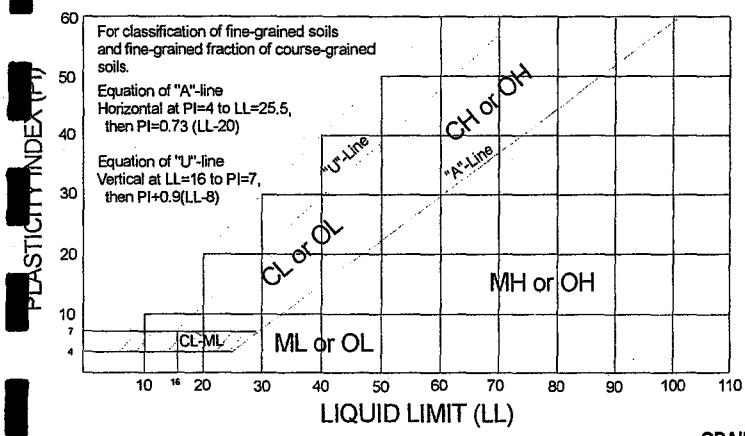
SITE PLAN

LEGEND

CLASSIFICATION OF SOILS

ASTM Designation: D2487-83
(Based on Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests					Soil Classification: Group Symbol	Soil Classification: Name
COARSE-GRAINED SOILS More than 50% retained on No. 200 Sieve	Gravels More than 50% coarse fraction retained on No. 4 Sieve	Clean Gravels Less than 5% fines	Cu > 4 and 1 < Cc < 3		GW	Well graded gravel
			Cu<4 and/or 1>Cc>3		GP	Poorly graded gravel
		Gravels with Fines More than 12% fines	Fines classify as ML or MH		GM	Silty gravel
			Fines classify as CL or CH		GC	Clayey gravel
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines	Cu > 6 and 1 < Cc < 3		SW	Well-graded sand
			Cu<6 and/or 1>Cc>3		SP	Poorly graded sand
		Sands with Fines More than 12% fines	Fines classify as ML or MH		SM	Silty sand
			Fines classify as CL or CH		SC	Clayey sand
FINE-GRAINED SOILS 50% or more passes the No. 200 Sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI>7 and plots on or above "A" line		CL	Lean clay
			PI<4 or plots below "A" line		ML	Silt
		Organic	Liquid Limit - oven dried / Liquid limit - not dried	<0.75	OL	Organic clay / Organic silt
	Silts and Clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line		CH	Fat clay
			PI plots below "A" line		MH	Elastic silt
		Organic	Liquid limit - oven dried / Liquid limit - not dried	<0.75	OH	Organic clay / Organic silt
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor				PT	Peat



TEST BORING LOG DEFINITIONS

Blows per foot using 140 pound hammer with 30 inch free-fall.

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density pcf	Water Content, %	Unified Classification	Description

C = Blows/Foot for AP1000 Diesel Hammer Driving 10" Dia. Double Wall Pipe
N = Standard Penetration Resistance (ASTM D1586)
R = Penetration Resistance (3 inch diameter ring line sampler)

GRAIN SIZES

U.S. STANDARD SERIES SIEVE: 200, 40, 10, 4 — CLEAR SQUARE SIEVE OPENINGS: 3/4", 3", 12"

SILTS & CLAYS DISTINGUISHED ON BASIS OF PLASTICITY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

MOISTURE CONDITION (INCREASING MOISTURE ⟶)

DRY — SLIGHTLY DAMP — DAMP — MOIST (Plastic Limit) — VERY MOIST — WET (SATURATED) (Liquid Limit)

CONSISTENCY CORRELATION: CLAYS & SILTS	BLOWS/FOOT*	RELATIVE DENSITY CORRELATION: SANDS & GRAVELS	BLOWS/FOOT*
VERY SOFT	0-2	VERY LOOSE	0-4
SOFT	2-4	LOOSE	4-10
FIRM	4-8	MEDIUM DENSE	10-30
STIFF	8-16	DENSE	30-50
VERY STIFF	16-32	VERY DENSE	OVER 50
HARD	OVER 32		

*Number of blows of 140 lb hammer falling 30" to drive a 2" O.D. (1-3/8" I.D.) split-spoon sampler (ASTM D1586).

TEST BORING LOGS
INITIAL
PHASE

R·A·M

TEST BORING LOG

BORING NO. BA1R **DATE:** 5-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.80'
STA. 184+44.54; R 57.40' **W.T. ELEV.** 868.80'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	8					SP	Sand, Trace Silt, With Gravel, Trace to Some Cobbles; brown, damp, medium dense to very dense, non-plastic fines.
	13						
	8						
	7						
5	53	44	N		4		
	24						
	11						
	23						
	14						
10	12	34	R	*	6		
	10						
	13						
	12						
	16						
15	28	77	N		8	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	25						
	45						
	35						
	23					▽	Groundwater at 19 feet. (5-19-05)
20	39	50/6"	R	*	14		
	27						
	22						
	25						
	40						
25	20	50/3"	N		10		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA1R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 184+44.54; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-19-05 **BY:** BM
SHEET NO. 2 **OF** 4
GROUND ELEV. 887.80'
W.T. ELEV. 868.80'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	16					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	42						
	49						
	15						
30	31	30	R	*	21		30
	28						
	36						
	23						
	33						
35	6	50/6"	N		23		35
	6						Interbedded sand.
	49						
	67						
	44						
40	26	50/6"	R	*	15		40
	32						
	33						
	23						
	48						Interbedded sand, some to trace clay and gravel.
45	56	88/10"	N		21		45
	47						
	45						
	56						
	34						
50	26	27	R	*	24		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA1R **DATE:** 5-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.80'
STA. 184+44.54; R 57.40' **W.T. ELEV.** 868.80'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	18					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	22					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	25							
	26							
55	17	31	N		31			55
	26						Interbedded silty sand.	
	27							
	37							
	62							
60	53	50/6"	R	NR				60
	30							
	33							
	48						Granite; mottled white, decomposed, weathering decreasing with depth.	
	51							
65	55	50/5"	N		25			65
	37							
	131							
	143							
	163							
70	142	50/5"	R	*	19			70
	131							
	155							
	160							
	185							
75	130	50/3"	N		17			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA1R **DATE:** 5-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.80'
STA. 184+44.54; R 57.40' **W.T. ELEV.** 868.80'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	215						Granite; mottled white, hard; cont.
							Stopped drilling at 76 feet.
							Groundwater observed at 19 feet.
							NR = No Recovery
80							* Sample too disturbed to determine density. 80
85							85
90							90
95							95
100							100

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 5
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.72'
STA. 185+59.61; L 57.40' **W.T. ELEV.** 871.72'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	11					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.	
	12							
	13							
	15							
5	14	14	R	*	3			5
	12							
	21							
	44							
	17							
10	22	31	N		14			10
	23							
	30							
	20							
	27							
15	28	50/6"	R	*	112			15
	31					▽	Groundwater at 16 feet. (5-18-05)	
	53							
	27							
	32							
20	35	50/5"	N		14			20
	38							
	43							
	48							
	23							
25	33	50/3"	R	*	10			25
							- continued -	

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 5
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.72'
STA. 185+59.61; L 57.40' **W.T. ELEV.** 871.72'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	31					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	29						
	24						
	30						
30	31	61	N		10		30
	20						
	37						
	35						
	28						
35	21	56	R	*	25		35
	21						
	37						
	42						
	47						
40	--	50/3"	N		14		40
	35						
	36						
	37						Interbedded clayey sand and sand, some to trace clay and gravel.
	45						
45	47	50/4"	R	*	16		45
	46						
	27					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	28						
	18						
50	42	83/9"	N		23		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 5
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.72'
STA. 185+59.61; L 57.40' **W.T. ELEV.** 871.72'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	23					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	28						
	29						
	36						
55	32	50/6"	R	86	35		55
	33						
	30						
	33						
	26						
60	--	45	N		13	SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines. 60
	42						
	36						
	37						
	35						
65	43	50/5"	R	90	30		65
	42						Interbedded sandy clay.
	41						
	28						
	35						
70	75	50/3"	N		21		70
	42					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	30						
	27						
	37						
75	37	50/5"	R	104	18		75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 185+59.61; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-18-05 **BY:** BM
SHEET NO. 4 **OF** 5
GROUND ELEV. 887.72'
W.T. ELEV. 871.72'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	38					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	36						
	47						
	29					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
80	70	50/4"	N		16		
	60						
	70						
	52						
	75						
85	72	50/4"	R	NR			
	104						
	87						
	114						
	132						
90	92	50/4"	N		15		
	70						
	69						
	78						
	89						
95	60	50/4""	R	NR			
	93						
	80						
	50						
	115						
100	105	50/4"	N		16		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 5
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.72'
STA. 185+59.61; L 57.40' **W.T. ELEV.** 871.72'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	123					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	106							
	81							
	173							
105	101	50/5"	R	*	23			105
	162						Granite; mottled white, decomposed, weathering decreasing with depth.	
	217							
	220							
	115							
110	128	50/3"	N		20			110
	155							
	180							
	160							
	255	50/3"	R	*				
115	200	50/3"	N		8			115
							Stopped drilling at 115.3 feet. Groundwater observed at 16 feet. NR = No Recovery	
							* Sample too disturbed to determine density.	
120								120
125								125

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 186+90.64; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-17-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 885.31'
W.T. ELEV. 876.31'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	6					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	26						
	26						
	37						
5	36	89/11"	N		2		5
	58						
	33						
	44						
	29					▽	
10	22	50/4"	R	*	3	⊻	Groundwater at 9 feet. (5-17-05) 10
	28						
	37						
	29						
	28						
15	24	50/6"	N		7		15
	45						
	71						
	22						
	34						
20	36	50/6"	R	*	8		20
	30						
	33						
	27						
	22						
25	20	50/6"	N		18		25
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2R **DATE:** 5-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.31'
STA. 186+90.64; R 57.40' **W.T. ELEV.** 876.31'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	18					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	23							
	32							
	28							
30	27	50/6"	R	*	9			30
	30							
	55							
	22							
	28							
35	34	50/6"	N		9		Sand, some to trace clay, gravel, and cobbles.	35
	38							
	41							
	37							
	35							
40	33	50/6"	R	*	14			40
	31							
	35							
	38							
	30							
45	35	50/6"	N		9			45
	37							
	24					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	18							
	22							
50	74	44	N		57			50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2R **DATE:** 5-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.31'
STA. 186+90.64; R 57.40' **W.T. ELEV.** 876.31'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	76					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	69						
	57						
	68						
55	70	39	R	86	32		
	63						
	57						
	44						
	51						
60	29	50/5"	R	103	25		Interbedded sand, some to trace silt.
	22						
	15						
	16						
	50						
65	39	50/5"	N		16		Interbedded clayey sand, with gravel.
	53						
	98						
	47						
	35						
70	55	50/4"	R	NR			
	41						
	54						
	51					SC	Clayey Sand, With Clay, Some Gravel; brown, damp to very damp, dense to very dense, low to medium plasticity fines, includes moderate to highly weathered clasts.
	57						
75	50	50/3"	N		14		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2R **DATE:** 5-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.31'
STA. 186+90.64; R 57.40' **W.T. ELEV.** 876.31'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	65					SC	Clayey Sand, With Clay, Some Gravel; cont.	
	40						Interbedded Sandy Clay.	
	55							
	53							
80	55	61	R	114	14			80
	56							
	58							
	54							
	50							
85	55	68	N		16	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	85
	52							
	38							
	48							
	52							
90	97	50/3"	R	115	11			90
	83							
	236							
	140							
	54							
95	44	50/6"	N		19			95
	66							
	65							
	49							
	39							
100	52	50/4"	R	NR				100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2R **DATE:** 5-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.31'
STA. 186+90.64; R 57.40' **W.T. ELEV.** 876.31'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	43					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	57							
	68							
	50							
105	78	50/6"	N		15			105
	59							
	49							
	46							
	64							
110	52	50/4"	R	NR				110
	50							
	65							
	68							
	62							
115	30	50/4"	N		6			115
	55							
	62							
	43							
	57							
120	70	50/2"	R	NR				120
	56							
	75							
	80							
	84							
125	79	50/6"	N					125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2R **DATE:** 5-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.31'
STA. 186+90.64; R 57.40' **W.T. ELEV.** 876.31'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	68					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	70							
	75							
	79							
130	61	50/4"	R	*	13			130
	55							
	45							
	47							
	63							
135	61	50/5"	N		6			135
	58							
	64							
	53							
	58							
140	70	89/11"	R	*	6			140
	62							
	69							
	74							
	58							
145	88	50/3"	N		NR			145
	124							
	68							
	66							
	47							
150		50/4"	R	*	11			150

Stopped drilling at 150 feet.
Groundwater observed at 9 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 882.16'
STA. 187+99.4; L 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	33					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	36						
	41						
	27						
5	18	77/10"	R	*	3		5
	19						
	26						
	25						Interbedded sand, silty sand and clayey sand.
	24					▽	
10	79	50/6"	N		12	▽	Groundwater at 9 feet. (5-18-05) 10
	57						
	35						
	30						
	29						
15	30	50	R	*	10		15
	31						
	27						
	26						
	25						
20	59	50/5"	N		14		20
	46						
	42						
	--						
	--						
25	15	86	R	*	8		25

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 882.16'
STA. 187+99.4; L 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	45					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	18						
	17						
	40						
30	59	50/6"	N		7		30
	39						
	--						
	--						
	30						
35	36	50/5"	R	*	20		35
	38						Interbedded clayey sand and sand, some to trace clay.
	37						
	47						
	23					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
40	36	65	N		24		40
	48						
	44						
	46						
	47						
45	52	49	R	NR			45
	48						
	46						
	41						
	33						
50	53	31	N		40		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 882.16'
STA. 187+99.4; L 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	57					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	49							
	37							
	53							
55	61	66/9"	R	86	35			55
	63							
	60							
	57							
	52					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.	
60	51	32	N		24			60
	35							
	38							
	37							
	35							
65	23	45	R	NR			Interbedded sandy clay and clayey sand.	65
	54							
	27							
	25							
	35							
70	--	64	N		26	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	70
	49							
	52							
	71							
	79							
75	45	50/6"	R	105	19			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 882.16'
STA. 187+99.4; L 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	53					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	34						
	52					SC	Clayey Sand, With Clay, Some Gravel; brown, damp to very damp, dense to very dense, low to medium plasticity fines, includes moderate to highly weathered clasts.
	40						
80	60	50/6"	N		18		
	67						
	80						
	47					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	57						
85	82	50/5"	R	109	16		
	60						
	30						
	37						
	43						
90	49	50/6"	N		17		
	74						
	80						
	90						
	62						
95	65	50/4"	R	NR			
	49						
	47						
	64						
	108						
100	135	50/6"	N		22		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 882.16'
STA. 187+99.4; L 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	146					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	100							
	116							
	83							
105	109	50/5"	R	118	12			105
	76							
	66							
	68							
	60							
110	52	50/6"	N		21			110
	55							
	46							
	54							
	60							
115	53	76/9"	R	*	11			115
	67							
	44							
	69							
	51							
120	54	50/1"	N		13			120
	53							
	65							
	42							
	52							
125	56	50/6"	R	*	6			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3L **DATE:** 5-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 882.16'
STA. 187+99.4; L 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	63					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.
	47						
	53						
	57						
130	54	77/8"	N		4		130
	73						
	70						
	79						
	55						
135	95	50/4"	R	NR			135
	68						
	49						
	64						
	49						
140	63	50/4"	N		15		140
	78						
	93						
	64						
	78						
145	79	50/6"	R	*	8		145
	50						
150		50/5"	N		12		150

Stopped drilling at 149.5 feet.
Groundwater observed at 9 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 189+33.48; R57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-20-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 881.36'
W.T. ELEV. 878.86'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	19					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	27						
	31					▽	Groundwater at 2.5 feet.
	25						(5-20-05)
5	23	49	N		8		
	18						
	23						
	26						
	46						
10	28	62	R	*	11		
	35						
	30						
	24						
	15						
15	18	51	N		14		
	19						
	16						
	26						
	29						
20	28	50/6"	R	*	7		
	26						
	18						
	23						
	24						
25	10	22	N		21		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4R **DATE:** 5-20-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.36'
STA. 189+33.48; R57.40' **W.T. ELEV.** 878.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	6					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	7						Interbedded sand.	
	30							
	38							
30	40	50/6"	R	*	21			30
	32							
	41							
	40							
	31							
35	24	74/10"	N		18			35
	12							
	25					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	35							
	36							
40	40	50/3"	R	*	23			40
	34							
	31							
	31							
	29							
45	27	85/10"	N		20			45
	32							
	31							
	28							
	26							
50	29	50/6"	R	78	38			50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4R **DATE:** 5-20-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.36'
STA. 189+33.48; R57.40' **W.T. ELEV.** 878.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	31					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	36						
	28						
	12					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
55	15	50/5"	N		20		
	16						
	24						
	35						
	26						
60	64	50/5"	R	NR			
	26						
	29						
	27						
	25						
65	26	54	N		20		
	27						
	28					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	30						
	29						
70	79	50/4"	R	NR			
	35						
	60						
	45						
	47						
75	43	50/6"	N		20		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4R **DATE:** 5-20-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.36'
STA. 189+33.48; R57.40' **W.T. ELEV.** 878.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	44					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	51					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	51						
	29						
80	40	50/9"	R	91	15		
	49						
	80						
	49						
	61						
85	29	50/5"	N		12		
	39						
	29						
	49						
	34						
90	64	50/5"	R	NR			
	125						
	247						
	200						
	210						
95	45	50/5"	N		14		
	64						
	145						
	105						
	156						
100	145	50/3"	R	*	12		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4R **DATE:** 5-20-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.36'
STA. 189+33.48; R57.40' **W.T. ELEV.** 878.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	245					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	84							
	71							
	122							
105	86	50/4"	N		9			105
	106							
	80							
	72							
	82							
110	130	50/6"	R	*	15			110
	62							
	72							
	68							
	96							
115	87	50/5"	N		15			115
	66							
	114							
	130							
	99							
120	64	50/5"	R	*	11			120
	114							
	58							
	60							
	49							
125	113	50/5"	N		7			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4R **DATE:** 5-20-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.36'
STA. 189+33.48; R57.40' **W.T. ELEV.** 878.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	95					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	90							
	66							
	54							
130	77	50/2"	R	*	8			130
	110							
	94							
	73							
	122							
135	100	50/3"	N		11			135
	79							
	81							
	90							
	75							
140	111	50/4"	R	*	7			140
	117							
	96							
	81							
	72							
145	101	50/5"	N		12			145
	112							
	87							
	97							
	102							
150		50/4"	R	*	9		Stopped drilling at 150 feet. Groundwater observed at 2.5 feet. NR = No Recovery	150
							* Sample too disturbed to determine density.	

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6R **DATE:** 5-2-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.00'
STA. 191+76.31, R 54.40' **W.T. ELEV.** 878.00'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	19					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; brown, saurated, dense to very dense, non-plastic fines.
	33						
	28						
	34						
5	18	34	N		NR	▽	5
	21						Groundwater at 5 feet. (5-02-05)
	23						
	16						
	15						
10	40	50/5"	R	*	13		10
	18						Interbedded sand and gravel.
	24						
	27						
	33						
15	29	50/3"	N		16		15
	13						
	14						
	17						
	100						
20	42	50/5"	R	*	16		20
	28						
	43						
	53						
	32						
25	45	50/3"	N		25		25
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6R **DATE:** 5-2-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.00'
STA. 191+76.31, R 54.40' **W.T. ELEV.** 878.00'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	10					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; cont.	
	20							
	48							
	32							
30	51	50/5"	R	*	11			30
	24							
	31							
	45							
	39							
35	47	50/5"	N		8		Interbedded clayey sand, some gravel, trace cobbles.	35
	43							
	19							
	19							
	21							
40	53	50/2"	R	*	2			40
	39							
	18							
	26							
	6							
45	45	11	N		22			45
	32						Interbedded sand, trace gravel.	
	29							
	20							
	29							
50	15	18	R	109	17			50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6R **DATE:** 5-2-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.00'
STA. 191+76.31, R 54.40' **W.T. ELEV.** 878.00'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	20					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; cont.	
	--							
	--							
	16							
55	9	21	N		22			55
	11							
	26							
	12							
	11							
60	26	7	R	102	24	SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.	60
	17							
	23							
	14							
	14							
65	42	12	N		31			65
	--							
	69							
	19					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	42							
70	30	16	R	99	26			70
	25							
	28							
	25							
	35							
75	31	31	N		32			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6R **DATE:** 5-2-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.00'
STA. 191+76.31, R 54.40' **W.T. ELEV.** 878.00'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	45					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	44							
	50							
	22							
80	50	82/9"	R	106	20			80
	66							
	58							
	48							
	57							
85	11	48	N		20	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	85
	34							
	24							
	58							
	33							
90	32	50/5"	R	NR				90
	40							
	45							
	43							
	44							
95	62	50/4"	R	NR				95
	88							
	85							
	85							
	130							
100	--	50/6"	R	119	7			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6R **DATE:** 5-2-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.00'
STA. 191+76.31, R 54.40' **W.T. ELEV.** 878.00'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	
	63					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	48							
	44							
	25							
105	60	50/4"	N		18			105
	25							
	38							
	27							
	33							
110	37	50/4"	R	NR				110
	56							
	37							
	28							
	49							
115	26	30	N		14			115
	46							
	53							
	48							
	47							
120	54	50/4"	R	NR				120
	52							
	40							
	54							
	51							
125	55	50/6"	N		18			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6R **DATE:** 5-2-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.00'
STA. 191+76.31, R 54.40' **W.T. ELEV.** 878.00'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	65					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	47							
	37							
	70							
130	50	22	R	117	7			130
	50							
	48							
	56							
	60							
135	43	29	N		NR			135
	50							
	55							
	51							
	34							
140	42	50/6"	R	NR				140
	73							
	70					SM/GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non- plastic fines; includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	
	71							
	55							
145	50	50/3"	N		13			145
	30							
	50							
	58						Stopped drilling at 149.6 feet. Groundwater observed at 5 feet. NR = No Recovery	
	52							
150		50/4"	R	NR				150

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7L **DATE:** 5-3-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.08'
STA. 192+85.11; L 57.40' **W.T. ELEV.** 877.08'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	9					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	32						
	31						
	41					▽	
5	25	66	R	*	18	▽	Groundwater at 4 feet. (5-3-05) 5
	--						
	120						
	18						
	30						
10	26	50/4"	N				10
	24						
	20						
	9						
	9						Interbedded clayey sand.
15	8	50/6"	R	*	4		15
	31						
	27						
	49						
	26						
20	34	50/6"	N		6		20
	21						
	17						
	17						
	38						
25	33	50/5"	R	*	32		25

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7L **DATE:** 5-3-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.08'
STA. 192+85.11; L 57.40' **W.T. ELEV.** 877.08'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	28					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	25						Interbedded sand, some to trace silt and gravel, occasional cobbles.
	35						
	42						
30	115	50/5"	N		3		30
	45						
	45						
	42						Interbedded silty and clayey sands.
	26						
35	44	50/3"	R	NR			35
	31					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; brown, saturated, dense to very dense, non-plastic fines.
	19						
	9						
	10						
40	23	11	N		14		40
	18						
	9						
	40						
	19						
45	20	18	R	*	33		45
	9					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	6						
	5						
	23						
50	12	15	N		24		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7L **DATE:** 5-3-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.08'
STA. 192+85.11; L 57.40' **W.T. ELEV.** 877.08'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	26					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; cont.	
	17						Interbedded sand and gravel.	
	8						Interbedded clayey sand and sandy clay.	
	14							
55	20	26	R	*	26			55
	21							
	29							
	22							
	29							
60	14	33	N		10		Interbedded silty sand.	60
	17							
	22							
	30							
	41					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
65	49	38	R	93	24			65
	30							
	62							
	27							
	50							
70	75	42	N		27			70
	48							
	39							
	34							
	41							
75	27	40	R	87	39			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7L **DATE:** 5-3-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.08'
STA. 192+85.11; L 57.40' **W.T. ELEV.** 877.08'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	62					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	60							
	68							
	56							
80	62	33	N		30			80
	33							
	30							
	31						Interbedded clay sand, some gravel.	
	20							
85	20	33	R	110	17			85
	42							
	27					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	
	28							
	24							
90	38	23	N		16			90
	44							
	35							
	63							
	33							
95	25	50/6"	R	106	19			95
	30							
	43							
	34							
	33							
100	35	19	N		20			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7L **DATE:** 5-3-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.08'
STA. 192+85.11; L 57.40' **W.T. ELEV.** 877.08'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	31					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	52							
	58							
	62							
105	63	50/6"	R	112	17			105
	98							
	73							
	60							
	80							
110	60	36	N		25			110
	37							
	48							
	34					SM/GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	
	30							
115	27	50/6"	R	NR				115
	45							
	25							
	22							
	57					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	
120	46	50/6"	N		19			120
	49							
	47							
	55							
	34							
125	40	50/4"	R	*	16			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 192+85.11; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-3-05 **BY:** BM
SHEET NO. 6 **OF** 6
GROUND ELEV. 881.08'
W.T. ELEV. 877.08'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	43					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.
	51						
	73						
	23						
130	27	50/5"	N		11		130
	36						
	35						
	42						
	52						
135	18	50/5"	R	*	16		135
	39						
	45						
	53						
	51						
140	61	82/8"	N		12		140
	45						
	39						
	84						
	40						
145	35	51	R	128	10		145
	26						
	35						
	47						
	81						
150		50/5"	N		7		150

Stopped drilling at 150 feet.
Groundwater observed at 4 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 194+19.14, R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-4-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 881.14'
W.T. ELEV. 876.14'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
						SP/ SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines.
5	26	19	N		7	▽	Groundwater at 5 feet. (5-4-05)
	19						
	19						
	22						
	25						
10	32	50/6"	R	NR		SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	26						
	32						
	20						
	19						
15	22	52	N		4		
	59						
	27						
	36						
	25						
20	15	50/12"	R	*	6		
	16						
	--						
	49						
	41						
25	76	50/6"	N		14		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8R **DATE:** 5-4-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.14'
STA. 194+19.14, R 57.40' **W.T. ELEV.** 876.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	40					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	32						
	26						
	13						
30	27	50/6"	R	NR			30
	36						
	19					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; brown, saturated, dense to very dense, non-plastic fines.
	8						
	6						
35	11	59	N		27		35
	6						
	5						
	4						
	12						
40	13	22	R	*	19		40
	12						
	4						
	6						
	8						
45	20	19	N		17		45
	18						
	6						
	5						
	8						
50	10	11	R	*	21		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8R **DATE:** 5-4-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.14'
STA. 194+19.14, R 57.40' **W.T. ELEV.** 876.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	8					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; cont. Interbedded Clayey Sand.	
	4							
	5							
	6							
55	5	16	N		18			55
	6							
	8							
	7							
	13							
60	--	21	R	*	21			60
	100							
	4					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	--							
	--							
65	7	59	N		41			65
	31							
	32							
	34							
	35							
70	--	28	R	113	11			70
	--							
	22							
	20							
	3							
75	4	20	N		27			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8R **DATE:** 5-4-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.14'
STA. 194+19.14, R 57.40' **W.T. ELEV.** 876.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	12					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	25						
	105						
	26						
80	65	29	R	103	18		80
	48						
	60						
	37						
	40						
85	28	29	N		22	SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel. 85
	30						
	62						
	20						
	76						
90	20	38	R	*	22	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel. 90
	34						
	29						
	32						
	46						
95	36	50/5"	N		26		95
	30						
	39						
	69						
	130						
100	46	50/9"	R	120	10		100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8R **DATE:** 5-4-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.14'
STA. 194+19.14, R 57.40' **W.T. ELEV.** 876.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	58					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	70							
	31							
	13							
105	43	50/4"	N		8			105
	47							
	71							
	78							
	29							
110	40	50/4"	R	NR				110
	36							
	52							
	26							
	50					SM/GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	
115	34	50/6"	N		10			115
	45							
	46							
	42							
	74							
120	34	50/4"	R	NR				120
	36							
	27							
	42							
	35							
125	32	50/6"	N		19			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8R **DATE:** 5-4-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.14'
STA. 194+19.14, R 57.40' **W.T. ELEV.** 876.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	32					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.
	40						
	40						
	50						
130	56	37	R	*	7		130
	74						
	56						
	40						
	37						
135	45	50/2"	N		11		135
	36						
	33						
	35						
	55						
140	40	50/6"	R	*	6		140
	53						
	45						
	69						
	45						
145	22	23	N		15		145
	35						
	23						
	54						
	48						
150		50/5"	R	*	11		Stopped drilling at 150 feet. Groundwater observed at 5 feet. NR = No Recovery 150

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+27.94; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-10-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 884.14'
W.T. ELEV. 878.14'
DRILLER: Layne Environmental

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	6					SP	Sand, Trace Silt, With Gravel, Trace to Some Cobbles; brown, damp,medium dense to very dense, non-plastic fines.
	29						
	27						
	22						
5	28	68	R	*	3	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp, medium dense to dense, non-plastic fines.
	19						
	18					▽	Groundwater at 6 feet. (5-10-05)
	12						
	18						
10	27	86	N		12		
	47						
	37						
	34						
	23						
15	37	50/6"	R	*	11		
	42						
	36						
	39						
	31						
20	35	50/4"	N		10		
	37						
	41						
	49						
	40						
25	44						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+27.94; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-10-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 884.14'
W.T. ELEV. 878.14'
DRILLER: Layne Environmental

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	34	50/6"	R	*	11	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	27						
	15						
	21						
30	45						
	55	65/9"	N		7		
	36						
	22						
	44						
35	48						
	51	50/6"	R	*	15		
	41						
	26						
	14						
40	21					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; brown, saturated, dense to very dense, non-plastic fines.
	12	26	N		17		
	11						
	9						
	6						
45							
	10	10	R	*	12		
	10						
	8						
	8						
50	32						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 195+27.94; L 57.40' **W.T. ELEV.** 878.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Environmental

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	12	14	N		20	SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; cont.
	6						
	4						Occasional sandy clay interbeds.
	6						
55	10						55
	17	14	R	*	26		
	13						
	12						
	6						
60	43						60
	26	20	N		24		
	40						
	37						
	25						
65	24						65
	33	75/10"	R	106	20	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	29						
	35						
	33						
70	37						70
	23	19	N		24		
	22						
	52						
	40						
75	54						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 195+27.94; L 57.40' **W.T. ELEV.** 878.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Environmental

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	31	25	R	113	8	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	27						
	32						
	27						
80	32						80
	34	30	N		20		
	42						
	35						
	40						
85	44						85
	37	13	R	100	23		
	59						
	49						
	27						
90	48						90
	28	20	N		18	SC	Clayey Sand, With Clay, Some Gravel; brown, damp to very damp, dense to very dense, low to medium plasticity fines, includes moderate to highly weathered clasts.
	40						
	29						
	26						
95	44						95
	50	10	R	112	8	SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.
	26						
	42						
	59						
100	91						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+27.94; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-10-05 **BY:** BM
SHEET NO. 5 **OF** 6
GROUND ELEV. 884.14'
W.T. ELEV. 878.14'
DRILLER: Layne Environmental

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	80	16	N		10	SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.
	60						
	58						
	33						
105	67						105
	52	73/10"	R	*	16		
	49						
	54						
	79						110
110	70						
	44	34	N		10		
	82						
	52						
	54						115
115	32						
	41	50/4"	R	NR			
	28						
	46						
	43						120
120	72						
	49	44	N		9		
	47						
	50						
	49						
125	52						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 195+27.94; L 57.40' **W.T. ELEV.** 878.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Environmental

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	59	45	R	*	18	SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.
	42						
	70						
	40						
130	44						130
	57	28	N		9		
	42						
	37						
	49						135
135	100						
	52	50/6"	R	*	8		
	28						
	66						
	43						140
140	57						
	62	50/4"	N		13		
	68						
	39						
	51						145
145	37						
	52	73/9"	R	*	10		
	32						
	42						
	47						
150		50/3"	N		9		150

Stopped drilling at 150 feet.
Groundwater observed at 6 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10R **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.64'
STA. 196+61.98;R57.40' **W.T. ELEV.** 877.65'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	15					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines.
	3						
	14						
	21						
5	23	27	N		6		
	33						
	21						
	23						
	33						
10	15	51	R	*	4	▽	Groundwater at 10 feet. (5-5-05)
	14						
	43						
	46					SP/GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	34						
15	18	86	N		7		
	22						
	25						
	21						
	33						
20	36	82	R	*	7		
	34						
	17						
	28						
	25						
25	28	35	N		8		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10R **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.64'
STA. 196+61.98;R57.40' **W.T. ELEV.** 877.65'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	28					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	19							
	33							
	27							
30	115	50/5"	R	*	27			30
	26							
	40							
	53							
	40							
35	40	50/4"	N		25			35
	4							
	27							
	76							
	33							
40	40	60	R	*	4		Interbedded clayey sand and gravel.	40
	13							
	6					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines.	
	8							
	15							
45	6	9	N		15			45
	8							
	6							
	7							
	7							
50	100	29	R	*	22			50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10R **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.64'
STA. 196+61.98;R57.40' **W.T. ELEV.** 877.65'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	42					SP-SM	Sand, Some to Trace Silt and Gravel,Occasional Cobbles; cont.	
	7							
	4							
	4							
55	27	7	N		22			55
	30							
	12							
	15							
	13							
60	24	13	R	*	23		Occasional interbeds of clayey sand.	60
	17							
	22					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	30							
	31							
65	22	8	N		31			65
	26							
	26							
	29							
	20							
70	26	71/7"	R	105	16			70
	27							
	30							
	32							
	47							
75	21	50/6"	N		29			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10R **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.64'
STA. 196+61.98;R57.40' **W.T. ELEV.** 877.65'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	30					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	32							
	27							
	28							
80	32	28	R	83	39			80
	37							
	38							
	44							
	37							
85	27	27	N		24			85
	31							
	28							
	34							
	32							
90	50	42	R	*	22			90
	22							
	14							
	45							
	58							
95	42	22	N		13		Interbedded clayey sand and sandy clay.	95
	29					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	
	32							
	57							
	45							
100	37	50/6"	R	*	15			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10R **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.64'
STA. 196+61.98;R57.40' **W.T. ELEV.** 877.65'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	28					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	32							
	75							
	90							
105	25	50/6"	N		6			105
	37							
	45							
	52							
	61							
110	52	50/5"	R	NR				110
	48							
	46							
	44							
	69							
115	70	61/8"	N		18			115
	82							
	55							
	42							
	47							
120	52	50/5"	R	*	18			120
	47							
	61							
	64							
	62							
125	48	11	N		10			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10R **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.64'
STA. 196+61.98;R57.40' **W.T. ELEV.** 877.65'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	73					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	80							
	42							
	53							
130	85	40	R	*	7			130
	80							
	116							
	59							
	48							
135	67	64/7"	N		12			135
	82							
	45							
	33							
	29							
140	67	50/6"	R	*	12			140
	97							
	36							
	44							
	66							
145	64	50/4"	N		6			145
	74							
	86							
	48							
	37							
150		15	R	*	10		Stopped drilling at 150.5 feet. Groundwater observed at 10 feet. NR = No Recovery	150
							* Sample too disturbed to determine density.	

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 197+70.77; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-5-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 884.85'
W.T. ELEV. 874.85'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	
	9					SP/	Sand and Gravel, Trace Silt, Some Cobbles;	
	22					GP	brown, very damp to wet, very dense, non-	
	21						plastic fines.	
	28							
5	27	50/6"	R	*	5		Interbedded silty and clayey sands.	5
	35							
	28							
	19							
	11							
10	12	50/5"	N		4	▽	Groundwater at 10 feet.	10
	10						(5-5-05)	
	18							
	9							
	12							
15	26	68	R	*	14			15
	16							
	9							
	15							
	14							
20	40	50/5"	N		8			20
	35							
	42							
	64							
	50							
25	47	50/4"	R	NR				25
							- continued -	

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11L **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.85'
STA. 197+70.77; L 57.40' **W.T. ELEV.** 874.85'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	36					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	37							
	41							
	49							
30	38	50/5"	N		11			30
	50							
	46							
	25							
	67						Interbedded sandy clay.	
35	100	50/5"	R	*	25			35
	105							
	117							
	88							
	75							
40	100	50/6"	N		NR			40
	37							
	130							
	35							
	32							
45	25	50/4"	R	NR				45
	18							
	10							
	9							
	10							
50	28	17	N		22			50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11L **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.85'
STA. 197+70.77; L 57.40' **W.T. ELEV.** 874.85'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	27					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	24							
	12					SP	Sand and Gravelly Sand, Trace Silt, With to Some Gravel, Some to Trace Cobbles; brown, saturated, dense to very dense, non-plastic fines.	
	11							
55	44	17	R	*	21			55
	13							
	17							
	15							
	8							
60	24	15	N		15			60
	8							
	15							
	11							
	13							
65	100	50/3"	R	NR				65
	12							
	19						Interbedded silty clay.	
	29					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	24							
70	67	27	N		33			70
	72							
	68							
	75							
	53							
75	35	28	R	106	20		Interbedded sandy clay and clayey sand.	75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11L **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.85'
STA. 197+70.77; L 57.40' **W.T. ELEV.** 874.85'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	45					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	42							
	39							
	47							
80	41	32	N		23			80
	55							
	65							
	58							
	52							
85	60	25	R	95	25			85
	70							
	59							
	54							
	55						Interbedded clayey sand.	
90	48	17	N		22			90
	52							
	33						Interbedded clayey sand.	
	43							
	45							
95	35	50/4"	R	NR		SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	95
	40							
	39							
	32							
	28							
100	30	26	N		13			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11L **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.85'
STA. 197+70.77; L 57.40' **W.T. ELEV.** 874.85'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	37					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.	
	48							
	45							
	50					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	
105	61	29	R	109	10			105
	47							
	46							
	32							
	26							
110	66	31	N		11			110
	51							
	41							
	45							
	32							
115	36	50/3"	R	NR				115
	40							
	41							
	26							
	37							
120	72	15	N		12			120
	39							
	42							
	61							
	27							
125	47	50/4"	R	NR				125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11L **DATE:** 5-5-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.85'
STA. 197+70.77; L 57.40' **W.T. ELEV.** 874.85'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	23					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.
	39						
	72						
	89						
130	89	50/4"	N		23		130
	72						
	77						
	96						
	95						
135	97	50/12"	R	*	14		135
	82						
	80						
	63						
	54						
140	79	50/6"	N		1		140
	60						
	92						
	53						
	82						
145	87	50/4"	R	*	15		145
	101						
	92						
	71						
	60						
150		50/6"	N		11		150

Stopped drilling at 149.5 feet.
Groundwater observed at 10 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12R **DATE:** 5-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.16'
STA. 198+99.21; R 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	9					SP/	Sand and Gravel, Trace Silt, Some Cobbles;
	64					GP	brown, very damp to wet, very dense, non-
	56						plastic fines.
	32						
5	25	32	N		7		
	21						
	27						
	12					▽	
	9					⊻	Groundwater at 8 feet.
10	21	19	R	*	11		(5-9-05)
	27						
	22						
	31						
	24						
15	21	67/10"	N		15		
	18						
	23						
	19						
	21						
20	26	50/6"	R	*	17		
	28						
	33						
	21						
	16						
25	26	57/11"	N		13		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12R **DATE:** 5-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.16'
STA. 198+99.21; R 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	--					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	--						
	42						
	31						
30	34	28	R	*	23		30
	25						
	59						
	14						
	23						
35	29	39	N		10		35
	15						
	5						
	6						
	8						
40	39	18	R	*	19		40
	9						
	--					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	--						
	--						
45	--	18	N		9		45
	--						
	--						
	--						
	--						
50	115	13	R	*	30		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12R **DATE:** 5-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.16'
STA. 198+99.21; R 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	6					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; cont.	
	--							
	--							
	--							
55	38	16	N		16			55
	32							
	--							
	--							
	--							
60	120	15	R	NR			Occasional interbeds of clayey sand and sandy clay.	60
	57							
	46							
	29						Interbedded clayey sand and sandy clay.	
	15							
65	30	23	N		20			65
	11							
	20							
	8							
	10							
70	160	50/4"	R	NR				70
	60							
	61					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
	14							
	37							
75	40	50/4"	N		32			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12R **DATE:** 5-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.16'
STA. 198+99.21; R 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	66					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	57							
	54							
	30							
80	47	50/4"	R	97	22			80
	50							
	38							
	44							
	45							
85	34	23	N		20			85
	32							
	27							
	18							
	22						Interbedded clayey sand and sand.	
90	38	23	R	103	23			90
	34							
	37							
	36							
	45					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	
95	44	50/6"	N		18			95
	49							
	52							
	66							
	45							
100	68	50/5"	R	NR				100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12R **DATE:** 5-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.16'
STA. 198+99.21; R 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	43					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.	
	52							
	44							
	63							
105	52	50/6"	N		8			105
	47							
	30							
	53							
	44							
110	54	50/4"	R	NR				110
	47							
	53							
	44							
	54							
115	14	50/6"	N		29			115
	18							
	26							
	31							
	28							
120	133	50/4"	R	*	28			120
	77							
	60							
	37							
	35							
125	31	50/5"	N		12			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12R **DATE:** 5-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.16'
STA. 198+99.21; R 57.40' **W.T. ELEV.** 873.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	52					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.
	46						
	64						
	66						
130	79	50/6"	R	*	7		130
	37						
	64						
	73						
	63						
135	96	50/6"	N		13		135
	57						
	74						
	133						
	85						
140	68	50/4"	R	NR			140
	112						
	32						
	162						
	80						
145	98	50/4"	N		9		145
	73						
	66						
	49						
	61						
150		50/2"	R	*	5		150

Stopped drilling at 149.5 feet.
Groundwater observed at 8 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.46'
STA. 200+13.61; L 57.40' **W.T. ELEV.** 865.46'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	1					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines.
	2						
	--						
	--						
5	--	14	R	*	7		
	--						
	--						
	--						
	3						
10	17	18	N		25		
	19						
	25						
	14						
	5						
15	--	11	R	*	13	▽	
	6						Groundwater at 16 feet. (5-10-05)
	17					SP/GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	21						
	20						
20	28	27	N		18		
	27						
	31						
	21						
	20						
25	29	50/6"	R	*	18		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.46'
STA. 200+13.61; L 57.40' **W.T. ELEV.** 865.46'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	29					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	39						
	26						
	39						
30	48	82	N		8		30
	38						
	46						
	48						
	42					SC	Clayey Sand, With Clay, Some to Trace Gravel; light brown, very damp to wet, dense to very dense, medium plasticity.
35	37	50/6"	R	*	13		35
	59						
	82						
	68						
	36						
40	15	22	N		15	SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines. 40
	19						
	40						
	10						
	12						
45	38	65	R	*	7		Interbedded sand and gravel. 45
	27						
	25						
	32						
	9						
50	24	22	N		10		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 200+13.61; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-10-05 **BY:** BM
SHEET NO. 3 **OF** 6
GROUND ELEV. 881.46'
W.T. ELEV. 865.46'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	11					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; cont.	
	10							
	11							
	7							
55	17	4	R	*	21			55
	15							
	7							
	8							
	11							
60	34	11	N		22			60
	6							
	6							
	6							
	10							
65	33	20	R	*	21		Occasional interbeds of sandy clay.	65
	27							
	20							
	24							
	47					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
70	33	47	N		27			70
	36							
	48							
	78							
	61							
75	55	90/9"	R	103	21			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.46'
STA. 200+13.61; L 57.40' **W.T. ELEV.** 865.46'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	30					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	29							
	34							
	17							
80	24	29	N		23		Interbedded sandy clay, clayey and silty sand.	80
	32							
	26							
	17							
	19							
85	83	51	R	99	25			85
	25							
	39							
	42							
	27							
90	59	40	N		12			90
	40							
	13							
	18							
	23							
95	57	34	R	108	19	SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	95
	20							
	27							
	18							
	23							
100	43	24	N		18			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.46'
STA. 200+13.61; L 57.40' **W.T. ELEV.** 865.46'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	37					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.	
	38							
	46							
	35							
105	27	50/5"	R	NR				105
	43							
	37							
	53							
	57							
110	38	50/6"	N		14			110
	23							
	36							
	28							
	31							
115	12	74/11"	R	125	11			115
	21							
	31							
	28							
	33							
120	72	71/10"	N		11			120
	40							
	32							
	34							
	47							
125	20	50/5"	R	118	12			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13L **DATE:** 5-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.46'
STA. 200+13.61; L 57.40' **W.T. ELEV.** 865.46'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	42					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.	
	44							
	54							
	56							
130	49	90/11"	N		12			130
	35							
	36							
	55							
	56							
135	45	39	R	124	6			135
	60							
	33							
	39							
	35							
140	62	50/2"	N		11			140
	33							
	35							
	42							
	42							
145	52	85/7"	R	*	6			145
	41							
	36							
	31							
	29							
150		50/3"	N		15		Stopped drilling at 150 feet. Groundwater observed at 16 feet. NR = No Recovery	150

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14R **DATE:** 5-13-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.26'
STA. 201+47.64; R 57.40' **W.T. ELEV.** 869.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	--					SM	Silty Sand, With Silt, Some to Trace Gravel, Occasional Cobbles; brown, damp, loose, non-plastic fines.
	--						
	--						
	--						
5	2	10	N		17		
	12						
	13						
	11						
	15					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
10	33	20	R	NR			
	28						
	47						
	21						
	30						
15	21	37	N		18		
	16						
	15						
	18					▽	Groundwater at 18 feet. (5-13-05)
	21						
20	23	39	R	*	14		
	--						
	--						
	--						
	19						
25	12	57/6"	N		8		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14R **DATE:** 5-13-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.26'
STA. 201+47.64; R 57.40' **W.T. ELEV.** 869.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	20					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	20						
	21						
	23						
30	18	59	R	*	10		30
	21						
	8						
	11						
	10						
35	34	50/5"	N		17		35
	31						
	37						
	34						
	26						
40	32	50/6"	R	*	14		40
	26						
	37						
	41						
	43						
45	55	50/6"	N		11		45
	48						
	42						
	8						
	14					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines.
50	45	12	R	*	20		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14R **DATE:** 5-13-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.26'
STA. 201+47.64; R 57.40' **W.T. ELEV.** 869.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	38					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobble; cont.	
	31							
	11							
	18							
55	5	15	N		8			55
	7							
	10							
	11							
	12						Occasional interbeds sandy clay.	
60	23	50/6"	R	*	17			60
	--							
	11							
	13							
	31					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
65	37	16	N		32			65
	46							
	25							
	42							
	34							
70	33	60/7"	R	91	30			70
	35							
	37							
	26							
	49						Interbedded sand.	
75	50	25	N		28			75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14R **DATE:** 5-13-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.26'
STA. 201+47.64; R 57.40' **W.T. ELEV.** 869.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	--					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	45							
	--							
	39							
80	50	30	R	109	19			80
	45							
	42							
	--						Occasional interbeds of sand.	
	46							
85	43	50/6"	N		26			85
	47							
	51							
	52							
	47							
90	45	7	R	78	29			90
	32							
	22							
	35							
	38							
95	29	22	N		28			95
	44							
	52							
	48							
	35						Interbedded clayey sand and gravel.	
100	35	50/6"	R	*	20			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14R **DATE:** 5-13-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.26'
STA. 201+47.64; R 57.40' **W.T. ELEV.** 869.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	45					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	35						
	45					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	36						
105	26	50/6"	N		20		105
	52						
	47						
	46						
	21						
110	70	50/5"	R	NR			110
	80						
	50						
	49						
	52						
115	46	50/6"	N		25		115
	41						
	51						
	47						
	39						
120	42	50/5"	R	*	10		120
	50						
	36						
	39						
	42						
125	39	50/6"	N		22		125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14R **DATE:** 5-13-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.26'
STA. 201+47.64; R 57.40' **W.T. ELEV.** 869.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	44					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.
	76						
	44						
	38						
130	86	40	R	116	11		130
	60						
	50						
	64						
	64						
135	58	50/5"	N		4		135
	39						
	95						
	86						
	76						
140	72	33	R	*	10		140
	76						
	62						
	60						
	73						
145	56	50/6"	N		11		145
	41						
	43						
	41						
	44						
150		50/6"	R	*	8		150

Stopped drilling at 150 feet.
Groundwater observed at 18 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15L **DATE:** 5-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.66'
STA. 202+56.44; R 53.40' **W.T. ELEV.** 868.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	2					SM	Silty Sand, With Silt, Some to Trace Gravel, Occasional Cobbles; brown, damp, loose, non-plastic fines.
	7						
	8						
	15						
5	11	12	R	*	14		
	14						
	8						
	14						
	26						
10	21	25	N		16		
	31						
	17						
	15						
	20						
15	44	50/5"	R	*	7		
	21						
	14						
	11						
	12						
20	35	63	N		5	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	26					∇	Groundwater at 19 feet.
	--						(5-12-05)
	--						
	--						
25	--	50/6"	R	*	18		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 202+56.44; R 53.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-12-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 887.66'
W.T. ELEV. 868.66'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	33					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	35						
	42						
	39						
30	22	50/6"	N		5		30
	26						
	30						
	31						
	27						
35	79	50/4"	R	*	22		35
	45						Interbedded clayey sand and sand, some to trace clay.
	36						
	48						
	35						
40	32	50/5"	N		12		40
	26						
	15						
	25						
	40						
45	10	50/4"	R	*	16	SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines. 45
	13						
	14						
	13						
	10						
50	22	15	N		25		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15L **DATE:** 5-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.66'
STA. 202+56.44; R 53.40' **W.T. ELEV.** 868.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	9					SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; cont.	
	20							
	18					SP/GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.	
	17							
55	16	18	R	*	10			55
	35							
	28							
	40							
	15							
60	10	15	N		25			60
	15							
	19							
	32							
	42					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.	
65	36	11	R	*	30			65
	46							
	51							
	50							
	21							
70	56	15	N		30			70
	51							
	32							
	37							
	53							
75	15	50/4"	R	NR			Interbedded sand and gravel.	75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15L **DATE:** 5-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.66'
STA. 202+56.44; R 53.40' **W.T. ELEV.** 868.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	
	27					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	33							
	62							
	34							
80	31	26	N		30		Interbedded silty sand.	80
	33							
	55							
	59							
	50							
85	47	6	R	102	24			85
	54							
	37							
	47							
	41							
90	62	15	N		28		Interbedded silty sand.	90
	43							
	43							
	41							
	40							
95	47	39	R	98	25			95
	37							
	32							
	27							
	34							
100	78	19	N		24			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15L **DATE:** 5-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.66'
STA. 202+56.44; R 53.40' **W.T. ELEV.** 868.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	39					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	41							
	40							
	42							
105	32	27	R	112	17	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.	105
	50							
	59							
	53							
	61							
110	74	40	N		21			110
	115							
	53							
	113							
	128							
115	99	50/5"	R	NR				115
	80							
	65							
	60							
	95							
120	68	50/6"	N		11			120
	62							
	69							
	69							
	43							
125	57	50/5"	R	NR				125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15L **DATE:** 5-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.66'
STA. 202+56.44; R 53.40' **W.T. ELEV.** 868.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	66					SC/ GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; cont.	
	79							
	75							
	57							
130	80	28	N		7			130
	39							
	43							
	48							
	39							
135	66	50/4"	R	NR				135
	80							
	53							
	54							
	66							
140	42	34	N		16			140
	38							
	34							
	70							
	66							
145	52	50/5"	R	NR				145
	72							
	60							
	64							
	65							
150		50/6"	N		14		Stopped drilling at 149.5 feet. Groundwater observed at 19 feet. NR = No Recovery	150

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 203+90.48; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-16-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 895.26'
W.T. ELEV. 877.26'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	--					SM	Silty Sand, With Silt, Some to Trace Gravel, Occasional Cobbles; brown, damp, loose, non-plastic fines.
	--						
	--						
	--						
5	7	12	N		6		
	48						
	25						
	24						
	48						
10	17	50/12"	R	*	8		
	10						
	11						
	18						
	45					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
15	59	46	N		12		
	36					▽	Groundwater at 18 feet. (5-16-05)
	38						
	42						
	30						
20	35	50/6"	R	*	13		
	50						
	5						
	11						
	42						
25	35	50/5"	N		10		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16R **DATE:** 5-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.26'
STA. 203+90.48; R 57.40' **W.T. ELEV.** 877.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	43					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	35						
	88						
	90						
30	56	50/4"	R	*	10		30
	50						
	61						Interbedded clayey sand and sand, some to trace clay.
	47					SC-GC	Clayey Sand and Gravel, With Clay, Some to Trace Cobbles; light brown, very damp to wet, dense to very dense, medium plasticity.
	39						
35	32	50/6"	N		12		35
	60						
	56						
	24						
	36						
40	30	50/4"	R	95	37		40
	41						
	19						
	21						
	17					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
45	15	13	N		7		45
	11						
	12						
	11						
	10						
50	43	25	R	*	21		50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16R **DATE:** 5-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.26'
STA. 203+90.48; R 57.40' **W.T. ELEV.** 877.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	47					SP-GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	18						Interbedded gravelly sand.
	15						
	12						
55	14	21	N		4		
	--						Occasional interbeds sandy clay.
	--						
	35					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	49						
60	35	49	R	99	25		
	51						
	47						
	55						
	66						
65	40	16	N		33		
	50						
	39						
	54						
	71						
70	43	67	R	98	23		
	42						
	36						
	53						Interbedded sand.
	27						
75	28	32	N		33		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16R **DATE:** 5-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.26'
STA. 203+90.48; R 57.40' **W.T. ELEV.** 877.26
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	44					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.
	50						
	79						
	26						
80	32	44	R	92	23		80
	61						
	46						
	53						
	71						
85	40	33	N		27		Interbedded clayey sand. 85
	47						
	47						
	42						
	38						
90	50	24	R	NR			90
	30						
	31						
	45						
	33						
95	37	49	N		24		95
	29						
	44					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.
	36						
	46						
100	58	50/5"	R	NR			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16R **DATE:** 5-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.26'
STA. 203+90.48; R 57.40' **W.T. ELEV.** 877.26
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	40					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.	
	15							
	15							
	22							
105	45	60	N		22			105
	37							
	56							
	107							
	52							
110	50	71/10"	R	*	5			110
	34							
	42							
	53							
	42							
115	48	50/6"	N		10			115
	76							
	74							
	63							
	61							
120	57	68/10"	R	117	15			120
	78							
	72							
	53							
	59							
125	73	50/6"	N		13			125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16R **DATE:** 5-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.26'
STA. 203+90.48; R 57.40' **W.T. ELEV.** 877.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	56					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.
	53						
	50					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	60						
130	99	71/10"	R	111	15		
	52						
	74						
	71						
	58						
135	79	50/5"	N		10		
	44						
	36						
	102						
	76						
140	61	50/3"	R	NR			
	90						
	56						
	41						
	47						
145	61	50/5"	N		10		
	56						
	70						
	65						
	52						Stopped drilling at 149.5 feet. Groundwater observed at 18 feet. NR = No Recovery
150		50/4"	R	*	24		

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 205+2.54; L57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-11-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 897.26'
W.T. ELEV. 879.26'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	--					SM	Silty Sand, With Silt, Some to Trace Gravel, Occasional Cobbles; brown, damp, loose, non-plastic fines.
	--						
	--						
	--						
5	1	50/3"	R	NR			5
	--						Interbedded sand, some to trace silt and gravel.
	1						
	--						
	9						
10	19	17	N		15	SP-SM	Sand, Some to Trace Silt and Gravel, Occasional Cobbles; brown, damp to very damp, non-plastic fines. 10
	15						
	20						
	32						
	25						
15	16	50/4"	R	NR			15
	20						Interbedded sand and gravel.
	12						
	19					SP/GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	13						
20	25	85/9"	N		2	▽	Groundwater at 18 feet. (5-11-05) 20
	24						
	27						
	24						
	32						
25	40	50/5"	R	*	9		25
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2L **DATE:** 5-11-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 897.26'
STA. 205+2.54; L57.40' **W.T. ELEV.** 879.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	37					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.	
	32							
	29							
	22							
30	26	45	N		8			30
	7						Interbedded sand, trace silt, some to trace gravel.	
	8							
	7							
	8							
35	11	50/3"	R	*	12			35
	12							
	31							
	20							
	20							
40	40	50/6"	N		18			40
	64							
	56							
	19							
	32							
45	52	50/4"	R	*	12			45
	35							
	34							
	24							
	29							
50	57	50/4"	N		14		Interbedded clayey sand, with to some gravel, trace cobbles.	50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 205+2.54; L57.40'
DRILL EQUIPMENT: AP 9000

DATE: 5-11-05 **BY:** BM
SHEET NO. 3 **OF** 6
GROUND ELEV. 897.26'
W.T. ELEV. 879.26'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	52					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; cont.
	15						
	17						
	19						
55	13	50/2"	R	NR			Interbedded with sand, trace silt, some to trace gravel.
	17						
	18						
	26						
	37						
60	55	50/6"	N		18		
	--						
	--						
	37						
	53					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
65	8	20	R	*	30		
	--						
	18						
	--						
	32						
70	40	23	N		25		
	36						
	42						
	39						
	69						
75	39	61	R	96	23		

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2L **DATE:** 5-11-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 897.26'
STA. 205+2.54; L57.40' **W.T. ELEV.** 879.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	25					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; cont.	
	66							
	78							
	19							
80	20	17	N		36		Interbedded sandy silt.	80
	35							
	39							
	50							
	44							
85	41	65	R	93	30			85
	59							
	44							
	26							
	39							
90	40	14	N		26		Interbedded sand and clayey sand.	90
	42							
	38							
	39							
	50							
95	46	50/5"	R	103	21			95
	52					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; brown, damp to wet, dense to very dense, low plasticity to non-plastic fines, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of clayey sand and gravel.	
	50							
	26							
	20							
100	16	38	N		10			100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2L **DATE:** 5-11-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 897.26'
STA. 205+2.54; L57.40' **W.T. ELEV.** 879.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description	Depth, feet
	45					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.	
	27							
	33							
	--							
105	--	50/4"	R	NR				105
	45							
	52							
	56							
	50							
110	44	26	N		18			110
	28							
	40							
	43							
	50							
115	36	61	R	111	18			115
	32							
	66							
	49							
	39							
120	100	46	N		17			120
	27							
	32							
	35							
	56							
125	62	50/4"	R	NR				125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2L **DATE:** 5-11-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 897.26'
STA. 205+2.54; L57.40' **W.T. ELEV.** 879.26'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot C	Blows/Foot N/R	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	74					SM/ GM	Silty Sand and Gravel, Some to Trace Silt, Some to Occasional Cobbles; cont.
	72						
	44						
	47						
130	51	39	N		9		130
	60						
	72						
	62						
	89						
135	99	50/9"	R	114	10		135
	68						
	67						
	74						
	70						
140	49	50/6"	N		16		140
	28						
	47						
	46						
	76						
145	33	50/3"	R	NR			145
	32						
	45						
	36						
	46						
150		50/6"	N		15		150

Stopped drilling at 150 feet.
Groundwater observed at 18 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOGS
FINAL
PHASE

R·A·M

TEST BORING LOG

BORING NO. BA1L **DATE:** 8-30-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.56'
STA. 184+21.92; L 57.40' **W.T. ELEV.** 867.56'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	4					SP	Sand, Trace to Some Gravel; brown, slightly damp to damp, medium dense, non-plastic fines.
	5						
	8						
	16						
5	20						5
	22	28	R	*	4		
	23						
	11						
	15						
10	9						10
	7	31	N		4		
	9						
	11						
	14						
15	18					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines. 15
	25	39	R	*	10		
	22						
	23						
	19					▽	Groundwater at 19 feet.
20	20						20
	16	57	N		4		
	23						
	18						
	15						
25	28						25

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA1L **DATE:** 8-30-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.56'
STA. 184+21.92; L 57.40' **W.T. ELEV.** 867.56'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	17	63	R	*	12	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	35						
	15						
	7						
30	16						30
	48	50	N		20		
	32						
	18						
	17						
35	26						35
	26	69	R	*	21		
	23						
	39						
	48					SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; brown, moist, dense to very dense, medium plastiicty fines, intermittent light cementation.
40	26						40
	26	64	N		17		
	56						
	66						
	83						
45	78						45
	68	50/6"	R	*	14		
	75						
	61						
	45					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
50	44						50
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA1L **DATE:** 8-30-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.56'
STA. 184+21.92; L 57.40' **W.T. ELEV.** 867.56'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	42	84	N		38	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	24						
	30						
	35						
55	39						55
	31	50/6"	R	*	32		
	29						
	31						
	69						
60	100						60
	95	50/5"	N		18		
	70						
	61						
	47						
65	67						65
	117	50/5"	R	*	10		
	147						Granite; mottled black/gray, moderately soft to hard, decomposed to highly weathered; broken to highly fractured, jointing 60 to 90 degrees from the horizontal, slightly rough, clay filled to stained joints.
	138						
	139						
70	227						70
	192	50/6"	N		14		Started coring at 71 feet.
	1	20/0	NQ				
75							75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA1L **DATE:** 8-30-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 4
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.56'
STA. 184+21.92; L 57.40' **W.T. ELEV.** 867.56'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
							Granite; - continued
	2	100/0	NQ				Becomes moderately weathered at 75 feet.
	3	100/0	NQ				
80							
	4	100/0	NQ				
85	5	33/0	NQ				
	6	100/0	NQ				
90							
	7	100/0	NQ				Becomes moderately to highly fractured at 90 feet.
95							
	8	55/0	NQ				Joints become 10 to 40 degrees from the horizontal at 95 feet.
							Stopped coring at 100 feet. Groundwater observed at 19 feet.
	8	0/0	NQ				* Sample too disturbed to determine density.
100							71 feet drilled with Becker percussion drill until refusal, set temporary casing cored 71 to 100 feet with a Mobile B61.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 185+69.23; R 57.40'
DRILL EQUIPMENT: AP 9000 and Mobile B61

DATE: 8-29-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 886.06'
W.T. ELEV. 861.06'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	7					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	19						
	39						
	54						
5	51						
	17	41	N		2		
	14						Interbedded with sand.
	21						
	26						
10	35						
	17	49	R	*	5		
	22						
	14						
	26						
15	25						
	20	62	N		4		
	19						
	46						
	23						
20	31						
	32	49	R	*	6		
	34						
	29						
	28						
25	12						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1R **DATE:** 8-29-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.06'
STA. 185+69.23; R 57.40' **W.T. ELEV.** 861.06'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	29	38	N		12	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	32					▽	
	12						Groundwater at 25 feet.
	24						Interbedded with sand.
30	16						
	18	62	R	*	14		
	14						
	22						
	23						
35	40						
	8	29	N		23		
	8						
	16						
	14						
40	3						
	7	45	R	*	16		
	13						
	20						
	57						
45	50						
	36	69	N		7		
	57						
	40						
	26					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
50	20						
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1R **DATE:** 8-29-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.06'
STA. 185+69.23; R 57.40' **W.T. ELEV.** 861.06'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	22	50/5"	R	NR		CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	30						
	29						
	27						
55	39						55
	42	39	N		35		
	37						
	29						
	37						
60	55						60
	48	48	R	*	28		
	37						
	55						
	44					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
65	51						65
	55	50/5"	N		12		
	59						
	50						
	105						
70	31						70
	39	50/6"	R	*	24		
	38						
	48						
	34						
75	54						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 185+69.23; R 57.40'
DRILL EQUIPMENT: AP 9000 and Mobile B61

DATE: 8-29-05 **BY:** BM
SHEET NO. 4 **OF** 6
GROUND ELEV. 886.06'
W.T. ELEV. 861.06'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	90	50/5"	N		11	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	70						
	100						
	55						
80	68						80
	96	50/6"	R	*	15		
	88						
	92						
	105						
85	127						85
	133	50/5"	N		8		
	55						
	74						
	89						
90	215						90
	111	50/4"	R	NR			
	92						
	120						
	130						
95	28						95
	55	50/6"	N		10		
	70						
	111						
	145						
100	83						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1R **DATE:** 8-29-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.06'
STA. 185+69.23; R 57.40' **W.T. ELEV.** 861.06'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	116	50/4"	R	*	14	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	113						
	128						
	87						
105	88						
	78	50/6"	N		9		Interbedded sand and gravel.
	115						Increasing % granitic clasts.
	98						
	87						
110	81						
	113	70	R	*	6		
	79						
	128						
	135						
115	75						
	114	18	N		37		
	197						Granite; mottled black/gray, moderately soft to hard, decomposed to highly weathered; broken to highly fractured, jointing 60 to 90 degrees from the horizontal, slightly rough, clay filled to stained joints.
	250						
	164						
120		50/2"	R	*	18		
							Started coring at 121 feet.
	1	80/0	NQ				Becomes moderately weathered at 122 feet.
125							

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B1R **DATE:** 8-29-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 886.06'
STA. 185+69.23; R 57.40' **W.T. ELEV.** 861.06'
DRILL EQUIPMENT: AP 9000 and Mobile B61 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
							Granite; - continued
	2	80/0	NQ				
130							130
	3	90/7	NQ				
							Stopped coring at 133.5 feet.
135							Groundwater observed at 19 feet. 135
							NR = No Recovery
							* Sample too disturbed to determine density.
							121 feet drilled with Becker percussion drill until refusal, set temporary casing cored 121 to 133.5 feet with a Mobile B61.
140							140
145							145
150							150

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 186+78.02; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-26-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 885.56'
W.T. ELEV. 868.56'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	5					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	7						
	31						
	42						
5	54						
	60	46	R	*	4		
	47						
	69						
	35						
10	24						
	18	55	N		6		
	18						
	29						
	33						
15	25						
	13	57	R	*	8		
	12					∇	Groundwater at 17 feet.
	16						
	15						
20	24						
	18	33	N		11		
	32						
	15						
	43						
25	23						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2L **DATE:** 8-26-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.56'
STA. 186+78.02; L 57.40' **W.T. ELEV.** 868.56'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	25	42	R	*	26	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	37						
	31						
	18						
30	28	25	N		13		
	14						
	23						
	27						
	33						
35	50	68	R	*	8		
	42						
	35						
	36						
	41						
40	36	84	N		22		
	27						
	36						
	45						
	44						
45	39	63	R	*	26	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	24						
	35						
	32						
	41						
50	45						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 186+78.02; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-26-05 BY: BM
SHEET NO. 3 OF 6
GROUND ELEV. 885.56'
W.T. ELEV. 868.56'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	39	41	N		19	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	26						
	37						
	34						
55	28						
	31	48	R	81	38		
	29						
	27						
	35						
60	25					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	19	13	N		3		
	23						
	24						
	42						
65	36						
	37	26	R	*	24		
	27						
	21						
	22						
70	35						
	27	24	N		23		
	24						
	34						
	45						
75	45						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2L **DATE:** 8-26-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.56'
STA. 186+78.02; L 57.40' **W.T. ELEV.** 868.56'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	39	41	R	*	31	SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; - continued
	41						
	41					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	45						
80	33	48	N		18		
	43						
	38						
	38						
	55					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
85	50	82	R	*	21		
	61						
	55						
	46						
	43						
90	85	50/6"	N		16		
	138						
	227						
	185						
	182						
95	108	50/5"	R	NR			
	70						
	71						
	79						
	91						
100	133						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2L **DATE:** 8-26-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.56'
STA. 186+78.02; L 57.40' **W.T. ELEV.** 868.56'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	63	50/6"	N		14	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	83						
	63						
	74						
105	79						105
	66	50/3"	R	*	6		
	87						
	80						
	71						
110	79						110
	86	50/5"	N		10		
	85						
	94						
	103						
115	90						115
	100	50/3"	R	NR			
	94						
	78						
	87						
120	60						120
	99	50/4"	N		11		
	108						
	117						
	94						
125	87						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B2L **DATE:** 8-26-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.56'
STA. 186+78.02; L 57.40' **W.T. ELEV.** 868.56'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	85	50	R	*	20	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	76						
	84						
	67						
130	59						
	65	50/5"	N		NR		
	77						
	79						
	85						
135	96						
	80	50/6"	R	*	10		
	109						
	92						
	97						
140	76						
	88	85/11"	N		7		
	98						
	80						
	71						
145	83						
	91	50/5"	R	*	5		
	111						
	97						
	84						
150		50/6"	N		10		Stopped drilling at 150 feet. Groundwater observed at 17 feet. NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3R **DATE:** 8-25-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.86'
STA. 188+12.06; R 57.40' **W.T. ELEV.** 863.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	7					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	13						
	35						
	36						
5	89	64	N		3		
	24						
	19						
	16						
	20						
10	18	42	R	*	9		Interbedded with clayey sand.
	11						
	25						
	24						
	26						
15	32	60	N		7		
	22						
	40						
	13					∇	Groundwater at 18 feet.
	33						
20	29	47	R	*	13		
	26						
	23						
	27						
	29						
25	24						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 188+12.06; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-25-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 881.86'
W.T. ELEV. 863.86'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	28	49	N		12	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	25						
	22						
	29						
30	25						
	51	44	R	*	12		Interbedded with clayey sand.
	57						
	53						
	35						
35	18						
	21	26	N		23		
	10						
	16						
	18						
40	30						
	37	44	R	*	12		
	25					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	23						
	27						
45	24						
	29	58	N		25		
	43						
	62						
	34						
50	28						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3R **DATE:** 8-25-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.86'
STA. 188+12.06; R 57.40' **W.T. ELEV.** 863.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	27	50/6"	R	87	28	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	32						
	28						
	23						
55	29						55
	42	54	N		17		
	31						
	28					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	25						
60	16						60
	17	29	R	105	23		
	13						
	14						
	13						
65	34						65
	20	26	N		27		
	30						
	20					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	31						
70	24						70
	28	50	R	*	16		
	34						
	31						
	33						
75	47						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3R **DATE:** 8-25-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.86'
STA. 188+12.06; R 57.40' **W.T. ELEV.** 863.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	40	18	N		39	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	80						
	44						
	62						
80	72						
	63	50/6"	R	*	25		
	68						
	74						
	123					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
85	66						
	157	50/6"	N		19		
	50						
	58						
	69						
90	49						
	90	50/5"	R	NR			
	98						
	82						
	75						
95	65						
	70	37	N		17		
	84						
	68						
	69						
100	50						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3R **DATE:** 8-25-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.86'
STA. 188+12.06; R 57.40' **W.T. ELEV.** 863.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	70	50/6"	R	*	20	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	97						
	75						
	67						
105	83						
	175	55	N		16		
	90						
	83						
	110						
110	76	50/6"	R	*	9		
	101						
	136						
	103						
	114						
115	95						
	115	50/4"	N		NR		
	97						
	76						
	107						
120	97						
	96	50/6"	R	*	18		
	75						
	106						
	157						
125	167						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B3R **DATE:** 8-25-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 881.86'
STA. 188+12.06; R 57.40' **W.T. ELEV.** 863.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	84	50/6"	N		7	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	98						
	107						
	113						
130	89						130
	95	50/4"	R	NR			
	74						
	63						
	71						
135	86						135
	89	50/5"	N		6		
	94						
	103						
	90						
140	95						140
	74	50/5"	R	*	9		
	88						
	95						
	110						
145	100	50/6"	N		12		145
	86						
	71						
	93						
	99						
150		50/4"	R	*	6		150

Stopped drilling at 150 feet.
Groundwater observed at 18 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4L **DATE:** 8-24-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.86'
STA. 189+20.86; L 57.40' **W.T. ELEV.** 871.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	17					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	18						
	40						
	29						
5	15						
	19	45	R	*	5		
	23						
	39					▽	Groundwater at 8 feet.
	21						
10	33						
	20	41	N		15		
	8						
	21						
	29						
15	22						
	41	69	R	*	11		
	33						
	34						
	17						
20	9						
	10	42	N		22		
	16						
	10						
	19						
25	20						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 189+20.86; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-24-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 879.86'
W.T. ELEV. 871.86'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	55	46	R	*	14	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	66						
	70						
	42						
30	91	58	N		4		
	52						
	38						
	31						
	26						
35	15	55	R	*	37	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	30						
	45						
	37						
	41						
40	39	60	N		17		
	53						
	61						
	48						
	52						
45	56	51	R	102	22		
	47						
	42						
	45						
	46						
50	68						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4L **DATE:** 8-24-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.86'
STA. 189+20.86; L 57.40' **W.T. ELEV.** 871.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	53	50/6"	N		7	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	91						
	62						
	89						
55	58					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	56	62	R	*	29		
	47						
	43						
	38						
60	73						
	33	49	N		20		
	32						
	35						
	37						
65	31					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	30	58	R	*	26		
	37						
	33						
	49						
70	35						
	42	80/11"	N		19		
	56						
	70						
	94						
75	63						
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 189+20.86; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-24-05 **BY:** BM
SHEET NO. 4 **OF** 6
GROUND ELEV. 879.86'
W.T. ELEV. 871.86'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	64	82/4"	R	*	30	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	69						
	60						
	64					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
80	56						80
	87	50/6"	N		12		
	116						
	105						
	80						
85	70						85
	64	50/6"	R	*	21		
	56						
	93						
	105						
90	68						90
	108	50/6"	N		19		
	300						
	95						
	107						
95	118						95
	137	50/5"	R	*	18		
	100						
	69						
	95						
100	112						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4L **DATE:** 8-24-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.86'
STA. 189+20.86; L 57.40' **W.T. ELEV.** 871.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	195	50/5"	N		14	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	175						
	151						
	142						
105	135						105
	127	50/6"	R	*	6		
	97						
	80						
	115						
110	118						110
	54	50/6"	N		10		
	135						
	122						
	118						
115	115						115
	77	50/5"	R	*	21		
	84						
	78						
	59						
120	83						120
	64	50/6"	N		17		
	99						
	84						
	40						
125	65						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B4L **DATE:** 8-24-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.86'
STA. 189+20.86; L 57.40' **W.T. ELEV.** 871.86'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	79	57	R	*	12	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	60						
	59						
	69						
130	87						130
	65	50/3"	N		10		
	77						
	89						
	95						
135	103						135
	90	50/5"	R	NR			
	98						
	84						
	72						
140	88						140
	105	50/5"	N		11		
	87						
	96						
	75						
145	66						145
	54	50/6"	R	*	11		
	70						
	89						
	99						
150		50/6"	N		11		150

Stopped drilling at 150 feet.
Groundwater observed at 8 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5R **DATE:** 8-15-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+54.89; R 57.40' **W.T. ELEV.** 873.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	18					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	20						
	31					▽	Groundwater at 3 feet.
	40						
5	52	45	N		5		
	27						
	21						
	32						
	26						
10	61	80/11"	R	*	15		
	75						
	63						
	43						
	52						
15	55	61	N		15		
	48						
	70						
	89						
	97						
20	79	50/6"	R	*	21		
	30						
	46						
	42						
	31						
25	46						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5R **DATE:** 8-15-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+54.89; R 57.40' **W.T. ELEV.** 873.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	51	75	N		33	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	52						
	25						
	53						
30	28						30
	24	50/6"	R	*	7		
	42						
	40						
	27						
35	13					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines. 35
	11	18	N		11		
	10						
	8						
	9						
40	10						40
	18	18	R	NR			
	26					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	31						
	52						
45	64						45
	39	71	N		21		
	--						
	--						
	--						
50	--						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5R **DATE:** 8-15-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+54.89; R 57.40' **W.T. ELEV.** 873.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	15	50/2"	R	103	17	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	14						
	18						
	21						
55	30						
	28	39	N		27		
	24					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	26						
	31						
60	30						
	32	15	R	NR			
	38						
	36						
	42						
65	45						
	47	38	N		28		
	39					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	41						
	31						
70	36						
	31	54	R	88	28		
	40						
	67						
	42						
75	41						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 190+54.89; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-15-05 **BY:** BM
SHEET NO. 4 **OF** 6
GROUND ELEV. 876.59'
W.T. ELEV. 873.59'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	42	57	N		20	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	40						
	43						
	35						
80	37						
	35	48	R	NR			
	40					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	38						
	39						
85	32						
	25	85/9"	N		14		
	30						
	45						
	47						
90	57						
	40	91/10"	R	113	17		
	50						
	83						
	94						
95	64						
	300	50/4"	N		NR		
	73						
	60						
	72						
100	51						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5R **DATE:** 8-15-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+54.89; R 57.40' **W.T. ELEV.** 873.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	85	50/4"	R	*	22	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	62						
	103						
	75						
105	112						105
	82	50/4"	N		13		
	70						
	56						
	38						
110	63						110
	85	50/4"	R	*	13		
	38						
	37						
	53						
115	48						115
	56	50/5"	N		11		
	130						
	57						
	36						
120	30						120
	50	86	R	*	6		
	84						
	120						
	80						
125	120						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 190+54.89; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-15-05 **BY:** BM
SHEET NO. 6 **OF** 6
GROUND ELEV. 876.59'
W.T. ELEV. 873.59'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	65	50/6"	N		16	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	86						
	167						
	52						
130	54						130
	70	50/4"	R	*	6		
	164						
	56						
	67						
135	69						135
	93	50/5"	N		3		
	82						
	73						
	70						
140	81						140
	73	50/4"	R	NR			
	90						
	60						
	66						
145	44	50/6"	N		5		145
	52						
	71						
	83						
	66						
150		50/5"	R	NR			150

Stopped drilling at 150 feet.
Groundwater observed at 3 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5L **DATE:** 8-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+42.27; L 57.40' **W.T. ELEV.** 870.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	9					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	19						
	33						
	44						
5	33						
	41	50/6"	R	*	8		
	51					▽	Groundwater at 6 feet.
	29						
	27						
10	39						
	34	50/5"	N		16		
	36						
	36						
	49						
15	40						
	37	50/5"	R	*	17		
	33						
	30						
	29						
20	44						
	101	50/6"	N		9		
	171						
	42						
	80						
25	56						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5L **DATE:** 8-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+42.27; L 57.40' **W.T. ELEV.** 870.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	46	81/10"	R	*	24	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	67						
	64						
	25						
30	40	67	N		11		30
	47						
	42						
	21						
	50						
35	32	50/6"	R	*	28		35
	36						
	12						
	29						
	60						
40	21	37	N		24	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation. 40
	23						
	22						
	27						
	31						
45	26	77/8"	R	101	28		45
	27						
	29						
	32						
	35						
50	72						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 190+42.27; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-9-05 **BY:** BM
SHEET NO. 3 **OF** 6
GROUND ELEV. 876.59'
W.T. ELEV. 870.59'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	55	66	N		17	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	84						
	65						
	67						
55	20						
	18	68/10"	R	112	7	SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	19						
	21						
	17						
60	15						
	25	59	N		28		
	42					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	38						
	42						
65	40						
	42	77/10"	R	*	24		
	35						
	27						
	36						
70	42						
	51	54	N		24		
	50						
	53						
	46						
75	49						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5L **DATE:** 8-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+42.27; L 57.40' **W.T. ELEV.** 870.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	43	73/11"	R	NR		CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	40						
	33						
	52					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
80	50						
	59	53	N		13		
	28						
	32						
	28						
85	37						
	52	50/6"	R	*	6		
	45						
	50						
	53						
90	85						
	134	50/6"	N		13		
	74						
	56						
	69						
95	80						
	77	50/6"	R	NR			
	50						
	76						
	85						
100	74						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5L **DATE:** 8-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+42.27; L 57.40' **W.T. ELEV.** 870.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	130	50/4"	N		31	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	70						
	55						
	56						
105	65						105
	68	50/6"	R	*	13		
	72						
	77						
	74						
110	52						110
	90	50/5"	N		9		
	70						
	59						
	38						
115	79						115
	69	50/4"	R	*	10		
	54						
	106						
	76						
120	56						120
	65	50/6"	N		10		
	55						
	67						
	55						
125	40						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B5L **DATE:** 8-9-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 876.59'
STA. 190+42.27; L 57.40' **W.T. ELEV.** 870.59'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	52	50/4"	R	NR		SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	49						
	69						
	40						
130	60						
	72	85/10"	N		7		
	50						
	42						
	84						
135	75						
	87	50/4"	R	*	15		
	64						
	45						
	35						
140	42						
	47	50/3"	N		15		
	65						
	60						
	72						
145	58						
	79	50/6"	R	NR			
	81						
	72						
	66						
150		50/4"	N		16		Stopped drilling at 150 feet. Groundwater observed at 6 feet. NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.09'
STA. 191+63.69; L 57.40' **W.T. ELEV.** 866.09'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	16					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	12						
	12						
	29						
5	38						
	32	63	R	*	8		
	54						
	31						
	26						
10	23						
	19	43	N		7		
	25						
	21						
	28						
15	41						
	25	53	R	*	6		
	51					▽	Groundwater at 17 feet.
	48						
	38						
20	37						
	28	40	N		18		
	27						
	39						
	14					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
25	15						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 191+63.69; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-23-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 883.09'
W.T. ELEV. 866.09'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	16	18	R	*	17	SP	Sand, Trace to Some Gravel; - continued
	10						
	11						
	10						
30	10	16	N		22		
	16						
	33						
	37						
	36						
35	45	48	R	*	27		
	19						
	13						
	26						
	15						
40	8	27	N		22		
	8						
	10						
	9						
	11						
45	8	15	R	*	18		
	10						
	12						
	9						
	10						
50	12						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 191+63.69; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-23-05 **BY:** BM
SHEET NO. 3 **OF** 6
GROUND ELEV. 883.09'
W.T. ELEV. 866.09'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	22	20	N		22	SP	Sand, Trace to Some Gravel; - continued
	23						
	18					SP-SM	Sand, Some to Trace Silt, Trace to Occasional Gravel; brown, saturated, dense to very dense, non-plastic fines.
	30						
55	28						
	47	38	R	*	34		
	26						
	43						
	42						
60	33						
	32	36	N		11		
	36						
	54						
	32						
65	39					CL/CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	46	50/6"	R	101	24		
	40						
	35						
	33						
70	30						
	32	50/6"	N		20		
	50						
	49						
	37						
75	52						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 191+63.69; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-23-05 **BY:** BM
SHEET NO. 4 **OF** 6
GROUND ELEV. 883.09'
W.T. ELEV. 866.09'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	46	50/6"	R	99	25	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	60						
	43						
	72						
80	50	89/9"	N		21		
	70						
	50						
	66						
	67						
85	60	50/5"	R	*	17	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	60						
	82						
	130						
	89						
90	30	50	N		14		
	45						
	77						
	132						
	68						
95	101	50/6"	R	*	12		
	139						
	115						
	126						
	46						
100	63						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 883.09'
STA. 191+63.69; L 57.40' **W.T. ELEV.** 866.09'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	91	50/5"	N		13	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	140						
	73						
	53						
105	52						105
	75	50/5"	R	NR			
	81						
	101						
	187						
110	97						110
	123	50/4"	N		9		
	59						
	56						
	52						
115	58						115
	55	50/4"	R	*	13		
	64						
	68						
	72						
120	40						120
	72	50/6"	N		NR		
	79						
	96						
	78						
125	84						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B6L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 191+63.69; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-23-05 **BY:** BM
SHEET NO. 6 **OF** 6
GROUND ELEV. 883.09'
W.T. ELEV. 866.09'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	73	50/5"	R	*	13	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	67						
	54						
	60						
130	71						130
	78	50/6"	N		4		
	69						
	81						
	95						
135	87						135
	100	50/6"	R	*	11		
	91						
	84						
	80						
140	87						140
	72	50/5"	N		NR		
	85						
	88						
	78						
145	91						145
	107	50/5"	R	*	15		
	98						
	85						
	73						
150		50/6"	N		11		150

Stopped drilling at 150 feet.
Groundwater observed at 17 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7R **DATE:** 8-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.48'
STA. 192+97.73; R 57.40' **W.T. ELEV.** 872.48'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	20					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	23						
	20						
	21						
5	52	31	N		5		
	43						
	36						
	19					▽	Groundwater at 8 feet.
	15						
10	19	57	R	*	8		
	26						
	28						
	39						
	52						
15	102	88/10"	N		14		
	99						
	75						
	81						
	56						
20	43	50/6"	R	*	12		
	33						
	38						
	38						
	20						
25	30						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 192+97.73; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-16-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 880.48'
W.T. ELEV. 872.48'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	32	41	N		14	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	35						
	24						
	49						
30	38						30
	21	49	R	*	11		
	37						
	36						
	33						
35	16					SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; brown, moist, dense to very dense, medium plasticity fines, intermittent light cementation. 35
	29	31	N		17		
	14						
	24						
	15						
40	24						40
	23	59	R	*	17		
	15					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	12						
	11						
45	13						45
	10	30	N		14		
	12						
	9						
	14						
50	10						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 192+97.73; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-16-05 **BY:** BM
SHEET NO. 3 **OF** 6
GROUND ELEV. 880.48'
W.T. ELEV. 872.48'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	11	30	R	*	21	SP	Sand, Trace to Some Gravel; - continued
	13						
	12						
	15						
55	9						55
	13	25	N		28		
	14						
	19						
	23					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
60	18						60
	16	57	R	*	43		
	26						
	28						
	27						
65	26						65
	28	39	N		28		
	26						
	32						
	37						
70	32						70
	25	52	R	89	29		
	29						
	31						
	26						
75	28						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 192+97.73; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-16-05 **BY:** BM
SHEET NO. 4 **OF** 6
GROUND ELEV. 880.48'
W.T. ELEV. 872.48'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	26	61	N		28	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	60						
	40						
	54						
80	77						
	54	95/9"	R	NR			
	65						
	61						
	54						
85	40						
	44	42	N		14		
	43						
	67					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	77						
90	56						
	35	73/9"	R	*	14		
	29						
	35						
	37						
95	58						
	64	50/3"	N		14		
	78						
	64						
	60						
100	69						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7R **DATE:** 8-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.48'
STA. 192+97.73; R 57.40' **W.T. ELEV.** 872.48'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	114	50/3"	R	NR		SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	117						
	123						
	60						
105	60						105
	49	50/5"	N		20		
	68						
	195						
	150						
110	140						110
	79	50/6"	R	*	11		
	62						
	44						
	50						
115	67						115
	74	50/5"	N		12		
	70						
	110						
	145						
120	85						120
	79	50/5"	R	*	7		
	89						
	70						
	82						
125	112						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B7R **DATE:** 8-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.48'
STA. 192+97.73; R 57.40' **W.T. ELEV.** 872.48'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	70	50/5"	N		12	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	54						
	107						
	110						
130	80						130
	87	17	R	115	11		
	99						
	82						
	66						
135	55						135
	61	48	N		NR		
	132						
	135						
	75						
140	90						140
	86	50/6"	R	*	5		
	59						
	72						
	97						
145	86	50/5"	N		5		145
	105						
	111						
	99						
	87						
150		50/5"	R	NR			150

Stopped drilling at 150 feet.
Groundwater observed at 8 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8L **DATE:** 8-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.23'
STA. 194+6.52; L 57.40' **W.T. ELEV.** 871.23'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	20					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	12						
	17						
	14						
5	13						
	16	34	R	*	5		
	14						
	13					▽	Groundwater at 8 feet.
	11						
10	18						
	45	20	N		3		
	47						
	51						
	69						
15	18						
	17	50/6"	R	*	13		
	36						
	27						
	24						
20	35						
	24	62	N		16		
	47						
	68					SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; brown, moist, dense to very dense, medium plasticity fines, intermittent light cementation.
	130						
25	93						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 194+6.52; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-16-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 879.23'
W.T. ELEV. 871.23'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	65	50/6"	R	NR		SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; - continued
	68						
	62						
	24						
30	15	51	N		16		
	16						
	12					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	10						
	9						
35	10	20	R	*	22		
	14						
	7						
	6						
	8						
40	11	22	N		24		
	22						
	11						
	22						
	14						
45	6	18	R	*	22		
	27						
	12						
	11						
	22						
50	8						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8L **DATE:** 8-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.23'
STA. 194+6.52; L 57.40' **W.T. ELEV.** 871.23'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	12	19	N		22	SP	Sand, Trace to Some Gravel; - continued
	13						
	12						
	15						
55	27					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	20	28	R	*	29		
	30						
	26						
	25						
60	29						
	26	22	N		26		
	31						
	27						
	33						
65	29						
	30	50/5"	R	*	25		
	34						
	27						
	32						
70	28						
	33	60	N		19		
	40						
	35						
	33						
75	37						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 194+6.52; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-16-05 **BY:** BM
SHEET NO. 4 **OF** 6
GROUND ELEV. 879.23'
W.T. ELEV. 871.23'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	32	78/11"	R	95	19	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	29						
	34						
	30						
80	27	70	N		24		
	32						
	34						
	42					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	48						
85	42	48	R	*	17		
	47						
	98						
	66						
	107						
90	43	81/11"	N		14		
	62						
	44						
	54						
	89						
95	93	50/6"	R	NR			
	108						
	67						
	70						
	63						
100	47						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 194+6.52; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-16-05 **BY:** BM
SHEET NO. 5 **OF** 6
GROUND ELEV. 879.23'
W.T. ELEV. 871.23'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	69	50/6"	N		12	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	35						
	52						
	76						
105	113						105
	100	50/5"	R	*	5		
	50						
	38						
	42						
110	118						110
	65	50/4"	N		NR		
	73						
	80						
	90						
115	50						115
	63	85/11"	R	NR			
	61						
	70						
	43						
120	55						120
	77	68	N		16		
	134						
	76						
	125						
125	117						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B8L **DATE:** 8-16-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 879.23'
STA. 194+6.52; L 57.40' **W.T. ELEV.** 871.23'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	83	24	R	*	5	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	45						
	63						
	80						
130	80						130
	42	50/5"	N		NR		
	90						
	50						
	78						
135	102						135
	140	50/5"	R	*	10		
	132						
	125						
	106						
140	90						140
	97	50/4"	N		7		
	111						
	120						
	101						
145	91						145
	77	50/5"	R	*	14		
	63						
	84						
	89						
150		50/5"	N		25		150

Stopped drilling at 150 feet.
Groundwater observed at 8 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+40.56; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-11-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 885.54'
W.T. ELEV. 877.54'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	3					SM	Silty Sand, Trace to Some Gravel; brown, damp to moist, loose to dense, non-plastic fines.
	17						
	33						
	40						
5	28	45	N		4		
	22						
	28						
	39					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	60						
10	61	52	R	*	5	▽	Groundwater at 8 feet.
	65						
	59						
	55						
	52						
15	53	50/6"	N		9		
	51						
	57						
	46						
	65						
20	41	80/9"	R	*	14		
	43						
	46						
	23						
	39						
25	56						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+40.56; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-11-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 885.54'
W.T. ELEV. 877.54'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	47	72	N		15	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	43						
	31						
	25						
30	27						30
	32	64	R	*	13		
	36						
	28						
	30						
35	36						35
	29	88/10"	N		23		
	39						
	33						
	25						
40	24						40
	21	65	R	*	18		
	18					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	12						
	7						
45	11						45
	12	46	N		11		
	8						
	12						
	16						
50	15						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9R **DATE:** 8-11-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.54'
STA. 195+40.56; R 57.40' **W.T. ELEV.** 877.54'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	31	53	R	*	26	SP	Sand, Trace to Some Gravel; - continued
	12						
	11						
	13						
55	15						55
	11	38	N		24		
	18						
	12						
	14						
60	10						60
	13	46	R	*	10		
	37						
	64					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	42						
65	45						65
	47	50/4"	N		31		
	59						
	71						
	81						
70	61						70
	23	50/4"	R	*	23		
	22						
	35						
	33						
75	30						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9R **DATE:** 8-11-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.54'
STA. 195+40.56; R 57.40' **W.T. ELEV.** 877.54'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	25	90/9"	N		27	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	67						
	59						
	54						
80	48						
	45	50/5"	R	99	21		
	42						
	52						
	50						
85	54						
	58	82/10"	N		26		
	67						
	48						
	53					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
90	67						
	56	50/6"	R	109	19		
	50						
	52						
	48						
95	48						
	44	50/4"	N		11		
	33						
	67						
	22						
100	37						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+40.56; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-11-05 **BY:** BM
SHEET NO. 5 **OF** 6
GROUND ELEV. 885.54'
W.T. ELEV. 877.54'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	58	55	R	*	17	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	66						
	99						
	68						
105	55	87/10"	N		16		105
	47						
	54						
	40						
	46						
110	54	50/6"	R	*	23		110
	51						
	58						
	85						
	92						
115	77	50/3"	N		5		115
	83						
	57						
	28						
	51						
120	--	50/4"	R	NR			120
	50						
	37						
	43						
	40						
125	64						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B9R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 195+40.56; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-11-05 **BY:** BM
SHEET NO. 6 **OF** 6
GROUND ELEV. 885.54'
W.T. ELEV. 877.54'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	52	50/6"	N		13	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	30						
	22						
	33						
130	42						130
	51	50/3"	R	*	12		
	65						
	151						
	132						
135	107						135
	116	50/5"	N		11		
	134						
	117						
	70						
140	67						140
	82	50/3"	R	NR			
	97						
	101						
	89						
145	93	50/4"	N		7		145
	66						
	75						
	100						
	97						
150		50/3"	R	*	10		150

Stopped drilling at 150 feet.
Groundwater observed at 9 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 196+49.36; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-10-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 887.44'
W.T. ELEV. 871.44'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	7					SM	Silty Sand, Trace to Some Gravel; brown, damp to moist, loose to dense, non-plastic fines.
	14						
	16						
	37						
5	42						5
	40	52	R	*	14		
	38						
	42						
	27						
10	20						10
	20	41	N		7		
	57					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	44						
	48						
15	51						15
	53	50/6"	R	*	10	▽	Groundwater at 16 feet.
	45						
	39						
	28						
20	22						20
	35	50/5"	N		13		
	77						
	66						
	37						
25	51						25

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10L **DATE:** 8-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.44'
STA. 196+49.36; L 57.40' **W.T. ELEV.** 871.44'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	63	50/3"	R	*	4	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	25						
	23						
	19						
30	35	50/5"	N		9		30
	36						
	40						
	18						
	16						
35	19	50/5"	R	*	23		35
	35						
	51						
	40						
	26						
40	23	50/6"	N		12		40
	90						
	41						
	14					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	12						
45	11						45
	9	27	R	*	13		
	10						
	11						
	11						
50	13						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10L **DATE:** 8-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.44'
STA. 196+49.36; L 57.40' **W.T. ELEV.** 871.44'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	30	23	N		9	SP	Sand, Trace to Some Gravel; - continued
	15						
	17						
	12						
55	18						55
	21	37	R	*	32		
	20						
	19						
	16						
60	11						60
	15	19	N		19		
	13						
	18						
	21						
65	28					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation. 65
	27	35	R	NR			
	35						
	44						
	32						
70	37						70
	77	64	N		22		
	79						
	80						
	70						
75	24						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10L **DATE:** 8-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.44'
STA. 196+49.36; L 57.40' **W.T. ELEV.** 871.44'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	37	50/5"	R	108	21	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	46						
	50						
	45						
80	42						
	58	80	N		23		
	60						
	37						
	42						
85	51						
	49	78/10"	R	102	20		
	42						
	46						
	58						
90	44						
	44	86/10"	N		17		
	46						
	52						
	29					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
95	17						
	25	50/6"	R	NR			
	27						
	52						
	18						
100	28						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10L **DATE:** 8-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.44'
STA. 196+49.36; L 57.40' **W.T. ELEV.** 871.44'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	60	84/10"	N		14	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	102						
	66						
	69						
105	81						105
	91	50/2"	R	*	11		
	150						
	45						
	63						
110	110						110
	127	50/4"	N		NR		
	200						
	87						
	92						
115	80						115
	97	50/3"	R	NR			
	115						
	49						
	60						
120	66						120
	71	50/4"	N		9		
	82						
	27						
	42						
125	51						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B10L **DATE:** 8-10-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 887.44'
STA. 196+49.36; L 57.40' **W.T. ELEV.** 871.44'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	46	50/6"	R	*	14	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	41						
	46						
	57						
130	60						130
	72	50/5"	N		7		
	93						
	82						
	85						
135	146						135
	67	50/3"	R	NR			
	83						
	69						
	34						
140	56						140
	72	50/5"	N		9		
	84						
	87						
	76						
145	54						145
	61	50/4"	R	*	8		
	77						
	81						
	69						
150		50/4"	N		NR		150

Stopped drilling at 150 feet.
Groundwater observed at 16 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11R **DATE:** 8-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 197+83.39; R 57.40' **W.T. ELEV.** 871.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	18					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	18						
	26						
	76						
5	55	57	N		3		
	49						
	36						
	40						
	15						
10	17	31	R	*	3		
	14						
	21						
	39					▽	Groundwater at 13 feet.
	31						
15	23	43	N		15		
	28						
	32						
	25						
	15						
20	32	43	R	*	15		
	45						
	54						
	52						
	55						
25	47						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11R **DATE:** 8-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 197+83.39; R 57.40' **W.T. ELEV.** 871.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	45	81	N		8	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	30						
	18						
	15						
30	18						30
	34	50	R	*	18		
	56						
	37						
	41						
35	29						35
	47	58	N		24		
	23						
	22						
	27						
40	30						40
	12	50/6"	R	*	22		
	13					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	10						
	11						
45	14						45
	13	27	N		10		
	11						
	12						
	10						
50	16						50
							- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 197+83.39; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-12-05 **BY:** BM
SHEET NO. 3 **OF** 6
GROUND ELEV. 884.14'
W.T. ELEV. 871.14'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	15	45	R	*	14	SP	Sand, Trace to Some Gravel; - continued
	22						
	30						
	29						
55	15						55
	14	44	N		25		
	15						
	18						
	17						
60	20						60
	45	62	R	*	25		
	30						
	17						
	22					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
65	27						65
	33	35	N		17		
	53						
	43						
	54						
70	25						70
	56	50/5"	R	90	28		
	47						
	50						
	75						
75	55						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11R **DATE:** 8-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 197+83.39; R 57.40' **W.T. ELEV.** 871.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	51	85/10"	N		26	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	48						
	25						
	24						
80	45						80
	62	50/5"	R	NR			
	25						
	86						
	93						
85	28						85
	57	20	N		29		
	76						
	52						
	63						
90	64						90
	65	50/4"	R	105	23		
	57						
	22						
	92						
95	74						95
	59	79	N		16		
	70						
	63					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel. - continued -
	72						
100	66						100

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11R **DATE:** 8-12-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.14'
STA. 197+83.39; R 57.40' **W.T. ELEV.** 871.14'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	96	50/6"	R	*	9	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	99						
	92						
	--						
105	79						105
	54	81/9"	N		11		
	63						
	75						
	63						
110	89						110
	92	50/6"	R	*	15		
	73						
	65						
	60						
115	63						115
	92	54	N		7		
	92						
	84						
	79						
120	105						120
	92	50/6"	R	NR			
	87						
	50						
	99						
125	50						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B11R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 197+83.39; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-12-05 **BY:** BM
SHEET NO. 6 **OF** 6
GROUND ELEV. 884.14'
W.T. ELEV. 871.14'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	90	50/5"	N		7	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	77						
	64						
	67						
130	76						130
	84	50/6"	R	*	10		
	101						
	96						
	85						
135	83						135
	91	50/5"	N		NR		
	72						
	50						
	65						
140	70						140
	85	50/5"	R	*	9		
	99						
	91						
	82						
145	88	50/5"	N		12		145
	74						
	106						
	92						
	80						
150		50/4"	R	*	9		150

Stopped drilling at 150 feet.
Groundwater observed at 13 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 198+92.19; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-17-05 **BY:** BM
SHEET NO. 1 **OF** 6
GROUND ELEV. 880.16'
W.T. ELEV. 874.16'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	18					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	30						
	40						
	25						
5	35						
	36	25	R	*	2	▽	Groundwater at 6 feet.
	35						
	35						
	22						
10	3						
	3	64	N		8		
	25						
	45						
	44						
15	34						
	41	65	R	*	11		
	37						
	30						
	28						
20	32						
	30	59	N		22		
	18						
	19						
	22						
25	40						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12L **DATE:** 8-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.16'
STA. 198+92.19; L 57.40' **W.T. ELEV.** 874.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	37	52	R	*	24	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	31						
	23						
	35						
30	37	49	N		23		30
	10						
	17						
	26						
	30						
35	37	50/6"	R	*	8		35
	45						
	52						
	32						
	23						
40	18	13	N		13	SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines. 40
	10						
	11						
	8						
	9						
45	12	13	R	*	17		45
	11						
	16						
	5						
	9						
50	12						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12L **DATE:** 8-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.16'
STA. 198+92.19; L 57.40' **W.T. ELEV.** 874.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	12	9	N		21	SP	Sand, Trace to Some Gravel; - continued
	13						
	6						
	8						
55	5						55
	7	13	R	*	14		
	11						
	9						
	10						
60	8						60
	5	5	N		19		
	4						
	8						
	4						
65	5						65
	6	12	R	*	32		
	9						
	18						
	21						
70	35						70
	45	13	N		28		
	41						
	36					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	37						
75	45						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12L **DATE:** 8-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.16'
STA. 198+92.19; L 57.40' **W.T. ELEV.** 874.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	38	47	R	*	31	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	35						
	33						
	37						
80	32						80
	35	79/11"	N		33		
	31						
	44						
	27						
85	29						85
	18	41	R	97	28		
	26						
	43						
	35					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
90	23						90
	26	50/4"	N		6		
	24						
	41						
	80						
95	67						95
	57	50/6"	R	*	14		
	56						
	65						
	56						
100	80						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12L **DATE:** 8-17-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 880.16'
STA. 198+92.19; L 57.40' **W.T. ELEV.** 874.16'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	80	69	N		15	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	68						
	77						
	72						
105	40						105
	45	84/8"	R	NR			
	57						
	68						
	100						
110	52						110
	49	50/5"	N		7		
	85						
	93						
	89						
115	105						115
	96	50/4"	R	*	7		
	80						
	79						
	64						
120	55						120
	63	42	N		10		
	81						
	66						
	110						
125	80						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B12L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 198+92.19; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-17-05 **BY:** BM
SHEET NO. 6 **OF** 6
GROUND ELEV. 880.16'
W.T. ELEV. 874.16'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	85	50/6"	R	*	14	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	70						
	65						
	47						
130	59						130
	75	50/4"	N		18		
	66						
	60						
	81						
135	96						135
	110	50/5"	R	NR			
	92						
	87						
	77						
140	65						140
	89	50/6"	N		4		
	97						
	105						
	93						
145	101						145
	87	50/3"	R	*	4		
	80						
	66						
	57						
150		50/5"	N		12		150

Stopped drilling at 150 feet.
Groundwater observed at 6 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13R **DATE:** 8-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.91'
STA. 200+26.23; R 57.40' **W.T. ELEV.** 864.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
						SM	Silty Sand, Trace to Some Gravel; brown, damp to moist, loose to dense, non-plastic fines.
	10						
	33						
5	28						
	120	18	N		2	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	69						
	47						
	41						
10	35						
	39	54	R	*	5		
	23						
	20						
	21						
15	25						
	27	48	N		2		
	29						
	22						
	15						
20	27						
	11	53	R	*	21	▽	Groundwater at 20 feet.
	12						
	32						
	26						
25	16						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13R **DATE:** 8-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.91'
STA. 200+26.23; R 57.40' **W.T. ELEV.** 864.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	29	51	N		11	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	13						
	6						
	10						
30	12						30
	15	31	R	*	8		
	24						
	43						
	57						
35	46						35
	64	50/4"	N		NR		
	65						
	50						
	36					SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; brown, moist, dense to very dense, medium plasticity fines, intermittent light cementation.
40	43						40
	35	83	R	*	11		
	40						
	45						
	30						
45	38						45
	36	86/11"	N		11		
	27						
	10					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	20						
50	10						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13R **DATE:** 8-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.91'
STA. 200+26.23; R 57.40' **W.T. ELEV.** 864.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	7	8	R	*	20	SP	Sand, Trace to Some Gravel; - continued
	10						
	11						
	14						
55	10						55
	14	16	N		23		
	15						
	11						
	13						
60	6						60
	10	11	R	*	11		
	10						
	13						
	22						
65	21						65
	22	35	N		18		
	36						
	29						
	32						
70	27						70
	23	85/11"	R	*	39		
	34						
	37						
	44						
75	20						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13R **DATE:** 8-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.91'
STA. 200+26.23; R 57.40' **W.T. ELEV.** 864.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	24	25	N		21	SP	Sand, Trace to Some Gravel; - continued
	26						
	48					SP-GP	Sand and Gravel, Some Cobbles, Occasional to Trace Boulders; brown, wet, dense to very dense, non-plastic fines, includes moderately to highly weathered clasts, interbeds of clayey sand.
	37						
80	15						
	18	50/6"	R	111	17		
	36						
	14						
	26						
85	28						
	24	77	N		10		
	32						
	26						
	31						
90	33						
	30	50/2"	R	85	30		
	37						
	40						
	36						
95	35						
	32	70	N		10		
	37					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	40						
	33						
100	40						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13R **DATE:** 8-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.91'
STA. 200+26.23; R 57.40' **W.T. ELEV.** 864.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	44	50/6"	R	NR		SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	82						
	75						
	60						
105	33						105
	30	50/6"	N		15		
	57						
	68						
	90						
110	77						110
	98	50/6"	R	*	15		
	100						
	92						
	48						
115	76						115
	87	50/6"	N		2		
	85						
	133						
	101						
120	70						120
	104	50/4"	R	NR			
	99						
	119						
	98						
125	45						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B13R **DATE:** 8-19-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 884.91'
STA. 200+26.23; R 57.40' **W.T. ELEV.** 864.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	57	81/9"	N		12	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	60						
	53						
	93						
130	101						130
	87	50/6"	R	*	13		
	67						
	59						
	76						
135	82						135
	93	50/6"	N		12		
	99						
	110						
	87						
140	79						140
	88	50/6"	R	NR			
	96						
	72						
	63						
145	50	50/5"	N		14		145
	59						
	74						
	87						
	65						
150		50/4"	R	*	5		150

Stopped drilling at 150 feet.
Groundwater observed at 20 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14L **DATE:** 8-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.91'
STA. 201+35.02; L 57.40' **W.T. ELEV.** 867.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	1					SM	Fill: Silty Sand, Trace to Some Gravel; brown, damp to moist, loose to dense, non-plastic fines.
	5						
	7						
	8						
5	8					SP	Sand, Trace to Some Gravel; brown, slightly damp to damp, medium dense, non-plastic fines.
	9	11	R	*	4		
	8						
	9						
	--						
10	--						
	--	15	N		3		
	5						
	10						
	28						
15	17						
	23	38	R	*	9		
	22					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	19					▽	Groundwater at 18 feet.
	18						
20	20						
	18	91	N		14		
	23						
	27						
	21						
25	22						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 201+35.02; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-18-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 885.91'
W.T. ELEV. 867.91'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	40	63	R	*	7	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	23						
	34						
	29						
30	32	69	N		10		
	35						
	46						
	40					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	59						
35	30	50/5"	R	*	11		
	45						
	41						
	46						
	46						
40	50	89/11"	N		18		
	39						
	25						
	14					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	12						
45	25						
	12	20	R	*	18		
	10						
	17						
	12						
50	15						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14L **DATE:** 8-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.91'
STA. 201+35.02; L 57.40' **W.T. ELEV.** 867.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	25	19	N		19	SP	Sand, Trace to Some Gravel; - continued
	16						
	7						
	6						
55	9						55
	7	25	R	*	10		
	8						
	11						
	10						
60	19						60
	13	17	N		14		
	12						
	14						
	13						
65	18					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation. 65
	20	56	R	*	15		
	23						
	24						
	18						
70	25						70
	30	54	N		28		
	38						
	42						
	27						
75	15						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14L **DATE:** 8-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.91'
STA. 201+35.02; L 57.40' **W.T. ELEV.** 867.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	18	60	R	94	29	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	19						
	24						
	22						
80	18						80
	30	57	N		24		
	39						
	33						
	41						
85	35						85
	52	66	R	*	22		
	56						
	47						
	33						
90	40						90
	51	87/11"	N		19		
	67						
	34						
	43						
95	50					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel. 95
	42	50/6"	R	123	11		
	36						
	40						
	31						
100	66						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14L
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 201+35.02; L 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-18-05 **BY:** BM
SHEET NO. 5 **OF** 6
GROUND ELEV. 885.91'
W.T. ELEV. 867.91'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	59	24	N		28	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	68						
	87						
	120						
105	70						105
	53	50/4"	R	NR			
	61						
	78						
	110						
110	88						110
	64	50/4"	N		13		
	87						
	48						
	77						
115	79						115
	85	50/5"	R	*	18		
	92						
	72						
	84						
120	40						120
	40	50/4"	N		NR		
	46						
	42						
	59						
125	60						125

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B14L **DATE:** 8-18-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.91'
STA. 201+35.02; L 57.40' **W.T. ELEV.** 867.91'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	51	50/5"	R	*	13	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	38						
	46						
	64						
130	77						130
	88	50/2"	N		22		
	99						
	80						
	65						
135	74						135
	61	50/4"	R	NR			
	54						
	49						
	59						
140	70						140
	62	50/4"	N		NR		
	57						
	38						
	60						
145	75						145
	89	50/4"	R	*	13		
	97						
	108						
	92						
150		50/6"	N		17		150

Stopped drilling at 150 feet.
Groundwater observed at 18 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15R **DATE:** 8-22-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.66'
STA. 202+69.06; R 57.40' **W.T. ELEV.** 866.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	5					SM	Silty Sand, Trace to Some Gravel; brown, damp to moist, loose to dense, non-plastic fines.
	12						
	13						
	83						
5	50	15	N		1	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, slightly damp to wet, very dense, non-plastic fines.
	58						
	44						
	57						
	55						
10	19	46	R	*	5		
	20						
	14						
	18						
	23						
15	21	55	N		6		
	28						
	23						
	25						
	45					▽	Groundwater at 19 feet.
20	16	41	R	*	7		
	13						
	10						
	22						
	16						
25	13						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15R **DATE:** 8-22-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.66'
STA. 202+69.06; R 57.40' **W.T. ELEV.** 866.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	19	34	N		32	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	27						
	17						
	40						
30	24						30
	26	48	R	*	22		
	61						
	64						
	53						
35	76					SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; brown, moist, dense to very dense, medium plasticity fines, intermittent light cementation. 35
	62	54	N		7		
	43						
	45						
	42						
40	31						40
	28	50/5"	R	NR			
	31						
	19					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	10						
45	14						45
	13	19	N		8		
	12						
	11						
	10						
50	12						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15R **DATE:** 8-22-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.66'
STA. 202+69.06; R 57.40' **W.T. ELEV.** 866.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	13	21	R	*	17	SP	Sand, Trace to Some Gravel; - continued
	9						
	11						
	10						
55	12						55
	29	20	N		17		
	45						
	14						
	20						
60	27						60
	18	17	R	*	12		
	23						
	37					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
	47						
65	22						65
	24	77	N		23		
	32						
	20						
	30						
70	50						70
	47	50/6"	R	97	26		
	59						
	54						
	44						
75	37						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15R **DATE:** 8-22-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.66'
STA. 202+69.06; R 57.40' **W.T. ELEV.** 866.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	32	27	N		21	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	46						
	49						
	50						
80	27						80
	56	50/6"	R	*	22		
	57						
	31						
	26						
85	40						85
	28	80/10"	N		32		
	42						
	38						
	54						
90	45						90
	45	50/6"	R	*	23		
	38						
	43						
	41						
95	45						95
	39	24	N		21		
	46						
	58						
	54						
100	39						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15R **DATE:** 8-22-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.66'
STA. 202+69.06; R 57.40' **W.T. ELEV.** 866.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	63	50/6"	R	106	20	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	62						
	80					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	92						
105	58	50/2"	N		16		
	49						
	67						
	59						
	124						
110	80	50/4"	R	NR			
	140						
	76						
	78						
	83						
115	132	50/5"	N		2		
	102						
	83						
	116						
	107						
120	95	50/5"	R	*	2		
	57						
	67						
	63						
	74						
125	61						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B15R **DATE:** 8-22-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 885.66'
STA. 202+69.06; R 57.40' **W.T. ELEV.** 866.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	37	50/6"	N		2	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	65						
	75						
	89						
130	79						130
	94	50/4"	R	NR			
	70						
	95						
	127						
135	45						135
	53	48	N		12		
	52						
	43						
	145						
140	110						140
	95	50/2"	R	*	10		
	79						
	67						
	55						
145	85	50/5"	N		12		145
	99						
	108						
	92						
	87						
150		50/5"	R	NR			150

Stopped drilling at 150 feet.
Groundwater observed at 19 feet.
NR = No Recovery

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 890.66'
STA. 203+77.86; L 57.40' **W.T. ELEV.** 864.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	26					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	29						
	26						
	54						
5	37						5
	31	28	R	*	7		
	28						
	32						
	21						
10	30						10
	22	46	N		8		
	37						
	45						
	46						
15	39						15
	33	80	R	*	3		
	46						
	42						
	50						
20	28						20
	32	65	N		3		
	44						
	65						
	28						
25	32						25

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 2 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 890.66'
STA. 203+77.86; L 57.40' **W.T. ELEV.** 864.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	20	41	R	*	11	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	26					▽	Groundwater at 26 feet.
	20						
	22						
30	34	50	N		11		
	53						
	23						
	30					SC	Clayey Sand, Trace to Some Gravel, Occasional Cobbles; brown, moist, dense to very dense, medium plasticity fines, intermittent light cementation.
	36						
35	40	87	R	*	15		
	45						
	38						
	45						
	68						
40	40	50/6"	N		19		
	47						
	40						
	16					SP	Sand, Trace to Some Gravel; brown, wet, medium dense, non-plastic fines.
	19						
45	15						
	12	31	R	*	11		
	17						
	22						
	20						
50	18						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 890.66'
STA. 203+77.86; L 57.40' **W.T. ELEV.** 864.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	13	24	N		17	SP	Sand, Trace to Some Gravel; - continued
	18						
	6						
	8						
55	10						55
	14	20	R	*	16		
	10						
	18						
	30						
60	36						60
	22	41	N		17		
	16						
	18						
	20					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
65	30						65
	32	50/6"	R	99	24		
	35						
	33						
	41						
70	46						70
	32	80/11"	N		22		
	23						
	25						
	28						
75	33						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 890.66'
STA. 203+77.86; L 57.40' **W.T. ELEV.** 864.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	19	31	R	91	25	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	20						
	24						
	27						
80	30						80
	24	76	N		NR		
	26						
	23						
	21						
85	35						85
	40	76	R	*	29		
	44						
	37						
	38						
90	37						90
	27	85/11"	N		28		
	33						
	39						
	53						
95	42						95
	39	49	R	96	18		
	36						
	35						
	62						
100	50						100

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 890.66'
STA. 203+77.86; L 57.40' **W.T. ELEV.** 864.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	28	53	N		25	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	32						
	38						
	59					SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
105	37						
	20	52	R	112	18		
	32						
	37						
	59						
110	27						
	42	50/6"	N		25		
	43						
	52						
	66						
115	89						
	145	50/6"	R	*	6		
	190						
	191						
	305						
120	137						
	53	50/4"	N		NR		
	57						
	52						
	47						
125	50						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. B16L **DATE:** 8-23-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 890.66'
STA. 203+77.86; L 57.40' **W.T. ELEV.** 864.66'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	55	50/6"	R	*	5	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	48						
	53						
	36						
130	42						130
	51	50/4"	N		12		
	75						
	90						
	101						
135	97						135
	89	50/5"	R	NR			
	93						
	76						
	63						
140	81						140
	90	50/6"	N		20		
	101						
	84						
	76						
145	65						145
	52	50/5"	R	*	15		
	71						
	84						
	99						
150		50/5"	N		19		Stopped drilling at 150 feet. Groundwater observed at 26 feet. NR = No Recovery 150

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2R **DATE:** 8-8-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 1 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.76'
STA. 205+15.16; R 57.40' **W.T. ELEV.** 877.76'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
						SM	Silty Sand, Trace to Some Gravel; brown, damp to moist, loose to dense, non-plastic fines.
	5						
	8						
	12						
5	15					SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; brown, very damp to wet, very dense, non-plastic fines.
	18	21	N		12		
	27						
	29						
	31						
10	26						
	17	50/5"	R	NR			
	31						
	35						
	23						
15	30						
	30	50/6"	N		2		
	33						
	26					▽	Groundwater at 18 feet.
	14						
20	16						
	21	50/5"	R	NR			
	26						
	24						
	26						
25	27						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2R
PROJECT NO. G11082
PROJECT NAME: Cotton Lane Bridge Over Gila River
STA. 205+15.16; R 57.40'
DRILL EQUIPMENT: AP 9000

DATE: 8-8-05 **BY:** BM
SHEET NO. 2 **OF** 6
GROUND ELEV. 895.76'
W.T. ELEV. 877.76'
DRILLER: Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	Blows/Foot (Core Data) N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	39	50/5"	N		10	SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	42						
	41						
	37						
30	61						30
	49	50/6"	R	*	27		
	54						
	64						
	34						
35	42						35
	45	89/9"	N		16		
	53						
	55						
	61						
40	92						40
	60	50/3"	R	*	14		
	72						
	52						
	62						
45	69						45
	45	50/5"	N		9		
	47						
	51						
	56						
50	50						50

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2R **DATE:** 8-8-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 3 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.76'
STA. 205+15.16; R 57.40' **W.T. ELEV.** 877.76'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	52	50/2"	R	NR		SP/ GP	Sand and Gravel, Trace Silt, Some Cobbles; - continued
	56						
	51						
	60						
55	66						55
	61	50/6"	N		23		
	58						
	60						
	53					CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; brown, very damp, very stiff to hard, medium to high plasticity, calcareous nodules, seams and interbeds of light cementation.
60	32						60
	26	50/5"	R	89	35		
	37						
	34						
	41						
65	19						65
	39	33	N		29		
	42						
	46						
	40						
70	48						70
	51	50/6""	R	*	19		
	49						
	47						
	52						
75	46						75

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2R **DATE:** 8-8-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 4 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.76'
STA. 205+15.16; R 57.40' **W.T. ELEV.** 877.76'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	49	47	N		32	CL/ CH	Silty Clay, With Silt, Some Sand, Trace to Occasional Gravel; - continued
	53						
	55						
	47						
80	51						
		42	R	86	37		
	51						
	46						
85	49						
	51	55	N		20		
	47						
	53						
	58						
90	67						
	99	58	R	100	22		
	57						
	42						
	34						
95	36	35	N		38	SP-GP	Sand and Gravel, Some Cobbles, Occasional to Trace Boulders; brown, wet, dense to very dense, non-plastic fines, includes moderately to highly weathered clasts, interbeds of clayey sand.
	40						
	31						
	22						
	17						
100	27						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2R **DATE:** 8-8-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 5 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.76'
STA. 205+15.16; R 57.40' **W.T. ELEV.** 877.76'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
		32	R	*	28	SP-GP	Sand and Gravel, Some Cobbles, Occasional to Trace Boulders; - continued
	60						
	56						
	45						
105	30	50/5"	N		11		
	47						
	58						
	56						
	60						
110	55	70/11"	R	*	6	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; brown, damp to very damp, dense to very dense, medium plasticity, seams and interbeds of light cementation, includes moderate to highly weathered clasts, interbedded sand and gravel, saturated, and interbeds of silty sand and gravel.
	59						
	63						
	67						
	58						
115	65	85/10"	N		12		
	67						
	50						
	54						
	56						
120	65	50/2"	R	*	10		
	72						
	85						
	97						
	102						
125	121						

- continued -

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

TEST BORING LOG

BORING NO. BA2R **DATE:** 8-8-05 **BY:** BM
PROJECT NO. G11082 **SHEET NO.** 6 **OF** 6
PROJECT NAME: Cotton Lane Bridge Over Gila River **GROUND ELEV.** 895.76'
STA. 205+15.16; R 57.40' **W.T. ELEV.** 877.76'
DRILL EQUIPMENT: AP 9000 **DRILLER:** Layne Christensen

Depth, feet	Blows/Foot (Core Data) C (Run)	N/R (%Rec./ %RQD)	Sample Type	Dry Density, pcf	Water Content, %	Unified Classification	Description
	118	50/4"	N		NR	SC-GC	Clayey Sand and Gravel, Some Clay, Some to Occasional Cobbles; - continued
	130						
	167						
	125						
130	105						
	102	50/4"	R	*	25		
	97						
	99						
	74						
135	78						
	88	50/4"	N		17		
	98						
	101						
	102						
140	105						
	110	50/6"	R	*	8		
	115						
	107						
	100						
145	103	50/4"	N		13		
	97						
	89						
	75						
	81	50/5"	R	10			Stopped drilling at 149.5 feet. Groundwater observed at 18 feet. NR = No Recovery
150							

* Sample too disturbed to determine density.

This boring log represents the conditions encountered on the date of drilling at this particular location. No other warranty is expressed or implied to the actual conditions which may exist within the vicinity of this boring location.

APPENDIX B
LABORATORY ANALYSIS

R·A·M

LABORATORY ANALYSIS
INITIAL
PHASE

R·A·M

LABORATORY TEST RESULTS

Date: 27-Jun-05

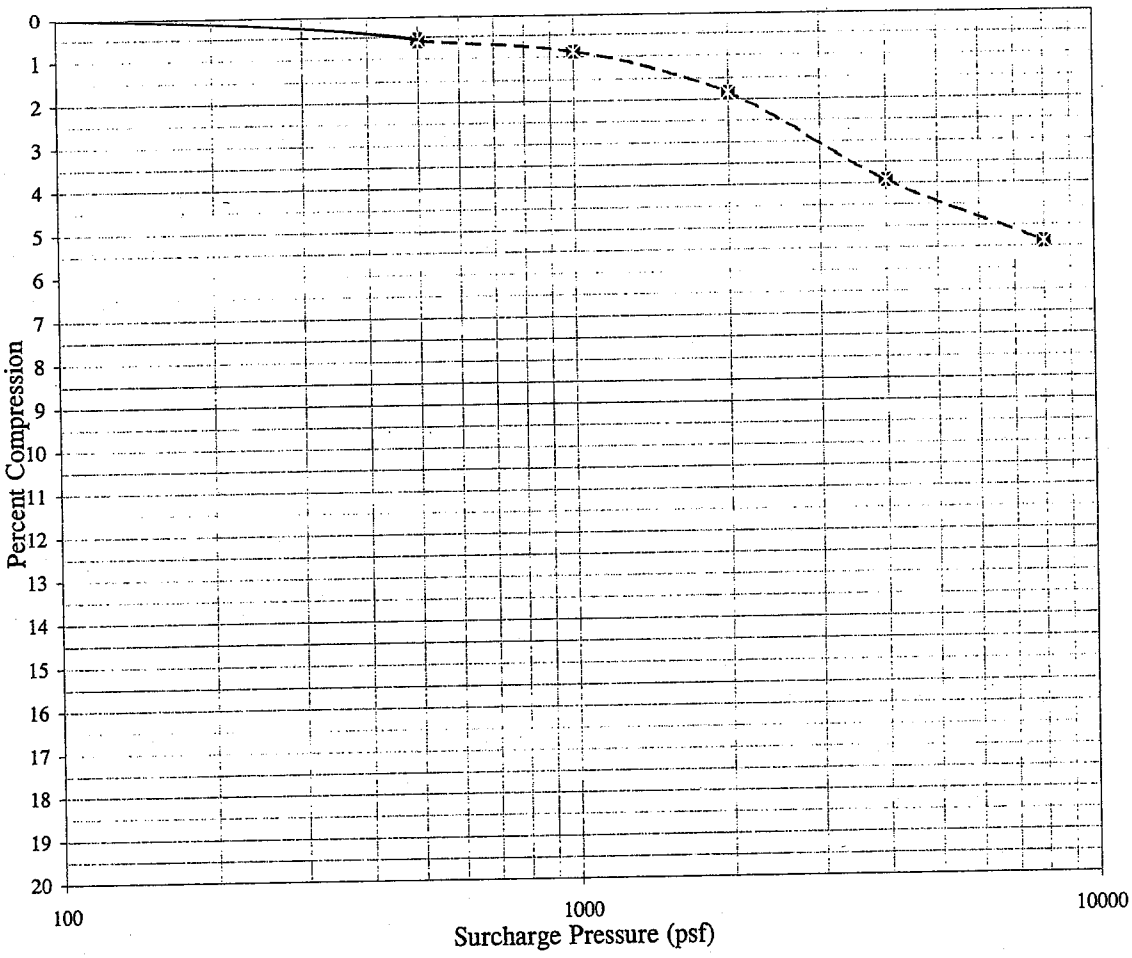
SAMPLE SOURCE: BA2L @ 84'-85.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 93 Moisture Content (%): 30



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

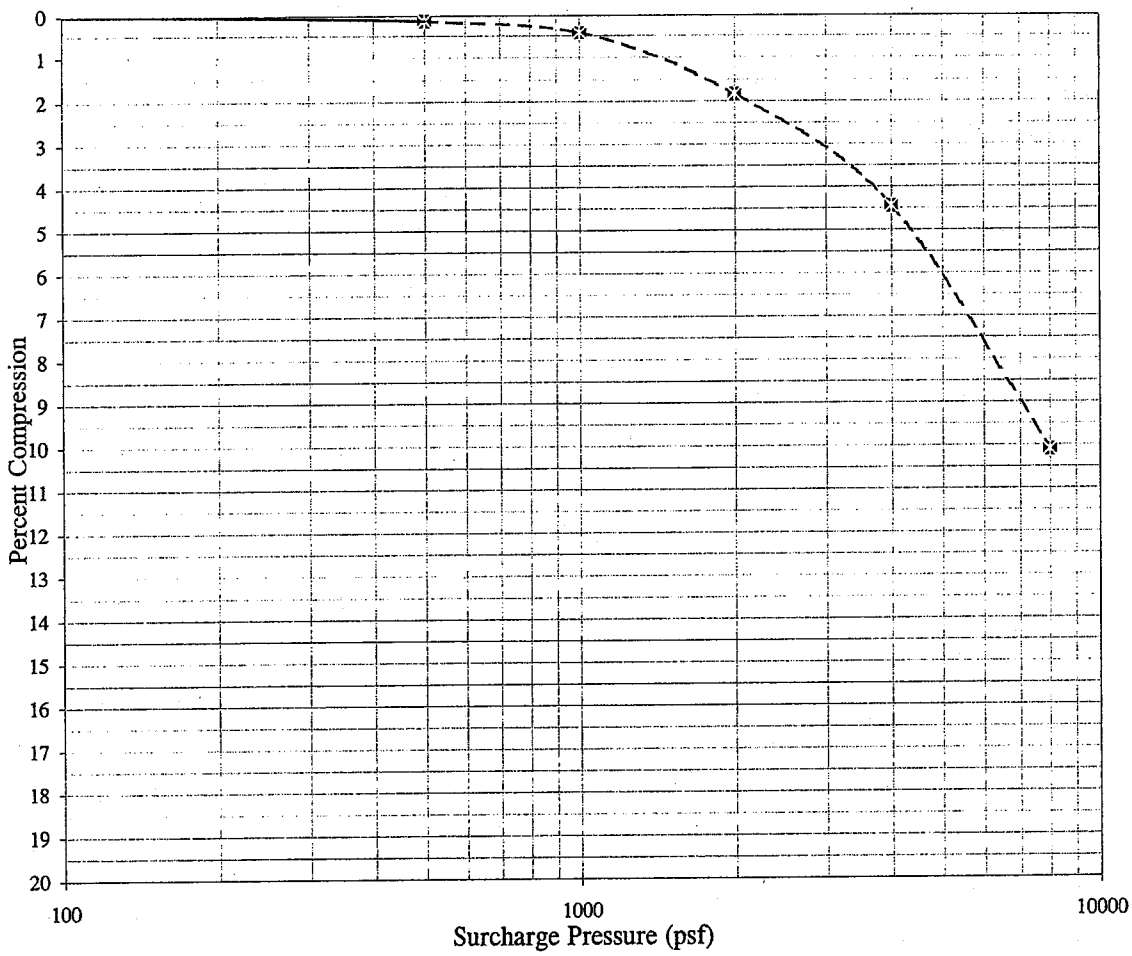
SAMPLE SOURCE: B6R @ 100'-100.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 119 Moisture Content (%): 7



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

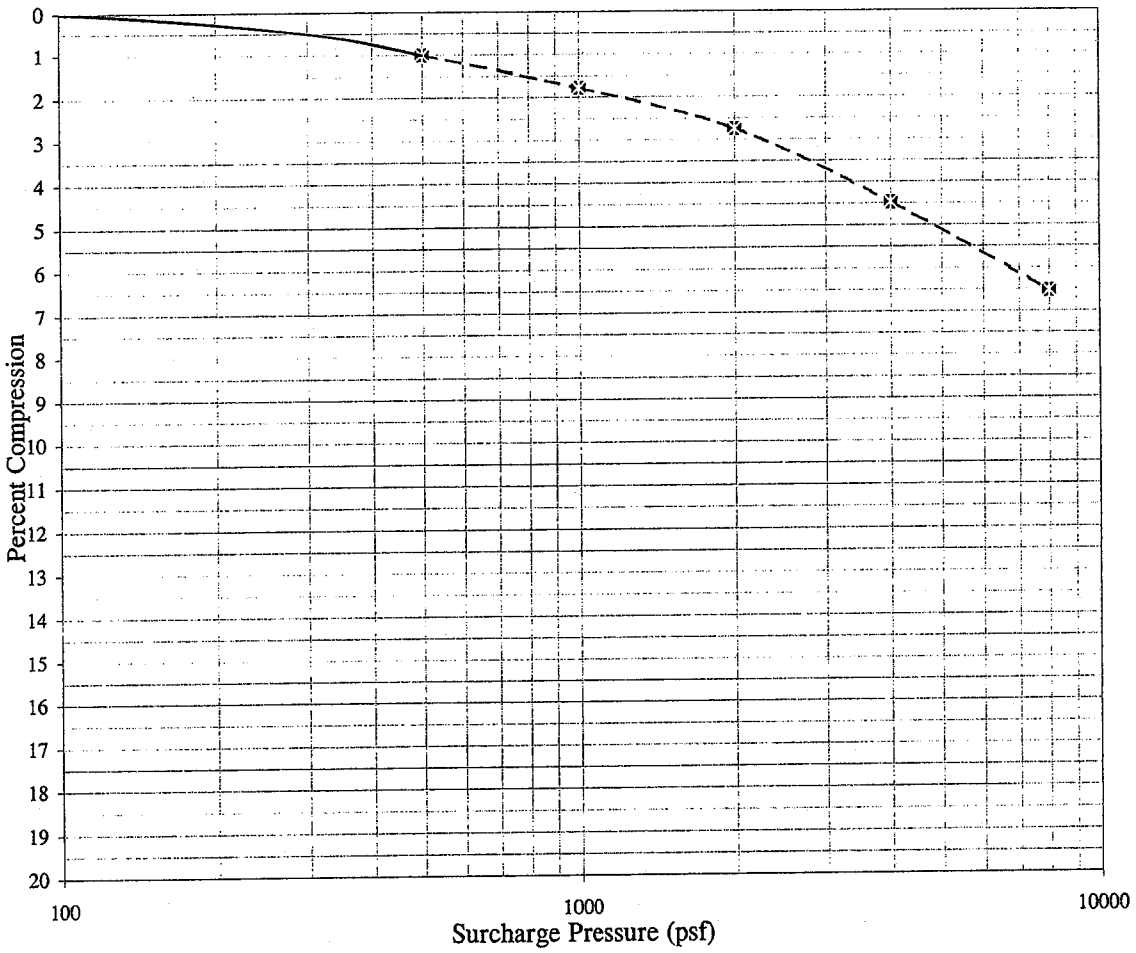
SAMPLE SOURCE: B7L @ 84'-85.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 110 Moisture Content (%): 17



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

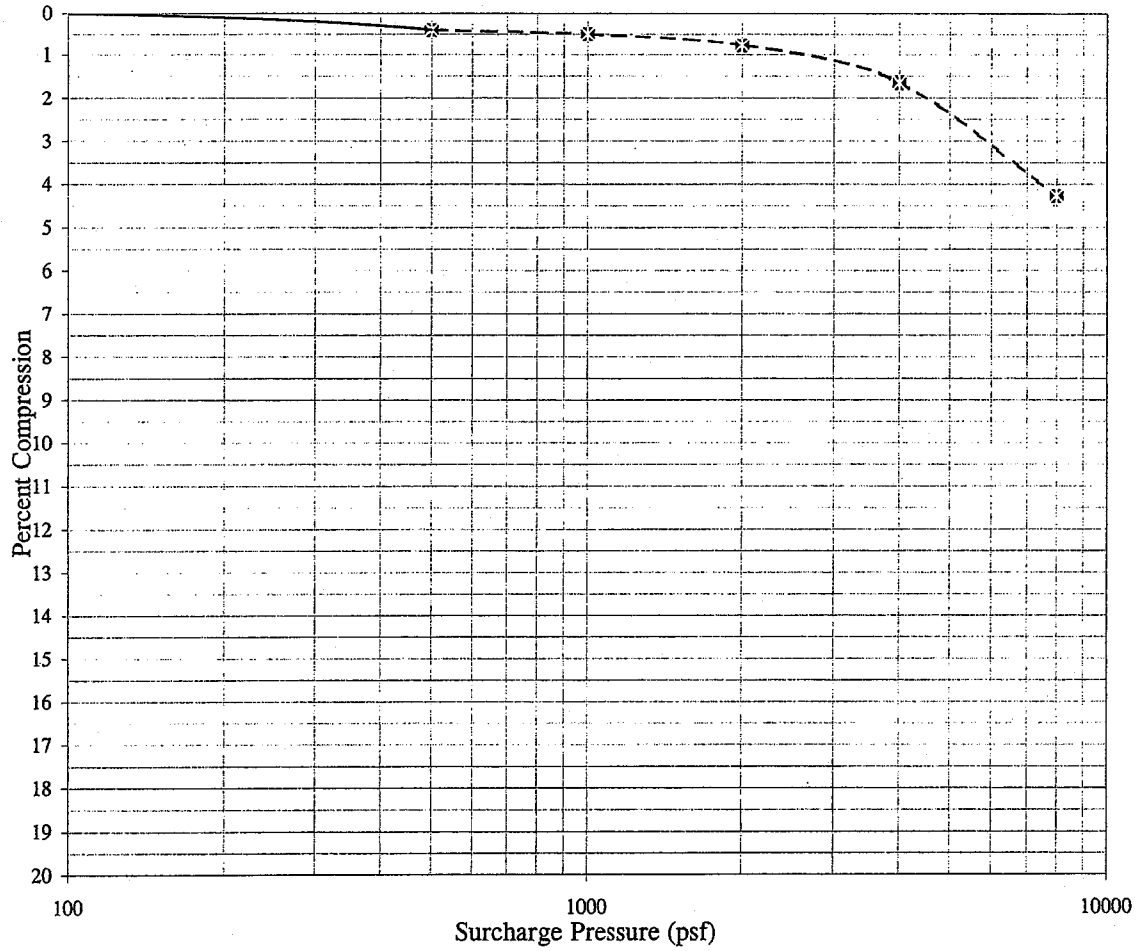
SAMPLE SOURCE: B8R @ 79'-80.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 103 Moisture Content (%): 18



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

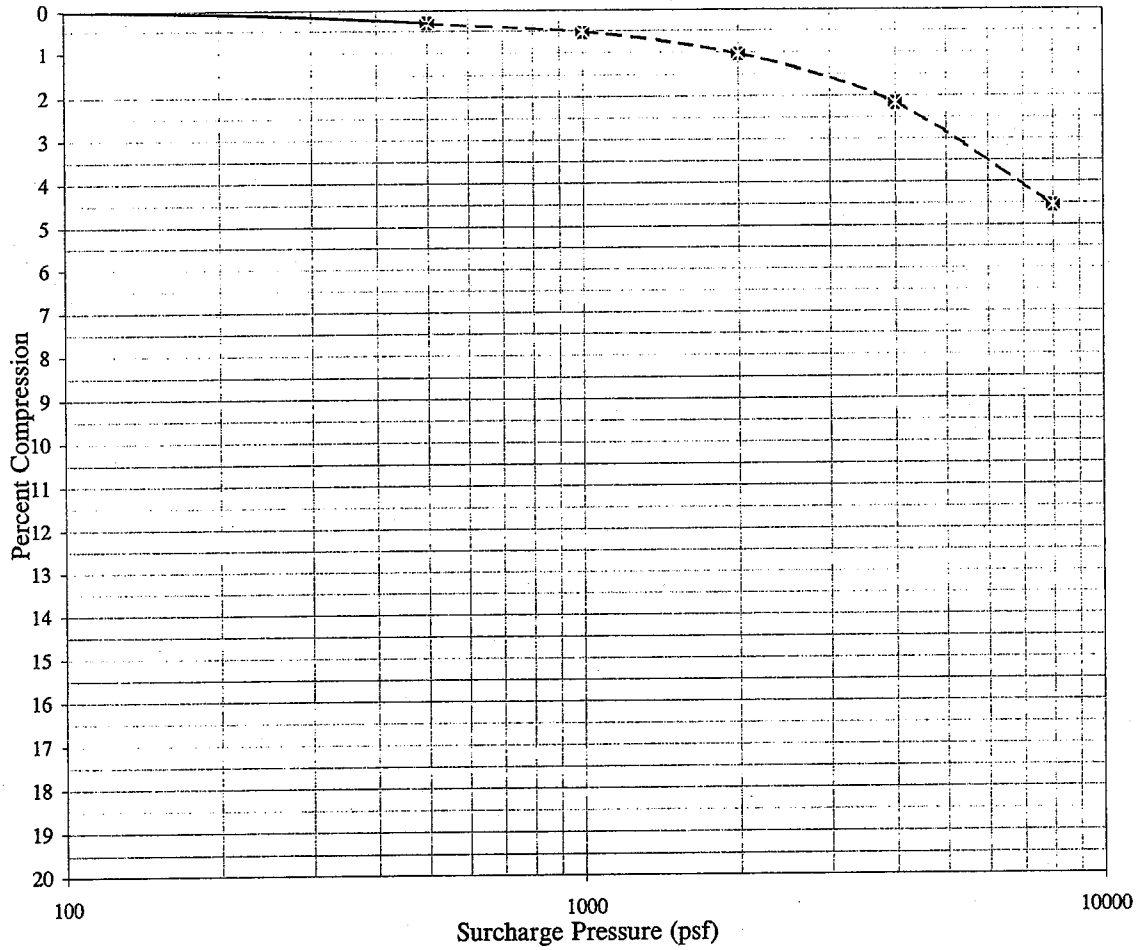
SAMPLE SOURCE: B8R @ 99'-99.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 120 Moisture Content (%): 10



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

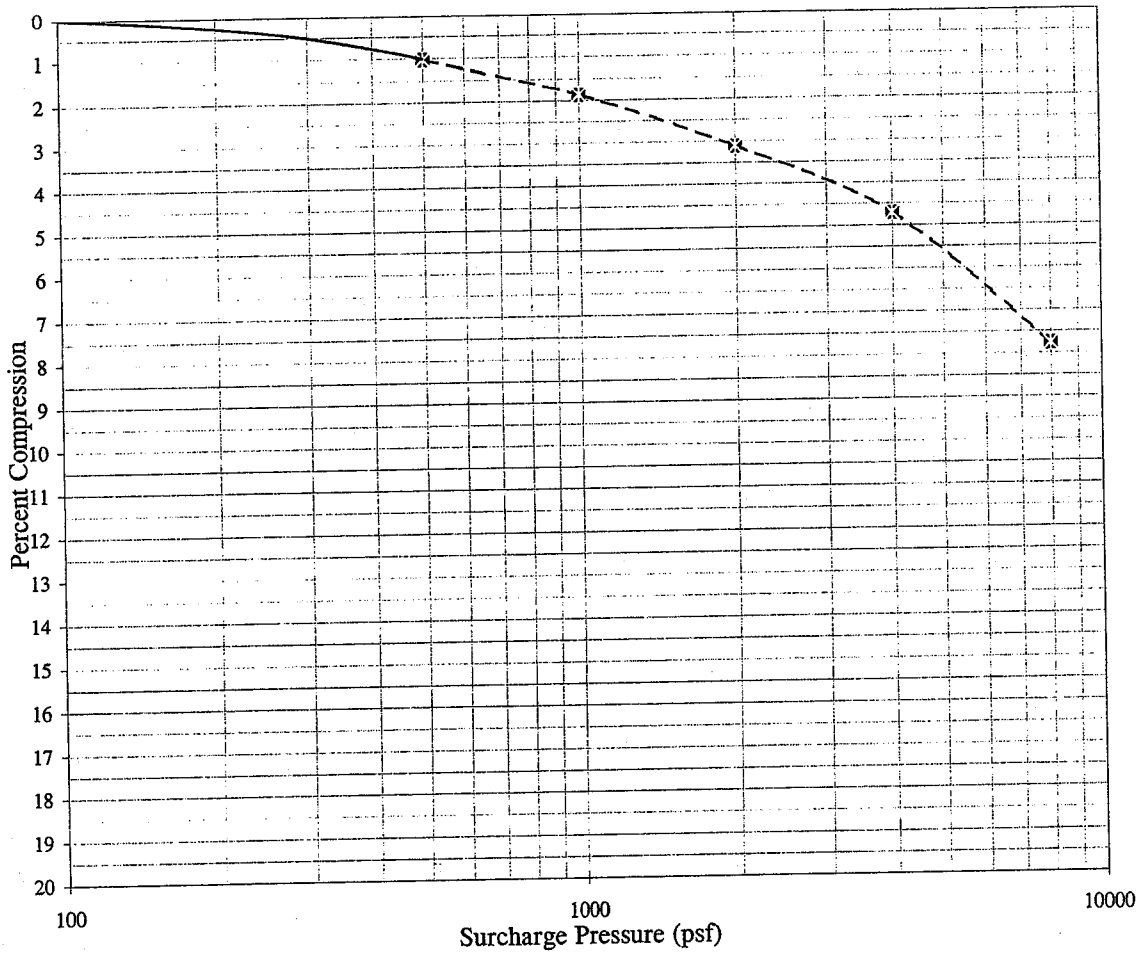
SAMPLE SOURCE: B9L @ 84'-85.5

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 100 Moisture Content (%): 23



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

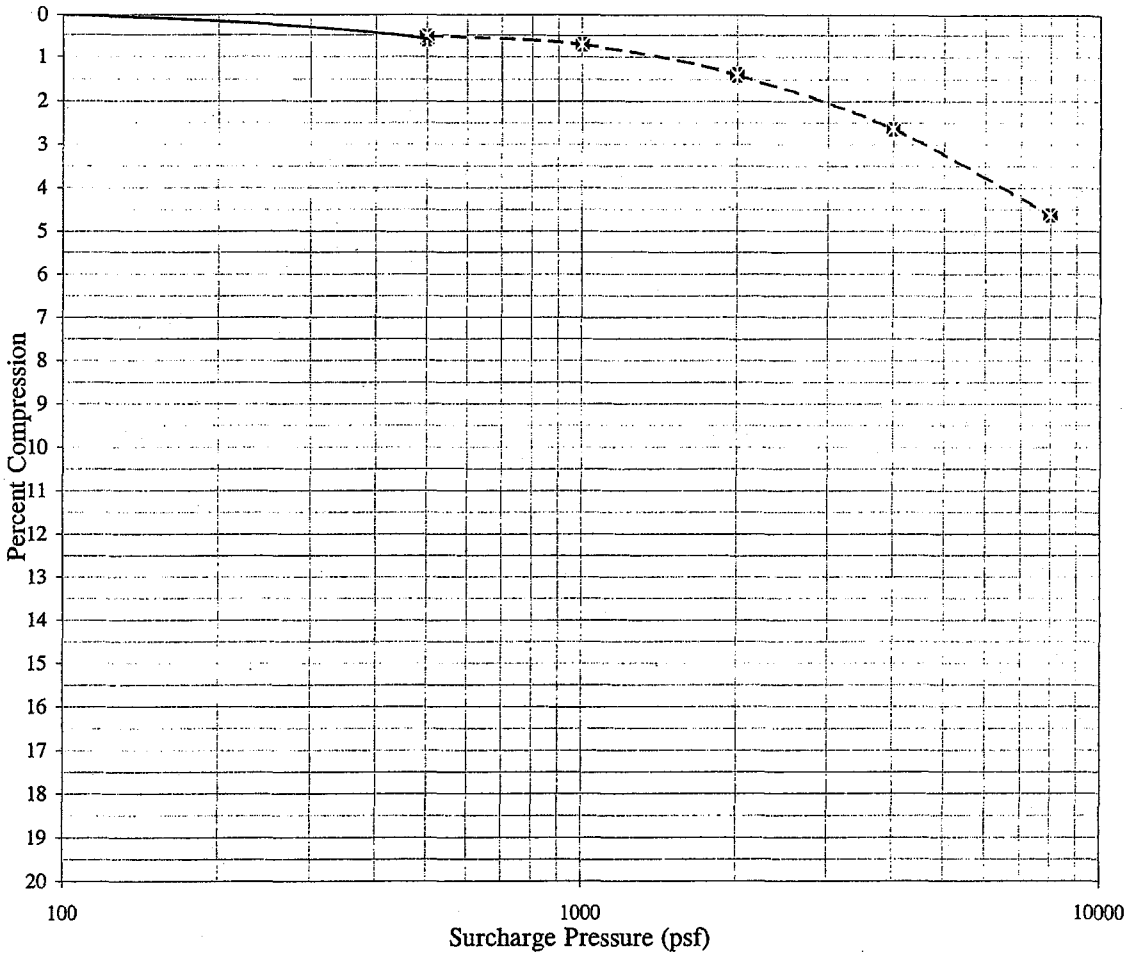
SAMPLE SOURCE: B11L @ 84'-85.5

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 95 Moisture Content (%): 25



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

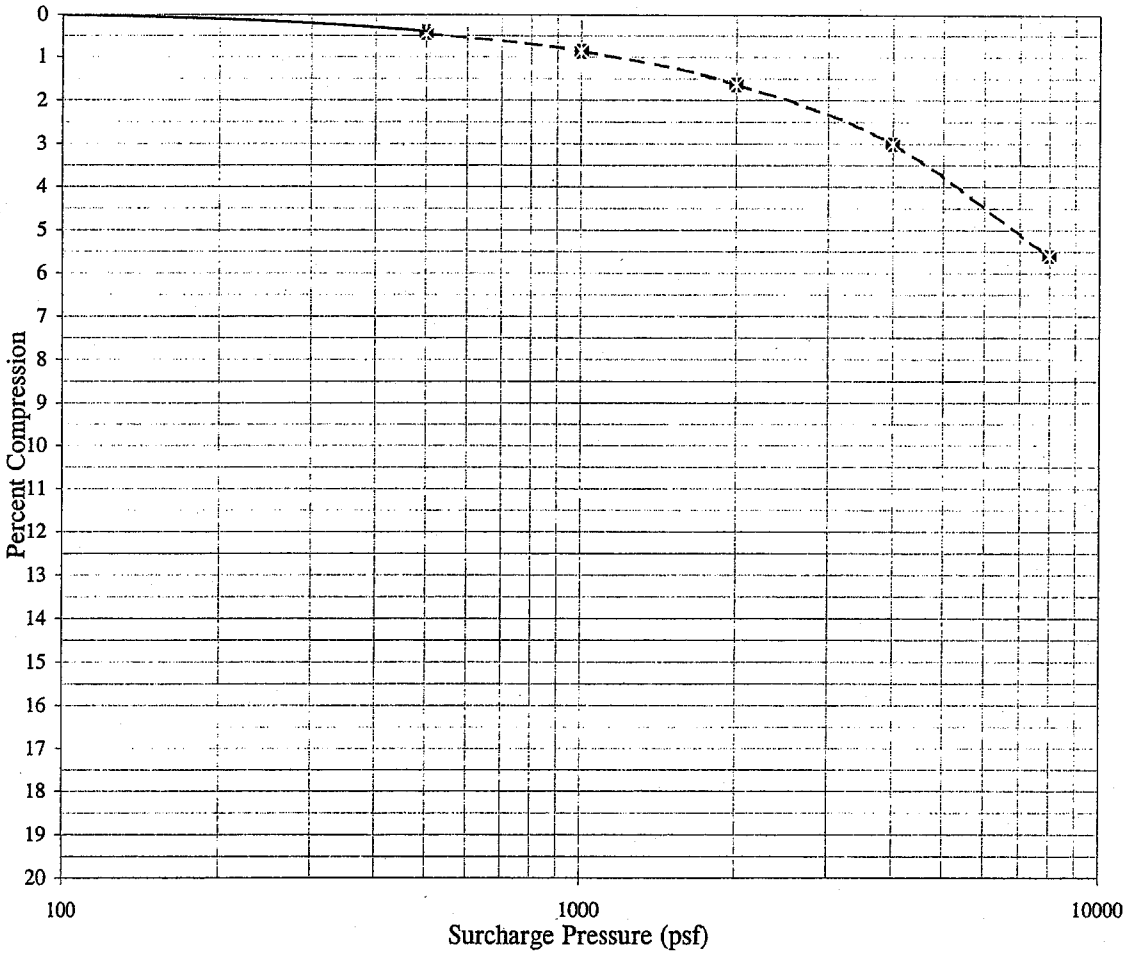
SAMPLE SOURCE: B12R @ 89'-90.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 103 Moisture Content (%): 23



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

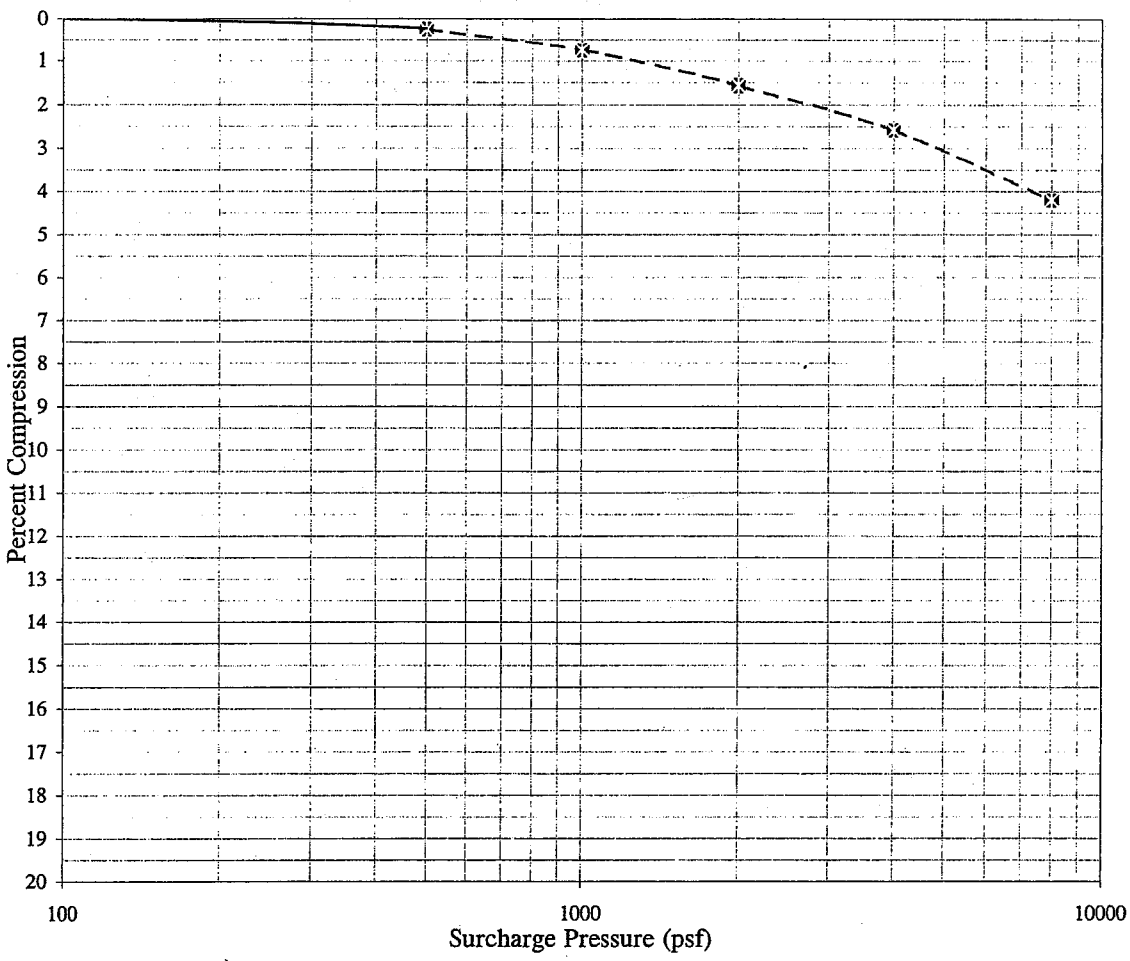
SAMPLE SOURCE: B13L @ 114'-115.5'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 125 Moisture Content (%): 11



REMARKS: Sample submerged at 500 psf.

LABORATORY TEST RESULTS

Date: 27-Jun-05

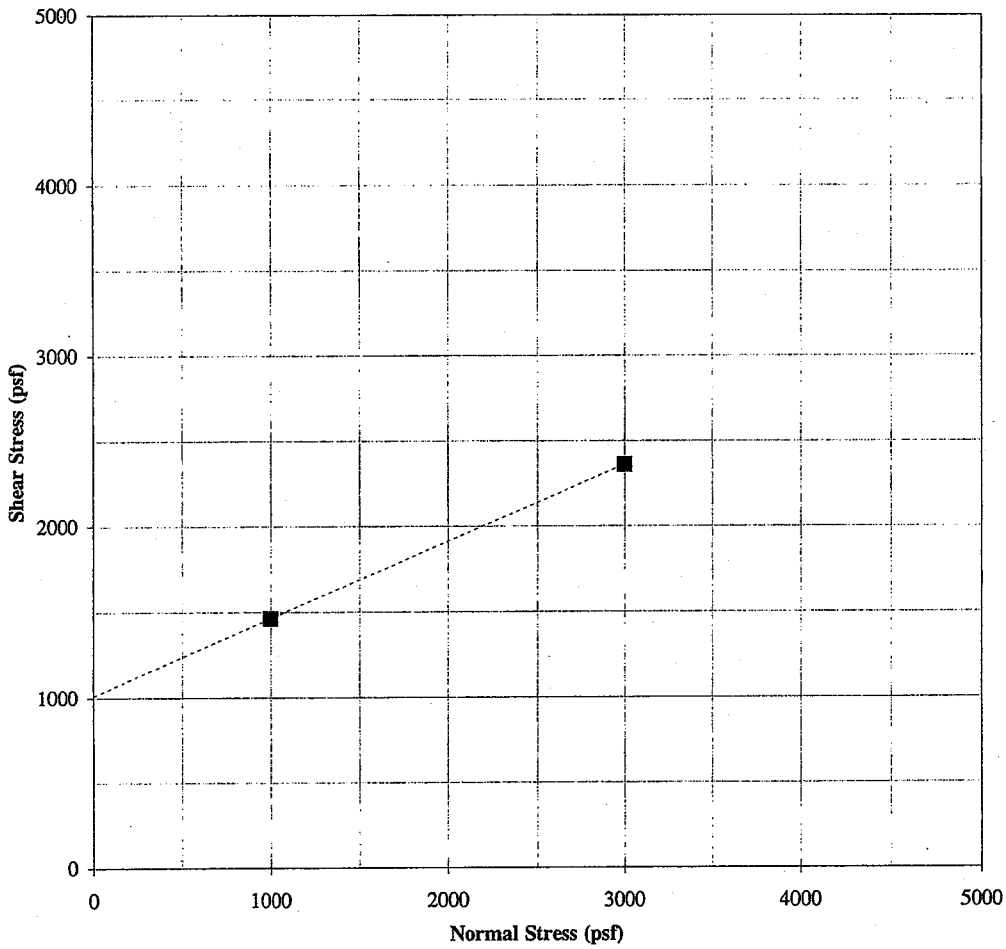
SAMPLE SOURCE: BA2L @ 74'-75.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	96	Moisture Content (%):	23
Cohesion (psf):	1000	Friction Angle (phi):	24



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

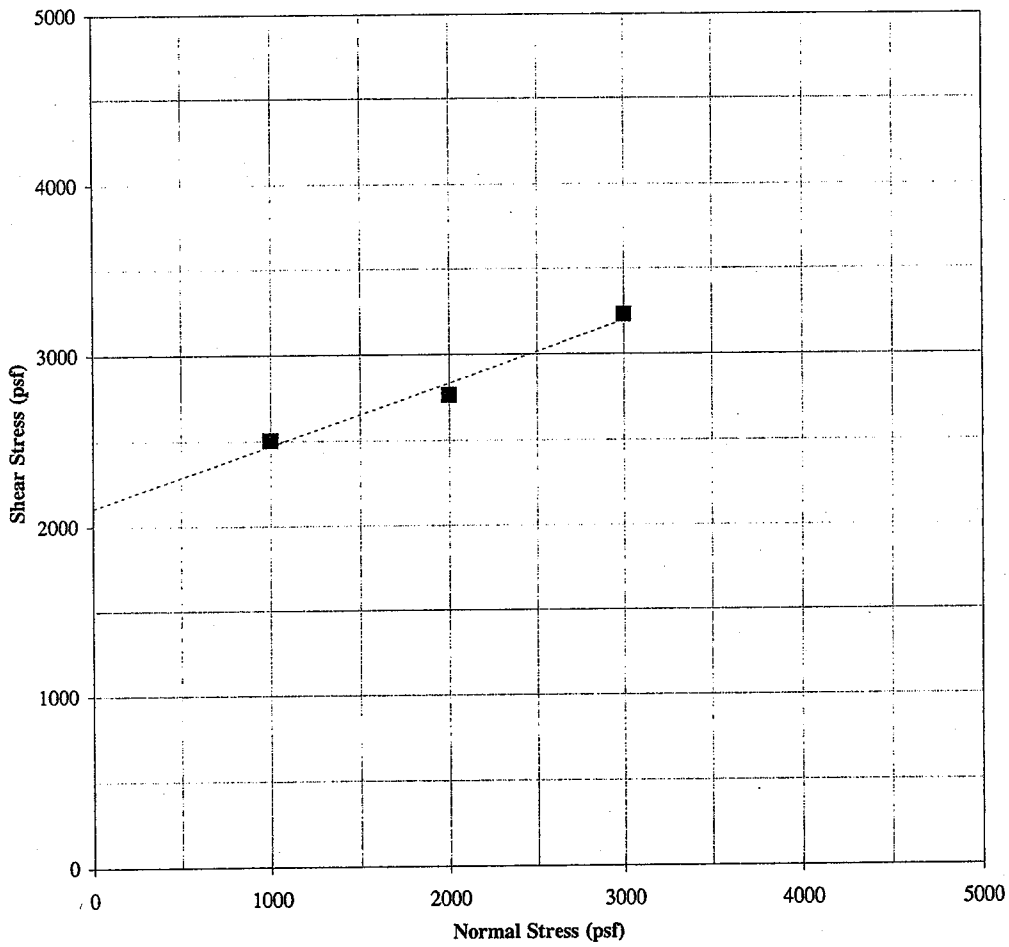
SAMPLE SOURCE: B1L @ 54'-55'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	86	Moisture Content (%):	35
Cohesion (psf):	2100	Friction Angle (phi):	20



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

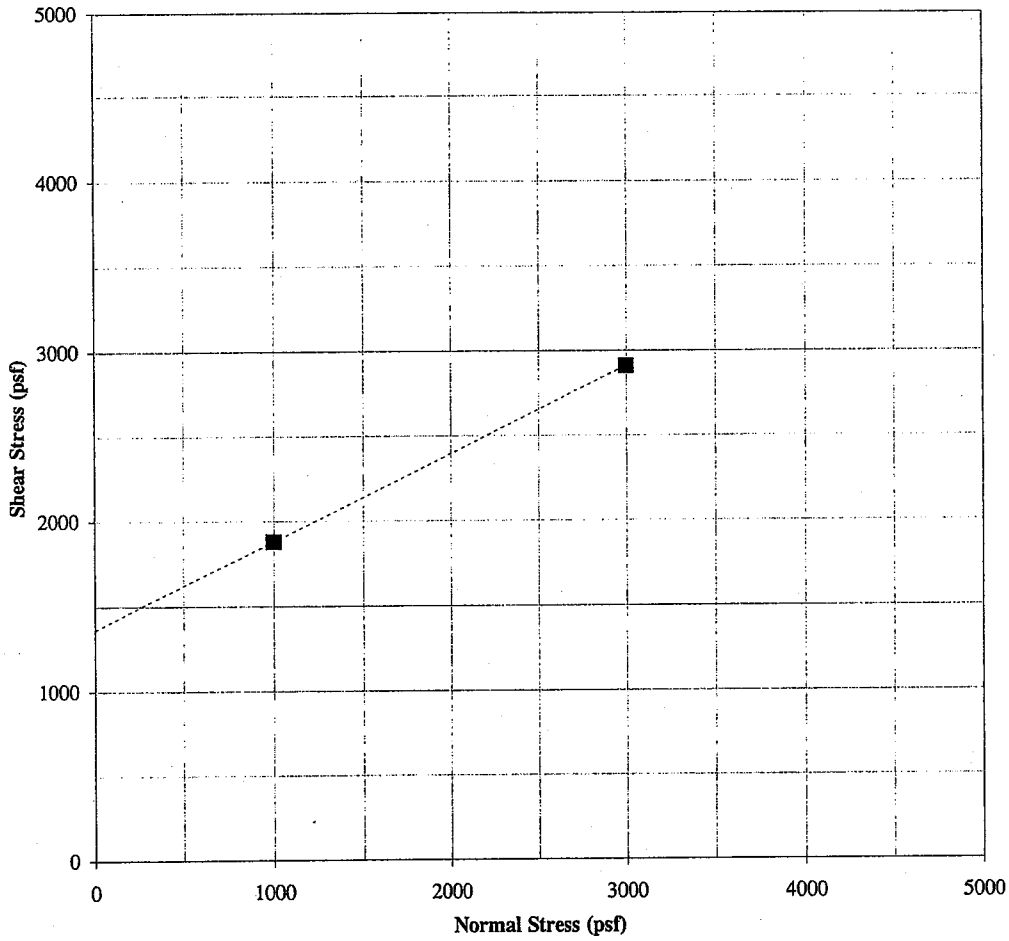
SAMPLE SOURCE: B1L @ 64'-65'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	90	Moisture Content (%):	30
Cohesion (psf):	1400	Friction Angle (phi):	27



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

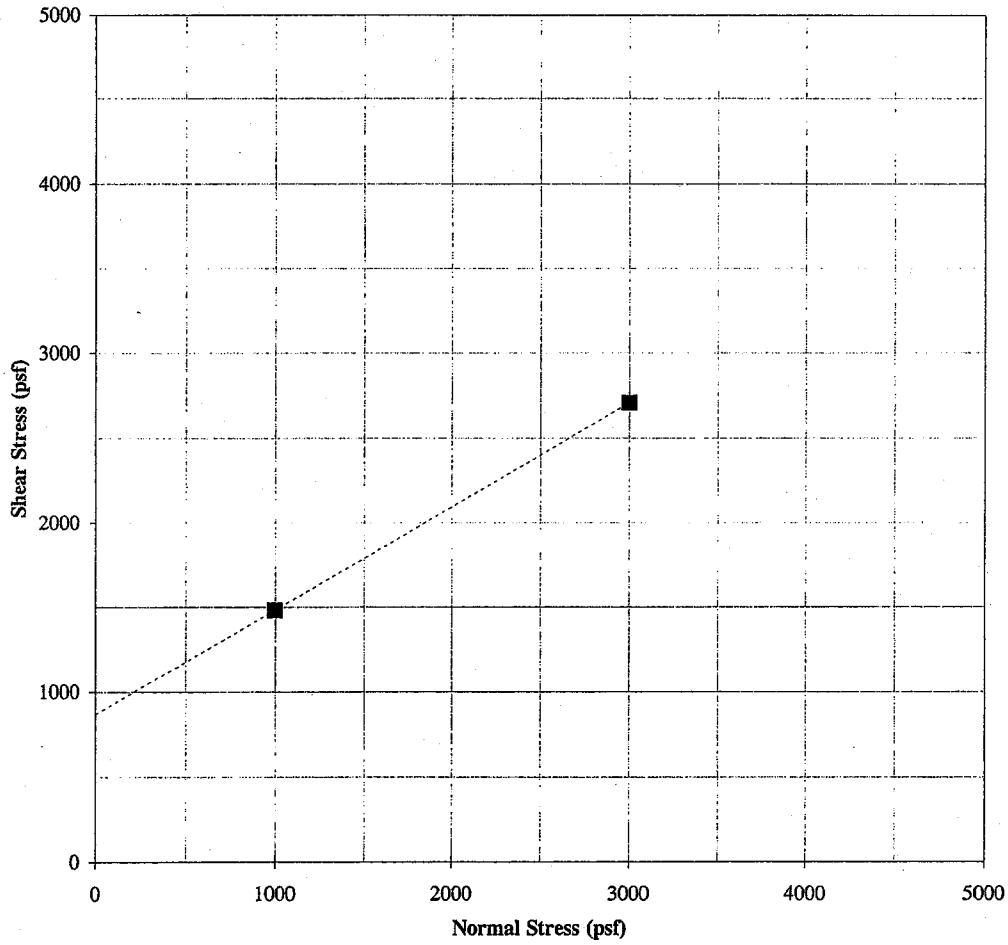
SAMPLE SOURCE: B1L @ 74'-75'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	104	Moisture Content (%):	18
Cohesion (psf):	900	Friction Angle (phi):	32



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

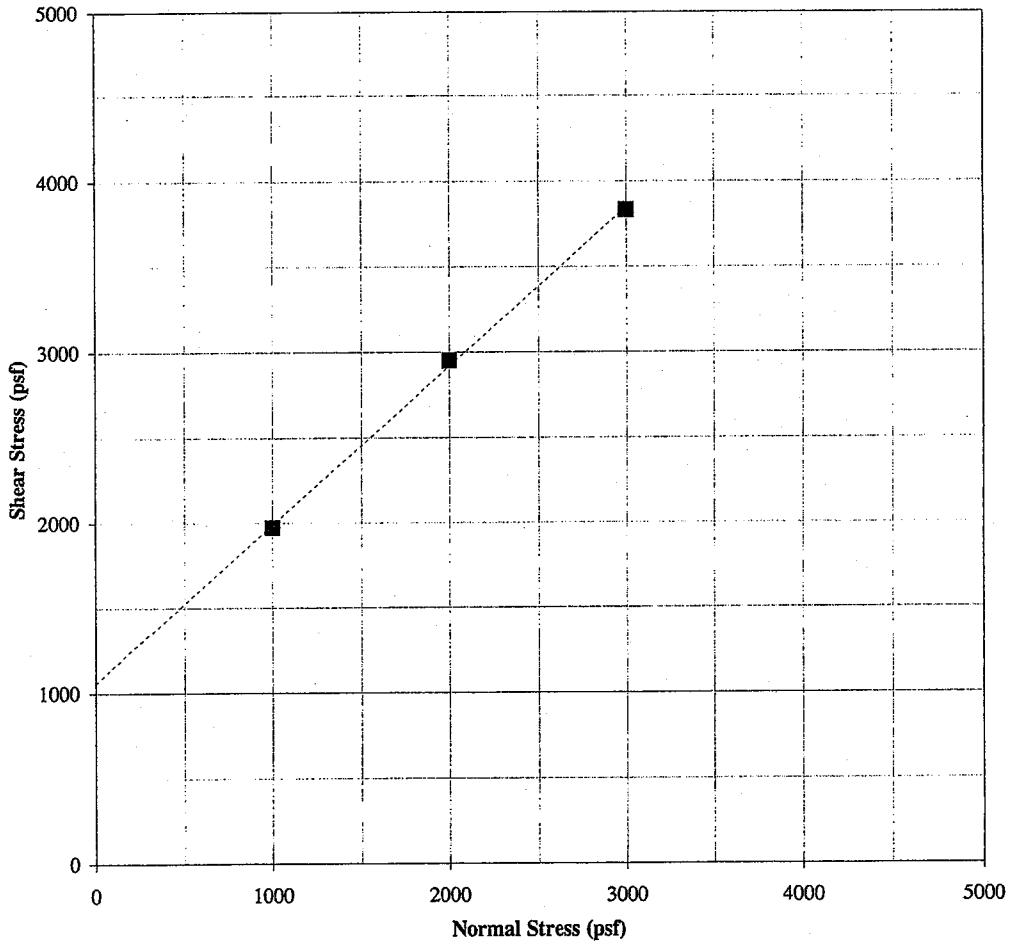
SAMPLE SOURCE: B2R @ 54'-55.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	86	Moisture Content (%):	32
Cohesion (psf):	1100	Friction Angle (phi):	43



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

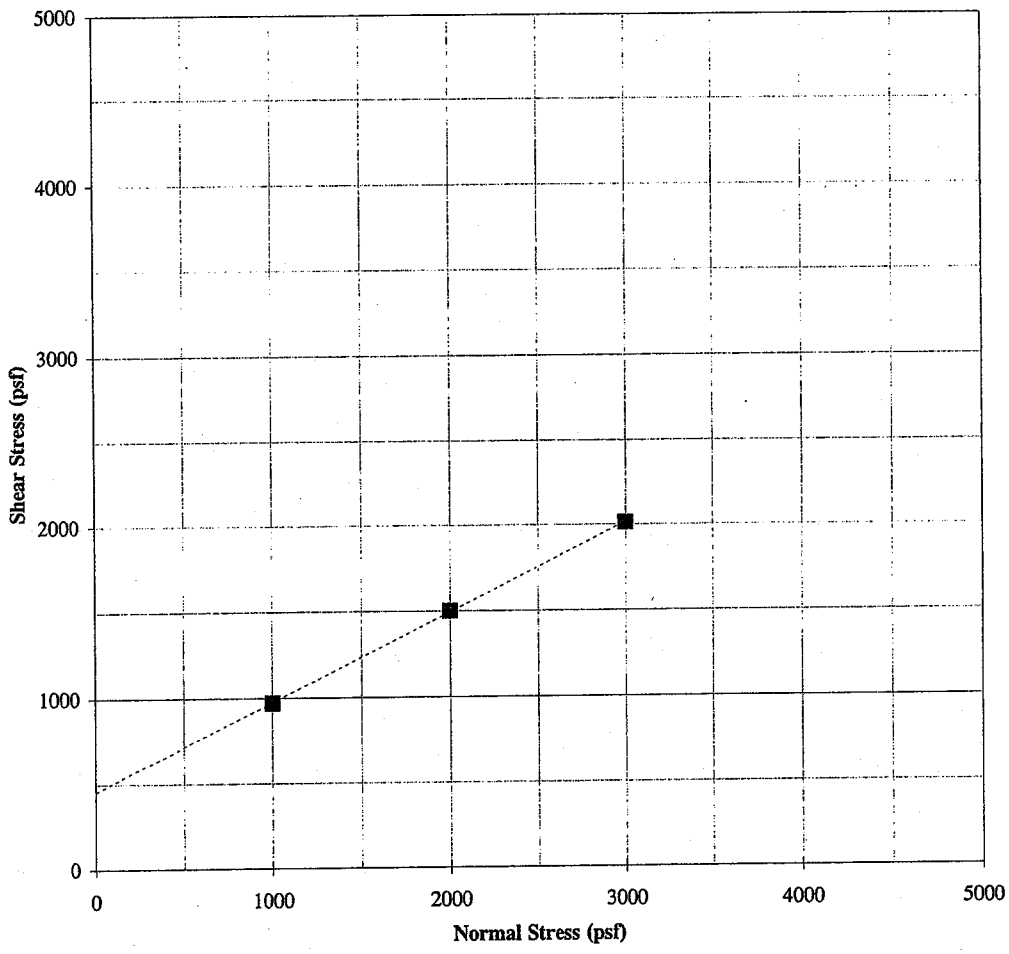
SAMPLE SOURCE: B2R @ 59'-60'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	103	Moisture Content (%):	25
Cohesion (psf):	500	Friction Angle (phi):	27



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

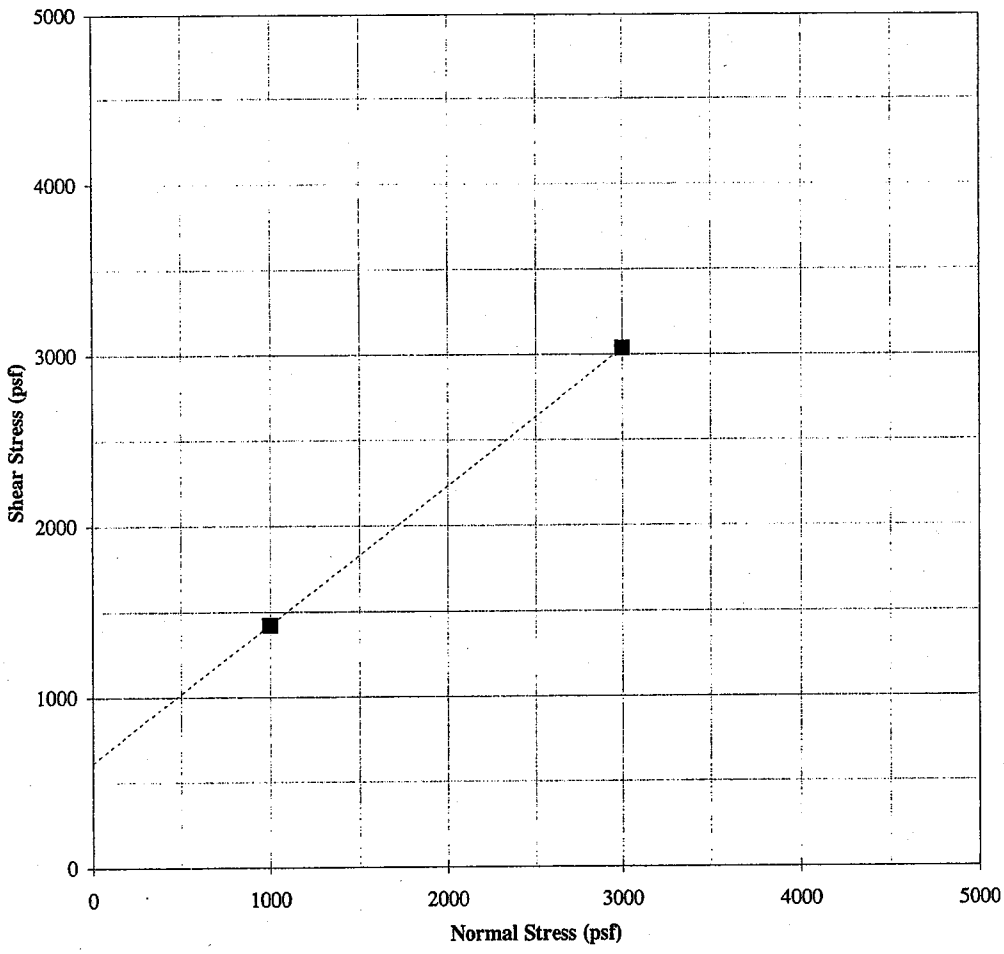
SAMPLE SOURCE: B2R @ 79'-80.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	114	Moisture Content (%):	14
Cohesion (psf):	600	Friction Angle (phi):	39



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

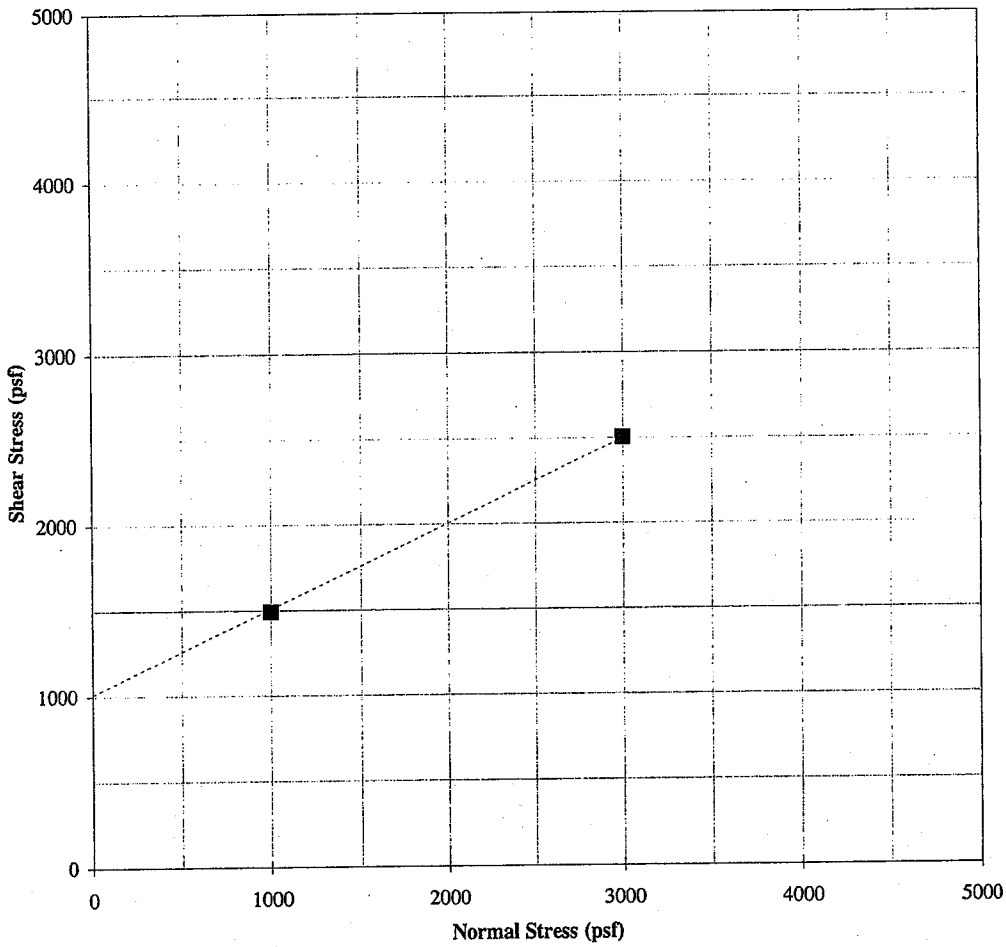
SAMPLE SOURCE: B3L @ 53.5'-54'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	86	Moisture Content (%):	35
Cohesion (psf):	1000	Friction Angle (phi):	27



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

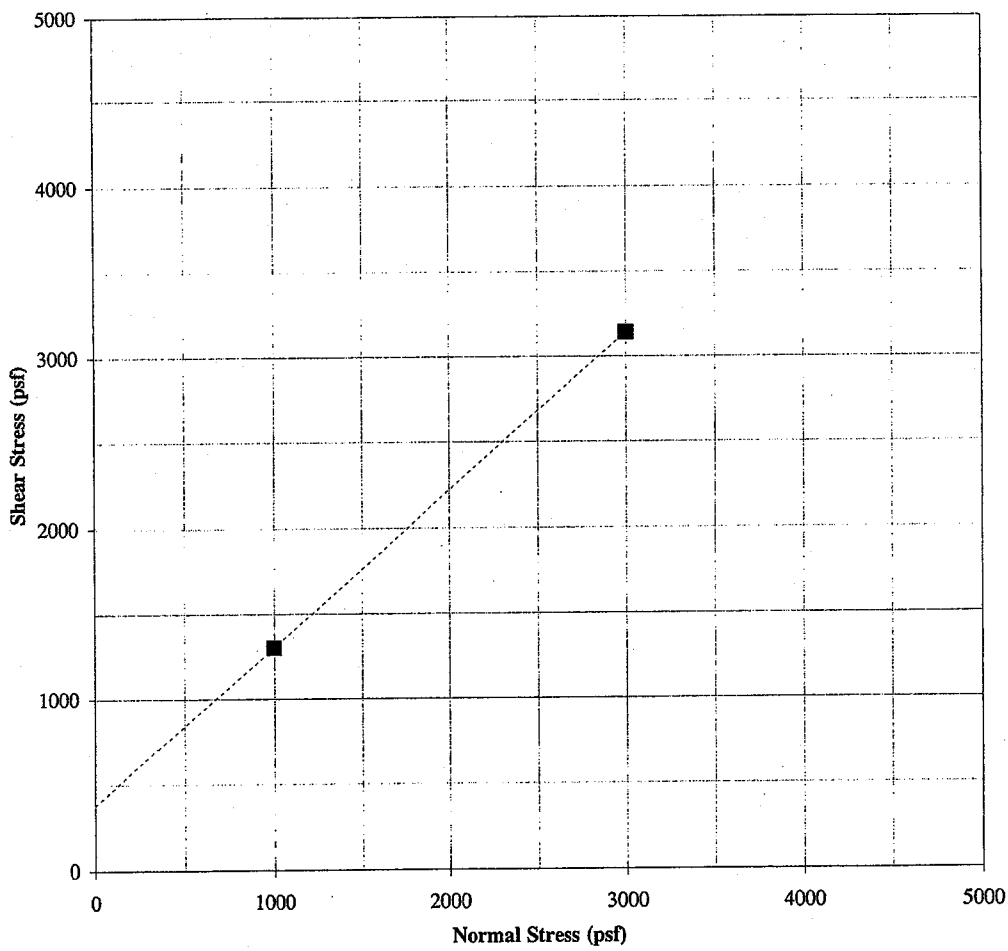
SAMPLE SOURCE: B3L @ 74'-75'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	105	Moisture Content (%):	19
Cohesion (psf):	400	Friction Angle (phi):	43



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

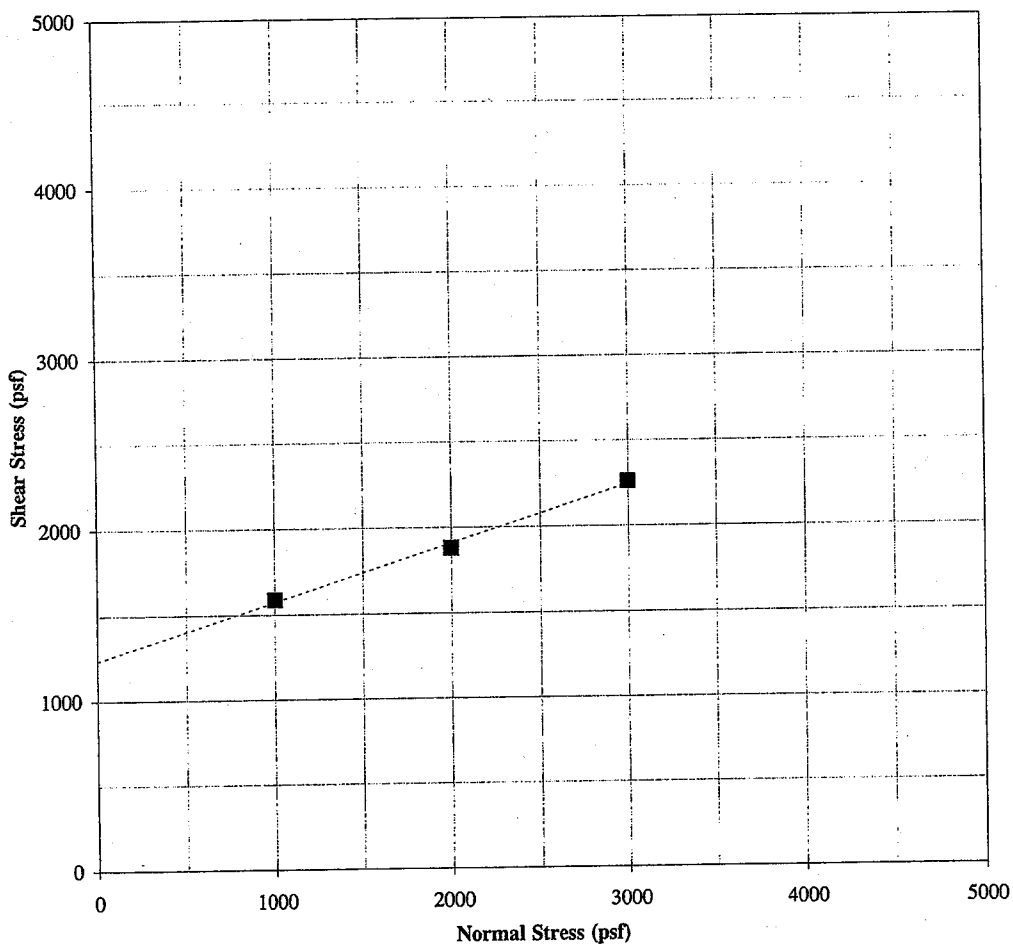
SAMPLE SOURCE: B3L @ 84'-85'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	109	Moisture Content (%):	16
Cohesion (psf):	1200	Friction Angle (phi):	19



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

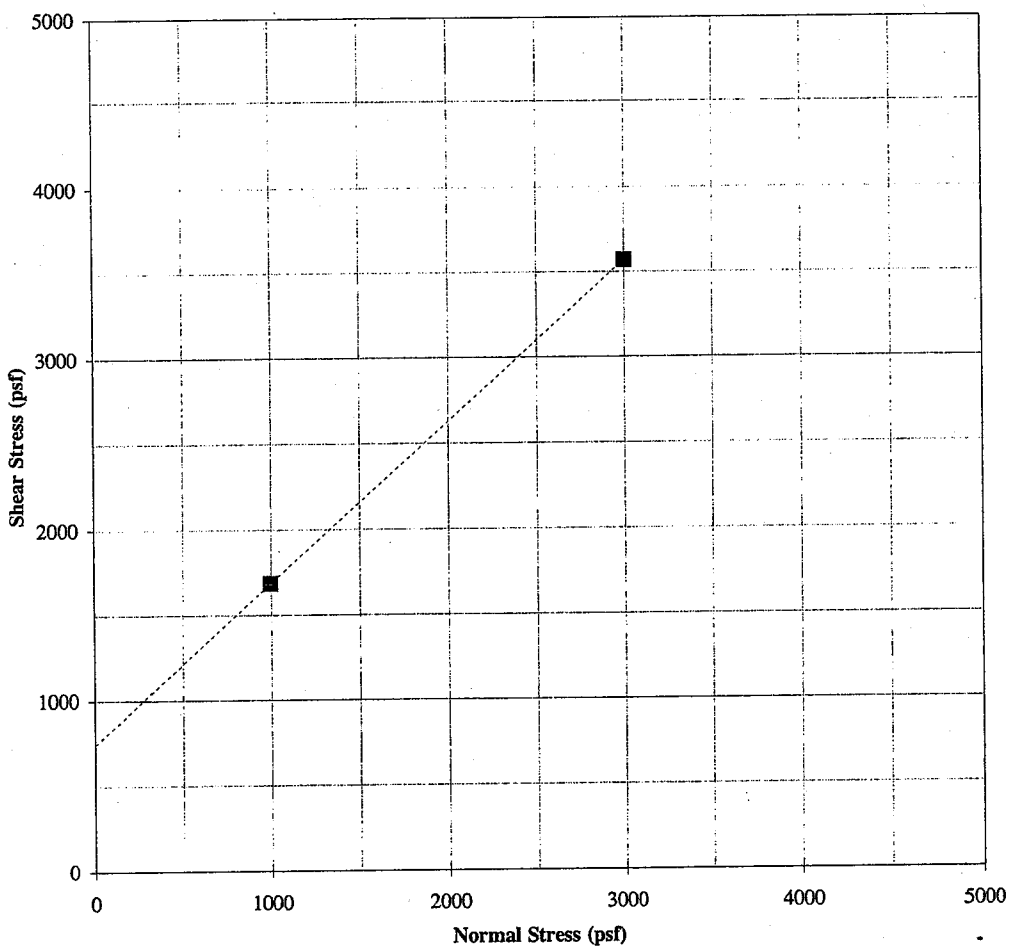
SAMPLE SOURCE: B4R @ 79'-80'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	91	Moisture Content (%):	15
Cohesion (psf):	700	Friction Angle (phi):	43



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

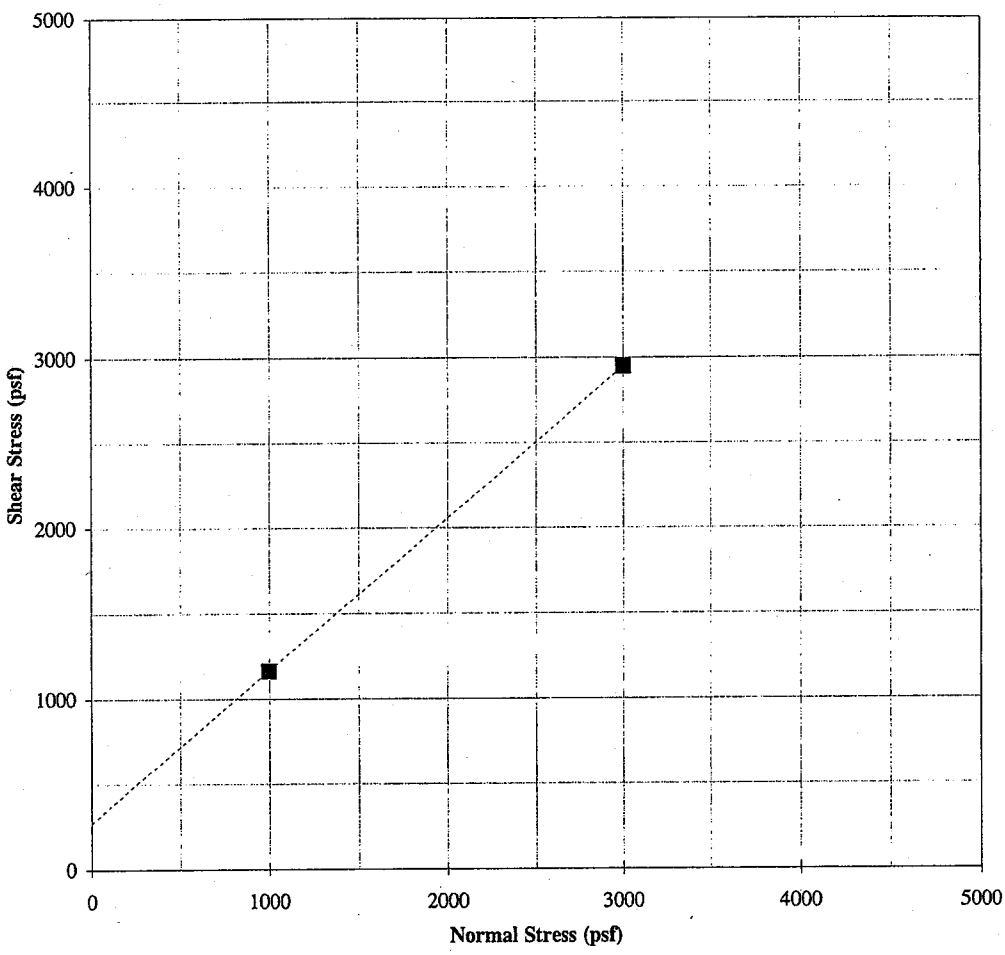
SAMPLE SOURCE: B6R @ 50'-51.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	109	Moisture Content (%):	17
Cohesion (psf):	300	Friction Angle (phi):	42



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

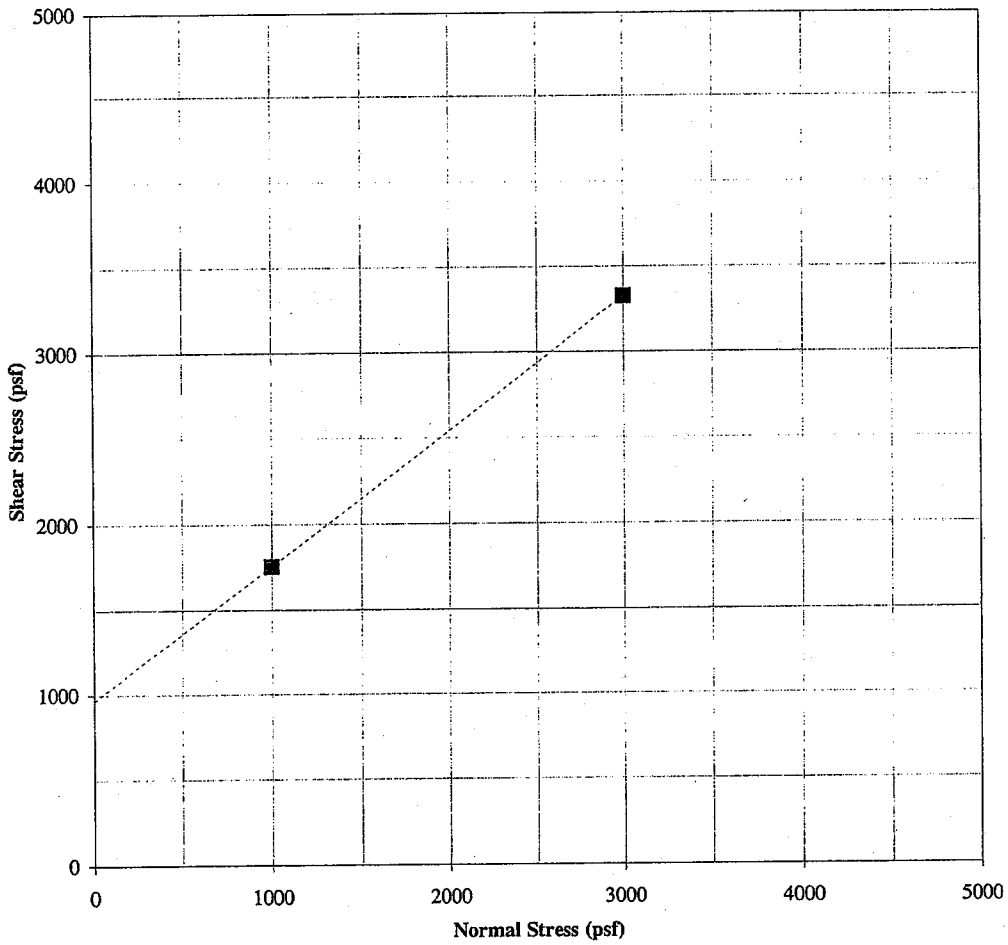
SAMPLE SOURCE: B6R @ 80'-81.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	106	Moisture Content (%):	20
Cohesion (psf):	1000	Friction Angle (phi):	38



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

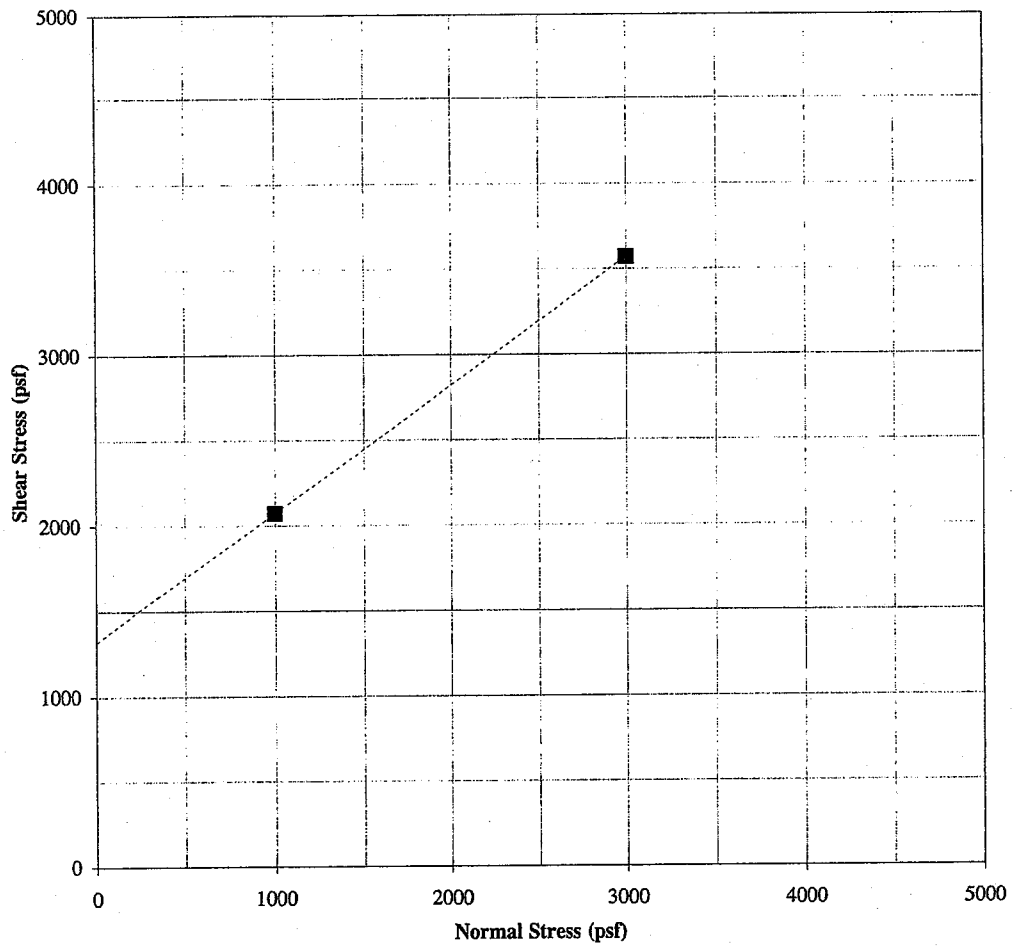
SAMPLE SOURCE: B7L @ 64'-65.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	93	Moisture Content (%):	24
Cohesion (psf):	1300	Friction Angle (phi):	37



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

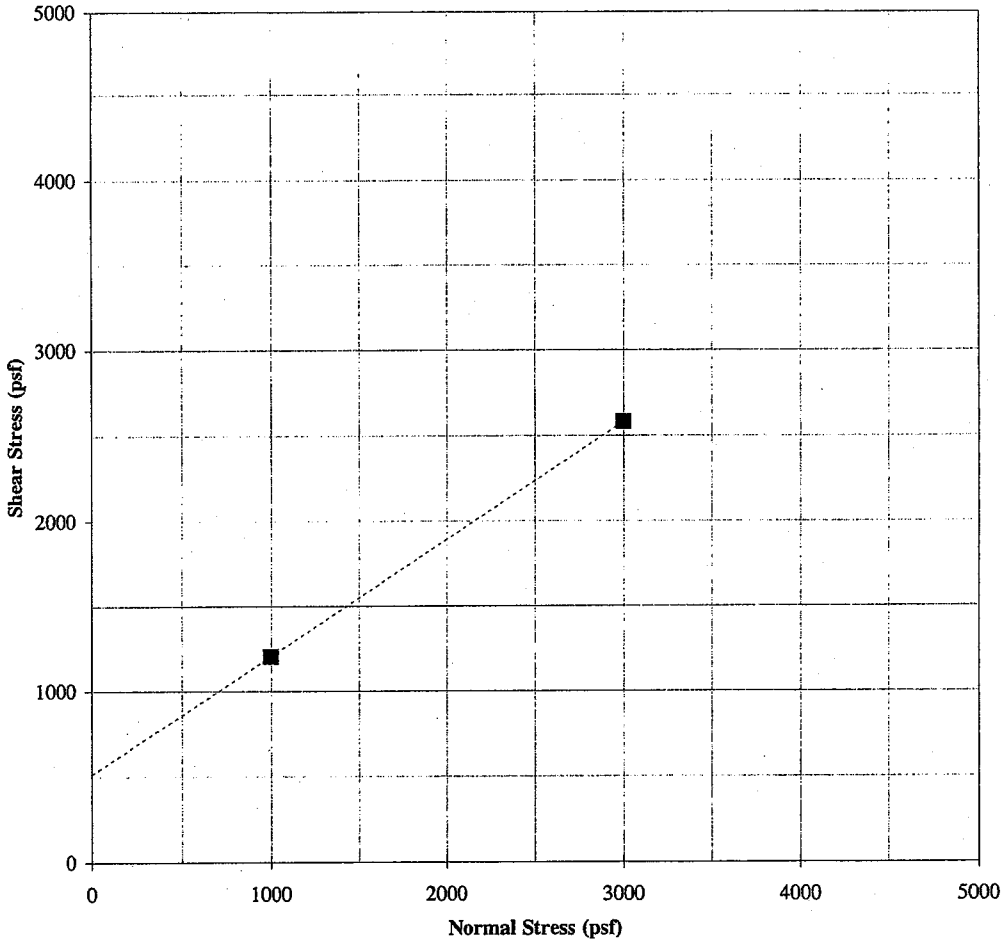
SAMPLE SOURCE: B7L @ 104'-104.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	112	Moisture Content (%):	17
Cohesion (psf):	500	Friction Angle (phi):	35



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

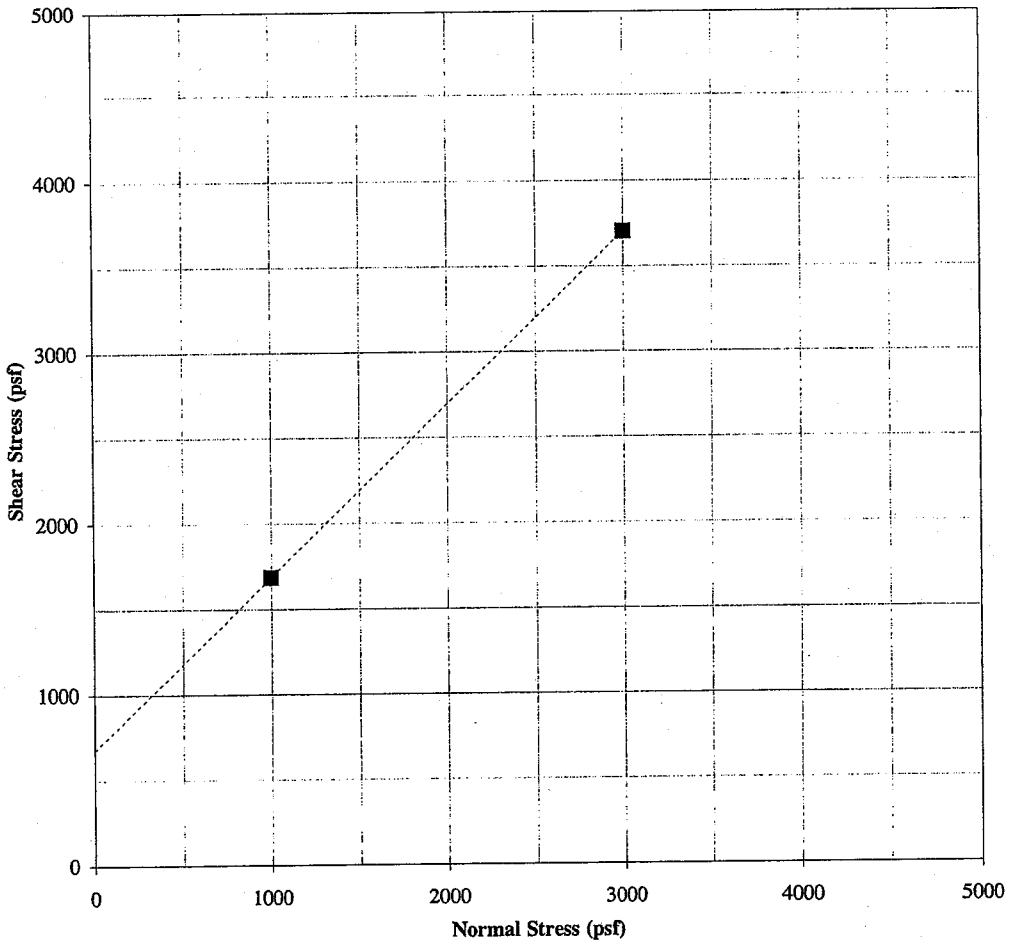
SAMPLE SOURCE: B8R @ 69'-70.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	113	Moisture Content (%):	11
Cohesion (psf):	700	Friction Angle (phi):	45



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

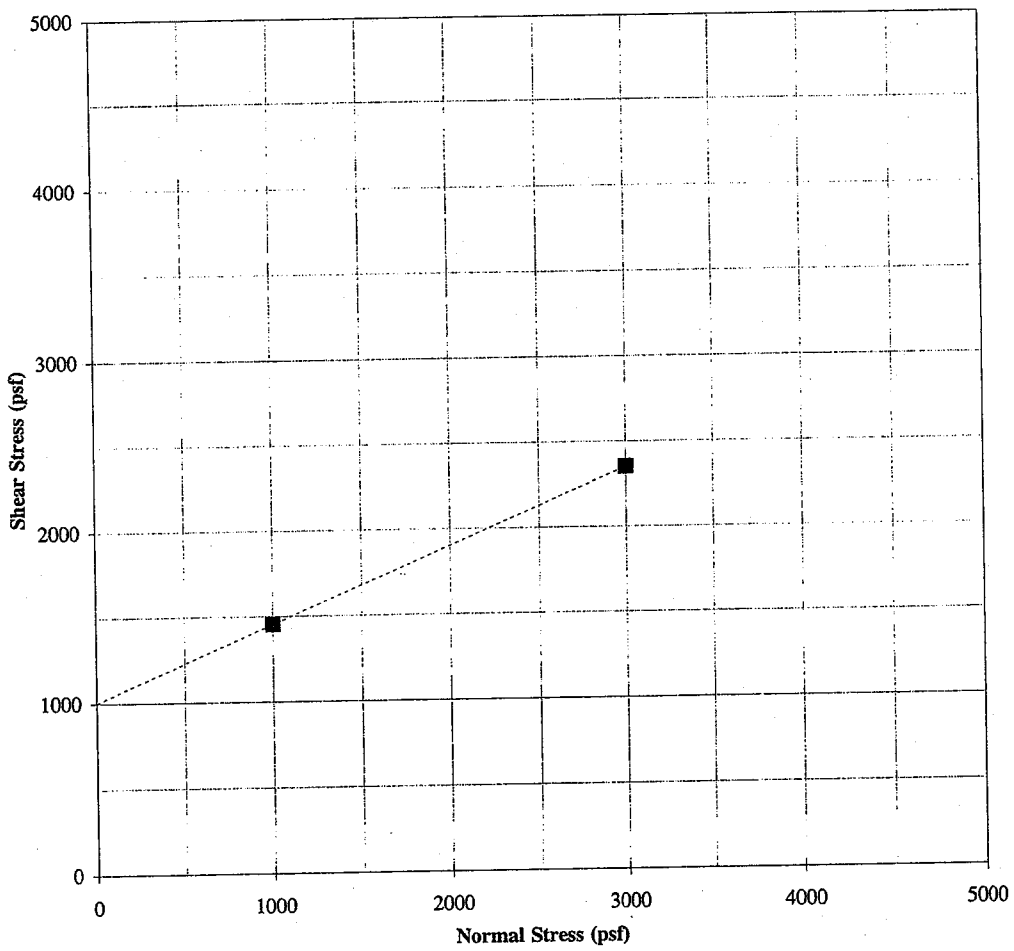
SAMPLE SOURCE: B9L @ 94'-95.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	112	Moisture Content (%):	8
Cohesion (psf):	1000	Friction Angle (phi):	24



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

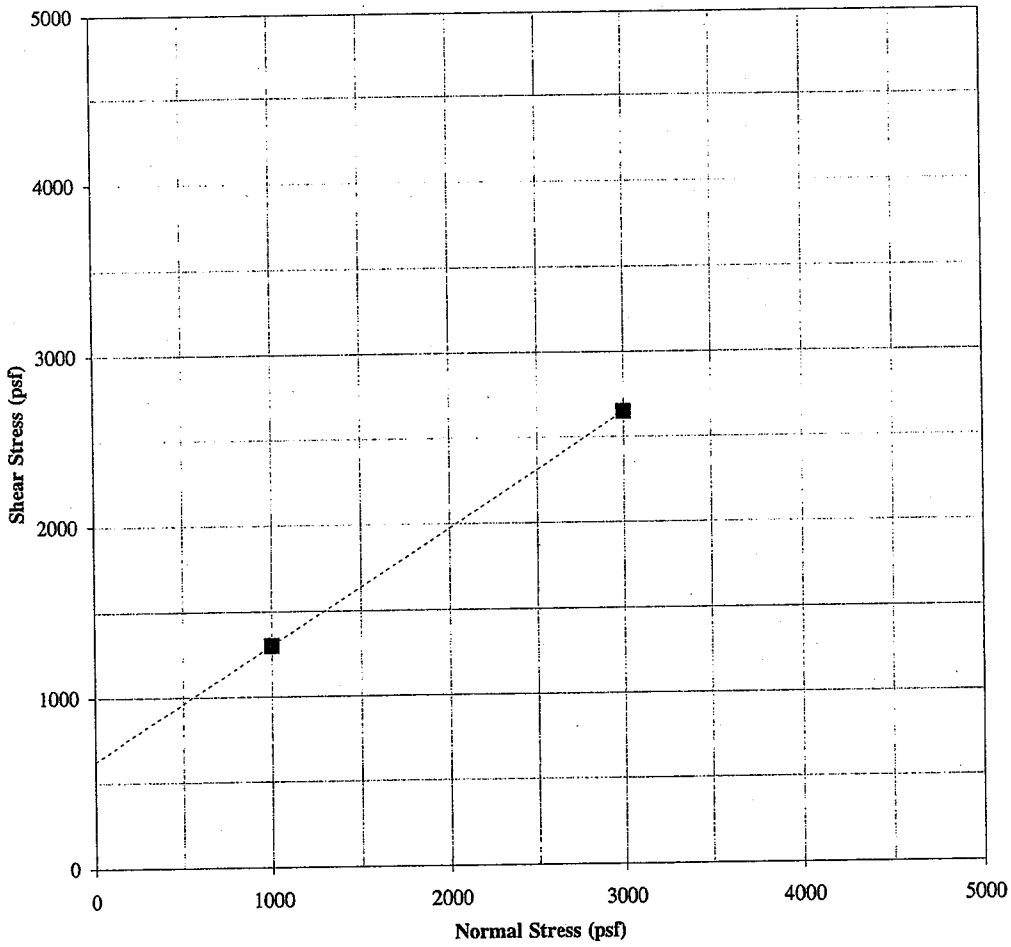
SAMPLE SOURCE: B10R @ 69'-70.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	105	Moisture Content (%):	16
Cohesion (psf):	600	Friction Angle (phi):	34



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

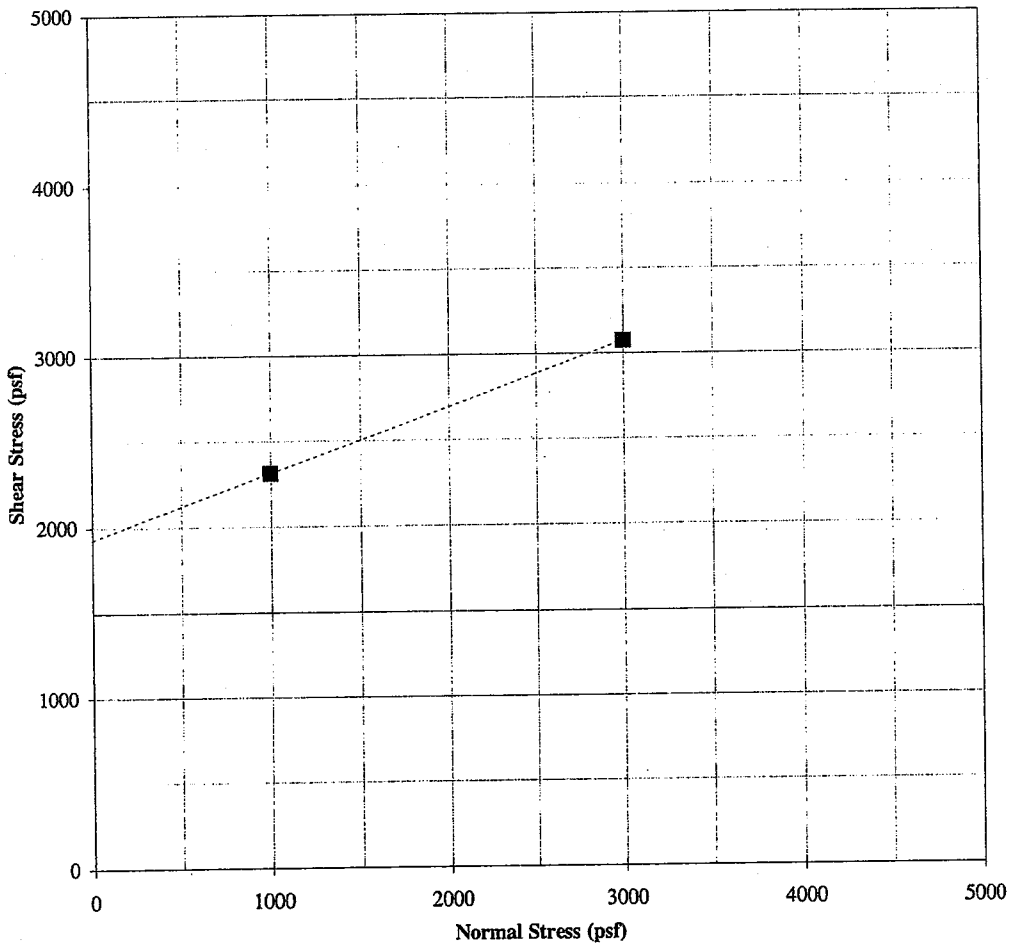
SAMPLE SOURCE: B10R @ 79'-80.5

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	83	Moisture Content (%):	39
Cohesion (psf):	1900	Friction Angle (phi):	21



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

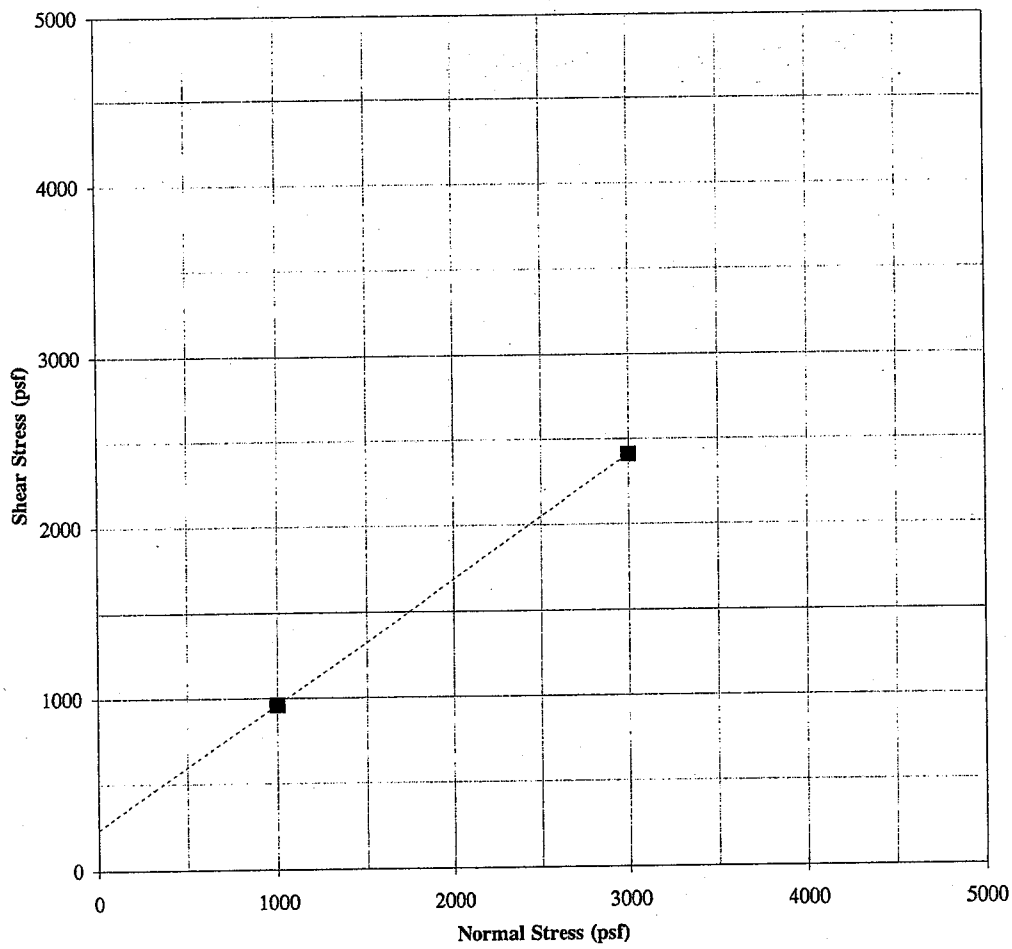
SAMPLE SOURCE: B11L @ 74'-75.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	106	Moisture Content (%):	20
Cohesion (psf):	200	Friction Angle (phi):	36



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

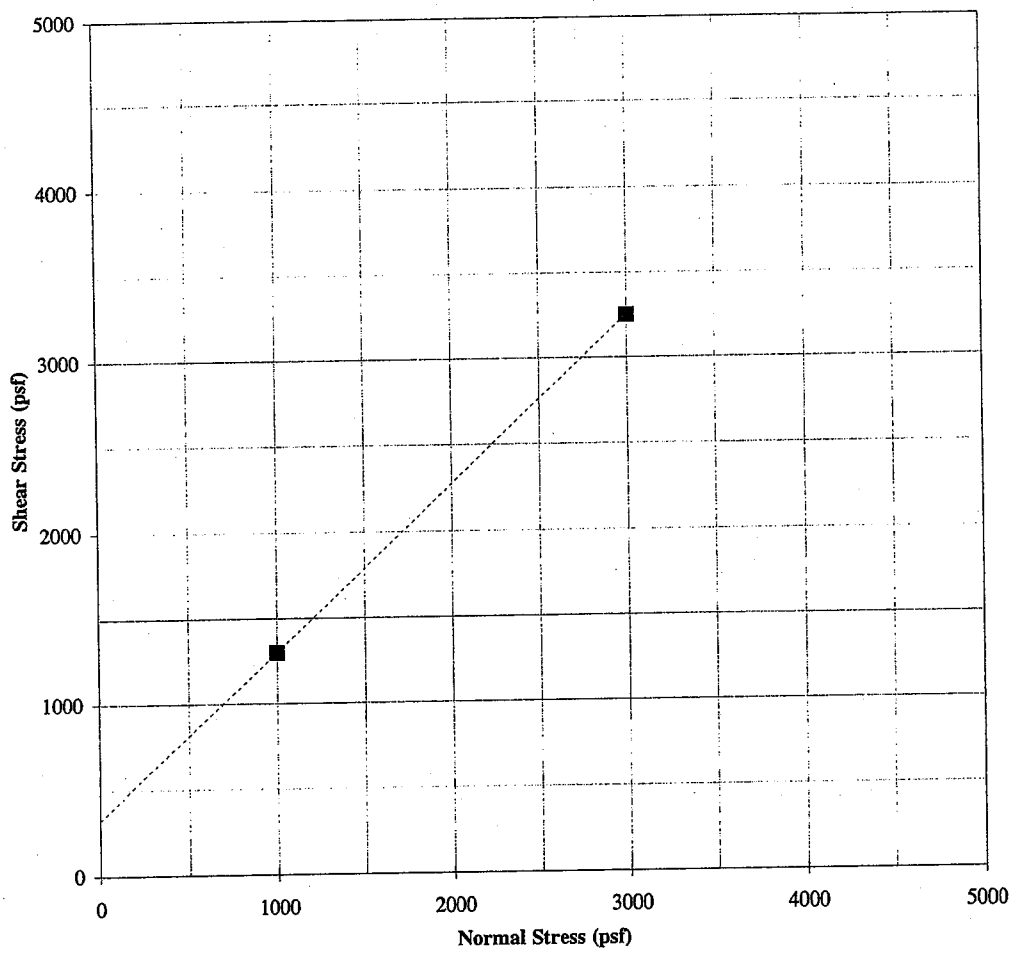
SAMPLE SOURCE: B11L @ 104'-105.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	109	Moisture Content (%):	10
Cohesion (psf):	300	Friction Angle (phi):	44



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

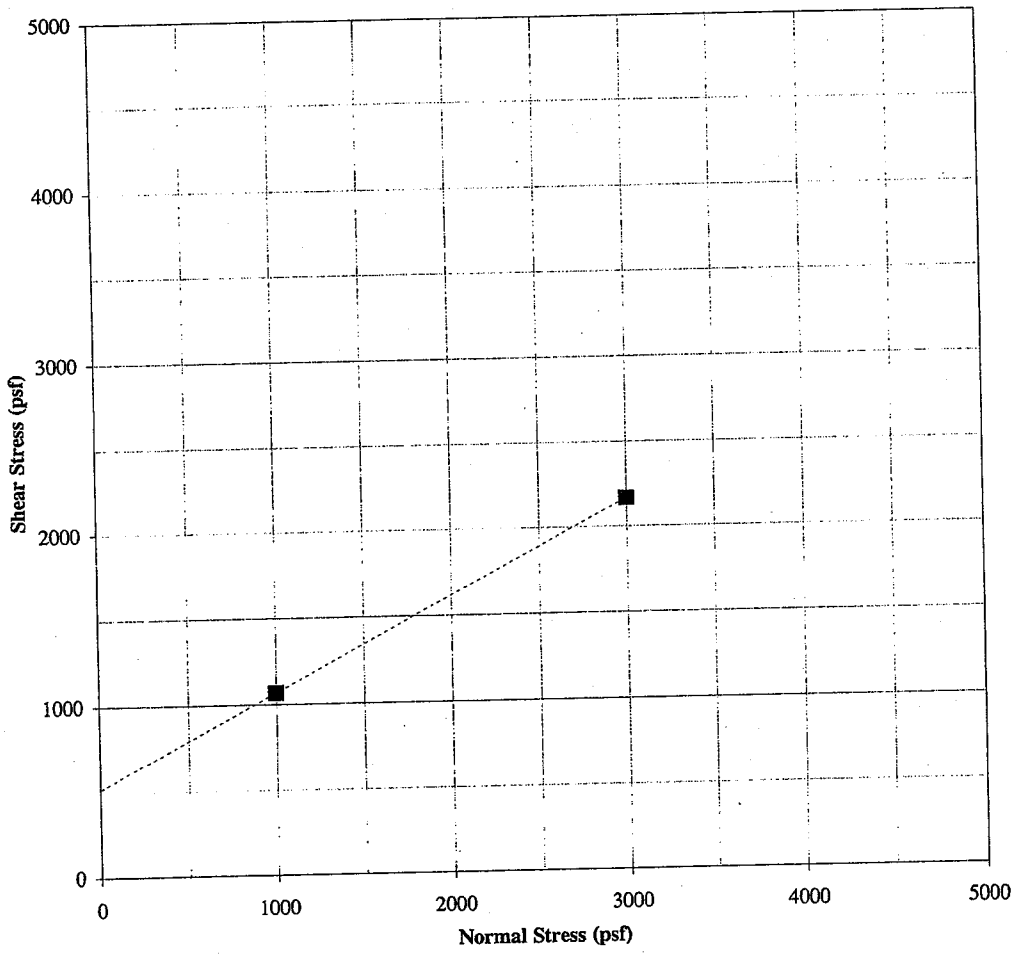
SAMPLE SOURCE: B12R @ 79'-80'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	97	Moisture Content (%):	22
Cohesion (psf):	500	Friction Angle (phi):	29



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

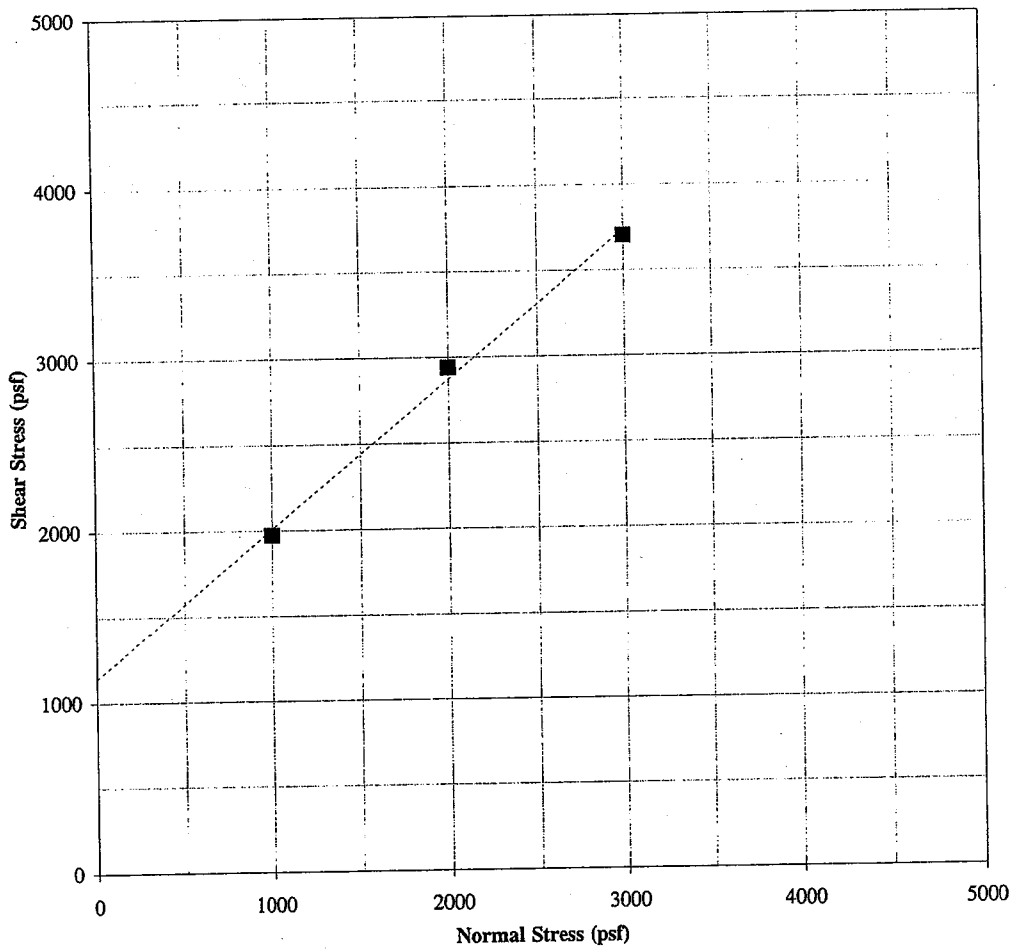
SAMPLE SOURCE: B13L @ 74'-75.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	103	Moisture Content (%):	21
Cohesion (psf):	1100	Friction Angle (phi):	41



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

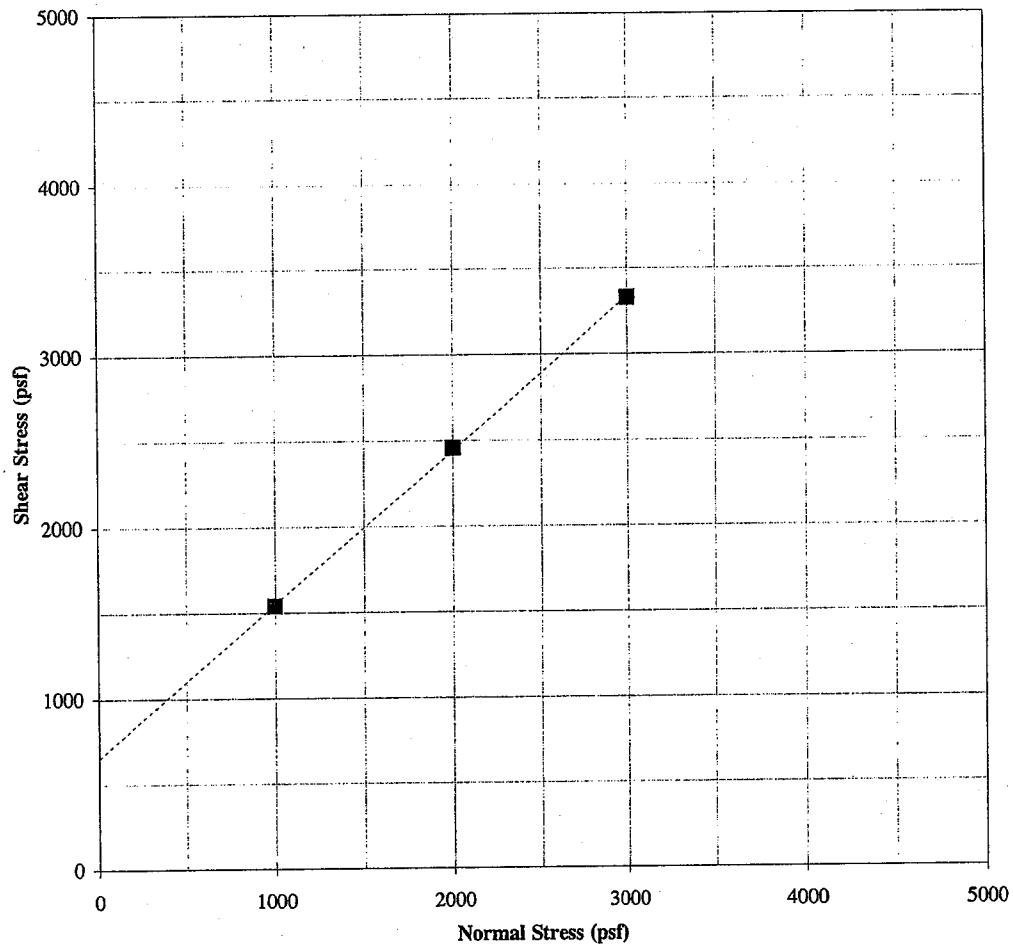
SAMPLE SOURCE: B13L @ 84'-85'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	99	Moisture Content (%):	25
Cohesion (psf):	700	Friction Angle (phi):	42



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

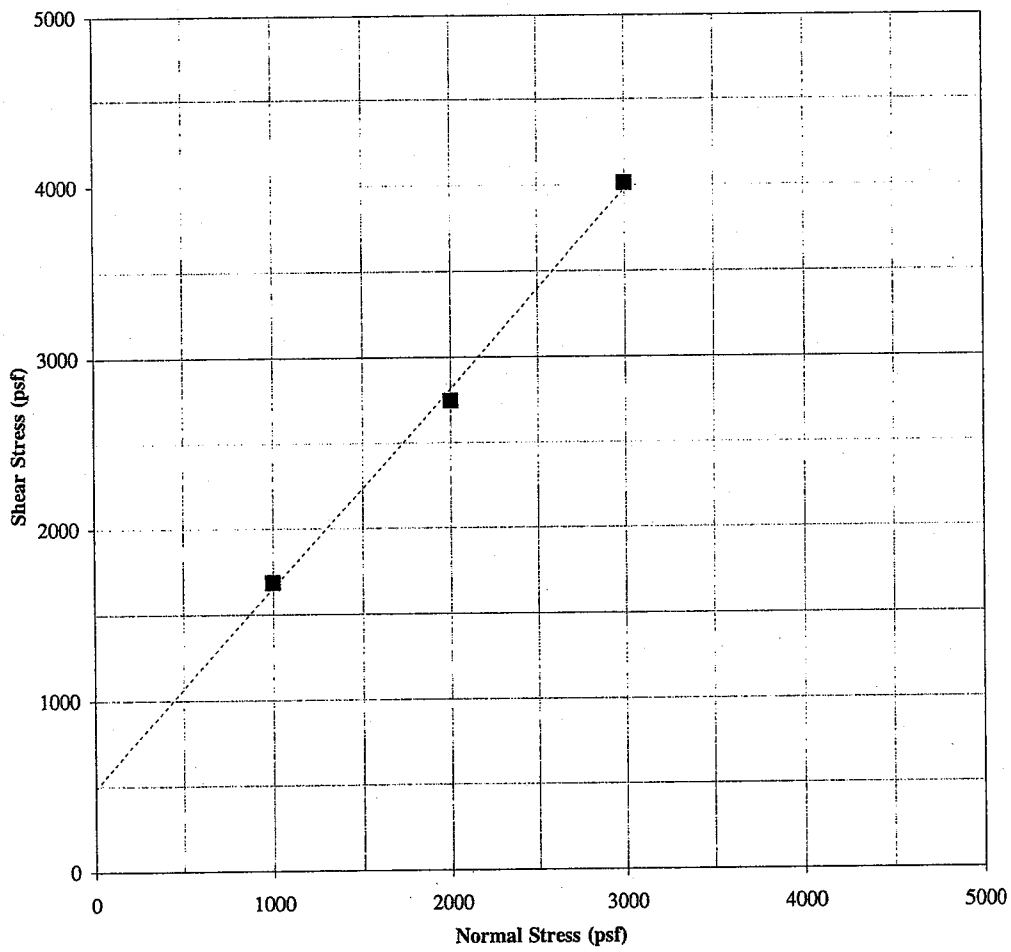
SAMPLE SOURCE: B14R @ 79'-80.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	109	Moisture Content (%):	19
Cohesion (psf):	500	Friction Angle (phi):	49



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

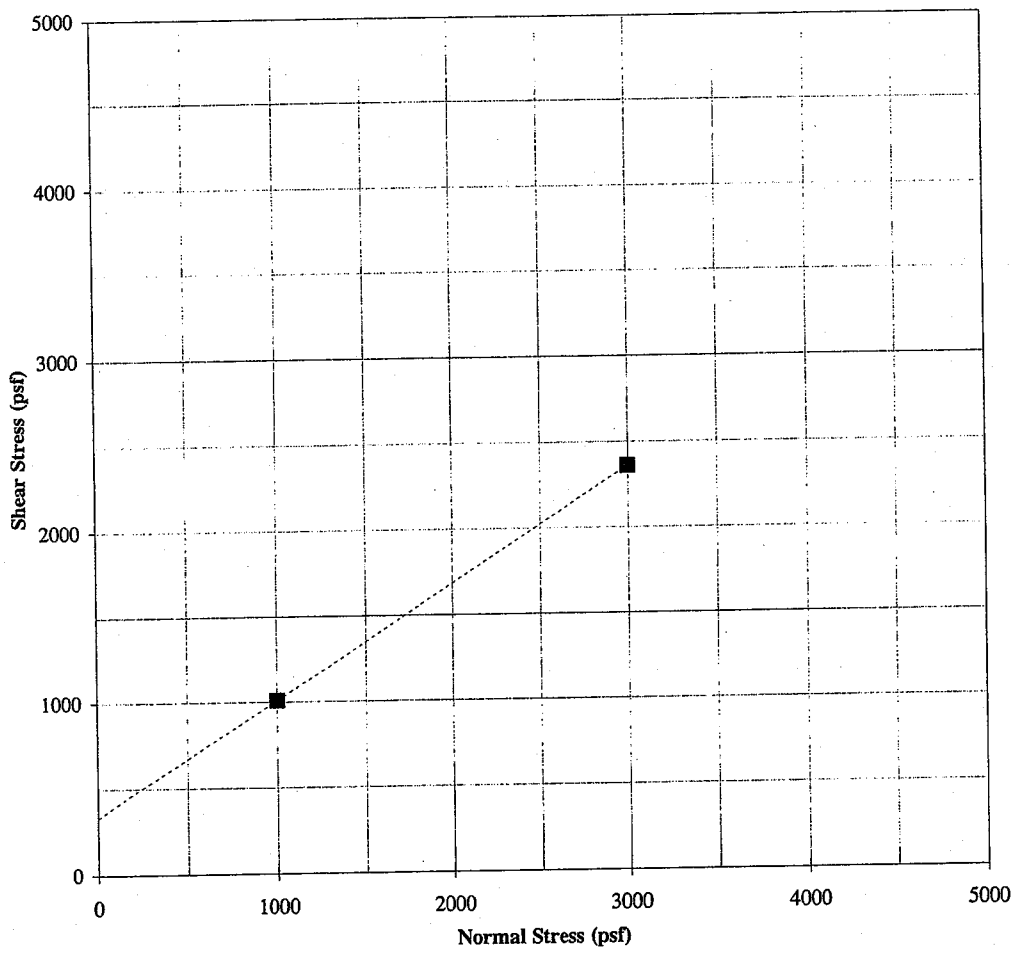
SAMPLE SOURCE: B15L @ 94'-95.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	98	Moisture Content (%):	25
Cohesion (psf):	300	Friction Angle (phi):	34



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

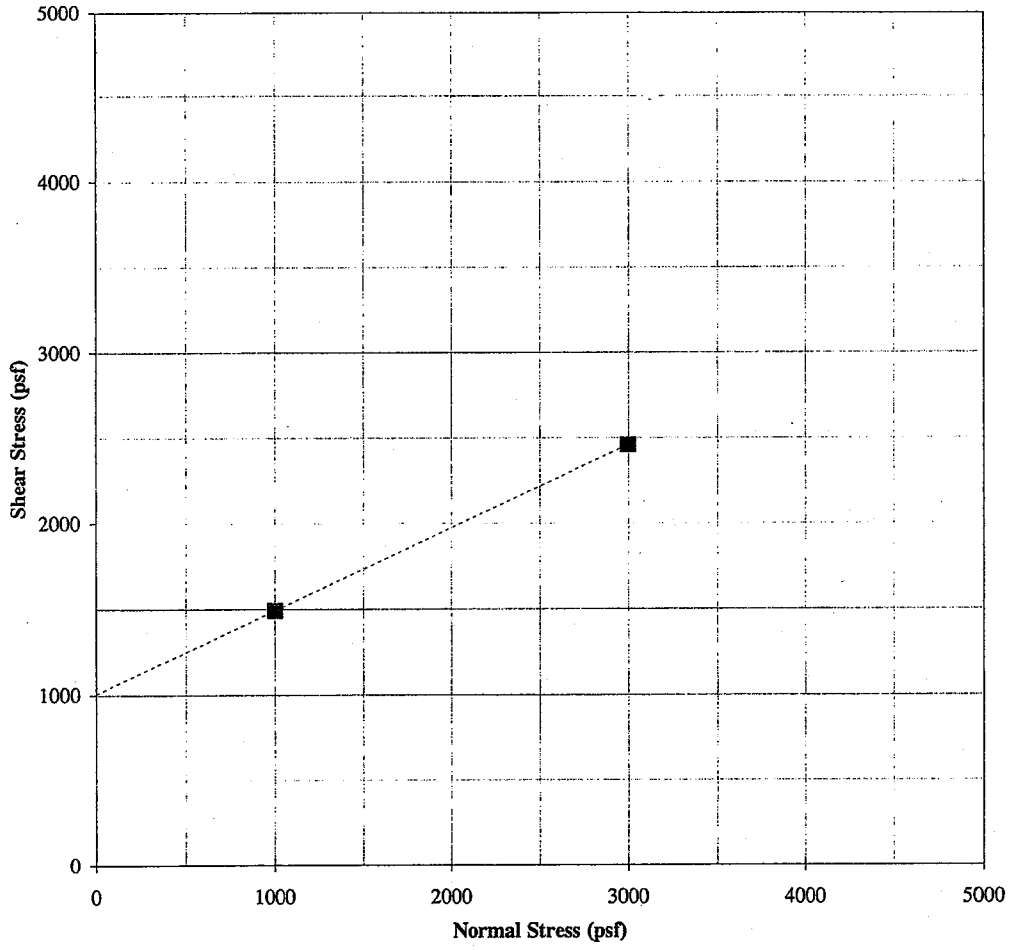
SAMPLE SOURCE: B15L @ 104'-105.5'

TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf):	112	Moisture Content (%):	17
Cohesion (psf):	1000	Friction Angle (phi):	26



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 27-Jun-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
BA1R @ 35'-40'	NA	NP	6.3	9	16	55	79	86	92	100				SP-SM
BA1R @ 55'-60'	30	12	59	75	90	97	98	98	98	100				CL
BA1R @ 65'-70'	NA	NP	17	25	35	48	61	71	80	98	100			SM
BA2L @ 0'-5' ←	NA	NP	15	29	62	82	86	87	88	90	100			SM ←
BA2L @ 35'-40'	NA	NP	2.5	7	19	33	38	41	45	61	64	84	100	GP
BA2L @ 50'-55'	NA	NP	1.2	2	3	9	20	38	56	87	92	100		SP
BA2L @ 60'-65'	31	11	65	70	75	82	85	86	87	95	100			CL
BA2L @ 110'-115	32	12	40	46	53	61	69	76	81	97	100			SC
B1L @ 30'-35'	NA	NP	1.7	4	12	24	33	37	42	64	69	95	100	GP
B1L @ 50'-55'	53	30	91	96	99	99	100							CH
B1L @ 60'-65'	NA	NP	14	32	87	98	99	99	100					SM
B1L @ 70'-75'	38	18	90	93	94	96	97	98	99	100				CL
B1L @ 80'-85'	54	23	23	28	34	42	53	64	76	97	100			SM
B1L @ 105'-110'	36	9	20	26	36	47	60	71	80	100				SM
B2R @ 40'-45'	NA	NP	3.7	5	7	12	21	29	38	71	80	91	100	GW
B2R @ 60'-65'	28	12	49	59	76	78	79	81	86	98	100			SC
B2R @ 75'-80'	33	15	66	71	75	79	85	89	93	100				CL
B3L @ 20'-25'	NA	NP	0.5	1	4	10	15	19	24	47	52	76	78	GP
B3L @ 45'-50'	45	23	92	98	99	99	99	100						CL
B3L @ 60'-65'	NA	NP	14	22	66	92	96	97	98	100				SM
B3L @ 70'-75'	37	17	84	89	94	97	98	99	99	100				CL
B3L @ 95'-100'	32	13	27	31	37	45	56	65	75	98	100			SC
B4R @ 40'-45'	27	9	79	91	96	97	98	99	99	100				CL
B4R @ 60'-65'	30	11	68	73	77	82	87	91	94	100				CL
B4R @ 70'-75'	41	20	86	91	93	95	97	98	100					CL
B4R @ 80'-85'	32	12	38	44	53	62	72	80	88	96	100			SC
B6R @ 0'-5' ←	NA	NP	0.3	2	15	39	48	53	56	72	74	89	100	SP ←
B6R @ 40'-45'	NA	NP	1.0	1	3	7	16	26	34	46	56	97	100	GP

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 27-Jun-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
BA1R @ 35'-40'	NA	NP	6.3	9	16	55	79	86	92	100				SP-SM
BA1R @ 55'-60'	30	12	59	75	90	97	98	98	98	100				CL
BA1R @ 65'-70'	NA	NP	17	25	35	48	61	71	80	98	100			SM
BA2L @ 0'-5'	NA	NP	15	29	62	82	86	87	88	90	100			SM
BA2L @ 35'-40'	NA	NP	2.5	7	19	33	38	41	45	61	64	84	100	GP
BA2L @ 50'-55'	NA	NP	1.2	2	3	9	20	38	56	87	92	100		SP
BA2L @ 60'-65'	31	11	65	70	75	82	85	86	87	95	100			CL
BA2L @ 110'-115'	32	12	40	46	53	61	69	76	81	97	100			SC
B1L @ 30'-35'	NA	NP	1.7	4	12	24	33	37	42	64	69	95	100	GP
B1L @ 50'-55'	53	30	91	96	99	99	100							CH
B1L @ 60'-65'	NA	NP	14	32	87	98	99	99	100					SM
B1L @ 70'-75'	38	18	90	93	94	96	97	98	99	100				CL
B1L @ 80'-85'	54	23	23	28	34	42	53	64	76	97	100			SM
B1L @ 105'-110'	36	9	20	26	36	47	60	71	80	100				SM
B2R @ 40'-45'	NA	NP	3.7	5	7	12	21	29	38	71	80	91	100	GW
B2R @ 60'-65'	28	12	49	59	76	78	79	81	86	98	100			SC
B2R @ 75'-80'	33	15	66	71	75	79	85	89	93	100				CL
B3L @ 20'-25'	NA	NP	0.5	1	4	10	15	19	24	47	52	76	78	GP
B3L @ 45'-50'	45	23	92	98	99	99	99	100						CL
B3L @ 60'-65'	NA	NP	14	22	66	92	96	97	98	100				SM
B3L @ 70'-75'	37	17	84	89	94	97	98	99	99	100				CL
B3L @ 95'-100'	32	13	27	31	37	45	56	65	75	98	100			SC
B4R @ 40'-45'	27	9	79	91	96	97	98	99	99	100				CL
B4R @ 60'-65'	30	11	68	73	77	82	87	91	94	100				CL
B4R @ 70'-75'	41	20	86	91	93	95	97	98	100					CL
B4R @ 80'-85'	32	12	38	44	53	62	72	80	88	96	100			SC
B6R @ 0'-5'	NA	NP	0.3	2	15	39	48	53	56	72	74	89	100	SP
B6R @ 40'-45'	NA	NP	1.0	1	3	7	16	26	34	46	56	97	100	GP

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 27-Jun-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
B6R @ 70'-75'	40	20	81	86	88	89	90	91	92	93	93	100		CL
B6R @ 90'-95'	34	13	18	22	26	32	41	50	59	84	100			SC
B7L @ 5'-10'	NA	NP	5.2	7	13	24	34	42	47	66	70	87	100	GP-SM
B7L @ 45'-50'	NA	NP	3.5	5	16	56	86	94	96	100				SP
B7L @ 75'-80'	36	13	88	92	94	94	94	95	95	96	100			CL
B7L @ 95'-100'	36	17	22	26	31	40	50	61	73	94	94	100		SC
B8R @ 10'-15'	NA	NP	2.5	3	5	10	16	20	24	48	55	72	86	GP
B8R @ 50'-55'	NA	NP	2.7	3	5	16	36	54	67	91	93	99	100	SP
B8R @ 65'-70'	31	12	62	69	74	79	84	88	92	98	100			CL
B8R @ 100'-105'	31	12	20	24	30	39	48	59	71	99	100			SC
B9L @ 15'-20'	NA	NP	4.6	8	14	25	34	39	41	61	66	75	100	GP
B9L @ 55'-60'	NA	NP	3.2	5	11	24	42	58	69	87	90	100		SP
B9L @ 70'-75'	32	9	71	80	85	88	90	91	94	100				CL
B9L @ 90'-95'	37	14	21	25	30	36	43	49	57	83	87	100		GC
B10R @ 15'-20'	NA	NP	7.7	11	17	25	35	42	52	78	83	93	100	GP-SM
B10R @ 55'-60'	32	14	12	14	17	25	35	46	56	86	93	100		GC
B10R @ 85'-90'	32	11	93	95	96	96	97	97	98	100				CL
B10R @ 105'-110'	28	11	27	32	39	47	57	66	76	97	100			SC
B11L @ 20'-25'	NA	NP	1.9	4	11	25	33	37	40	59	67	94	100	GP
B11L @ 60'-65'	NA	NP	2.2	5	16	39	52	63	70	84	89	98	100	SP
B11L @ 70'-75'	30	9	60	68	74	78	79	80	80	85	90	100		CL
B11L @ 110'-115'	30	6	14	18	24	33	43	53	60	88	95	100		SM
B12R @ 25'-30'	NA	NP	1.8	4	9	21	28	31	35	54	67	87	95	GP
B12R @ 55'-60'	NA	NP	7.2	8	12	23	38	53	62	85	94	100		SP-SM
B12R @ 85'-90'	25	4	67	74	79	83	85	87	89	93	93	100		CL-ML
B12R @ 95'-100'	NA	NP	3.7	5	7	13	21	31	39	59	66	85	100	GM
B13L @ 35'-40'	36	16	7.2	9	12	17	24	33	41	76	85	100		GW-GC
B13L @ 60'-65'	NA	NP	2.0	3	11	34	58	70	75	87	90	100		SP

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 27-Jun-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
B13L @ 75'-80'	37	17	66	71	77	83	89	92	95	100				CL
B13L @ 95'-100'	28	11	24	30	36	46	56	65	73	93	100			SC
B14R @ 45'-50'	34	16	7.4	9	12	19	30	40	49	80	87	98	100	GP-GC
B14R @ 55'-60'	NA	NP	2.3	3	6	11	22	41	55	87	94	100		SP
B14R @ 90'-95'	47	25	75	76	78	80	82	85	87	94	94	100		CL
B14R @ 105'-110'	29	11	17	20	25	31	39	51	64	100				SC
B15L @ 30'-35'	NA	NP	6.1	8	14	27	32	35	38	61	70	100		GP-GM
B15L @ 50'-55'	NA	NP	1.5	2	3	10	21	32	44	82	89	100		GP
B15L @ 70'-75'	40	18	86	89	90	91	94	97	98	100				CL
B15L @ 110'-115'	33	14	20	24	29	37	48	57	65	95	95	100		SC
B16R @ 40'-45'	NA	NP	3.4	4	7	13	21	30	42	75	85	100		GW
B16R @ 50'-55'	NA	NP	1.9	3	5	10	17	28	42	79	87	100		GW
B16R @ 80'-85'	27	11	56	72	84	89	93	95	96	98	100			CL
B16R @ 100'-105'	NA	NP	5.2	7	12	23	37	48	54	82	90	100		SP-SM

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 27-Jun-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: pH, Minimum Resistivity (ADOT 236a)

SAMPLED BY: RAM/Reese

RESULTS:

Sample Source	pH	Minimum Resistivity (ohm-cm)
BA1R @ 35'-40'	8.8	2640
BA2L @ 0'-5'	8.5	2102
B1L @ 80'-85'	8.5	1220
B2R @ 60'-65'	8.3	746
B6R @ 70'-75'	8.3	1288
B7L @ 5'-10'	9.0	2102
B8R @ 100'-105'	8.5	858
B9L @ 55'-60'	9.1	1695
B10R @ 15'-20'	8.7	1980
B11L @ 60'-65'	9.2	990
B12R @ 85'-90'	8.5	1056
B13L @ 95'-100'	8.3	1424
B14R @ 90'-95'	8.4	792
B15L @ 50'-55'	8.9	2112
B16R @ 40'-45'	8.9	1716

MOTZZ LABORATORY, INC.
2109 S. 48th Street, Suite 101
Tempe, AZ 85282

Soil Analysis report

Ricker-Atkinson-McBee
Ken Ricker
2105 South Hardy Drive
Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 6/1/2005
Date Reported: 6/29/2005
PO Number: G11082

Lab Number: 5489-01 **BA1R @35'-40',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.026	%	
Sulfate-S, SO4-S	ARIZ 733	0.0023	%	
Chloride	ARIZ 736	0.0081	%	

Lab Number: 5489-02 **B1L @ 80'-85'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.045	%	
Sulfate-S, SO4-S	ARIZ 733	0.011	%	
Chloride	ARIZ 736	0.016	%	

Lab Number: 5489-03 **B2R @ 60'-65',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.065	%	
Sulfate-S, SO4-S	ARIZ 733	0.0044	%	
Chloride	ARIZ 736	0.016	%	

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602-454-2376 (Phone) 602-454-9243 (Fax)

MOTZZ LABORATORY, INC.
2109 S. 48th Street, Suite 101
Tempe, AZ 85282

Soil Analysis report

Ricker-Atkinson-McBee
Dave Thomas
2105 South Hardy Drive
Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 5/24/2005
Date Reported: 6/29/2005
PO Number: G11082

Lab Number: 5449-01 B6L @ 70'-75',

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.039	%	
Sulfate-S, SO4-S	ARIZ 733	0.0011	%	
Chloride	ARIZ 736	0.0063	%	

Lab Number: 5449-02 B7L @ 5'-10',

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.045	%	
Sulfate-S, SO4-S	ARIZ 733	0.0025	%	
Chloride	ARIZ 736	0.011	%	

Lab Number: 5449-03 B8R @ 100'-105',

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.042	%	
Sulfate-S, SO4-S	ARIZ 733	0.0030	%	
Chloride	ARIZ 736	0.018	%	

Lab Number: 5449-04 B9L @ 55'-60',

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.040	%	
Sulfate-S, SO4-S	ARIZ 733	0.0023	%	
Chloride	ARIZ 736	0.011	%	

Lab Number: 5449-05 B10R @ 15'-20',

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.045	%	
Sulfate-S, SO4-S	ARIZ 733	0.0004	%	
Chloride	ARIZ 736	0.010	%	

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MOTZZ LABORATORY, INC.
2109 S. 48th Street, Suite 101
Tempe, AZ 85282

Soil Analysis report

Ricker-Atkinson-McBee
Dave Thomas
2105 South Hardy Drive
Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 5/24/2005
Date Reported: 6/29/2005
PO Number: G11082

Lab Number: 5449-06 **B11L @ 60'-65',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.042	%	
Sulfate-S, SO4-S	ARIZ 733	0.0021	%	
Chloride	ARIZ 736	0.011	%	

Lab Number: 5449-07 **B12R @ 85'-90',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.050	%	
Sulfate-S, SO4-S	ARIZ 733	0.0013	%	
Chloride	ARIZ 736	0.0096	%	

Lab Number: 5449-08 **B13L @ 95'-100',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.036	%	
Sulfate-S, SO4-S	ARIZ 733	0.0017	%	
Chloride	ARIZ 736	0.010	%	

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MOTZZ LABORATORY, INC.
2109 S. 48th Street, Suite 101
Tempe, AZ 85282

Soil Analysis report

Ricker-Atkinson-McBee
Ken Ricker
2105 South Hardy Drive
Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 5/25/2005
Date Reported: 6/29/2005
PO Number: G11082

Lab Number: 5456-01 **BA2L @ 0'-5',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.035	%	
Sulfate-S, SO4-S	ARIZ 733	0.0034	%	
Chloride	ARIZ 736	0.0054	%	

Lab Number: 5456-02 **B14R @90'-95',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.065	%	
Sulfate-S, SO4-S	ARIZ 733	0.0054	%	
Chloride	ARIZ 736	0.0090	%	

Lab Number: 5456-03 **B15L @ 50'-55'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.047	%	
Sulfate-S, SO4-S	ARIZ 733	0.0025	%	
Chloride	ARIZ 736	0.013	%	

Lab Number: 5456-04 **B16R @ 40'-45',**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.051	%	
Sulfate-S, SO4-S	ARIZ 733	0.0034	%	
Chloride	ARIZ 736	0.015	%	

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LABORATORY ANALYSIS
FINAL
PHASE

R·A·M

LABORATORY TEST RESULTS

Date: 29-Nov-05

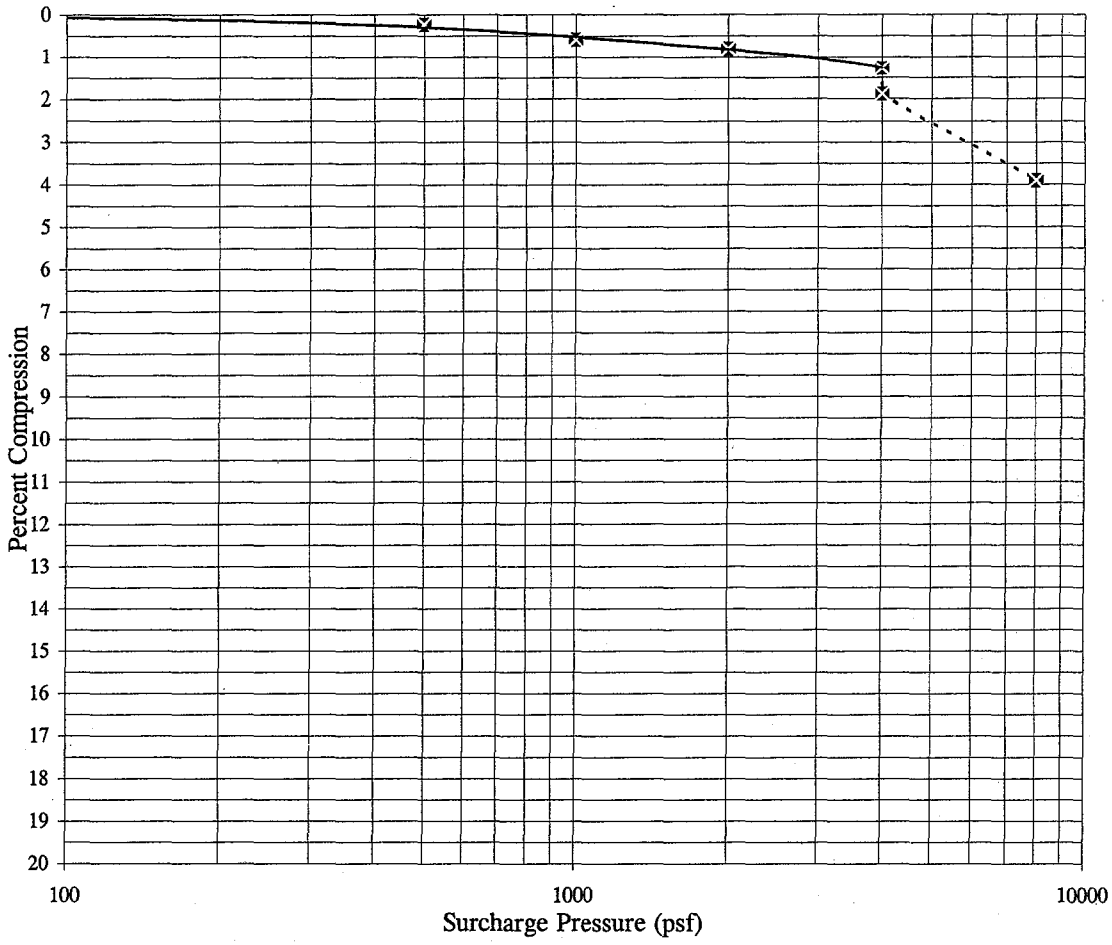
SAMPLE SOURCE: B5R @ 90'-91'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 113 Moisture Content (%): 17



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 29-Nov-05

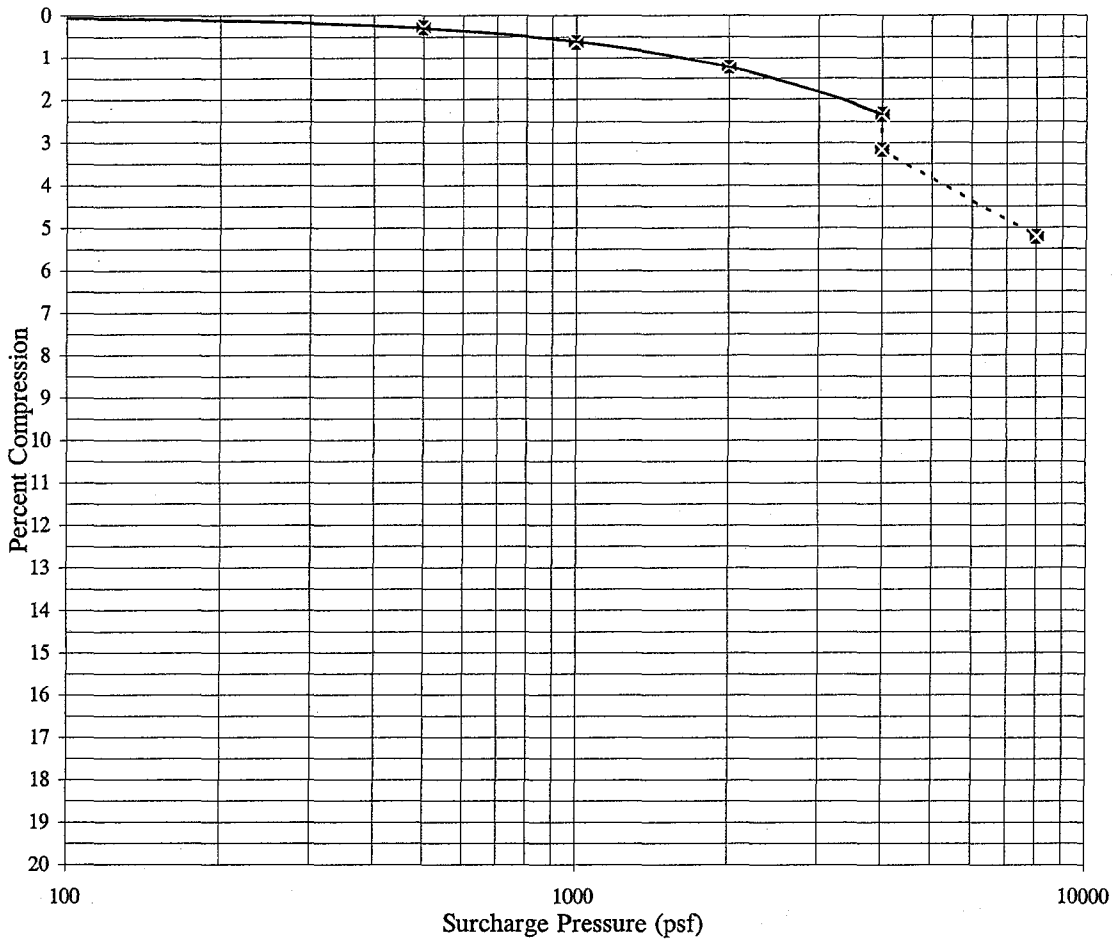
SAMPLE SOURCE: B7R @ 70'-71'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 89 Moisture Content (%): 29



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 29-Nov-05

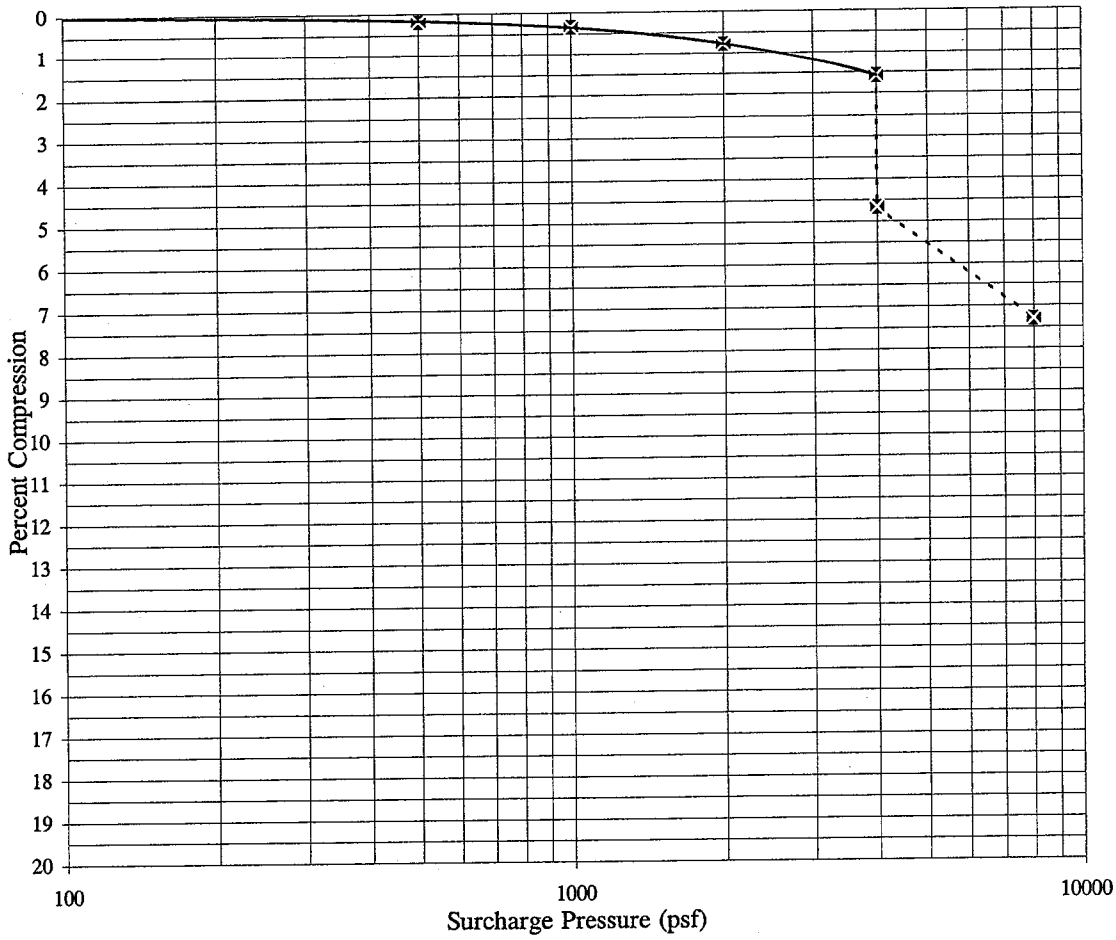
SAMPLE SOURCE: B8L @ 75'-76'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 95 Moisture Content (%): 19



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 1-Dec-05

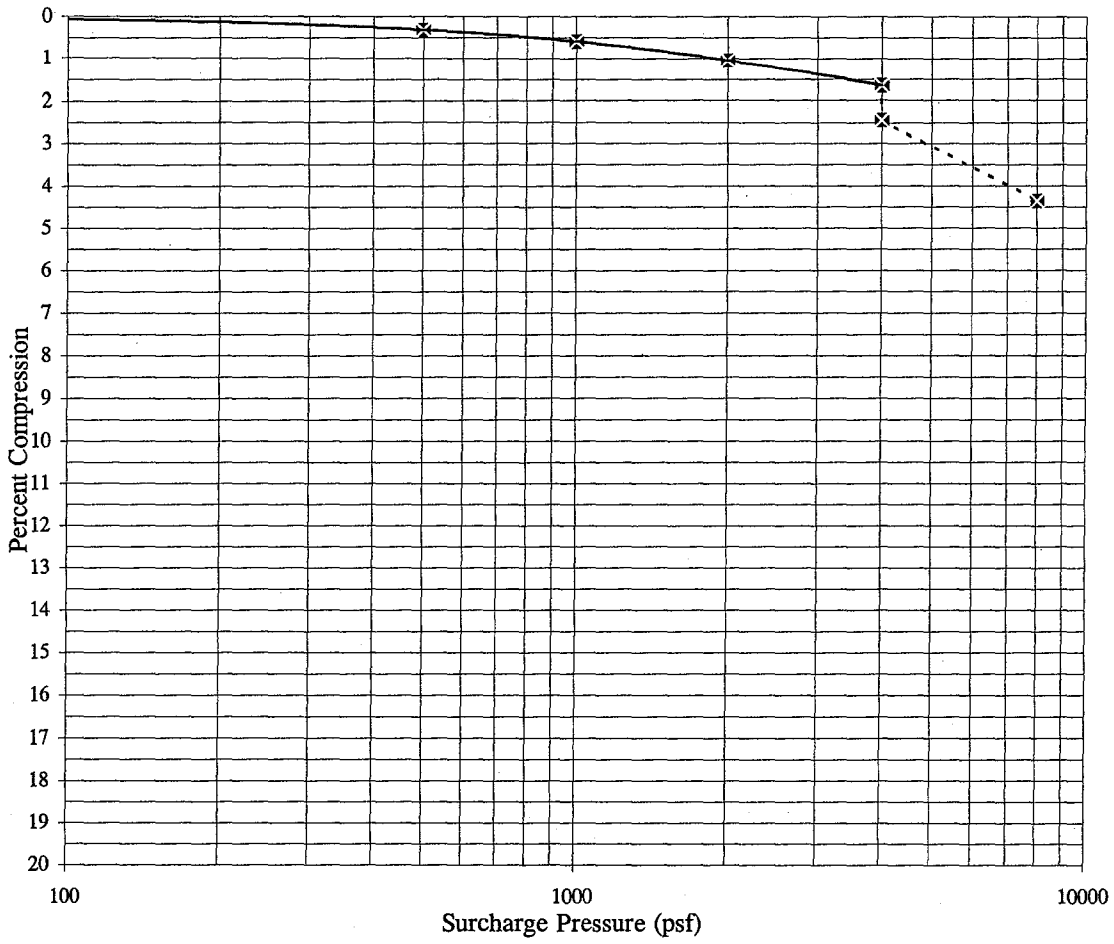
SAMPLE SOURCE: B9R @ 80'-81'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 109 Moisture Content (%): 19



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 29-Nov-05

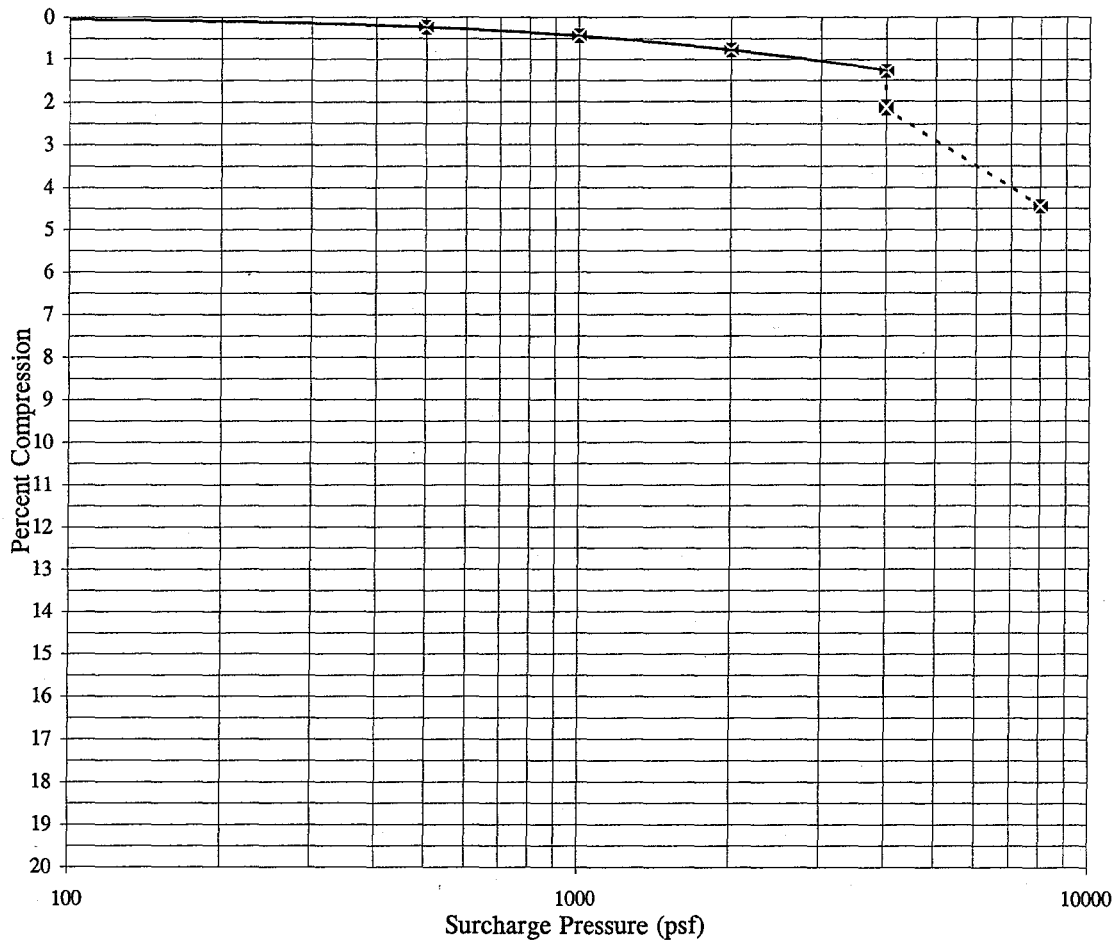
SAMPLE SOURCE: B10L @ 85'-86'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 103 Moisture Content (%): 20



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 1-Dec-05

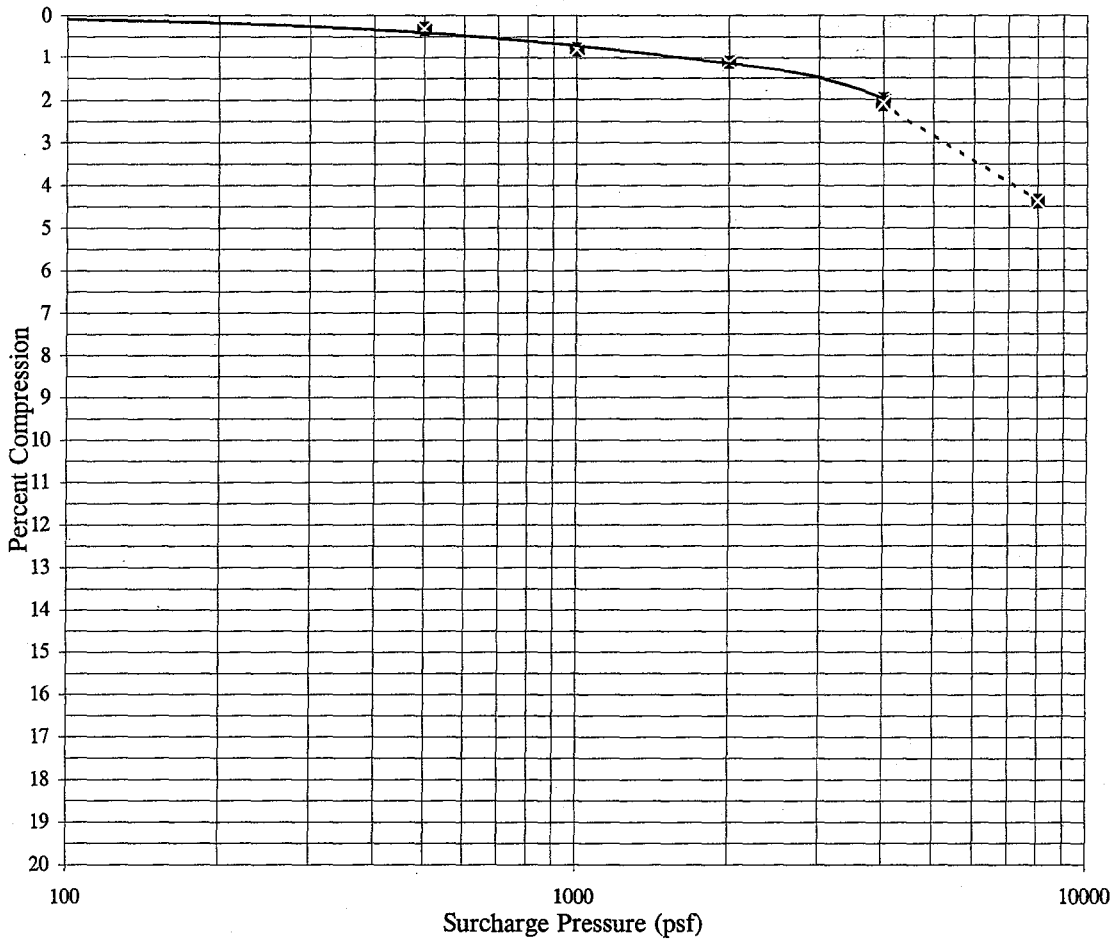
SAMPLE SOURCE: B11R @ 70'-71'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 90 Moisture Content (%): 28



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 29-Nov-05

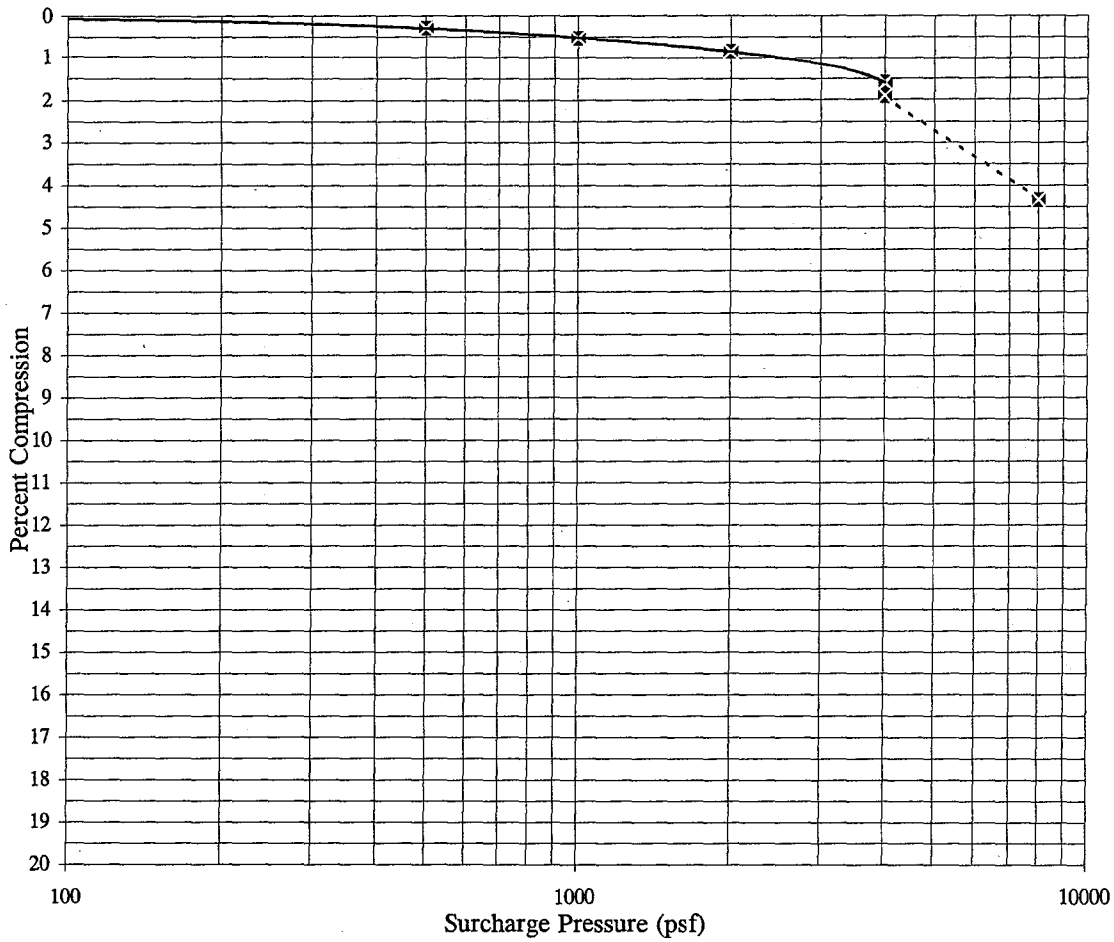
SAMPLE SOURCE: BA2R @ 60'-61'

TESTING PERFORMED: Compression (ASTM D2435) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 89 Moisture Content (%): 35



REMARKS: Sample submerged at 4000 psf.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B2L @ 55'-56'

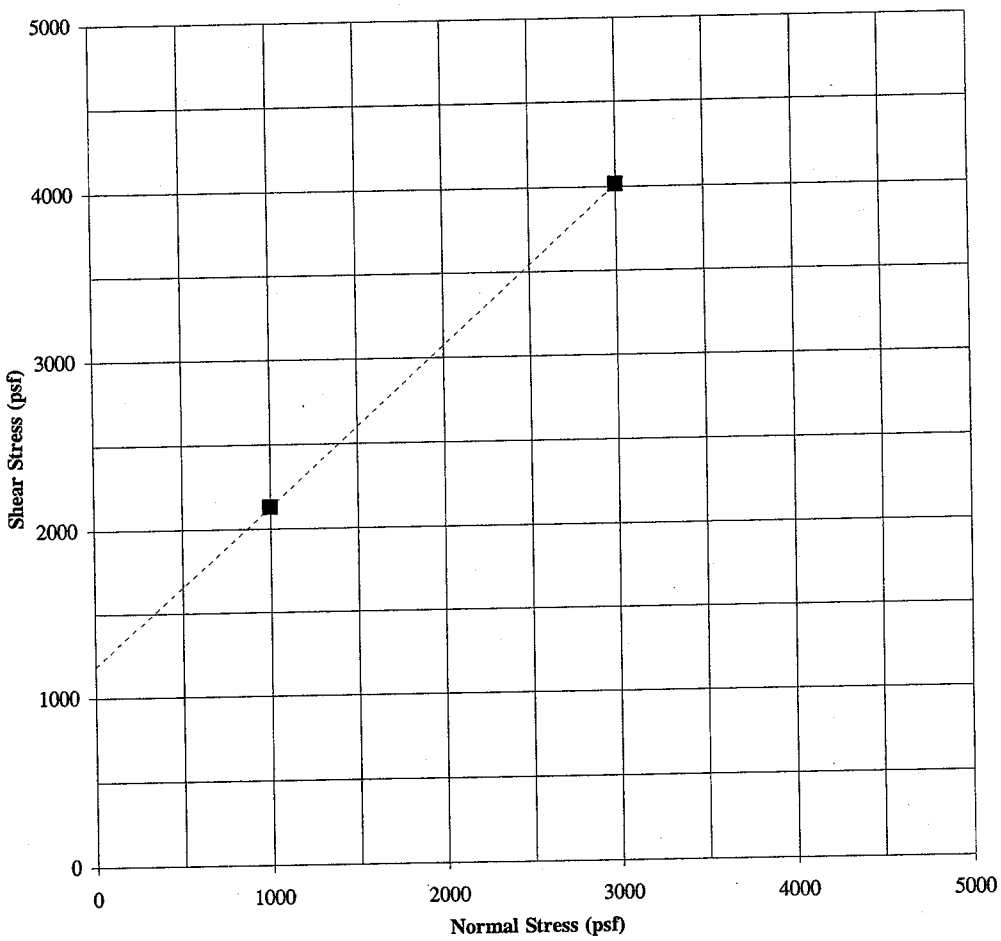
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 81 Moisture Content (%): 38

Cohesion (psf): 1200 Friction Angle (phi): 43



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B3R @ 50'-51'

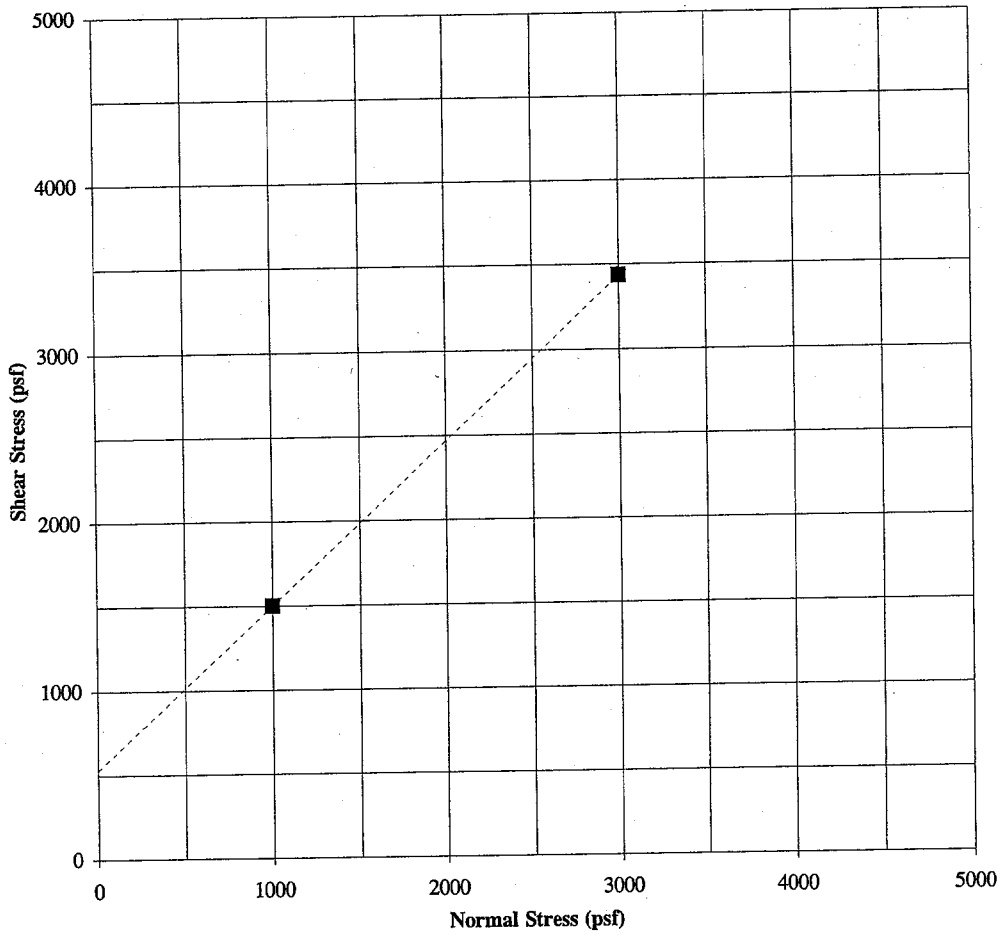
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 87 Moisture Content (%): 28

Cohesion (psf): 500 Friction Angle (phi): 44



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B4L @ 45'-46'

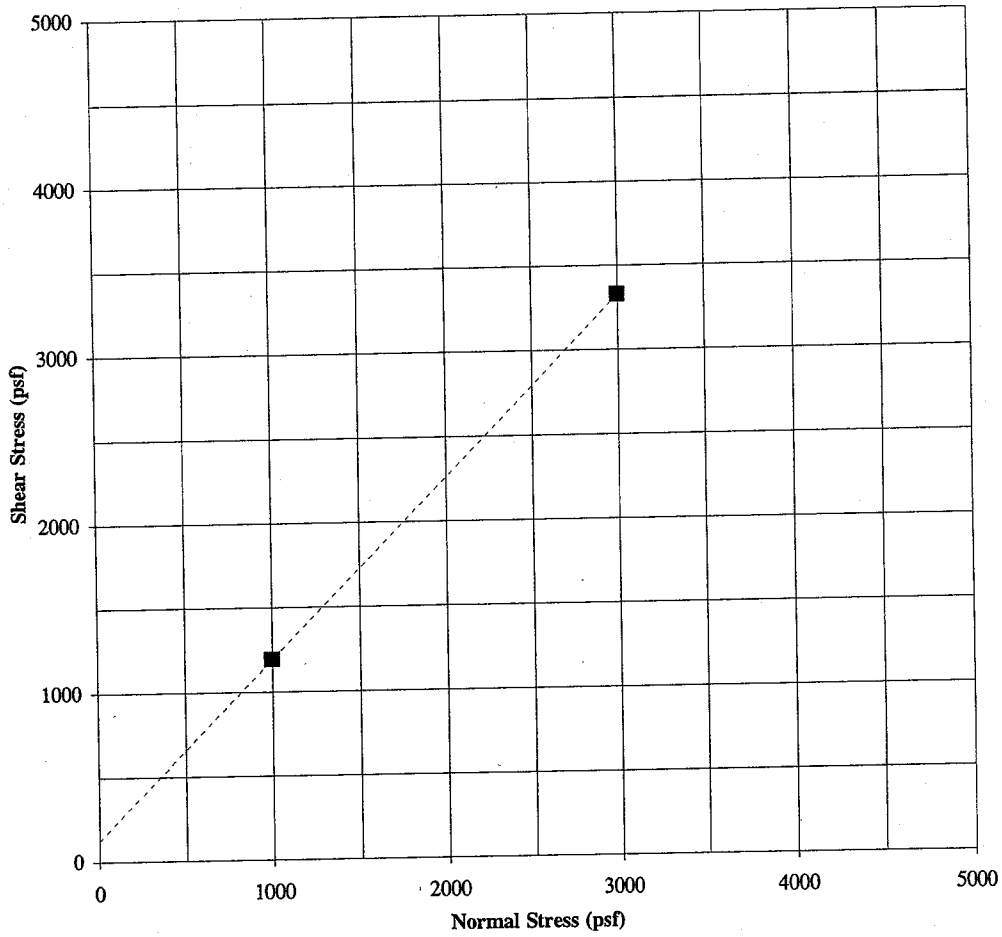
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 102 Moisture Content (%): 22

Cohesion (psf): 100 Friction Angle (phi): 47



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B5L @ 55'-56'

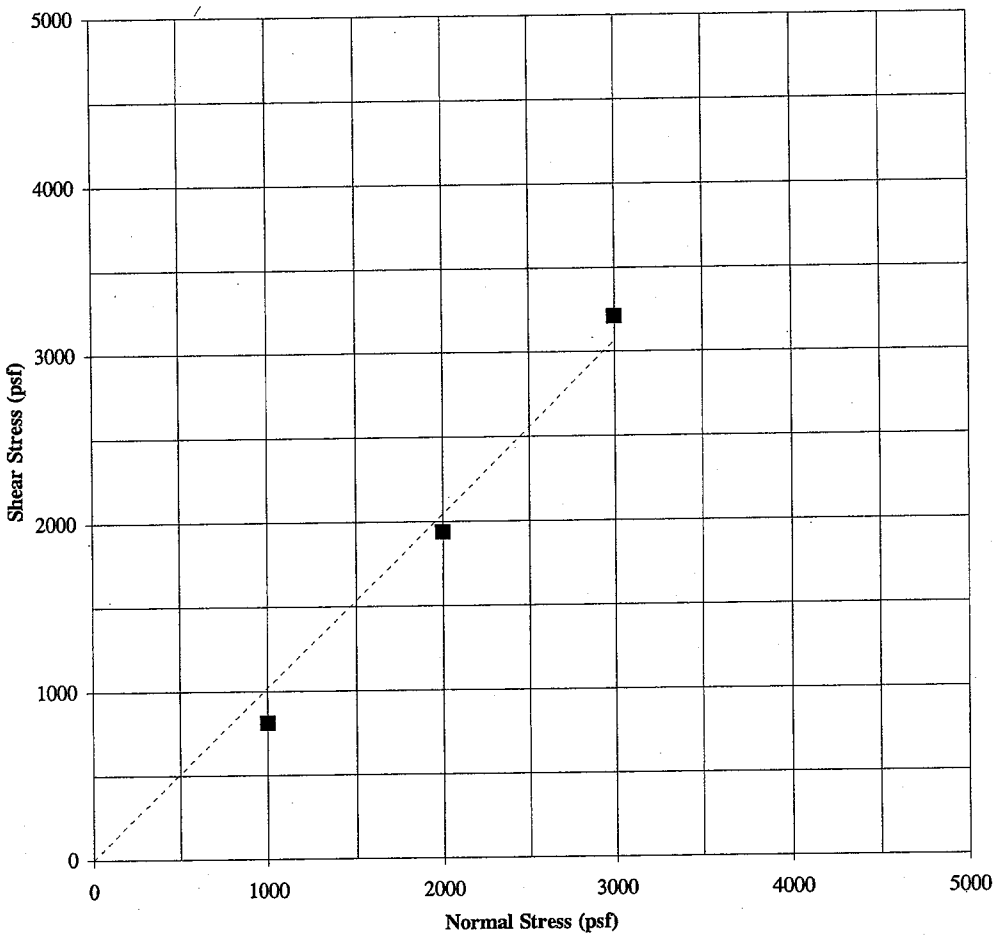
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 117 Moisture Content (%): 7

Cohesion (psf): 0 Friction Angle (phi): 50



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: B5R @ 50'-51'

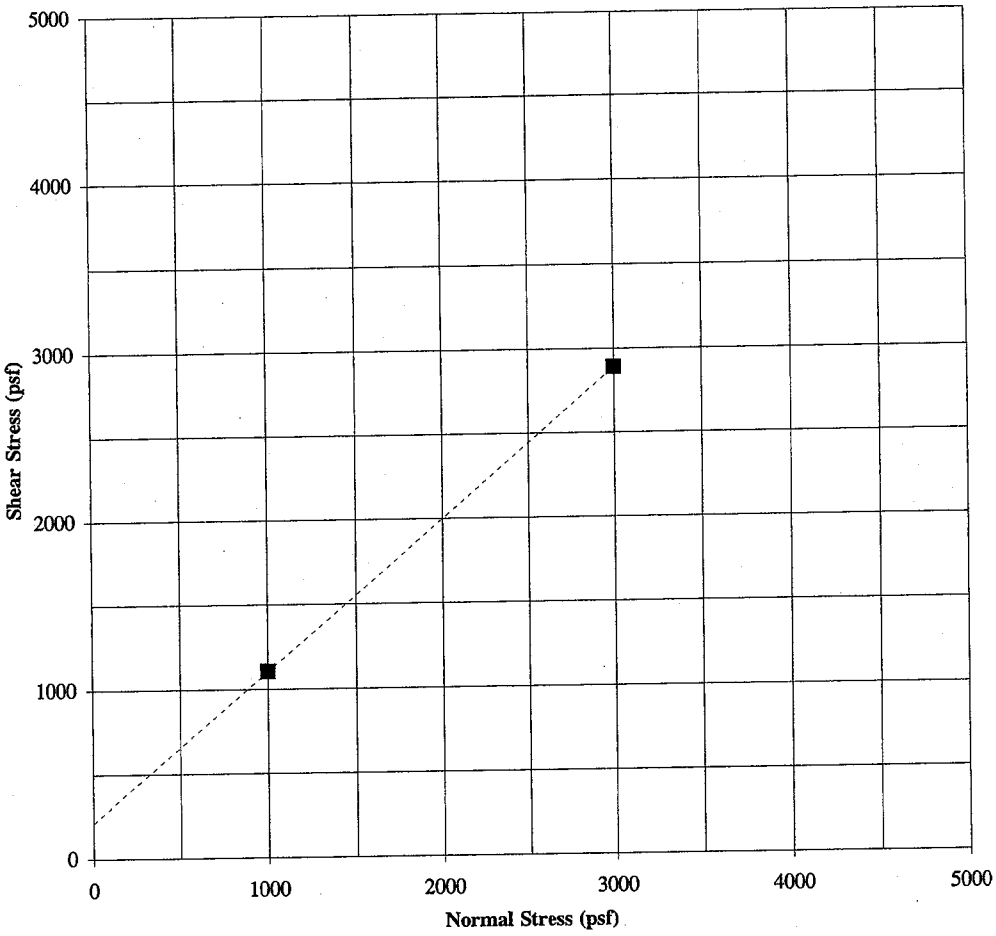
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 103 Moisture Content (%): 17

Cohesion (psf): 200 Friction Angle (phi): 42



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B5R @ 70'-71'

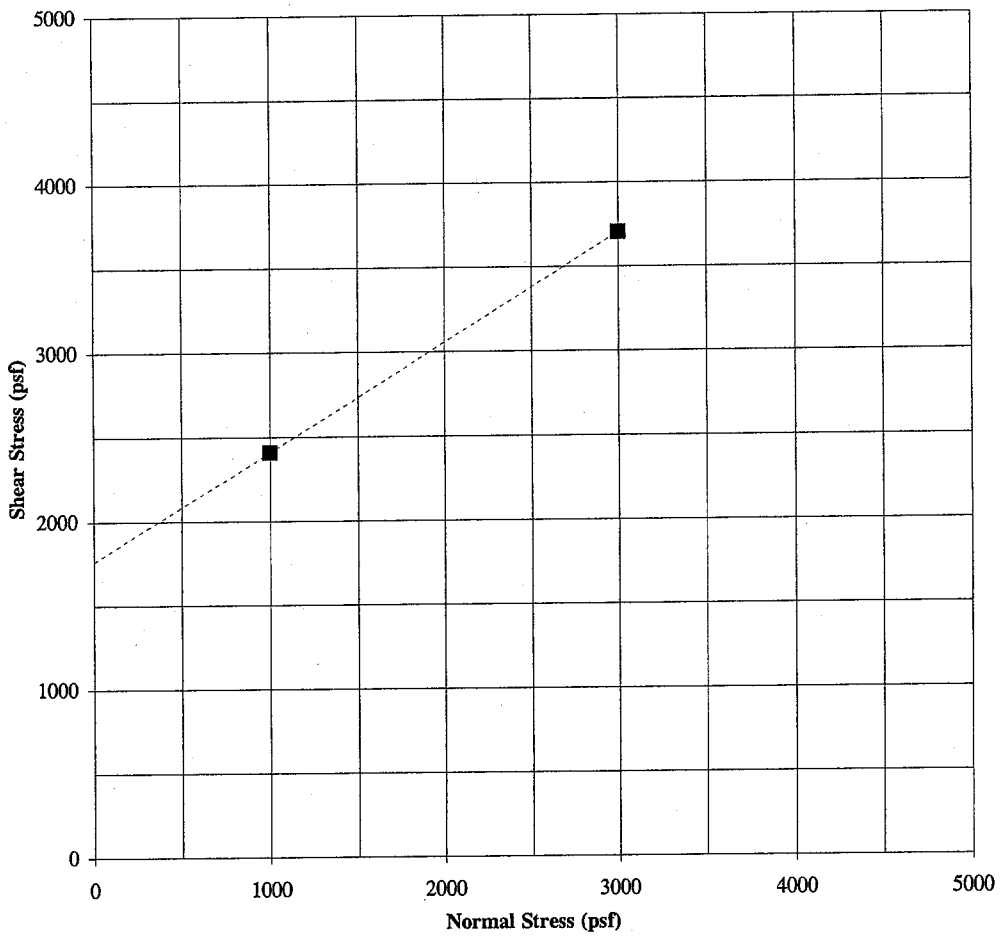
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 88 Moisture Content (%): 28

Cohesion (psf): 1800 Friction Angle (phi): 33



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: B6L @ 75'-76'

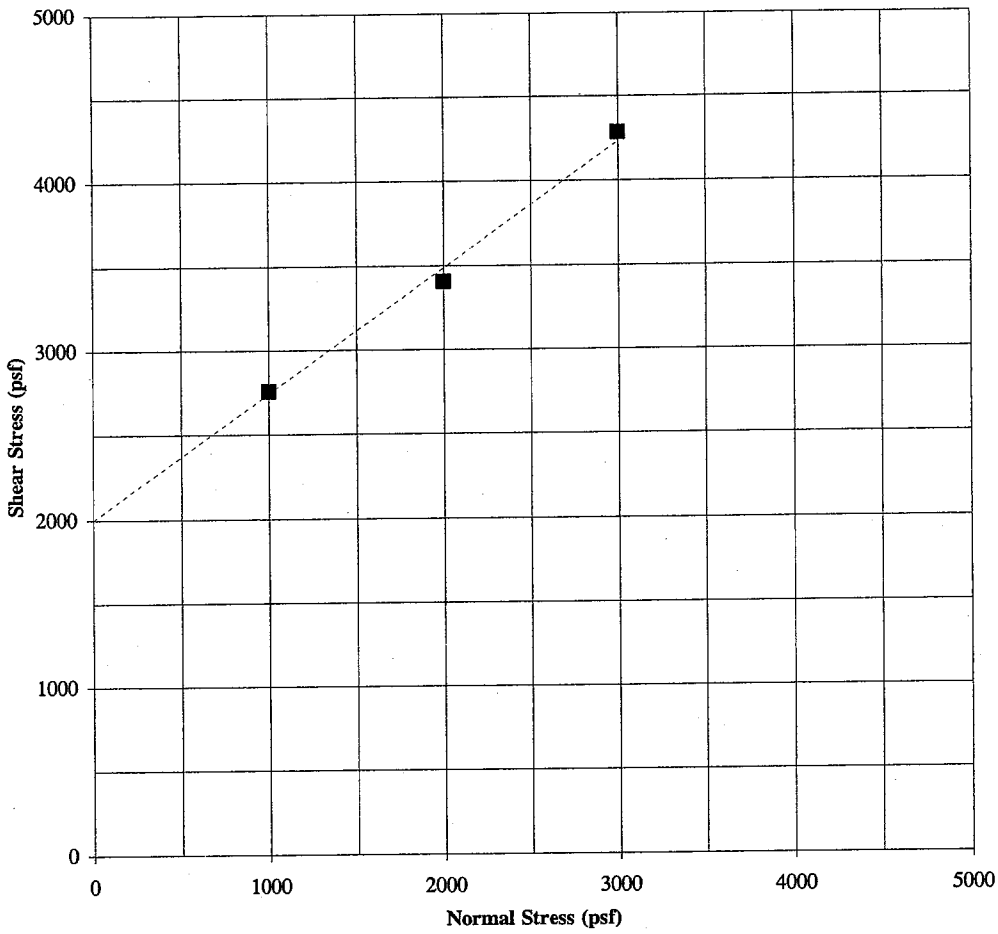
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 99 Moisture Content (%): 25

Cohesion (psf): 2000 Friction Angle (phi): 38



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: B6L @ 75'-76'

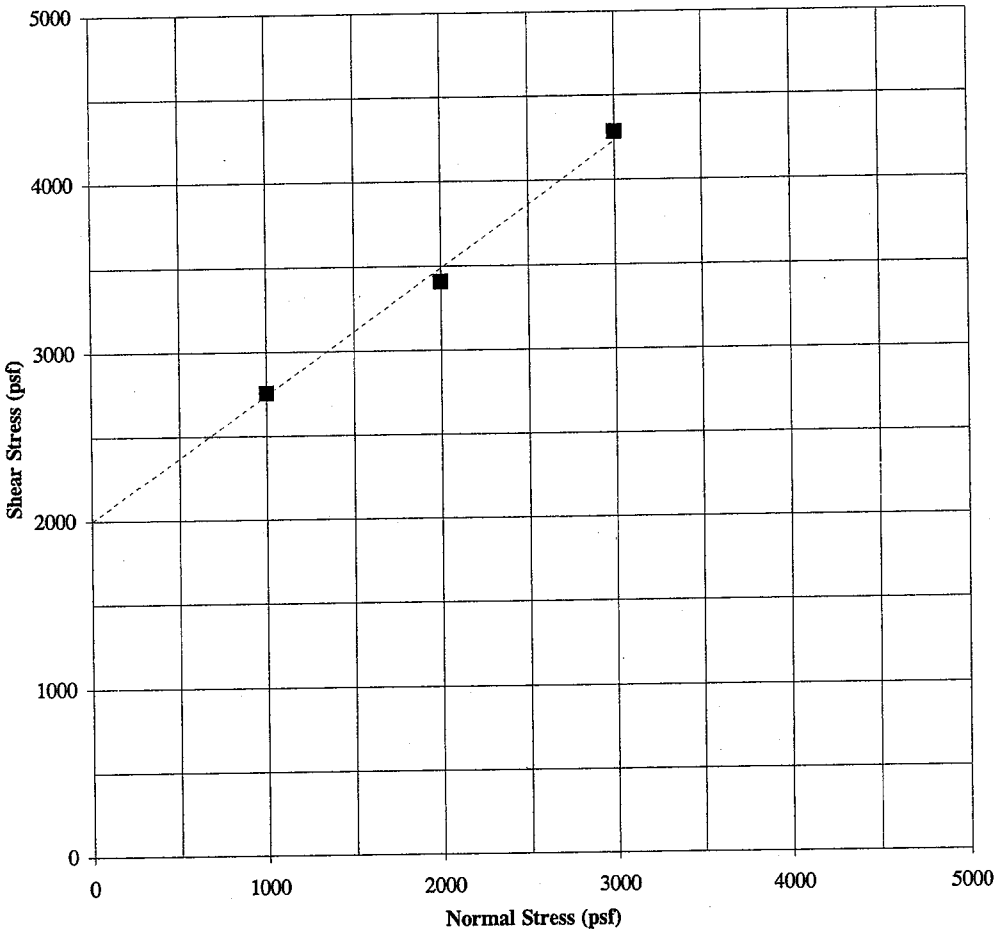
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 99 Moisture Content (%): 25

Cohesion (psf): 2000 Friction Angle (phi): 38



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: B10L @ 75'-76'

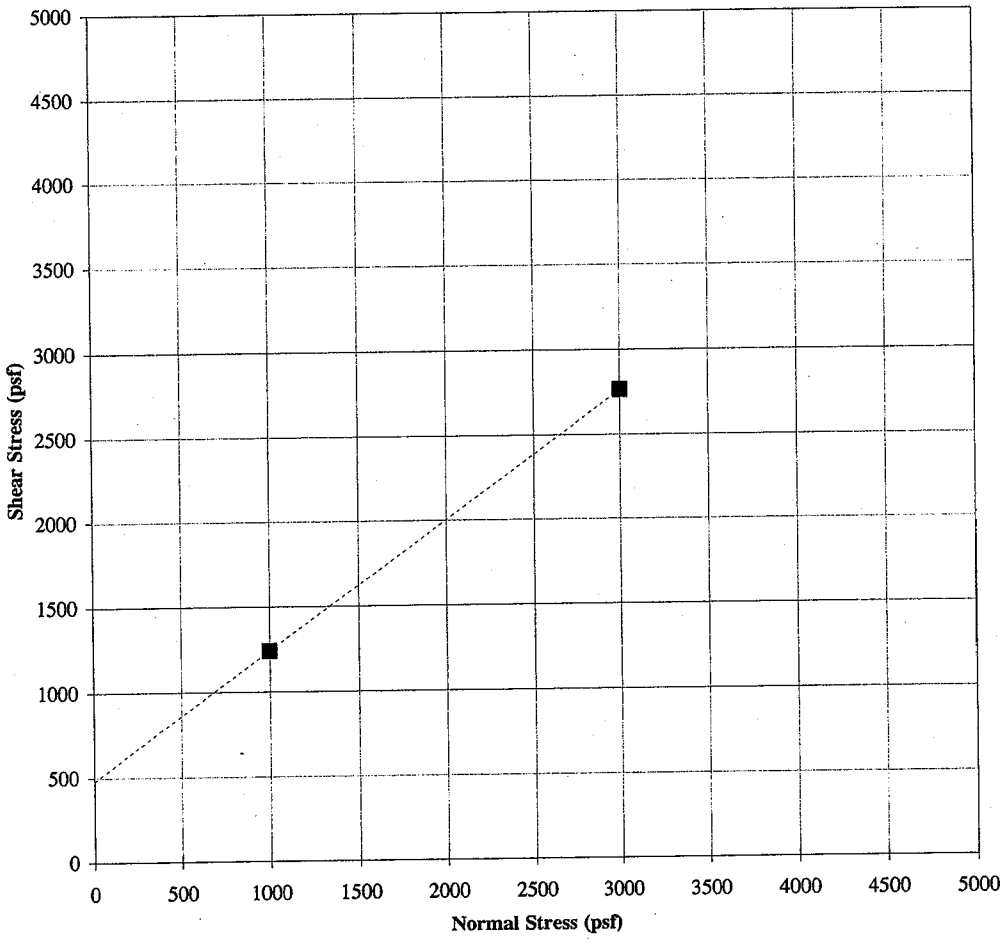
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 108 Moisture Content (%): 21

Cohesion (psf): 500 Friction Angle (phi): 37



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B11R @ 90'-91'

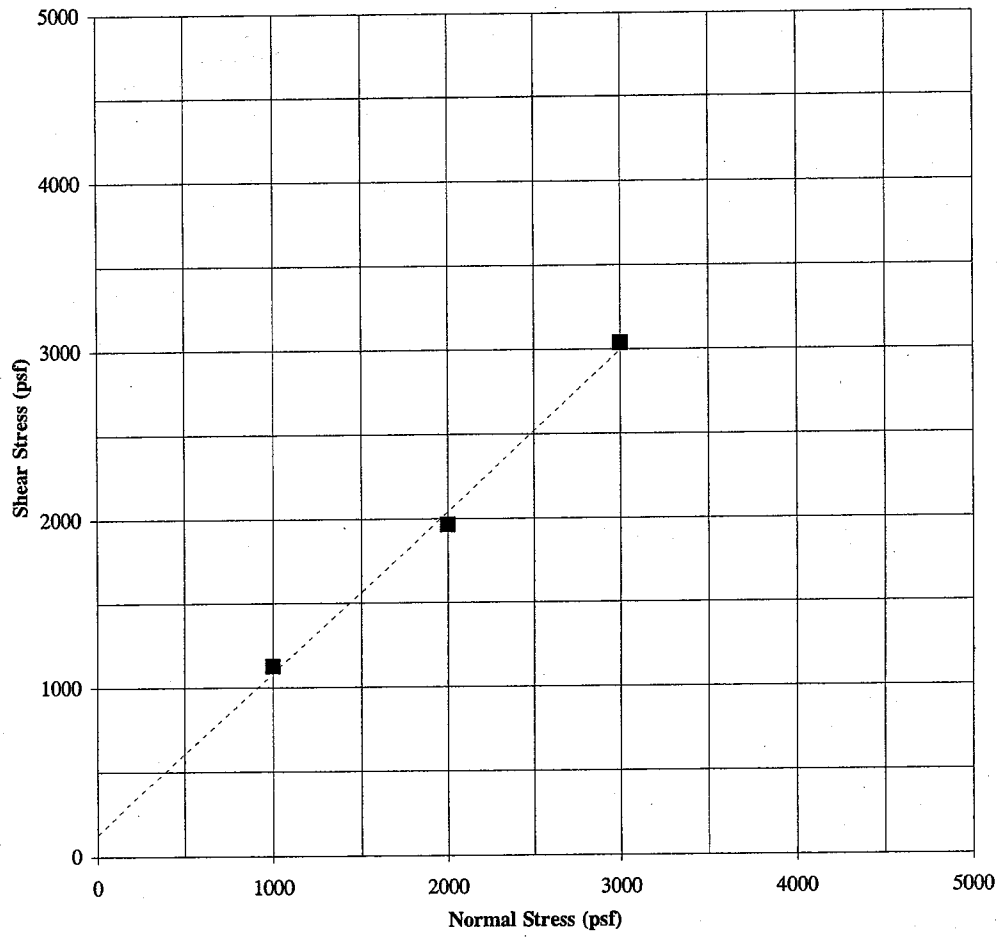
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 105 Moisture Content (%): 23

Cohesion (psf): 100 Friction Angle (phi): 44



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B13R @ 90'-91'

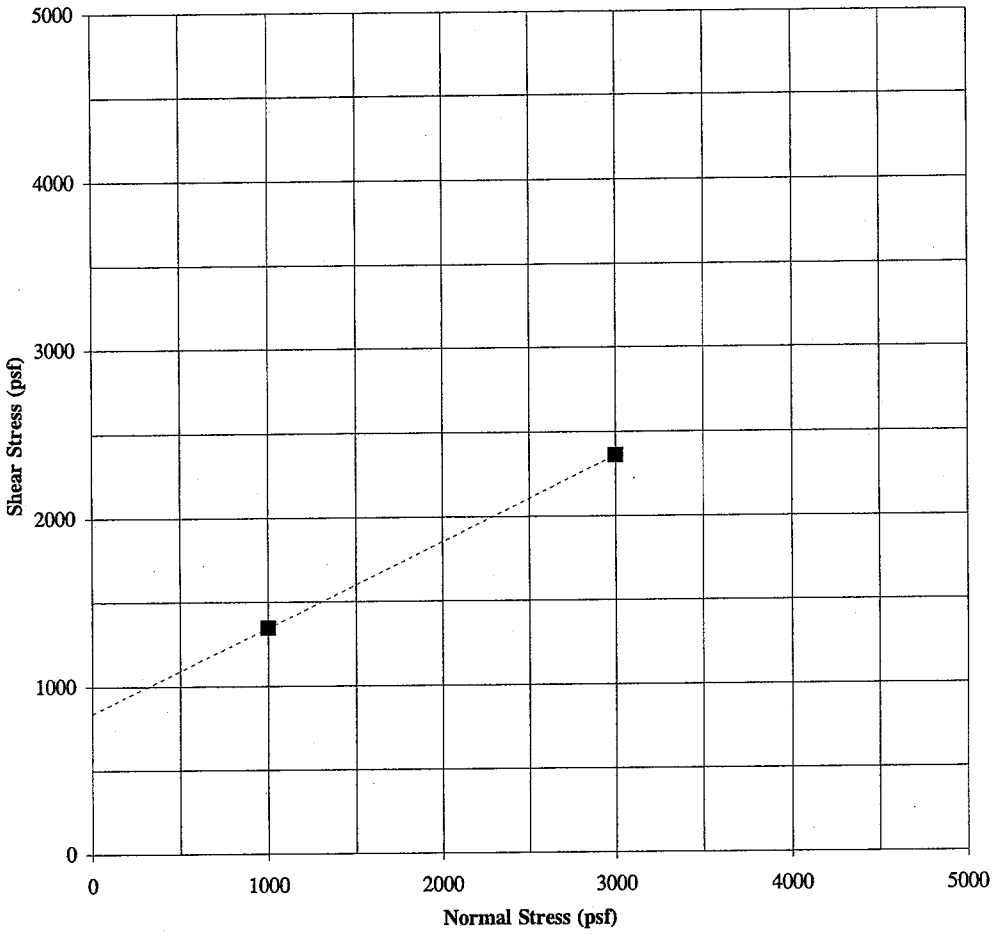
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 85 Moisture Content (%): 30

Cohesion (psf): 800 Friction Angle (phi): 27



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B14L @ 75'-76'

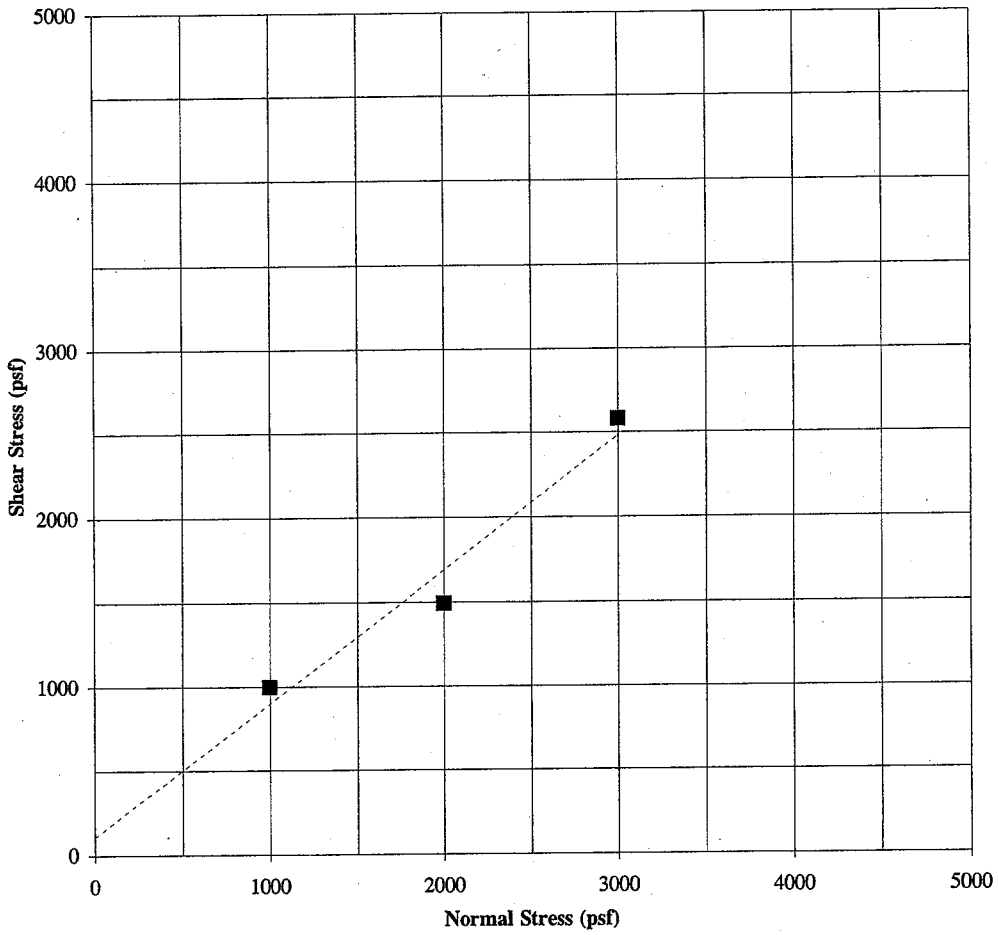
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 94 Moisture Content (%): 29

Cohesion (psf): 100 Friction Angle (phi): 38



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: B14L @ 95'-96'

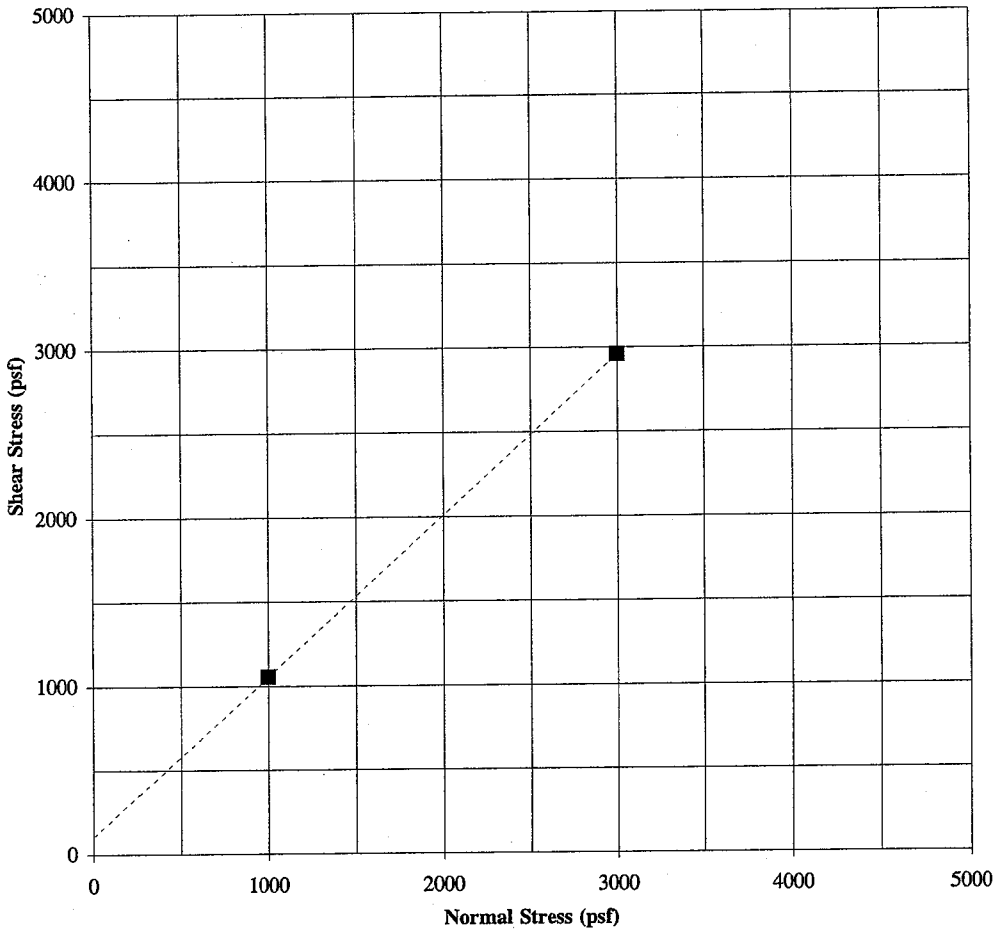
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 123 Moisture Content (%): 11

Cohesion (psf): 100 Friction Angle (phi): 44



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B15R @ 70'-71'

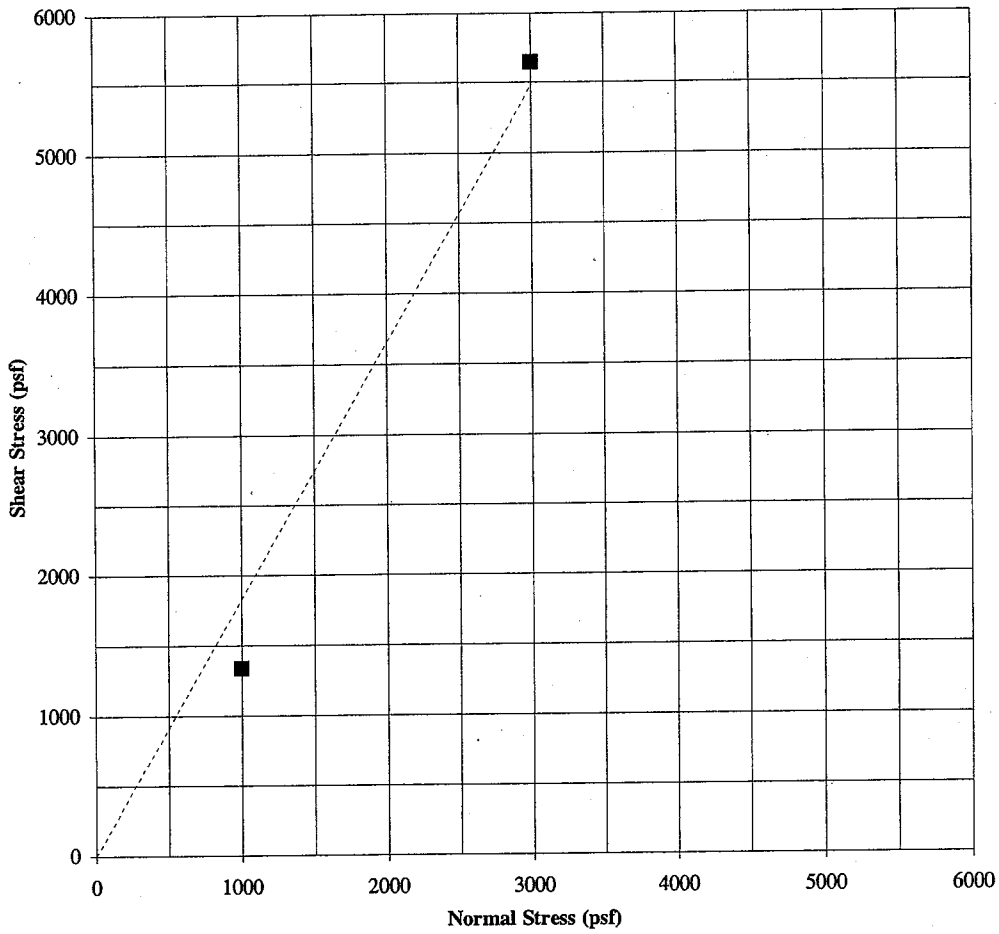
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 97 Moisture Content (%): 26

Cohesion (psf): 0 Friction Angle (phi): 65



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B16L @ 95'-96'

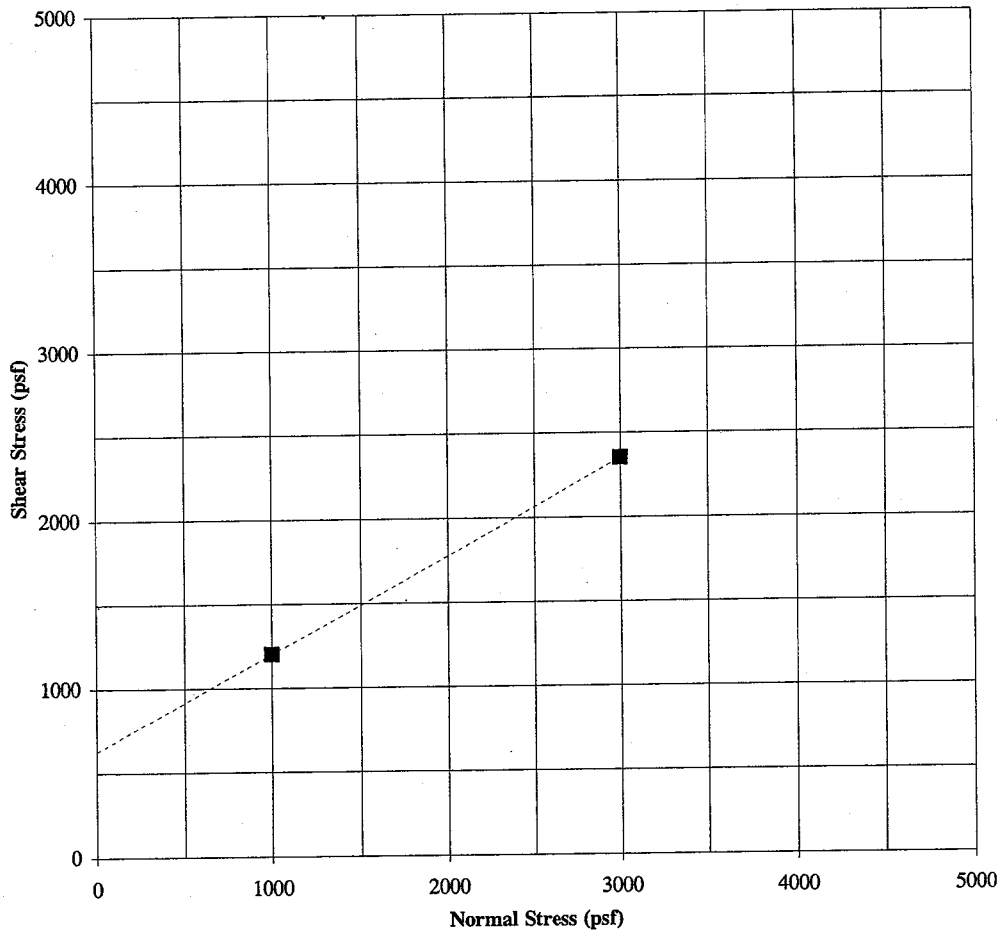
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 96 Moisture Content (%): 29

Cohesion (psf): 600 Friction Angle (phi): 30



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: B16L @ 105'-106'

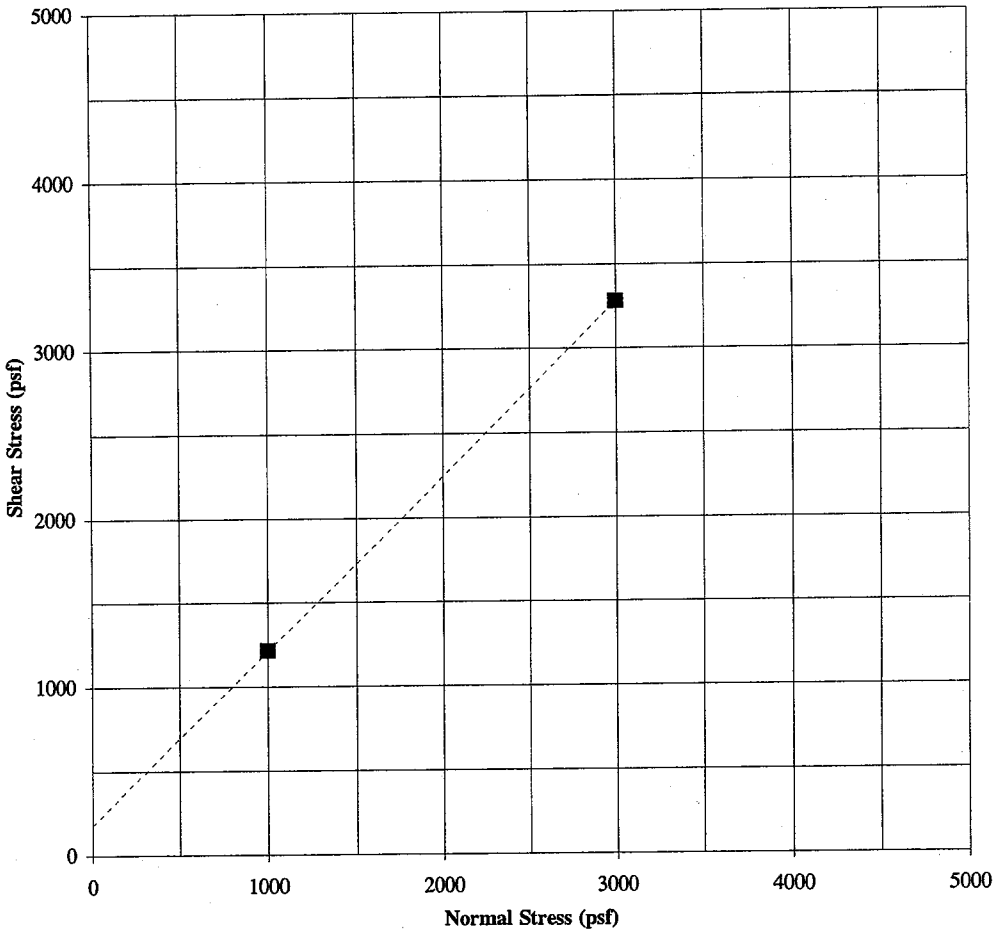
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 112 Moisture Content (%): 18

Cohesion (psf): 200 Friction Angle (phi): 46



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 29-Nov-05

SAMPLE SOURCE: BA2R @ 90'-91'

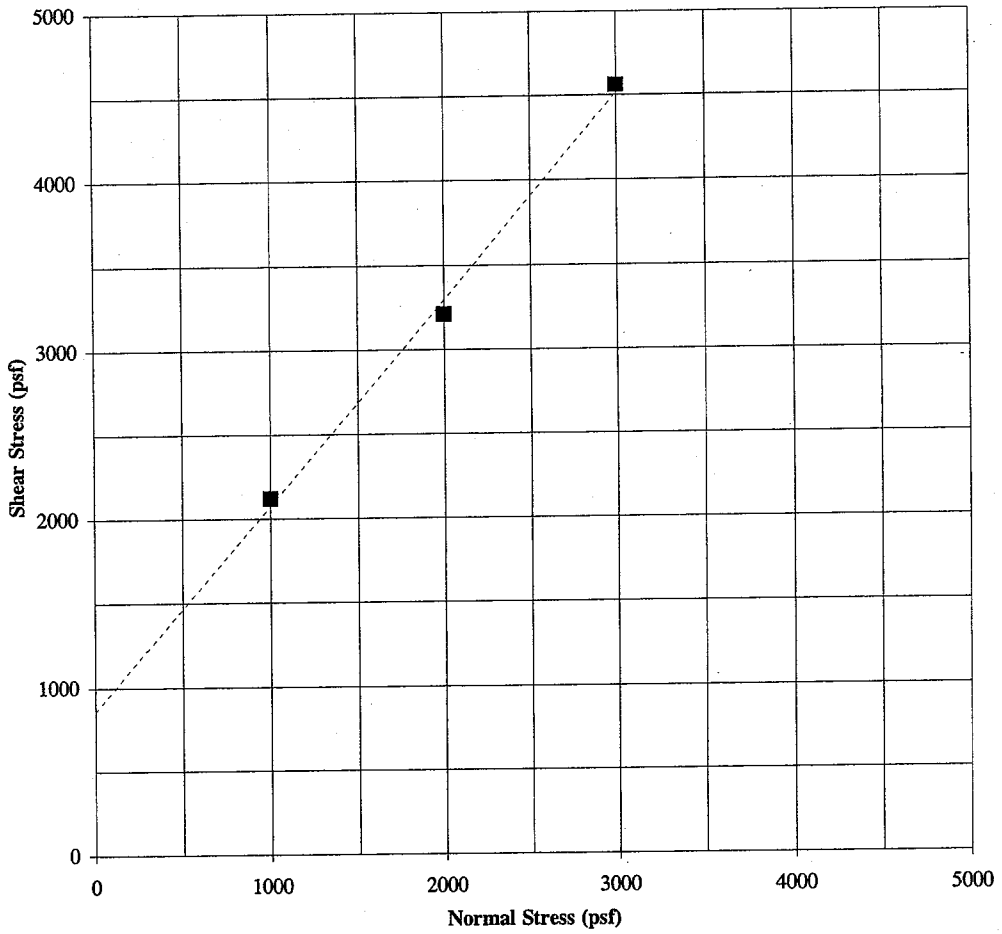
TESTING PERFORMED: Direct Shear (ASTM D3080) - Driven Ring Sample

SAMPLED BY: RAM/Reese

RESULTS:

Dry Density (pcf): 100 Moisture Content (%): 22

Cohesion (psf): 900 Friction Angle (phi): 51



REMARKS: Samples submerged prior to testing.

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
BA1L @ 5'-10'	NA	NP	5.6	10	22	47	66	74	79	98	100			SW-SM
BA1L @ 30'-35'	NA	NP	3.2	6	17	34	40	45	51	75	80	100		GP
BA1L @ 50'-55'	41	21	91	95	97	97	98	98	98	100				CL
BA1L @ 60'-65'	NA	NP	26	35	46	57	67	77	84	96	100			SM
BA2R @ 45'-50'	35	17	11	14	21	33	41	51	69	97	100			SW-SC
BA2R @ 60'-65'	34	13	80	88	93	96	96	96	97	98	100			CL
BA2R @ 90'-95'	35	16	77	82	92	97	98	98	99	100				CL
BA2R @ 100'-105'	24	10	25	34	53	66	72	78	84	97	100			SC
B1R @ 35'-40'	NA	NP	1.6	3	8	26	37	41	45	70	89	100		GP
B1R @ 55'-60'	50	33	96	97	97	98	98	98	99	100				CH
B1R @ 65'-70'	26	5	37	43	52	61	68	74	80	94	100			SC-SM
B1R @ 110'-115'	NA	NP	20	25	31	40	49	57	63	88	90	100		SM
B2L @ 30'-35'	NA	NP	3.5	5	8	15	22	28	36	64	79	100		GW
B2L @ 50'-55'	45	28	84	89	93	96	98	99	100					CL
B2L @ 60'-65'	NA	NP	17	50	95	99	99	99	99	100				SM
B2L @ 80'-85'	35	17	43	48	54	62	70	77	84	100				SC
B3R @ 15'-20'	NA	NP	6.9	9	13	20	26	34	44	77	88	100		GW-GM
B3R @ 35'-40'	NA	NP	5.9	9	24	49	55	57	60	73	76	100		SW-SM
B3R @ 45'-50'	37	20	84	89	92	93	94	95	95	97	100			CL
B3R @ 70'-75'	36	20	73	77	83	85	88	89	91	100				CL
B4L @ 30'-35'	31	13	10	13	16	23	35	45	52	70	81	100		GW-GC
B4L @ 40'-45'	30	10	79	90	94	96	98	99	100					CL
B4L @ 70'-75'	34	15	91	95	95	96	97	97	98	100				CL
B4L @ 80'-85'	25	8	16	19	23	29	39	51	67	94	100			SC
B5L @ 10'-15'	NA	NP	1.8	3	5	14	26	32	37	59	65	87	100	GP
B5L @ 40'-45'	31	14	75	88	94	97	99	100						CL
B5L @ 55'-60'	40	24	49	64	77	81	83	84	85	88	88	100		SC
B5L @ 65'-70'	32	13	58	63	67	74	82	89	94	100				CL

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
B5L @ 80'-85'	32	11	18	23	29	38	50	63	77	97	100			SC
B5R @ 35'-40'	35	16	18	22	27	35	44	54	63	80	80	100		SC
B5R @ 60'-65'	NA	NP	58	64	77	88	91	94	96	100				ML
B6L @ 20'-25'	NA	NP	48	50	60	82	89	91	93	100				SM
B6L @ 45'-50'	NA	NP	2.1	3	7	22	37	49	57	77	89	100		SP
B6L @ 55'-60'	29	6	73	91	94	95	96	96	96	97	100			CL-ML
B6L @ 65'-70'	39	17	90	94	96	97	98	98	99	100				CL
B7R @ 20'-25'	NA	NP	1.7	3	8	17	24	29	34	58	65	88	100	GW
B7R @ 45'-50'	NA	NP	2.0	3	6	23	52	63	69	81	90	100		SP
B7R @ 60'-65'	26	9	72	80	89	91	91	92	92	97	100			CL
B7R @ 90'-95'	25	9	19	22	26	34	46	60	72	100				SC
B8L @ 35'-40'	NA	NP	1.8	3	15	38	61	75	85	98	100			SP
B8L @ 60'-65'	34	16	70	75	84	86	87	87	88	98	100			CL
B8L @ 85'-90'	33	12	25	29	35	43	52	61	71	95	100			SC
B8L @ 95'-100'	33	15	28	33	39	49	60	71	81	97	100			SC
B9R @ 35'-40'	31	9	6.9	9	14	20	31	44	60	95	100			SW-SC
B9R @ 50'-55'	NA	NP	2.7	4	8	20	36	52	66	90	95	100		SP
B9R @ 75'-80'	45	24	86	91	94	96	97	97	98	100				CL
B9R @ 90'-95'	24	5	17	21	27	36	46	58	70	89	91	100		SC-SM
B10L @ 45'-50'	NA	NP	1.1	2	3	20	24	44	62	86	93	100		SP
B10L @ 85'-90'	27	6	75	82	86	88	89	90	91	94	100			CL-ML
B10L @ 65'-70'	29	9	75	83	90	95	96	97	97	100				CL
B10L @ 100'-105'	30	12	19	24	31	41	51	60	69	97	100			CL
B11R @ 30'-35'	NA	NP	2.3	4	10	23	32	41	51	73	75	100		SP
B11R @ 55'-60'	NA	NP	5.0	8	15	38	62	75	82	94	100			SP
B11R @ 75'-80'	26	6	55	60	65	71	77	83	87	94	94	100		SP-SM
B11R @ 105'-110'	32	14	19	23	31	41	55	70	83	99	100			SC
B12L @ 55'-60'	NA	NP	1.8	3	5	17	36	53	64	85	88	100		SP

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 1-Dec-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: Sieve Analysis, Percent Passing No. 200 Sieve, Atterberg Limits (ASTM C136, D1140, D4318)

SAMPLED BY: RAM/Reese

RESULTS:

Sample	Atterberg Limits		Sieve Size - Accumulative Percent Passing											Soil
Source	LL	PI	200	100	50	30	16	8	4	3/4"	1"	2"	3"	Class.*
B12L @ 65'-70'	NA	NP	2.9	5	15	37	53	68	79	94	100			SP
B12L @ 75'-80'	36	16	84	88	91	93	94	94	95	97	100			CL
B12L @ 90'-95'	29	7	22	26	32	41	52	63	74	95	100			SC-SM
B13R @ 30'-35'	NA	NP	2.8	7	20	61	79	84	88	100				SP
B13R @ 50'-55'	NA	NP	1.8	3	10	23	46	70	86	100				SP
B13R @ 70'-75'	32	11	68	73	77	83	85	85	86	95	100			CL
B13R @ 80'-85'	25	6	40	47	57	68	75	78	82	96	100			SC-SM
B14L @ 35'-40'	30	12	10	13	17	22	30	40	53	83	95	100		GW-GC
B14L @ 45'-50'	NA	NP	4.2	6	8	12	23	36	48	88	100			GP
B14L @ 65'-70'	50	26	92	95	97	98	98	99	99	100				CH
B14L @ 95'-100'	24	5	11	14	17	25	34	44	54	72	88	100		GW-GC/GM
B15R @ 0'-5'	NA	NP	25	41	69	90	96	97	97	100				SM
B15R @ 35'-40'	32	12	5.6	7	10	14	18	23	29	66	77	100		GP-GC
B15R @ 45'-50'	NA	NP	1.7	3	7	24	52	68	82	100				SP
B15R @ 65'-70'	38	19	80	87	91	91	92	92	93	96	100			CL
B16L @ 25'-30'	NA	NP	7.4	11	19	33	40	46	55	95	100			SP-SM
B16L @ 65'-70'	40	23	88	93	95	96	97	97	98	100				CL
B16L @ 105'-110'	27	8	48	58	66	75	81	85	88	100				SC
B16L @ 130'-135'	25	7	21	25	31	40	52	64	75	98	100			SC-SM

NP = Non-Plastic

* Unified Soil Classification System

LABORATORY TEST RESULTS

Date: 30-Nov-05

SAMPLE SOURCE: As noted below

TESTING PERFORMED: pH, Minimum Resistivity (ADOT 236a)

SAMPLED BY: RAM/Reese

RESULTS:

Sample Source	pH	Minimum Resistivity (ohm-cm)
BA1L @ 50'-55'	7.6	678
B1R @ 110'-115'	8.2	1288
B2L @ 30'-35'	8.3	2244
B3R @ 15'-20'	8.0	1695
B4L @ 30'-35'	8.1	1188
B5L @ 65'-70'	7.9	1424
B5R @ 45'-50'	8.2	1220
B6L @ 20'-25'	7.9	1831
B7R @ 20'-25'	8.2	2373
B8L @ 85'-86'	8.2	1122
B9R @ 50'-55'	7.8	1716
B10L @ 65'-70'	7.9	1627
B11R @ 30'-35'	8.2	2034
B12L @ 55'-60'	7.6	610
B13R @ 50'-55'	8.2	2305
B15R @ 30'-40'	7.9	1356

MOTZZ LABORATORY, INC.
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Tempe AZ 85282

Soil Analysis report

Ricker-Atkinson-McBee
Ken Ricker
2105 South Hardy Dr.#3
Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 10/6/2005
Date Reported: 12/1/2005
PO Number: G11082

Lab Number: 6038-01 **Bail 50-55'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.049	%	
Sulfate-S, SO4-S	ARIZ 733	0.0014	%	
Chloride	ARIZ 736	0.011	%	

Lab Number: 6038-02 **B3R 15-20'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.068	%	
Sulfate-S, SO4-S	ARIZ 733	0.0046	%	
Chloride	ARIZ 736	0.0063	%	

Lab Number: 6038-03 **B4L 30-35'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.047	%	
Sulfate-S, SO4-S	ARIZ 733	0.0029	%	
Chloride	ARIZ 736	0.013	%	

Lab Number: 6038-04 **B2L 30-35'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.055	%	
Sulfate-S, SO4-S	ARIZ 733	0.0014	%	
Chloride	ARIZ 736	0.0064	%	

Lab Number: 6038-05 **BIR 110-115'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.033	%	
Sulfate-S, SO4-S	ARIZ 733	0.0035	%	
Chloride	ARIZ 736	0.0016	%	

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Soil Analysis report

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Ken Ricker
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Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 8/25/2005
Date Reported: 12/1/2005
PO Number: G11082

Lab Number: 5896-01 **B5L@ 65'-70'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.043	%	
Sulfate-S, SO4-S	ARIZ 733	0.0017	%	
Chloride	ARIZ 736	0.011	%	

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Soil Analysis report

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Ken Ricker
2105 South Hardy Dr.#3
Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 9/12/2005
Date Reported: 12/1/2005
PO Number: G11082

Lab Number: 5952-01 **B5R 45-50**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.040	%	
Sulfate-S, SO4-S	ARIZ 733	0.0087	%	
Chloride	ARIZ 736	0.0062	%	

Lab Number: 5952-02 **B8L 85-90**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.032	%	
Sulfate-S, SO4-S	ARIZ 733	0.0016	%	
Chloride	ARIZ 736	0.011	%	

Lab Number: 5952-03 **B9R 50-55**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.039	%	
Sulfate-S, SO4-S	ARIZ 733	0.0024	%	
Chloride	ARIZ 736	0.011	%	

Lab Number: 5952-04 **B10L 65-70**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.050	%	
Sulfate-S, SO4-S	ARIZ 733	0.0012	%	
Chloride	ARIZ 736	0.010	%	

Lab Number: 5952-05 **B12L 55-60**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.039	%	
Sulfate-S, SO4-S	ARIZ 733	0.0029	%	
Chloride	ARIZ 736	0.014	%	

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Soil Analysis report

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Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 9/20/2005
Date Reported: 12/1/2005
PO Number: G11082

Lab Number: 5978-01 **B6 L 20-25'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.028	%	
Sulfate-S, SO4-S	ARIZ 733	0.0017	%	
Chloride	ARIZ 736	0.0076	%	

Lab Number: 5978-02 **B15 R 35-40'**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.044	%	
Sulfate-S, SO4-S	ARIZ 733	0.0030	%	
Chloride	ARIZ 736	0.013	%	

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Soil Analysis report

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Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 8/30/2005
Date Reported: 12/1/2005
PO Number:

Lab Number: 5917-01 **B7R@20-25**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.028	%	
Sulfate-S, SO4-S	ARIZ 733	0.0018	%	
Chloride	ARIZ 736	0.0062	%	

Lab Number: 5917-02 **B11R@30-35**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.027	%	
Sulfate-S, SO4-S	ARIZ 733	0.0018	%	
Chloride	ARIZ 736	0.0079	%	

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Soil Analysis report

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Tempe , AZ 85282-1921

Project: G11082
Sampler:
Date Received: 9/12/2005
Date Reported: 12/1/2005

PO Number: G11082

Lab Number: 5952-06 **B13R 50-55**

Soluble Salts, Sulfate & Chloride	Method	Result	Units	Levels
Soluble Salts	ARIZ 237b SS	0.032	%	
Sulfate-S, SO4-S	ARIZ 733	0.0019	%	
Chloride	ARIZ 736	0.010	%	