Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

September 27, 2010

Mr. Rafael Fajardo
Associate Civil Engineer
City of Rosemead
8838 Valley Boulevard
Rosemead, CA 91770

Subject: **RESPONSE TO CITY OF ROSEMEAD – GEOLOGICAL REPORT REVIEW DATED SEPTEMBER 13, 2010 BY ECI**
Rosemead Park Aquatic Center
9155 E. Mission Drive
Rosemead, CA
Converse Project No. 10-31-284-01

Reference: "Geotechnical Study Report, Rosemead Park Aquatic Center, 9155 E. Mission Drive, Rosemead, California, Converse Project No. 10-31-284-01, dated September 3, 2010"

Dear Mr. Fajardo:

Converse Consultants (Converse) prepared this letter to respond to the City of Rosemead – Geological Report Review, dated September 13, 2010, regarding the proposed Rosemead Park Aquatic Center Project in Rosemead, California. A copy of the third-party Geological Report Review by Earth Consultants International (ECI) is attached for reference. Our referenced Geotechnical Study Report will be updated with additional information as requested by the third-party review, and re-issued under separate cover. The comments from the City of Rosemead third-party reviewer and our responses are as follows:

Comments

Comment No. 1: *Please review and correct as necessary the text in Appendix C regarding the depth to groundwater at the site.*

Response to Comment No. 1: An updated Geotechnical Study Report will be issued with an edited Appendix C that correctly summarizes the groundwater conditions encountered during our subsurface exploration (no groundwater to 51.5 feet), and the highest historical groundwater level of 30 feet.

Comment No. 2: *Geotechnical reports submitted to the City of Rosemead should include a County of Los Angeles Building Code Section 111 Statement.*

Response to Comment No. 2: It is our opinion that the proposed project (completed grading and site improvements) will be safe from the hazards of landslides, settlement or slippage and will not adversely affect property outside of the developed area in accordance with Los Angeles County Building Code Section 111, provided our conclusions and recommendations are incorporated into the project plans, specifications, and are followed during site construction. An updated Geotechnical Study Report will be issued and will include this statement.

Comment No. 3: *On Page 15, under Section 11.1.4, the results of the liquefaction analysis were inadvertently omitted.*

Response to Comment No. 3: Based on our analyses the potential liquefaction/seismically-induced settlement is estimated to be approximately 0.45 inch, with differential dynamic settlement estimated to be less than 0.3 inch. An updated Geotechnical Study Report will be issued and will include the settlement quantities under Section 11.1.4.

CLOSURE

A copy of the third-party Geological Report Review dated September 13, 2010 is attached to the end of this response letter. All information provided herein will be incorporated into an Updated Geotechnical Study Report, to be issued shortly.

Our findings and recommendations were prepared in accordance with generally accepted professional geotechnical engineering principals and practice in southern California. We make no other warranty, either expressed or implied. All other recommendations presented in our referenced report, not superseded herein, remain applicable.

Please contact the undersigned, if you have any questions.

CONVERSE CONSULTANTS

Sean C. Lin, P.E.
Project Engineer

CHI-HSIN LIN
No. 67109
Exp. 9/30/12
CIVIL

Geoffrey D. Stokes, P.G., C.E.G.
Senior Geologist

Geoffrey Daniel Stokes
NO. 2268
CERTIFIED ENGINEERING GEOLOGIST
Exp. 7/31/11

William Chu, P.E., G.E.
Senior Vice President/Principle Engineer

CHU HSUEH-HSIN WILLIAM
No. 2482
Exp. 6/30/12
GEOTECHNICAL

SCL/GDS/WHC//dlr

Dist: 3/Addressee

Encl: Geological Report Review, dated September 13, 2010

ENCLOSURE

Geological Report Review
dated September 13, 2010

Earth Consultants International

September 13, 2010
ECI Project No. 3019

City of Rosemead
Geological Report Review

Project Name:	Rosemead Park Aquatic Center
Location:	9155 E. Mission Drive, Rosemead Lat: 34.0829, Long: -118.0689
Proposed Development:	Swimming pool, bathhouse building (4,471 square feet), shade structures, solar panels and lawn area
Report Reviewed:	Converse Consultants, 2010, Geotechnical Study Report, Rosemead Park Aquatic Center, 9155 E. Mission Drive, Rosemead, California; Converse Project No. 10-31-284-01, dated September 3, 2010; signed by Sean C. Lin, PE 67109, Geoffrey D. Stokes, PG, CEG 2266, and William H. Chu, PE, GE 2482.
Type of Report:	Geotechnical Engineering Investigation, addresses liquefaction
Previous Reviews:	None by Earth Consultants International, Inc. (ECI)

FINDINGS

☐ Report is Acceptable as Presented
☐ Report is Acceptable with the Following Conditions
☑ Response is Required (see Remarks)

The site is located within a Liquefaction Hazard Zone as defined by the Seismic Hazards Mapping Act (California PRC Div. 2, Chapter 7.8, sec. 2690-2699.6). Upon acceptance by the City of this report(s), the City must forward the report(s) to the State Geologist within 30 days of approval. The site is not located within an Alquist-Priolo Earthquake Fault Zone (per California PRC Div. 2, Chapter 7.5, sec. 2621-2630), nor is it located within or near a fault hazard management zone identified in the City of Rosemead (2008) Safety Element of the General Plan. Therefore, fault studies are not required for this project.

The study reportedly included the drilling of four 8-inch-diameter, hollow stem auger borings as follows: boring BH-1 to 51.5 feet, BH-2 to 21.5 feet, BH-3 to 31.5 feet, and BH-4 to 21.5 feet. According to the consultant's boring logs, the site is capped by 1.5 to 2 feet of topsoil consisting of brown to dark brown silty sand to sandy silt. In the area of the existing pool deck, where boring BH-2 was emplaced, artificial fill nearly 4 feet thick was observed immediately below the surface. The underlying alluvium consists of layers of sand with silt, sand, silty sand and sandy silt; some of these layers include a few gravels 1/2- to 2-inch in size. According to the borehole logs, ground water was not encountered to the maximum depth explored of 51.5 feet. The historical high groundwater level, based on California Division of Mines and Geology (CDMG) Seismic Hazard Zone Report 024, is approximately 30 feet below the ground surface. According to the project consultant, a silty sand layer present at a depth of 37.5 to 40 feet in boring BH-1 is susceptible to liquefaction. Seismic-induced settlement of 0.45 inch and differential dynamic settlement of 0.3 inch are anticipated at the site as a result of a magnitude 7.0 earthquake. The geotechnical engineering reviewer will evaluate these statements further.

The consultant used the peak ground acceleration defined by the 2007 California Building Code as $S_{DS}/2.5$ (equal to 0.494g), for the liquefaction analysis. Other applications yield higher peak ground accelerations with a 10 percent of exceedance in 50 years for the site of between 0.55 and 0.57g (USGS Earthquake Ground Motion Parameters Version 5.0.9a, dated 10/21/2009; USGS. National Seismic Hazards Mapping Project, 2008). The Upper Elysian Park fault, a buried thrust fault that underlies a large section of the Los Angeles Basin, is the main contributor to the seismic hazard at the site. The seismic design parameters provided, per the 2007 California Building Code provisions, are in agreement with the values that we calculated independently for the site.

REMARKS

Earth Consultants International, Inc. (ECI) reviewed the above-referenced report, on behalf of the City of Rosemead's Planning Department, for compliance with applicable codes, guidelines and standards of practice. Please note that the City of Rosemead has adopted the Los Angeles County Department of Public Works Manual for Preparation of Geotechnical Reports. The consultant should address the following issues in the report:

1. Please review and correct as necessary the text in Appendix C regarding the depth to groundwater at the site.
2. Geotechnical reports submitted to the City of Rosemead should include a County of Los Angeles Building Code Section 111 Statement.
3. On Page 15, under Section 11.1.4, the results of the liquefaction analysis were inadvertently omitted.

If the City or consultants have any questions regarding the comments presented above, please contact Earth Consultants International, Inc.

Respectfully submitted for
EARTH CONSULTANTS INTERNATIONAL, INC.

Tania Gonzalez, CEG 1859
Engineering Geologic Reviewer for the City of Rosemead
Earth Consultants International, Inc.
1642 E. Fourth Street, Santa Ana, California 92701
(714) 412-2654 (direct), (714) 544-5321 (general office)

TANIA GONZALEZ
No. 1859

References and Sources:

California Building Standards Commission, 2007, California Building Code, Title 24, Parts 1 through 10, and 12; published July 1, 2007; effective January 1, 2008.

California Division of Mines and Geology, 1991 (revised Official Map), Alquist-Priolo Earthquake Fault Zone Map for El Monte 7-1/2 minute Quadrangle, California; Scale: 1:24,000.

California Division of Mines and Geology, 1998, Seismic Hazard Zone Report for the El Monte 7.5-Minute Quadrangle, Los Angeles County, California: Seismic Hazard Zone Report 024.

California Geological Survey, 2008, Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California; dated September 11, 2008, and available online at http://www.conservation.ca.gov/cgs/shzp/Pages/shmppgminfo.aspx.

City of Rosemead General Plan Update, 2008, Chapter 5: Public Safety, adopted October 14, 2008.

County of Los Angeles Department of Public Works, December 2006, Manual for Preparation of Geotechnical Reports.

Dibblee, T.W., Jr., 1999, Geologic Map of the El Monte and Baldwin Park Quadrangles, Los Angeles County, California: Dibblee Geological Foundation Map #69, Scale: 1:24,000.

Treiman, J.A., 1991, Whittier fault zone, Los Angeles and Orange Counties, California: California Division of Mines and Geology Fault Evaluation Report FER 222, 17p.

U.S. Geological Survey (USGS), 2008, National Seismic Hazards Mapping Project Probabilistic Seismic Hazard Analysis Interactive Deaggregation web site (http://eqint.cr.usgs.gov/deaggint/2008/?PHPSESSID=momi4ckdhfgqtsuqjdqojs8ol2)

U.S. Geological Survey (USGS), 2009, Seismic Hazard Curves, Response Parameters and Design Parameters, Version 5.0.9a, dated October 21, 2009.

Yeats, R.S., 2004, Tectonics of the San Gabriel Basin and Surroundings, Southern California: Geological Society of America Bulletin, Vol. 116, No. 9/10, pp. 1158-1182.

Yerkes, R.F., and Campbell, R.H., 2005, Preliminary Geologic Map of the Los Angeles 30′ x 60′ Quadrangle, Southern California, Version 1.0: U.S. Geological Survey Open-File Report 2005-1019.

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

September 27, 2010

Mr. Rafael Fajardo
Associate Civil Engineer
City of Rosemead
8838 Valley Boulevard
Rosemead, CA 91770

Subject: **RESPONSE TO CITY OF ROSEMEAD – GEOTECHNICAL REPORT REVIEW DATED SEPTEMBER 16, 2010 BY ZEISER KLING**
Rosemead Park Aquatic Center
9155 E. Mission Drive
Rosemead, CA
Converse Project No. 10-31-284-01

Reference: "Geotechnical Study Report, Rosemead Park Aquatic Center, 9155 E. Mission Drive, Rosemead, California, Converse Project No. 10-31-284-01, dated September 3, 2010"

Dear Mr. Fajardo:

Converse Consultants (Converse) prepared this letter to respond to the City of Rosemead – Geotechnical Report Review, dated September 16, 2010, regarding the proposed Rosemead Park Aquatic Center Project in Rosemead, California. A copy of the third-party Geotechnical Report Review by Zeiser Kling is attached for reference. Our referenced Geotechnical Study Report will be updated with additional information as requested by the third-party review, and re-issued under separate cover. The comments from the City of Rosemead third-party reviewer and our responses are as follows:

Comments

Comment No. 1: *The City Engineering Geologist should review the report to determine compliance from a geologic perspective.*

Response to Comment No. 1: Converse response not needed for this comment.

Comment No. 2: *While seismically-induced settlement quantities are provided in the executive summary, under Section 11.1.4 Settlement of the consultants report, those quantities are missing. The report should provide quantities for seismic settlement where indicated under Section 11.1.4.*

Response to Comment No. 2: Based on our analyses the potential liquefaction/seismically-induced settlement is estimated to be approximately 0.45 inch, with differential dynamic settlement estimated to be less than 0.3 inch. An updated Geotechnical Study Report will be issued and will include the settlement quantities under Section 11.1.4.

Comment No. 3: *The Consultant Site Plan, Drawing No. 2 is unclear. Please provide a more legible plan and indicate the location of the proposed development elements in comparison to existing elements.*

Response to Comment No. 3: An updated Geotechnical Study Report will be issued with a more legible copy of Drawing No. 2, *Site Plan and Boring Location Map.* In addition, the updated report will include a drawing that illustrates the boring locations with respect to the planned site re-development. Copies of Drawing No. 2a, *Site Plan and Boring Location Map,* and Drawing No. 2b, *Proposed Improvement Plan* are provided at the end of this response letter.

Comment No. 4: *Please provide cross sections to illustrate depth of pool elements in relationship to proposed structures and existing structures that will remain.*

Response to Comment No. 4: We understand that the existing swimming pool, pool decking, community building and site walls will be demolished. Site re-development will include a 40-meter by 25-yard swimming pool, 4,471 square feet bathhouse building, 8,300 square feet of shade structures, and 7,200 square feet of solar panels. Drawing No. 3a, *Geotechnical Cross Section A-A'* and Drawing No. 3b, *Geotechnical Cross Section B-B'* have been prepared to illustrate the approximate depth of existing pool elements in relationship to the proposed site re-development. The vertical scale has been exaggerated to better illustrate the existing versus planned improvements. These drawings are provided at the end of this response letter and will be included in our updated Geotechnical Study Report.

Comment No. 5: *The Consultant states in the main portion of the report that groundwater was not encountered to the depths explored (51.5 feet) and that the highest historical groundwater was at 30 feet, yet in Appendix C the consultant states that groundwater was encountered at 13 feet and that the highest historical groundwater level was less than 5 feet. Please clarify.*

Response to Comment No. 5: An updated Geotechnical Study Report will be issued with an edited Appendix C that correctly summarizes the groundwater conditions encountered during our subsurface exploration (no groundwater to 51.5 feet), and the highest historical groundwater level of 30 feet.

Comment No. 7 [6]: *The Consultant shall provide a statement that the proposed improvements will not have adverse impact on adjoining properties or structures.*

Response to Review Comment No. 7 [6]: It is our opinion that the proposed project (completed grading and site improvements) will be safe from the hazards of landslides, settlement or slippage and will not adversely affect property outside of the developed area in accordance with Los Angeles County Building Code Section 111, provided our conclusions and recommendations are incorporated into the project plans, specifications, and are followed during site construction. An updated Geotechnical Study Report will be issued and will include this statement.

Comment No. 8 [7]: *Grading, foundation and erosion plans, when finalized, should be reviewed by the consultant. A written plan review should be provided that discusses any new or updated recommendations.*

Response to Comment No. 8 [7]: Converse will review final design drawings and specifications to verify that our geotechnical recommendations have been properly implemented into the design documents. A written letter review letter will be issued.

CLOSURE

A copy of the third-party Geotechnical Report Review dated September 16, 2010 is attached to the end of this response letter. All information provided herein will be incorporated into an Updated Geotechnical Study Report, to be issued shortly.

Our findings and recommendations were prepared in accordance with generally accepted professional geotechnical engineering principals and practice in southern California. We make no other warranty, either expressed or implied. All other recommendations presented in our referenced report, not superseded herein, remain applicable.

Please contact the undersigned, if you have any questions.

CONVERSE CONSULTANTS

Sean C. Lin, P.E.
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
CHI-HSIN LIN
No. 67109
Exp. 9/30/12
CIVIL
STATE OF CALIFORNIA

Geoffrey D. Stokes, P.G., C.E.G.
Senior Geologist

PROFESSIONAL GEOLOGIST
Geoffrey Daniel Stokes
NO. 2268
CERTIFIED ENGINEERING GEOLOGIST
Exp. 7/31/11
STATE OF CALIFORNIA

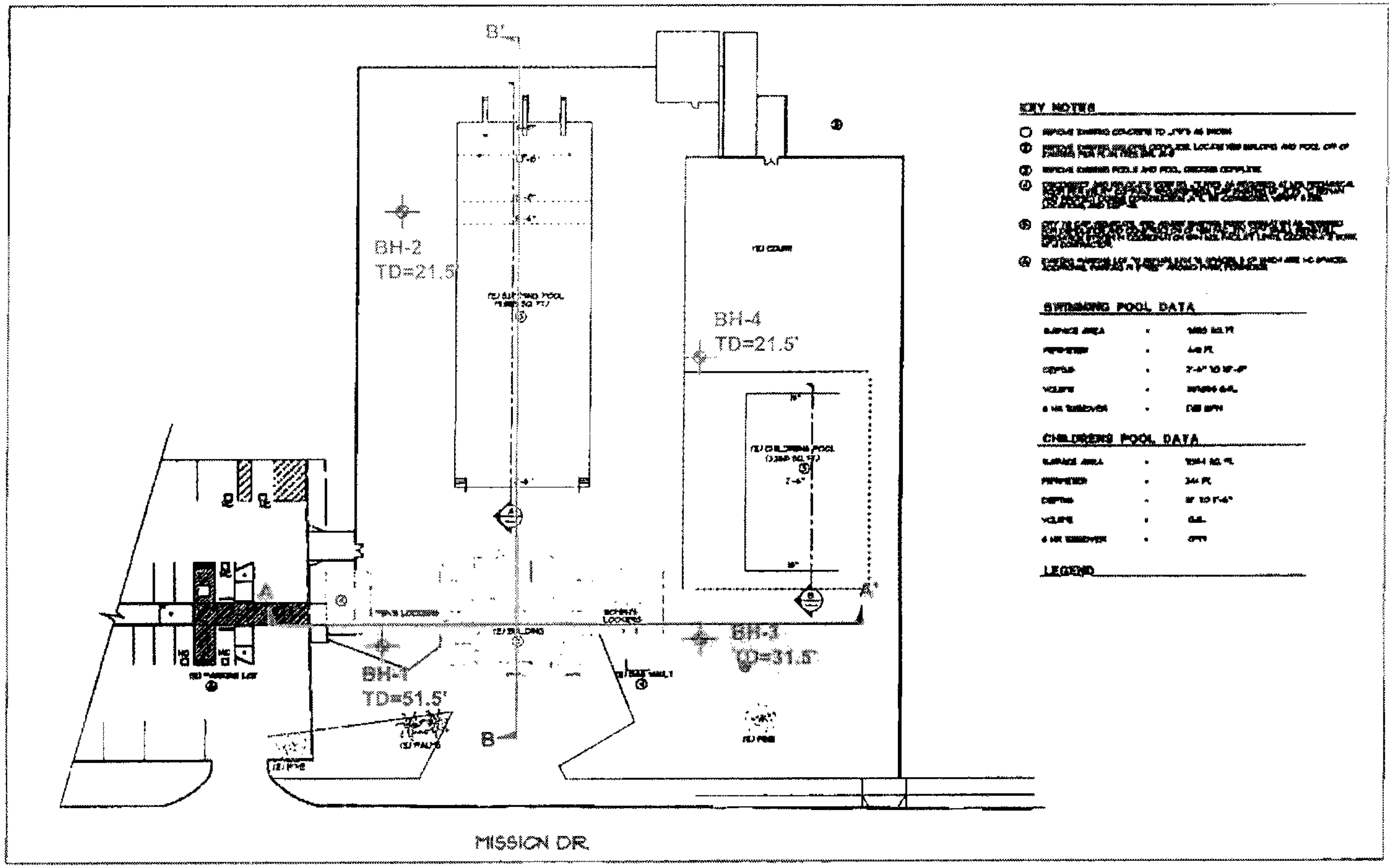
William Chu, P.E., G.E.
Senior Vice President/Principle Engineer

REGISTERED PROFESSIONAL ENGINEER
CHU HSUEH-HSIN WILLIAM
No. 2482
Exp 6/30/12
GEOTECHNICAL
STATE OF CALIFORNIA

SCL/GDS/WHC/dlr

Dist: 3/Addressee

Encl: Geotechnical Report Review, dated September 16, 2010
Drawing No. 2a, *Site Plan and Boring Location Map*
Drawing No. 2b, *Proposed Improvement Plan*
Drawing No. 3a, *Geotechnical Cross Section A-A'*
Drawing No. 3b, *Geotechnical Cross Section B-B'*

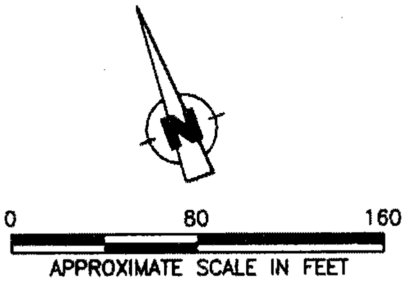


LEGEND

APPROXIMATE LOCATION OF BORING

TD = TOTAL DEPTH, RELATIVE TO GROUND SURFACE

GEOLOGIC CROSS SECTIONS



SITE PLAN AND BORING LOCATION MAP

Converse Consultants

ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	2a

ENCLOSURE

Geotechnical Report Review
dated September 16, 2010

ZEISER
KLING
Consultants, Inc.

City of Rosemead
Geotechnical Report Review

ZKCI Project No. 08097-13
Plan Check No.
Date Authorized: September 9, 2010
Date Completed: September 16, 2010
Date of Report: September 3, 2010
Site Address: 9155 E. Mission Drive, Rosemead
Lot/Parcel/Tract No.:
Proposed Development: Rosemead Park Aquatic Center consisting of a new swimming pool, bathhouse, shade structures, solar panels and landscaping
Report Reviewed: **Converse Consultants, Geotechnical Study Report, Rosemead Park Aquatic Center, 9155 E. Mission Drive, Rosemead, California, Project Number 10-31-284-01, dated September 3, 2010**
Type of Report **Geotechnical Investigation**
Previous Reviews: None
Date Completed
Additional Documents Reviewed: None

FINDINGS

☐ Report is Acceptable
☐ Report is acceptable with the following Conditions
☑ Response is Required

1. The city Engineering Geologist should review the report to determine compliance from a geologic perspective.

REMARKS

2. While seismically-induced settlement quantities are provided in the executive summary, under Section 11.1.4 <u>Settlement</u> of the consultants report, those quantities are missing. The report should provide quantities for seismic settlement where indicated under Section 11.1.4

3. The consultant site plan, Drawing No. 2 is unclear. Please provide a more legible plan and indicate the location of the proposed development elements in comparison to existing elements.

4. Please provide cross sections to illustrate deep of pool elements in relationship to proposed structures and existing structures that will remain.

5. The consultant states in the main portion of the report that groundwater was not encountered to the depths explored (51.5 feet) and that the highest historical groundwater was at 30 feet, yet in Appendix C the consultant states that groundwater was encountered at 13 feet and that the highest historical groundwater level was less than 5 feet. Please clarify.

7. The consultant shall provide a statement that the proposed improvements will not have an adverse impact on adjoining properties or structures.

8. Grading, foundation and erosion plans, when finalized, should be reviewed by the consultant. A written plan review should be provided that discusses any new or updated recommendations.

Our review is intended to determine if the submitted report(s) comply with City, State and applicable building codes and generally accepted geotechnical practices within the local area. The scope of our services for this third party review has been limited to a review of the above referenced report and associated documents, as supplied by the City of Rosemead. Re-analysis of reported data and/or calculations and preparation of amended construction or design recommendations are specifically not included within our scope of services. Our review should not be considered as a certification, approval or acceptance of the consultant's work, nor is it meant as an acceptance of liability for final design or construction recommendations made by the geotechnical consultant of record or the project designers or engineers.

We appreciate the opportunity to be of continued service. Should the City, consultant or applicant have questions regarding this review, please contact Zeiser Kling Consultants, Inc.

Respectfully Submitted,

ZEISER KLING CONSULTANTS, INC.

Henry F. Kling, GE 2205, Expires 3/31/12
Geotechnical Reviewer for the City of Rosemead
Zeiser Kling Consultants, Inc.
151 Kalmus Drive, Suite H6
Costa Mesa, CA 92626
(714) 755-1355

References:

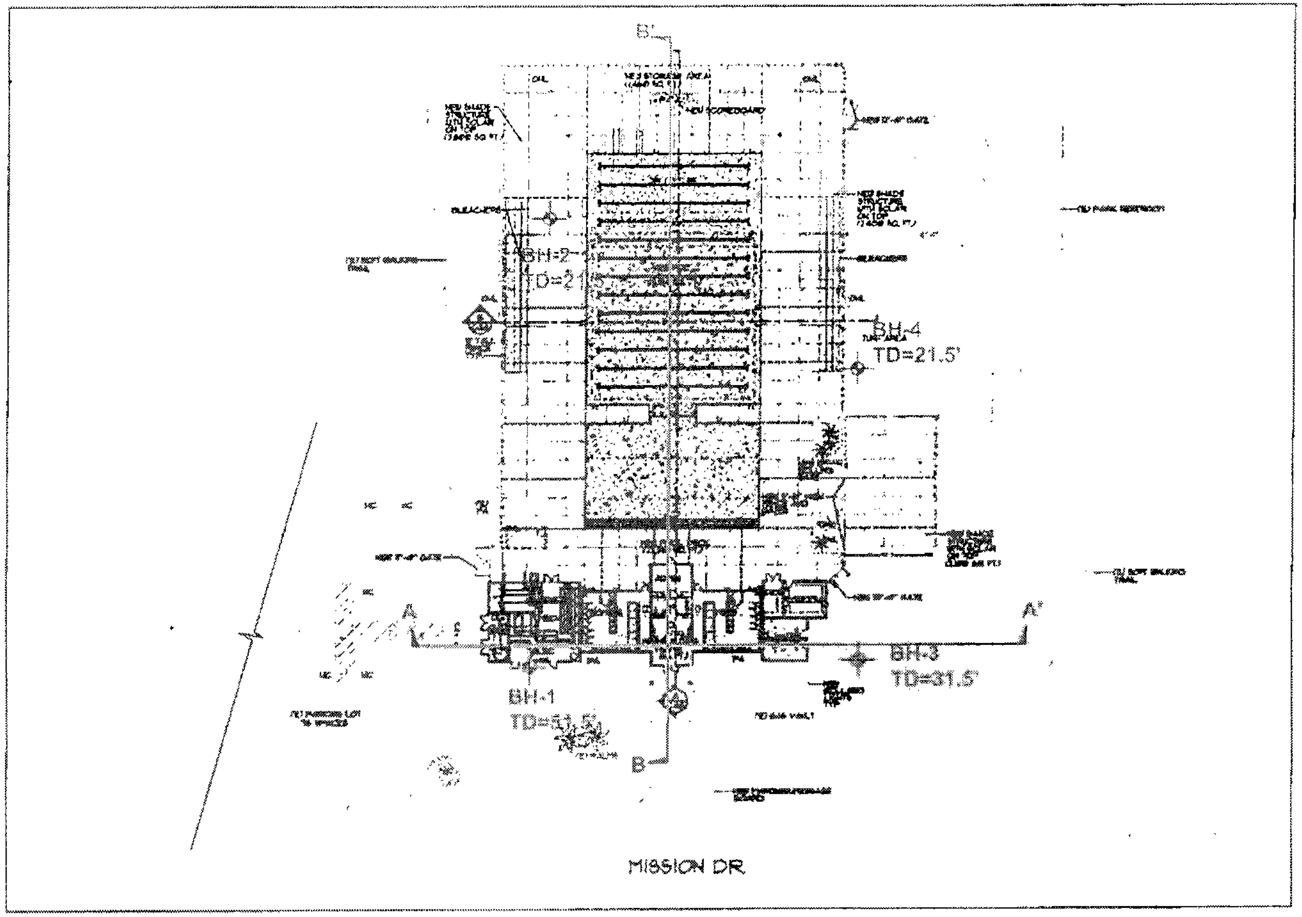
California Division of Mines and Geology, 1998, Seismic Hazard Zone Report 024, Seismic Hazard Zone Report for the El Monte 7.5- Minute Quadrangle, Los Angeles County, California.

California Division of Mines and Geology, 2000, DMG Open-File Report 98-29, Digital Geologic Map of the El Monte 7.5 Quadrangle, Los Angeles County, California.

County of Los Angeles, Department of Public Works, Engineering Division, December 2006, Manual for Preparation of Geotechnical Reports.

California Geological Survey, 2008, Special Publication 117A, Guidelines for evaluating and Mitigating Seismic Hazards in California.

Southern California Earthquake Center, March 1999, Recommended Procedures for Implementation of DMG Special Publication 117, guidelines for Analyzing and Mitigating Liquefaction Hazards in California.

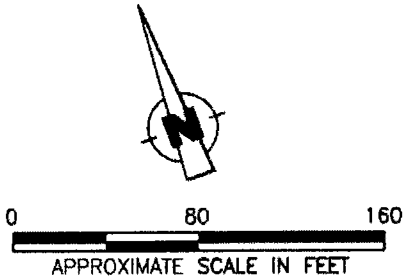


LEGEND

- APPROXIMATE LOCATION OF BORING

TD = TOTAL DEPTH, RELATIVE TO GROUND SURFACE

GEOLOGIC CROSS SECTIONS

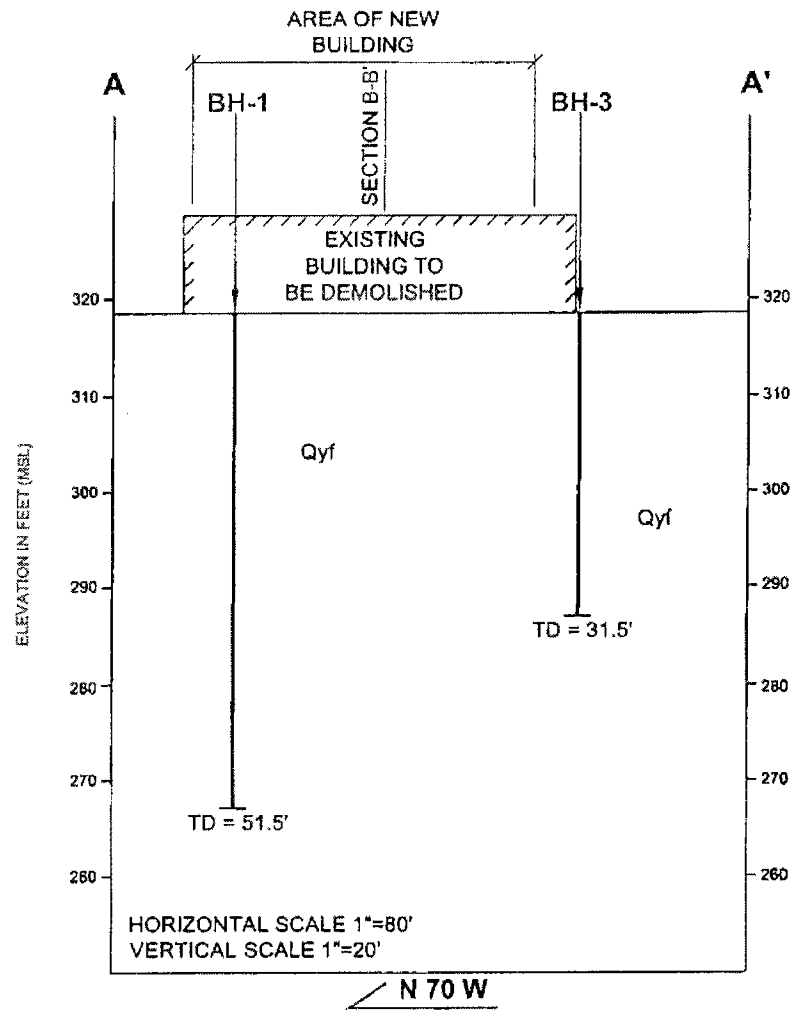


PROPOSED IMPROVEMENT PLAN

Converse Consultants

ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	2b



Qyf = Alluvial Fan Deposits

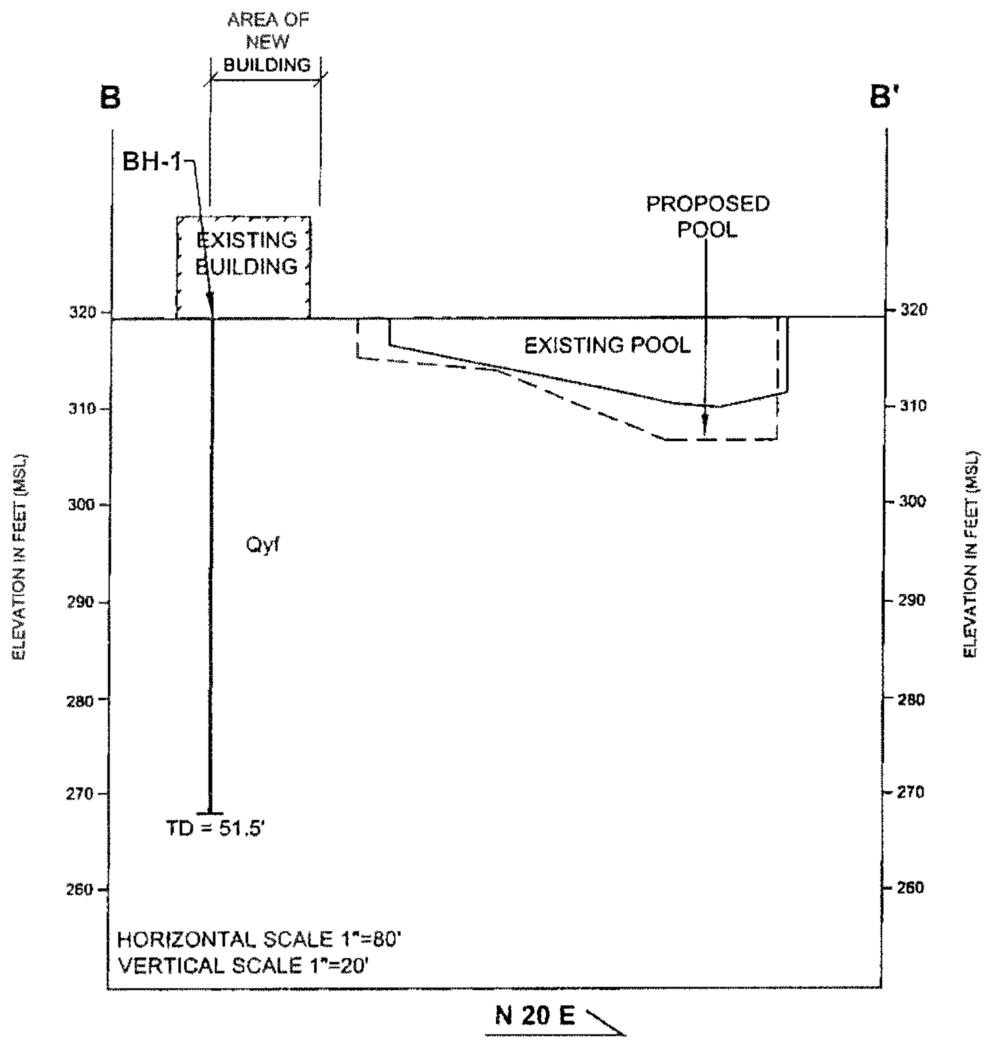
GEOLOGIC CROSS SECTION A-A′

Converse Consultants

ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No. 10-31-284-02

Drawing No. 3a



Qyf = Alluviul Fan Deposits

GEOLOGIC CROSS SECTION B-B'

Converse Consultants

ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-02	3b

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

GEOTECHNICAL STUDY REPORT
Rosemead Park Aquatic Center

9155 E. Mission Drive
Rosemead, California

Converse Project No. 10-31-284-01

September 3, 2010

PREPARED FOR

City of Rosemead
8838 Valley Boulevard
Rosemead, CA 91770

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

September 3, 2010

Mr. Rafael Fajardo
Associate Civil Engineer
City of Rosemead
8838 Valley Boulevard
Rosemead, CA 91770

Subject: **GEOTECHNICAL STUDY REPORT**
Rosemead Park Aquatic Center
9155 E. Mission Drive
Rosemead, California
Converse Project No. 10-31-284-01

Dear Mr. Fajardo:

Enclosed is the geotechnical study report performed by Converse Consultants (Converse) for the proposed Rosemead Park Aquatic Center project located within the southerly portion of Rosemead Park, in Rosemead, California. The purpose of the study was to provide a geotechnical evaluation of the site conditions with respect to the planned project, and to provide recommendations for project design, site preparation and construction.

Based on our background review, field exploration, laboratory testing, geologic evaluation and geotechnical analysis, the site is suitable from a geotechnical standpoint for the proposed project, provided our conclusions and recommendations are implemented during design and construction.

We appreciate the opportunity to be of service to the City of Rosemead. If you should have any questions, please do not hesitate to contact us at (626) 930-1200.

CONVERSE CONSULTANTS

William H. Chu, P.E., G.E.
Senior Vice President/Principal Engineer

Dist: 6/Addressee

GDS/SCL/WHC/dlr

PROFESSIONAL CERTIFICATION

This geotechnical report for the proposed Rosemead Park Aquatic Center project in Rosemead, California has been prepared by the staff of Converse under the professional supervision of the individuals whose seals and signatures appear hereon.

The findings, recommendations, specifications or professional opinions contained in this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice in this area of Southern California. There is no warranty, either expressed or implied.

In the event that changes to the property occur, or additional, relevant information about the property is brought to our attention, the conclusions contained in this report may not be valid unless these changes and additional relevant information are reviewed and the recommendations of this ~~report are~~ modified or verified in writing.

CHI-HSIN LIN
No. 67109
Exp. 9/30/10
CIVIL

Sean C. Lin, P.E.
Project Engineer

Geoffrey Daniel Stokes
NO. 2266
CERTIFIED ENGINEERING GEOLOGIST
Exp. 2/31/11

Geoffrey D. Stokes, P.G., C.E.G.
Senior Geologist

CHU HSUEH-HSIN WILLIAM
No. 2482
Exp. 6/30/12
GEOTECHNICAL

William H. Chu, P.E., G.E.
Senior Vice President / Principal Engineer

EXECUTIVE SUMMARY

The following is the summary of our geotechnical study report including findings, conclusions, and recommendations, as presented in the body of this report. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report content shall prevail.

- We understand that the existing swimming pool, pool decking, community building and site walls will be demolished. Site re-development will include a 40-meter by 25-yard swimming pool, 4,471 square feet bathhouse building, 8,300 square feet of shade structures, 7,200 square feet of solar panels, and 3,360 feet of lawn area. New structures with relative light foundation loads (isolated pads/piers, continuous spread footings, slab-on-grade) were assumed in our geotechnical analysis.
- The project area was vacant land prior to construction of Rosemead Park improvements based on review of historic aerial photographs taken in 1948 and 1953; the existing pool and pool building are shown in a 1972 aerial photograph of the site vicinity.
- Our subsurface exploration was performed on August 6, 2010, with the aid of truck-mounted hollow-stem auger borings extending between depths of approximately 21.5 to 51.5 feet below the existing ground surface (bgs). The borings were located within and adjacent to the limits of the planned site re-development.
- Up to approximately 3.5 feet of topsoil and undocumented fill soils were encountered in the borings. However, deeper fills may exist at the site.
- Native soils characterized as Holocene-age alluvial fan deposits (map symbol Qyf) were encountered below the topsoil and fill in all four (4) borings drilled during our subsurface exploration. The alluvium consists primarily of fine-grained silty sand within the upper 10 feet, with increased fine- to medium grained sand content at depths below 10 feet. Sampling blow counts correlate with relatively loose to medium dense conditions within the upper 6 feet, and generally medium dense to dense conditions at depths greater than 6 feet.
- Groundwater was not encountered during subsurface exploration to a depth of 51.5 feet. However, the historic high groundwater levels at the subject site have been measured at depths of approximately 30 feet below the existing ground surface.

- The upper six (6) feet of mixed undocumented fill and native alluvial soils have a "Very Low" expansion potential. Expansive soil mitigation measures for foundations supported on future engineered fill soils derived from on-site sources, or supported on native alluvial soils are not anticipated.
- Site soils have preliminary "negligible" concentrations of water soluble sulfates.
- Laboratory testing indicates that site soils, in general, are considered "non-corrosive" to buried ferrous metals.
- The sandy native soils tested for collapse/consolidation indicate a slight potential for collapse.
- There are no known active faults projecting toward or extending across the proposed site. The site is not situated within a currently designated Alquist-Priolo Earthquake Fault Zone (formerly Special Studies Zones).
- Although clear of geologic hazards associated with fault rupture the site is located within a seismically active area and will be subject to intense ground motion during a significant seismic event. Site-specific parameters for seismic design are provided in the report, formulated in general accordance with Chapter 16, Sections 1613 and 1614 of the 2007 California Building Code.
- Based on the relatively flat topography, and per our review of the Seismic Hazard Zones Map for the El Monte 7.5-Minute Quadrangle, the subject site is not located in an area for seismically induced slope instability.
- The site is located within a mapped Seismic Hazard Zone for liquefaction potential. Based on our analyses the potential liquefaction/seismically-induced settlement is estimated to be approximately 0.45 inch, with differential dynamic settlement estimated to be less than 0.3 inch.
- Site preparation for the swimming pool and bathhouse building will require remedial grading including removal of existing manmade structures and buried utilities, and over-excavation and re-compaction of existing undocumented fill soils and the upper compressible native soils.
- The footprint of the new bathhouse building should be over-excavated to depth of at least 5 feet, as measured from existing grades. Deeper removals will be needed if firm native soils are not exposed on the excavation bottom.
- The swimming pool area should be over-excavated to depth of at least 2 feet below the bottom elevation of the pool shell. Deeper removals will be needed if firm native soils are not exposed on the excavation bottom.
- Hardscape areas beyond the footprint of the bathhouse building and swimming pool should be over-excavated to a depth of at least 2 feet, as measured from existing grades. Deeper removal will be needed if firm soil conditions are not exposed on the excavation bottom.

- It is expected that site soils can be excavated with conventional heavy-duty earth-moving equipment in good working order. Excavated site soils free of organic matter and demolition debris are considered suitable for placement as compacted fill after proper processing. Such processing may include moisture conditioning and mixing, and removal/screening of oversized debris.

Results of our study indicate that the site is suitable from a geotechnical standpoint for the proposed development, provided that the recommendations contained in this report are incorporated into the design and construction of the project.

TABLE OF CONTENTS

Tables

Drawings

Appendices

1.0 INTRODUCTION

This report contains the findings, conclusions and recommendations of our Geotechnical Study Report performed for the proposed Rosemead Park Aquatic Center project planned within the southern portion of Rosemead Park. The project area is situated along the north side of E. Mission Drive, west of Encinita Avenue in Rosemead, California (see Drawing No. 1, *Site Location Map*).

The purpose of the study was to generate a report with geotechnical design parameters for use by the project design team, to aid in the preparation of project plans and specifications. This report is written for the project described herein and is intended for use solely by the City of Rosemead and the project design team. This report should not be used as a bidding document but may be made available to the potential contractors for information on factual data only. For bidding purposes, the contractors should be responsible for making their own interpretation of the data contained in this report.

2.0 SITE CONDITIONS AND PROPOSED PROJECT

Existing improvements within the project area include a single-story community building, swimming pool, shallow toddler pool, pool decking and site walls. The subject site is relatively flat lying, with surface elevations ranging from approximately 318 to 320 feet relative to mean-sea-level (MSL), down toward the southeast.

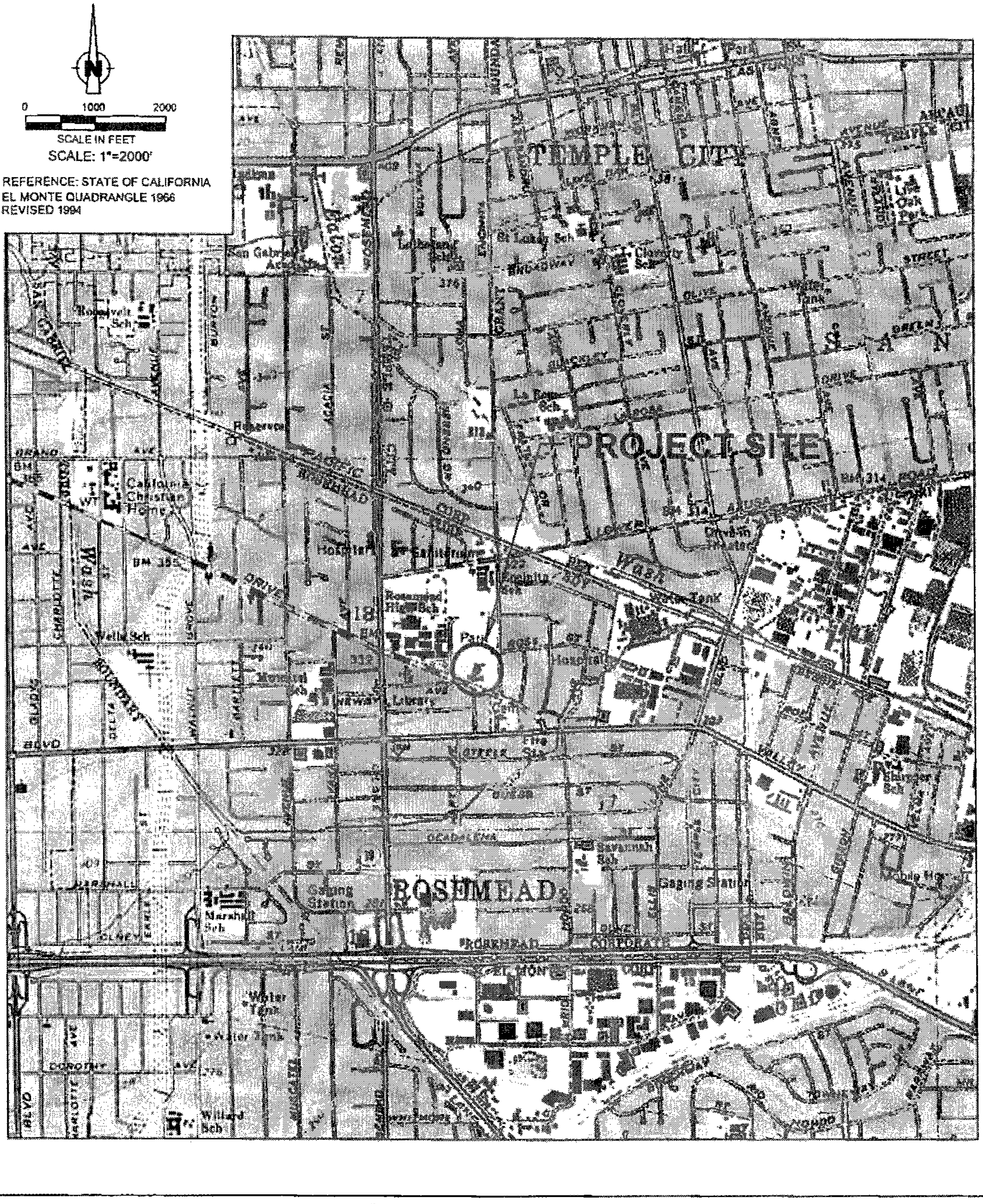
We understand that the existing site improvements will be demolished, and the project area will be re-developed with a 40-meter by 25-yard swimming pool, 4,471 square feet bathhouse building, 8,300 square feet of shade structures, 7,200 square feet of solar panels, and 3,360 feet of lawn area. The proposed new bathhouse structure will likely be wood or steel framed with shallow foundations and slab-on-grade. No basement is planned at this time.

In the absence of actual structural loads, we have assumed for the purpose of this study that column loads will be on the order of 50 kips or less (dead plus live) and the wall loads will be on the order of 10 kips or less per linear foot.

The coordinates representative of the project site location are listed below:

North latitude:	34.0829 degrees
West longitude:	118.0689 degrees

These coordinates were used to calculate earthquake ground motions based on the 2007 CBC with the United States Geological Survey computer program *Seismic Hazards Curves, Response Parameters and Design Parameters, Version 5.0.9a.*



SCALE: 1"=2000'

REFERENCE: STATE OF CALIFORNIA
EL MONTE QUADRANGLE 1966
REVISED 1994

SITE LOCATION MAP

ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

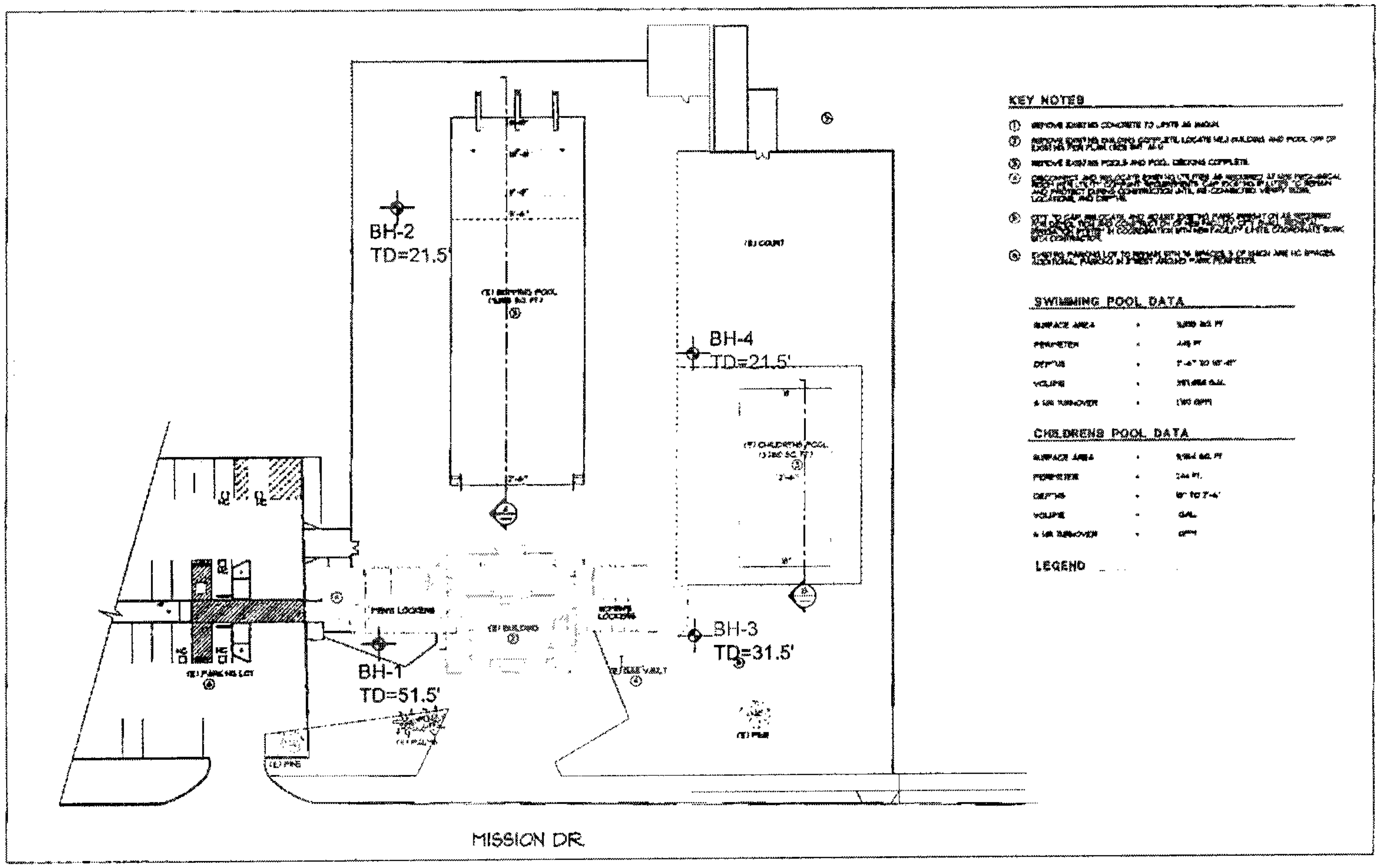
Project No.

10-31-284-01

Converse Consultants

Drawing No.

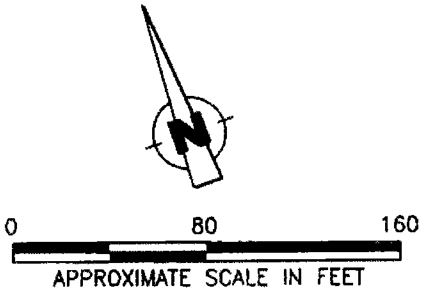
1



LEGEND

APPROXIMATE LOCATION OF BORING

TD = TOTAL DEPTH, RELATIVE TO GROUND SURFACE



SITE PLAN AND BORING LOCATION MAP

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ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	2

3.0 SCOPE OF WORK

Our scope of work, as outlined in our proposal dated July 23, 2010, consisted of the following tasks:

3.1 Task I: Project Set-up, Background Review and Field Reconnaissance

A review of readily available geotechnical and geologic background documentation was performed as a part of our work, including published maps and reports, and historic aerial photographs dating back to 1948. A list of the documentation reviewed is presented in the References section at the end of this report.

A Converse representative visited the site prior to drilling to assess equipment accessibility and to mark the boring locations. Site access was coordinated with City staff. Five (5) boring locations were marked within the proposed site boundaries. Underground Service Alert of Southern California was notified of our proposed drilling locations 48 hours in advance of the subsurface exploration. At the time of drilling only four of the locations were accessible due to stockpiles of soil and construction materials.

3.2 Task II: Field Exploration

Our field exploration consisted of drilling, logging, and sampling four (4) hollow-stem auger borings (BH-1 through BH-4) on August 6, 2010. The borings were advanced using truck mounted drill rig with an 8-inch diameter hollow stem auger to a maximum depth of 51.5 feet below the existing ground surface (bgs). The boring locations are shown on Drawing No. 2, *Site Plan and Boring Location Map*.

The borings were visually logged by a geologist and sampled at regular intervals and at changes in subsurface soils. California Modified Sampler (Ring samples), Standard Penetration Test samples, and bulk soil samples were obtained for laboratory testing. The borings were backfilled with soil cuttings following the completion of drilling, with disturbed pool deck surfaces patched with concrete.

3.3 Task III: Laboratory Testing

Representative samples of the site soils were tested in our laboratory and the laboratory of Environmental Geotechnology Laboratory, Inc. of Arcadia to aid in the classification and to evaluate relevant engineering properties. The tests performed included:

- *In situ* moisture contents and dry densities (ASTM Standard D2216)
- Grain Size Distribution (ASTM Standard C136)
- Fines Content/Passing No. 200 Sieve (ASTM Standard D1140)

- Maximum Dry Density and Optimum-Moisture Content relationship (ASTM Standard D1557)
- Direct Shear (ASTM Standard D3080)
- Consolidation and Collapse (ASTM Standard D2435)
- Expansion Index (ASTM Standard D4829)
- Soil Corrosivity (Caltrans 643, 422, 417, and 532)

For a description of the laboratory test methods and test results, see Appendix B, *Laboratory Testing Program*. For *in-situ* moisture and dry densities, see the Logs of Borings in Appendix A, *Field Exploration*.

3.4 Task IV: Geotechnical Analyses and Report

Data obtained from the background review, exploratory borings, and laboratory-testing program were analyzed and evaluated. This report was prepared to provide the findings, conclusions and recommendations developed during our preliminary study and evaluation.

4.0 SITE BACKGROUND

Historic aerial photographs were reviewed from the following website: www.HistoricAerials.com, a service by Nationwide Environmental Title Research, LLC; a database of aerial photographs from the United States Department of Agriculture (USDA) and United States Geological Survey (USGS). Readily available historic photographs for the site from the years 1948, 1953, 1972, 1980, and 2005, were viewed.

Review of historic aerial photos indicate the project area was vacant circa 1948. The 1953 photo shows the site was used as a park with grass fields and a parking lot in the southwest corner; the existing pools and community building are shown in the 1972 photo. The 1980 and 2005 photos show very similar conditions to present-day.

5.0 GEOLOGY AND SUBSURFACE CONDITIONS

5.1 Regional Geologic Setting

Rosemead Park is located within the central portion of the San Gabriel Basin, a broad sediment filled basin located at the convergence of the Transverse Ranges and Peninsular Ranges geomorphic provinces of California. Prior to public improvement projects including dams and concrete channels, the San Gabriel Basin was subject to periodic flooding and sedimentation. The San Gabriel basin is underlain by deep alluvial fan sediments that have been deposited over time by river and stream channels draining from the southern flank of the San Gabriel Mountains. The alluvial fan deposits consist primarily of sands, gravels, and cobbles.

Drawing No. 3, *Regional Geologic Map*, based on the Preliminary Geologic Map of the Los Angeles 30' x 60' Quadrangle (USGS, 2005) has been prepared to show the location of the project site with respect to the regional geology. Map symbol Qyf represents Holocene–age alluvial fan deposits.

The San Gabriel Basin is bounded by the San Gabriel Mountains on the north, the San Jose and Puente Hills on the east, and the Repetto and Montebello Hills on the southwest and is situated at the junction of two major convergent fault systems. The first group includes the northwest-trending high angle strike slip faults of the San Andreas system, San Jacinto fault zone, Whittier-Elsinore fault system, and Newport-Inglewood fault zone. The second group includes the east-west trending low angle reverse or reverse-oblique faults bounding the south margin of the Transverse Range province. Faults in this group include the Malibu-Santa Monica, Hollywood, Raymond and Sierra Madre fault zones. The San Gabriel Basin is bounded by active faults on all sides and is also underlain by buried thrust faults including the Puente Hills blind thrust and Upper Elysian Park blind thrust. The seismic hazard for the San Gabriel Basin and vicinity is high.

5.2 Geology and Subsurface Profile of Project Site

Topsoil and undocumented fill soils were encountered in the borings, varying in depth from approximately 1.5 feet to 3.5 feet. The fill was encountered below the existing pool decking. Thicker fills may exist within other portions of the site beyond our boring locations. In general, the near surface topsoil and fill encountered consist of fine grained silty sand. The existing pool decking 3 inches thick and reinforced with welded wire mesh.

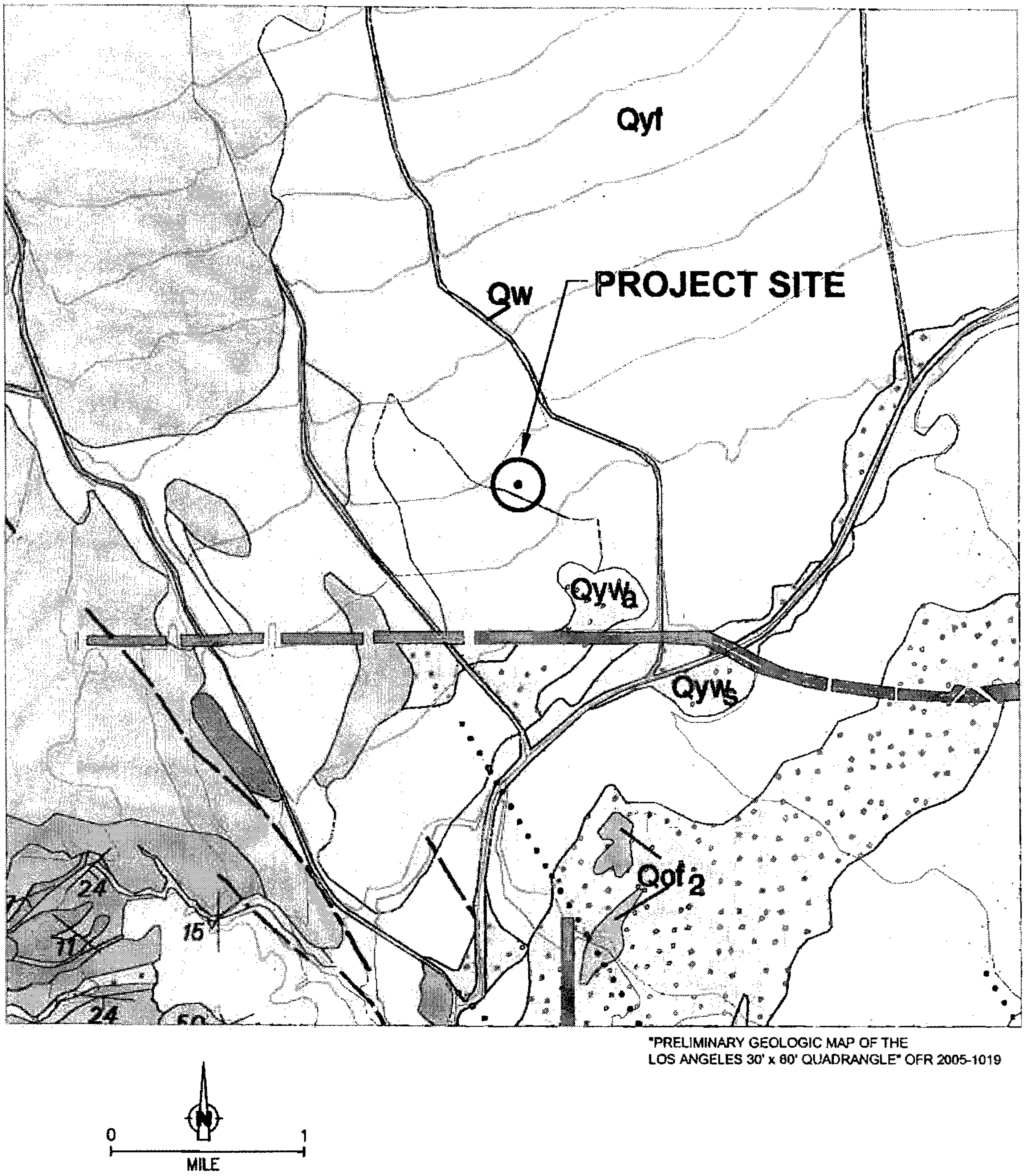
Alluvial soils were encountered below the topsoil and undocumented fill in all four borings drilled as a part of subsurface exploration. The alluvial fan deposits encountered in the borings consist primarily of fine-grained silty sand within the upper 10 feet, with increased fine- to medium grained sand content at depths below 10 feet. Sampling blow counts correlate with relatively loose to medium dense conditions within the upper 6 feet, and generally medium dense to dense conditions at depths greater than 6 feet.

For additional information on the subsurface conditions, see the Logs of Borings Data in Appendix A, *Field Exploration.*

5.3 Groundwater

Groundwater was not encountered during subsurface exploration to a depth of 51.5 feet. However, the historic high groundwater levels at the subject site have been measured at depths of approximately 30 feet below the existing ground surface, as shown on Drawing No. 4, *Historical Ground Water Contour Map.*

In general, groundwater levels fluctuate with the seasons and local zones of perched



"PRELIMINARY GEOLOGIC MAP OF THE
LOS ANGELES 30' x 60' QUADRANGLE" OFR 2005-1019

REGIONAL GEOLOGIC MAP

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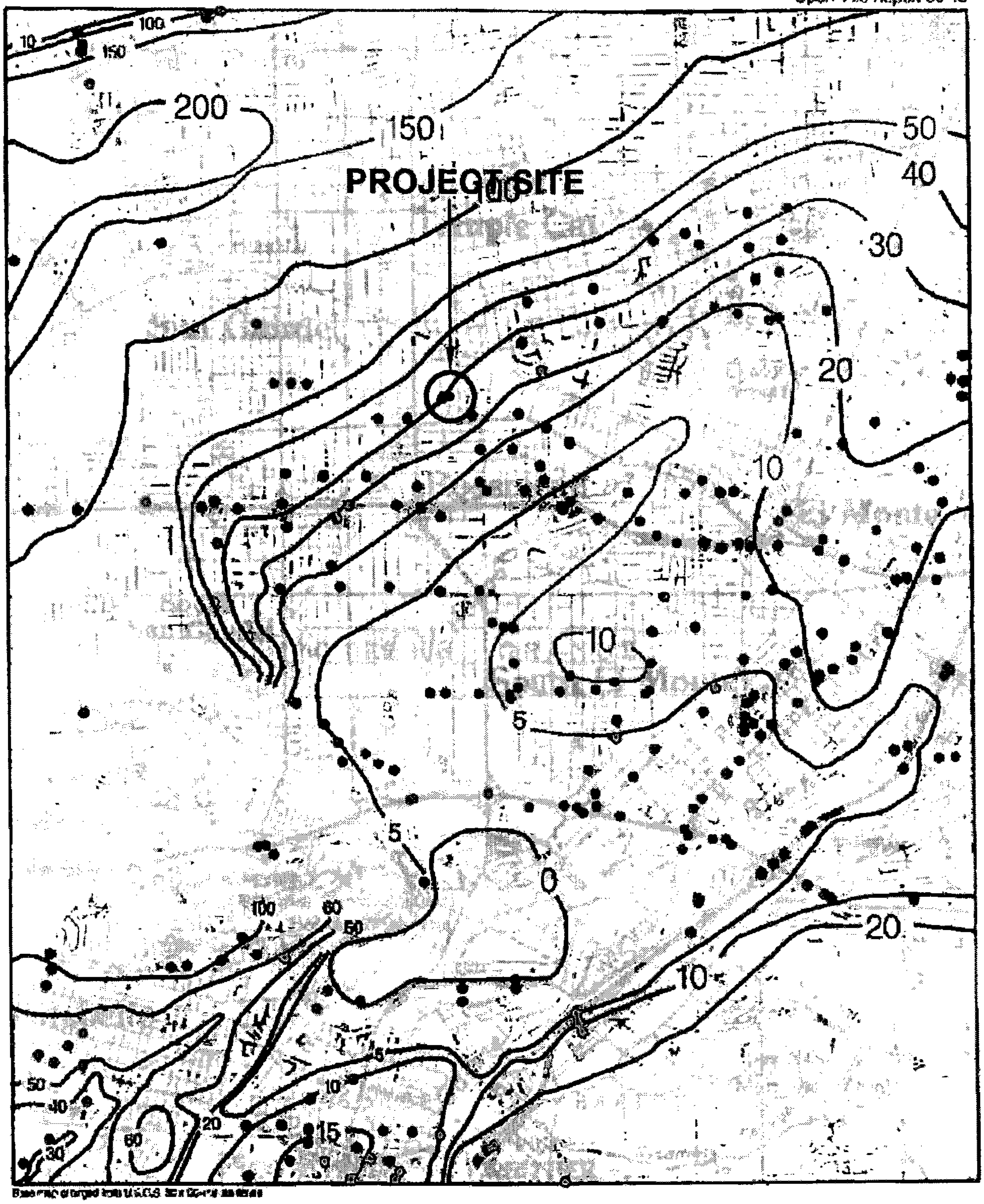
Project No.	Drawing No.
10-31-284-01	3



Base map enlarged from U.S.G.S. 30 x 60-minute series

Plate 1.2 Historically Highest Ground Water Contours and Borehole Log Data Locations, El Monte Quadrangle.

● Borehole Site

30 Depth to ground water in feet

ONE MILE

SCALE

HISTORICAL GROUND WATER CONTOUR MAP

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Project No.	Drawing No.
10-31-284-01	4

groundwater may be present within the nearer surface soils due to local conditions or during rainy seasons. Groundwater conditions below any given site vary depending on numerous factors including seasonal rainfall, local irrigation, and groundwater pumping, among other factors. The regional groundwater table is not expected to be encountered during the planned construction.

5.4 Subsurface Variations

Based on results of the subsurface exploration and our experience, some variations in the continuity and nature of subsurface conditions within the project site should be anticipated. Because of the uncertainties involved in the nature and depositional characteristics of the earth material at the site, care should be exercised in interpolating or extrapolating subsurface conditions between or beyond the boring locations. If, during construction, subsurface conditions differ significantly from those presented in this report, this office should be notified immediately so that recommendations can be modified, if necessary.

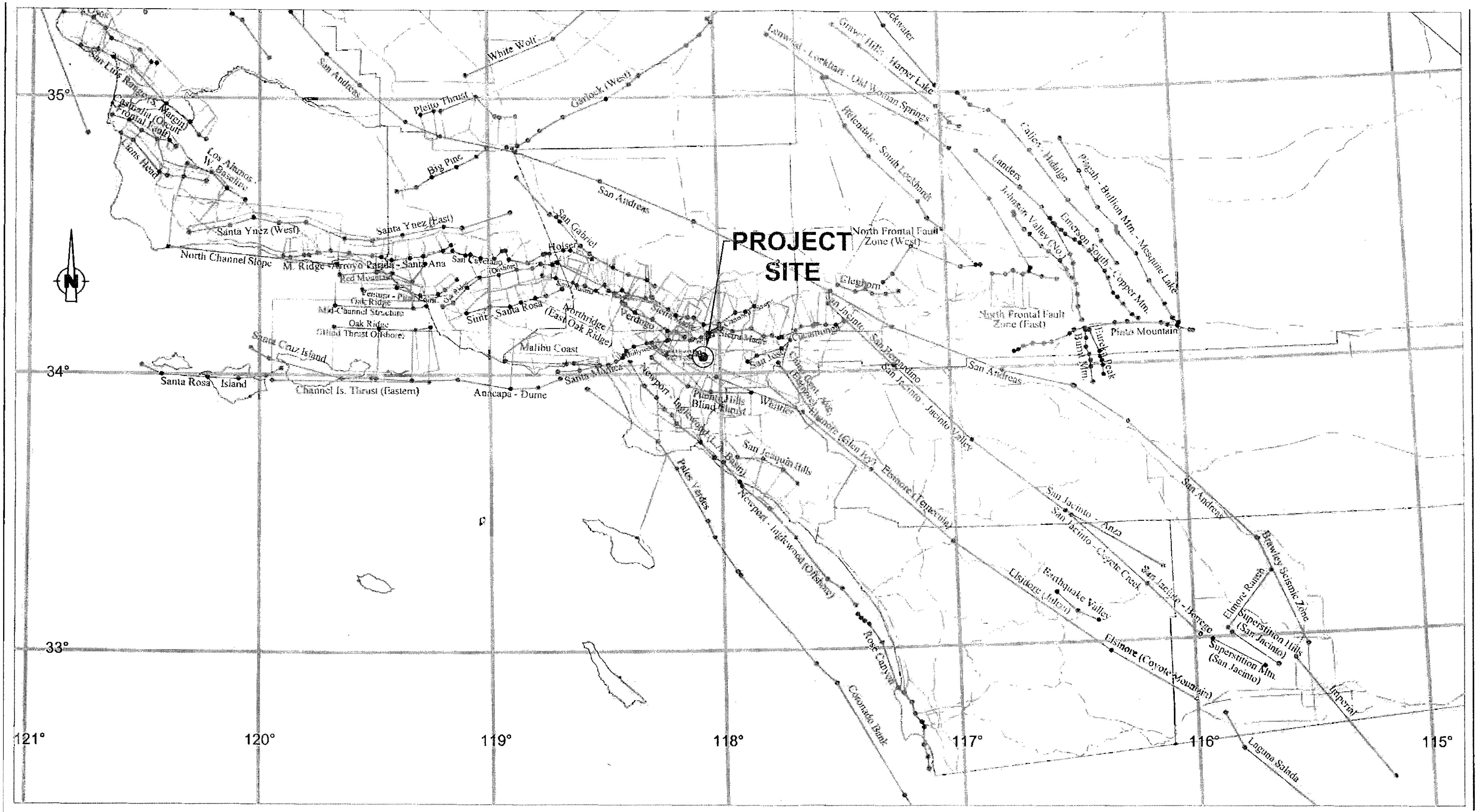
6.0 FAULTING AND SEISMIC HAZARDS

The subject site is situated within a seismically active region. As is the case for most areas of Southern California, ground-shaking resulting from earthquakes associated with nearby and more distant faults may occur at the project site. During the life of the project, seismic activity associated with active faults can be expected to generate moderate to strong ground shaking at the site.

The project site is not located within a currently designated State of California Earthquake Fault Zone (Alquist-Priolo Special Studies Zones) for surface fault rupture. No surface faults are known to project through or towards the site. The closest known faults to the project site with a mappable surface expression are the Raymond Fault, located approximately 6 kilometers to the north, the Verdugo Fault located approximately 9.5 kilometers to the northwest, and the Sierra Madre Fault System located approximately 10 kilometers to the north.

Blind thrust faults are low angle reverse faults which generally have no surface trace. The potential for damage from earthquakes on blind thrust faults within the Los Angeles Basin was illustrated by the M_L 5.9 Whittier earthquake on October 1, 1987, and the M_W 6.7 Northridge earthquake on January 17, 1994. The Santa Fe Springs segment of the Puente Hills blind thrust fault is located below the subject site at a depth greater than 13 kilometers. The approximate locations of local active faults with respect to the project site are shown on Drawing No. 5, *Southern California Regional Fault Map.*

Seismic hazard fault models for the San Gabriel Basin and vicinity will continue to be refined as new information and technology develops and becomes available through time.



REFERENCE: PORTION OF CGS 2002 CALIFORNIA FAULT MODEL
MODIFIED FOR USE WITH FRISKSP AND EQFAULT
BY THOMAS F. BLAKE, AUGUST 2004

FAULT SOURCES

BLIND THRUST FAULT,
POLYGONS INDICATE RUPTURE
PLANES AND DIP DIRECTION

SOUTHERN CALIFORNIA REGIONAL FAULT MAP

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Project No.	Drawing No.
10-31-284-01	5

6.1 Seismic Hazards

As is the case for most areas of Southern California, seismic hazards resulting from earthquakes need to be considered in the design and construction of new projects. In addition to strong ground motion, such hazards included ground rupture, slope instability and liquefaction. As previously reported, the subject site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo Special Studies Zones) for surface fault rupture.

The State of California Seismic Hazard Zone Map for the El Monte Quadrangle (March 25, 1999) shows that the project site is not located within an area of earthquake induced slope instability but is within a potential liquefaction zone, as shown on Drawing No. 6, *Seismic Hazard Zones Map.* The results of our site-specific liquefaction analysis are summarized in the following report section.

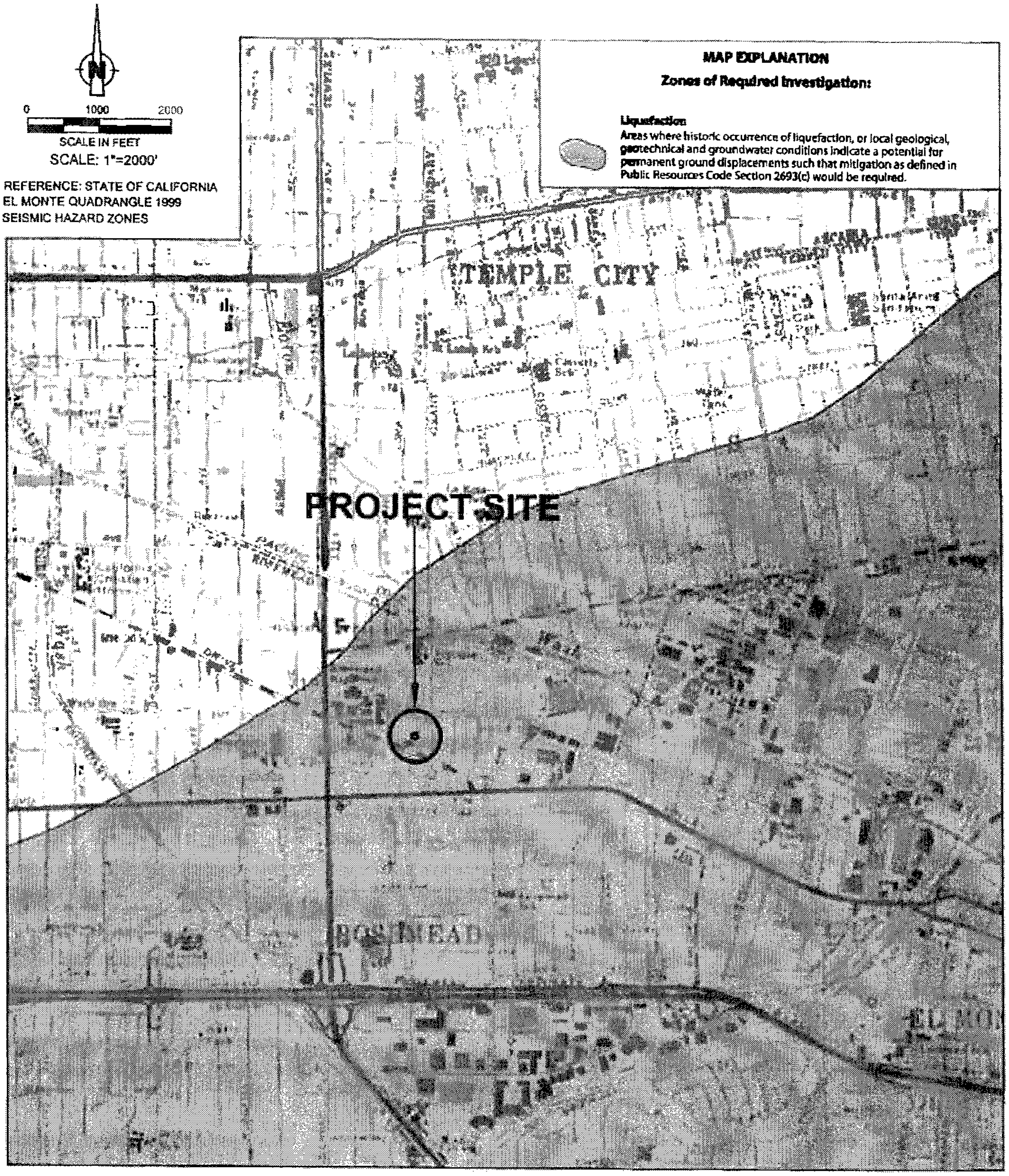
6.2 Effects of Seismic Activity and Geologic Hazards

Other effects of seismic activity, besides surface fault rupture, soil liquefaction, and landslide, include lateral spreading, earthquake-induced flooding, tsunamis, and seiches. Site-specific potential for each of these other seismic and geologic hazards is discussed in the following sections.

Liquefaction and Seismically-Induced Settlement: Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within a depth of about 50 feet or less. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. The project site is located within a mapped liquefaction potential zone as indicated in the Drawing No. 6, *Seismic Hazard Zones Map.*

The referenced standards for determining liquefaction potential are included in the *2008 Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California*, *Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Liquefaction Hazards in California,* dated March 1999, and *2007 California Building Code*. They are as follows:

1. Where estimated past, present, and future groundwater levels are greater than 50 feet below grade or 20 feet below the bottom of any proposed foundations, whichever is deeper, the site should excluded from the threat of liquefaction.
2. Bedrock encountered at the site shall not be susceptible to liquefaction.
3. When corrected Standard Penetration Test (SPT) or converted California modified split spoon blow counts $(N_1)_{60}$, are greater than 30, or corrected cone penetration



REFERENCE: STATE OF CALIFORNIA
EL MONTE QUADRANGLE 1999
SEISMIC HAZARD ZONES

SEISMIC HAZARD ZONES MAP

ROSEMEAD PARK AQUATIC CENTER
9155 E. MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.
10-31-284-01

Drawing No.
6

Converse Consultants

test tip resistance (q_{c1N}) are greater than or equal to 160 tons per square foot, those layers shall not be considered susceptible to liquefaction.

4. In soils where the Plasticity Index (PI) is less than 12 and the moisture content is greater than 85 percent of the liquid limit, or in sensitive soils where the PI is greater than 18, seismically induced deformation during liquefaction may occur.
5. When calculating liquefiable layers, the factor of safety against liquefaction shall be taken as greater than or equal to 1.30.
6. The "Chinese Criteria" and grain size is no longer an acceptable indicator of liquefaction potential.

Although site specific exploration did not encounter groundwater to a depth of 51.5 feet bgs, historic high groundwater levels for the subject site presented in the Seismic Hazard Evaluation Report for the El Monte 7.5-minute Quadrangle (1999) indicate groundwater levels at approximately 30 feet.

Liquefaction analysis was performed using *LiquefyPro,* Version 5.8d, 2009, by Civil Tech Software for the upper 50 feet of earth materials in BH-1, with a conservative groundwater level of 30 feet from the ground surface. The results of the liquefaction analysis and a summary of the methods used are presented in Appendix C, *Liquefaction/Seismic Settlement Analysis.*

The potential liquefaction induced settlement, as analyzed in Boring BH-1, is estimated to be 0.45 inch with a potential differential dynamic settlement of 0.3 inch. The planned aquatic center improvements should be designed considering the seismically-induced settlement.

Lateral Spreading: Seismically induced lateral spreading involves primarily lateral movement of earth materials due to ground shaking. It differs from the slope failure in that complete ground failure involving large movement does not occur due to the relatively smaller gradient of the initial ground surface. Lateral spreading is demonstrated by near-vertical cracks with predominantly horizontal movement of the soil mass involved. The topography at the project site and in the immediate vicinity of the site is relatively flat, with no nearby slopes or embankments. Under these circumstances, the potential for lateral spreading at the subject site is considered negligible.

Earthquake-Induced Flooding: This is flooding caused by failure of dams or other water-retaining structures as a result of earthquakes. The potential of earthquake induced flooding of the subject site is considered to be remote because of regional flood control structures.

Tsunamis: Tsunamis are tidal waves generated by fault displacement or major ground movement. Based on the inland location of the site, tsunamis do not pose a hazard.

Seiches: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on site location, away from lakes and reservoirs, seiches do not pose a hazard.

7.0 SEISMIC ANALYSIS

Seismic parameters are based on the 2007 California Building Code, calculated with the United States Geological Survey computer program *Seismic Hazards Curves, Response Parameters and Design Parameters, Version 5.0.9a.,* and the site coordinates 34.0829 degrees North Latitude, 118.0689 degrees West Longitude are provided on the following table:

Table No. 1, CBC Seismic Parameters

Seismic Parameters	
Site Class	D
Mapped Short period (0.2-sec) Spectral Response Acceleration, S_S	1.852g
Mapped 1-second Spectral Response Acceleration, S_1	0.708g
Site Coefficient (from Table 1613.5.3(1)), Fa	1.0
Site Coefficient (from Table 1613.5.3(2)), Fv	1.5
MCE 0.2-sec period Spectral Response Acceleration, S_{MS}	1.850g
MCE 1-second period Spectral Response Acceleration, S_{M1}	1.062g
Design Spectral Response Acceleration for short period, S_{DS}	1.235g
Design Spectral Response Acceleration for 1-second period, S_{D1}	0.708g

8.0 LABORATORY TESTING

Representative samples of the site soils were tested in our laboratory and the laboratory of Environmental Geotechnology Laboratory, Inc. of Arcadia to aid in the classification and to evaluate relevant engineering properties. Results of the various laboratory tests are summarized discussed below. For a more detailed description of the laboratory test methods and test results, see Appendix B, *Laboratory Testing Program.*

- *In-situ* Moisture and Dry Density – Results of *in-situ* moisture and dry density tests are presented on the Log of Borings in Appendix A, *Field Exploration.*

- Grain Size Analysis – One (1) representative bulk samples was tested to evaluate the relative grain size distribution of sandy samples. Results are presented in Appendix B, *Laboratory Testing Program.*
- Passing No. 200 – Two (2) representative samples were tested to determine the percent finer than sieve No. 200, to aid in the classification of on-site soils and for liquefaction analyses. Results are presented in Appendix B, *Laboratory Testing Program*, and indicate the soil samples tested are primarily sand with various amounts of silt.
- Maximum Dry Density and Optimum Moisture Content – The moisture-density relationship of a representative near-surface soil sample is presented in Appendix B, *Laboratory Testing Program.* The test results indicate that the laboratory maximum dry density for representative samples of the upper six feet of soil are 133 pounds per cubic foot (pcf) at 8 percent moisture content.
- Direct Shear – One (1) direct shear test was performed on representative in-situ samples and one (1) direct shear test was performed on a sample remolded to 90 percent relative compaction. Results of the direct shear testing is presented in Appendix B, *Laboratory Testing Program.* The test results indicate the fine-grained sandy soils tested have moderate shear strengths.
- Consolidation Test – Two (2) consolidation tests was performed on representative sample of the site soils encountered within the upper 10 feet. The results of the testing are presented in Appendix B, *Laboratory Testing Program.* Based on the results of the test, the compressibility of the site soils is considered slightly compressible.
- Expansion Index – One (1) representative sample from the upper six (6) feet bgs of the site was tested to evaluate Expansion Index (EI). Test results are included in Appendix B, *Laboratory Testing Program.* The test results indicate that the site soils have a very low expansion potential (EI less than 20).
- Soil Corrosivity – One (1) representative sample of the site soils was tested to evaluate soil corrosivity with respect to common construction materials such as concrete and steel. The test results are presented in Appendix B, *Laboratory Testing Program.* Test results are also discussed in Section 11.6, *Soil Corrosivity Evaluation.*

For additional information on the subsurface conditions, see the Logs of Borings in Appendix A, *Field Exploration.*

9.0 FINDINGS AND CONCLUSIONS

Based on the results of our background review, subsurface exploration, laboratory testing, geotechnical analyses, and understanding of the planned site re-development, it is our opinion that the proposed project is feasible from a geotechnical standpoint, provided the following conclusions and recommendations are incorporated into the project plans, specifications, and are followed during site construction.

The following is a summary of the major geologic and geotechnical factors to be considered for the planned project:

- The site is suitable from a geotechnical viewpoint for the proposed construction of the Rosemead Park Aquatics Center Project.
- Variable thickness topsoil and undocumented fill soils were encountered in the borings, with depths ranging between approximately 1.5 to 3.5 feet below the existing ground surface. Thicker fills may exist at the site. The near-surface topsoil and fill soils encountered in the borings generally consist of fine-grained silty sand.
- Remedial grading will be needed to over-excavate and recompact existing topsoil, undocumented fill soils and upper alluvial soils for foundation, slab and swimming pool shell support. Following remedial grading, compacted fill soils are anticipated to have similar engineering characteristics with the underlying medium dense to dense alluvial soils.
- The proposed bathhouse structure may use a conventional foundation system (spread footings and isolated pads) with slab-on-grade, supported on future compacted fill.
- As an alternative to conventional spread foundations, the planned shade structure canopies can be supported on piers (caissons) bearing into either future compacted fill soils or the underlying native alluvial soils provided the following recommendations incorporated into design and construction. The piers can be connected to a grade beam system determined by the project structural engineer to control the deflections of structure under the design tolerance
- Groundwater was not encountered in the exploratory borings drilled to depths of 51.5 feet and is not anticipated within the zone of construction.
- The upper six (6) feet of mixed undocumented fill and native alluvial soils have a "Very Low" expansion potential. Expansive soil mitigation measures for foundations supported on future fill soils derived from on-site sources, or supported on native alluvial soils are not anticipated.
- Laboratory testing indicates that site soils, in general, are considered "non-corrosive" to ferrous metals. Site soils have "negligible" concentrations of water soluble sulfates.

- The sandy native soils tested for collapse/consolidation indicate a slight potential for collapse.
- The site is located within a mapped Seismic Hazard Zone for liquefaction potential. Based on our analyses the potential liquefaction/seismically-induced settlement is estimated to be approximately 0.45 inch, with differential dynamic settlement estimated to be approximately 0.3 inch.
- The site is located within a seismically active area and will be subject to intense ground motion during a significant seismic event. Site-specific parameters for seismic design are provided in the report, formulated in general accordance with Chapter 16, Sections 1613 and 1614 of the 2007 California Building Code.

10.0 RECOMMENDATIONS - EARTHWORK AND SITE GRADING

10.1 General

Based on our field exploration, laboratory testing, and analyses of subsurface conditions at the site, remedial over-excavation grading is required to provide a relatively uniform soil condition across the site for support of the planned Rosemead Park Aquatic Center project. To help reduce the potential for differential settlement, variations in the soil type, degree of compaction, and thickness of the compacted fill placed underneath the footings and swimming pool shell should be kept uniform. Site grading recommendations provided in this report are based on our experience with similar projects in the area and our site-specific geotechnical evaluation.

The existing undocumented fill soils and native soils removed during over-excavation may be placed as compacted fill in structural areas after proper processing (free of vegetation, shrubs, roots and debris). The site soil materials may contain scattered demolition debris. Earthwork should be performed with suitable equipment and techniques to selectively screen/remove debris from soils placed as engineered fill.

Soils containing organic materials should not be used as structural fill. The extent of over-excavation removal should be further evaluated by the geotechnical representative based on observations during grading.

10.2 Over-Excavation/Removal

The footprint of the new bathhouse building should be over-excavated to depth of at least 5 feet, as measured from existing grades. Deeper removal will be needed if firm native soils are not exposed on the excavation bottom. The exposed bottom of the over-excavation area should be scarified at least 6 inches, moisture conditioned as needed to near-optimum moisture content, and compacted to 90 percent relative compaction (laboratory maximum density evaluated per ASTM D1577). The lateral limits of the over-excavation should extend at least 5 feet beyond the building footprint. However, over-excavation should not undermine adjacent off-site improvements or buried utilities. Remedial grading should not extend within a projected 1:1 (horizontal to vertical) plane projected down from the outer edge of adjacent off-site improvements/utilities.

The swimming pool area should be over-excavated to depth of at least 2 feet below the bottom elevation of the pool shell. Deeper removal will be needed if firm native soils are not exposed on the excavation bottom. The exposed bottom of the over-excavation area should be scarified at least 6 inches, moisture conditioned as needed to near-optimum moisture content, and compacted to 90 percent relative compaction (laboratory maximum density evaluated per ASTM D1577).

Hardscape areas beyond the footprint of the bathhouse building and swimming pool should be over-excavated to a depth of at least 2 feet, as measured from existing grades. Deeper removal will be needed if firm soil conditions are not exposed on the excavation bottom. The exposed bottom of the over-excavation area should be scarified at least 6 inches, moisture conditioned as needed to near-optimum moisture content, and compacted to 90 percent relative compaction (laboratory maximum density evaluated per ASTM D1577). The lateral limits of the over-excavation should extend at least 2 feet beyond the hardscape areas, where feasible.

10.3 Engineered Fill

All engineered fill should be placed on competent, scarified and compacted native materials as evaluated by the geotechnical engineer and in accordance with the specifications presented in this section.

Excavated site soils, free of deleterious materials and rock particles larger than three (3) inches in the largest dimension, should be suitable for placement as compacted fill. Any proposed import fill should be evaluated and approved by Converse prior to import to the site. Import fill material should have an expansion index less than 20.

Prior to compaction, fill materials should be thoroughly mixed and moisture conditioned to within three (3) percent of the optimum moisture content. All fill, if not specified otherwise elsewhere in this report, should be compacted to at least 90 percent of the laboratory dry density in accordance with the ASTM Standard D1557 test method.

At the time of our recent field exploration, *in-situ* moisture content of the upper six (6) feet of existing soils ranged from 6 to 9 percent. The optimum moisture content is about 8 percent. Therefore, some moisture conditioning may be necessary prior to the material being placed as compacted fill. The amount of processing required for proper moisture conditioning at the site will depend on the seasonal variations in the *in-situ* moisture conditions, the depth of cut, the equipment, and the processing method.

10.4 Excavatability

Based on our field exploration, the earth materials at the site may be excavated with conventional heavy-duty earth moving and trenching equipment. The onsite materials may contain occasional demolition debris. Earthwork should be performed with suitable equipment and methods for removal of debris from the engineered fill.

10.5 Expansive Soil

The result of expansion index testing indicated very low expansion potential (EI less than 20). The recommendations contained in this report are based upon the anticipated non-expansion soil conditions. Any proposed import fill should have an expansion index less than 20, and should be evaluated and approved by Converse prior to import to the site.

10.6 Shrinkage and Subsidence

Soil shrinkage and/or bulking as a result of remedial grading depends on several factors including the depth of over-excavation, and the grading method and equipment utilized, and average relative compaction. For preliminary estimation, bulking and shrinkage factors for various units of earth material at the site may be taken as presented below:

- The approximate shrinkage factor for the topsoil and undocumented fill soils is estimated to range from ten (10) to fifteen (15) percent.
- The approximate shrinkage factor for the native alluvial soils is estimated to range from five (5) to ten (10) percent.
- For estimation purposes, ground subsidence may be taken as 0.10 feet as a result of remedial grading.

Although these values are only approximate, they represent our best estimates of the factors to be used to calculate lost volume that may occur during grading. If more accurate shrinkage and subsidence factors are needed, it is recommended that field-testing using the actual equipment and grading techniques be conducted.

10.7 Slab Subgrade Preparation

Final subgrade soils for structures and hardscape should be uniform and non-yielding. To obtain a uniform subgrade, soils should be well mixed and uniformly compacted. The subgrade soils should be non-expansive and well-drained. The near-surface site soils should be free draining. We recommend that at least the upper two (2) inches of subgrade soils underneath the slab-on-grade should be comprised of well-drained granular soils such as sands, gravel or crushed aggregate satisfying the following criteria:

- Maximum size ≤ 1.5 inches
- Percent passing U.S. #200 sieve ≤ 12 percent
- Sand equivalent ≥ 30

The subgrade soils should be moisture conditioned to near-optimum or slightly above before placing concrete.

11.0 DESIGN RECOMMENDATIONS

The proposed Rosemead Park Aquatic Center project improvements may be supported on spread footings extending into properly compacted fill, or deeper foundations extending into dense alluvial soils as outlined in the following report sections.

11.1 Shallow Foundations

The design recommendations provided in this section are based on the assumption that in preparing the site, earthwork and grading recommendations presented in Section 10.0 and Appendix D will be implemented. The proposed building structures may be supported on shallow continuous and isolated spread foundations provided our recommendations are incorporated in the design and construction plans.

11.1.1 Vertical Capacity

Shallow continuous footing should be at least 18 inches wide and embedded at least 24 inches below lowest adjacent grade into compacted fill soils. The footing reinforcement should be based on the structural design. Conventional spread footings founded on compacted fill soils may be designed for a net bearing pressure of 2,000 pounds per square foot (psf) for dead-plus-live-loads.

The net allowable bearing pressure can be increased by 400 psf for each additional foot of excavation depth and width up to a maximum value of 4,000 psf.

The net allowable bearing values indicated above are for the dead loads and frequently applied live loads and are obtained by applying a factor of safety of 3.0 to the net ultimate bearing capacity.

11.1.2 Lateral Capacity

Resistance to lateral loads can be assumed to be provided by friction acting at the base of foundations and by passive earth pressure. A coefficient of friction of 0.3 between concrete and soil may be used with the dead load forces. An allowable passive earth pressure may be designed using an equivalent fluid pressure of 300 pcf for compacted fill or native soils. A factor of safety of 1.5 was applied in calculating passive earth pressure. The maximum value of the passive earth pressure should be limited to 3,000 psf for compacted fill or native soils. When combining passive and friction for lateral resistance, the passive component should be reduced by one-third.

11.1.3 Dynamic Increases

Vertical and lateral bearing values indicated above are for the total dead loads and frequently applied live loads. If normal code requirements are applied for design, the above vertical bearing and lateral resistance values may be increased by 33 percent for short duration loading, which will include the effect of wind or seismic forces.

11.1.4 Settlement

The static settlement of structures supported on continuous and/or spread footings founded on compacted fill and/or dense native soils will depend on the actual footing dimensions and the imposed vertical loads. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 0.5 inch. In order to evaluate differential settlement, data on the relative dimension of adjacent footings, magnitude of imposed loads and distance between footings is needed. In the absence of such data, and based on our experience on similar projects for similarly loaded footings, the differential settlement may be taken as equal to about one half of the total settlement over a horizontal distance of 50 feet.

Based on our liquefaction and seismically-induced settlement analyses, the potential seismically-induced settlement is estimated to be 0.xx inch, and the differential settlement is estimated to be 0.xx.

11.2 Pier Foundations

As an alternative to conventional spread foundations, the planned shade structure canopies can be supported on piers (caissons) bearing into either future compacted fill soils or the underlying native alluvial soils provided the following recommendations incorporated into design and construction. The piers can be connected to a grade beam system determined by the project structural engineer to control the deflections of structure under the design tolerance.

Piers should be at least 24-inch in diameter and extend at least 5 feet into future compacted fill soils and/or dense native soils. Piers can be designed for an allowable skin friction of 180 psf against the perimeter of pier for a minimum embedment of 5 feet below the adjacent grade. The upper one (1) foot of soil skin friction should be neglected in pier capacity calculations.

If end bearing capacity is to be considered for design, the bottom of pier should be cleaned out with appropriate equipment. The allowable end bearing capacity can be designed for 3000 psf. However, the diameter of pier may be increased and temporary casing may be required to facilitate cleanout.

Resistance to lateral loads can be provided by friction acting at the base of the foundation and by passive earth pressure. A coefficient of friction of 0.3 may be assumed with normal dead load forces. An allowable passive earth pressure may be designed using an equivalent fluid pressure (EFP) of 300 pcf up to a maximum of 3000 psf for foundations poured against future compacted fill and/or firm alluvial soils. The values of coefficient of friction and allowable passive earth pressure include a factor of safety of 1.5. For ground surface restrained by concrete slab, the passive resistance may be calculated from the ground surface. For unrestrained ground condition, the passive resistance of the upper one (1) feet earth material should be neglected in design.

The static settlement of shade and solar panel structures supported on pier foundations will depend on the actual footing dimensions and the imposed vertical loads. Most of the footing settlement at the project site is expected to occur immediately after the application of the load. Based on the maximum allowable net bearing pressures presented above, static settlement is anticipated to be less than 0.5 inch.

Bearing values indicated above are for total dead load and frequently applied live loads. The above vertical bearing may be increased by 33% for short durations of loading which will include the effect of wind or seismic forces. The allowable passive pressure may be increased by 33% for lateral loading due to wind or seismic forces.

11.3 Swimming Pool

The swimming pool shell can be supported on future compacted fill, provided that the earthwork recommendations included herein are followed. Recommended swimming pool design parameters are as follows:

- The shell walls should be designed to support an equivalent fluid pressure (EFP) of 65 pounds per cubic foot for level backfill.

- Walls higher than 12 feet should be designed for an earthquake load in terms of equivalent pressure of 18 pcf, based on an inverted triangular distribution. The resultant seismic force can be assumed to be located at 2/3 of the wall height measured from the bottom of wall.
- Shell design is based on the assumption that site soils will have been properly compacted and will have an expansion index less than 50.
- The recommended lateral pressures assume no hydrostatic pressures. A hydrostatic relief system connected to a sump pump is recommended.
- Both static settlement and seismically-induced settlement should be considered in the structural design.

11.4 Modulus of Subgrade Reaction

For the subject project, design of the structures supported on compacted fill subgrade prepared in accordance with the recommendations provided in this report may be based on a soil modulus of subgrade reaction (k_s) of 150 pounds per square inch per inch.

11.5 Slabs-on-grade and Hardscape

The design of the slab-on-grade will depend on, among other factors, the expansion potential of the pad soils. Based on the expansion index test performed during this evaluation, the expansion potential of the site soils at a shallow depth is very low (EI less than 20). Accordingly, slabs-on-grade for building pads may be of the conventional type as opposed to post-tensioned.

Slabs-on-grade should be supported on properly compacted fill or deeper undisturbed native soils. Compacted fill used to support slabs-on-grade should be placed and compacted in accordance with report section 10.0 Recommendations – Earthwork and Site Grading, and the general recommendations given in Appendix D, *Recommended Earthwork Specifications*.

Slabs-on-grade should have a minimum thickness of four (4) inches nominal for support of normal ground-floor live loads. Pool decking should also have a minimum thickness of four (4) inches. Minimum reinforcement for slabs-on-grade should be No. 4 reinforcing bars, spaced at 18 inches on-center each way. The thickness and reinforcement of more heavily-loaded slabs will be dependent upon the anticipated loads and should be designed by a structural engineer.

It is critical that the exposed subgrade soils should not be allowed to desiccate prior to the slab pour. Care should be taken during concrete placement to avoid slab curling. Slabs should be designed and constructed as promulgated by the ACI and Portland Cement Association (PCA). Prior to the slab pour, all utility trenches should be properly backfilled and compacted.

If moisture-sensitive floor coverings, such as vinyl tile, carpet, or wood floors, are used, slabs should be protected by a minimum 10-mil thick moisture retarder/barrier in conformance with ASTM E 1745 Class A requirements. If the retarder/barrier is used, it should be protected with 2 inches of sand placed above to prevent punctures and to aid in the concrete cure.

11.6 Soil Corrosivity Evaluation

Converse retained The Environmental Geotechnical Laboratory, Inc., located in Arcadia, California, to test a bulk soil sample from boring location BH-1 (1 to 6 feet bgs). The tests included minimum resistivity, pH, soluble sulfates, and chloride content, with the results summarized on the following table:

Table No. 2, Soil Corrosivity Test Results

Sample Location (Boring/Depth)	pH (CALTRANS 643)	Soluble Chlorides (CALTRANS 422) (ppm)	Soluble Sulfate (CALTRANS 417) (ppm)	Saturated Resistivity (CALTRANS 532) Ohm-cm
BH-1 (1-6)	7.96	125	10	8,400

According to the Caltrans Corrosive Guidelines (2003), a corrosive area is one where any of the following conditions exist: the soil contains more than 500 ppm of chlorides, more than 2,000 ppm (0.2 percent) of sulfates, a pH of 5.5 or less, and a resistivity of 1,500 ohm-centimeters or less.

Since the soluble sulfate concentrations tested for this project are less than 2,000 ppm in the soil, mitigation measures to protect concrete in contact with the soils are not anticipated.

The pH, chloride content and resistivity values of the samples tested are in the non-corrosive range.

The test results presented herein are considered preliminary. Additional testing and evaluation of the as-graded soils is recommended. A corrosion engineer may be consulted for appropriate mitigation procedures and construction design, if needed. Conventional corrosion mitigation measures may include the following:

- Steel and wire concrete reinforcement should have at least three inches of concrete cover where cast against soil, unformed.

- Below-grade ferrous metals should be given a high-quality protective coating, such as 18-mil plastic tape, extruded polyethylene, coal-tar enamel, or Portland cement mortar.

- Below-grade metals should be electrically insulated (isolated) from above-grade metals by means of dielectric fittings in ferrous utilities and/or exposed metal structures breaking grade.

11.7 Site Drainage

Adequate positive drainage should be provided away from the structures to prevent ponding and to reduce percolation of water into structural backfill. We recommend that the landscape area immediately adjacent to the foundation shall be designed sloped away from the building with a minimum 5% slope gradient for at least 10 feet measured perpendicular to the face of the wall. Impervious surfaces within 10 feet of the building foundation shall be sloped a minimum of 2 percent away from the building per 2010 California Building Code.

Planters and landscaped areas adjacent to the building perimeter should be designed to minimize water infiltration into the subgrade soils. Gutters and downspouts should be installed on the roof, and runoff should be directed to the storm drain through non-erosive devices. Lower level walkways and open patio areas may require special drainage provisions and sump pumps to provide suitable drainage.

12.0 CONSTRUCTION RECOMMENDATIONS

12.1 General

Site soils should be excavatable using conventional heavy-duty excavating equipment. Temporary sloped excavation is feasible if performed in accordance with the slope ratios provided in Section 12.2, *Temporary Excavations*. Existing utilities should be accurately located and either protected or removed as required.

12.2 Temporary Excavations

Based on the materials encountered in the exploratory borings, sloped temporary excavations may be constructed according to the slope ratios presented in Table No. 3, *Slope Ratios for Temporary Excavation*. Any loose utility trench backfill or other fill encountered in excavations will be less stable than the native soils. Temporary cuts encountering loose fill or loose dry sand should be constructed at a flatter gradient than presented in the following table.

Table No. 3, Slope Ratios for Temporary Excavation

Maximum Depth of Cut (feet)	Maximum Slope Ratio* (horizontal: vertical)
0 – 4	vertical
4 - 8	1:1
8 +	1.5:1

*Slope ratio assumed to be uniform from top to toe of slope.

Surfaces exposed in slope excavations should be kept moist but not saturated to minimize raveling and sloughing during construction. Adequate provisions should be made to protect the slopes from erosion during periods of rainfall. Surcharge loads, including construction, should not be placed within five (5) feet of the unsupported trench edge. The above maximum slopes are based on a maximum height of six (6) feet of stockpiled soils placed at least five (5) feet from the trench edge.

All applicable requirements of the California Construction and General Industry Safety Orders, the Occupational Safety and Health Act of 1987 and current amendments, and the Construction Safety Act should be met. The soils exposed in cuts should be observed during excavation by the project's geotechnical consultant. If potentially unstable soil conditions are encountered, modifications of slope ratios for temporary cuts may be required.

12.3 Special Consideration for Excavation Adjacent to Existing Structures

Temporary excavations for the proposed improvements should not extend below a 1:1 (horizontal: vertical) plane extending beyond and down from the bottom of the existing utility lines or foundations. The remedial grading excavations should not cause loss of bearing and/or lateral support for adjacent off-site utilities or structures.

If remedial grading excavations extend below a 1:1 horizontal:vertical (H:V) plane extending beyond and down from the bottom of adjacent off-site utility lines or structure foundations, shoring or slot cutting shall be employed. “A-B-C” lot cuts exposing native sandy soils may be excavated with maximum 8 foot long sections to prevent the existing utility lines or off-site structures from becoming unstable. Backfill should be accomplished in the shortest period of time possible and in alternating sections.

Based on the proposed development, shoring is not anticipated.

12.4 Geotechnical Services During Construction

This report has been prepared to aid in the site preparation and site grading plans and specifications, and to assist the architect, civil and structural engineers in the design of the proposed structure. It is recommended that this office be provided an opportunity to review final design drawings and specifications to verify that the recommendations of this report have been properly implemented.

Recommendations presented herein are based upon the assumption that adequate earthwork monitoring will be provided by Converse. Excavation bottoms should be observed by a Converse representative prior to the placement of compacted fill. Structural fill and backfill should be placed and compacted during continuous observation and testing by this office. Footing excavations should be observed by Converse prior to placement of steel and concrete for verification that footings are founded on satisfactory materials and excavations are free of loose and disturbed materials.

During construction, the geotechnical engineer and/or their authorized representatives should be present at the site to provide a source of advice to the client regarding the geotechnical aspects of the project and to observe and test the earthwork performed. Their presence should not be construed as an acceptance of responsibility for the performance of the completed work, since it is the sole responsibility of the contractor performing the work to ensure that it complies with all applicable plans, specifications, ordinances, etc.

This firm does not practice or consult in the field of safety engineering. We do not direct the contractor's operations, and cannot be responsible for other than our own personnel on the site; therefore, the safety of others is the responsibility of the contractor. The contractor should notify the owner if he considers any recommended actions presented herein to be unsafe.

13.0 CLOSURE

The findings and recommendations of this report were prepared in accordance with generally accepted professional engineering and engineering geologic principles and practice. We make no other warranty, either expressed or implied. Our conclusions and recommendations are based on the results of the background review, field and laboratory studies, combined with an interpolation and extrapolation of soil conditions between and beyond boring locations. If conditions encountered during construction appear to be different from those shown by the borings, this office should be notified.

Design recommendations given in this report are based on the assumption that the earthwork and site grading recommendations contained in this report are implemented. Additional consultation may be prudent to interpret Converse's findings for contractors, or to possibly refine these recommendations based upon the review of the final site grading and actual site conditions encountered during construction. If the scope of the project changes, if project completion is to be delayed, or if the report is to be used for another purpose, this office should be consulted.

This report was prepared for the City of Rosemead and their design team for the subject project described herein. Converse is not responsible for technical interpretations made by others of our exploratory information. Specific questions or interpretations concerning the findings and conclusions presented herein may require a written clarification to avoid any misunderstandings.

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APPENDIX A

FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

Field exploration included a site reconnaissance and subsurface exploration program. During the site reconnaissance, the surface conditions were noted, and the approximate locations of the borings were marked for utility clearance. The exploratory borings were approximately located using existing boundary and other features as a guide and should be considered accurate only to the degree implied by the method used. The various field study methods performed are discussed below.

Four (4) borings (BH-1 through BH-4) were drilled within the project site on August 6, 2010. The borings were advanced using a truck mounted drill rig with eight-inch diameter hollow-stem augers. The depths drilled were approximately 21.5 feet to 51.5 feet below ground surface (bgs). Encountered earth materials were continuously logged by a Converse geologist and classified in the field by visual examination in accordance with the Unified Soil Classification System (USCS). Where appropriate, field descriptions and classifications have been modified to reflect laboratory test results.

Ring samples of the subsurface materials were obtained at frequent intervals in the exploratory borings using a drive sampler (2.4-inches inside diameter and 3.0-inches outside diameter) lined with sample rings. The steel ring sampler was driven into the bottom of the borehole with successive drops of a 140-pound driving weight falling 30 inches, using an automatic hammer. Samples are retained in brass rings (2.4-inches inside diameter and 1.0-inch in height). The central portion of the sample was retained and carefully sealed in waterproof plastic containers for shipment to the Converse laboratory. Blow counts for each sample interval are presented on the logs of borings. Bulk samples of typical soil types were also obtained.

Standard Penetration Test (SPT) was also performed using a standard (1.4-inches inside diameter and 2.0-inches outside diameter) split-barrel sampler. The mechanically driven hammer for the SPT sampler was 140 pounds, failing 30 inches for each blow. The recorded blow counts for every six inches for a total of 1.5 feet of sampler penetration are shown on the Logs of Borings in the "BLOWS" column. The standard penetration test was performed in accordance with the ASTM Standard D1586 test method.

It should be noted that the exact depths at which material changes occur cannot always be established accurately. Unless a more precise depth can be established by other means, changes in material conditions that occur between driven samples are indicated in the logs at the top of the next drive sample. A key to soil symbols and terms is presented as Drawing No. A-1. The log of the exploratory boring is presented in Drawing Nos. A-2a through A-5, *Log of Borings.*

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)	∴	GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
			○	GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	‖	GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
			▨	GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)	░	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	‖	SM	SILTY SANDS, SAND - SILT MIXTURES
			▨	SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	‖	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			▨	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			☰	OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	▥	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			▨	CH	INORGANIC CLAYS OF HIGH PLASTICITY
			≈	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			⩛	PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BORING LOG SYMBOLS

SAMPLE TYPE

- ☒ STANDARD PENETRATION TEST
  Split barrel sampler in accordance with ASTM D-1586-84 Standard Test Method
- ■ DRIVE SAMPLE 2.42" I.D. sampler.
- ☐ DRIVE SAMPLE No recovery
- ▩ BULK SAMPLE
- ▼ GROUNDWATER WHILE DRILLING
- ▼ GROUNDWATER AFTER DRILLING

LABORATORY TESTING ABBREVIATIONS

TEST TYPE

(Results shown in Appendix B)

CLASSIFICATION

Plasticity	pi
Grain Size Analysis	ma
Passing No. 200 Sieve	wa
Sand Equivalent	se
Expansion Index	ei
Compaction Curve	max
Hydrometer	h

STRENGTH

Pocket Penetrometer	p
Direct Shear	ds
Direct Shear (single point)	ds*
Unconfined Compression	uc
Triaxial Compression	tx
Vane Shear	vs
Consolidation	c
Collapse Test	col
Resistance (R) Value	r
Chemical Analysis	ca
Electrical Resistivity	er

UNIFIED SOIL CLASSIFICATION AND KEY TO BORING LOG SYMBOLS

Converse Consultants

Project Name	Project No.	Drawing No.
ROSEMEAD PARK AQUATIC CENTER 9155 MISSION DRIVE ROSEMEAD, CALIFORNIA	10-31-284-01	A-1

Log of Boring No. BH-1

Dates Drilled: 8/6/2010
Logged by: GDS
Checked By: SCL
Equipment: 8" HOLLOW STEM AUGER
Driving Weight and Drop: 140 lbs / 30 in
Ground Surface Elevation (ft): N/A
Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		TOPSOIL: **SILTY SAND** (SM): fine-grained, dark brown.		▨				max,ds ma,ca er,el
		ALLUVIUM: **SILTY SAND** (SM): fine to medium-grained, brown, slightly porous.						
5			■	▨	2/3/3	8	119	c
10		**SAND WITH SILT (SP-SM):** fine to medium-grained, trace gravels up to 2" in maximum dimension, brown.	□		6/9/12			
15		**SAND** (SP): medium-grained, trace gravels up to 1/2" in maximum dimension, brown.	■		7/22/30	3	115	
20			□		15/18/12			
25		**SILTY SAND (SM):** fine-grained, brown.	■		6/9/16	6	109	
30			☒		6/8/8			wa(fc=27%)

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No. 10-31-284-01
Drawing No. A-2a

Log of Boring No. BH-1

Dates Drilled: 8/6/2010
Logged by: GDS
Checked By: SCL
Equipment: 8" HOLLOW STEM AUGER
Driving Weight and Drop: 140 lbs / 30 in
Ground Surface Elevation (ft): N/A
Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
		SILTY SAND (SM): fine-grained, trace clay, brown.	☒		7/8/9			
40		**SANDY SILT (ML)**: fine-grained sand, trace clay, brown.	☒		6/7/8			wa(fc=55%)
45		**SAND WITH SILT** (SP-SM): fine to medium-grained, trace gravels up to 1/2" in maximum dimension, brown.	☒		13/19/22			
50		**SAND** (SP): medium-grained, trace gravels up to 1/2" in maximum dimension, brown.	☒		17/15/15			

End of boring at 51.5 feet.
Groundwater not encountered during drilling.
Borehole backfilled with soil cuttings on 8-6-10.

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No. 10-31-284-01
Drawing No. A-2b

Log of Boring No. BH-2

Dates Drilled: 8/6/2010
Logged by: GDS
Checked By: SCL
Equipment: 8" HOLLOW STEM AUGER
Driving Weight and Drop: 140 lbs / 30 in
Ground Surface Elevation (ft): N/A
Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		Concrete Deck: 3" thick, wire mesh reinforcement						
		FILL (Af): **SILTY SAND (SM):** fine-grained, brown.						
		ALLUVIUM: **SILTY SAND (SM):** fine-grained, slightly porous, brown.						
5			■		3/4/6	7	112	ds
10			■		4/6/6	6	111	
15			■		7/6/8	6	116	
20		**SAND (SP-SM):** fine to medium-grained, brown.	■		6/7/9	21	102	
		End of boring at 21.5 feet. Groundwater not encountered during drilling. Borehole backfilled with soil cuttings on 8-6-10.						

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No. 10-31-284-01
Drawing No. A-3

Log of Boring No. BH-3

Dates Drilled: 8/6/2010
Logged by: GDS
Checked By: SCL
Equipment: 8" HOLLOW STEM AUGER
Driving Weight and Drop: 140 lbs / 30 in
Ground Surface Elevation (ft): N/A
Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES		BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
			DRIVE	BULK				
		TOPSOIL: **SANDY SILT (ML):** fine-grained sand, dark brown.						
		ALLUVIUM: **SILTY SAND (SM):** fine-grained, brown to dark brown.						
5		-brown	■		3/3/7	9	120	
10		**SAND WITH SILT (SM):** fine to medium-grained, trace gravels up to 1" in maximum dimension, brown.	■		5/8/14	5	110	
15			■		15/20/24	5	118	
20		**SILTY SAND (SM):** fine-grained, brown.	■		5/9/14	11	109	
25			■		9/13/23	9	110	
30		-fine to medium-grained, trace gravels up to 1/2" in maximum dimension	■		13/18/19	4	123	
		End of boring at 31.5 feet. Groundwater not encountered during drilling. Borehole backfilled with soil cuttings on 8-6-10.						

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No. 10-31-284-01
Drawing No. A-4

Log of Boring No. BH-4

Dates Drilled: 8/6/2010
Logged by: GDS
Checked By: SCL
Equipment: 8" HOLLOW STEM AUGER
Driving Weight and Drop: 140 lbs / 30 in
Ground Surface Elevation (ft): N/A
Depth to Water (ft): NOT ENCOUNTERED

Depth (ft)	Graphic Log	SUMMARY OF SUBSURFACE CONDITIONS This log is part of the report prepared by Converse for this project and should be read together with the report. This summary applies only at the location of the boring and at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with the passage of time. The data presented is a simplification of actual conditions encountered.	SAMPLES DRIVE	SAMPLES BULK	BLOWS	MOISTURE (%)	DRY UNIT WT. (pcf)	OTHER
		TOPSOIL: **SANDY SILT TO SILTY SAND (ML/SM):** fine-grained, dark brown.						
		ALLUVIUM: **SILTY SAND (SM):** fine-grained, slightly porous, brown.						
5			■		4/6/9	7	119	
10		**SAND WITH SILT (SP-SM):** medium to coarse-grained, brown.	■		6/8/12	5	111	c
15		**SAND (SP):** fine to coarse-grained, gray brown.	■		15/20/27	3	119	
20			■		7/11/16	5	108	
		End of boring at 21.5 feet. Groundwater not encountered during drilling. Borehole backfilled with soil cuttings on 8-6-10.						

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No. 10-31-284-01
Drawing No. A-5

APPENDIX B

LABORATORY TESTING PROGRAM

APPENDIX B

LABORATORY TESTING PROGRAM

Tests were conducted in our laboratory on representative soil samples for the purpose of classification and evaluation of their relevant physical characteristics and engineering properties. The amount and selection of tests were based on the geotechnical requirements of the project. Test results are presented herein and on the Logs of Borings in Appendix A, *Field Exploration*. The following is a summary of the laboratory tests conducted for this project.

Moisture Content and Dry Density

Results of moisture content and dry density tests, performed on relatively undisturbed ring samples were used to aid in the classification of the soils and to provide quantitative measure of the *in situ* dry density. Data obtained from this test provides qualitative information on strength and compressibility characteristics of site soils. For test results, see the Logs of Borings in Appendix A, *Field Exploration*.

Grain-Size Analysis

To assist in classification of soils, mechanical grain-size analyses were performed on a representative sample. Testing was performed in general accordance with the ASTM Standard C136 test method. Grain-size curve is shown in Drawing No. B-1, *Grain Size Distribution Results*.

Percent Finer Than Sieve No. 200

The percent finer than sieve No. 200 test was performed on two (2) representative soil samples to aid in the classification of the on-site soils and to estimate other engineering parameters. Testing was performed in general accordance with the ASTM Standard D1140 test method. The test results are presented in the following table and boring logs.

Table No. B-1, Summary of Percent Passing Sieve #200 Test Results

Boring No.	Depth (feet)	Soil Classification	Percent Passing Sieve No. 200
BH-1*	1-6	Silty Sand (SM)	27.0
BH-1	30	Silty Sand (SM)	27.1
BH-1	40	Sandy Silt (ML)	55.0

* result from grain-size analysis

Maximum Dry Density Test

One (1) laboratory maximum dry density-moisture content relationship tests were performed on representative bulk sample of the upper 6 feet of soil material. The testing was conducted in accordance with ASTM Standard D1557 laboratory procedure. The test result is presented on Drawing Nos. B-2, *Moisture-Density Relationship Results*.

Direct Shear

Direct shear test was performed on one (1) relatively undisturbed in-situ samples and one (1) sample remolded to approximately 90 percent relative compaction, at soaked moisture conditions. For each test, three brass sampler rings were placed, one at a time, directly into the test apparatus and subjected to a range of normal loads appropriate for the anticipated conditions. The sample was then sheared at a constant strain rate of 0.04 inch/minute. Shear deformation was recorded until a maximum of about 0.25-inch shear displacement was achieved. Ultimate strength was selected from the shear-stress deformation data and plotted to determine the shear strength parameters. For test data, including sample density and moisture content, see Drawing Nos. B-3a and B-3b, *Direct Shear Test Results*, and in the following table.

Table No. B-2, Direct Shear Test Results

Boring No.	Depth (feet)	Soil Classification	Ultimate Strength Parameters	
			Friction Angle (degrees)	Cohesion (psf)
BH-1*	1-6	Silty Sand (SM)	31	150
BH-2	5	Silty Sand (SM)	26	200

*Indicates remolded sample to 90% relative compaction

Consolidation

Consolidation tests were performed on two (2) relatively undisturbed in-situ samples. Data obtained from this test procedure was used to evaluate the settlement characteristics of the foundation soils under load. Preparation for this test involved trimming the sample and placing the one-inch high brass ring into the test apparatus, which contained porous stones, both top and bottom, to accommodate drainage during testing. Normal axial loads were applied to one end of the sample through the porous stones, and the resulting deflections were recorded at various time periods. The load was increased after the sample reached a reasonable state equilibrium. Normal loads were applied at a constant load-increment ratio, successive loads being generally twice the preceding load. The sample was tested at field and submerged conditions. The test results, including sample density and moisture content, are presented in Drawing Nos. B-4a and B-4b, *Consolidation Test Results*.

Expansion Index

One (1) representative bulk sample was tested to evaluate the expansion potential of materials encountered at the site. Test results are presented in the following table:

Table No. B-3, Expansion Index Test Results

Boring No.	Depth (feet)	Soil Description	Expansion Index	Expansion Potential
BH-1	1-6	Silty Sand (SM)	4	Very Low

Soil Corrosivity

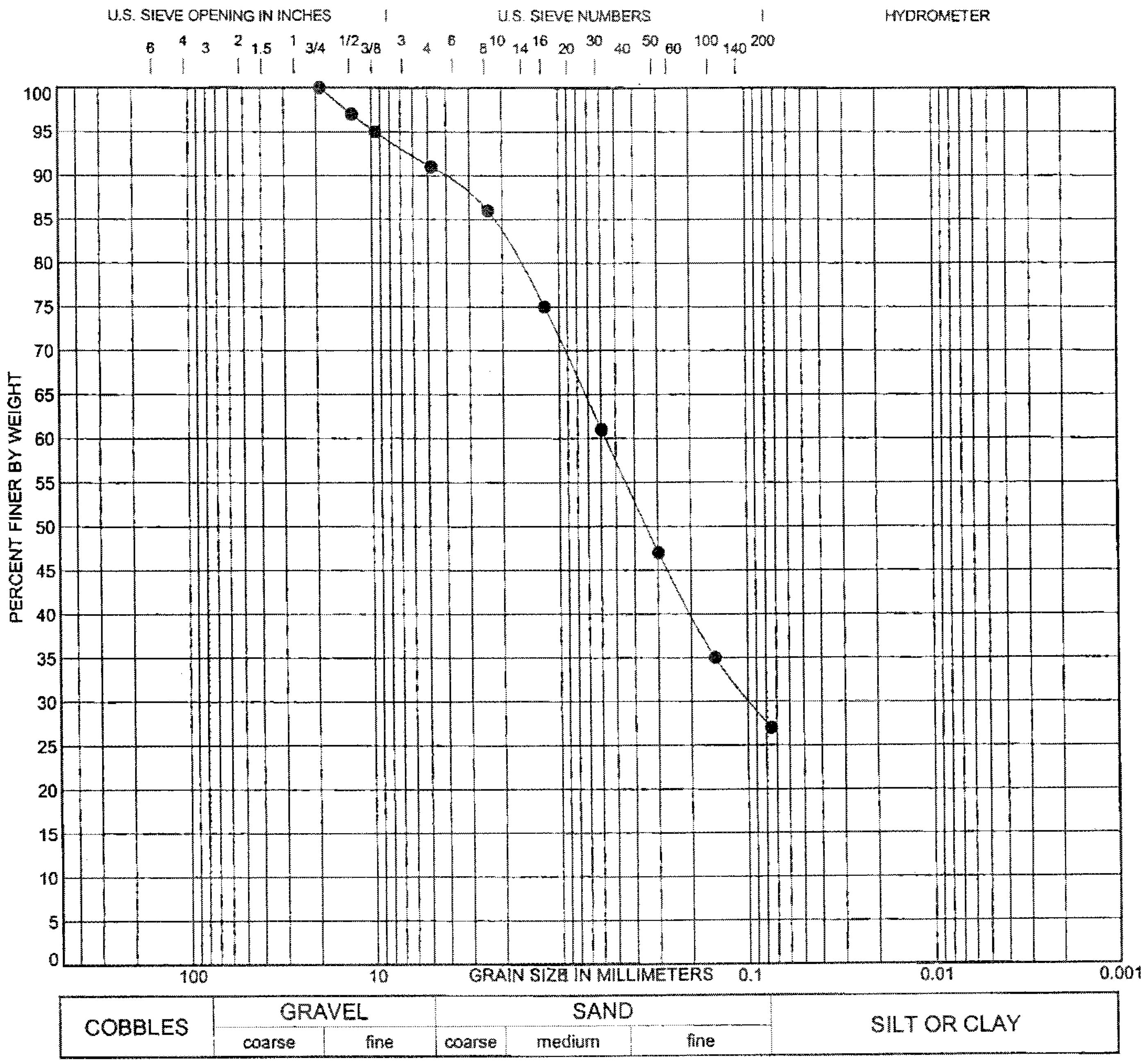
One (1) representative soil sample was tested to evaluate minimum electrical resistivity, pH, and chemical content, including soluble sulfate and chloride concentrations. The purpose of these tests is to determine the corrosion potential of site soils when placed in contact with common construction materials. These tests were performed by Environmental Geotechnical Laboratory, Inc. (EGL), located in Arcadia, California. The test results received from EGL are included in the following table.

Table No. B-4, Corrosivity Test Results

Sample Location (Boring/Depth)	pH (CALTRANS 643)	Soluble Chlorides (CALTRANS 422) (ppm)	Soluble Sulfate (CALTRANS 417) (ppm)	Saturated Resistivity (CALTRANS 532) Ohm-cm
BH-1 / 1-6'	7.96	125	10	8,400

Sample Storage

Soil samples presently stored in our laboratory will be discarded 30 days after the date of this report, unless this office receives a specific request to retain the samples for a longer period.



	Boring No.	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	**BH-1**	**1-6**	**SILTY SAND** (SM)					

	Boring No.	Depth (ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**BH-1**	**1-6**	**19**	**0.566**	**0.097**		**9.0**	**64.0**	**27.0**	

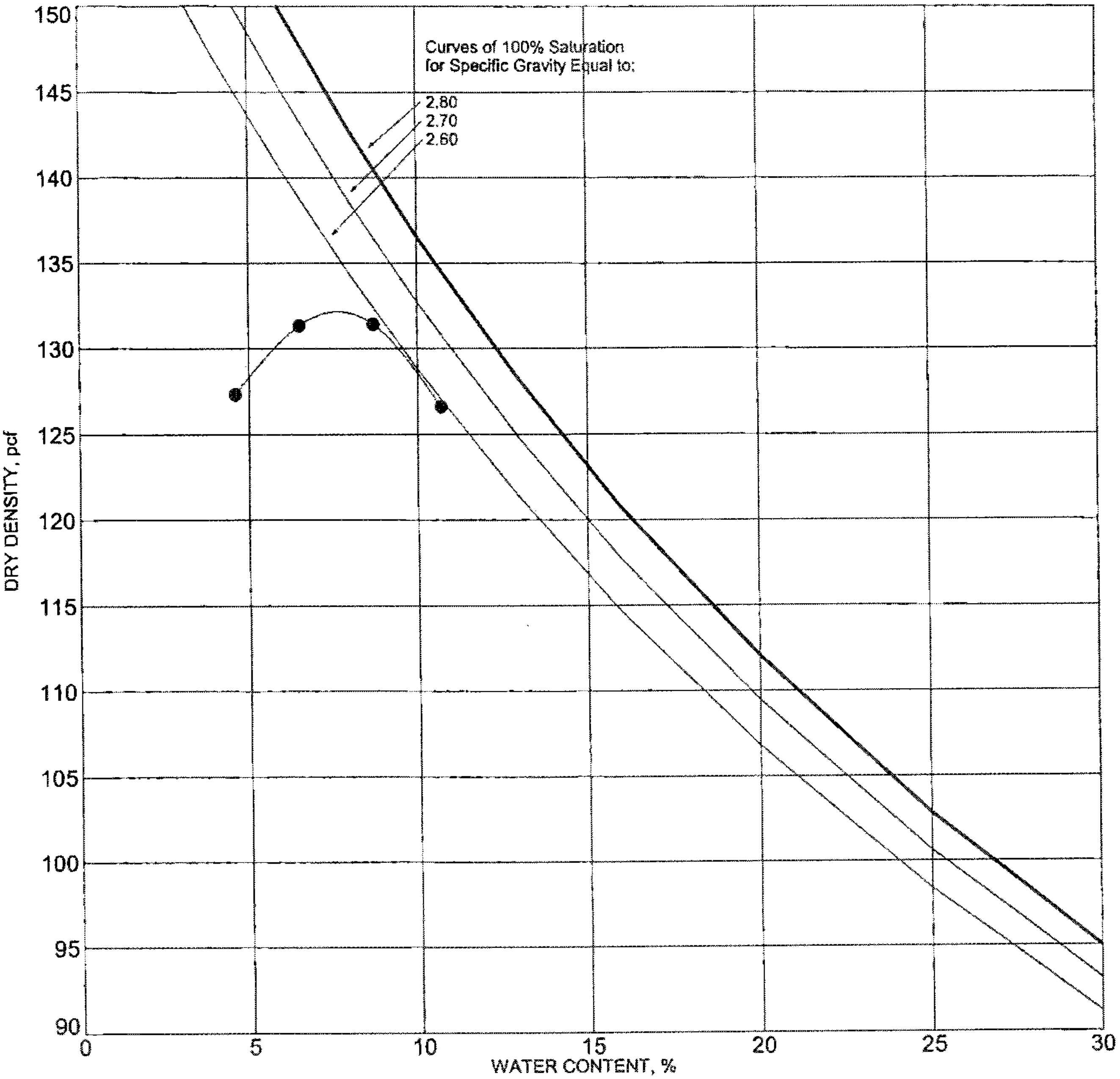
GRAIN SIZE DISTRIBUTION RESULTS

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.
10-31-284-01

Drawing No.
B-1



SYMBOL	BORING NO.	DEPTH (ft)	DESCRIPTION	ASTM TEST METHOD	OPTIMUM WATER, %	MAXIMUM DRY DENSITY, pcf
●	BH-1	1-6	SILTY SAND (SM)	D1557 Method A	5	133

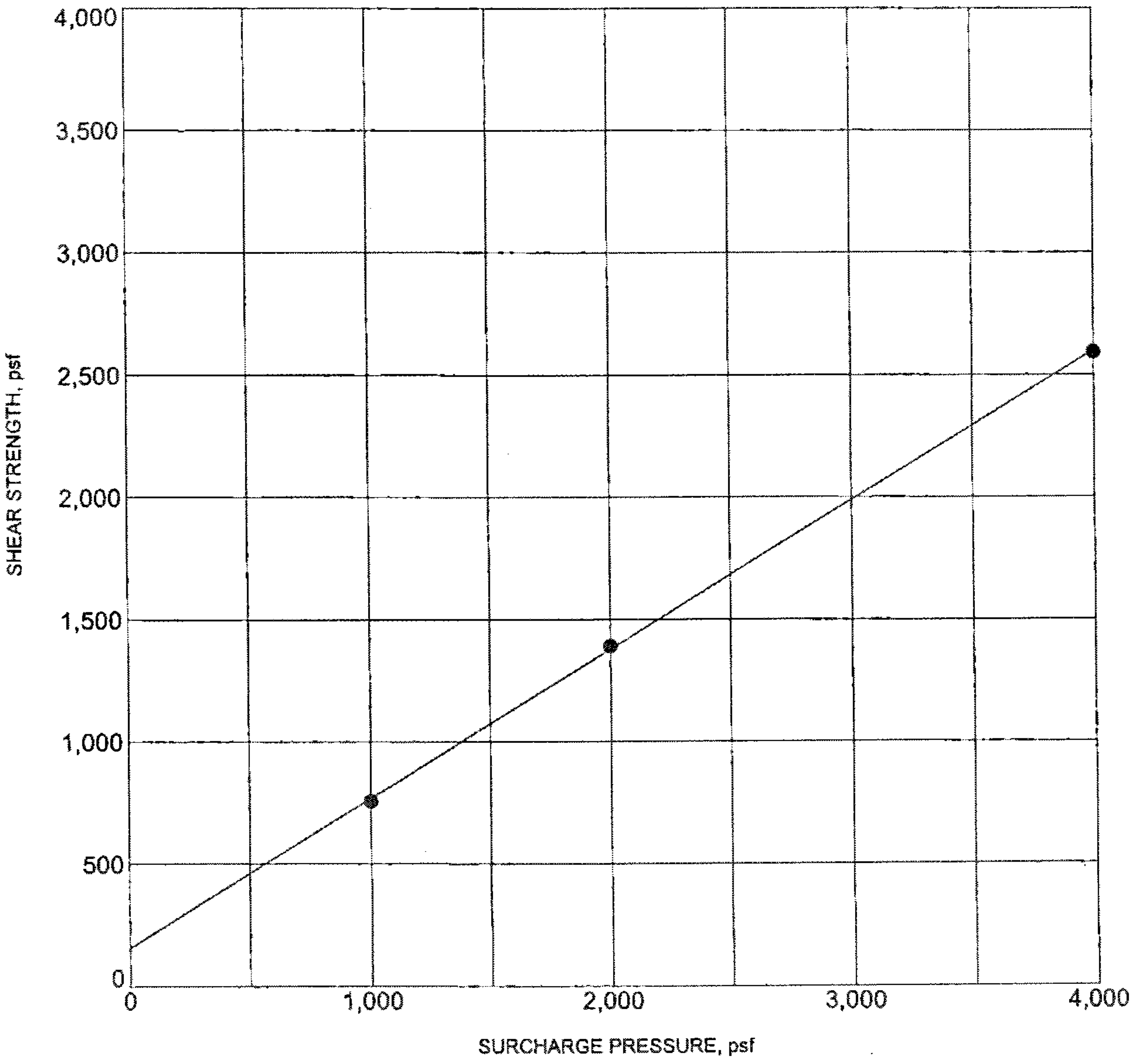
MOISTURE-DENSITY RELATIONSHIP RESULTS

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.
10-31-284-01

Drawing No.
B-2



BORING NO. :	BH-1	DEPTH (ft) :	1-6
DESCRIPTION :	SILTY SAND (SM)		
COHESION (psf) :	150	FRICTION ANGLE (degrees):	31
MOISTURE CONTENT (%) :	9.3	DRY DENSITY (pcf) :	119.2

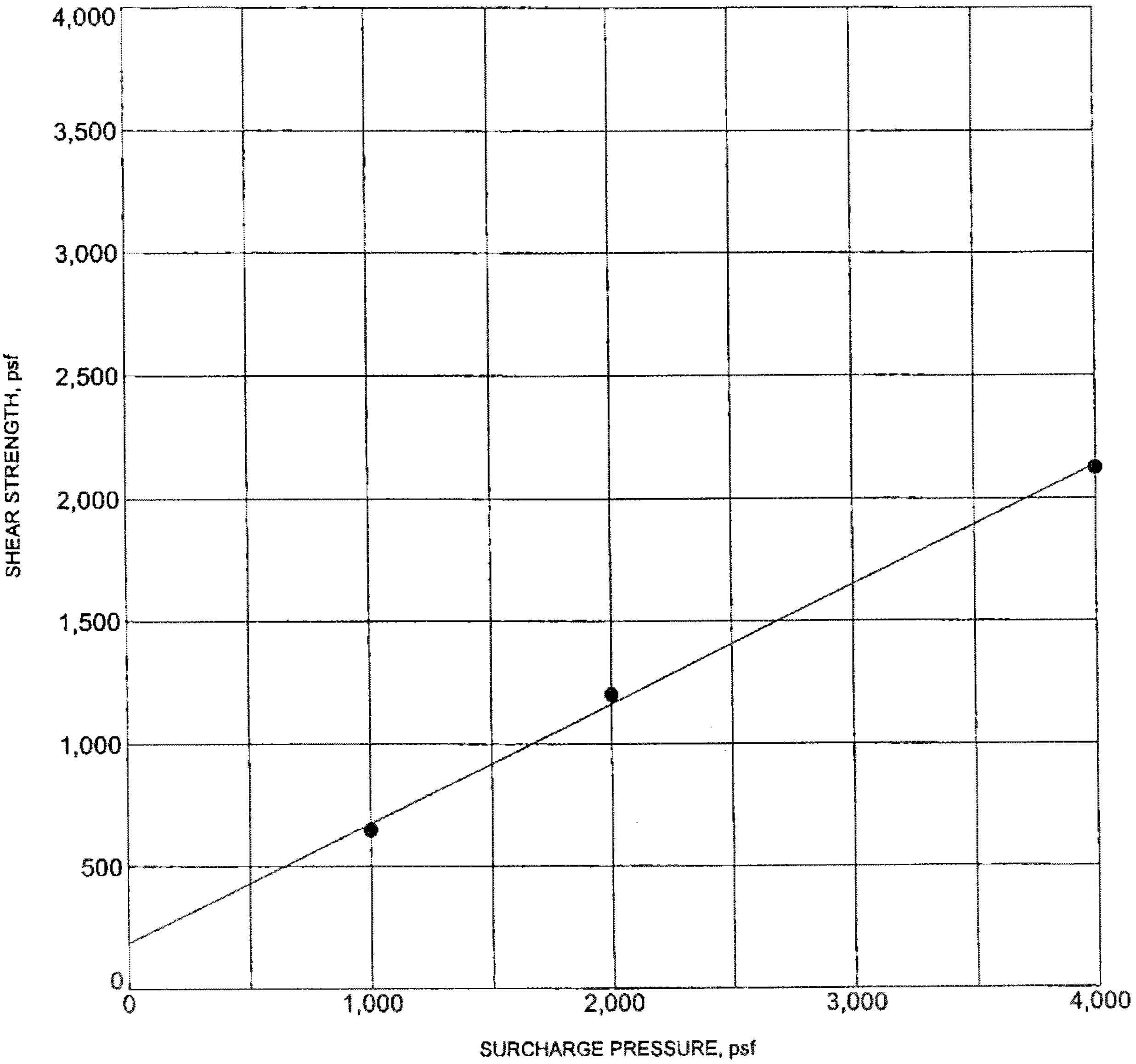
NOTE: Ultimate Strength. Sample remolded to 90% relative compaction.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	B-3a



BORING NO.	:	BH-2	DEPTH (ft)	:	5
DESCRIPTION	:	SILTY SAND (SM)			
COHESION (psf)	:	200	FRICTION ANGLE (degrees):		26
MOISTURE CONTENT (%)	:	7.4	DRY DENSITY (pcf)	:	112.1

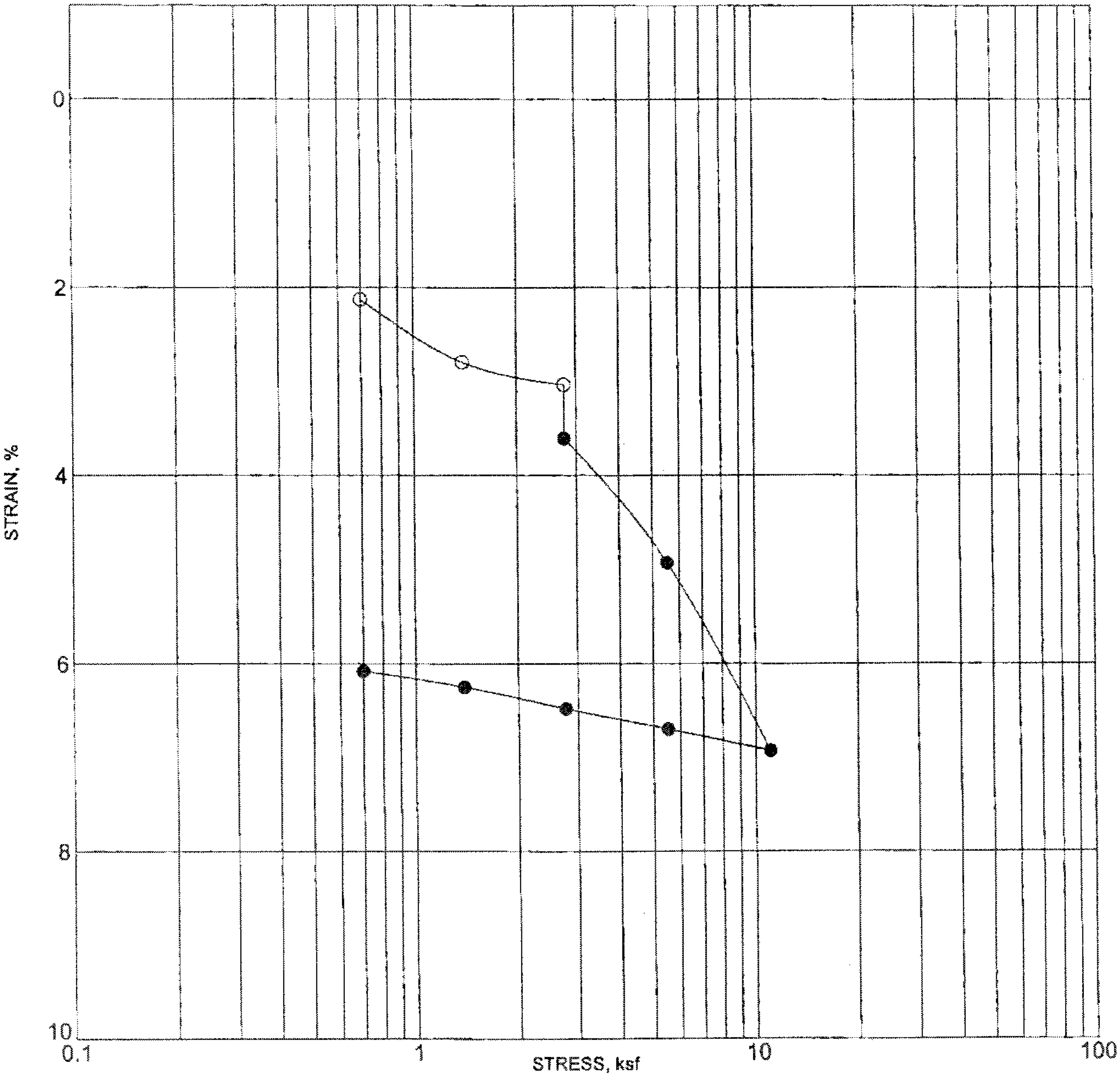
NOTE: Ultimate Strength.

DIRECT SHEAR TEST RESULTS

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	B-3b



BORING NO. :	BH-1	DEPTH (ft) :	5
DESCRIPTION :	SILTY SAND (SM)		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	8.4	119.2		
FINAL	13.1	119.2		

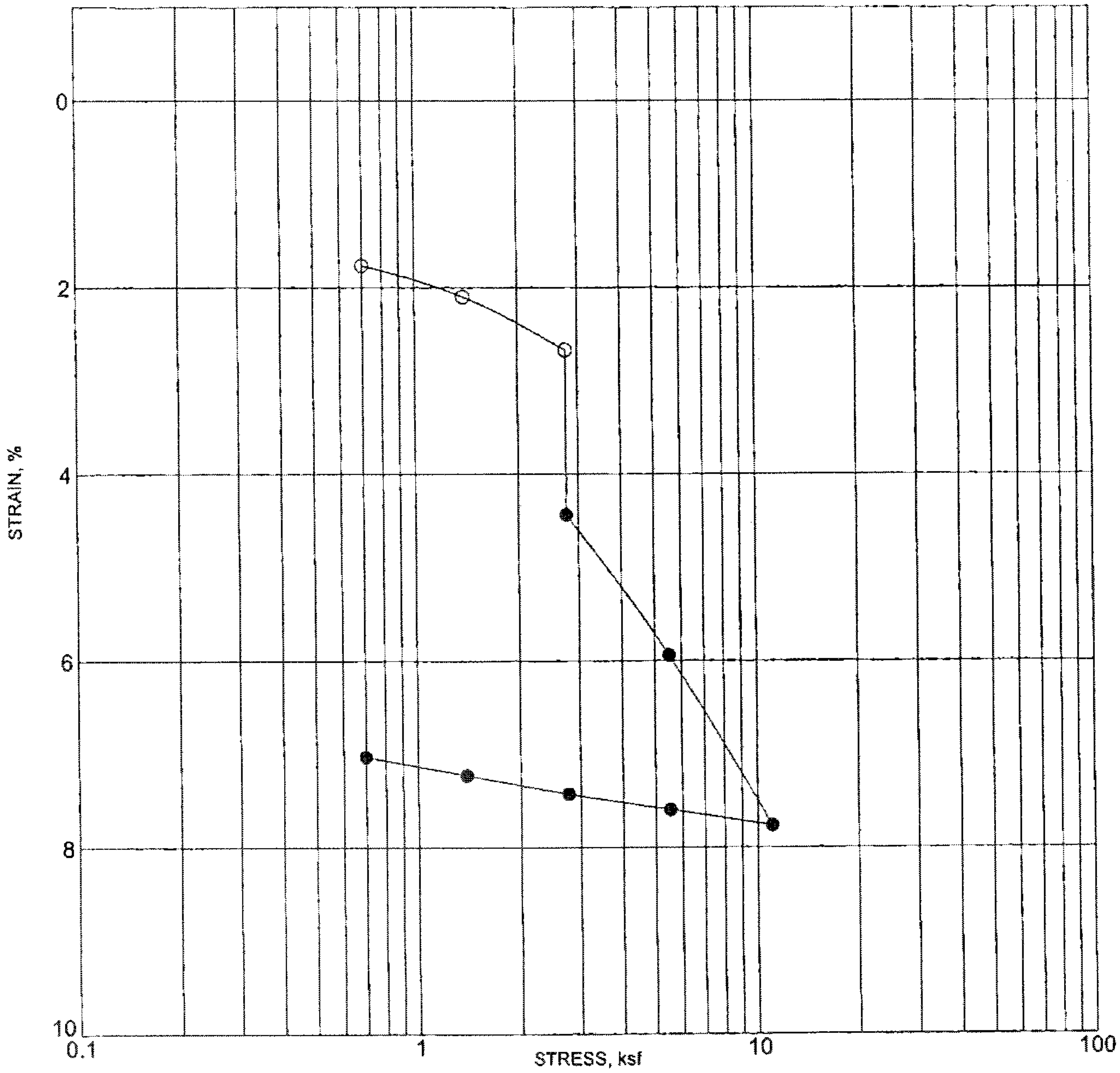
NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	B-4a



BORING NO. :	BH-4	DEPTH (ft) :	10
DESCRIPTION :	SAND WITH SILT (SP-SM)		

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	4.7	111.3		
FINAL	17.6	111.3		

NOTE: SOLID CIRCLES INDICATE READINGS AFTER ADDITION OF WATER

CONSOLIDATION TEST RESULTS

Converse Consultants

Project Name
ROSEMEAD PARK AQUATIC CENTER
9155 MISSION DRIVE
ROSEMEAD, CALIFORNIA

Project No.	Drawing No.
10-31-284-01	B-4b

APPENDIX C

LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

APPENDIX C

LIQUEFACTION/SEISMIC SETTLEMENT ANALYSIS

The subsurface data obtained from exploratory borings were used to evaluate the liquefaction/seismic settlement potential of the area. The Logs of Borings are presented in Appendix A, *Field Exploration*.

Liquefaction is the sudden decrease in the strength of cohesionless soils due to dynamic or cyclic shaking. Saturated soils behave temporarily as a viscous fluid (liquefaction) and, consequently, lose their capacity to support the structures founded on them. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of shaking increase. Liquefaction potential has been found to be the greatest where the groundwater level and loose sands occur within 50 feet of the ground surface.

Groundwater was encountered at 13 feet in the borings to a maximum explored depth of 51.5 feet below ground surface. The historic highest ground water level is less than 5 feet below ground surface. The groundwater of 3 feet below ground surface was used for liquefaction analysis.

The referenced standards for determining liquefaction potential are included in the *2008 Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California*, *Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Liquefaction Hazards in California*, dated March 1999, and *2007 California Building Code*. They are as follows:

1. Where estimated past, present, and future groundwater levels are greater than 50 feet below grade or 20 feet below the bottom of any proposed foundations, whichever is deeper, the site should excluded from the threat of liquefaction.
2. Bedrock encountered at the site shall not be susceptible to liquefaction.
3. When corrected Standard Penetration Test (SPT) or converted California modified split spoon blow counts $(N_1)_{60}$, are greater than 30, or corrected cone penetration test tip resistance (q_{c1N}) are greater than or equal to 160 tons per square foot, those layers shall not be considered susceptible to liquefaction.
4. In soils where the Plasticity Index (PI) is less than 12 and the moisture content is greater than 85 percent of the liquid limit, or in sensitive soils where the PI is greater than 18, seismically induced deformation during liquefaction may occur.
5. When calculating liquefiable layers, the factor of safety against liquefaction shall be taken as greater than or equal to 1.30.

6. The "Chinese Criteria" and grain size is no longer an acceptable indicator of liquefaction potential.

Although site specific exploration did not encounter groundwater to a depth of 51.5 feet bgs, historic high groundwater levels for the subject site presented in the Seismic Hazard Evaluation Report for the El Monte 7.5-minute Quadrangle (1999) indicate groundwater levels at approximately 30 feet. Based on 2007 California Building Code, the peak ground acceleration is defined as $S_{DS}/2.5$. In this case, peak ground acceleration of 0.494g is to be used for liquefaction analysis. Based on Seismic Hazard Evaluation Report for the El Monte 7.5-minute Quadrangle (1999), the earthquake magnitude of 7.0 is used for liquefaction analysis.

The liquefaction potential and seismic settlement analyses were performed utilizing SPT data obtained from BH-1 for the upper 50 feet. The analysis was performed in accordance with the method published by Southern California Earthquake Center (March 1999) using *LiquefyPro,* Version 5.8d, 2009, by Civil Tech Software.

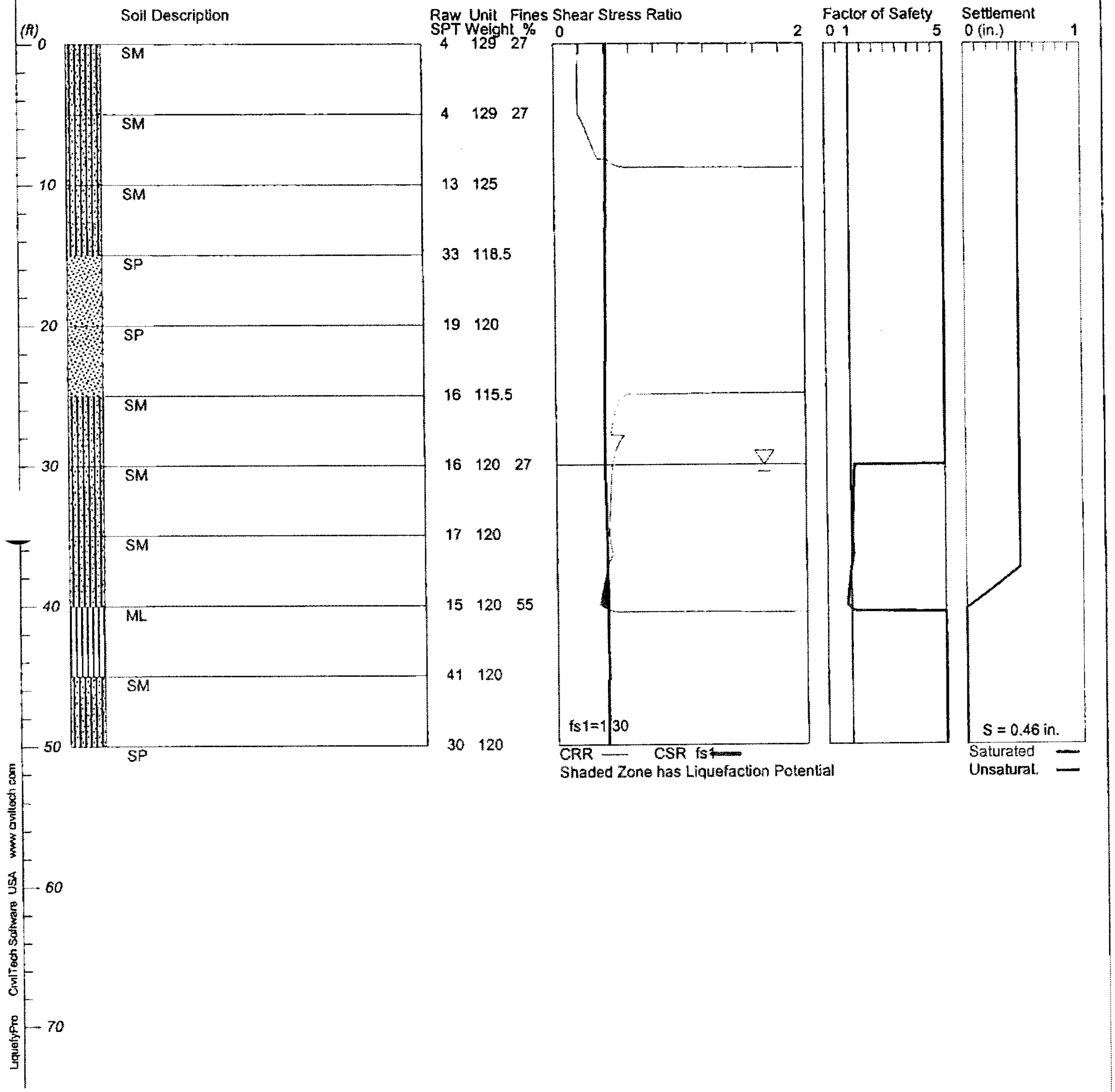
Based on our analyses, a thin soil layer in boring location BH-1 is prone to liquefaction assuming groundwater present at 30 feet below ground. The potential liquefaction induced settlement, as analyzed in Boring BH-1, is estimated to be 0.45 inch with a potential differential dynamic settlement of 0.3 inch. The planned aquatic center improvements should be designed considering the seismically-induced settlement.

LIQUEFACTION ANALYSIS

Rosemead Park Aquatic Center

Hole No.=BH-1 Water Depth=30 ft

Magnitude=7
Acceleration=0.494g



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*************************************************************************************
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                                              LIQUEFACTION ANALYSIS SUMMARY

                                             Copyright by CivilTech Software
                                                www.civiltechsoftware.com

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        Licensed to ,   9/2/2010        4:58:00 PM

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Documents\0-Reports\10-31-281-01 Rosemead Park Aquatic Center\Analyses\BH-1.liq
        Title:  Rosemead Park Aquatic Center
        Subtitle:  10-31-284-01

        Surface Elev.=
        Hole No.=BH-1
        Depth of Hole= 50.00 ft
        Water Table during Earthquake= 30.00 ft
        Water Table during In-Situ Testing= 50.00 ft
        Max. Acceleration= 0.49 g
        Earthquake Magnitude= 7.00

 Input Data:
        Surface Elev.=
        Hole No.=BH-1
        Depth of Hole=50.00 ft
        Water Table during Earthquake= 30.00 ft
        Water Table during In-Situ Testing= 50.00 ft
        Max. Acceleration=0.49 g
        Earthquake Magnitude=7.00
        No-Liquefiable Soils:   CL, OL are Non-Liq. Soil

        1. SPT or BPT Calculation.
        2. Settlement Analysis Method: Tokimatsu/Seed
        3. Fines Correction for Liquefaction: Idriss/Seed
        4. Fine Correction for Settlement: Post Liquefaction
        5. Settlement Calculation in: Liq. zone only
        6. Hammer Energy Ratio,                                 Ce = 1.3
        7. Borehole Diameter,                                       Cb= 1.15
        8. Sampling Method,                                        Cs= 1.2
        9. User request factor of safety (apply to CSR) ,   User= 1.3
           Plot one CSR curve (fs1=User)
        10. Use Curve Smoothing: Yes*
        * Recommended Options

        In-Situ Test Data:
        Depth   SPT     gamma   Fines
        ft              pcf     %
        ______________________________
        0.00    4.00    129.00  27.00
        5.00    4.00    129.00  27.00
        10.00   13.00   125.00  27.00
        15.00   33.00   118.50  27.00
        20.00   19.00   120.00  27.00
        25.00   16.00   115.50  27.00
        30.00   16.00   120.00  27.00
        35.00   17.00   120.00  27.00
        40.00   15.00   120.00  55.00
```

```
        45.00    41.00    120.00   55.00
        50.00    30.00    120.00   55.00
        _______________________________________

Output Results:
        Settlement of Saturated Sands=0.46 in.
        Settlement of Unsaturated Sands=0.00 in.
        Total Settlement of Saturated and Unsaturated Sands=0.46 in.
        Differential Settlement=0.231 to 0.304 in.

        Depth    CRRm     CSRfs    F.S.     S_sat.   S_dry    S_all
        ft                                  in.      in.      in.
        _______________________________________________________________
        0.00     0.19     0.42     5.00     0.46     0.00     0.46
        0.50     0.19     0.42     5.00     0.46     0.00     0.46
        1.00     0.19     0.42     5.00     0.46     0.00     0.46
        1.50     0.19     0.42     5.00     0.46     0.00     0.46
        2.00     0.19     0.42     5.00     0.46     0.00     0.46
        2.50     0.19     0.41     5.00     0.46     0.00     0.46
        3.00     0.19     0.41     5.00     0.46     0.00     0.46
        3.50     0.19     0.41     5.00     0.46     0.00     0.46
        4.00     0.19     0.41     5.00     0.46     0.00     0.46
        4.50     0.19     0.41     5.00     0.46     0.00     0.46
        5.00     0.19     0.41     5.00     0.46     0.00     0.46
        5.50     0.22     0.41     5.00     0.46     0.00     0.46
        6.00     0.25     0.41     5.00     0.46     0.00     0.46
        6.50     0.27     0.41     5.00     0.46     0.00     0.46
        7.00     0.29     0.41     5.00     0.46     0.00     0.46
        7.50     0.31     0.41     5.00     0.46     0.00     0.46
        8.00     0.34     0.41     5.00     0.46     0.00     0.46
        8.50     0.46     0.41     5.00     0.46     0.00     0.46
        9.00     2.39     0.41     5.00     0.46     0.00     0.46
        9.50     2.39     0.41     5.00     0.46     0.00     0.46
        10.00    2.39     0.41     5.00     0.46     0.00     0.46
        10.50    2.39     0.41     5.00     0.46     0.00     0.46
        11.00    2.39     0.41     5.00     0.46     0.00     0.46
        11.50    2.39     0.41     5.00     0.46     0.00     0.46
        12.00    2.39     0.41     5.00     0.46     0.00     0.46
        12.50    2.39     0.41     5.00     0.46     0.00     0.46
        13.00    2.39     0.40     5.00     0.46     0.00     0.46
        13.50    2.39     0.40     5.00     0.46     0.00     0.46
        14.00    2.39     0.40     5.00     0.46     0.00     0.46
        14.50    2.39     0.40     5.00     0.46     0.00     0.46
        15.00    2.39     0.40     5.00     0.46     0.00     0.46
        15.50    2.39     0.40     5.00     0.46     0.00     0.46
        16.00    2.39     0.40     5.00     0.46     0.00     0.46
        16.50    2.39     0.40     5.00     0.46     0.00     0.46
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        17.50    2.39     0.40     5.00     0.46     0.00     0.46
        18.00    2.39     0.40     5.00     0.46     0.00     0.46
        18.50    2.39     0.40     5.00     0.46     0.00     0.46
        19.00    2.39     0.40     5.00     0.46     0.00     0.46
        19.50    2.39     0.40     5.00     0.46     0.00     0.46
        20.00    2.39     0.40     5.00     0.46     0.00     0.46
        20.50    2.39     0.40     5.00     0.46     0.00     0.46
        21.00    2.39     0.40     5.00     0.46     0.00     0.46
        21.50    2.39     0.40     5.00     0.46     0.00     0.46
        22.00    2.39     0.40     5.00     0.46     0.00     0.46
        22.50    2.39     0.40     5.00     0.46     0.00     0.46
        23.00    2.39     0.40     5.00     0.46     0.00     0.46
        23.50    2.39     0.39     5.00     0.46     0.00     0.46
        24.00    2.39     0.39     5.00     0.46     0.00     0.46
        24.50    2.39     0.39     5.00     0.46     0.00     0.46
```

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   25.00    0.56     0.39     5.00     0.46     0.00     0.46
   25.50    0.51     0.39     5.00     0.46     0.00     0.46
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   26.50    0.47     0.39     5.00     0.46     0.00     0.46
   27.00    0.46     0.39     5.00     0.46     0.00     0.46
   27.50    0.44     0.39     5.00     0.46     0.00     0.46
   28.00    0.54     0.39     5.00     0.46     0.00     0.46
   28.50    0.50     0.39     5.00     0.46     0.00     0.46
   29.00    0.48     0.39     5.00     0.46     0.00     0.46
   29.50    0.46     0.39     5.00     0.46     0.00     0.46
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   30.50    0.44     0.39     1.14     0.46     0.00     0.46
   31.00    0.44     0.39     1.13     0.46     0.00     0.46
   31.50    0.44     0.39     1.12     0.46     0.00     0.46
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   32.50    0.43     0.39     1.09     0.46     0.00     0.46
   33.00    0.43     0.40     1.08     0.46     0.00     0.46
   33.50    0.43     0.40     1.07     0.46     0.00     0.46
   34.00    0.42     0.40     1.06     0.46     0.00     0.46
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   37.00    0.42     0.40     1.04     0.46     0.00     0.46
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   38.00    0.39     0.40     0.96*    0.38     0.00     0.38
   38.50    0.37     0.40     0.92*    0.30     0.00     0.30
   39.00    0.36     0.41     0.89*    0.22     0.00     0.22
   39.50    0.35     0.41     0.86*    0.14     0.00     0.14
   40.00    0.34     0.41     0.84*    0.05     0.00     0.05
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   47.00    2.15     0.41     5.00     0.00     0.00     0.00
   47.50    2.14     0.41     5.00     0.00     0.00     0.00
   48.00    2.14     0.40     5.00     0.00     0.00     0.00
   48.50    2.13     0.40     5.00     0.00     0.00     0.00
   49.00    2.13     0.40     5.00     0.00     0.00     0.00
   49.50    2.12     0.40     5.00     0.00     0.00     0.00
   50.00    2.12     0.40     5.00     0.00     0.00     0.00
   ----------------------------------------------------------
   * F.S.<1, Liquefaction Potential Zone
   (F.S. is limited to 5,  CRR is limited to 2,    CSR is limited to 2)

   Units:  Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight =
pcf; Depth = ft; Settlement = in.

------------------------------------------------------------------------------
   1 atm (atmosphere) = 1 tsf (ton/ft2)
   CRRm           Cyclic resistance ratio from soils
   CSRsf          Cyclic stress ratio induced by a given earthquake (with user
request factor of safety)
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F.S.            Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat           Settlement from saturated sands
S_dry           Settlement from Unsaturated Sands
S_all           Total Settlement from Saturated and Unsaturated Sands
NoLiq           No-Liquefy Soils
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APPENDIX D

EARTHWORK SPECIFICATIONS

APPENDIX D

EARTHWORK SPECIFICATIONS

D1.1 Scope of Work

The work includes all labor, supplies and construction equipment required to construct the building pads in a good, workmanlike manner, as shown on the drawings and herein specified. The major items of work covered in this section include the following:

- Site Inspection
- Authority of Geotechnical Engineer
- Site Clearing
- Excavations
- Preparation of Fill Areas
- Placement and Compaction of Fill
- Observation and Testing

D1.2 Site Inspection

1. The Contractor shall carefully examine the site and make all inspections necessary, in order to determine the full extent of the work required to make the completed work conform to the drawings and specifications. The Contractor shall satisfy himself as to the nature and location of the work, ground surface and the characteristics of equipment and facilities needed prior to and during prosecution of the work. The Contractor shall satisfy himself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered. Any inaccuracies or discrepancies between the actual field conditions and the drawings, or between the drawings and specifications must be brought to the Owner's attention in order to clarify the exact nature of the work to be performed.

2. This *Geotechnical Study Report* by Converse Consultants may be used as a reference to the surface and subsurface conditions on this project. The information presented in this report is intended for use in preliminary design and is subject to confirmation of the conditions encountered during construction. The exploration logs and related information depict subsurface conditions only at the particular time and location designated on the boring logs. Subsurface conditions at other locations may differ from conditions encountered at the exploration locations. In addition, the passage of time may result in a change in subsurface conditions at the exploration locations. Any review of this information

shall not relieve the Contractor from performing such independent study and evaluation to satisfy himself as to the nature of the surface and subsurface conditions to be encountered and the procedures to be used in performing his work.

D1.3 Authority of the Geotechnical Engineer

1. The Geotechnical Engineer will observe the placement of compacted fill and will take sufficient tests to evaluate the uniformity and degree of compaction of filled ground.
2. As the Owner's representative, the Geotechnical Engineer will (a) have the authority to cause the removal and replacement of loose, soft, disturbed and other unsatisfactory soils and uncontrolled fill; (b) have the authority to approve the preparation of native ground to receive fill material; and (c) have the authority to approve or reject soils proposed for use in building areas.
3. The Civil Engineer and/or Owner will decide all questions regarding (a) the interpretation of the drawings and specifications, (b) the acceptable fulfillment of the contract on the part of the Contractor and (c) the matters of compensation.

D1.4 Site Clearing

1. Clearing and grubbing shall consist of the removal of all existing structures, pavement, utilities, vegetation and demolition debris from areas to be graded.
2. Organic and inorganic materials resulting from the clearing and grubbing operations shall be hauled away from the areas to be graded.

D1.5 Excavations

1. Based on observations made during our field explorations, the surficial soils can be excavated with conventional earthwork equipment in good working order.

D1.6 Preparation of Fill Areas

1. All organic material, organic soils, undocumented fill soils and demolition debris should be removed from the proposed building areas.
2. Existing topsoil and undocumented fill is not considered suitable for supporting structures or additional fill. Over-excavation should include the depth of topsoil and undocumented fill, with a minimum depth of 5 feet from existing grade or the depths to the undocumented fill, whichever is deeper, and extended to five (5) feet beyond the bathhouse building limits where permitted by property line constraints. The swimming pool should be over-excavated to a depth of at least 2 feet below the bottom of the pool shell. All loose, soft or disturbed earth

materials should be removed from the bottom of excavations before placing structural fill. The actual depth of removal should be evaluated based on observations made during grading. Thickness of compacted fill underneath the buildings should be kept uniform. After the required removals have been made, the exposed native earth materials shall be excavated to provide a zone of structural fill for the support of footings, slabs-on-grade, and exterior flatwork. The fill thickness under structures should not vary.

3. The subgrade in all areas to receive fill shall be scarified to a minimum depth of six (6) inches, the soil moisture adjusted between optimum and three (3) percent above optimum for fine-grained soils and within three (3) percent of optimum moisture content for granular soils, and then compacted to at least 90 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. Scarification may be terminated on moderately hard to hard, cemented earth materials with the approval of the Geotechnical Engineer.
4. Compacted fill may be placed on native soils that have been properly scarified and recompacted as discussed above.
5. All areas to receive compacted fill will be observed and approved by the Geotechnical Engineer before the placement of fill.

D1.7 Placement and Compaction of Fill

1. Compacted fill placed for the support of footings, slabs-on-grade, exterior concrete flatwork, and driveways will be considered structural fill. Structural fill may consist of approved on-site soils or imported fill that meets the criteria indicated below.
2. Fill consisting of selected on-site earth materials or imported soils approved by the Geotechnical Engineer shall be placed in layers on approved earth materials. Soils used as compacted structural fill shall have the following characteristics:
   a. All fill soil particles shall not exceed three (3) inches in nominal size, and shall be free of organic matter and miscellaneous inorganic debris and inert rubble.
   b. Imported fill materials shall have an Expansion Index (EI) less than 20. All imported fill should be compacted to at least 90 percent of the laboratory maximum dry density (ASTM Standard D1557) at about three (3) percent above optimum moisture for fine grained soils, and within three (3) percent of optimum for granular soils.
3. Fill soils shall be evenly spread in maximum 8-inch lifts, watered or dried as necessary, mixed and compacted to at least the density specified below. The fill shall be placed and compacted on a horizontal plane, unless otherwise approved by the Geotechnical Engineer.

4. All fill placed at the site shall be compacted to at least 90 percent of the laboratory maximum dry density as determined by ASTM Standard D1557 test method. The on-site soils shall be moisture conditioned within three (3) percent above the optimum moisture content. At least the upper 12 inches of subgrade soils underneath the concrete apron, pavement and parking areas should be compacted to a minimum of 95 percent relative compaction.
5. Fill exceeding five (5) feet in height shall not be placed on native slopes that are steeper than 5:1 horizontal:vertical (H:V). Where native slopes are steeper than 5:1 H:V, and the height of the fill is greater than five (5) feet, the fill shall be benched into competent materials. The height and width of the benches shall be at least two (2) feet.
6. Representative samples of materials being used, as compacted fill will be analyzed in the laboratory by the Geotechnical Engineer to obtain information on their physical properties. Maximum laboratory density of each soil type used in the compacted fill will be determined by the ASTM Standard D1557 compaction method.
7. Fill materials shall not be placed, spread or compacted during unfavorable weather conditions. When site grading is interrupted by heavy rain, filling operations shall not resume until the Geotechnical Engineer approves the moisture and density conditions of the previously placed fill.
8. It shall be the Grading Contractor's obligation to take all measures deemed necessary during grading to provide erosion control devices in order to protect slope areas and adjacent properties from storm damage and flood hazard originating on this project. It shall be the contractor's responsibility to maintain slopes in their as-graded form until all slopes are in satisfactory compliance with job specifications, all berms have been properly constructed, and all associated drainage devices meet the requirements of the Civil Engineer.

D1.8 Trench Backfill

The following specifications are recommended to provide a basis for quality control during the placement of trench backfill.

1. Trench excavations to receive backfill shall be free of trash, debris or other unsatisfactory materials at the time of backfill placement.
2. Trench backfill shall be compacted to a minimum relative compaction of 90 percent as per ASTM Standard D1557 test method.
3. Rocks larger than one (1) inch should not be placed within 12 inches of the top of the pipeline or within the upper 12 inches of pavement or structure subgrade. No more than 30 percent of the backfill volume shall be larger than 3/4-inch in largest dimension diameter, and rocks shall be well mixed with finer soil.

4. The pipe design engineer should select bedding material for the pipe. Bedding materials generally should have a Sand Equivalent (SE) greater than or equal to 30, as determined by the ASTM Standard D2419 test method.
5. Trench backfill shall be compacted by mechanical methods, such as sheepsfoot, vibrating or pneumatic rollers, or mechanical tampers, to achieve the density specified herein. The backfill materials shall be brought to within three (3) percent of optimum moisture content for granular soils and between optimum and three (3) percent above optimum for fine-grained soils, then placed in horizontal layers. The thickness of uncompacted layers should not exceed eight (8) inches. Each layer shall be evenly spread, moistened or dried as necessary, and then tamped or rolled until the specified density has been achieved.
6. The contractor shall select the equipment and processes to be used to achieve the specified density without damage to adjacent ground and completed work.
7. The field density of the compacted soil shall be measured by the ASTM Standard D1556 or ASTM Standard D2922 test methods or equivalent.
8. Observation and field tests should be performed by Converse during construction to confirm that the required degree of compaction has been obtained. Where compaction is less than that specified, additional compactive effort shall be made with adjustment of the moisture content as necessary, until the specified compaction is obtained.
9. It should be the responsibility of the Contractor to maintain safe conditions during cut and/or fill operations.
10. Trench backfill shall not be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until field tests by the project's geotechnical consultant indicate that the moisture content and density of the fill are as previously specified.

D1.9 Observation and Testing

1. During the progress of grading, the Geotechnical Engineer will provide observation of the fill placement operations.
2. Field density tests will be made during grading to provide an opinion on the degree of compaction being obtained by the contractor. Where compaction of less than specified herein is indicated, additional compactive effort with adjustment of the moisture content shall be made as necessary, until the required degree of compaction is obtained.
3. A sufficient number of field density tests will be performed to provide an opinion to the degree of compaction achieved. In general, density tests will be performed on each one-foot lift of fill, but not less than one for each 500 cubic yards of fill placed.

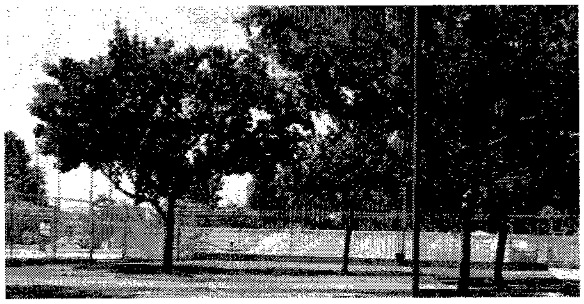
WALLACE LABORATORIES, LLC
365 Coral Circle
El Segundo, CA 90245
phone (310) 615-0116 fax (310) 640-6863

August 16, 2010

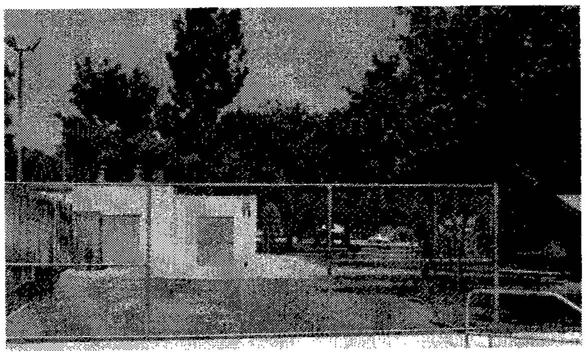
idg3@earthlink.net
Integrated Design Group, LLP
Douglas V. Diggs
226 West Sixth Street
Ontario, CA 91762

RE: Rosemead Aquatic Park, 9155 E. Mission Dr., Rosemead, 91770
Site visit on August 12, 2010
Soil Management Report

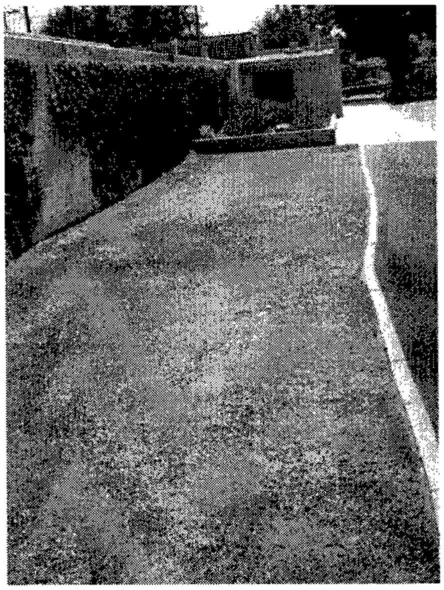
Dear Doug,



Test area viewed facing west



Test area viewed facing north



West side of the aquatic center

The future planting area on the east side of the aquatic center was evaluated. The area is currently covered with uniform, dark green turf.

The west side was not tested. The turf has multiple brown spots. Irrigation coverage may not be uniform or the soil may not readily accept irrigation water due to insufficient water infiltration. A turf area on the east side of the aquatic center had a low spot which was flooded on the day of the site visit.

The soil on the east side of the aquatic center was sampled from the top 2 feet, a composite sample was made between grade to 2 feet for agricultural soil suitability analysis.

The top 5 inches is a sandy loam soil which differs from the soil in the deeper profile. The top 5 inches is clean, devoid of rocks and fine pieces of asphalt. The soil below 5 inches contains 3-inch minus rock and pieces of ground asphalt about 3/8 inch in diameter.

The soil is calcareous meaning that it contains calcium carbonate or limestone. Limestone induces iron deficiency in acidic loving plants such as roses. Most of California's native plants are tolerant of the presence of limestone. Iron deficiency is correctable with the addition of chelated iron. The soil pH is alkaline at 7.75.

Salinity is low at 0.51 millimho/cm. About half of the soluble salts are due to sodium. SAR (sodium adsorption ratio) is safe at 2.2. High amounts of sodium disperse soil and restricted the rate of water infiltration. Dispersed soil has small pores which are not effective for conveying water through the soil profile. Dispersed soils also crust on the surface limiting water infiltration. Sodium excess is correctible with the addition of gypsum followed with irrigation to leach sodium through the soil profile.

Nitrogen is low. Phosphorus and potassium are modest. Iron, manganese, zinc, copper and boron are sufficient. Sulfur is low.

Soil organic matter is low at 0.92% on a dry weight basis. The quality of the soil organic matter is good. The carbon:nitrogen ratio is 7.7. Soil organic matter flocculates soil particles forming water stable aggregates or crumbs. Soil crumbs provide tilth and porosity. The space between the crumbs is larger than the space between the primary unaggregated particles. The large sized pores transmit water through the soil profile and readily fill with air afterwards. Air-filled pores supply air and oxygen for active root functions. Unlike photosynthetic leaves, roots require oxygen and do not produce oxygen.

The soil texture is sandy loam. Based on the non-gravel fraction, it contains 73.9% sand, 17.8% silt and 8.3% clay. The gravel fraction is 14.6%. The presence of gravel and rock is undesirable. Gravel and rock block root growth. Gravel and rock are not permeable. The path of travel of roots, drainage and air exchange is increased and is tortuous and circuitous in the presence of large amounts of gravel and rock.

The rate of water percolation based on Soil Water Characteristics version 6.02.74 model developed by Keith Saxton of the USDA estimates the rate of water percolation at 1.87 inches per hour for the current soil conditions. The model is based on the soil texture (sand, silt and clay content), percent of gravel and soil organic matter. This rate is for normal soil compaction. Dense, compacted soil reduces the size of the soil pores and hinders water percolation and air exchange. The program is available at http://hydrolab.arsusda.gov/soilwater/Index.htm.

Recommendations

CLEANUP Clean up the planters and remove the existing vegetation and major roots larger than about 1 inch in diameter. Buried vegetation and buried roots readily decompose and frequently become putrid. Protect the existing roots of trees which are to remain in the current planting areas. Remove the turf and thatch layer of the turf. Remove any pockets of gravel, rocks, asphalt, debris, etc.

TILLAGE Cultivate the soil at least 12 inches deep on 12 inch centers. Reduce soil clods to a maximum diameter of 1 inch in the top 6 inches. Do not till muddy soils, they are not friable. Optimum moisture content is partially damp. The moisture content should not be so great that excessive compaction will occur, nor so dry that clods will not break readily. Remove rocks, gravel, debris and clods larger than 1 inch in diameter from the top 6 inches. Lower the gravel content to a maximum of 20% if high.

APPLICATION OF AMENDMENTS AND FERTILIZERS.

Uniformly broadcast the following materials.
The rates are per 1,000 square feet:

Ammonium sulfate (21-0-0) - 5 pounds
Potassium sulfate (0-0-50) - 8 pounds
Triple superphosphate (0-45-0) - 4 pounds
Gypsum - 15 pounds
Organic amendment - 3 cubic yards, sufficient amount to provide soil organic matter in the range of 4% to 7% on a dry weight basis

Homogeneously incorporate the above materials into the soil to a depth of six inches. The soil organic matter needs to be stable in order to avoid excessive decomposition. Fine rake the soils after soil preparation and remove gravel larger than 3/8 inches in diameter from the top several inches.

After the preparation of the soil, test the quality of the amended soil for suitability prior to seeding and planting.

TRANSPLANTING Prepare planting pits normally twice as wide as the rootballs. The walls and bottom of the planting pits should not have compacted soil except under the rootball. If necessary, loosen glazed soil by scarifying the soil surface.

BACKFILL MIX Blend the following materials into clean excavated soil. Remove debris, rocks and foreign material. Soil clods should not exceed 1 inch in diameter.

Remove rocks, gravel, debris and clods larger than 1 inch in diameter. Excessive gravel should not be present. The general maximum is 20%. Rates are per cubic yard:

Ammonium sulfate (21-0-0) - 1/4 pound
Potassium sulfate (0-0-50) - 1/3 pound
Triple superphosphate (0-45-0) - 1/4 pound
Gypsum - 1 pound
Organic amendment - 15% by volume, sufficient amount to provide soil organic matter in the range of 4% to 7% on a dry weight basis

Backfill the transplant with the prepared soil. The root flare needs to be slightly above grade. If a basin is used, it should be used temporarily. Standing water at the base of the trunk is undesirable.

ORGANIC AMENDMENT

1. Humus material shall have an ash content of no less than 6% and no more than 20%. Organic matter shall be at least 50% on a dry weight basis.
2. The pH of the material shall be between 6 and 7.5.
3. The salt content shall be less than 10 millimho/cm @ 25° C. (ECe less than 10) on a saturated paste extract.
4. Boron content of the saturated extract shall be less than 1.0 parts per million.
5. Silicon content (acid-insoluble ash) shall be less than 50%.
6. Calcium carbonate shall not be present if to be applied on alkaline soils.
7. Types of acceptable products are composts, manures, mushroom composts, straw, alfalfa, peat mosses etc. low in salts, low in heavy metals, free from weed seeds, free of pathogens and other deleterious materials.
8. Composted wood products are conditionally acceptable [stable humus must be present]. Wood based products are not acceptable which are based on red wood or cedar.
9. Sludge-based materials are not acceptable.
10. Carbon:nitrogen ratio is less than 25:1.
11. The compost shall be aerobic without malodorous presence of decomposition products.
12. The maximum particle size shall be 0.5 inch, 80% or more shall pass a No. 4 screen.

Maximum total permissible pollutant concentrations in amendment in parts per million on a dry weight basis:

arsenic	20	copper	150	selenium	30
cadmium	15	lead	100	silver	10
chromium	100	mercury	10	vanadium	200
cobalt	50	molybdenum	20	zinc	200
		nickel	100		

General maintenance fertilization

Nitrogen is routinely needed since it leaches. The frequency of application will depend on the soil type, rate of plant growth, amount of irrigation, water quality, type of soil amendments used for soil preparation, etc.

For alkaline soils, the general guideline is ammonium sulfate (21-0-0) at 5 pounds per 1,000 square feet every several months as required. This will acidify the soil.

Since potassium and phosphorus do not readily leach, the frequency of application for these two nutrients is generally very low. For actual determination of the nutrient requirements, soil and perhaps tissue testing is required. If NPK are needed, apply Yara's Turf Royale (21-7-14) at 5 pounds per 1,000 square feet.

Micronutrients should not be applied unless both soil and tissue indicate the need except for iron deficiency in acid-loving plants. Correct iron deficiency if it develops with Becker Underwood Sprint 138 Fe or other FeEDDHA chelated iron.

Sincerely,

Garn A. Wallace, Ph. D.
GAW:n

Converse Consultants

Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

Asbestos and Lead Based Paint Survey Report

Rosemead Park Aquatic Center Building
9155 E. Mission Drive
Rosemead, California

PREPARED FOR

City of Rosemead
8838 East Valley Boulevard
Rosemead, California 91770

Converse Project No. 10-41-209-01

August 6, 2010

Converse Consultants
Geotechnical Engineering, Environmental & Groundwater Science, Inspection & Testing Services

August 6, 2010

Mr. Rafael Fajardo
Associate Civil Engineer
City of Rosemead
8838 East Valley Boulevard
Rosemead, California 91770

Subject: **Asbestos and Lead Based Paint Survey Report**
Rosemead Park Aquatic Center Building
9155 E. Mission Drive
Rosemead, California
Converse Project No. 10-41-209-01

Mr. Fajardo:

Attached is a copy of the Asbestos and Lead-Based Paint Survey report for the referenced property.

We appreciate the opportunity to be of service to you. If you should have any questions or comments regarding the contents of this report please contact either George Paler at (626) 930-1258 or Norman Eke at (626) 930-1260.

Sincerely,

CONVERSE CONSULTANTS

George Paler
Certified Asbestos Consultant #93-1136
DHS Lead Inspector/Assessor, #I-1487

Norman S. Eke
Managing Officer

Dist: 2/Addressee

Table of Contents

Definitions

Asbestos-Containing Material (ACM): The United States Environmental Protection Agency (EPA) has defined ACM to be any substance containing more than one percent (1%) or more asbestos by weight.

Asbestos-Containing Construction Material (ACCM): The California Environmental Protection Agency (Cal/EPA) defines an ACCM as any substance containing more than one-tenth of one prevent (0.1%) asbestos by weight.

Lead-Based Paint (LBP): The Los Angeles County Department of Health Services (DHS) has defined a LBP as containing a lead concentration greater than 0.7 milligrams per centimeter squared (mg/cm^2); 600 parts per million; or 0.06 percent by weight.

Lead-Containing Material (LCM): A non-painted material typically made of ceramic that contains a concentration of lead greater than the Los Angeles County DHS defined concentration of 0.7 mg /cm^2, 600 parts per million, or 0.06 percent by weight.

Executive Summary

This report presents the results of the Converse Consultants' (Converse) Asbestos and Lead-Based Paint (LBP) survey conducted at the existing Rosemead Park Aquatic Center Building located at 9155 E. Mission Drive in the City of Rosemead, Los Angeles County, California. The purpose of the survey was to evaluate suspect asbestos-containing materials (ACMs) and LBPs at the subject property.

The following is a summary of our report. Please refer to the appropriate sections of the report for complete conclusions and recommendations. In the event of a conflict between this summary and the report, or an omission in the summary, the report shall prevail.

The work was completed by environmental professionals and has been performed in accordance with our proposal dated July 22, 2010. Our work consisted of the following tasks:

- Performed a building survey of areas to observe areas of suspect ACMs and LBPs.
- Evaluation of the condition and homogeneity of suspect ACMs and LBPs.
- Collected bulk samples of suspected ACMs, and submitted to laboratory for analysis.
- Performed testing of suspect LBP and lead-containing materials (LCMs). Converse used a portable x-ray fluorescence device (XRF) (Niton XLp 300A/700A) to test the suspect materials.
- Prepared this report.

Converse completed the survey on Monday, July 26, 2010. Samples of suspect materials were submitted to a certified laboratory for analysis. Laboratory analysis detected asbestos in the following suspect material:

- Grey roof penetration mastic

In addition to the above material, Converse observed two 4-inch diameter asbestos cement (transite) vent pipes on the roof of the building. One vent pipe extends from the existing old boiler unit in the old Water Heater Room. The other vent pipe was observed on the upper portion of the roof over the Kitchen. Transite is a known asbestos-containing material and was therefore not sampled.

Converse's lead survey detected lead in concentrations greater than the Los Angeles County DHS definition of LBP (0.7 mg/m^3) in the following materials and painted surfaces:

- Brown interior paint on wood door, associated components, wood panel on the north side of the Lobby (Room 1), and wood panels on the south side of the Women's Check Room (Room 10)
- Blue interior paint on the sliding wood door and associated components on the east side of the Lobby (Room 1)
- White interior paint on the metal window frame in the Lobby Men's Restroom (Room 2)
- Blue interior paint on the wood and metal wall panels at the south side of the Entrance to the Women's Locker Room (Room 4)
- White interior paint on the upper wood window components on the north side of the Women's Locker Room (Room 5) and Men's Locker Room (Room 18)
- White interior paint on the wood ceiling beams in the Women's Locker Room (Room 5) and Men's Locker Room (Room 18)
- Yellow ceramic tile on the walls of the Northwest Women's Shower Room (Room 6) and Men's Shower Room (Room 19)
- Pink ceramic tile on the walls of the Women's Shower Room (Room 7)
- Brown ceramic tile on the walls of the Women's Shower Room (Room 7), Men's Shower Room (Room 19) and Men's Restroom (Room 20)
- Grey ceramic tile on the walls of the Women's Shower Room (Room 7)
- Blue interior paint on the metal door frames to the Storage Room west of the Women's Shower Room (Room 8) and Storage Room east of the Men's Locker Room (Room 17) and on the north side of the Entrance Hallway to the Women's Locker Room (Room 9)
- Blue interior paint on the wood window frames on the west side of the Entrance Hallway to the Women's Locker Room (Room 9), Entrance Hallway to the Men's Locker Room (Room 16) and entrance to the HVAC Room (Room 14)
- Blue interior paint on the wood doors and associated components on the west and north sides of the Entrance Hallway to the Women's Locker Room (Room 9), Women's Check Room (Room 10), Office (Room 11), and Entrance Hallway to the Men's Locker Room (Room 16)
- White paint on the interior wood window frame on the north side of the Office (Room 11)
- Blue exterior paint on the wood fascias of the building
- Brown exterior paint on metal and wood window components on the north side of the roof of the building
- Blue exterior paint on the wood gate frame of the Pool Chemical Storage Room (Room 23) at the east side of the building

Intact LCMs, such as the ceramic tile, or LBPs can remain in place. Should the LCMs or LBPs become damaged or peeling, Converse recommends that the damaged, peeling paint be stabilized or removed by a state-licensed lead based paint abatement contractor using approved wet methods and engineering controls, and trained and certified lead workers prior to the demolition of the buildings. The work must be performed in accordance with 8 CCR 1532.1 and Title 17 of the California Department of Health Services. The ceramic or paint chip debris should be characterized for lead content in order to determine appropriate disposal.

1.0 Purpose and Scope of Services

This report presents the results of the Converse asbestos and lead based paint survey conducted at the existing Rosemead Park Aquatic Center Building located at 9155 E. Mission Drive in the City of Rosemead, Los Angeles County, California. The purpose of the survey was to evaluate suspect ACMs, LCMs and LBPs at the subject property.

Our work was performed in accordance with our proposal dated July 22, 2010 and consisted of the following tasks:

- Performed a building survey of areas to observe areas of suspect ACMs and LBPs.
- Evaluation of the condition and homogeneity of suspect ACMs and LBPs.
- Collected bulk samples of suspected ACMs, and submitted to laboratory for analysis.
- Performed testing of suspect LBPs and LCMs. Converse used a portable x-ray fluorescence device (XRF) (Niton XLp 300A/700A) to test the suspect materials.
- Prepared this report.

The survey and report were completed by the following Converse employees:

- George Paler, Certified Asbestos Consultant (CAC), Certified Lead Inspector/Assessor
- William Ragsdale, Certified Lead Inspector/Assessor

2.0 Sampling Methodology

2.1 Asbestos

Prior to sampling, Converse visually surveyed the interior and exterior of the building for presumed asbestos-containing materials and homogeneous areas (areas that have uniform color, texture, and appearance). Suspect materials in the building were divided into friable and non-friable materials and placed in one of the following U. S. Environmental Protection Agency (EPA) categories:

- Surfacing Materials (sprayed or troweled-on materials)
- Thermal Systems Insulations (materials generally applied to various mechanical systems)
- Miscellaneous Materials (any materials which do not fit in the above categories)

Our sampling methodology followed the general guidelines for bulk asbestos sampling in schools and public buildings as presented in Section 40, Part 763 (AHERA) of the Code of Federal Regulations (CFR). Converse collected bulk samples of the following suspect materials.

- Roof core – brown felt shingle
- Roof core – grey rolled roofing felt
- Roof parapet core – grey rolled roofing
- Grey roof penetration mastic
- Window putty
- Smooth plaster ceiling with skim coat
- Smooth plaster walls with skim coat
- Drywall with joint compound ceiling and walls
- Heating, Ventilation and Air Conditioning (HVAC) duct jacket
- White suspect debris in attics

Converse collected a total of 34 bulk samples for asbestos analysis during our survey. The samples were logged on to a sample location map and chain-of-custody documentation and submitted to a State-certified laboratory for analysis. During our survey, Converse observed two 4-inch diameter transite vent pipes on the roof of the building. One vent pipe extends from the existing old boiler unit in the old Water Heater Room. The other vent pipe was observed on the upper portion of the roof over the Kitchen. Transite is a known asbestos-containing material and was therefore not sampled.

2.2 LBP

Prior to sampling, Converse visually surveyed the interior and exterior of the building for damaged (peeling) paint on building components. Painted surfaces were observed to be intact.

Converse collected XRF readings on the following suspect painted surfaces and building components:

- Interior walls, ceilings and beams
- Interior and exterior doors and components
- Ceramic plumbing fixtures
- Interior ceramic wall and floor tiles
- Interior concrete floor
- Interior and exterior windows and associated components
- Interior cabinets, counters, shelves and racks
- Interior and exterior doors and associated components
- Interior wood ceiling access hatches
- Interior dehumidifier and electrical panel
- Interior metal lockers
- Interior wood benches
- Exterior walls
- Exterior fascias
- Exterior roof eaves
- Exterior gates and posts

3.0 Discussion of Survey Results

3.1 Asbestos

The bulk asbestos samples collected on July 26, 2010 were submitted to Micron Environmental Labs (Micron) in El Monte, California. Micron is a State-certified laboratory for asbestos analysis. The asbestos samples were analyzed by polarized light microscopy (PLM) by EPA Test Method 600/R-93/116. The sample location map, analytical report and chain of custody documentation are provided in Appendix A.

Based on the analytical report, asbestos was detected in the grey roof penetration mastic. In addition, during our survey, Converse observed two (2) transite vent pipes extending through the roof of the building. Both ACMs are listed below:

Table 1 – Summary of ACMs

Building Material	Percent Asbestos	Approx. Area	Comments
Grey roof penetration mastic	5% Chrysotile	50 Square Feet	On the roof of the structure around the base of the roof vents. There are 17 metal roof vent pipes, 2 transite vents and 4 HVAC vents on the roof. The mastic was observed to be in good condition at the time of the survey.
4-inch diameter asbestos cement (transite) vent pipes	Assumed	2 vent pipes, approx. 20 lineal feet total	Two transite vent pipes were observed on the roof of the building. One vent pipe extends approximately 12 feet from the old boiler unit in the Old Water Heater Room through the roof of the building. The second transite vent pipe is located on the roof over the Kitchen and is estimated to extend approximately 8 feet down into the room. Both transite vent pipes were observed to be in good condition at the time of the survey.

Transite is a known ACM. Therefore samples of the vent pipes were not collected.

3.2 LBP

Converse collected XRF readings on suspect lead-painted surfaces and lead-containing materials. The Action Level for our survey was set at 0.7 mg/cm^2 (milligrams per square centimeter) of lead, in accordance with the Los Angeles County Department of Health Services definition for lead-based paint. Null readings were re-tested. Paint or glazing compounds that exceed 0.7 mg/kg are considered to be an LBP or an LCM.

Based on the XRF readings, the following materials are considered to be LBPs or LCMs:

Table 3 – Summary of LBPs and LCMs

Paint Color and Substrate	XRF Reading (mg/cm²)	Comments
Brown interior paint on wood door, associated components and wood panels	1.3 – 2.1	Lobby (Room 1) and Women's Check Room (Room 10). Wood doors, associated components and wood panels were observed on the north side of the Lobby and on the south side of the Women's Check Room. The paint was observed to be intact at the time of the survey.
Blue interior paint on the sliding wood door and associated components	1.7 – 2.4	Lobby (Room 1). On the east side of the Lobby. The paint was observed to be intact at the time of the survey.
White interior paint on the metal window frame	1.3	Lobby Men's Restroom (Room 2). Only one window in this room. The paint was observed to be intact at the time of the survey.
Blue interior paint on the wood and metal wall panels	1.6 – 1.9	Entrance to Women's Locker Room (Room 4). On the south side of room. The paint was observed to be intact at the time of the survey.
White interior paint on the upper wood window components	1.0 – 1.5	Women's Locker Room (Room 5) and Men's Locker Room (Room 18). Upper windows at the raised portion of the roof in both rooms. The paint was observed to be intact at the time of the survey.
White interior paint on the wood ceiling beams	1.4	Women's Locker Room (Room 5) and Men's Locker Room (Room 18). Located at the ceiling in both rooms. The paint was observed to be intact at the time of the survey.
Yellow ceramic tile on walls	1.7 – 9.0	Northwest Women's Shower Room (Room 6) and Men's Shower Room (Room 19). The material was observed to be intact at the time of the survey.
Pink ceramic tile on walls	9.1	Women's Shower Room (Room 7). The material was observed to be intact at the time of the survey.
Brown ceramic tile on walls	5.8 – 33.2	Women's Shower Room (Room 7), Men's Shower Room (Room 19), and Men's Restroom (Room 20). The material was observed to be intact at the time of the survey.
Grey ceramic tile on walls	3.2	Women's Shower Room (Room 7). The material was observed to be intact at the time of the survey.

Paint Color and Substrate	XRF Reading (mg/cm²)	Comments
Blue interior paint on metal door frames	2.0 – 2.7	Storage Room West of Women's Shower Room (Room 8), Storage Room East of Men's Shower Room (Room 17), and Entrance Hallway to Women's Locker Room (Room 9). Located at the entrance to the storage rooms and on the north side of the entrance hallway. The paint was observed to be intact at the time of the survey.
Blue interior paint on wood window frames	1.7	Women's Locker Room (Room 9), Entrance Hallway to the Men's Locker Room (Room 16) and entrance to the HVAC Room (Room 14). The paint was observed to be intact at the time of the survey.
Blue interior paint on wood doors and associated components	1.7 – 3.5	Entrance Hallway to the Women's Locker Room (Room 9), Women's Check Room (Room 10), Office (Room 11), and Entrance Hallway to the Men's Locker Room (Room 16). On west and north sides of the rooms. The paint was observed to be intact at the time of the survey.
White interior paint on wood window frame	2.3	Office (Room 11). Different type of window frame than those on the upper windows. The paint was observed to be intact at the time of the survey.
Blue exterior paint on wood fascias	1.0 – 1.1	Building Exterior. Around perimeter of the roof of the building. The paint was observed to be intact at the time of the survey.
Brown exterior paint on metal and wood window components	1.0 – 1.1	Building Exterior. Located on upper windows on the north side of the roof. The paint was observed to be intact at the time of the survey.
Blue exterior paint on the wood gate frame	2.0	Building Exterior. The gate to the Pool Chemical Storage Room (Room 23) at the east side of the building. The paint was observed to be intact at the time of the survey.

The other tested painted surfaces, compounds or components contained lead concentrations below 0.7 mg/cm² and are therefore non-LBPs or LCMs.

4.0 Conclusions and Recommendations

4.1 Asbestos

All ACMs, such as the transite vent pipes and grey roof penetration mastic, must be abated prior to renovation/remodeling or demolition activities that may disturb the ACMs. Asbestos abatement must be performed by a Cal-OSHA licensed asbestos abatement contractor using methods in accordance with 8 CCR 1529, and South Coast Air Quality Management District Rule 1403. All asbestos abatement workers must have current asbestos training documentation, current medical exams and releases, and current fit tests for the use of personal protective equipment (PPE). Following abatement, ACM waste may be disposed of as non-hazardous asbestos-containing waste provided that it is removed intact. If the ACM transite vent pipes are broken or damaged during abatement, then they must be disposed of as friable, asbestos-containing hazardous waste.

Converse further recommends that asbestos abatement procedures be monitored by an independent third party or consultant knowledgeable in asbestos abatement procedures.

4.2 LBP

Intact LBPs and LCMs can be maintained in place. Disturbance of lead-painted surfaces or lead-containing materials, including painting, must, at a minimum, be performed by personnel that have undergone 2 hours of lead awareness training.

Damaged (peeling) lead based paint is required to be stabilized prior to renovation/remodeling or demolition activities that may impact the LBPs and/or LCMs in order to minimize exposure to lead by workers and to avoid possible contamination from loose paint chips. Stabilization consists of the removal of loose and peeling LBP (typically by wet scraping) leaving a smooth surface. An encapsulating agent is then applied to the smooth surface to lock down the remaining LBP. Intact painted surfaces do not require stabilization prior to renovation/remodeling or demolition and can be disposed of as non-regulated waste (architectural debris).

Converse recommends that should the LBPs become damaged, the damaged paint be stabilized by a state-licensed lead based paint abatement contractor using approved wet methods and engineering controls, and trained and certified lead workers prior to the renovation/remodeling or demolition of the building. The work must be performed in accordance with 8 CCR 1532.1 and Title 17 of the California Department of Health Services. LBP waste must be characterized prior to disposal in order to determine whether the waste constitutes a hazardous waste or non-hazardous waste. LCMs that become damaged, such as the ceramic wall tile, may be patched and repaired by personnel with lead awareness training or be removed by a state-licensed lead abatement contractor. Waste generated by stabilization or abatement procedures must be characterized for lead contact in order to determine proper disposal methods.

Converse further recommends that lead paint stabilization or abatement procedures be monitored by an independent third party or consultant knowledgeable in lead abatement procedures and is a California DHS-Certified Lead Project Monitor.

5.0 Confidentiality and Limitations

This report has been prepared for the sole benefit and exclusive use of the City of Rosemead as it pertains to the Rosemead Park Aquatic Center building located at 9155 E. Mission Drive, Rosemead, California. Our services have been performed in accordance with generally accepted practices in the environmental sciences. No other warranty, either express or implied, is made.

Converse Consultants is not responsible or liable for any claims or damages associated with the accuracy or completeness of information provided by others. This report should not be regarded as a guarantee that further ACMs, LBPs, and LCMs beyond that which were or were not detected in our survey, are present at the property. In the event that changes in the nature of the property occur, or additional relevant information about the property is brought to our attention, the conclusions and recommendations contained in this letter report may not be valid unless these changes and additional relevant information are reviewed and the conclusions of this letter report are modified or verified in writing. Reliance on this report by Third Parties shall be at the Third Party's sole risk.

Asbestos

Sample Location Map, Analytical Report, & Chain of Custody Documentation

Appendix A

Micron Environmental Labs

3565 Lexington Ave. • El Monte, California 91731 (626) 454-4782 Fax (626) 454-4849

August 4, 2010

George Paler
Converse Consultants
222 E. Huntington Dr., Suite 211
Monrovia, CA 91016

Subject: PLM Analysis of Bulk Samples
Micron Job No.: 11710013
Client Ref.: 10-41-209-01/Rosemead Park

Dear Mr. Paler:

This report includes an attached summary of the samples collected for the analyses of the 34 bulk samples received by this laboratory on July 27, 2010. The analyses were completed using polarized light microscopy (PLM) in accordance with the EPA Method 600/R-93/116, July 1993. The quantification is based on the percentage of visual area estimation and is expressed as percent area. Samples that are multilayer are analyzed by layer unless, it has been requested as a composite analysis. These visual area estimate results are based on using reference standards materials that are routinely used in the laboratory.

For all the organic matrix samples that were not asbestos detected by (PLM), Micron Environmental recommends the use of Transmission Electron Microscopy (TEM) due to the size and the masking of the fibers.

Micron Environmental Labs is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) Lab Code 200294-0 for asbestos fiber analysis (PLM).

Micron Environmental Labs is responsible for the accuracy in this report, but we are not liable for any wrong data given to us by the client regarding these samples or for any misuse or interpretation of information supplied by us. Liability shall extend to providing replicate analyses only. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. We will retain these samples for a period of ninety days unless otherwise specified. This report pertains only to the samples submitted and analyzed.

Micron Environmental will not grant reproduction of this report unless an approval is obtained from this laboratory. Please feel free to contact the laboratory for questions regarding results or the analytical methods used at (626)454-4782.

Sincerely,
Micron Environmental Labs

aniel Gamez
irector
Attachments
SEO

Micron Environmental Labs
5 Lexington Ave.
Monte, CA 91731

626-454-4782
FAX: 626-454-4849

Analytical Method: EPA 600/R-93/116
NIST / NVLAP Lab Code No. 200294-0
California ELAP Certificate No. 2297

Micron Ref. No.
11710013

Sample Summary Results

Customer Project: *10-41-209-01/Rosemead Park* Microscopist: *Carlo Gamez*

August 4, 2010

George Paler
Converse Consultants
222 E. Huntington Dr., Suite 211
Monrovia, CA 91016

Date Collected: *July 26, 2010*
Date Received: *July 27, 2010*
Date Analyzed: *August 2, 2010*
No. Samples: *34*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-01 292121	Roof Core black	No	10% Cellulose 90% Mineral Filler	
RP-02 292122	Roof Core black	No	10% Cellulose 90% Mineral Filler	
RP-03 292123	Roof Core black	No	10% Cellulose 90% Mineral Filler	
RP-04 292124	Roof Core black	No	10% Cellulose 90% Mineral Filler	
RP-05 292125	Roof Core black	No	100% Organic Binders	

Sample Summary Results

Date: *August 4, 2010*

Micron Ref. No.: *11710013*

Microscopist: *Carlo Gamez*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-06 292126	Roof Core black	No	30% Mineral Filler 70% Organic Binders	
RP-07 292127	Roof Core black	No	30% Mineral Filler 70% Organic Binders	
RP-08 292128	Roof Core black	No	30% Mineral Filler 70% Organic Binders	X
RP-09 292129	Roof Core black	No	30% Mineral Filler 70% Organic Binders	
RP-10 292130	Roof Mastic black	Yes	5% chrysotile 95% Organic Binders	
RP-11 292131	Roof Mastic black	No	100% Organic Binders	
RP-12 292132	Roof Mastic black	No	100% Organic Binders	
RP-13 292133	Window Putty white	No	100% Organic Binders	

Sample Summary Results

Date: *August 4, 2010*

Microscopist: *Carlo Gamez*

Micron Ref. No.: *11710013*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-14 292134	Window Putty white	No	100% Organic Binders	
RP-15 292135	Window Putty white	No	100% Organic Binders	
RP-16 292136	Ceiling Plaster white	No	100% Mineral Filler	
RP-16 292136	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	
RP-17 292137	Ceiling Plaster white	No	100% Mineral Filler	
RP-17 292137	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	
RP-18 292138	Ceiling Plaster white	No	100% Mineral Filler	X
RP-18 292138	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	X

Sample Summary Results

Date: *August 4, 2010*

Microscopist: *Carlo Gamez*

Micron Ref. No.: *11710013*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-19 292139	Ceiling Plaster white	No	100% Mineral Filler	
RP-19 292139	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	
RP-20 292140	Ceiling Plaster white	No	100% Mineral Filler	
RP-20 292140	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	
RP-21 292141	Ceiling Plaster white	No	100% Mineral Filler	
RP-21 292141	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	
RP-22 292142	Ceiling Plaster white	No	100% Mineral Filler	
RP-22 292142	Ceiling Plaster-Skim Coat white	No	100% Mineral Filler	

Sample Summary Results

Date: *August 4, 2010*
Micron Ref. No.: *11710013*

Microscopist: *Carlo Gamez*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-23 292143	Wall Plaster white	No	100% Mineral Filler	
RP-23 292143	Wall Plaster-Skim Coat white	No	100% Mineral Filler	
RP-24 292144	Wall Plaster white	No	100% Mineral Filler	
RP-24 292144	Wall Plaster-Skim Coat white	No	100% Mineral Filler	
RP-25 292145	Wall Plaster white	No	100% Mineral Filler	
RP-25 292145	Wall Plaster-Skim Coat white	No	100% Mineral Filler	
RP-26 292146	Drywall white	No	100% Mineral Filler	
RP-26 292146	Joint Compound white	No	100% Mineral Filler	

Sample Summary Results

Date: *August 4, 2010*

Microscopist: *Carlo Gamez*

Micron Ref. No.: *11710013*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-27 292147	Drywall white	No	100% Mineral Filler	
RP-27 292147	Joint Compound white	No	100% Mineral Filler	
RP-28 292148	Drywall white	No	100% Mineral Filler	
RP-28 292148	Joint Compound white	No	100% Mineral Filler	
RP-29 292149	HVAC Duct Jacket white	No	10% Cellulose 90% Organic Binders	
RP-30 292150	HVAC Duct Jacket white	No	10% Cellulose 90% Organic Binders	
RP-31 292151	HVAC Duct Jacket white	No	10% Cellulose 90% Organic Binders	X
RP-32 292152	Attic Debris white	No	100% Mineral Filler	

Sample Summary Results

Date: *August 4, 2010*

Micron Ref. No.: *11710013*

Microscopist: *Carlo Gamez*

Cust ID No. Micron ID No.	Sample Description / Color	Asbestos Detected	Analytical Results	Q.C.
RP-33 292153	Attic Debris white	No	100% Mineral Filler	
RP-34 292154	Attic Debris white	No	100% Mineral Filler	

Microscopist: ______________________

The limit of detection for this analytical method is less than one percent asbestos (visual area estimates). CV=0.04

#11710011

Converse Consultants

222 East Huntington Drive
Suite 211
Monrovia, CA 91016-3500
Tel.: (626) 930-1200
Fax: (626) 930-1212

BULK SAMPLE LOG

ject Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

OMOGENEOUS MATERIAL: Roof Core - Brown Felt Shingle

Sample Number	Location	Area Sq. Ft.	Condition
RP-01	NW, side over Women's Locker Rm	~5,000	Good
RP-02	S. side center	↓	↓
RP-03	NE, side over Men's Locker Rm		

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

OMMENTS: Brown felt shingle roofing along N. side and S. center of Bldg. Grey rolled roofing on flat portion of roofs at SW & SE sides. 3 layers over wood or cellulose (S. center) substrate.

HAIN OF CUSTODY

elinquished By: George Palo Time: 18:00 Date: 7/26/10

eceived By: Nora Ramey Time: 10 30 AM Date: 7-26-10

elinquished By: Time: Date:

ed By: Time: Date:

Page 1 of

Converse Consultants

222 East Huntington Drive
Suite 211
Monrovia, CA 91016-3500
Tel.: (626) 930-1200
Fax: (626) 930-1212

BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

OMOGENEOUS MATERIAL: Roof Core - Grey Rolled Roofing Felt

Sample Number	Location	Area Sq. Ft.	Condition
RP-04	SE. Side over Water Htr Rm	~4,000	Good
RP-05	S. Side toward center	↓	↓
RP-06	SW. Side ~~→~~	↓	↓

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

COMMENTS: Grey rolled roofing on flat portion of roof, 2 layers over wood substrate.

CHAIN OF CUSTODY

Relinquished By: George Paler Time: 18:00 Date: 7/26/10
Received By: Time: 10:30 am Date: 7/27/10
Relinquished By: Time: Date:
ived By: Time: Date:

Page 2 of

Converse Consultants

222 East Huntington Drive
Suite 211
Monrovia, CA 91016-3500
Tel.: (626) 930-1200
Fax: (626) 930-1212

BULK SAMPLE LOG

oject Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

HOMOGENEOUS MATERIAL: Roof Parapit Core - Grey Rolled Roofing

Sample Number	Location	Area Sq. Ft.	Condition
RP-07	SE side	~200	Good
RP-08	NW corner	↓	↓
RP-09	SW side	↓	↓

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

COMMENTS: Parapits at NE & along E. Roof perimeter and at SW roof perimeter only. 2 layers over CMU

CHAIN OF CUSTODY

Relinquished By: George Puler Time: 10:00 Date: 7/26/10
Received By: Time: 10:30 AM Date: 7/27/10
Relinquished By: Time: Date:
ed By: Time: Date:

Converse Consultants

222 East Huntington Drive
Suite 211
Monrovia, CA 91016-3500
Tel.: (626) 930-1200
Fax: (626) 930-1212

BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

HOMOGENEOUS MATERIAL: Grey Roof Penetration Mastic

Sample Number	Location	Area Sq. Ft.	Condition
RP-10	Center Rf section, S/E corner	~50	Good
RP-11	Base of transite vent pipe over old Water Htr Rm, S/E side		
RP-12	NW corner		

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

17

COMMENTS: Sometimes painted silver, 19 vents, 4 HVAC vents 2 transite vent pipes, total 19 vents. Some HVAC vents have Mastic around square base - not all.

CHAIN OF CUSTODY

Relinquished By: George Peter Time: 18:00 Date: 7/26/10

Received By: Nora Barnes Time: 10³⁰ am Date: 7/27/10

Relinquished By: Time: Date:

Received By: Time: Date:

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222 East Huntington Drive
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BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park
Collected By: GJP
Project No.: 10-41-209-01
Date: 7/26/10

HOMOGENEOUS MATERIAL: Window Putty

Sample Number	Location	Area Sq. Ft.	Condition
RP-13	W. exterior Men's RR	8 windows	Good
RP-14	S. exterior Women's Lock Rm	↓	↓
RP-15	S/E exterior Office		

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

COMMENTS: 8 windows with putty

CHAIN OF CUSTODY

Relinquished By: George Paler Time: 18:00 Date: 7/26/10
Received By: Nora Ramey Time: 1030/am Date: 7/27/10
Relinquished By: Time: Date:
ved By: Time: Date:

Page 5 of

Converse Consultants

222 East Huntington Drive
Suite 211
Monrovia, CA 91016-3500
Tel.: (626) 930-1200
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BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park
Collected By: GJP
Project No.: 10-41-209-01
Date: 7/26/10

HOMOGENEOUS MATERIAL: Smooth Plaster Ceiling w/ Skim coat

Sample Number	Location	Area Sq. Ft.	Condition
RP-16	Entrance to Men's Locker Rm	~7,000	Good
RP-17	Men's Locker Rm Soffit, center	↓	↓
RP-18	Men's Shower Rm, center		
RP-19	Men's Check Rm, center		
RP-20	Women's Locker Rm entrance		
RP-21	Women's Shower Rm, center		
RP-22	Women's Check Rm, center	↓	↓

Friability: Friable [✓ Non-Friable]
Potential for Contact with Material: High Moderate Low
Influence of Vibration: High Moderate Low
Potential for Air Erosion: High Moderate Low
Damage Assessment: [✓ Good] Damaged Significantly Damaged

COMMENTS: Plaster ceilings in entrances to Locker Rms, & soffits, Check Rm Shower Rms, Kitchen, Office & Lobby & HVAC Rm. Men's & Women's Locker Rm ceilings are wood. W. side Men's & Women's Lobby Restrooms are drywall.

CHAIN OF CUSTODY

Relinquished By: George Paler Time: 18:00 Date: 7/26/10
Received By: Time: 10:30 AM Date: 7/27/10
Relinquished By: Time: Date:
ed By: Time: Date:

Page 6 of

Converse Consultants

222 East Huntington Drive
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BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

HOMOGENEOUS MATERIAL: Smooth Plaster Walls w/skim coat

Sample Number	Location	Area Sq. Ft.	Condition
RP-23	NE Kitchen, SE corner	~400	Good
RP-24	Entrance to Women's Locker Rm	↓	↓
RP-25	Men's Locker Rm Restroom S. Wall	↓	↓

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

COMMENTS: Wood Wall - no JC at entrance to Men's Locker Rm

CHAIN OF CUSTODY

Relinquished By: George Paler Time: 18:20 Date: 7/26/10

Received By: Nora [illegible] Time: 10^{30} AM Date: 7/27/10

Relinquished By: Time: Date:

Received By: Time: Date:

Page 7 of

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BULK SAMPLE LOG

ject Name: City of Rosemead/Rosemead Park
Collected By: GJP
Project No.: 10-41-209-01
Date: 7/26/10

OMOGENEOUS MATERIAL: Drywall w/Joint Cmpd Ceiling & Walls

Sample Number	Location	Area Sq. Ft.	Condition
RP-26	Ceiling - Lobby Men's RR - center	~400	Good
RP-27	Wall - Lobby Men's RR - S. Wall	↓	↓
RP-28	Wall - Lobby Women's RR - S. Wall	↓	↓

Friability:	Friable	[✓ Non-Friable]	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	[✓ Good]	Damaged	Significantly Damaged

OMMENTS: Joint compound associated w/plaster mesh.

CHAIN OF CUSTODY

Relinquished By: George Palo Time: 18:00 Date: 7/26/10
Received By: Time: 10^{30} Am Date: 7/27/10
Relinquished By: Time: Date:
ed By: Time: Date:

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BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

HOMOGENEOUS MATERIAL: HVAC Duct Jacket

Sample Number	Location	Area Sq. Ft.	Condition
RP-29	HVAC Rm above old heater unit	~5 SF	Good
RP-30	↓	↓	↓
RP-31	↓	↓	↓

Friability:	Friable	Non-Friable	
Potential for Contact with Material:	High	Moderate	Low
Influence of Vibration:	High	Moderate	Low
Potential for Air Erosion:	High	Moderate	Low
Damage Assessment:	Good	Damaged	Significantly Damaged

COMMENTS: Only in HVAC Rm - jacket over fiberglass insulation

CHAIN OF CUSTODY

Relinquished By: George Pale Time: 18:00 Date: 7/26/10
Received By: Time: 1030/am Date: 7/27/10
Relinquished By: Time: Date:
ved By: Time: Date:

Page 9 of

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BULK SAMPLE LOG

Project Name: City of Rosemead/Rosemead Park

Collected By: GJP

Project No.: 10-41-209-01

Date: 7/26/10

HOMOGENEOUS MATERIAL: White Suspect Debris in Attics

Sample Number	Location	Area Sq. Ft.	Condition
RP-32	Attic above entrance to Women's Locker Rm	~30	S. Damaged
RP-33	Attic above Women's Check Rm	↓	↓
RP-34	↓ ↓	↓	↓

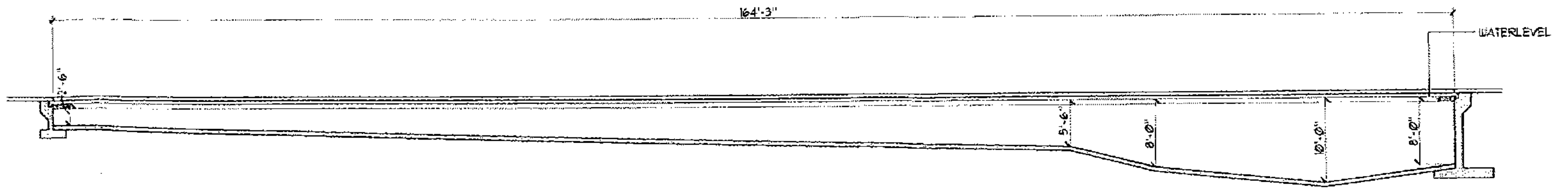
Friability: [✓ Friable] Non-Friable
Potential for Contact with Material: High Moderate [✓ Low]
Influence of Vibration: High Moderate [✓ Low]
Potential for Air Erosion: High [✓ Moderate] Low
Damage Assessment: Good Damaged [✓ Significantly Damaged]

COMMENTS: Observed in 2 Attic spaces on Women's side. In attic above entrance to Women's locker Rm and in attic above Women's check Rm. Metal pipes were observed to be uninsulated

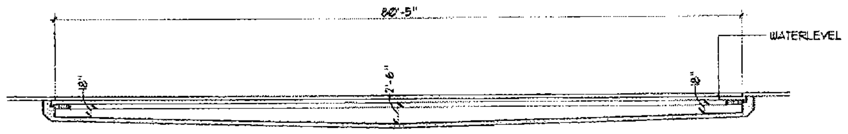
CHAIN OF CUSTODY

Relinquished By: George Palet Time: 18:00 Date: 7/26/10
Received By: Time: 1030am Date: 7/27/10
Relinquished By: Time: Date:
Received By: Time: Date:

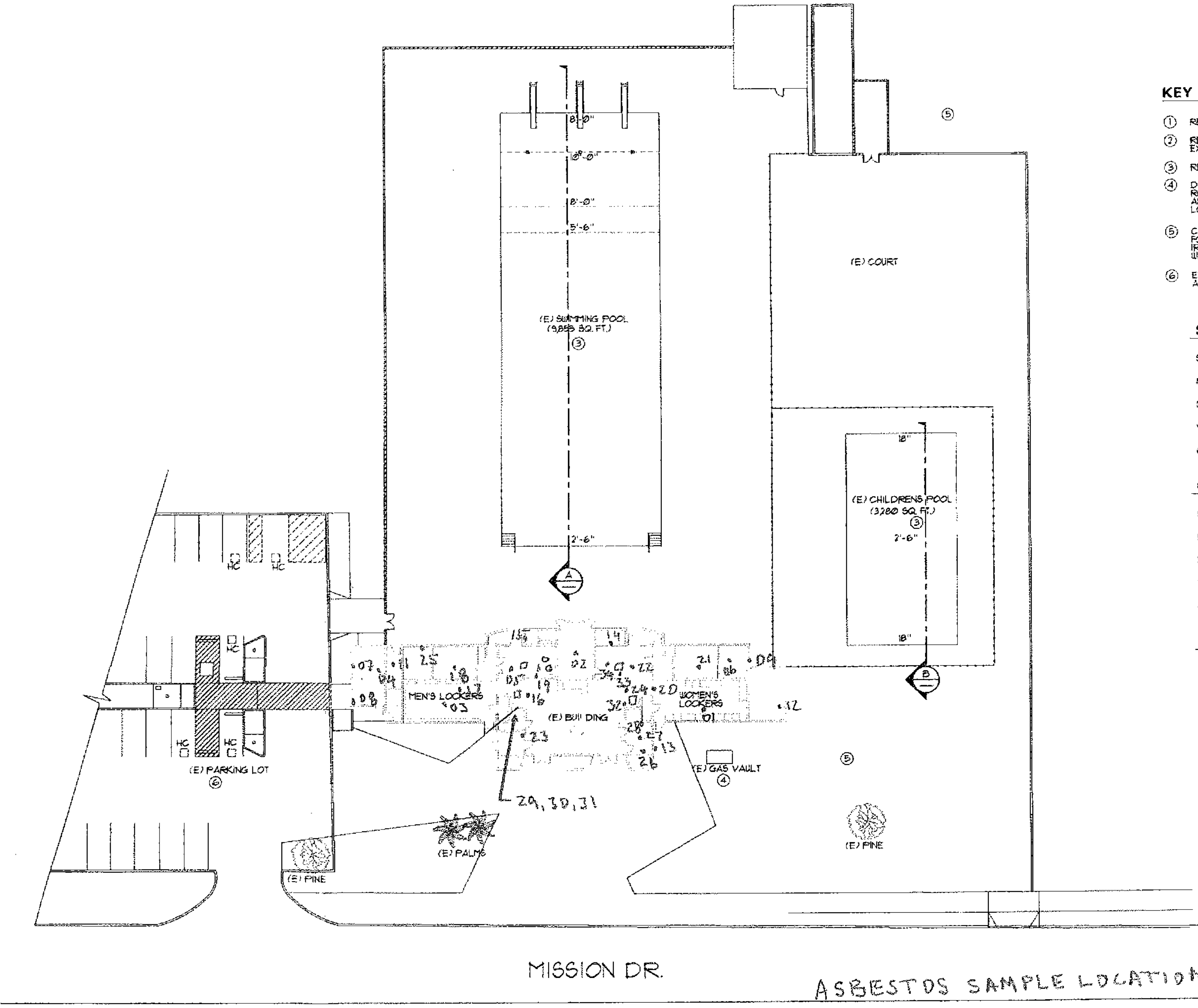
Page 10 of



(A) **SWIMMING POOL SECTION** 1/8"=1'-0"



(B) **SWIMMING POOL SECTION** 1/8"=1'-0"



ASBESTOS SAMPLE LOCATION MAP

(1)

KEY NOTES

① REMOVE EXISTING CONCRETE TO LIMITS AS SHOWN.

② REMOVE EXISTING BUILDING COMPLETE. LOCATE NEW BUILDING AND POOL OFF OF EXISTING PER PLAN. (SEE SHT. A1-1)

③ REMOVE EXISTING POOLS AND POOL DECKING COMPLETE.

④ DISCONNECT AND RELOCATE EXISTING UTILITIES AS REQUIRED AT NEW MECHANICAL ROOM PER UTILITY COMPANY REQUIREMENTS. CAP EXISTING UTILITIES TO REMAIN AND PROTECT DURING CONSTRUCTION UNTIL RE-CONNECTED. VERIFY SIZES, LOCATIONS, AND DEPTHS.

⑤ CITY TO CAP, RELOCATE, AND ADJUST EXISTING PARK IRRIGATION AS REQUIRED FOR DEMOLITION AND CONSTRUCTION OF NEW FACILITY. CITY SHALL REINSTALL IRRIGATION SYSTEM IN COORDINATION WITH NEW FACILITY LIMITS. COORDINATE WORK WITH CONTRACTOR.

⑥ EXISTING PARKING LOT TO REMAIN, WITH 76 SPACES, 5 OF WHICH ARE HC SPACES. ADDITIONAL PARKING IN STREET AROUND PARK PERIMETER.

SWIMMING POOL DATA

SURFACE AREA = 9,855 SQ. FT.
PERIMETER = 449 FT.
DEPTHS = 2'-6" TO 10'-0"
VOLUME = 397,058 GAL.
6 HR TURNOVER = 1,102 GPM

CHILDRENS POOL DATA

SURFACE AREA = 9,954 SQ. FT.
PERIMETER = 244 FT.
DEPTHS = 18" TO 2'-6"
VOLUME = GAL.
6 HR TURNOVER = GPM

LEGEND

Key

•24 - Sample Negative for Asbestos
010 - Sample positive for Asbestos
□ - Ceiling Access Hatch

NOT TO SCALE

N ↑

AQUATIC
DESIGN GROUP
2226 FARADAY AVE. CARLSBAD, CA 92008
Tel 760.438.8400 Fax 760.438.5251

SCOTT J. FERRELL

NO.	DATE	REVISION

DATE: 06.24.2010
DRAWING TITLE:
SCALE:
JOB TITLE: ROSEMEAD PARK AQUATICS CENTER
DRAWN BY: JBP/GSH
JOB ADDRESS: 9155 E. MISSION DR., ROSEMEAD, CA 91770

DRAWING NO.:
A-0.1

Lead-Based Paint

Lead-Based Paint Survey Summary
Table (XRF Log)
Lead Survey Map and Notes

Appendix B

Ins[illegible]or: William Ragsdale
CDPH No. I-14594
Date Inspection Performed:
7/26/10

Lead Based Pa[illegible]urvey Summary Table
Rosemead Park Aquatic Center Bldg
9155 E. Mission Dr.
Rosemead, CA

Analyzer: Nit[illegible]XLp-702A
Units: mg/cm^2
Action Level: 0.7 mg/cm

Reading	Time	Type	Component	Substrate	Side	Condition	Color	Floor	Room	Misc 1	Results	PbC	PbC Error
1	7/26/2010 9:21	SHUTTER_CAL										4.36	0
2	7/26/2010 9:30	CALIBRATION								SRM2570	Negative	0	0.02
3	7/26/2010 9:30	CALIBRATION								SRM2573	Positive	0.9	0.2
4	7/26/2010 9:31	CALIBRATION								SRM2574	Negative	0.6	0.1
5	7/26/2010 9:33	PAINT	WALL	CONCRETE	NORTH	INTACT	BLUE	FIRST	1		Negative	0	0.02
6	7/26/2010 9:33	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	1		Negative	0.01	0.02
7	7/26/2010 9:34	PAINT	WALL	METAL	NORTH	INTACT	WHITE	FIRST	1	VENT	Negative	-0.23	0.9
8	7/26/2010 9:34	PAINT	WALL	METAL	NORTH	INTACT	WHITE	FIRST	1	VENT	Negative	-0.09	0.75
9	7/26/2010 9:34	PAINT	WALL	METAL	NORTH	INTACT	WHITE	FIRST	1	VENT	Negative	0	0.02
10	7/26/2010 9:35	PAINT	WALL	CONCRETE	NORTH	INTACT	GREY	FIRST	1		Negative	0	0.02
11	**7/26/2010 9:36**	**PAINT**	**DOOR**	**WOOD**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**1**		**Positive**	**2.3**	**1.6**
12	**7/26/2010 9:36**	**PAINT**	**DOOR**	**WOOD**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**1**	**FRAME**	**Positive**	**2**	**0.9**
13	**7/26/2010 9:36**	**PAINT**	**DOOR**	**WOOD**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**1**	**JAM**	**Positive**	**1.9**	**1.1**
14	**7/26/2010 9:37**	**PAINT**	**PANEL**	**WOOD**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**1**		**Positive**	**3.1**	**2.1**
15	7/26/2010 9:38	PAINT	WALL	WOOD	EAST	INTACT	BLUE	FIRST	1		Negative	0.02	0.05
16	**7/26/2010 9:39**	**PAINT**	**SLIDING DOOR**	**WOOD**	**EAST**	**INTACT**	**BLUE**	**FIRST**	**1**		**Positive**	**2.1**	**1.2**
17	**7/26/2010 9:39**	**PAINT**	**SLIDING DOOR**	**WOOD**	**EAST**	**INTACT**	**BLUE**	**FIRST**	**1**	**FRAME**	**Positive**	**2.3**	**1.5**
18	**7/26/2010 9:39**	**PAINT**	**SLIDING DOOR**	**WOOD**	**EAST**	**INTACT**	**BLUE**	**FIRST**	**1**	**JAM**	**Positive**	**1.7**	**0.8**
19	**7/26/2010 9:40**	**PAINT**	**SLIDING DOOR**	**WOOD**	**EAST**	**INTACT**	**BLUE**	**FIRST**	**1**	**TRIM**	**Positive**	**2.4**	**1.7**
20	7/26/2010 9:40	PAINT	DOOR	METAL	EAST	INTACT	BLUE	FIRST	1		Negative	0	0.02
21	7/26/2010 9:41	PAINT	DOOR	METAL	EAST	INTACT	BLUE	FIRST	1	FRAME	Negative	0	0.02
22	7/26/2010 9:42	PAINT	WALL	WOOD	SOUTH	INTACT	WHITE	FIRST	1		Negative	0.09	0.18
23	7/26/2010 9:43	PAINT	CEILING	WOOD	SOUTH	INTACT	WHITE	FIRST	1		Negative	0.02	0.04
24	7/26/2010 9:43	PAINT	CEILING	WOOD	SOUTH	INTACT	WHITE	FIRST	1	BEAM	Negative	0.13	0.56
25	7/26/2010 9:45	PAINT	FLOOR	CONCRETE	SOUTH	INTACT	GREY	FIRST	1		Negative	0	0.02
26	7/26/2010 9:48	PAINT	WALL	WOOD	NORTH	INTACT	WHITE	FIRST	2		Negative	0	0.02
27	7/26/2010 9:49	PAINT	WALL	CERAMIC	NORTH	INTACT	YELLOW	FIRST	2		Negative	0.05	0.15
28	7/26/2010 9:49	PAINT	SINK	CERAMIC	NORTH	INTACT	WHITE	FIRST	2		Negative	0.02	0.08
29	7/26/2010 9:50	PAINT	TOILET	CERAMIC	EAST	INTACT	WHITE	FIRST	2		Negative	0.01	0.04
30	**7/26/2010 9:51**	**PAINT**	**WINDOW**	**METAL**	**EAST**	**INTACT**	**WHITE**	**FIRST**	**2**	**FRAME**	**Positive**	**1.3**	**0.6**
31	7/26/2010 9:51	PAINT	WALL	CONCRETE	SOUTH	INTACT	WHITE	FIRST	2		Negative	0.06	0.08
32	7/26/2010 9:52	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	2	FRAME	Negative	0	0.03
33	7/26/2010 9:52	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	2	TRIM	Negative	0	0.02
34	7/26/2010 9:56	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	2		Negative	0	0.02
35	7/26/2010 9:56	PAINT	FLOOR	CONCRETE		INTACT	GREY	FIRST	2		Negative	0	0.02
36	7/26/2010 10:01	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	4		Negative	0.07	0.1
37	7/26/2010 10:01	PAINT	WALL	CONCRETE	NORTH	INTACT	BLUE	FIRST	4		Negative	0.05	0.08

Insp[illegible]or: William Ragsdale
CDPH No. I-14594
Date Inspection Performed:
7/26/10

Lead Based Pai[illegible]urvey Summary Table
Rosemead Park Aquatic Center Bldg
9155 E. Mission Dr.
Rosemead, CA

Analyzer: Nito[illegible]XLp-702A
Units: mg/cm^2
Action Level: 0.7 mg/cm

Reading	Time	Type	Component	Substrate	Side	Condition	Color	Floor	Room	Misc 1	Results	PbC	PbC Error
38	**7/26/2010 10:02**	**PAINT**	**PANEL**	**WOOD**	**SOUTH**	**INTACT**	**BLUE**	**FIRST**	**4**		**Positive**	**1.6**	**0.9**
39	**7/26/2010 10:02**	**PAINT**	**PANEL**	**METAL**	**SOUTH**	**INTACT**	**BLUE**	**FIRST**	**4**	**FRAME**	**Positive**	**1.9**	**1.1**
40	7/26/2010 10:03	PAINT	WALL	WOOD	WEST	INTACT	BLUE	FIRST	4		Negative	0.04	0.08
41	7/26/2010 10:03	PAINT	WALL	WOOD	WEST	INTACT	WHITE	FIRST	4		Negative	0.03	0.06
42	7/26/2010 10:03	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	4		Negative	0.07	0.16
43	7/26/2010 10:04	PAINT	CEILING HATCH	WOOD		INTACT	WHITE	FIRST	4		Negative	0.04	0.13
44	7/26/2010 10:04	PAINT	CEILING HATCH	WOOD		INTACT	WHITE	FIRST	4	TRIM	Negative	0.05	0.17
45	7/26/2010 10:05	PAINT	FLOOR	CONCRETE		INTACT	GREY	FIRST	4		Negative	0	0.02
46	7/26/2010 10:07	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	5		Negative	-0.03	0.73
47	7/26/2010 10:07	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	5		Negative	-0.21	0.77
48	7/26/2010 10:08	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	5		Negative	0.07	0.09
49	7/26/2010 10:08	PAINT	WALL	CONCRETE	NORTH	INTACT	BLUE	FIRST	5		Negative	0.01	0.03
50	7/26/2010 10:08	PAINT	POST	CONCRETE	NORTH	INTACT	WHITE	FIRST	5		Negative	0.02	0.06
51	7/26/2010 10:09	PAINT	DOOR	CONCRETE	NORTH	INTACT	BLUE	FIRST	5	FRAME	Negative	0	0.02
52	7/26/2010 10:10	PAINT	WALL	WOOD	NORTH	INTACT	WHITE	FIRST	5		Negative	0.01	0.03
53	7/26/2010 10:10	PAINT	WINDOW	WOOD	NORTH	INTACT	BROWN	FIRST	5	LOUVER	Negative	0.06	0.13
54	7/26/2010 10:11	PAINT	WINDOW	WOOD	NORTH	INTACT	BROWN	FIRST	5	FRAME	Negative	0.01	0.02
55	**7/26/2010 10:12**	**PAINT**	**WINDOW**	**WOOD**	**NORTH**	**INTACT**	**WHITE**	**FIRST**	**5**	**FRAME**	**Positive**	**1.3**	**0.5**
56	**7/26/2010 10:12**	**PAINT**	**WINDOW**	**WOOD**	**NORTH**	**INTACT**	**WHITE**	**FIRST**	**5**		**Positive**	**1**	**0.3**
57	**7/26/2010 10:13**	**PAINT**	**WINDOW**	**WOOD**	**NORTH**	**INTACT**	**WHITE**	**FIRST**	**5**	**TRIM**	**Positive**	**1.5**	**0.8**
58	7/26/2010 10:14	PAINT	DOOR	METAL	SOUTH	INTACT	BLUE	FIRST	5		Negative	0	0.02
59	7/26/2010 10:14	PAINT	DOOR	METAL	SOUTH	INTACT	BLUE	FIRST	5	FRAME	Negative	0	0.02
60	7/26/2010 10:16	PAINT	WINDOW	WOOD	SOUTH	INTACT	WHITE	FIRST	5	FRAME	Null	0.6	0.1
61	7/26/2010 10:16	PAINT	WINDOW	WOOD	SOUTH	INTACT	WHITE	FIRST	5	FRAME	Negative	0.2	0.24
62	7/26/2010 10:16	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	5		Negative	0.3	0.17
63	**7/26/2010 10:17**	**PAINT**	**CEILING**	**WOOD**		**INTACT**	**WHITE**	**FIRST**	**5**	**BEAM**	**Positive**	**1.4**	**0.7**
64	7/26/2010 10:19	PAINT	WALL	WOOD	NORTH	INTACT	WHITE	FIRST	6		Negative	0	0.02
65	7/26/2010 10:20	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	6		Negative	0	0.02
66	**7/26/2010 10:20**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**YELLOW**	**FIRST**	**6**		**Positive**	**9**	**6.1**
67	7/26/2010 10:21	PAINT	WINDOW	METAL	NORTH	INTACT	WHITE	FIRST	6		Negative	0.04	0.07
68	7/26/2010 10:21	PAINT	TOILET	METAL	EAST	INTACT	WHITE	FIRST	6		Negative	0.03	0.05
69	7/26/2010 10:22	PAINT	SINK	METAL	WEST	INTACT	WHITE	FIRST	6		Negative	0.03	0.04
70	7/26/2010 10:22	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	6		Negative	0	0.02
71	7/26/2010 10:23	PAINT	FLOOR	CONCRETE		INTACT	GREY	FIRST	6		Negative	0.01	0.02
72	7/26/2010 10:25	PAINT	WALL	WOOD	NORTH	INTACT	WHITE	FIRST	7		Negative	0.05	0.08
73	**7/26/2010 10:26**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**PINK**	**FIRST**	**7**		**Positive**	**9.1**	**6.6**
74	**7/26/2010 10:26**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**7**		**Positive**	**5.8**	**3.9**

Ins[illegible]or: William Ragsdale
CDPH No. I-14594
Date Inspection Performed:
7/26/10

Lead Based Pai[illegible]urvey Summary Table
Rosemead Park Aquatic Center Bldg
9155 E. Mission Dr.
Rosemead, CA

Analyzer: Nit[illegible]XLp-702A
Units: mg/cm^2
Action Level: 0.7 mg/cm

Reading	Time	Type	Component	Substrate	Side	Condition	Color	Floor	Room	Misc 1	Results	PbC	PbC Error
75	**7/26/2010 10:26**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**GREY**	**FIRST**	**7**		**Positive**	**3.2**	**2.4**
76	7/26/2010 10:27	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	7		Negative	0.03	0.67
77	7/26/2010 10:28	PAINT	FLOOR	CERAMIC		INTACT	BROWN	FIRST	7		Negative	0.03	0.05
78	7/26/2010 10:28	PAINT	FLOOR	CERAMIC		INTACT	PINK	FIRST	7		Negative	0.01	0.02
79	7/26/2010 10:29	PAINT	DEHUMIDIFIER	METAL		INTACT	WHITE	FIRST	7		Negative	0.02	0.04
80	7/26/2010 10:30	PAINT	WALL	CONCRETE	EAST	INTACT	WHITE	FIRST	8		Negative	0	0.02
81	7/26/2010 10:31	PAINT	DOOR	WOOD	SOUTH	INTACT	BLUE	FIRST	8		Negative	0	0.02
82	**7/26/2010 10:31**	**PAINT**	**DOOR**	**METAL**	**SOUTH**	**INTACT**	**BLUE**	**FIRST**	**8**	**FRAME**	**Positive**	**2**	**0.9**
83	**7/26/2010 10:34**	**PAINT**	**DOOR**	**WOOD**	**NORTH**	**INTACT**	**BLUE**	**FIRST**	**9**		**Positive**	**2.2**	**1.3**
84	**7/26/2010 10:34**	**PAINT**	**DOOR**	**METAL**	**NORTH**	**INTACT**	**BLUE**	**FIRST**	**9**	**FRAME**	**Positive**	**2.7**	**1.8**
85	7/26/2010 10:38	PAINT	WALL	CONCRETE	EAST	INTACT	WHITE	FIRST	9		Negative	0.07	0.08
86	7/26/2010 10:38	PAINT	WALL	CONCRETE	EAST	INTACT	BLUE	FIRST	9		Negative	0.06	0.07
87	7/26/2010 10:38	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	9	FRAME	Negative	0	0.02
88	7/26/2010 10:39	PAINT	WINDOW	WOOD	WEST	INTACT	BLUE	FIRST	9		Negative	0	0.02
89	**7/26/2010 10:39**	**PAINT**	**WINDOW**	**WOOD**	**WEST**	**INTACT**	**BLUE**	**FIRST**	**9**	**FRAME**	**Positive**	**1.2**	**0.5**
90	**7/26/2010 10:40**	**PAINT**	**DOOR**	**WOOD**	**WEST**	**INTACT**	**BLUE**	**FIRST**	**9**		**Positive**	**1.7**	**0.9**
91	**7/26/2010 10:40**	**PAINT**	**DOOR**	**WOOD**	**WEST**	**INTACT**	**BLUE**	**FIRST**	**9**	**FRAME**	**Positive**	**2.5**	**1.5**
92	7/26/2010 10:40	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	9	JAM	Negative	0	0.02
93	7/26/2010 10:41	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	9		Negative	0	0.02
94	7/26/2010 10:41	PAINT	FLOOR	WOOD		INTACT	GREY	FIRST	9		Negative	0	0.02
95	7/26/2010 10:45	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	10		Negative	0.03	0.04
96	7/26/2010 10:45	PAINT	WALL	CONCRETE	NORTH	INTACT	BLUE	FIRST	10		Negative	0.01	0.03
97	7/26/2010 10:46	PAINT	CABINET	WOOD	EAST	INTACT	BLUE	FIRST	10		Negative	0.16	0.29
98	7/26/2010 10:46	PAINT	DOOR	WOOD	NORTH	INTACT	BLUE	FIRST	10		Negative	0	0.02
99	**7/26/2010 10:46**	**PAINT**	**DOOR**	**WOOD**	**NORTH**	**INTACT**	**BLUE**	**FIRST**	**10**	**FRAME**	**Positive**	**2.2**	**1.4**
100	7/26/2010 10:47	PAINT	CABINET	WOOD	SOUTH	INTACT	BROWN	FIRST	10		Negative	0	0.02
101	**7/26/2010 10:48**	**PAINT**	**PANEL**	**WOOD**	**SOUTH**	**INTACT**	**BROWN**	**FIRST**	**10**		**Positive**	**1.3**	**0.6**
102	**7/26/2010 10:48**	**PAINT**	**PANEL**	**WOOD**	**SOUTH**	**INTACT**	**BROWN**	**FIRST**	**10**	**FRAME**	**Positive**	**1.9**	**1.1**
103	7/26/2010 10:49	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	10		Negative	0	0.02
104	**7/26/2010 10:49**	**PAINT**	**DOOR**	**WOOD**	**WEST**	**INTACT**	**BLUE**	**FIRST**	**10**	**FRAME**	**Positive**	**3**	**2.3**
105	7/26/2010 10:50	PAINT	RACK	METAL		INTACT	BLUE	FIRST	10		Negative	0	0.02
106	7/26/2010 10:53	PAINT	WALL	WOOD	NORTH	INTACT	WHITE	FIRST	11		Negative	0.01	0.03
107	**7/26/2010 10:54**	**PAINT**	**WINDOW**	**WOOD**	**NORTH**	**INTACT**	**WHITE**	**FIRST**	**11**	**FRAME**	**Positive**	**2.3**	**1.5**
108	7/26/2010 10:54	PAINT	DOOR	WOOD	NORTH	INTACT	BLUE	FIRST	11		Negative	0	0.02
109	7/26/2010 10:54	PAINT	DOOR	WOOD	NORTH	INTACT	BLUE	FIRST	11	FRAME	Negative	0.29	0.23
110	7/26/2010 10:56	PAINT	WALL	CONCRETE	EAST	INTACT	WHITE	FIRST	11		Negative	0.03	0.04
111	7/26/2010 10:56	PAINT	ELCT PANEL	METAL	EAST	INTACT	WHITE	FIRST	11		Negative	0.03	0.12

Ins[redacted]r: William Ragsdale
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Lead Based Pai[redacted]rvey Summary Table
Rosemead Park Aquatic Center Bldg
9155 E. Mission Dr.
Rosemead, CA

Analyzer: Nit[redacted]Lp-702A
Units: mg/cm^2
Action Level: 0.7 mg/cm

Reading	Time	Type	Component	Substrate	Side	Condition	Color	Floor	Room	Misc 1	Results	PbC	PbC Error
112	7/26/2010 10:57	PAINT	WALL	WOOD	SOUTH	INTACT	BROWN	FIRST	11		Negative	0.24	0.32
113	7/26/2010 10:57	PAINT	WALL	WOOD	SOUTH	INTACT	BROWN	FIRST	11	FRAME	Negative	0	0.02
114	7/26/2010 10:58	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	11		Negative	0	0.02
115	**7/26/2010 10:58**	**PAINT**	**DOOR**	**WOOD**	**WEST**	**INTACT**	**BLUE**	**FIRST**	**11**	**FRAME**	**Positive**	**3.5**	**2.6**
116	7/26/2010 11:00	PAINT	WALL	CONCRETE	NORTH	INTACT	WHITE	FIRST	24		Negative	0.19	0.18
117	7/26/2010 11:00	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	24		Negative	0.05	0.63
118	7/26/2010 11:01	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	24	FRAME	Negative	0.5	0.2
119	7/26/2010 11:02	PAINT	WALL	WOOD	SOUTH	INTACT	WHITE	FIRST	24		Negative	0	0.69
120	7/26/2010 11:02	PAINT	TOILET	CERAMIC	SOUTH	INTACT	WHITE	FIRST	24		Negative	0.01	0.02
121	7/26/2010 11:03	PAINT	SINK	CERAMIC	SOUTH	INTACT	WHITE	FIRST	24		Negative	0.01	0.05
122	7/26/2010 11:03	PAINT	WINDOW	METAL	WEST	INTACT	WHITE	FIRST	24		Negative	0.16	0.53
123	7/26/2010 11:04	PAINT	LOCKERS	METAL	SOUTH	INTACT	BLUE	FIRST	24		Negative	0	0.02
124	7/26/2010 11:09	PAINT	WALL	DRYWALL	NORTH	INTACT	WHITE	FIRST	13		Negative	0	0.02
125	7/26/2010 11:09	PAINT	WALL	CONCRETE	EAST	INTACT	WHITE	FIRST	13		Negative	0	0.02
126	7/26/2010 11:10	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	13		Negative	0	0.02
127	7/26/2010 11:10	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	13	FRAME	Negative	0	0.02
128	7/26/2010 11:11	PAINT	DOOR	METAL	EAST	INTACT	BLUE	FIRST	13	FRAME	Negative	0	0.02
129	7/26/2010 11:17	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	13		Negative	0.04	0.11
130	7/26/2010 11:18	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	13	FRAME	Negative	0.11	0.25
131	7/26/2010 11:18	PAINT	WINDOW	METAL	WEST	INTACT	WHITE	FIRST	13		Negative	0.06	0.15
132	**7/26/2010 11:25**	**PAINT**	**DOOR**	**WOOD**	**EAST**	**INTACT**	**BLUE**	**FIRST**	**14**		**Positive**	**1.7**	**0.7**
133	7/26/2010 11:26	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	14	FRAME	Negative	0.5	0.1
134	7/26/2010 11:30	PAINT	WALL	CONCRETE	WEST	INTACT	WHITE	FIRST	15		Negative	0.01	0.02
135	7/26/2010 11:30	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	15		Negative	0	0.02
136	7/26/2010 11:30	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	15	FRAME	Negative	0	0.02
137	7/26/2010 11:31	PAINT	DOOR	WOOD	WEST	INTACT	BLUE	FIRST	15	TRIM	Negative	0.01	0.05
138	7/26/2010 11:31	PAINT	CEILING	WOOD		INTACT	WHITE	FIRST	15		Negative	0	0.02
139	**7/26/2010 11:34**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**YELLOW**	**FIRST**	**19**		**Positive**	**1.7**	**0.9**
140	**7/26/2010 11:34**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**19**		**Positive**	**33.2**	**25.5**
141	7/26/2010 11:35	PAINT	WALL	PLASTER	NORTH	INTACT	WHITE	FIRST	19		Negative	0	0.02
142	7/26/2010 11:35	PAINT	CEILING	PLASTER		INTACT	WHITE	FIRST	19		Negative	0.03	0.05
143	7/26/2010 11:36	PAINT	FLOOR	CERAMIC		INTACT	YELLOW	FIRST	19		Negative	0.01	0.02
144	7/26/2010 11:36	PAINT	FLOOR	CERAMIC		INTACT	BROWN	FIRST	19		Negative	0	0.02
145	7/26/2010 11:38	PAINT	WALL	DRYWALL	NORTH	INTACT	WHITE	FIRST	20		Negative	0	0.02
146	7/26/2010 11:39	PAINT	WALL	CERAMIC	NORTH	INTACT	YELLOW	FIRST	20		Negative	0.5	0.2
147	**7/26/2010 11:39**	**PAINT**	**WALL**	**CERAMIC**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**20**		**Positive**	**26.5**	**22.6**
148	7/26/2010 11:40	PAINT	DOOR	WOOD	EAST	INTACT	BLUE	FIRST	20	FRAME	Negative	0	0.02

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Rosemead Park Aquatic Center Bldg
9155 E. Mission Dr.
Rosemead, CA

Analyzer: Nit[illegible]XLp-702A
Units: mg/cm^2
Action Level: 0.7 mg/cm

Reading	Time	Type	Component	Substrate	Side	Condition	Color	Floor	Room	Misc 1	Results	PbC	PbC Error
149	7/26/2010 11:40	PAINT	SINK	CERAMIC	EAST	INTACT	WHITE	FIRST	20		Negative	0.01	0.05
150	7/26/2010 11:41	PAINT	URANIL	CERAMIC	EAST	INTACT	WHITE	FIRST	20		Negative	0.01	0.03
151	7/26/2010 11:41	PAINT	TOILET	CERAMIC	EAST	INTACT	WHITE	FIRST	20		Negative	0.01	0.03
152	7/26/2010 11:42	PAINT	CEILING	DRYWALL		INTACT	WHITE	FIRST	20		Negative	0	0.02
153	7/26/2010 11:42	PAINT	FLOOR	CERAMIC		INTACT	YELLOW	FIRST	20		Negative	0.04	0.07
154	7/26/2010 11:43	PAINT	FLOOR	CONCRETE		INTACT	GREY	FIRST	20		Negative	0	0.02
155	7/26/2010 11:55	PAINT	WALL	CONCRETE	EAST	INTACT	BROWN	FIRST	22		Negative	0.04	0.04
156	7/26/2010 11:55	PAINT	CEILING	WOOD		INTACT	BROWN	FIRST	22		Negative	0.03	0.03
157	7/26/2010 11:55	PAINT	CEILING	WOOD		INTACT	BROWN	FIRST	22	BEAM	Negative	0.02	0.02
158	7/26/2010 11:58	PAINT	WALL	WOOD	EAST	INTACT	BROWN	FIRST	21		Negative	0.01	0.02
159	7/26/2010 11:58	PAINT	CEILING	WOOD		INTACT	BROWN	FIRST	21		Negative	0.11	0.11
160	7/26/2010 11:58	PAINT	CEILING	WOOD		INTACT	BROWN	FIRST	21	BEAM	Negative	0.08	0.08
161	7/26/2010 12:00	PAINT	WALL	CONCRETE	WEST	INTACT	BROWN	FIRST	23		Negative	0.02	0.03
162	7/26/2010 12:01	PAINT	CEILING	WOOD		INTACT	BROWN	FIRST	23		Negative	0.01	0.02
163	7/26/2010 12:01	PAINT	CEILING	WOOD		INTACT	BROWN	FIRST	23	BEAM	Negative	0.02	0.02
164	7/26/2010 12:05	PAINT	WALL	CONCRETE	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0.04	0.05
165	7/26/2010 12:05	PAINT	DOOR	WOOD	NORTH	INTACT	BLUE	FIRST	OUTSIDE		Negative	0.29	0.2
166	7/26/2010 12:06	PAINT	DOOR	METAL	NORTH	INTACT	BLUE	FIRST	OUTSIDE	LOUVER	Negative	-0.07	0.76
167	7/26/2010 12:06	PAINT	DOOR	METAL	NORTH	INTACT	BLUE	FIRST	OUTSIDE	LOUVER	Negative	0.21	0.48
168	7/26/2010 12:07	PAINT	WINDOW	METAL	NORTH	INTACT	BROWN	FIRST	OUTSIDE	GUARD	Negative	0	0.02
169	7/26/2010 12:07	PAINT	WINDOW	METAL	NORTH	INTACT	BROWN	FIRST	OUTSIDE	LOUVERS	Negative	0.29	0.19
170	7/26/2010 12:10	PAINT	WINDOW	METAL	NORTH	INTACT	BROWN	FIRST	OUTSIDE	LOUVERS	Negative	0.4	0.3
171	**7/26/2010 12:14**	**PAINT**	**FACIA**	**WOOD**	**NORTH**	**INTACT**	**BLUE**	**FIRST**	**OUTSIDE**		**Positive**	**1.1**	**0.4**
172	7/26/2010 12:15	PAINT	GUTTER	METAL	NORTH	INTACT	BLUE	FIRST	OUTSIDE		Negative	0	0.02
173	7/26/2010 12:15	PAINT	EAVES	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0.2	0.3
174	7/26/2010 12:16	PAINT	RAFTER	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Null	0.7	0.2
175	7/26/2010 12:16	PAINT	RAFTER	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0.14	0.27
176	7/26/2010 12:17	PAINT	OVERHANG	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Null	0.6	0.2
177	7/26/2010 12:17	PAINT	OVERHANG	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0.3	0.36
178	7/26/2010 12:18	PAINT	WALL	CONCRETE	NORTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0.01	0.02
179	7/26/2010 12:18	PAINT	WALL	CONCRETE	NORTH	INTACT	BROWN DARK	FIRST	OUTSIDE		Negative	0.01	0.02
180	**7/26/2010 12:19**	**PAINT**	**WINDOW**	**METAL**	**NORTH**	**INTACT**	**BROWN**	**FIRST**	**OUTSIDE**		**Positive**	**1**	**0.2**
181	7/26/2010 12:20	PAINT	GATE	WOOD	NORTH	INTACT	BLUE	FIRST	OUTSIDE		Negative	0	0.02
182	**7/26/2010 12:20**	**PAINT**	**GATE**	**WOOD**	**NORTH**	**INTACT**	**BLUE**	**FIRST**	**OUTSIDE**	**FRAME**	**Positive**	**2**	**0.9**
183	**7/26/2010 12:23**	**PAINT**	**FACIA**	**WOOD**	**NORTH**	**INTACT**	**BLUE**	**FIRST**	**OUTSIDE**		**Positive**	**1**	**0.2**
184	7/26/2010 12:24	PAINT	WINDOW	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE	LOUVERS	Negative	0.13	0.24
185	7/26/2010 12:24	PAINT	CORNER POST	WOOD	NORTH	INTACT	BROWN	FIRST	OUTSIDE	LOUVERS	Negative	0.11	0.2

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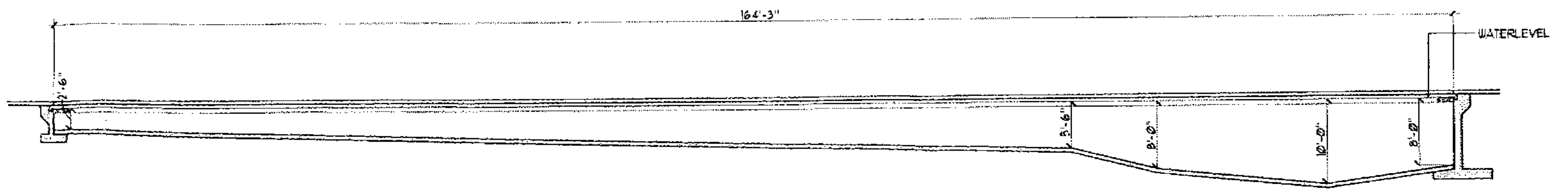
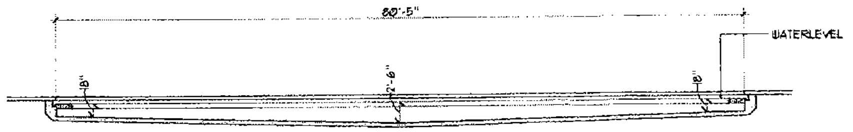
9155 E. Mission Dr.
Rosemead, CA

Analyzer: Nit[illegible]XLp-702A
Units: mg/cm^2
Action Level: 0.7 mg/cm

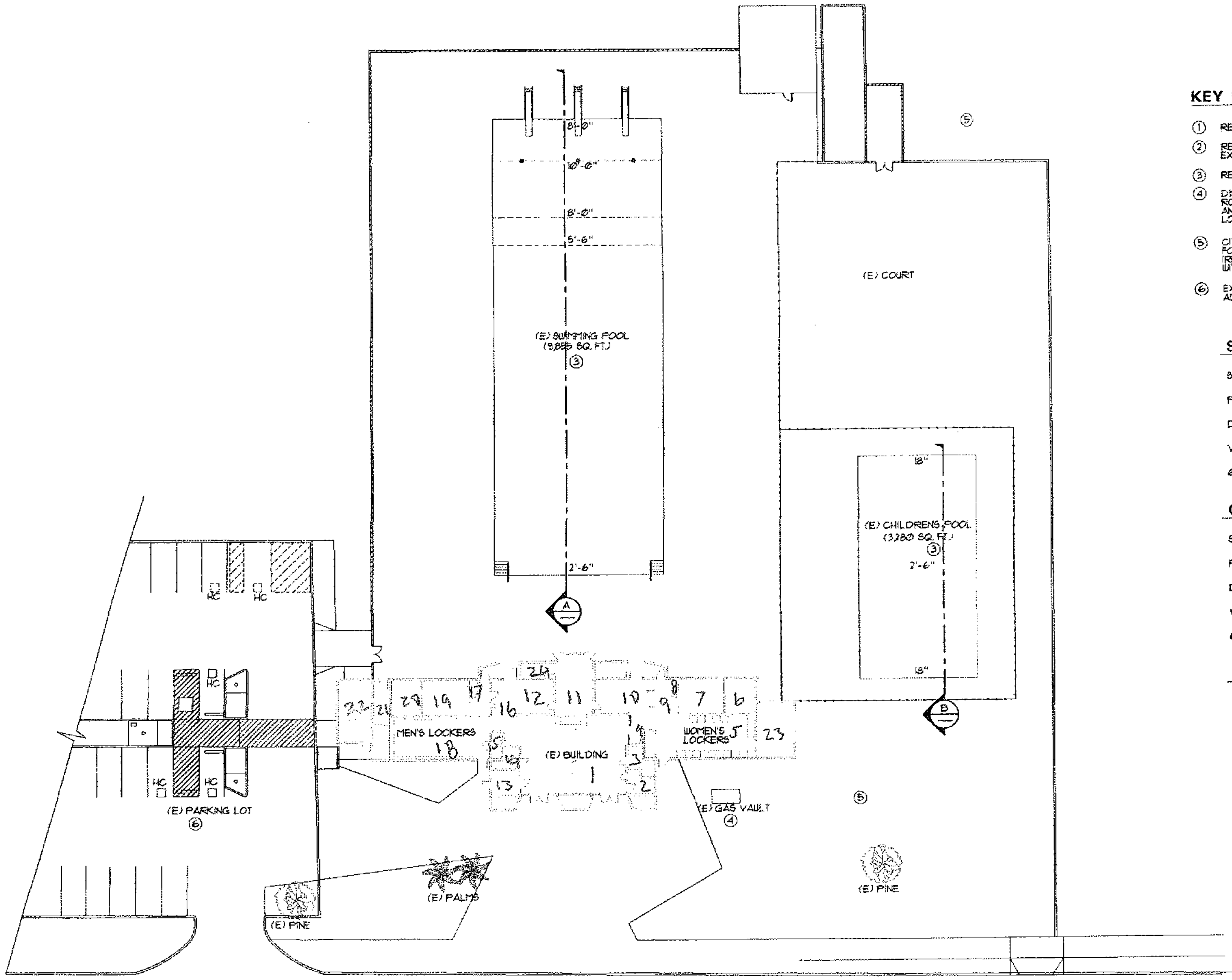
Reading	Time	Type	Component	Substrate	Side	Condition	Color	Floor	Room	Misc 1	Results	PbC	PbC Error
186	**7/26/2010 12:25**	**PAINT**	**WINDOW**	**WOOD**	**EAST**	**INTACT**	**BROWN**	**FIRST**	**OUTSIDE**	**TRIM**	Positive	1.1	0.4
187	7/26/2010 12:25	PAINT	WINDOW	WOOD	EAST	INTACT	BROWN	FIRST	OUTSIDE	PANEL	Negative	0	0.02
188	7/26/2010 12:25	PAINT	FLASHING	METAL	EAST	INTACT	BROWN	FIRST	OUTSIDE	PANEL	Negative	0.02	0.06
189	7/26/2010 12:26	PAINT	FLASHING	METAL	EAST	INTACT	BLUE	FIRST	OUTSIDE	PANEL	Negative	0.26	0.19
190	7/26/2010 12:27	PAINT	HOODS	METAL	EAST	INTACT	BLUE	FIRST	OUTSIDE	ROOF	Negative	0.11	0.31
191	7/26/2010 12:29	PAINT	WALL	CONCRETE	SOUTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0	0.02
192	7/26/2010 12:29	PAINT	WALL	CONCRETE	SOUTH	INTACT	BLUE	FIRST	OUTSIDE		Negative	0.01	0.03
193	7/26/2010 12:30	PAINT	OVERHANG	WOOD	SOUTH	INTACT	BROWN	FIRST	OUTSIDE		Negative	0.03	0.52
194	7/26/2010 12:31	PAINT	LOUVERS	METAL	WEST	INTACT	BROWN DARK	FIRST	OUTSIDE		Negative	0	0.02
195	7/26/2010 12:33	CALIBRATION								SRM2570	Negative	0	0.02
196	7/26/2010 12:33	CALIBRATION								SRM2573	Positive	0.9	0.2
197	7/26/2010 12:34	CALIBRATION								SRM2574	Negative	0.6	0.1



Ⓐ SWIMMING POOL SECTION 1/8"=1'-0"



Ⓑ SWIMMING POOL SECTION 1/8"=1'-0"



MISSION DR.

LEAD SURVEY MAP

KEY NOTES

① REMOVE EXISTING CONCRETE TO LIMITS AS SHOWN.

② REMOVE EXISTING BUILDING COMPLETE. LOCATE NEW BUILDING AND POOL OFF OF EXISTING PER PLAN. (SEE SHT. A1-1)

③ REMOVE EXISTING POOLS AND POOL DECKING COMPLETE.

④ DISCONNECT AND RELOCATE EXISTING UTILITIES AS REQUIRED AT NEW MECHANICAL ROOM PER UTILITY COMPANY REQUIREMENTS. CAP EXISTING UTILITIES TO REMAIN AND PROTECT DURING CONSTRUCTION UNTIL RE-CONNECTED. VERIFY SIZES, LOCATIONS, AND DEPTHS.

⑤ CITY TO CAP, RELOCATE, AND ADJUST EXISTING PARK IRRIGATION AS REQUIRED FOR DEMOLITION AND CONSTRUCTION OF NEW FACILITY. CITY SHALL REINSTALL IRRIGATION SYSTEM IN COORDINATION WITH NEW FACILITY LIMITS. COORDINATE WORK WITH CONTRACTOR.

⑥ EXISTING PARKING LOT TO REMAIN, WITH 16 SPACES, 5 OF WHICH ARE HC SPACES. ADDITIONAL PARKING IN STREET AROUND PARK PERIMETER.

SWIMMING POOL DATA

SURFACE AREA = 9,855 SQ. FT.
PERIMETER = 449 FT.
DEPTHS = 2'-6" TO 10'-0"
VOLUME = 397,058 GAL.
6 HR TURNOVER = 1,102 GPM

CHILDRENS POOL DATA

SURFACE AREA = 9,954 SQ. FT.
PERIMETER = 244 FT.
DEPTHS = 18" TO 2'-6"
VOLUME = GAL.
6 HR TURNOVER = GPM

LEGEND

Key
7 - Room Designations for Lead Survey

NOT TO SCALE

AQUATIC
DESIGN GROUP
2226 FARADAY AVE. CARLSBAD, CA 92008
Tel 760.438.8400 Fax 760.438.5251

LICENSED ARCHITECT
SCOTT J. FERRELL
C-45202
STATE OF CALIFORNIA

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NO.	DATE	REVISION

DATE: 06/24/2010
DRAWING TITLE:
SCALE:
JOB TITLE: ROSEMEAD PARK AQUATICS CENTER
DRAWN BY: JBP/GSF
JOB ADDRESS: 9155 E. MISSION DR.
ROSEMEAD, CA 91770

DRAWING NO.:
A-0.1

① - ③

XRF SAMPLE LOG

Converse Consultants

222 E. Huntington Drive, Suite 211
Monrovia, CA 91016-3500
Tel.: 626.930.1200
Fax: 626.930.1212

Job Name: City of Rosemead/Rosemead Park
Converse Job No.: 10-41-209-01
Date: 7/26/10
Collected By: WLR

Address: Rosemead Park
City:

Sample No.	Interior	Exterior	Paint Color	Substrate	Sample Location & Comments	Condition	Lead Conc. (mg/cm^2)	LBP Yes	LBP No
					Room 1 / Walls, Doors Alike				
					2 / N,E wall & S,W walls Alike				
					3 / Room 2 & 3 Alike				
					4 / N,E,S walls Alike				
					5 / N,S,E,W walls Alike N windows Alike S windows Alike Doors Alike				
					6 / N,S,E,W walls Alike toilets & sinks Alike				
					7 / walls Alike				
					8 / N,E,W, walls Alike				
					9 / N,S,W,E walls Alike				
					10 / N,S,E,W walls Alike E,S cabinets Alike Panels Alike				
					11 / N, Door & Frame Alike E,W,N walls Alike West Doors Alike				
					12 / is like Room 10				

Additional Comments:

| ②-③

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					Room 13 N,E walls Alike S,W walls Alike				
					14 NPS except Door				
					15 walls Alike				
					16 is Like Room 9				
					17 is Like Room 8				
					18 is Like Room 5				
					19 N,S,W,E, walls ~~Alike~~ Alike				
					20 walls Alike sinks, urinal, toilets Alike				
					21 walls Alike				
					22 walls Alike				
					23 walls Alike				
					24 N,E walls Alike S,W, walls Alike				

Additional Comments:

③-③

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Sample No.	Interior	Exterior	Paint Color	Substrate	Sample Location & Comments	Condition	Lead Conc. (mg/cm^2)	LBP	
								Yes	No
					OUTSIDE N,S,E,W WALLS ALIKE				
					LOUVERS, EAVES, RAFTERS WINDOW GUARD, FACIA, FLASHING ALIKE				

Additional Comments: