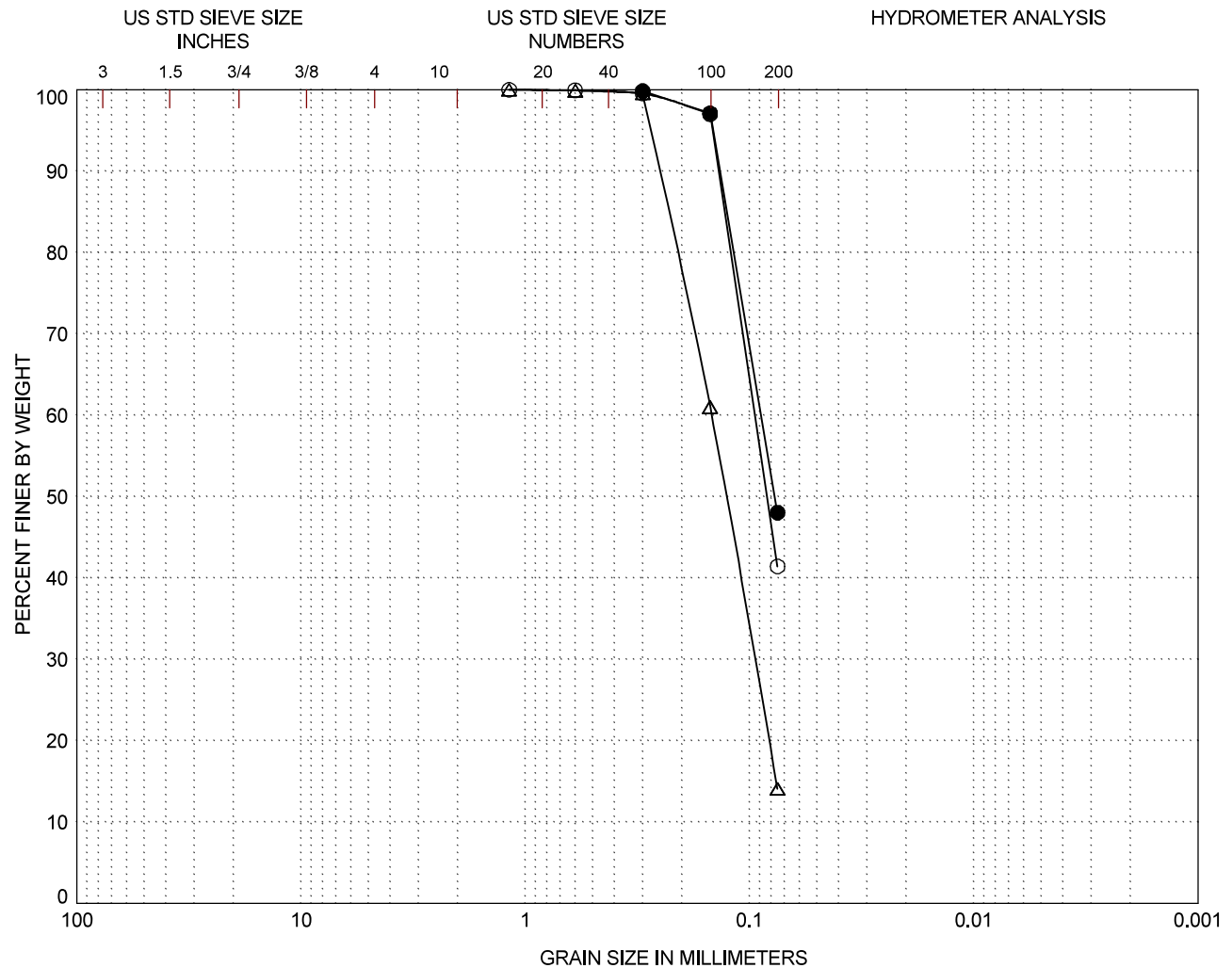


| <b>DOCKETED</b>         |                                                                  |
|-------------------------|------------------------------------------------------------------|
| <b>Docket Number:</b>   | 23-AFC-01                                                        |
| <b>Project Title:</b>   | Morton Bay Geothermal Project (MBGP)                             |
| <b>TN #:</b>            | 252491-4                                                         |
| <b>Document Title:</b>  | Morton Bay Geothermal Project Data Request Response Set 1 Part 4 |
| <b>Description:</b>     | N/A                                                              |
| <b>Filer:</b>           | Jerry Salamy                                                     |
| <b>Organization:</b>    | Jacobs                                                           |
| <b>Submitter Role:</b>  | Applicant Consultant                                             |
| <b>Submission Date:</b> | 10/2/2023 7:58:39 PM                                             |
| <b>Docketed Date:</b>   | 10/3/2023                                                        |

# SUMMARY OF LABORATORY TEST RESULTS

Black Rock Units 1, 2 & 3  
Calipatria, California

FIGURE B-1d



| GRAVEL |      | SAND   |        |      | SILT or CLAY |
|--------|------|--------|--------|------|--------------|
| Coarse | Fine | Coarse | Medium | Fine |              |

| LEGEND |            |             |
|--------|------------|-------------|
|        | (location) | (depth, ft) |
| ○      | RW-03      | 10.0        |
| ●      | RW-05      | 20.0        |
| △      | RW-07      | 45.0        |

#### CLASSIFICATION

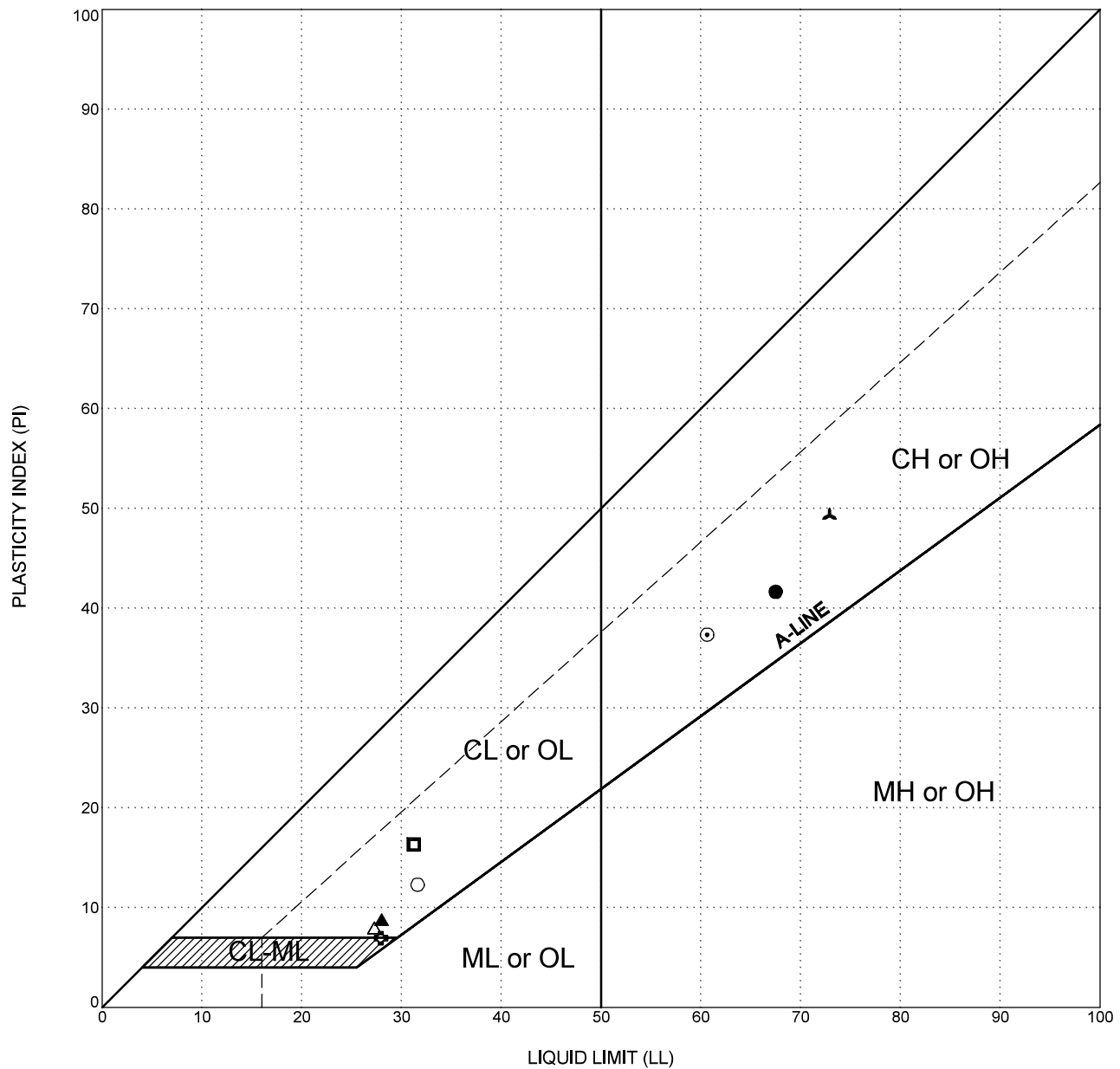
Silty Fine SAND (SM)  
Silty Fine SAND (SM)  
Silty Fine SAND (SM)

C<sub>c</sub>

C<sub>u</sub>

**GRAIN SIZE CURVES**  
Black Rock Units 1, 2 & 3  
Calipatria, California

FIGURE B-2

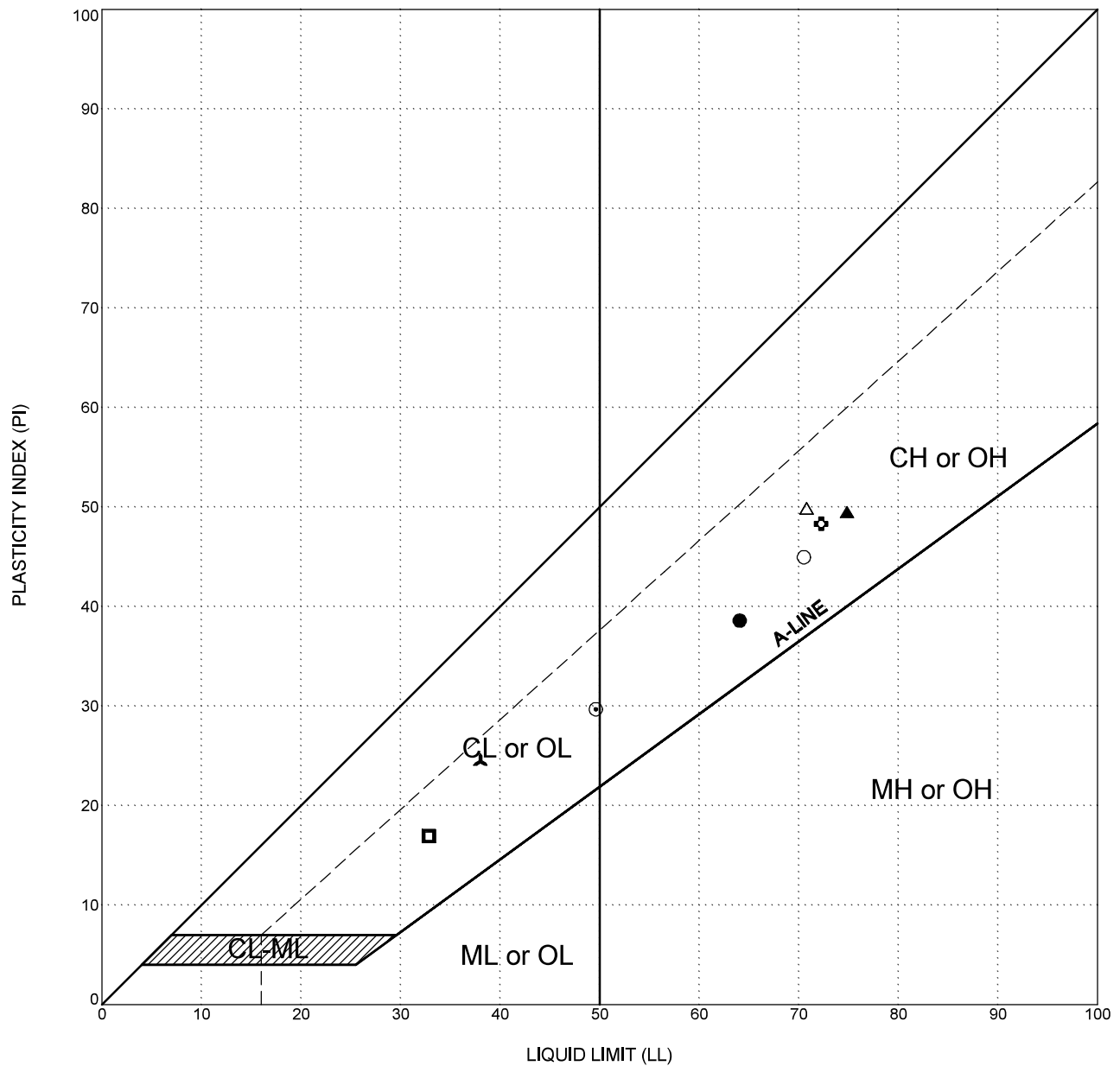


| LEGEND |          |           | CLASSIFICATION |  |  | ATTERBERG LIMITS TEST RESULTS |                    |                       |
|--------|----------|-----------|----------------|--|--|-------------------------------|--------------------|-----------------------|
|        | location | depth, ft |                |  |  | LIQUID LIMIT (LL)             | PLASTIC LIMIT (PL) | PLASTICITY INDEX (PI) |
| ○      | RW-01    | 30.0      | Lean CLAY (CL) |  |  | 32                            | 19                 | 13                    |
| ●      | RW-01    | 50.0      | Fat CLAY (CH)  |  |  | 67                            | 26                 | 41                    |
| △      | RW-02    | 6.0       | Lean CLAY (CL) |  |  | 27                            | 19                 | 8                     |
| ▲      | RW-02    | 16.0      | Lean CLAY (CL) |  |  | 28                            | 19                 | 9                     |
| ⊙      | RW-02    | 30.0      | Fat CLAY (CH)  |  |  | 61                            | 23                 | 38                    |
| ⊕      | RW-03    | 36.0      | Lean CLAY (CL) |  |  | 28                            | 21                 | 7                     |
| ▲      | RW-04    | 50.5      | Fat CLAY (CH)  |  |  | 73                            | 23                 | 50                    |
| ■      | RW-04    | 75.0      | Lean CLAY (CL) |  |  | 31                            | 15                 | 16                    |

**PLASTICITY CHART**  
Black Rock Units 1, 2 & 3  
Calipatria, California

FIGURE B-3a

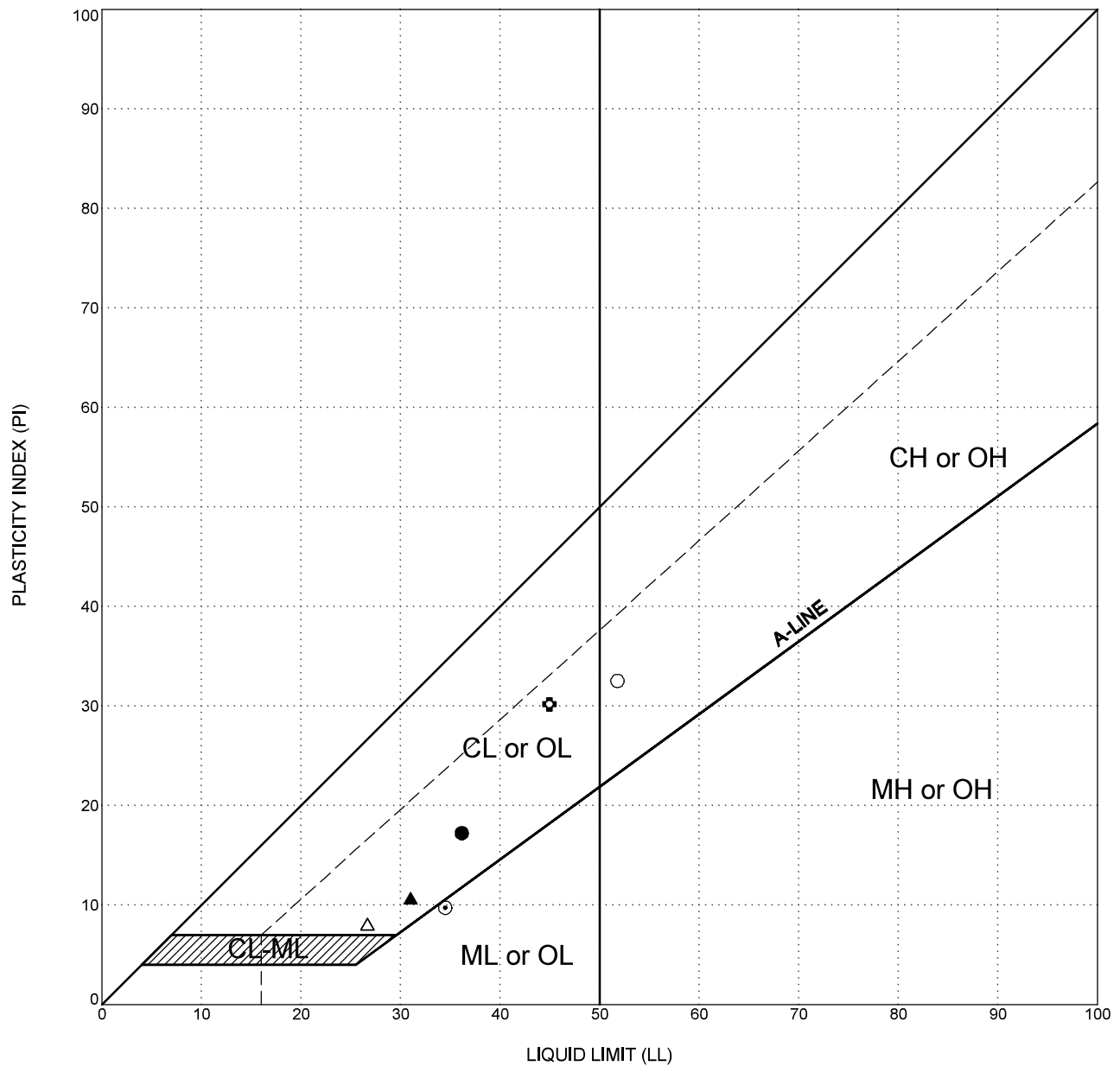




| LEGEND |          |           | CLASSIFICATION |                |  | ATTERBERG LIMITS TEST RESULTS |                    |                       |
|--------|----------|-----------|----------------|----------------|--|-------------------------------|--------------------|-----------------------|
|        | location | depth, ft |                |                |  | LIQUID LIMIT (LL)             | PLASTIC LIMIT (PL) | PLASTICITY INDEX (PI) |
| ○      | RW-04    | 85.0      |                | Fat CLAY (CH)  |  | 71                            | 26                 | 45                    |
| ●      | RW-05    | 50.0      |                | Fat CLAY (CH)  |  | 64                            | 25                 | 39                    |
| △      | RW-06    | 16.0      |                | Fat CLAY (CH)  |  | 71                            | 21                 | 50                    |
| ▲      | RW-06    | 65.0      |                | Fat CLAY (CH)  |  | 75                            | 25                 | 50                    |
| ⊙      | RW-07    | 15.0      |                | Lean CLAY (CL) |  | 50                            | 20                 | 30                    |
| ⊕      | RW-07    | 51.0      |                | Fat CLAY (CH)  |  | 72                            | 24                 | 48                    |
| ⤴      | HSA-03   | 0.0       |                | Lean CLAY (CL) |  | 38                            | 13                 | 25                    |
| ▣      | HSA-04   | 0.0       |                | Lean CLAY (CL) |  | 33                            | 16                 | 17                    |

**PLASTICITY CHART**  
Black Rock Units 1, 2 & 3  
Calipatria, California

FIGURE B-3b



| LEGEND |          |           | CLASSIFICATION |                |  | ATTERBERG LIMITS TEST RESULTS |                    |                       |
|--------|----------|-----------|----------------|----------------|--|-------------------------------|--------------------|-----------------------|
|        | location | depth, ft |                |                |  | LIQUID LIMIT (LL)             | PLASTIC LIMIT (PL) | PLASTICITY INDEX (PI) |
| ○      | HSA-10   | 0.0       |                | Fat CLAY (CH)  |  | 52                            | 19                 | 33                    |
| ●      | HSA-11   | 0.0       |                | Lean CLAY (CL) |  | 36                            | 19                 | 17                    |
| △      | HSA-14   | 0.0       |                | SILT (ML)      |  | 27                            | 19                 | 8                     |
| ▲      | HSA-16   | 10.0      |                | Lean CLAY (CL) |  | 31                            | 20                 | 11                    |
| ⊙      | HSA-19   | 11.4      |                | SILT (ML)      |  | 34                            | 25                 | 9                     |
| ⊕      | HSA-22   | 0.0       |                | Lean CLAY (CL) |  | 45                            | 15                 | 30                    |

**PLASTICITY CHART**  
Black Rock Units 1, 2 & 3  
Calipatria, California

FIGURE B-3c

# COMPACTION



|         |          |           |            |          |          |
|---------|----------|-----------|------------|----------|----------|
| Job No. | 3652.001 | Job Name: | Black Rock | Date:    | 11/20/08 |
| Lab ID: | 4124     | Client:   |            | Pg. 1 of |          |

| SAMPLE DATA                    |  |             |                |             |  |
|--------------------------------|--|-------------|----------------|-------------|--|
| Boring No.:                    |  | Sample No.: | HSA-14         | Depth (ft): |  |
| Description of Soil / Material |  |             | Brown Fat Clay |             |  |
| Reporting Depth (ft):          |  |             |                |             |  |

| TEST DATA                       |                                            |                     |                                           |  |                   |
|---------------------------------|--------------------------------------------|---------------------|-------------------------------------------|--|-------------------|
| TOTAL SAMPLE Wt. (g):           | Wt RETAINED ON 3/4in. (19.0mm) SIEVE (g) : |                     | % RETAINED ON 3/4in. (19.0mm) SIEVE (g) : |  | BLOWS PER LAYER : |
| 12,985                          | Wt RETAINED ON 3/8in. (9.5mm) SIEVE (g) :  |                     | % RETAINED ON 3/8in. (9.5mm) SIEVE (g) :  |  | No. OF LAYERS :   |
|                                 | Wt RETAINED ON No. 4 (4.75mm) SIEVE (g) :  |                     | % RETAINED ON No. 4 (4.75mm) SIEVE (g) :  |  | VOLUME OF MOLD :  |
| ASTM METHOD USED (SEE NOTE 1) : | A                                          | INITIAL M/CONTENT : | PREPARATION METHOD USED                   |  | RAMMER :          |
|                                 |                                            |                     |                                           |  | Hand              |

| Test No.                   | 1      | 2                          | 3      | 4      | 5      |
|----------------------------|--------|----------------------------|--------|--------|--------|
| Wt. Of Wet Soil (lb)       | 8.490  | 8.810                      | 8.810  | 8.840  | 8.830  |
| Wt. Of Mold (lb)           | 4.380  | 4.380                      | 4.380  | 4.380  | 4.380  |
| Wet Unit Weight (lb/ft³)   | 123.3  | 133.0                      | 133.0  | 133.9  | 133.6  |
| Tare No.                   | LPT-52 | YO-22                      | YO-22  | YO-11  | LPT-46 |
| Wt. of Wet Soil + Tare (g) | 605.50 | 606.30                     | 606.30 | 603.70 | 601.40 |
| Wt. of Dry Soil + Tare(g)  | 565.20 | 545.40                     | 545.40 | 533.00 | 533.10 |
| Wt. of Water (g)           | 40.30  | 60.90                      | 60.90  | 70.70  | 68.30  |
| Wt. of Tare (g)            | 38.60  | 38.30                      | 38.30  | 38.30  | 38.40  |
| Wt. of Dry Soil (g)        | 526.60 | 507.10                     | 507.10 | 494.70 | 494.70 |
| Moisture Content (%)       | 7.7    | 12.0                       | 12.0   | 14.3   | 13.8   |
| Dry Unit Weight (lb/ft³)   | 114.6  | 118.7                      | 118.7  | 117.1  | 117.4  |
| MAX. DRY DENSITY (lb/ft³)  | 119.0  | OPT. MOISTURE CONTENT (%)  |        |        | 12     |
| CORRECTED MDD              | 119.0  | CORRECTED MOISTURE CONTENT |        |        | 12     |

**NOTE 1** ASTM METHODS AS FOLLOWS :-

METHOD A - < 20 % RET. No.4 (4.75mm) SIEVE 4in MOLD.

METHOD B - > 20 % RET. No.4 (4.75mm) & < 20 % RET. 3/8in (9.5mm) SIEVE 4in MOLD.

METHOD C - > 20 % RET. 3/8in (9.5mm) & < 30 % RET. 3/4in (19mm) SIEVE 6in MOLD.

IF 30% OR MORE IS RET. ON THE 3/4in (19mm) SIEVE THEN **NONE** OF THE METHODS DETAILED ABOVE MAY BE USED. (INFORM THE LABORATORY SUPERVISOR)

**VOLUME OF MOLD :-**  
 6in mold - 0.0750  
 4in mold - 0.0333

REMARKS : Assumed density of 2.700 kg/m³ used for Air voids calculations

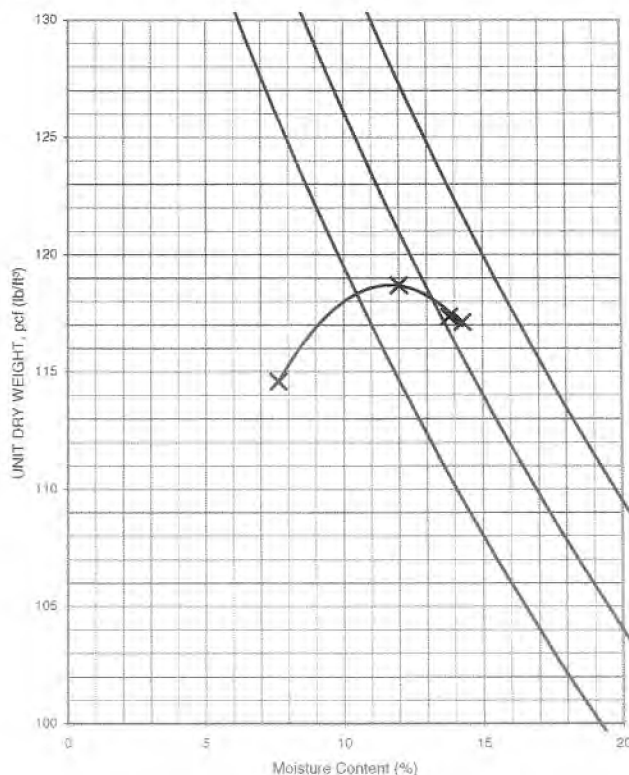


FIGURE B-4a

|             |  |        |  |                 |  |              |  |
|-------------|--|--------|--|-----------------|--|--------------|--|
| Tested by : |  | Date : |  | Calculated by : |  | Checked by : |  |
| HSA-14      |  |        |  |                 |  |              |  |

# COMPACTION



|         |          |           |            |       |          |
|---------|----------|-----------|------------|-------|----------|
| Job No. | 3652.001 | Job Name: | Black Rock | Date: | 11/20/08 |
| Lab ID: | 4124     | Client:   |            |       | Pg. 1 of |

| SAMPLE DATA                    |  |             |                |             |  |
|--------------------------------|--|-------------|----------------|-------------|--|
| Boring No.:                    |  | Sample No.: | HSA-22         | Depth (ft): |  |
| Description of Soil / Material |  |             | Brown Fat Clay |             |  |

| TEST DATA                       |                                            |                     |                                           |                         |                   |
|---------------------------------|--------------------------------------------|---------------------|-------------------------------------------|-------------------------|-------------------|
| TOTAL SAMPLE Wt. (g):           | Wt RETAINED ON 3/4in. (19.0mm) SIEVE (g) : |                     | % RETAINED ON 3/4in. (19.0mm) SIEVE (g) : |                         | BLOWS PER LAYER : |
|                                 | Wt RETAINED ON 3/8in. (9.5mm) SIEVE (g) :  |                     | % RETAINED ON 3/8in. (9.5mm) SIEVE (g) :  |                         | No. OF LAYERS :   |
| 8,798                           | Wt RETAINED ON No. 4 (4.75mm) SIEVE (g) :  |                     | % RETAINED ON No. 4 (4.75mm) SIEVE (g) :  |                         | VOLUME OF MOLD :  |
| ASTM METHOD USED (SEE NOTE 1) : | A                                          | INITIAL M/CONTENT : |                                           | PREPARATION METHOD USED | RAMMER :          |
|                                 |                                            |                     |                                           |                         | Hand              |

| Test No.                   | 1      | 2                          | 3      | 4      | 5      |
|----------------------------|--------|----------------------------|--------|--------|--------|
| Wt. Of Wet Soil (lb)       | 8.700  | 8.700                      | 8.790  | 8.700  | 8.700  |
| Wt. Of Mold (lb)           | 4.380  | 4.380                      | 4.380  | 4.380  | 4.380  |
| Wet Unit Weight (lb/ft³)   | 129.7  | 129.7                      | 132.4  | 129.7  | 129.7  |
| Tare No.                   | LPT-68 | LPT-68                     | LPT-31 | YO-16  | YO-16  |
| Wt. of Wet Soil + Tare (g) | 620.80 | 620.80                     | 609.50 | 603.20 | 603.20 |
| Wt. of Dry Soil + Tare (g) | 552.00 | 552.00                     | 533.50 | 517.90 | 517.90 |
| Wt. of Water (g)           | 68.80  | 68.80                      | 76.00  | 85.30  | 85.30  |
| Wt. of Tare (g)            | 38.40  | 38.40                      | 38.20  | 38.40  | 38.40  |
| Wt. of Dry Soil (g)        | 513.60 | 513.60                     | 495.30 | 479.50 | 479.50 |
| Moisture Content (%)       | 13.4   | 13.4                       | 15.3   | 17.8   | 17.8   |
| Dry Unit Weight (lb/ft³)   | 114.3  | 114.3                      | 114.7  | 110.1  | 110.1  |
| MAX. DRY DENSITY (lb/ft³)  | 115.5  | OPT. MOISTURE CONTENT (%)  |        |        | 15     |
| CORRECTED MDD              | 115.5  | CORRECTED MOISTURE CONTENT |        |        | 15     |

**NOTE 1** ASTM METHODS AS FOLLOWS :-

METHOD A - < 20 % RET. No.4 (4.75mm) SIEVE 4in MOLD.

METHOD B - > 20 % RET. No.4 (4.75mm) & < 20 % RET. 3/8in (9.5mm) SIEVE 4in MOLD.

METHOD C - > 20 % RET. 3/8in (9.5mm) & < 30 % RET. 3/4in (19mm) SIEVE 6in MOLD.

IF 30% OR MORE IS RET. ON THE 3/4in (19mm) SIEVE THEN **NONE** OF THE METHODS DETAILED ABOVE MAY BE USED. (INFORM THE LABORATORY SUPERVISOR)

**VOLUME OF MOLD :-**  
 6in mold - 0.0750  
 4in mold - 0.0333

REMARKS : Assumed density of 2.700 kg/m³ used for Air voids calculations

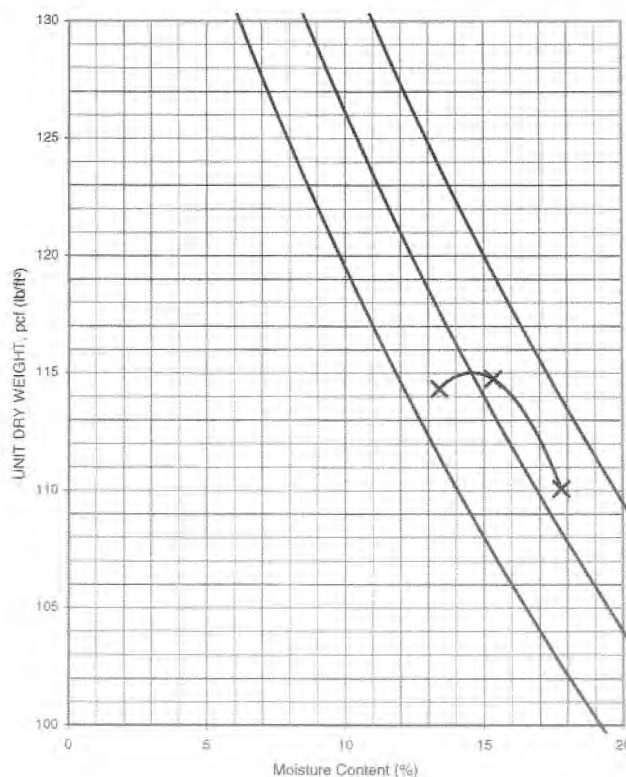


FIGURE B-4b

|             |        |                 |              |
|-------------|--------|-----------------|--------------|
| Tested by : | Date : | Calculated by : | Checked by : |
| HSA-22      |        |                 |              |

Pg. 1 of

| SAMPLE DATA                    |  |             |       |             |  |                       |  |
|--------------------------------|--|-------------|-------|-------------|--|-----------------------|--|
| Boring No.:                    |  | Sample No.: | HSA-4 | Depth (ft): |  | Reporting Depth (ft): |  |
| Description of Soil / Material |  |             |       |             |  | Brown Fat Clay        |  |

| TEST DATA                       |                                            |                     |                                           |                         |                   |         |
|---------------------------------|--------------------------------------------|---------------------|-------------------------------------------|-------------------------|-------------------|---------|
| TOTAL SAMPLE Wt. (g):           | Wt RETAINED ON 3/4in. (19.0mm) SIEVE (g) : |                     | % RETAINED ON 3/4in. (19.0mm) SIEVE (g) : |                         | BLOWS PER LAYER : | 25      |
| 8,253                           | Wt RETAINED ON 3/8in. (9.5mm) SIEVE (g) :  |                     | % RETAINED ON 3/8in. (9.5mm) SIEVE (g) :  |                         | No. OF LAYERS :   | 5       |
|                                 | Wt RETAINED ON No. 4 (4.75mm) SIEVE (g) :  |                     | % RETAINED ON No 4 (4.75mm) SIEVE (g) :   |                         | VOLUME OF MOLD :  | 0.03320 |
| ASTM METHOD USED (SEE NOTE 1) : | A                                          | INITIAL M/CONTENT : |                                           | PREPARATION METHOD USED | RAMMER :          | Hand    |

**NOTE 1**     **ASTM METHODS AS FOLLOWS :-**

METHOD A - < 20 % RET. No.4 (4.75mm) SIEVE  
                    4in MOLD.

METHOD B - > 20 % RET. No.4 (4.75mm) &  
                    < 20 % RET. 3/8in (9.5mm) SIEVE  
                    4in MOLD.

METHOD C - > 20 % RET. 3/8in (9.5mm) &  
                    < 30 % RET. 3/4in (19mm ) SIEVE  
                    6in MOLD.

IF 30% OR MORE IS RET. ON THE 3/4in (19mm)  
SIEVE THEN **NONE** OF THE METHODS DETAILED ABOVE  
MAY BE USED. (INFORM THE LABORATORY  
SUPERVISOR)

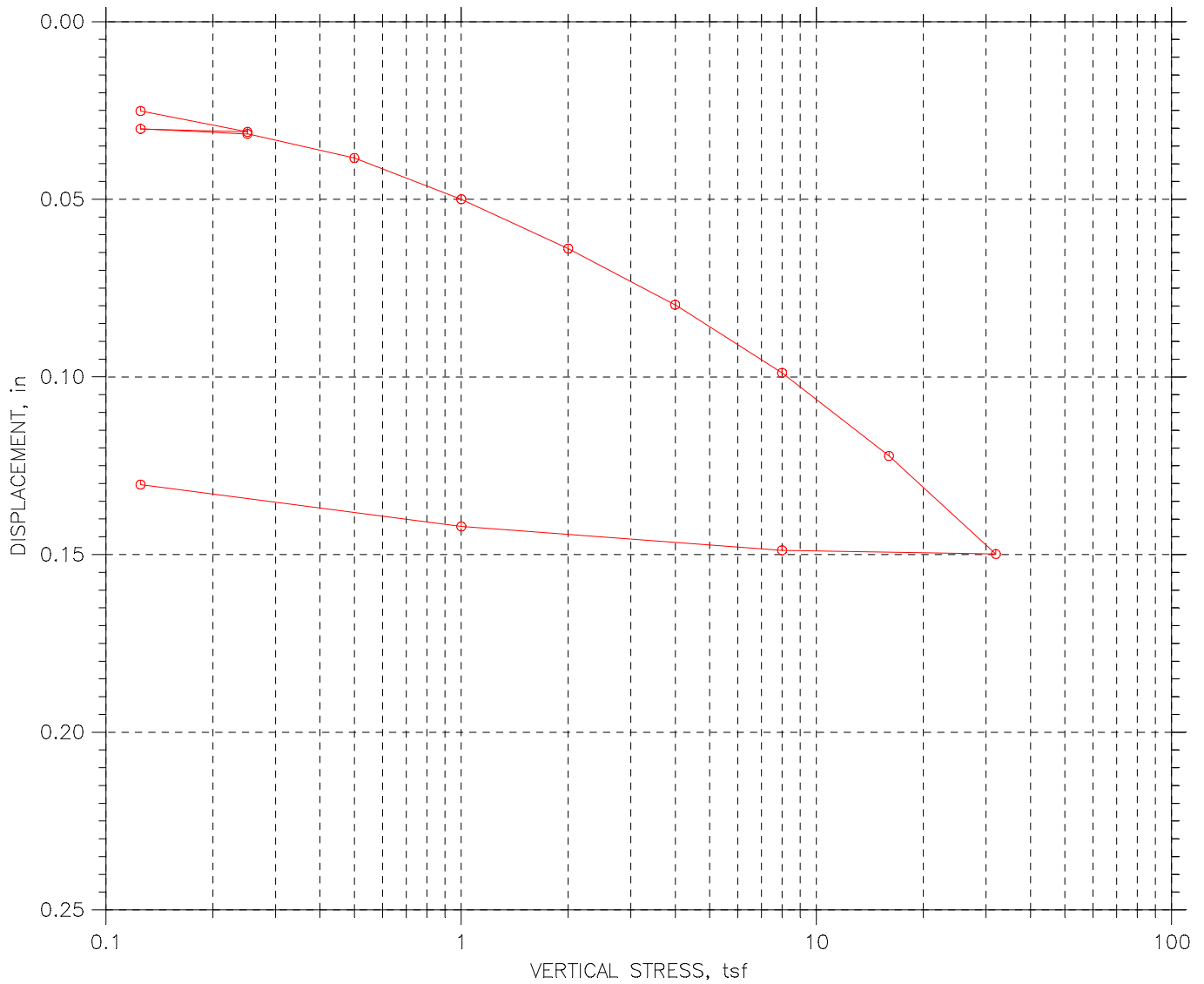
**VOLUME OF MOLD :-**

                    6in mold - 0.0750  
                    4in mold - 0.0333

|             |        |                 |              |
|-------------|--------|-----------------|--------------|
| Tested by : | Date : | Calculated by : | Checked by : |
|-------------|--------|-----------------|--------------|

# CONSOLIDATION TEST DATA

## SUMMARY REPORT

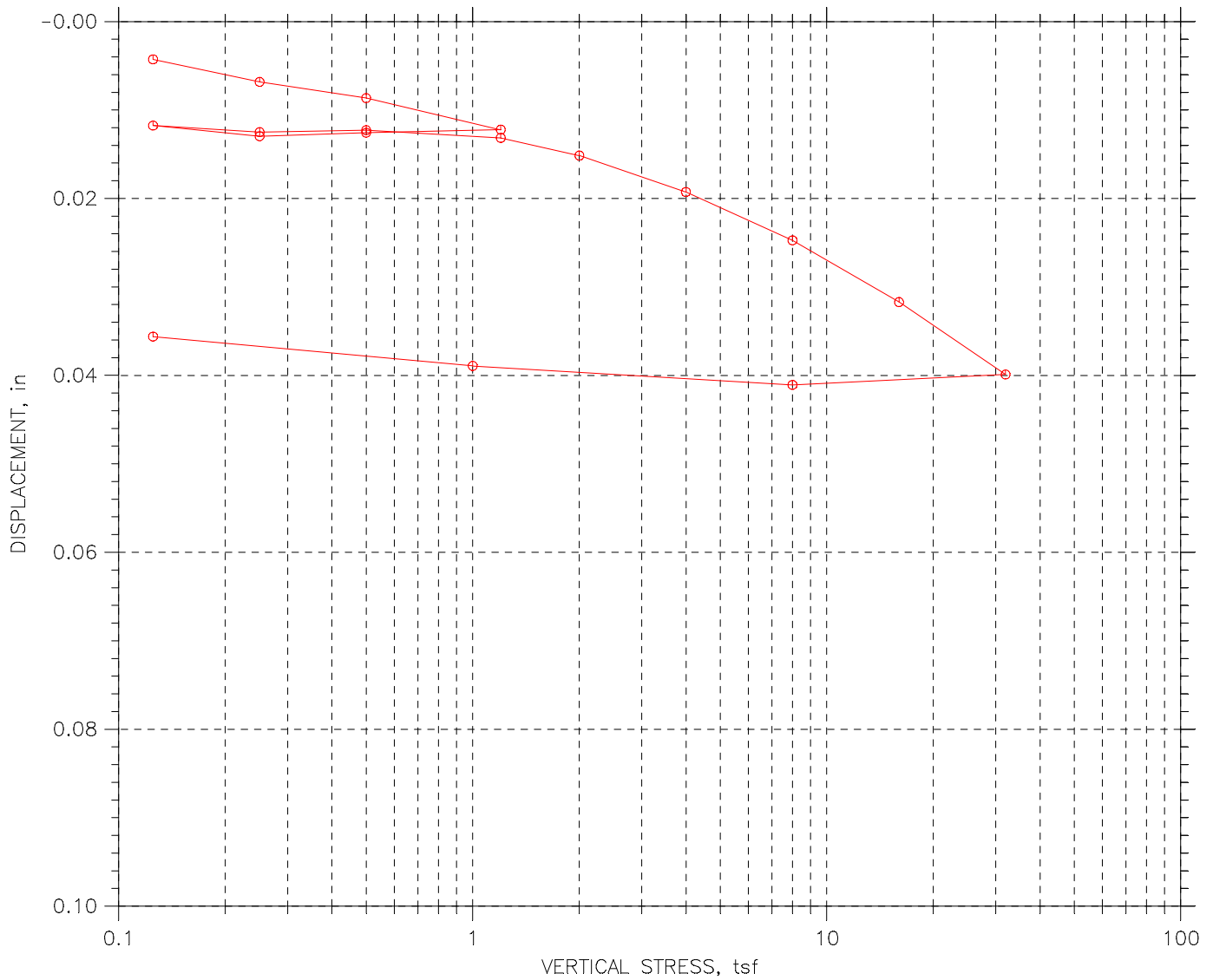


|                                  |         |              |                      | Before Test | After Test |      |
|----------------------------------|---------|--------------|----------------------|-------------|------------|------|
| Overburden Pressure: 0 tsf       |         |              | Water Content, %     | 30.62       | 24.96      |      |
| Preconsolidation Pressure: 0 tsf |         |              | Dry Unit Weight, pcf | 93.88       | 108.       |      |
| Compression Index: 3.81959e-313  |         |              | Saturation, %        | 91.06       | 100.00     |      |
| Diameter: 2.4 in                 |         | Height: 1 in |                      | Void Ratio  | 1.02       | 0.76 |
| LL: ---                          | PL: --- | PI: ---      | GS: 3.04             |             |            |      |

|  |                                                                |                          |                       |
|--|----------------------------------------------------------------|--------------------------|-----------------------|
|  | Project: Black Rock Units 1,2,3                                | Location: Calipatria, CA | Project No.: 3652.001 |
|  | Boring No.: RW-01                                              | Tested By: NJD           | Checked By: NJD       |
|  | Sample No.: #1                                                 | Test Date: 11/7/08       | Depth: 6.0ft          |
|  | Test No.: D                                                    | Sample Type: Ring        | Elevation: N/A        |
|  | Description: Clayey SILT (ML): brown, wet                      |                          |                       |
|  | Remarks: 3652.001_RW-01_#1_6.0ft_Node65_Black Rock Units 1,2,3 |                          |                       |
|  |                                                                |                          |                       |

**FIGURE B-5a**

# CONSOLIDATION TEST DATA SUMMARY REPORT



|                                  |         |              |                      | Before Test | After Test |      |
|----------------------------------|---------|--------------|----------------------|-------------|------------|------|
| Overburden Pressure: 0 tsf       |         |              | Water Content, %     | 24.67       | 22.37      |      |
| Preconsolidation Pressure: 0 tsf |         |              | Dry Unit Weight, pcf | 101.6       | 105.4      |      |
| Compression Index: 3.81959e-313  |         |              | Saturation, %        | 101.17      | 100.79     |      |
| Diameter: 2.42 in                |         | Height: 1 in |                      | Void Ratio  | 0.66       | 0.60 |
| LL: ---                          | PL: --- | PI: ---      | GS: 2.70             |             |            |      |

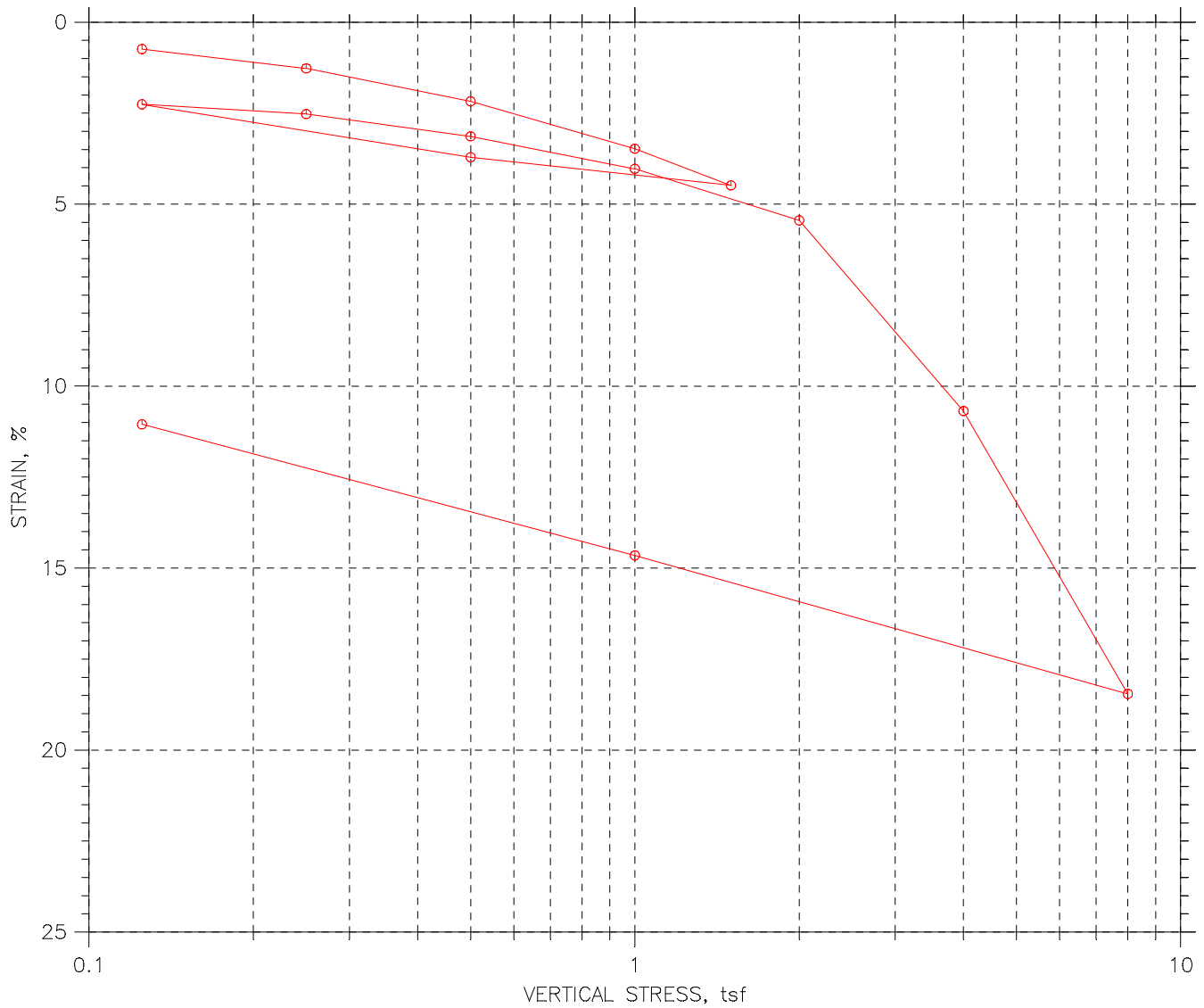
|  |                                                                     |                          |                       |
|--|---------------------------------------------------------------------|--------------------------|-----------------------|
|  | Project: Black Rock Units 1,2,3                                     | Location: Calipatria, CA | Project No.: 3652.001 |
|  | Boring No.: RW-03                                                   | Tested By: NJD           | Checked By: NJD       |
|  | Sample No.: #7                                                      | Test Date: 11/10/08      | Depth: 36.0ft         |
|  | Test No.: E                                                         | Sample Type: Ring        | Elevation: N/A        |
|  | Description: Silty SAND (SM): brown, moist, fine sand               |                          |                       |
|  | Remarks: 3652.001_RW-03_#7_36.0ft_Node65_Black Rock Units 1,2,3.dat |                          |                       |
|  |                                                                     |                          |                       |

FIGURE B-5b



# CONSOLIDATION TEST DATA

## SUMMARY REPORT



|                                  |         |              |                      | Before Test | After Test |      |
|----------------------------------|---------|--------------|----------------------|-------------|------------|------|
| Overburden Pressure: 0 tsf       |         |              | Water Content, %     | 48.36       | 40.47      |      |
| Preconsolidation Pressure: 0 tsf |         |              | Dry Unit Weight, pcf | 77.66       | 87.31      |      |
| Compression Index: 3.81959e-313  |         |              | Saturation, %        | 111.56      | 117.41     |      |
| Diameter: 2.4 in                 |         | Height: 1 in |                      | Void Ratio  | 1.17       | 0.93 |
| LL: ---                          | PL: --- | PI: ---      | GS: 2.70             |             |            |      |

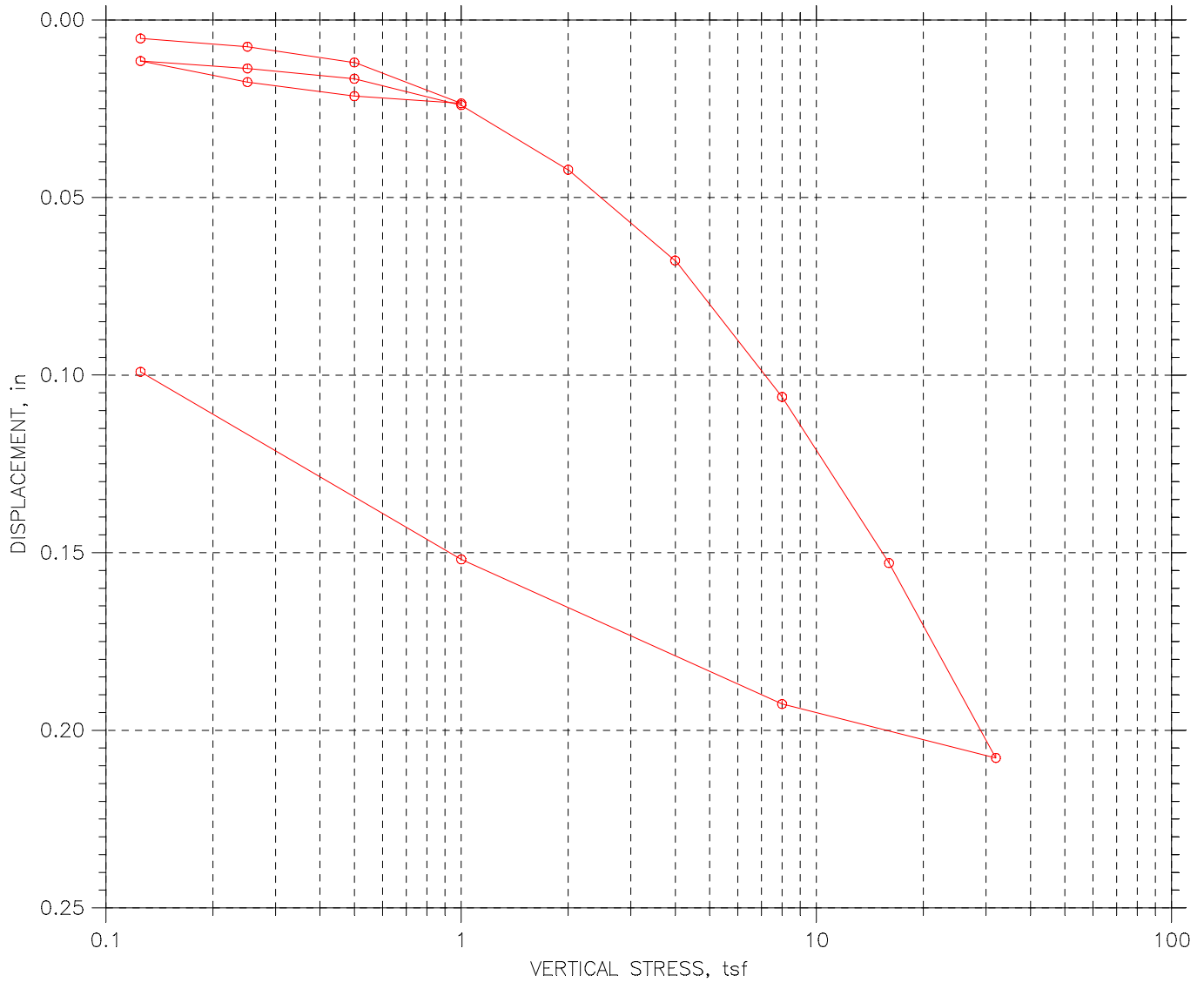
|  |                                                                      |                          |                       |
|--|----------------------------------------------------------------------|--------------------------|-----------------------|
|  | Project: Black Rock Units 1,2,3                                      | Location: Calipatria, CA | Project No.: 3652.001 |
|  | Boring No.: RW-4                                                     | Tested By: NJD           | Checked By: NJD       |
|  | Sample No.: #10                                                      | Test Date: 11/3/08       | Depth: 50.5ft         |
|  | Test No.: A                                                          | Sample Type: Shelby      | Elevation: N/A        |
|  | Description: Fat CLAY (CH): brown, wet                               |                          |                       |
|  | Remarks: 3652.001_RW-04_#10_50.5ft_Node66_Black Rock Units 1,2,3.dat |                          |                       |
|  |                                                                      |                          |                       |

FIGURE B-5c



# CONSOLIDATION TEST DATA

## SUMMARY REPORT



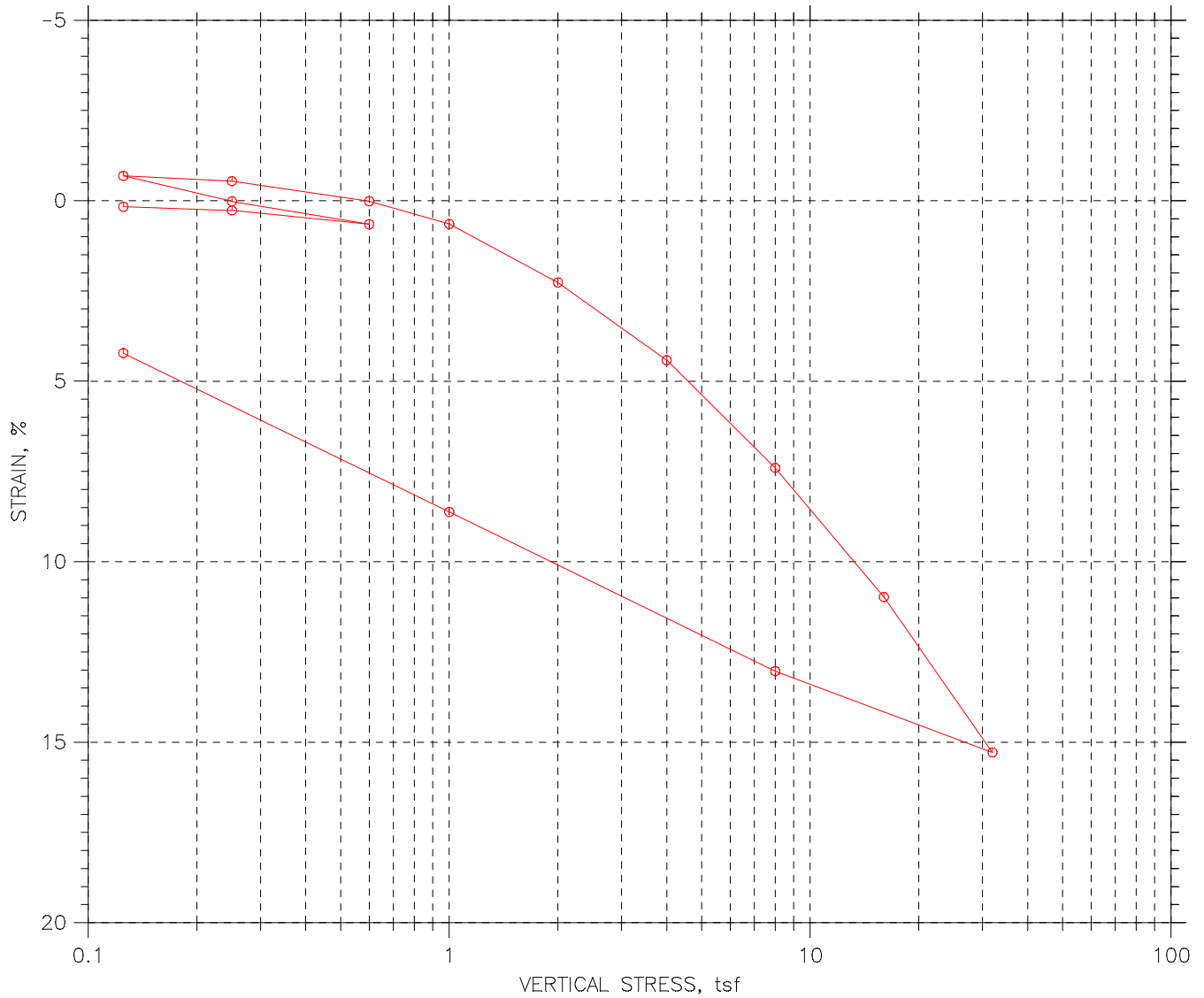
|                                  |         |              |                      | Before Test | After Test |      |
|----------------------------------|---------|--------------|----------------------|-------------|------------|------|
| Overburden Pressure: 0 tsf       |         |              | Water Content, %     | 35.02       | 30.32      |      |
| Preconsolidation Pressure: 0 tsf |         |              | Dry Unit Weight, pcf | 87.89       | 97.56      |      |
| Compression Index: 3.81959e-313  |         |              | Saturation, %        | 93.75       | 100.00     |      |
| Diameter: 2.42 in                |         | Height: 1 in |                      | Void Ratio  | 1.11       | 0.90 |
| LL: ---                          | PL: --- | PI: ---      | GS: 2.97             |             |            |      |

|  |                                                                     |                          |                       |
|--|---------------------------------------------------------------------|--------------------------|-----------------------|
|  | Project: Black Rock Units 1,2,3                                     | Location: Calipatria, CA | Project No.: 3652.001 |
|  | Boring No.: RW-05                                                   | Tested By: NJD           | Checked By: NJD       |
|  | Sample No.: #6                                                      | Test Date: 11/11/08      | Depth: 31.5ft         |
|  | Test No.: N/A                                                       | Sample Type: Shelby      | Elevation: N/A        |
|  | Description: Fat CLAY (CH): brown, wet                              |                          |                       |
|  | Remarks: 3652.001_RW-05_#6_31.5ft_Node65_Black Rock Units 1,2,3.dat |                          |                       |
|  |                                                                     |                          |                       |

**FIGURE B-5d**

# CONSOLIDATION TEST DATA

## SUMMARY REPORT



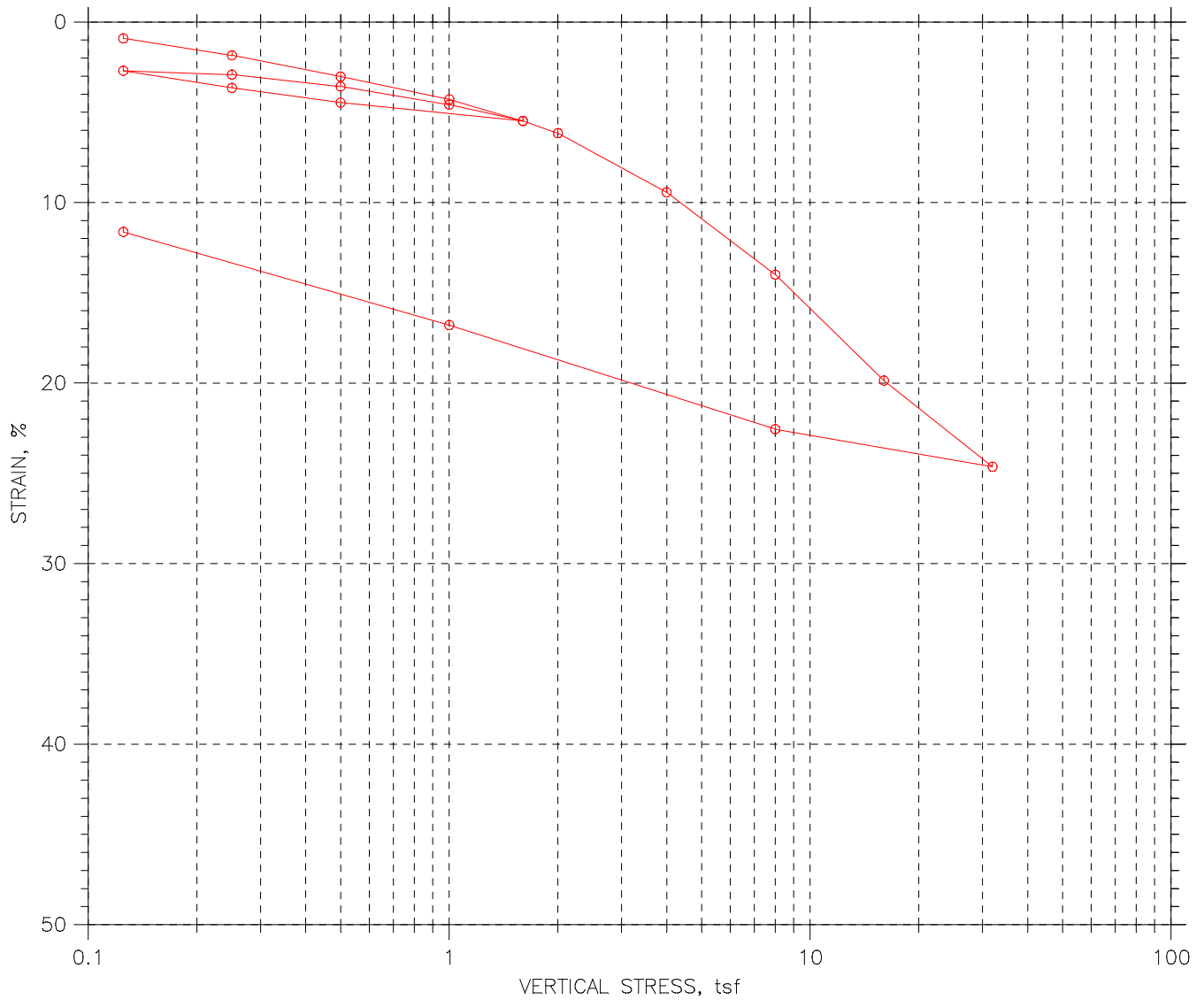
|                                  |         |              |          | Before Test          | After Test |        |
|----------------------------------|---------|--------------|----------|----------------------|------------|--------|
| Overburden Pressure: 0 tsf       |         |              |          | Water Content, %     | 29.94      | 28.39  |
| Preconsolidation Pressure: 0 tsf |         |              |          | Dry Unit Weight, pcf | 94.34      | 98.5   |
| Compression Index: 3.81959e-313  |         |              |          | Saturation, %        | 102.77     | 107.76 |
| Diameter: 2.42 in                |         | Height: 1 in |          | Void Ratio           | 0.79       | 0.71   |
| LL: ---                          | PL: --- | PI: ---      | GS: 2.70 |                      |            |        |

|  |                                                                     |                          |                       |
|--|---------------------------------------------------------------------|--------------------------|-----------------------|
|  | Project: Black Rock Units 1,2,3                                     | Location: Calipatria, CA | Project No.: 3652.001 |
|  | Boring No.: RW-6                                                    | Tested By: NJD           | Checked By: NJD       |
|  | Sample No.: #3                                                      | Test Date: 11/7/08       | Depth: 16.0ft         |
|  | Test No.: C                                                         | Sample Type: Shelby      | Elevation: N/A        |
|  | Description: Fat CLAY (CH): brown, wet                              |                          |                       |
|  | Remarks: 3652.001_RW-06_#3_16.0ft_Node66_Black Rock Units 1,2,3.dat |                          |                       |
|  |                                                                     |                          |                       |

**FIGURE B-5e**

# CONSOLIDATION TEST DATA

## SUMMARY REPORT

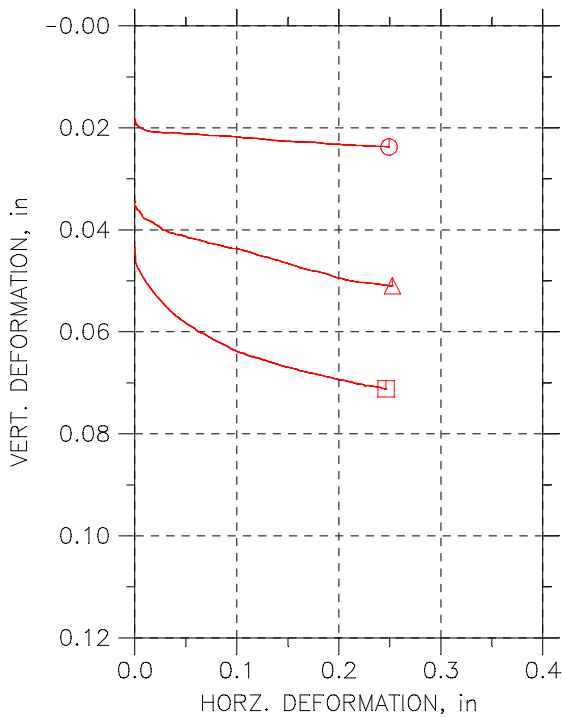
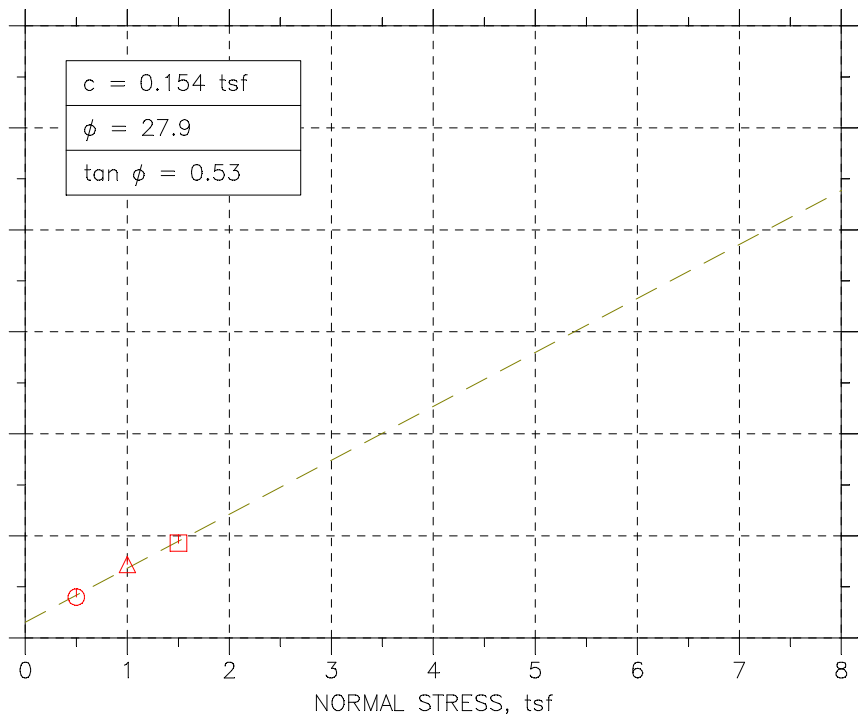
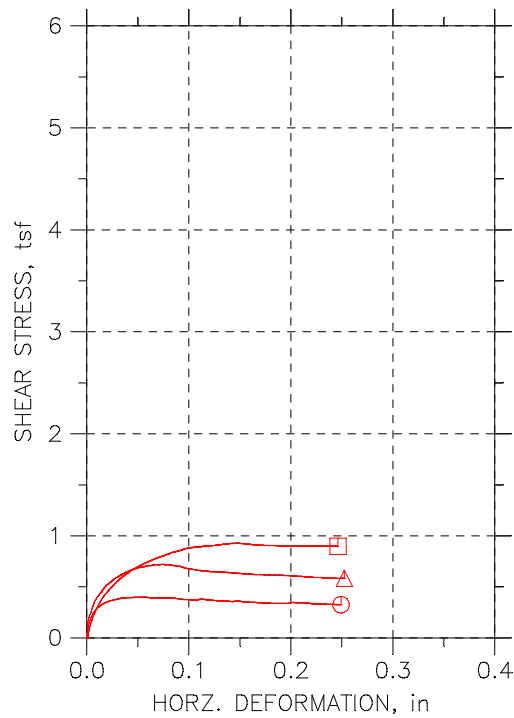


|                                  |         |              |                      | Before Test | After Test |      |
|----------------------------------|---------|--------------|----------------------|-------------|------------|------|
| Overburden Pressure: 0 tsf       |         |              | Water Content, %     | 38.33       | 33.13      |      |
| Preconsolidation Pressure: 0 tsf |         |              | Dry Unit Weight, pcf | 84.19       | 95.27      |      |
| Compression Index: 3.81959e-313  |         |              | Saturation, %        | 103.29      | 116.29     |      |
| Diameter: 2.42 in                |         | Height: 1 in |                      | Void Ratio  | 1.00       | 0.77 |
| LL: ---                          | PL: --- | PI: ---      | GS: 2.70             |             |            |      |

|  |                                                                      |                          |                       |
|--|----------------------------------------------------------------------|--------------------------|-----------------------|
|  | Project: Black Rock Units 1,2,3                                      | Location: Calipatria, CA | Project No.: 3652.001 |
|  | Boring No.: RW-7                                                     | Tested By: NJD           | Checked By: NJD       |
|  | Sample No.: #10                                                      | Test Date: 11/11/08      | Depth: 51.0ft         |
|  | Test No.: N/A                                                        | Sample Type: Ring        | Elevation: N/A        |
|  | Description: Fat CLAY (CH): brown, wet                               |                          |                       |
|  | Remarks: 3652.001_RW-07_#10_51.0ft_Node66_Black Rock Units 1,2,3.dat |                          |                       |
|  |                                                                      |                          |                       |

**FIGURE B-5f**

# DIRECT SHEAR TEST REPORT



|                            |                       |          |          |         |
|----------------------------|-----------------------|----------|----------|---------|
| Symbol                     | ⊖                     | △        | □        |         |
| Test No.                   | A                     | B        | C        |         |
| Sample No.                 | #2                    | #2       | #2       |         |
| Shape                      | Circular              | Circular | Circular |         |
| Initial                    | Dimension, in         | 2        | 2        | 2       |
|                            | Area, in <sup>2</sup> | 3.1416   | 3.1416   | 3.1416  |
|                            | Height, in            | 1        | 1        | 1       |
|                            | Water Content, %      | 28.74    | 28.74    | 28.73   |
|                            | Dry Density, pcf      | 95.104   | 96.817   | 94.489  |
|                            | Saturation, %         | 98.17    | 102.23   | 96.73   |
|                            | Void Ratio            | 0.80515  | 0.77321  | 0.8169  |
| Consol. Height, in         |                       | 0.98258  | 0.96705  | 0.95798 |
| Consol. Void Ratio         |                       | 0.7737   | 0.71479  | 0.74056 |
| Final                      | Water Content, %      | 31.23    | 27.10    | 31.42   |
|                            | Dry Density, pcf      | 97.419   | 102.02   | 101.73  |
|                            | Saturation, %         | 112.66   | 109.16   | 125.66  |
|                            | Void Ratio            | 0.76226  | 0.68283  | 0.68754 |
| Normal Stress, tsf         |                       | 0.49995  | 0.99967  | 1.4999  |
| Max. Shear Stress, tsf     |                       | 0.39963  | 0.72021  | 0.92855 |
| Ult. Shear Stress, tsf     |                       | 0.3244   | 0.58309  | 0.89799 |
| Time to Failure, min       |                       | 350      | 490      | 919     |
| Disp. Rate, in/min         |                       | 0.00017  | 0.00017  | 0.00017 |
| Estimated Specific Gravity |                       | 2.75     | 2.75     | 2.75    |
| Liquid Limit               |                       | ---      | ---      | ---     |
| Plastic Limit              |                       | ---      | ---      | ---     |
| Plasticity Index           |                       | ---      | ---      | ---     |

Project: Black Rock Units 1,2,3  
 Location: Calipatria, CA  
 Project No.: 3652.001  
 Boring No.: HSA-19  
 Sample Type: Ring  
 Description: Fat CLAY (CH): brown, moist  
 Remarks: 3652.001\_HSA-19\_#2\_6.0ft\_0.5tsf\_STA\_Black Rock Units 1,2,3

FIGURE B-6

-R- VALUE TEST RESULT

PROJECT NO: 3652.001

PROJECT NAME: BLACK ROCK UNITS 1 - 2 & 3

SAMPLE NO. HSA - 8 @ 0 - 3' SOURCE: Onsite

DESCRIPTION: Brown lean to fat CLAY with sand (CL-CH)

TESTED BY: JA DATE: 11-10-08

ATTENTION: Jon Everett

COPY TO: Jim Bruss

\* \* \* \* \* RESISTANCE VALUE DATA SUMMARY \* \* \* \* \*

INITIAL MOISTURE CONTENT: 20 %

| DRY<br>DENSITY<br>(pcf) | WATER<br>CONTENT<br>(%) | EXUDATION<br>PRESSURE<br>(psi) | EXPANSION<br>PRESSURE<br>(psf) | * R *<br>VALUE |
|-------------------------|-------------------------|--------------------------------|--------------------------------|----------------|
| 99.3                    | 23.8                    | 231                            | 0                              | 2              |
| 99.8                    | 23.2                    | 326                            | 35                             | 4              |
| 100                     | 22.6                    | 446                            | 39                             | 6              |

AT EXUDATION PRESSURE OF 300 PSI:

|      |      |     |    |   |
|------|------|-----|----|---|
| 99.6 | 23.4 | 300 | 31 | 4 |
|------|------|-----|----|---|

-R- VALUE TEST RESULT

PROJECT NO: 3652.001

PROJECT NAME: BLACK ROCK UNITS 1 - 2 & 3

SAMPLE NO. HSA - 12 @ 0 - 3' SOURCE: Onsite

DESCRIPTION: Brown lean to fat CLAY with sand (CL-CH)

TESTED BY: JC DATE: 11/10/08

ATTENTION: Jon Everett

COPY TO: Jim Bruss

\* \* \* \* \* RESISTANCE VALUE DATA SUMMARY \* \* \* \* \*

INITIAL MOISTURE CONTENT: 23 %

| DRY<br>DENSITY<br>(pcf) | WATER<br>CONTENT<br>(%) | EXUDATION<br>PRESSURE<br>(psi) | EXPANSION<br>PRESSURE<br>(psf) | * R *<br>VALUE |
|-------------------------|-------------------------|--------------------------------|--------------------------------|----------------|
| 96.1                    | 26.1                    | 215                            | 0                              | 1              |
| 98.6                    | 24.9                    | 310                            | 9                              | 2              |
| 100.8                   | 23.8                    | 390                            | 83                             | 5              |

AT EXUDATION PRESSURE OF 300 PSI:

|      |    |     |   |   |
|------|----|-----|---|---|
| 98.4 | 25 | 300 | 8 | 2 |
|------|----|-----|---|---|

-R- VALUE TEST RESULT

PROJECT NO: 3652.001

PROJECT NAME: BLACK ROCK UNITS 1 - 2 & 3

SAMPLE NO. HSA - 20 @ 0' - 3' SOURCE: Onsite

DESCRIPTION: Brown lean CLAY with sand (CL)

TESTED BY: GB DATE: 11-10-08

ATTENTION: Jon Everett

COPY TO: Jim Bruss

\* \* \* \* \* RESISTANCE VALUE DATA SUMMARY \* \* \* \* \*

INITIAL MOISTURE CONTENT: 16 %

| DRY<br>DENSITY<br>(pcf) | WATER<br>CONTENT<br>(%) | EXUDATION<br>PRESSURE<br>(psi) | EXPANSION<br>PRESSURE<br>(psf) | * R *<br>VALUE |
|-------------------------|-------------------------|--------------------------------|--------------------------------|----------------|
| 106.7                   | 17.4                    | 199                            | 0                              | 16             |
| 108.5                   | 16.9                    | 310                            | 0                              | 29             |
| 108.1                   | 16.3                    | 358                            | 0                              | 31             |

AT EXUDATION PRESSURE OF 300 PSI:

|       |      |     |   |    |
|-------|------|-----|---|----|
| 107.9 | 16.8 | 300 | 0 | 28 |
|-------|------|-----|---|----|



# EXPANSION INDEX

ASTM D4829-03 / UBC 29-1

Project Name: Black Rock Unit 1,2 3  
 Sample Source: HSA-3 @ 0-3'  
 Sample Description: Brown lean CLAY with sand (CL).

Project Number: 3652.001  
 Tested By: DC  
 Date Tested: 11/7/2008

## Test Data:

Expansion:      Load-Expanded: ☒      Expanded-Load: ☐      Other: ☐

| MOISTURE<br>CONTENT               | BEFORE<br>TEST | AFTER<br>TEST | REMOLDING<br>DATA    |      |                    |       |
|-----------------------------------|----------------|---------------|----------------------|------|--------------------|-------|
| Ring Number                       |                |               | Water<br>content, %  | 11.1 | Desired<br>Density | 105.0 |
| Weight of Wet Soil + Ring (gms)   | 385.0          | 472.4         |                      |      |                    |       |
| Weight of Dry Soil + Ring (gms)   | 346.5          | 385.1         |                      |      |                    |       |
| Weight of Ring (gms)              | 0.0            | 38.6          | Total Dry Soil, gms. |      |                    |       |
| Weight of Dry Soil (gms)          | 346.5          | 346.5         | Water Added, gms.    |      |                    |       |
| Weight of Water (gms)             | 38.5           | 87.3          |                      |      |                    |       |
| Volume of Soil (ft <sup>3</sup> ) | 0.0073         | 0.0077        |                      |      |                    |       |
| Water Content, %                  | 11.1           | 25.2          |                      |      |                    |       |
| Dry Density (pcf)                 | 105.0          | 98.9          |                      |      |                    |       |

## SPECIMEN DATA:

Height 1.00 inches      Diameter: 4.00 inches  
 $G_s = \underline{2.7}$  estimate       $V_0 = \underline{0.0073}$  inch.<sup>3</sup>  
 $\delta_d = \underline{105.0}$   
 $\delta_f = \underline{98.9}$

|                 |           |
|-----------------|-----------|
| EXPANSION INDEX | <u>62</u> |
|-----------------|-----------|

| SPECIMEN<br>HEIGHT<br>(inches) | $H_0 - H_f$ | $(w/c)(G_s)(\delta_d)$<br>(x) | $(G_s)(62.4) - \delta_d$<br>(y) | S%<br>x / y |         |
|--------------------------------|-------------|-------------------------------|---------------------------------|-------------|---------|
| 1.000                          |             | 3151.26                       | 63.44                           | 50          | Initial |
| 1.062                          | 0.0619      | 6729.06                       | 69.56                           | 97          | Final   |

| Date:    | Time: | Reading: | Remarks: |
|----------|-------|----------|----------|
| 11/10/08 | 3:30  | 0.3435   |          |
| 11/10/08 | 3:56  | 0.3200   |          |
| 11/10/08 | 4:18  | 0.3003   |          |
| 11/11/08 | 8:10  | 0.2814   |          |
| 11/11/08 | 11:50 | 0.2816   |          |
| 11/11/08 | 1:10  | 0.2816   |          |

FIGURE B-8a





## EXPANSION INDEX

ASTM D4829-03 / UBC 29-1

**Project Name:** Black Rock Unit 1,2,3

**Project Number:** 3652.001

**Sample Source:** HSA-10 @ 0-3'

**Tested By:** DC

**Sample Description:** Brown fat CLAY with sand (CH).

**Date Tested:** 11/7/2008

**Test Data:**

**Expansion:**      Load-Expanded: ☒      Expanded-Load: ☐      Other: ☐

| MOISTURE<br>CONTENT               | BEFORE<br>TEST | AFTER<br>TEST | REMOLDING<br>DATA   |      |                    |      |
|-----------------------------------|----------------|---------------|---------------------|------|--------------------|------|
| Ring Number                       |                |               | Water<br>content, % | 13.5 | Desired<br>Density | 97.5 |
| Weight of Wet Soil + Ring (gms)   | 365.0          | 461.1         |                     |      |                    |      |
| Weight of Dry Soil + Ring (gms)   | 321.6          | 360.4         |                     |      |                    |      |
| Weight of Ring (gms)              | 0.0            | 38.8          |                     |      |                    |      |
| Weight of Dry Soil (gms)          | 321.6          | 321.6         |                     |      |                    |      |
| Weight of Water (gms)             | 43.4           | 100.7         |                     |      |                    |      |
| Volume of Soil (ft <sup>3</sup> ) | 0.0073         | 0.0078        |                     |      |                    |      |
| Water Content, %                  | 13.5           | 31.3          |                     |      |                    |      |
| Dry Density (pcf)                 | 97.5           | 90.8          |                     |      |                    |      |

**SPECIMEN DATA:**

**Height** 1.00 inches    **Diameter:** 4.00 inches  
**G<sub>s</sub>** = 2.7 estimate    **V<sub>0</sub>** = 0.0073 inch.<sup>3</sup>  
**δ<sub>d</sub>** = 97.5  
**δ<sub>f</sub>** = 90.8

|                        |           |
|------------------------|-----------|
| <b>EXPANSION INDEX</b> | <u>74</u> |
|------------------------|-----------|

| SPECIMEN<br>HEIGHT<br>(inches) | H <sub>0</sub> -H <sub>f</sub> | (w/c)(G <sub>s</sub> )(δ <sub>d</sub> )<br>(x) | (G <sub>s</sub> )(62.4)-δ <sub>d</sub><br>(y) | S%<br>x / y |         |
|--------------------------------|--------------------------------|------------------------------------------------|-----------------------------------------------|-------------|---------|
| 1.000                          |                                | 3552.33                                        | 70.99                                         | 50          | Initial |
| 1.074                          | 0.0740                         | 7674.48                                        | 77.70                                         | 99          | Final   |

| Date:    | Time: | Reading: | Remarks: |
|----------|-------|----------|----------|
| 11/10/08 | 3:56  | 0.3225   |          |
| 11/10/08 | 4:02  | 0.3000   |          |
| 11/10/08 | 4:13  | 0.2800   |          |
| 11/11/08 | 8:10  | 0.2480   |          |
| 11/11/08 | 11:50 | 0.2484   |          |
| 11/11/08 | 1:10  | 0.2485   |          |

FIGURE B-8b



## EXPANSION INDEX

ASTM D4829-03 / UBC 29-1

**Project Name:** Black Rock Unit 1,2 3  
**Sample Source:** HSA-22 @ 0-3'  
**Sample Description:** Brown lean CLAY with sand (CL).

**Project Number:** 3652.001

**Tested By:** DC

**Date Tested:** 11/7/2008

**Test Data:**

**Expansion:**      **Load-Expanded:** ☒      **Expanded-Load:** ☐      **Other:** ☐

| MOISTURE<br>CONTENT               | BEFORE<br>TEST | AFTER<br>TEST | REMOLDING<br>DATA   |      |                    |       |
|-----------------------------------|----------------|---------------|---------------------|------|--------------------|-------|
| Ring Number                       |                |               | Water<br>content, % | 12.3 | Desired<br>Density | 100.4 |
| Weight of Wet Soil + Ring (gms)   | 372.0          | 512.3         |                     |      |                    |       |
| Weight of Dry Soil + Ring (gms)   | 331.3          | 417.8         |                     |      |                    |       |
| Weight of Ring (gms)              | 0.0            | 86.5          |                     |      |                    |       |
| Weight of Dry Soil (gms)          | 331.3          | 331.3         |                     |      |                    |       |
| Weight of Water (gms)             | 40.7           | 94.5          |                     |      |                    |       |
| Volume of Soil (ft <sup>3</sup> ) | 0.0073         | 0.0078        |                     |      |                    |       |
| Water Content, %                  | 12.3           | 28.5          |                     |      |                    |       |
| Dry Density (pcf)                 | 100.4          | 94.1          |                     |      |                    |       |

**SPECIMEN DATA:**

**Height** 1.00 inches    **Diameter:** 4.00 inches  
**G<sub>s</sub>** = 2.7 estimate    **V<sub>0</sub>** = 0.0073 inch.<sup>3</sup>  
**δ<sub>d</sub>** = 100.4  
**δ<sub>r</sub>** = 94.1

|                        |           |
|------------------------|-----------|
| <b>EXPANSION INDEX</b> | <b>68</b> |
|------------------------|-----------|

| SPECIMEN<br>HEIGHT<br>(inches) | H <sub>0</sub> -H <sub>f</sub> | (w/c)(G <sub>s</sub> )(δ <sub>d</sub> )<br>(x) | (G <sub>s</sub> )(62.4)-δ <sub>d</sub><br>(y) | S%<br>x / y |         |
|--------------------------------|--------------------------------|------------------------------------------------|-----------------------------------------------|-------------|---------|
| 1.000                          |                                | 3331.33                                        | 68.05                                         | 49          | Initial |
| 1.067                          | 0.0672                         | 7247.86                                        | 74.37                                         | 97          | Final   |

| Date:    | Time: | Reading: | Remarks: |
|----------|-------|----------|----------|
| 11/11/08 | 2:03  | 0.3389   |          |
| 11/11/08 | 3:15  | 0.3010   |          |
| 11/11/08 | 4:35  | 0.2815   |          |
| 11/12/08 | 7:55  | 0.2715   |          |
| 11/12/08 | 10:25 | 0.2717   |          |
| 11/12/08 | 1:50  | 0.2717   |          |

FIGURE B-8c



25 November 2008

Job No.0811051

Cust. No.11608

1100 Willow Pass Court, Suite A

Concord, CA 94520-1006

925 462 2771 Fax: 925 462 2775

www.cercoanalytical.com

Mr. Kim Yee  
Fugro West, Inc.  
1000 Broadway, Suite 440  
Oakland, CA 94607

Subject: Project No.: 3652.001  
Project Name: Black Rock Units 1, 2, 3  
Corrosivity Analysis – ASTM Test Methods with Brief Evaluation

Dear Mr. Yee:

Pursuant to your request, CERCO Analytical has analyzed the soil samples submitted on November 07, 2008. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurements, all samples are classified as "severely corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentrations range from 630 to 1,500 mg/kg. Because the chloride ion concentrations are greater than 300 mg/kg, they are determined to be sufficient to attack steel embedded in a concrete mortar coating.

The sulfate ion concentrations range from 1,200 to 2,800 mg/kg and are determined to be sufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations. Therefore, concrete that comes into contact with this soil should use sulfate resistant cement such as Type II, in accordance with the Uniform building Code requirements.

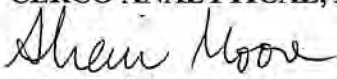
The pH of the soils range from 7.9 to 8.4 which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potentials range from 460 to 470-mV, which are indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call JDH Corrosion Consultants, Inc. at (925) 927-6630.

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,  
**CERCO ANALYTICAL, INC.**

for,   
J. Darby Howard, Jr., P.E.  
President

JDH/jdl  
Enclosure

FIGURE B-9a



1100 Willow Pass Court, Suite A  
Concord, CA 94520-1006  
925 462 2771 Fax: 925 462 2775  
www.cercoanalytical.com

Client: Fugro West  
Client's Project No.: 3652.001  
Client's Project Name: Black Rock Units 1, 2, 3  
Date Sampled: Not Indicated  
Date Received: 7-Nov-08  
Matrix: Soil  
Authorization: Signed Chain of Custody

Date of Report: 25-Nov-2008

| Job/Sample No. | Sample I.D.   | Redox<br>(mV) | pH  | Conductivity<br>(umhos/cm)* | Resistivity<br>(100% Saturation)<br>(ohms-cm) | Sulfide<br>(mg/kg)* | Chloride<br>(mg/kg)* | Sulfate<br>(mg/kg)*  |
|----------------|---------------|---------------|-----|-----------------------------|-----------------------------------------------|---------------------|----------------------|----------------------|
| 0811051-001    | HSA-3 @ 0-3'  | 470           | 8.2 | -                           | 270                                           | -                   | 1,500                | 2,800 <sup>(1)</sup> |
| 0811051-002    | HSA-10 @ 0-3' | 460           | 7.9 | -                           | 280                                           | -                   | 800                  | 1,300                |
| 0811051-003    | HSA-11 @ 0-3' | 470           | 7.9 | -                           | 310                                           | -                   | 630                  | 1,200                |
| 0811051-004    | HSA-14 @ 0-3' | 460           | 7.9 | -                           | 400                                           | -                   | 970                  | 1,200                |
| 0811051-005    | HSA-20 @ 0-3" | 460           | 8.4 | -                           | 260                                           | -                   | 970                  | 1,600                |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |
|                |               |               |     |                             |                                               |                     |                      |                      |

|                  |             |             |             |             |             |             |                              |
|------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| Method:          | ASTM D1498  | ASTM D4972  | ASTM D1125M | ASTM G57    | ASTM D4658M | ASTM D4327  | ASTM D4327                   |
| Detection Limit: | -           | -           | 10          | -           | 50          | 15          | 15                           |
| Date Analyzed:   | 21-Nov-2008 | 21-Nov-2008 | -           | 25-Nov-2008 | -           | 21-Nov-2008 | 21-Nov-2008 &<br>24-Nov-2008 |

\* Results Reported on "As Received" Basis

N.D. - None Detected

<sup>(1)</sup> Detection limit is elevated to 75 mg/kg due to dilution

Cheryl McMillen  
Laboratory Director

**Quality Control Summary** - All laboratory quality control parameters were found to be within established limits

Page No. 1

**APPENDIX C**  
**LIQUEFACTION ANALYSES**

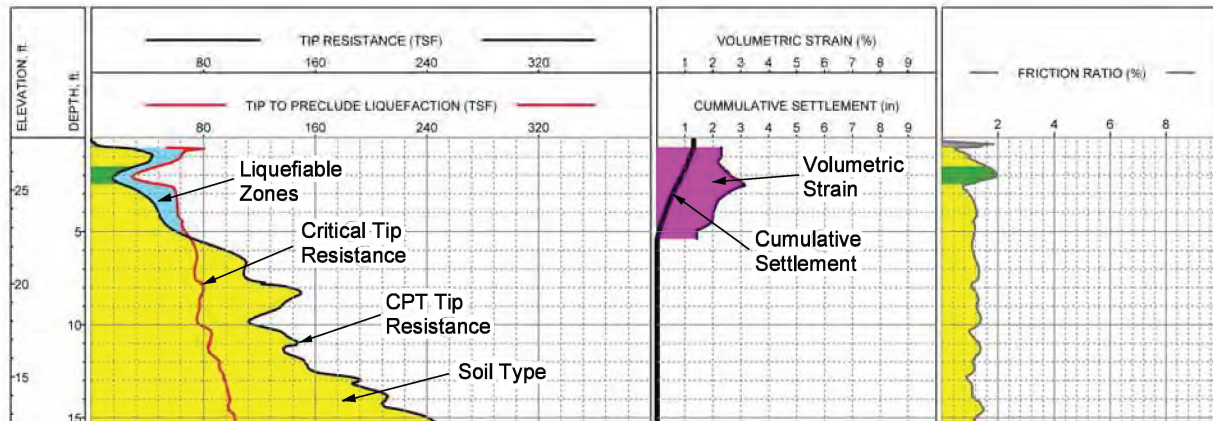
## **APPENDIX C**

### **LIQUEFACTION ANALYSES**

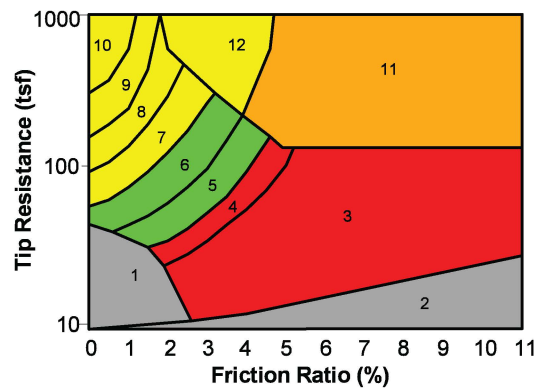
Appendix C presents the results of the CPT liquefaction assessments for the Design Level Earthquake (DLE) event in accordance with the criteria presented in Section 6 of this report. For the analyses, the DLE event is defined as having a moment magnitude (M) of 6.5 and a PGA of 0.40g.

The susceptibility of granular soils to liquefaction is a function of gradation, density, and type of fines content of the soil. The susceptibility in general decreases with respective increases in: 1) distribution of grain size, and 2) soil density. The detailed liquefaction susceptibility was based on the CPT-based empirical procedures recommended by Youd et. al., (2001) and used typical CPT tip resistance data that are representative of the soils at the project site. It should be noted that all zones susceptible to liquefaction are shown to the base of each exploration, and cumulative settlement commences with the deepest encountered liquefiable zones; however, past research has suggested that in most cases liquefaction does not occur at depths greater than about 50 feet below ground surface.

Figure C-1 provides a key for the interpretation of the liquefaction analyses based on the CPT data. Figures C-2 through C-22 present the CPT liquefaction assessments for the DLE event. The CPT plots show zones of materials susceptible to liquefaction in pink, and cumulative settlements along with volumetric strains.



### COLOR LEGEND FOR FRICTION RATIO TRACES



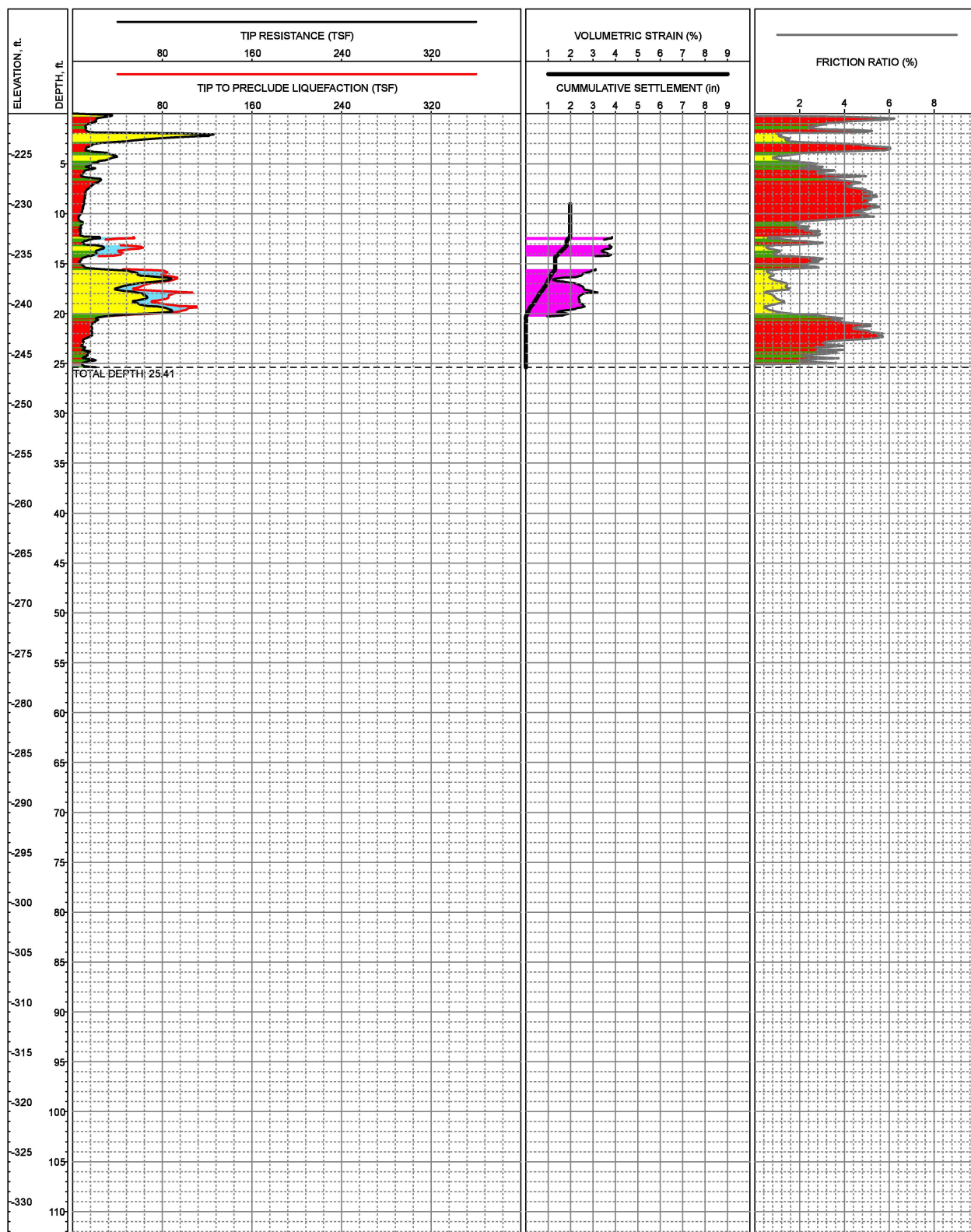
| Zone | Soil Behavior Type        | U.S.C.S. |
|------|---------------------------|----------|
| 1    | Sensitive Fine-grained    | OL-CH    |
| 2    | Organic Material          | OL-OH    |
| 3    | Clay                      | CH       |
| 4    | Silty Clay to Clay        | CL-CH    |
| 5    | Clayey Silt to Silty Clay | MH-CL    |
| 6    | Sandy Silt to Clayey Silt | ML-MH    |
| 7    | Silty Sand to Sandy Silt  | SM-ML    |
| 8    | Sand to Silty Sand        | SM-SP    |
| 9    | Sand                      | SW-SP    |
| 10   | Gravelly Sand to Sand     | SW-GW    |
| 11   | Very Stiff Fine-grained * | CH-CL    |
| 12   | Sand to Clayey Sand *     | SC-SM    |

\*overconsolidated or cemented

### CPT CORRELATION CHART (Robertson and Campanella, 1984)

### KEY TO LIQUEFACTION LOGS Black Rock Units 1, 2, & 3 Calipatria, California



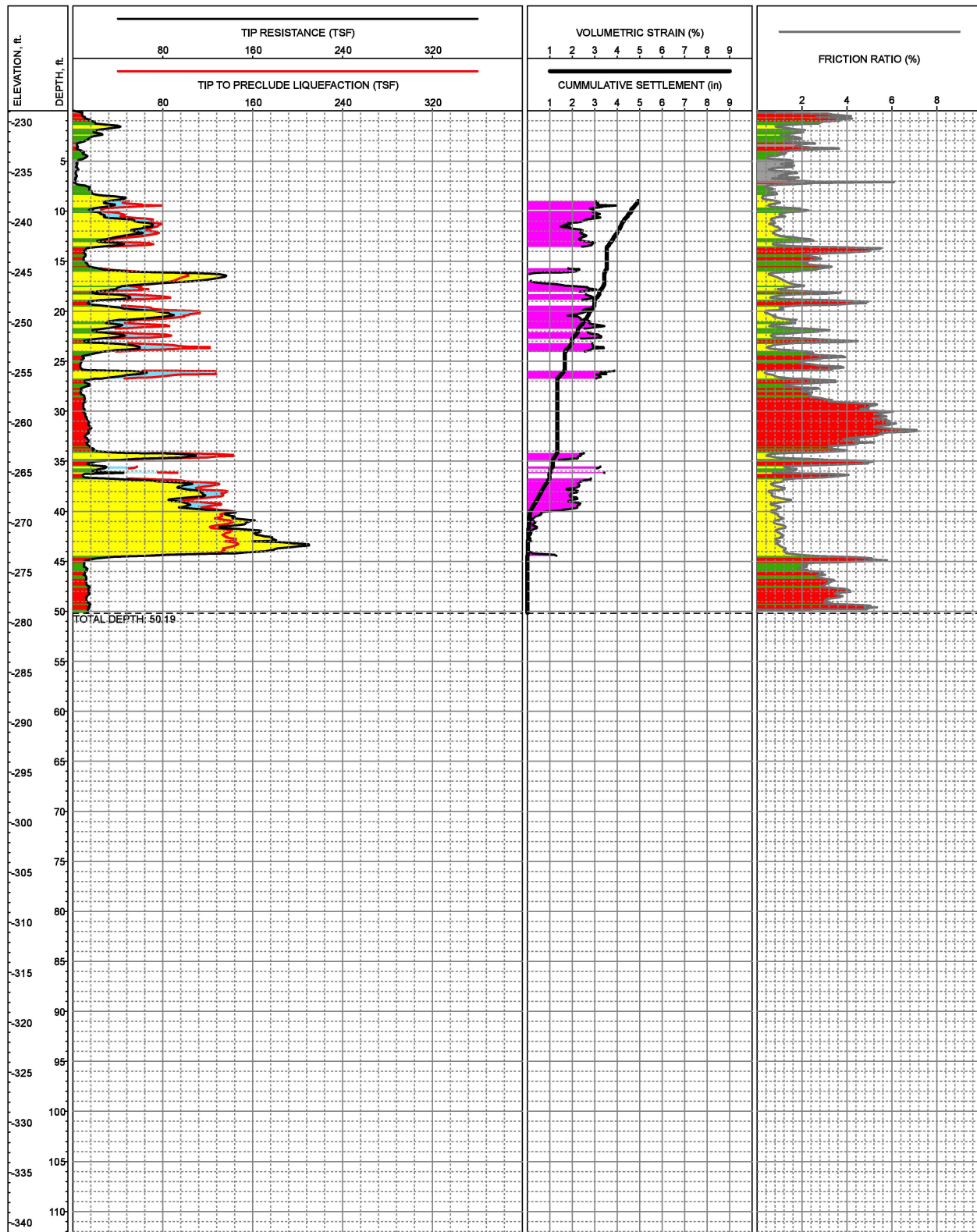


LOCATION: E6,750,956, N2,005,421, CA State Plane, Zone 6, NAD83, Feet  
SURFACE EL: -221.0ft +/- (NAVD88)  
COMPLETION DEPTH: 25.41ft  
TESTDATE: 10/8/2008

EXPLORATION METHOD: Cone Penetrometer  
PERFORMED BY: Kehoe Testing & Engineering  
REVIEWED BY: Jon Everett

**LIQUEFACTION LOG OF CPT NO: C-101**  
P.G.A. = 0.40g and  $M_w = 6.5$   
Black Rock Units 1, 2 & 3  
Calipatria, California

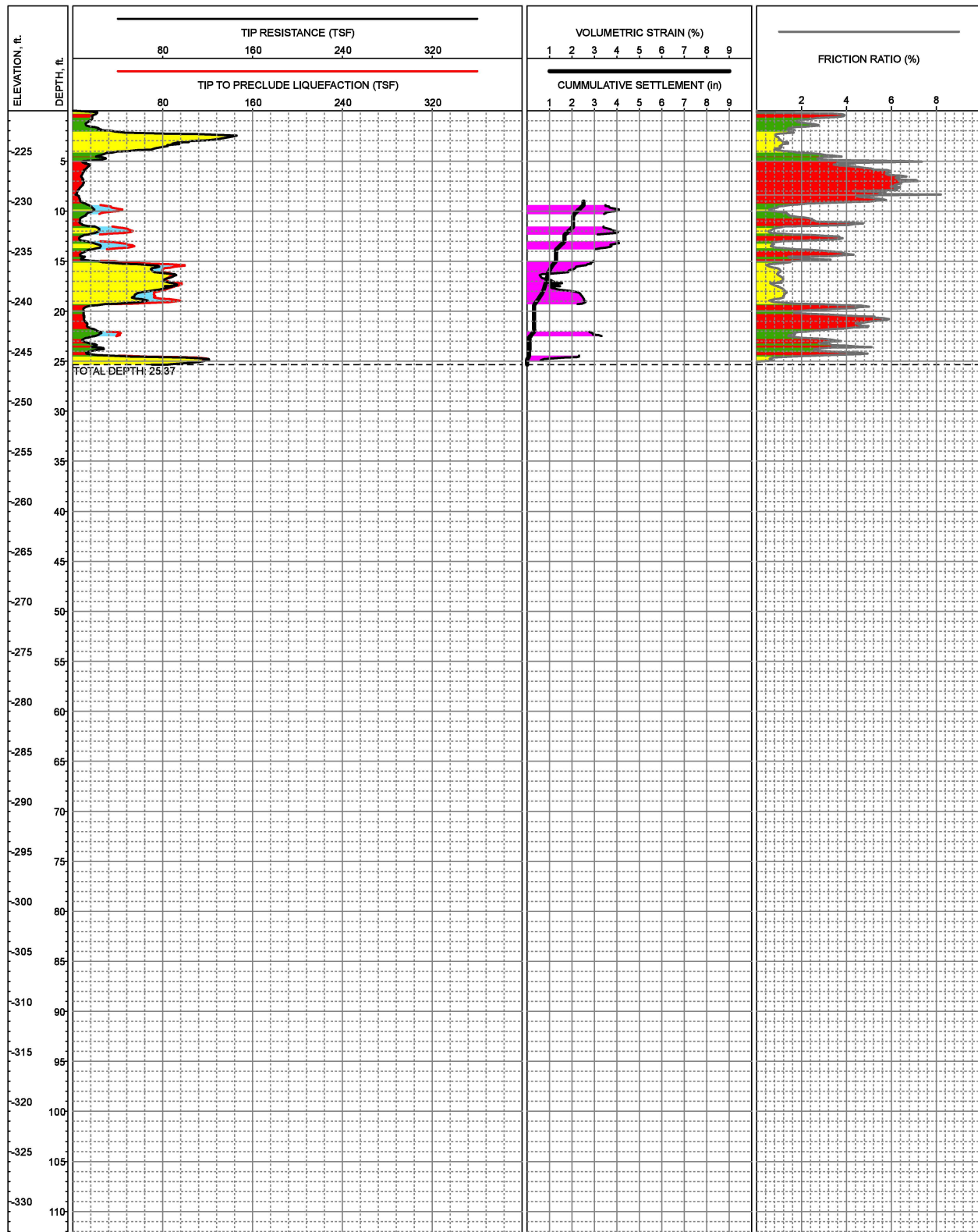




LOCATION: E6,752,117, N2,005,697, CA State Plane, Zone 6, NAD83, Feet  
SURFACE EL: -228.9ft +/- (NAVD88)  
COMPLETION DEPTH: 50.19ft  
TESTDATE: 10/8/2008

EXPLORATION METHOD: Cone Penetrometer  
PERFORMED BY: Kehoe Testing & Engineering  
REVIEWED BY: Jon Everett

**LIQUEFACTION LOG OF CPT NO: C-102**  
P.G.A. = 0.40g and  $M_w = 6.5$   
Black Rock Units 1, 2 & 3  
Calipatria, California

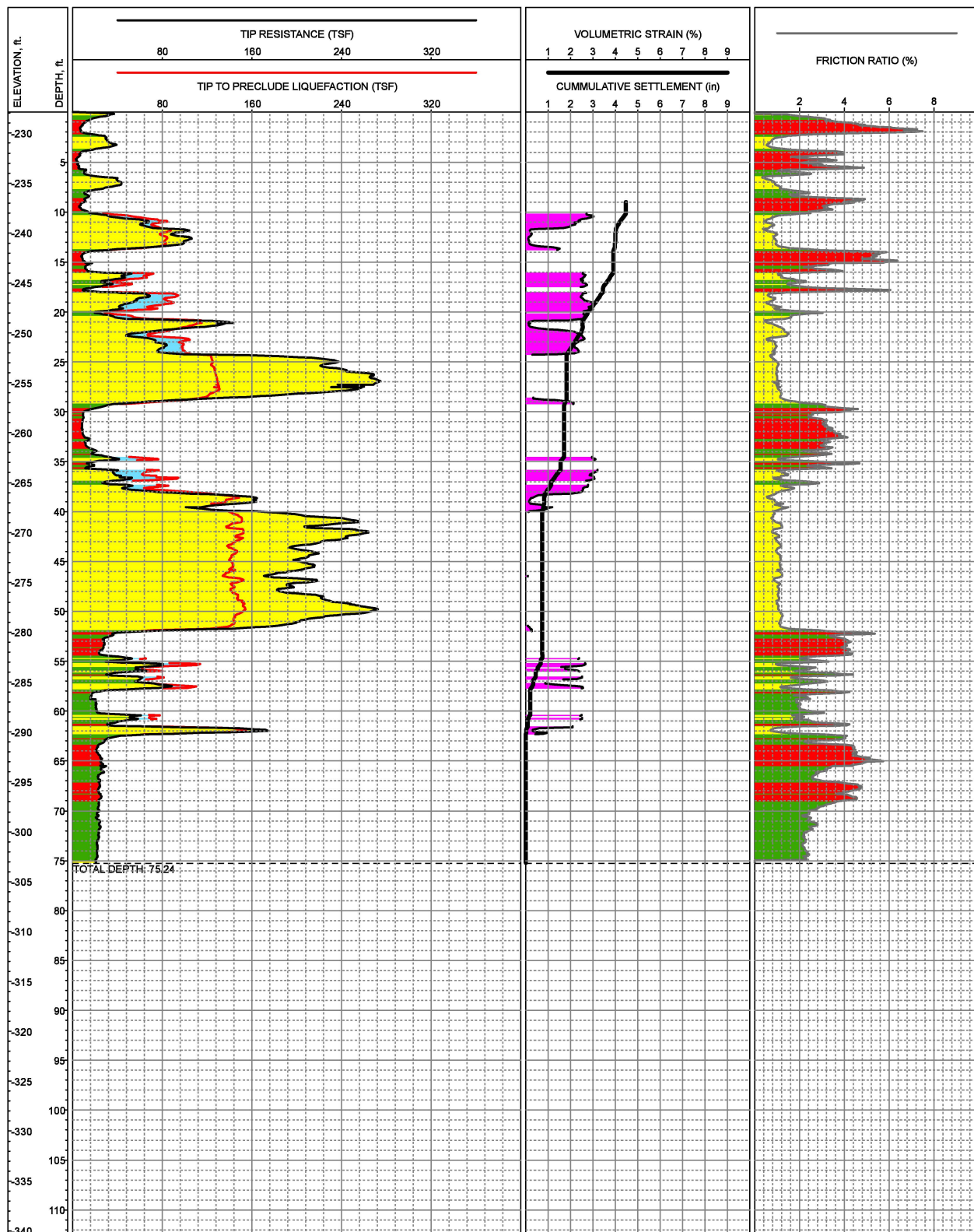


LOCATION: E6,750,954, N2,004,791, CA State Plane, Zone 6, NAD83, Feet  
SURFACE EL: -221.0ft +/- (NAVD88)  
COMPLETION DEPTH: 25.37ft  
TESTDATE: 10/8/2008

EXPLORATION METHOD: Cone Penetrometer  
PERFORMED BY: Kehoe Testing & Engineering  
REVIEWED BY: Jon Everett

**LIQUEFACTION LOG OF CPT NO: C-103**  
P.G.A. = 0.40g and Mw = 6.5  
Black Rock Units 1, 2 & 3  
Calipatria, California





LOCATION: E6,752,229, N2,004,966, CA State Plane, Zone 6, NAD83, Feet  
SURFACE EL: -227.9ft +/- (NAVD88)  
COMPLETION DEPTH: 75.24ft  
TESTDATE: 10/7/2008

EXPLORATION METHOD: Cone Penetrometer  
PERFORMED BY: Kehoe Testing & Engineering  
REVIEWED BY: Jon Everett

**LIQUEFACTION LOG OF CPT NO: C-104**  
P.G.A. = 0.40g and  $M_w = 6.5$   
Black Rock Units 1, 2 & 3  
Calipatria, California