Attachment 16
Phase I - ESA

PRELIMINARY SOILS ENGINEERING REPORT
HOT SPRINGS MASTER PLAN
A PLANNED COMMUNITY DEVELOPMENT
APNS: 025-390-002, -003, -006, -007, AND –008
EAST OF BUENA VISTA DRIVE
CITY OF EL PASO DE ROBLES, CALIFORNIA

PROJECT SL05322-2

Prepared for

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June 2, 2006

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June 2, 2006
Project SL05322-2

Estrella Associates, Inc.
Attn: Dick Willhoit
2727 Buena Vista Drive
Paso Robles, California 93446

Subject: **Preliminary Soils Engineering Report**
Hot Springs Master Plan, A Planned Community Development
APNS: 025-390-002, -003, -006, -007 and –008
East of Buena Vista Drive
City of El Paso de Robles, California

Dear Mr. Willhoit:

This Preliminary Soils Engineering Report has been prepared for the proposed Hot Springs Master Plan, A Planned Community Development to be located east of Buena Vista Drive, APNS: 025-390-002, -003, -006, -007 and -008, Rancho Santa Ysabel in the city of El Paso de Robles, California. Geotechnically, the site is suitable for the proposed development provided the recommendations in this report for site preparation, earthwork, foundations, slabs, retaining walls, and pavement sections are incorporated into the design.

Given the scope of the project and the variability of conditions encountered, it is anticipated that in-depth soils investigations will be performed for each area with site specific Soils Engineering Reports issued. Based on the preliminary Site Plan and the topography of the site, it is anticipated that graded engineered fill pads will be constructed with all foundations excavated into engineered fill. Since competent native material of the Paso Robles Formation was encountered at numerous boring locations within 5 feet of the surface elevation during the sub-surface investigation, proposed structures may be constructed utilizing continuous footings founded in uniform competent native material as observed and approved by a representative of GeoSolutions, Inc. Deepened footings may be required in certain areas to achieve the required embedment depth in uniform competent native material. This alternative is included in this report. All foundations are to be excavated into uniform competent material to limit the potential for distress of the foundation systems due to differential settlement. If cuts steeper than allowed by State of California Construction Safety Orders for "Excavations, Trenches, Earthwork" are proposed, a numerical slope stability analysis may be necessary for temporary construction slopes.

Natural seepage at the interface of two materials with different densities is very common. This interface occurs at the Site and may require sub-surface drains. Sub-drains should be placed in established drainage courses and potential seepage areas. The location of sub-drains should be determined during grading by a representative of GeoSolutions, Inc.

Thank you for the opportunity to have been of service in preparing this report. If you have any questions or require additional assistance, please feel free to contact the undersigned at (805) 543-8539.

Sincerely,
GeoSolutions, Inc.

REGISTERED PROFESSIONAL ENGINEER
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Exp. 9/30/2007

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TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PURPOSE AND SCOPE 3

3.0 FIELD AND LABORATORY INVESTIGATION 3

3.1 Seismic Design Considerations 6

3.2 Liquefaction Potential 6

4.0 GENERAL SOIL-FOUNDATION DISCUSSION 6

5.0 PRELIMINATRY CONCLUSIONS AND RECOMMENDATIONS 7

5.1 Preliminary Preparation of Building Pads 7

5.2 Preliminary Preparation of Paved Areas 8

5.3 Conventional Foundations-Preliminary Design 8

5.4 Slab-On-Grade Construction-Preliminary Design 10

5.5 Retaining Walls-Preliminary Design 11

5.6 Preliminary Pavement Design 13

6.0 ADDITIONAL GEOTECHNICAL SERVICES 13

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS 14

REFERENCES

PLATE 1: Site Plan

APPENDIX A

Field Investigation
Soil Classification Chart
Boring Logs

APPENDIX B

Laboratory Testing
Soil Test Reports

APPENDIX C

Preliminary Grading Specifications
Key and Bench with Backdrain

LIST OF FIGURES

Figure 1: Area Location Map 1

Figure 2: Site Location Map 1

Figure 3: Setback Dimensions 10

Figure 4: Sub-Slab Detail 10

Figure 5: Retaining Wall Detail 12

LIST OF TABLES

Table 1: Area Designations Table 2

Table 2: Boring Numbers Near Areas of Interest 3

Table 3: Engineering Properties 5

Table 4: 2001 California Building Code, Chapter 16, Structural Design Parameters 6

Table 5: Preliminary Minimum Footing and Grade Beam Dimensions 9

Table 6: Preliminary Retaining Wall Design Parameters 11

Table 7: Preliminary Recommended Pavement Structural Sections 13

PRELIMINARY SOILS ENGINEERING REPORT
HOT SPRINGS MASTER PLAN
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EAST OF BUENA VISTA DRIVE
CITY OF EL PASO DE ROBLES, CALIFORNIA

PROJECT SL05322-2

1.0 INTRODUCTION

This report presents the results of the preliminary geotechnical investigation for the proposed Hot Springs Master Plan, A Planned Community Development to be located east of Buena Vista Drive, APNS: 025-390-002, -003, -006, -007 and -008, Rancho Santa Ysabel in the city of El Paso de Robles, California. See Figure 1: Site Location Map.

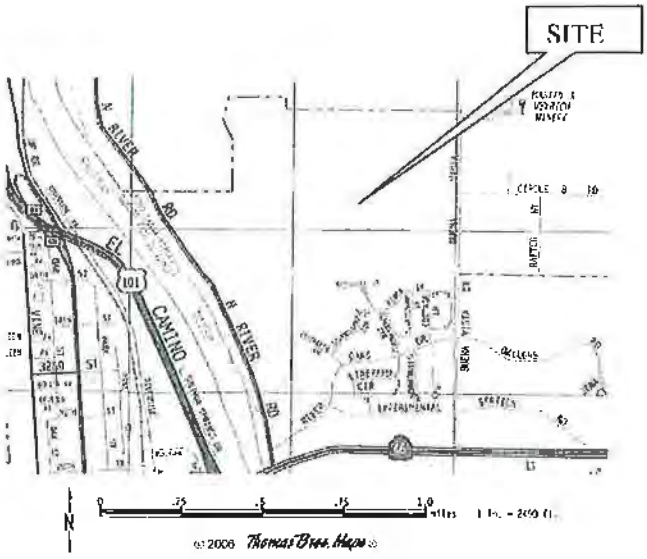

Figure 1: Area Location Map

The proposed development area is irregular in shape and approximately 250 acres in area. The majority of the proposed development is to be east of North River Road, north of River Oaks Planned Community, east of Buena Vista Drive and extending north to the current city limits. The accesses to the development are planned from Buena Vista Road and Clubhouse Drive. The property will hereafter be referred to as the "Site." See Figure 2: Site Location Map, and Plate 1: Site Plan.

The Planned Community Development is to include: Active Adult Neighborhood, Estate Lots, Large Lot Neighborhood, Manor House Courts, 5-Pack Clusters, Spa Zone Dwellings, High End Flats, Lake Front Condominiums, Bed and Breakfast Condos, Bed and Breakfast, Boutique Hotel, Community Facilities, Community Swimming and Tennis, Hot Springs Spa, and Community Sports Practice Facility. For clarity, the Site has been divided into these designated areas for the different planned uses. These areas have been given Area Numbers and are listed in Table 1: Area Designation Table, with approximate areas described. See Plate 1: Site Plan for site locations. In addition, a dam is proposed to separate the existing lake into two portions. A Pavilion and Amphitheater is to be located in the southern portion of the development, south of the dam and west of the lake. GeoSolutions, Inc. has completed geotechnical investigations for these areas and they are listed in the references.

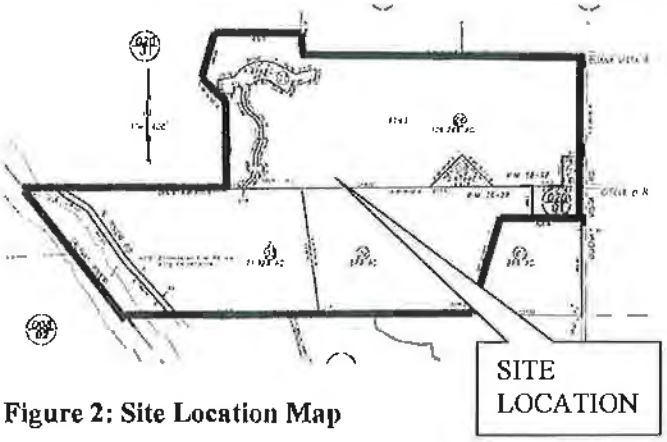

Figure 2: Site Location Map

The Active Adult Neighborhood is proposed to occupy the southwestern portion of the Site, west of the lake and east of North River Road. The Hot Springs Spa is to occupy the area to the northeast of the Active Adult Neighborhood. The Bed and Breakfast is proposed to the north of the Hot Springs Spa in the northwest corner of the Site. The Boutique Hotel is proposed east of the Bed and Breakfast. Bed and Breakfast Condos are to be located in the area south of the Boutique Hotel and east of the Hot Springs Spa. The Spa Zone Dwellings are to be located south of the Bed and Breakfast Condos and east of the lake. Estate Lots are proposed to encompass the south-central portion of the Site with several additional Estate Lots to be located in the northern portion of the Site, east of the Boutique Hotel. High End Flats are to be located south of the southern Estate Lots, in the southeasterly corner of the Site. Community Swimming and Tennis is to be located northeast of the 5-Pack Clusters. The Large Lot Neighborhood and Manor House Courts are to be located south and of the Community Swimming and Tennis and south of the northern Estate Lots. Lake Front Condominiums are to be located in the eastern portion of the Site, in the area of a proposed lake. 5-Pack Clusters and Community Facilities are to occupy the northeast corner of the Site. The Community Sports Practice Facility is to be located west of North River Road and east of the Salinas River and will not be addressed in this report.

Table 1: Area Designations Table

Area Designation for Hot Springs Master Plan		
Area Numbers	**Area Name**	**Notes/Area Descriptions**
1	Active Adult Neighborhood	Southwestern portion of the Site - east of North River Road
2	Estate Lots	Southeast portion of the Site - east of the existing lake, some estate lots are also located north of the proposed Large Lot Neighborhood
3	Large Lot Neighborhood	Northeast portion of the Site - north and south of Estate Lots
4	Manor House Courts	Northeast portion of the Site - east of the Large Lot Neighborhood
5	5-Pack Clusters	Northeast portion of the Site - east of the proposed Manor House Courts and west of the Proposed Lake
6	Spa Zone Dwellings	Northwest of the Estate Lots and east of the existing lake
7	High End Flats	Southeast portion of the Site - south of Estate Lots
8	Lake Front Condominiums	Northeast portion of the Site - south of the 5-Pack Clusters, bordering the Proposed Lake
9	Bed and Breakfast Condos	East of the Hot Springs Spa - between the Estate Lots and Boutique Hotel-east of the existing lake
10	Bed and Breakfast	Northwest corner of the Site
11	Boutique Hotel	Northeast of the Bed and Breakfast Condos and west of the Estate Lots
12	Community Facilities	Northeast corner of the Site – north of the 5-Pack Clusters
13	Community Swimming and Tennis	Eastern area of the Site - southwest of the Proposed Lake
14	Hot Springs Spa	Northeast of the Active Adult Neighborhood
15	Community Sports Practice Facility	West of North River Road – not addressed in this report

Site topography consists of rolling hills with varying slope gradients from relatively level to approximately 3-to-1 (horizontal to vertical). Surface drainage follows the topography of the Site via natural drainage courses to generally to the west-northwest to the Salinas River. Currently the Site is used for agriculture and vegetated with field crops, native grasses and sparse trees.

2.0 PURPOSE AND SCOPE

The purpose of this study was to explore and evaluate the surface and sub-surface soil conditions at the Site and develop geotechnical information and design criteria. The scope of this study includes the following items:

1. A review of available published and unpublished geotechnical data pertinent to the project site.

2. A field study consisting of a site reconnaissance and an exploratory boring program to formulate a description of the sub-surface conditions.

3. A laboratory-testing program performed on representative soil samples collected from our field study.

4. Analysis of the data gathered during our field study and laboratory testing.

5. Development of recommendations for site preparation and grading, and geotechnical design criteria for building foundations, retaining walls, pavement sections, underground utilities and drainage facilities.

3.0 FIELD AND LABORATORY INVESTIGATION

The field investigation was conducted on April 24, 25, 27, and 28, 2006 and May 1, 2, and 3, 2006 using a track-mounted CME-55 drill rig. Nineteen exploratory borings to a maximum depth of 20 feet below ground surface (bgs) were placed at the approximate locations indicated on the Site Plan. The designated areas with the corresponding boring locations are included in Table 2.

Table 2: Boring Numbers Near Areas of Interest

Area Number	1		2	3	4	5	6	7
Boring Number	B-1, B-2, B-3, B-4		B-17, B-19	B-11	B-11	B-12, B-15	B-6	B-18
Area Number	8	9	10	11	12	13	14	15
Boring Number	B-14	B-7, B-8	B-9	B-10	B-13	B-16	B-5	-

In **Area 1, Active Adult Neighborhood**, borings B-1, B-2, B-3 and B-4, the surface and subsurface materials generally consisted of dark to medium yellowish brown sandy CLAY (CL) with some silt and coarse gravel encountered in a slightly moist and stiff to hard condition. In boring B-3, a lens of yellowish brown clayey SAND (SC) with silt was encountered at depths of 3.0 feet to 7.0 feet bgs. The borings were terminated at 15 feet bgs. Groundwater was not encountered in any of these borings.

In **Area 2, Estate Lots**, boring B-17, the surface and subsurface materials generally consisted of light brown sandy CLAY (CL) encountered in a slightly moist and hard condition, becoming very stiff with depth. Termination of the boring was at 15.0 feet bgs. In boring B-19, the surface and subsurface materials

generally consisted of brown sandy CLAY (CL) encountered in a slightly moist and hard condition. Termination of this boring was at 5.0 feet bgs in material identified as slightly weathered Paso Robles Formation and referred to as competent native material.

In **Areas 3 and 4, Large Lot Neighborhood and Manor House Courts,** boring B-11, the surface materials generally consisted of yellowish brown silty CLAY (CL) encountered in a slightly moist and stiff condition extending to a depth of 5.0 feet bgs and the subsurface material consisted of light brown sandy CLAY encountered in a slightly moist and hard condition to termination of the boring at 10 feet bgs. Boring B-11 was terminated in material that was identified as the weathered Paso Robles Formation and referred to as competent native material.

In **Area 5, 5-Pack Clusters,** In boring B-12, the surface materials generally consisted of dark yellowish brown sandy CLAY (CL) with gravel encountered in a slightly moist and very stiff condition extending to a depth of 7.0 feet bgs and the subsurface material consisted of brown clayey SAND (SC) encountered in a slightly moist and dense condition to termination of the boring at 15 feet bgs. In boring B-15, the surface and subsurface material consisted of yellowish brown sandy CLAY (CL) encountered in a slightly moist and stiff condition, becoming very stiff to hard with depth to termination of the boring at 15.0 feet bgs. Groundwater was not encountered in any of these borings.

In **Area 6, Spa Zone Dwellings,** boring B-6, the surface materials generally consisted of yellowish brown clayey SAND encountered to a depth of 3.5 feet bgs in a slightly moist condition. The sub-surface materials consisted of yellowish brown sandy CLAY (CL) with silt and some gravel encountered in a slightly moist and very stiff to hard condition to termination of boring at 15.0 feet bgs.

In **Area 7, High End Flats,** boring B-18, the surface materials generally consisted of dark grayish brown silty CLAY (CL) with gravel encountered in a slightly moist and stiff condition to a depth of 5.0 feet bgs. The subsurface material consisted of strong brown sandy CLAY (CL) encountered in a slightly moist and very stiff condition to termination of the boring at 15.0 feet bgs. No groundwater was encountered.

In **Area 8, Lake Front Condominiums,** boring B-14, the surface and subsurface materials generally consisted of light brown sandy CLAY (CL) encountered in a slightly moist to dry and very stiff to hard condition. The boring was terminated at 15 feet bgs with no groundwater encountered.

In **Area 9, Bed and Breakfast Condos,** borings B-7 and B-8, in boring B-7, the surface and subsurface materials generally consisted of yellowish brown sandy CLAY (CL) with silt and some gravel encountered in a slightly moist and very stiff to hard condition to termination of boring at 15.0 feet bgs. In boring B-8, the surface and subsurface material consisted of light olive brown silty CLAY (CL) encountered in a slightly moist and hard condition to termination of the boring at 5.0 feet bgs, which was identified as the weathered Paso Robles Formation and referred to as competent native material. Groundwater was not encountered in any of these borings.

In **Area 10, Bed and Breakfast,** boring B-9, the surface and subsurface materials generally consisted of pale yellowish brown sandy CLAY (CL) with silt encountered in a slightly moist and hard condition to termination of the boring at 5 feet bgs. This material was identified as slightly weathered Paso Robles Formation and referred to as competent native material. No groundwater was encountered.

In **Area 11, Boutique Hotel,** boring B-10, the surface and subsurface materials generally consisted of yellowish brown sandy CLAY (CL) encountered in a slightly moist and very stiff to hard condition. The boring was terminated at 15 feet bgs in this material, which was identified as slightly weathered Paso Robles Formation and referred to as competent native material. No groundwater was encountered.

In **Area 12, Community Facilities,** boring B-13, the surface and subsurface material consisted of dark yellowish brown silty SAND (SM) with gravel encountered in a dry and dense condition, becoming very dense with depth. Boring termination was at 10.0 feet bgs in material that was identified as the weathered Paso Robles Formation and referred to as competent native material. Groundwater was not encountered.

In **Area 13, Community Swimming and Tennis,** boring B-16, the surface materials generally consisted of dark brown sandy CLAY (CL) encountered in a slightly moist condition to a depth of 4.0 feet bgs. The subsurface material consisted of light yellowish brown sandy CLAY (CL) with silt encountered in a slightly moist and firm condition, becoming hard with depth. The boring was terminated at 20 feet bgs in this material with no groundwater encountered.

In **Area 14, Hot Springs Spa**, boring B-5, the surface materials generally consisted of dark yellowish brown sandy CLAY (CL) with silt encountered in a slightly moist condition, extending to a depth of 3.5 feet bgs. The subsurface material in this area consisted of dark yellowish brown silty SAND (SM) with clay encountered in a slightly moist and medium dense condition, extending to a depth of 12.5 feet bgs. From 12.5 feet bgs to termination of the boring at 15 feet bgs, dark yellowish brown sandy CLAY (CL) with silt was encountered in a moist and stiff condition. No groundwater was encountered.

Area 15, Community Sports Practice Facility, was not addressed in this report.

During the boring operations the soils encountered were continuously examined, visually classified, and sampled for general laboratory testing. A project engineer has reviewed a continuous log of the soils encountered at the time of field investigation. The Boring Logs are attached in **Appendix A**.

The results of the laboratory tests performed on the soils sampled from the Site during boring operations are listed below. A detailed explanation of each laboratory test performed is provided in **Appendix B**, along with the laboratory data reports.

Table 3: Engineering Properties

Sample Name	Area Number	Sample Description	Specification	Expansion Index	Expansion Potential	Maximum Dry Density, γ_d (pcf)	Optimum Moisture (%)	Angle of Internal Friction, ϕ (deg.)	Cohesion, c (psf)
A	3	Dark Yellowish Brown Sandy CLAY w/ Silt	CL	26	Low	123.8	10.5	24.3°	303
B	3	Dark Yellowish Brown Sandy CLAY w/ Silt	CL	17	Very Low	122.8	11.1	14.2°	271
C	6	Yellowish Brown Clayey SAND w/ Silt & Gravel	SC	8	Very Low	130.7	8.7	-	-
D	6	Dark Yellowish Brown Sandy CLAY w/ Silt	CL	33	Low	123.2	10.7	7.0°	488
E	6	Yellowish Brown Sandy CLAY	CL	0	Very Low	113.4	14.1	-	-
B-3 @ 4.0 ft	3	Yellowish Brown Clayey SAND w/ Silt	SC	-	-	-	-	36.6°	0

B-5 @ 4.0 ft	4	Dark Yellowish Brown Silty SAND w/ Clay	SM	-	-	-	-	45.8°	0
B-10 @ 4.0 ft	5	Yellowish Brown Sandy CLAY	CL	-	-	-	-	11.0°	432
B-12 @ 4.0 ft	8	Dark Yellowish Brown Sandy CLAY w/ Gravel	CL	-	-	-	-	20.2°	304
B-15 @ 4.0 ft	8	Yellowish Brown Clayey SAND	SC	-	-	-	-	41.6°	0

3.1 Seismic Design Considerations

Structural building design parameters within the 2001 California Building Code (CBC) are dependent upon several factors including site soil characteristics and faults near the Site. This data is presented in tabular form in Table 4.

Table 4: 2001 California Building Code, Chapter 16, Structural Design Parameters

Soil Profile Type	S_D – Stiff Soil
Seismic Source Type	Greater than 15 kilometers from an A fault Approximately 3.5 kilometers from a B fault.
Seismic Zone	Seismic Zone 4 Z= 0.4
Near Source Factor	$N_a = 1.15$ $N_v = 1.40$
Seismic Coefficient	$C_a = 0.44N_a = 0.44\ (1.15) = 0.51$ $C_v = 0.64N_v = 0.64\ (1.40) = 0.90$

3.2 Liquefaction Potential

1. Liquefaction occurs when saturated, cohesionless soils lose shear strength due to earthquake shaking. Ground motion from an earthquake may induce cyclic reversals of shear stresses of large amplitude. Lateral and vertical movement of the soil mass combined with the loss of bearing strength usually results from this phenomenon.

2. Liquefaction potential of soil deposits during earthquake activity depends on soil type, void ratio, groundwater conditions, the duration of shaking and confining pressures on the potentially liquefiable soil unit. Fine, well-sorted loose sand, shallow groundwater, high intensity earthquakes and long duration of ground shaking are the principal factors leading to liquefaction. Based on the density of the soils, recent seismic activity, the depth to groundwater, and the knowledge of the site geology; the potential for seismic liquefaction of soils appears to be low. Assuming that the recommendations of the Soils Engineering Report are implemented, the potential for seismically induced settlement and differential settlement is considered to be low.

4.0 GENERAL SOIL-FOUNDATION DISCUSSION

Given the scope of the project and the variability of conditions encountered, it is anticipated that in-depth soils investigations will be performed for each area with site specific Soils Engineering Reports issued. Based on the preliminary Site Plan and the topography of the site, it is anticipated that graded engineered fill pads will be constructed with all foundations excavated into engineered fill. Since competent native material of the Paso Robles Formation was encountered at numerous boring locations within 5 feet of the surface elevation during the sub-surface investigation, proposed structures may be constructed utilizing continuous footings founded in uniform competent native material as observed and approved by a

representative of GeoSolutions, Inc. Deepened footings may be required in certain areas to achieve the required embedment depth in uniform competent native material. This alternative is included in this report. All foundations are to be excavated into uniform competent material to limit the potential for distress of the foundation systems due to differential settlement. If cuts steeper than allowed by State of California Construction Safety Orders for "Excavations, Trenches, Earthwork" are proposed, a numerical slope stability analysis may be necessary for temporary construction slopes.

Natural seepage at the interface of two materials with different densities is very common. This interface occurs at the Site and may require sub-surface drains. Sub-drains should be placed in established drainage courses and potential seepage areas. The location of sub-drains should be determined during grading by a representative of GeoSolutions, Inc.

5.0 PRELIMINATRY CONCLUSIONS AND RECOMMENDATIONS

The Site is suitable for the proposed developments provided the recommendations presented in this report are incorporated into the project plans and specifications.

The primary geotechnical concerns at the Site are:

1. The presence of potentially expansive material. Influx of water from irrigation, leakage from the residence or natural seepage could cause expansive soil problems.

2. The potential for differential settlement occurring between foundations supported on two soil materials having different settlement characteristics, such as native soil and engineered fill. Therefore, it is important that all of the foundations are founded in equally competent uniform material in accordance with this report.

5.1 Preliminary Preparation of Building Pads

1. Given the scope of the project and the variability of conditions encountered, it is anticipated that in-depth soils investigations will be performed for each area with site-specific Soils Engineering Reports issued. In general, it is anticipated that graded engineered fill pads will be developed for the proposed structures with the foundations excavated into engineered fill. As an alternative, given the shallow depth to competent native material in numerous boring locations, footings could be founded in uniform competent native material as observed and approved by a representative of GeoSolutions, Inc.

2. For the development of engineered fill pads, it is expected that the native material will require over-excavating to least 18 inches below existing grade, 12 inches below the bottom of the footings, to competent native material or one-half the depth of the deepest fill; whichever is greatest. The limits of over-excavation should extend a minimum of 5 feet beyond the perimeter foundation. The exposed surface may require scarification to a depth of 12 inches, moisture conditioned to near optimum moisture content and compacted to a minimum relative density of 90 percent (ASTM D1557-02$^{\epsilon 1}$ test method). The over-excavated material is suitable for use as engineered fill. Refer to Figure 4: Sub-Slab Detail for under-slab drainage material and **Appendix C** for more details on fill placement.

3. For slab-on-grade construction with footings founded a minimum of 12 inches into uniform competent native material, the pad area to receive slab-on-grade construction should be graded such that all slabs are supported on uniform competent material. The

native material may require over-excavation beneath the slab to at least 12 inches below existing grade and finished slab elevation, to competent native material or one-half the depth of the deepest fill; whichever is greatest. The removed material is suitable to be processed as engineered fill. Refer to Figure 4: Sub-Slab Detail for under-slab drainage material and **Appendix C** for more details on fill placement.

4. If fill areas are constructed on slopes greater than 10 to 1 (horizontal to vertical), we recommend that benches be cut every 4 feet as fill is placed. Each bench shall be a minimum of 10 feet wide with a minimum of 2 percent gradient into the slope. If fill areas are constructed on slopes greater than 5 to 1, we recommend that the toe of all areas to receive fill be keyed a minimum of 24 inches into underlying dense material. Key depths are to be observed and approved by a representative of GeoSolutions, Inc. Sub-drains shall be placed in the keyway and benches as required. Refer to **Appendix C**, Detail A, Key and Bench with Backdrain.

5.2 Preliminary Preparation of Paved Areas

1. Pavement areas should be over-excavated 12 inches below existing grade or finished sub-grade; whichever is deeper. The exposed surface should be scarified an additional depth of 8 inches, moisture conditioned to near optimum moisture content and compacted to a minimum relative density of 90 percent (ASTM D1557-02$^{\varepsilon 1}$ test method). The over-excavated soil should then be moisture conditioned to produce a water-content of at least 1 to 2 percent above optimum value and then compacted to a minimum relative density of 90 percent. The top 12 inches of sub-grade soil under all pavement sections should be compacted to a minimum relative density of 95 percent based on the ASTM D1557-02$^{\varepsilon 1}$ test method at slightly above optimum.

2. Sub-grade soils should not be allowed to dry out or have excessive construction traffic between moisture conditioning and compaction, and placement of the pavement structural section.

5.3 Conventional Foundations-Preliminary Design

1. Conventional continuous and spread footings with grade beams may be used for support of the various proposed structures. Isolated pad footings will be permitted for single floor loads only.

2. Preliminary minimum footing and grade beam sizes and depths in engineered fill or uniform competent native material may be based on the following table.

Table 5: Preliminary Minimum Footing and Grade Beam Dimensions

Excavated in Engineered Fill			
Building Type	**Depth Below Lowest Adjacent Grade**		**Width**
One-Story	15 inches		12 inches
Two-Story	18 inches		15 inches
Three-Story	24 inches		24 inches
Excavated in Uniform Competent Native Material			
Building Type	**Depth Below Lowest Adjacent Grade**	**Minimum Embedment into Uniform Competent Native**	**Width**
One-Story	15 inches	12 inches	12 inches
Two-Story	18 inches	12 inches	15 inches
Three-Story	24 inches	12 inches	24 inches

3. Minimum reinforcing for footings may be assumed to be two No. 4 bars, placed one at the top and one at the bottom, or as directed by the project Structural Engineer.

4. A representative of this firm should observe and approve all foundation excavations for required embedment depth prior to the placement of reinforcing steel and/or concrete. Concrete should be placed only in excavations that have been pre-moistened and are free of loose soft soil or debris. A pre-moistening requirement of 120 percent of optimum moisture content to a depth of 21 inches below lowest adjacent grade with associated testing required may be assumed.

5. An allowable dead plus live load bearing pressure of **1,800 psf** may be assumed for preliminary design for engineered fill or uniform competent native material. Lateral forces on structures may be resisted by passive pressure acting against the sides of shallow footings and/or friction between the engineered fill or uniform competent native material and the bottom of the footings. For resistance to lateral loads, a friction factor varying from **0.35** may be assumed for preliminary design for engineered fill or uniform competent native material.

6. A passive resistance of **300-pcf** equivalent fluid weight may be assumed for preliminary design against the side of shallow footings in engineered fill or uniform competent native material. Foundation excavations should be observed and approved by a representative of this firm prior to the placement of reinforcing steel and/or concrete.

7. Foundation design should conform to the requirements of Chapter 18 of the latest edition of the California Building Code.

8. The minimum footing setback distance from an ascending or descending slope greater than 3-to-1 (horizontal to vertical) must be maintained, see Figure 3: Setback Dimensions. The base of all grade beams and footings should be level and step as required accommodating any slope of the grade while maintaining the minimum required footing embedment and slope setback distance.

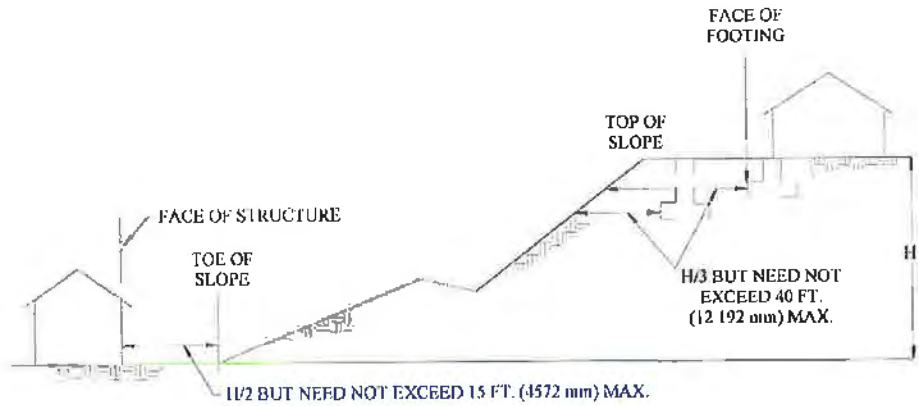

Figure 3: Setback Dimensions

5.4 Slab-On-Grade Construction-Preliminary Design

1. Concrete slabs-on-grade and flatwork should not be placed directly on unprepared native materials. Preparation of sub-grade to receive concrete slabs-on-grade and flatwork should be processed as discussed in the preceding sections of this report. Concrete slabs should be placed only over sub-grade that has been pre-moistened. A pre-moistening requirement of 120 percent of optimum moisture content to a depth of 21 inches below lowest adjacent grade with associated testing required may be assumed.

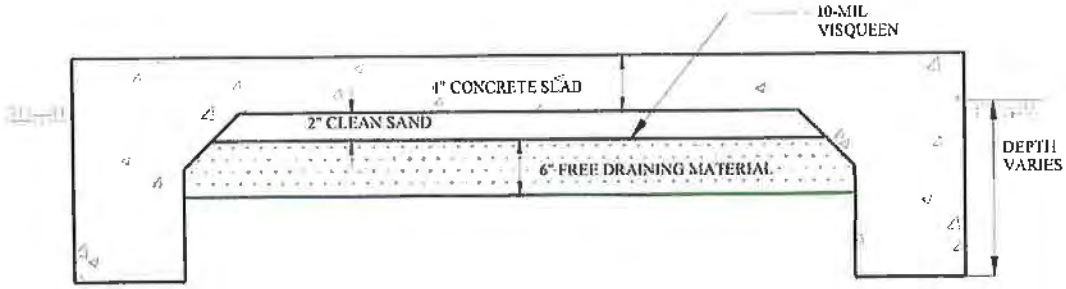

Figure 4: Sub-Slab Detail

2. Where concrete slabs-on-grade are to be constructed, the slabs should be underlain by a minimum of 6 inches of clean free-draining material, such as a coarse aggregate mix to serve as a cushion and a capillary break. Where moisture susceptible storage or floor coverings are anticipated, a 10-mil Visqueen-type membrane should be placed between the free-draining material and the slab to minimize moisture condensation under the floor covering. See Figure 4: Sub-Slab Detail. It is suggested that a 2-inch thick sand layer be placed on top of the membrane to assist in the curing of the concrete, increasing the depth of the under-slab material to a total of 8 inches. The sand should be lightly moistened prior to placing concrete.

3. Concrete slabs-on-grade should be a minimum of 4 inches thick with minimum reinforcing assumed to be No. 4 reinforcing bars placed at 18 inches on-center both ways

at or slightly above the center of the structural section. Reinforcing bars should have a minimum clear cover of 1.5 inches. The aforementioned reinforcement may be used for anticipated uniform floor loads not exceeding 200 psf. If floor loads greater than 200 psf are anticipated, a Structural Engineer should evaluate the slab design.

4. Moisture condensation under floor coverings has become critical due to the use of water-soluble adhesives; therefore it is suggested that moisture sensitive slabs not be constructed during inclement weather conditions.

5. Concrete for all slabs should be placed at a maximum slump of less than 5 inches. Excessive water content is the major cause of concrete cracking. If fibers are used to aid in the control of cracking, a water-reducing admixture may be added to the concrete to increase slump while maintaining a water/cement ratio, which will limit excessive shrinkage. Control joints should be constructed as required to control cracking.

5.5 Retaining Walls-Preliminary Design

1. Retaining walls should be designed to resist lateral pressures from adjacent soils and surcharge loads applied behind the walls. The following lateral pressures may be assumed for preliminary design of retaining walls at the Site. See Table 6: Retaining Wall Design Parameters and Figure 5: Retaining Wall Detail.

Table 6: Preliminary Retaining Wall Design Parameters

Lateral Pressure and Condition	Equivalent Fluid Pressure, pcf
Active Case, Engineered Fill or Native (K_a)	40
At-Rest Case, Engineered Fill or Native (K_o)	60
Passive Case, Engineered Fill or Coupetent Native (K_p)	300

2. The above values for preliminary equivalent fluid pressure are based on walls having level retained surfaces. Walls having a retained surface that slopes upward from the top of the wall should be designed for an additional equivalent fluid pressure of **1 pcf** for the active case and **1.5 pcf** for the at-rest case, for every **two degrees** of slope inclination.

3. Retaining wall foundations may be assumed to be founded a minimum of 15 inches below lowest adjacent grade in engineered fill or founded a minimum of 15 inches below lowest adjacent grade and embedded at least 12 inches in uniform competent native material as observed and approved by a representative of GeoSolutions, Inc. A coefficient of friction of 0.30 may be assumed between engineered fill or uniform competent native material and concrete footings. Project designers may assume a maximum toe pressure of **2,200 psf** for engineered fill or uniform competent native material for preliminary design.

4. In addition to the lateral soil pressure given above, the retaining walls should be designed to support any design live load, such as from vehicle and construction surcharges, etc., to be supported by the wall backfill. If construction vehicles are required to operate within 10 feet of a wall, supplemental pressures will be induced and should be taken into account through design.

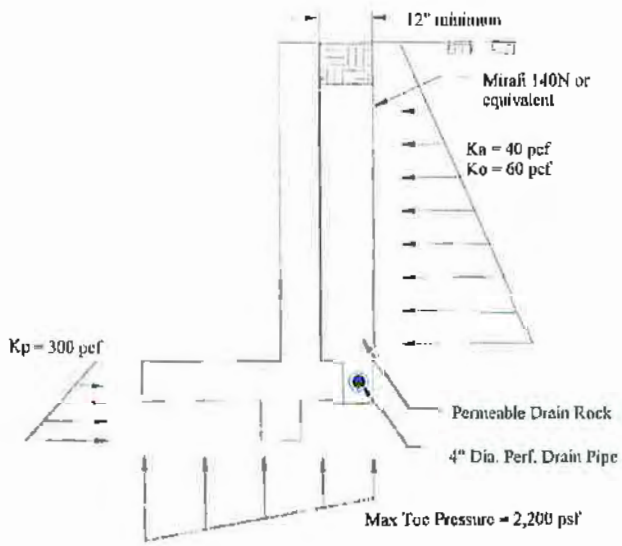

Figure 5: Retaining Wall Detail

5. The recommended pressures are based on the assumption that sufficient sub-surface drainage will be provided behind the walls to prevent the build-up of hydrostatic pressure. To achieve this we recommend that a filter material be placed behind all proposed walls. The blanket of filter material should be a minimum of 12 inches thick and should extend from the bottom of the wall to 12 inches from the ground surface. The top 12 inches should consist of moisture conditioned, compacted, clayey soil.

6. A 4-inch diameter perforated or slotted drainpipe (ASTM D1785 PVC) should be installed near the bottom of the filter blanket with perforations facing down. The drainpipe should be underlain by at least 4 inches of filter type material and should daylight to discharge in suitably projected outlets with adequate gradients. The filter material should consist of a clean free-draining aggregate, such as a coarse aggregate mix.

7. The filter material should be encapsulated in a permeable geotextile fabric. A suitable permeable geotextile fabric, such as non-woven needle-punched Mirafi 140N or equal, may be utilized to encapsulate the retaining wall drain material and should conform to Caltrans Standard Specification 88-1.03 for underdrains.

8. For hydrostatic loading conditions (i.e. no free drainage behind retaining wall), an additional loading of 45-pcf equivalent fluid weight should be added to the above soil pressures. If it is necessary to design retaining structures for submerged conditions, the allowed bearing and passive pressures should be reduced by 50 percent. In addition, soil friction beneath the base of the foundations should be neglected.

9. Precautions should be taken to ensure that heavy compaction equipment is not used adjacent to walls, so as to prevent undue pressure against, and movement of the walls.

10. The use of water-stops/impermeable barriers should be used for any basement construction, and for building walls that retain earth.

5.6 Preliminary Pavement Design

1. All paving construction and materials used should conform to applicable sections of the latest edition of the State of California Department of Transportation Standard Specifications.

2. As indicated previously, the top 12 inches of sub-grade soil under pavement sections should be compacted to a minimum relative density of 95 percent based on the ASTM D1557-02$^{\varepsilon 1}$ test method at slightly above optimum moisture content. Aggregate bases and sub-bases should also be compacted to a minimum relative density of 95 percent based on the aforementioned test method.

3. The following table provides the recommended pavement section based on an assumed R-Value of 40. Final design pavement section will be determined after preliminary grading is complete and the California Test Method No. 301-F test is performed on a representative pavement sub-soil sample encountered at the Site.

Table 7: Preliminary Recommended Pavement Structural Sections

Street Type	City Standards Drawing Number	Traffic Index	Design Speed	**A.C. (inches)	***A.B (inches)
Arterial	A-1 / A-2	7.0	45 mph	4.0	7.0
Collector Street	A-3	6.0	35 mph	3.0	6.5
Industrial Street	A-4	6.0	35 mph	3.0	6.5
Local Street	A-5 / 6	5.0	25 mph	2.0	6.0
Cul-de-Sac Street	A-5 / A-6	4.0	25 mph	2.0	6.0
Hillside Street (15-24% Slope)	A-8	4.0	25 mph	2.0	6.0
Hillside Street (25% or Greater)	A-9	4.0	25 mph	2.0	6.0
Private Street	A-10	4.0	20 mph	2.0	6.0
West Side 80' Street Standard	A-12	6.0	35 mph	4.0	6.0
Frontage Road	A-13	6.0	35 mph	3.0	6.5

*Street Type, Standard Drawing Number, Traffic Index, and Design Speed were obtained from the City of El Paso de Robles City Standards. The minimum recommended thickness of AC is equal to or greater than the minimum required by the City of El Paso de Robles.

**A.C = Asphaltic Concrete meeting Caltrans Specification for Class II Asphalt Concrete

***A.B. = Aggregate Base meeting Caltrans Specification for Class II Aggregate Base (R-Value = 78 Minimum)

4. A minimum of 6 inches of Class II Aggregate Base is recommended for all pavement sections. All pavement sections should be crowned for good drainage. All pavement construction and materials used should conform to Sections 25, 26 and 39 of the latest edition of the State of California Department of Transportation Standard Specifications.

6.0 ADDITIONAL GEOTECHNICAL SERVICES

The recommendations contained in this report are based on a limited number of borings and on the continuity of the sub-surface conditions encountered. It is assumed that GeoSolutions, Inc. will be retained to perform the following services:

1. Consultation during plan development.

2. Site-specific Soils Engineering Reports.

3. Plan review of grading and foundation documents prior to construction.

4. Construction inspections and testing as required including, but not limited to, stripping, grading, over-excavating, backfill placement, imported materials, foundation excavation observations, pre-moistening verification and compaction.

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed during our study. Should any variations or undesirable conditions be encountered during the development of the Site, GeoSolutions, Inc. should be notified immediately and GeoSolutions, Inc. will provide supplemental recommendations as dictated by the field conditions.

2. This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project, and incorporated into the project plans and specifications. The owner or his/her representative is responsible to ensure that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Therefore, this report should not be relied upon after a period of 3 years without our review nor should it be used or is it applicable for any properties other than those studied. However many events such as floods, earthquakes, grading of the adjacent properties and building and municipal code changes could render sections of this report invalid in less than 3 years.

REFERENCES

REFERENCES

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Bowles, Joseph E. *Foundation Analysis and Design.* 5th ed. New York: McGraw-Hill, 1996.

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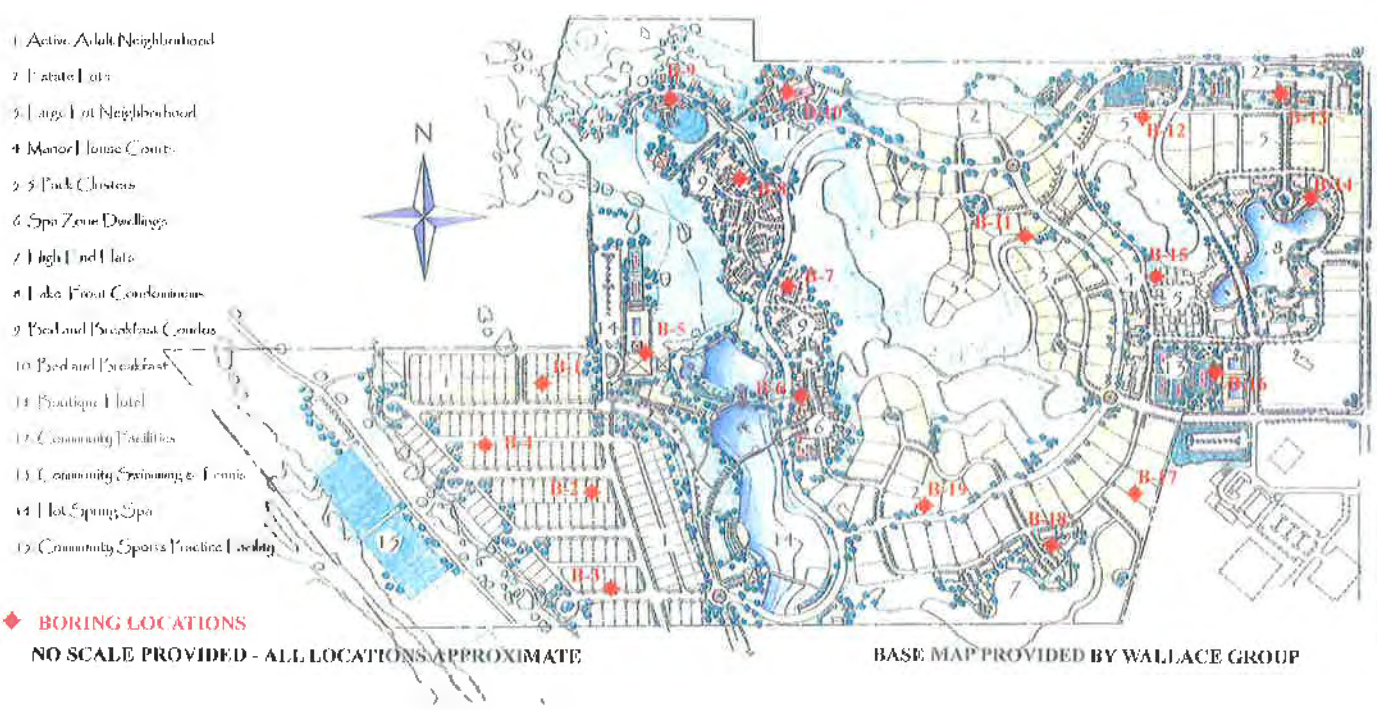
Soils Engineering Report, Dam Investigation, Hot Springs Master Plan, El Paso de Robles, California, by GeoSolutions Inc, Project SL05322-3, dated February 28, 2006.

Soils Engineering Report, Pavilion and Amphitheater, Hot Springs Master Plan, El Paso de Robles, California, by GeoSolutions Inc, Project SL05322-3, dated March 20, 2006.



GeoSolutions, Inc.
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(805) 541-8330 Fax (805) 541-2171

SITE PLAN

HOT SPRINGS MASTER PLAN, PLANNED DEVELOPMENT
PASO ROBLES, CALIFORNIA

PLATE
1

APPENDIX A

Field Investigation

Soil Classification Chart

Boring Logs

FIELD INVESTIGATION

The field investigation was conducted April 24, 25, 27, and 28, 2006 and May 1, May 2, and 3, 2006 using a track-mounted CME 55 drill rig. The surface and sub-surface conditions were studied by advancing nineteen exploratory borings. This exploration was conducted in accordance with presently accepted geotechnical engineering procedures consistent with the scope of the services authorized to GeoSolutions, Inc.

The CME-55 drill rig with an 8-inch diameter hollow-stem continuous flight auger advanced nineteen exploratory borings near the approximate locations indicated on the Site Plan. The drilling and field observation was performed under the direction of the project engineer. A representative of GeoSolutions, Inc. maintained a log of the soil conditions and obtained soil samples suitable for laboratory testing. The soils were classified in accordance with the Unified Soil Classification System. See Soil Classification Chart, **Appendix A**.

Standard Penetration Tests with a 2-inch outside diameter standard (SPT) split tube sampler and with a 3-inch outside diameter Modified California (CA) split tube sampler were performed to obtain an indication, in the field, of the density of the soil and to allow visual observation of at least a portion of the soil column. Soil samples obtained with the sampler are retained for further observation and testing. A 140-pound hammer free falling 30 inches drives the sampler. The sampler is initially seated 6 inches to penetrate any loose cuttings and is then driven an additional 12 inches with the results (N-values) recorded in the boring logs as the number of blows per foot required to advance the sample the 12 inches.

The CA sampler is a larger diameter sampler than the SPT sampler and provides additional material for normal geotechnical testing such as in-situ shear and consolidation testing. Either sampler may be used in the field investigation, but the N-values obtained from using the CA sampler will be greater than that of the SPT. The N-values for samples collected using the CA can be roughly correlated to SPT N-values using a conversion factor that may vary from about 0.5 to 0.7 with the average conversion factor approximately 0.63 (1÷1.6). More information about standardized samplers can be found in the California Geological Survey Special Publication 117 (DMG SP117), updated May 28, 2002.

Disturbed bulk samples are obtained from cuttings developed during boring operations. The bulk samples are selected for classification and testing purposes and may represent a mixture of soils within the noted depths. Recovered samples are placed in transport containers and returned to the laboratory for further classification and testing.

Logs of the borings showing the depths and descriptions of the soils encountered, geologic structure where applicable, penetration resistance, and results of in-place density and moisture content tests are presented in this appendix. The logs represent the interpretation of field logs and tests, the interpolation of soil conditions between samples and the results of laboratory observations and tests. The noted stratification lines represent the approximate boundaries between the surface soil types. The actual transition between soil types may be gradual.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		LABORATORY CLASSIFICATION CRITERIA		GROUP SYMBOLS	PRIMARY DIVISIONS
COARSE GRAINED SOILS More than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retained on No. 4 (4.75mm) sieve	Clean gravels (less than 5% fines*)	C_u greater than 4 and C_z between 1 and 3	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			Not meeting both criteria for GW	GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		Gravel with fines (more than 12% fines*)	Atterberg limits plot below "A" line or plasticity index less than 4	GM	Silty gravels, gravel-sand-silt mixtures
			Atterberg limits plot below "A" line and plasticity index greater than 7	GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 (4.75mm) sieve	Clean sand (less than 5% fines*)	C_u greater than 6 and C_z between 1 and 3	SW	Well graded sands, gravely sands, little or no fines
			Not meeting both criteria for SW	SP	Poorly graded sands and gravelly and sands, little or no fines
		Sand with fines (more than 12% fines*)	Atterberg limits plot below "A" line or plasticity index less than 4	SM	Silty sands, sand-silt mixtures
			Atterberg limits plot above "A" line and plasticity index greater than 7	SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS 50% or more passes No. 200 sieve	SILTS AND CLAYS (liquid limit less than 50)	Inorganic soil	PI < 4 or plots below "A"-line	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
		Inorganic soil	PI > 7 and plots on or above "A" line**	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Organic Soil	LL (oven dried)/LL (not dried) < 0.75	OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS (liquid limit 50 or more)	Inorganic soil	Plots below "A" line	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		Inorganic soil	Plots on or above "A" line	CH	Inorganic clays of high plasticity, fat clays
		Organic Soil	LL (oven dried)/LL (not dried) < 0.75	OH	Organic silts and organic clays of high plasticity
Peat	Highly Organic	Primarily organic matter, dark in color, and organic odor		PT	Peat, muck and other highly organic soils

*Fines are those soil particles that pass the No. 200 sieve. For gravels and sands with between 5 and 12% fines, use of dual symbols is required (i.e. GW-GM, GW-GC, GP-GM, or GP-GC).

**If the plasticity index is between 4 and 7 and it plots above the "A" line, then dual symbols (i.e. CL-ML) are required.

CLASSIFICATIONS BASED ON PERCENTAGE OF FINES

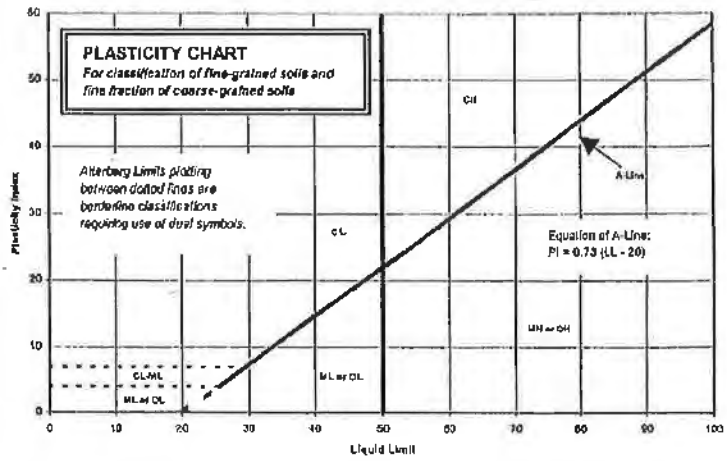
Less than 5%, Pass No. 200 (75mm)sieve)	GW, GP, SW, SP
More than 12% Pass N. 200 (75 mm) sieve	GM, GC, SM, SC
5%-12% Pass No. 200 (75 mm) sieve	Borderline Classification requiring use of dual symbols

CONSISTENCY

CLAYS AND PLASTIC SILTS	STRENGTH TON/SQ. FT ++	BLOWS/ FOOT +
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	Over 4	Over 32

RELATIVE DENSITY

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/ FOOT +
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	Over 50



+ Number of blows of a 140-pound hammer falling 30-inches to drive a 2-inch O.D. (1-3/8-inch I.D.) split spoon (ASTM D1586).

++ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D1586), pocket penetrometer, torvane, or visual observation.

Drilling Notes:

1. Sampling and blow counts
   a. California Modified – number of blows per foot of a 140 pound hammer falling 30 inches
   b. Standard Penetration Test – number of blows per 12 inches of a 140 pound hammer falling 30 inches

Types of Samples:
X – In-Situ
SPT - Standard Penetration
CA - California Modified
N - Nuclear Gauge
PO – Pocket Penetrometer (tons/sq.ft.)

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-1**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/24/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark yellowish brown, with silt, slightly moist, hard	CL											
-1													
-2				X	50/5"			9.3	114.3				
-3													
-4				X	68								
-5													
-6													
-7	SANDY CLAY: yellowish brown, coarse gravel, with silt, slightly moist, very stiff	CL											
-8													
-9				X	46								
-10													
-11													
-12													
-13													
-14				X	46								
-15													
-16													
-17													
-18													
-19													
-20													

GeoSolutions, Inc.

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San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-2**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Hot Springs Master Plan	DRILL RIG:	CME 55
DRILLING LOCATION:	See Figure 2, Site Plan	HOLE DIAMETER:	8 Inches
DATE DRILLED:	4/25/06	SAMPLING METHOD:	CA
LOGGED BY:	DW	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark yellowish brown, with silt, slightly moist, stiff to hard with depth	CL											
-1				A		24.3	303			10.5	123.8	26	
-2													
-3													
-4				X	24			7.9	102.9				
-5													
-6													
-7													
-8													
-9				X	23								
-10													
-11													
-12													
-13													
-14				X	71								
-15													
-16													
-17													
-18													
-19													
-20													

GeoSolutions, Inc.

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San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-3**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Hot Springs Master Plan	DRILL RIG:	CME 55
DRILLING LOCATION:	See Figure 2, Site Plan	HOLE DIAMETER:	8 Inches
DATE DRILLED:	4/25/06	SAMPLING METHOD:	CA
LOGGED BY:	DW	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark brown, with silt, slightly moist	CL											
-1													
-2													
-3	CLAYEY SAND: yellowish brown, with silt, dense	SC											
-4				X	53	36.6	0						
-5													
-6													
-7	SANDY CLAY: dark brown, with silt, slightly moist, stiff	CL											
-8													
-9				X	23								
-10													
-11	SANDY CLAY: dark yellowish brown, slightly moist, hard	CL		B						11.1	122.8	17	
-12													
-13													
-14				X	66								
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-4**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/25/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: yellowish brown, with silt, slightly moist, stiff to very stiff with depth	CL											
-1													
-2													
-3													
-4				X	22			11.8	101.9				
-5													
-6													
-7													
-8													
-9				X	42								
-10													
-11													
-12													
-13													
-14				X	38								
-15													
-16													
-17													
-18													
-19													
-20													

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-5**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/25/06**	SAMPLING METHOD:	**CA and SPT**
LOGGED BY:	**DW**	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark yellowish brown, with silt, slightly moist	CL											
-1													
-2													
-3													
-4	SILTY SAND: dark yellowish brown, with clay, slightly moist, medium dense	SM		CA	32	45.8	0						
-5													
-6													
-7													
-8													
-9				SPT	24								
-10													
-11													
-12													
-13	SANDY CLAY: dark yellowish brown, moist, stiff	CL											
-14				CA	13								
-15													
-16													
-17													
-18													
-19													
-20													

GeoSolutions, Inc.

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San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-6**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Hot Springs Master Plan	DRILL RIG:	CME 55
DRILLING LOCATION:	See Figure 2, Site Plan	HOLE DIAMETER:	8 Inches
DATE DRILLED:	4/27/06	SAMPLING METHOD:	CA
LOGGED BY:	DW	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	CLAYEY SAND; yellowish brown, slightly moist	SC											
-1				C						8.7	130.7	8	
-2													
-3													
-4	SANDY CLAY; yellowish brown, with silt, slightly moist to dry, very stiff to hard at depth	CL		X	36			11.9	99.4				
-5				D		7.0	488			10.7	123.2	33	
-6													
-7													
-8													
-9				X	76								
-10													
-11													
-12													
-13													
-14				X	69								
-15													
-16													
-17													
-18													
-19													
-20													

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-7**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Hot Springs Master Plan	DRILL RIG:	CME 55
DRILLING LOCATION:	See Figure 2, Site Plan	HOLE DIAMETER:	8 Inches
DATE DRILLED:	4/27/06	SAMPLING METHOD:	CA
LOGGED BY:	DW	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: yellowish brown, with silt, slightly moist, hard	CL											
-1													
-2													
-3													
-4				X	55			15.6	104.7				
-5													
-6													
-7													
-8													
-9				X	63								
-10													
-11	CLAYEY SAND: yellowish brown, with gravel, slightly moist to very hard, Alluvium	SC		E						14.1	113.4	0	
-12													
-13													
-14				X	50/6"								
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-8**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/27/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **5 Feet** Page 8 of 19

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	**SILTY CLAY**: light olive brown, slightly moist, hard, weathered Paso Robles Formation	CL											
-1													
-2													
-3													
-4				X	50/5"			16.3	106.4				
-5													
-6													
-7													
-8													
-9													
-10													
-11													
-12													
-13													
-14													
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-9**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/27/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **5 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: pale yellowish brown, with silt, slightly moist, hard, slightly weathered Paso Robles Formation	CL											
-1													
-2				X	50/5"								
-3													
-4													
-5													
-6													
-7													
-8													
-9													
-10													
-11													
-12													
-13													
-14													
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-10**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/27/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: yellowish brown, slightly moist, very stiff to hard with depth	CL											
-1										14.1	113.4	0	
-2													
-3													
-4				X	39	11.0	432						
-5													
-6													
-7													
-8	slightly weathered Paso Robles Formation												
-9				X	74								
-10													
-11													
-12													
-13													
-14				X	50/5"								
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-11**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/28/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **10 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SILTY CLAY: yellowish brown, slightly moist, stiff	CL											
-1													
-2													
-3													
-4				X	15				92.8	20.5			
-5	SANDY CLAY: light brown, slightly moist, hard, weathered Paso Robles Formation	CL											
-6													
-7													
-8													
-9				X	50/6"								
-10													
-11													
-12													
-13													
-14													
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-12**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**4/28/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark yellowish brown, with gravel, slightly moist, very stiff	CL											
-1													
-2													
-3													
-4				X	31	20.2	304						
-5													
-6													
-7	CLAYEY SAND: brown, slightly moist, dense	SC											
-8													
-9				X	53			9.8	116.3				
-10													
-11													
-12													
-13													
-14				X	54								
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-13**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Hot Springs Master Plan	DRILL RIG:	CME 55
DRILLING LOCATION:	See Figure 2, Site Plan	HOLE DIAMETER:	8 Inches
DATE DRILLED:	5/1/06	SAMPLING METHOD:	CA
LOGGED BY:	DW	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **10 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SILTY SAND: dark yellowish brown, some gravel, dry, dense to very dense with depth, Paso Robles Formation	SM											
-1													
-2													
-3													
-4				X	65								
-5													
-6													
-7													
-8													
-9				X	50/6"								
-10													
-11													
-12													
-13													
-14													
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-14**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**5/1/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: light brown, slightly moist to dry with depth, very stiff to hard with depth	CL											
-1													
-2													
-3													
-4				X	44								
-5													
-6													
-7													
-8													
-9				X	67								
-10													
-11													
-12													
-13													
-14				X	78								
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-15**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**5/2/06**	SAMPLING METHOD:	**CA and SPT**
LOGGED BY:	**DW**	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	CLAYEY SAND: yellowish brown, slightly moist, stiff becoming hard to very stiff with depth	CL											
-1													
-2													
-3													
-4				CA	21	41.6	0						
-5													
-6													
-7													
-8													
-9				CA	57								
-10													
-11													
-12													
-13													
-14				SPT	25								
-15													
-16													
-17													
-18													
-19													
-20													

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BORING LOG

BORING NO. **B-16**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**5/3/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **20 Feet** Page 16 of 19

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark brown, slightly moist	CL											
-1													
-2													
-3													
-4	SANDY CLAY: light yellowish brown, with silt, slightly moist, firm to hard with depth	CL		X	12			21.9	92				
-5													
-6													
-7													
-8													
-9				X	69								
-10													
-11													
-12													
-13													
-14				X	50/6"								
-15													
-16													
-17													
-18													
-19				X	50/6"								
-20													

GeoSolutions, Inc.

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San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-17**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**5/2/06**	SAMPLING METHOD:	**CA and SPT**
LOGGED BY:	**DW**	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: light brown, slightly moist, hard becoming very stiff with depth	CL											
-1													
-2													
-3													
-4				CA	56								
-5													
-6													
-7													
-8													
-9				CA	47								
-10													
-11													
-12													
-13													
-14				SPT	22								
-15													
-16													
-17													
-18													
-19													
-20													

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San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-18**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**5/2/06**	SAMPLING METHOD:	**CA and SPT**
LOGGED BY:	**DW**	HOLE ELEVATION:	

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **15 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark grayish brown, with gravel, slightly moist, stiff	CL											
-1													
-2													
-3													
-4				CA	23			23.3	92.7				
-5	SANDY CLAY: strong brown, slightly moist, stiff	CL											
-6													
-7													
-8													
-9				CA	31			18.4	101.9				
-10													
-11													
-12													
-13													
-14				SPT	28			19.7					
-15													
-16													
-17													
-18													
-19													
-20													

GeoSolutions, Inc.

220 High Street
San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-19**

JOB NO. **SL05322-2**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Hot Springs Master Plan**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**5/2/06**	SAMPLING METHOD:	**CA**
LOGGED BY:	**DW**	HOLE ELEVATION:	

Depth of Groundwater: **Not Encountered** Boring Terminated At: **5 Feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	FRICTION ANGLE, degrees	COHESION, C psf	IN-SITU WATER CONTENT, %	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY CLAY: dark brown, slightly moist, hard, slightly weathered Paso Robles Formation	CL											
-1													
-2													
-3													
-4				X	50/6"								
-5													
-6													
-7													
-8													
-9													
-10													
-11													
-12													
-13													
-14													
-15													
-16													
-17													
-18													
-19													
-20													

APPENDIX B

Laboratory Testing

Soil Test Reports

LABORATORY TESTING

This appendix includes a discussion of test procedures and results of the laboratory-testing program performed. The purposed of the laboratory testing is to assess the soil engineering properties of the soil materials underlying the Site. The program is carried out employing, wherever practical, currently accepted test methods of the American Society for Testing and Materials (ASTM).

Undisturbed and disturbed bulk samples used in the laboratory-testing program are obtained from various locations during the course of the field exploration as discussed in **Appendix A** of this report. Identification of each sample is by sample letter and depth. The method of identifying and classifying soils according to their engineering properties parallels the Unified Soils Classification System. The various laboratory tests performed are described below.

Expansion Index of Soils (ASTM D4829-03) is conducted in accordance with the ASTM test method and the California Building Code Standard, and are performed on representative bulk and undisturbed soil samples. The purpose of this test is to evaluate expansion potential of the site soils due to fluctuations in moisture content. The sample specimens are placed in a consolidometer, surcharged under a 144-psf vertical confining pressure, and then inundated with water. The amount of expansion is recorded over a 24-hour period with a dial indicator. The expansion index is calculated by determining the difference between final and initial height of the specimen divided by the initial height.

Laboratory Compaction Characteristics of Soil Using Modified Effort (ASTM D1557-02$^{\varepsilon 1}$) is performed to determine the relationship between the moisture content and density of soils and soil-aggregate mixtures when compacted in a standard size mold with a 10-lbf hammer from a height of 18 inches. The test is performed on a representative bulk sample of bearing soil near the estimated footing depth. The procedure is repeated on the same soil sample at various moisture contents sufficient to establish a relationship between the maximum dry unit weight and the optimum water content for the soil. The data, when plotted, represents a curvilinear relationship known as the moisture density relations curve. The values of optimum water content and modified maximum dry unit weight can be determined from the plotted curve.

Direct Shear Tests of Soils Under Consolidated Drained Conditions (ASTM D3080-04) is performed on undisturbed and remolded samples representative of the foundation material. The samples are loaded with a predetermined normal stress and submerged in water until saturation is achieved. The samples are then sheared horizontally at a controlled strain rate allowing partial drainage. The shear stress on the sample is recorded at regular strain intervals. This test determines the resistance to deformation, which is shear strength, inter-particle attraction or cohesion c, and resistance to interparticle slip called the angle of internal friction ϕ.

Particle Size Analysis of Soils (ASTM D422-63R02) is used to determine the particle-size distribution of fine and coarse aggregates. In the test method the sample is separated through a series of sieves of progressively smaller openings for determination of particle size distribution. The total percentage passing each sieve is reported and used to determine the distribution of fine and coarse aggregates in the sample.

Density of Soil in Place by the Drive-Cylinder Method (ASTM D2937-04) and **Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass** (ASTM D2216-05) are used to obtain values of in-place water content and in-place density. Undisturbed samples, brought from the field to the laboratory, are weighed, the volume is calculated, and they are placed in the oven to dry. Once the samples have been dried, they are weighed again to determine the water content, and the in-place density is then calculated. The moisture density tests allow the water content and in-place densities to be obtained at required depths.

GeoSolutions, Inc.	SOILS REPORT	(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/18/2006
Client:		Project #:	SL05322-2
Sample:	A Depth: 1.0 ft.	Lab #:	5667
Location:	B-2	Sample Date:	4/28/2006
		Sampled By:	DW

Soil Classification
ASTM D2487-00, D2488-00

Result: Dark Yellowish Brown Sandy CLAY w/ Silt

Specification: CL

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	100	
No. 8	99	
No. 16	97	
No. 30	93	
No. 50	87	
No. 100	76	
No. 200	63.1	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

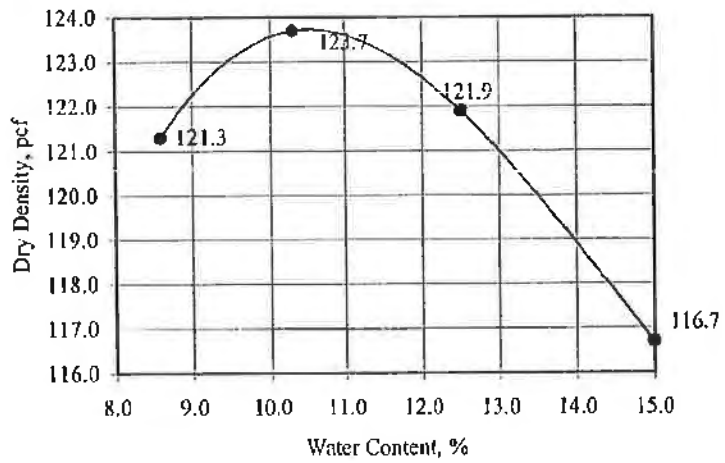
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	26
Expansion Potential:	Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02 [illegible]



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve = 2.6

Trial #	1	2	3	4
Water Content:	8.6	10.3	12.5	15.0
Dry Density:	121.3	123.7	121.9	116.7

Maximum Dry Density, pcf:	123.8
Optimum Water Content, %:	10.5

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description
B-1	2.0	9.3	114.3	92%	Dark Yellowish Brown Sandy CLAY w/ Silt (CL)
B-2	4.0	7.9	102.9	83%	Dark Yellowish Brown Clayey SAND (CL)
B-4	4.0	11.8	101.9	82%	Yellowish Brown Sandy CLAY w/ Silt (CL)
B-6	4.0	11.9	99.4	80%	Yellowish Brown Sandy CLAY w/ Silt (CL)
B-7	4.0	15.6	104.7	84%	Yellowish Brown Sandy CLAY w/ Silt (CL)
B-8	4.0	16.3	106.4	-	Light Olive Brown Silty CLAY (CL)
B-11	4.0	20.5	92.8	-	Dark Yellowish Brown Silty CLAY (CL)
B-12	9.0	9.8	116.3	-	Brown Clayey SAND (SC)
B-16	4.0	21.9	92.0	-	Light Yellowish Brown Sandy CLAY w/Silt (CL)
B-18	4.0	23.3	92.7	-	Dark Grayish Brown Sandy CLAY w/Gravel (CL)

Report By: Darren Harrold

SOILS REPORT

(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/18/2006
Client:		Project #:	SL05322-2
Sample:	B Depth: 11.0 ft.	Lab #:	5667
Location:	B-3	Sample Date:	4/28/2006
		Sampled By:	DW

Soil Classification
ASTM D2487-00, D2488-00

Result:	Dark Yellowish Brown Sandy CLAY w/ Silt
Specification:	CL

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	100	
No. 8	100	
No. 16	99	
No. 30	97	
No. 50	94	
No. 100	85	
No. 200	70.3	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

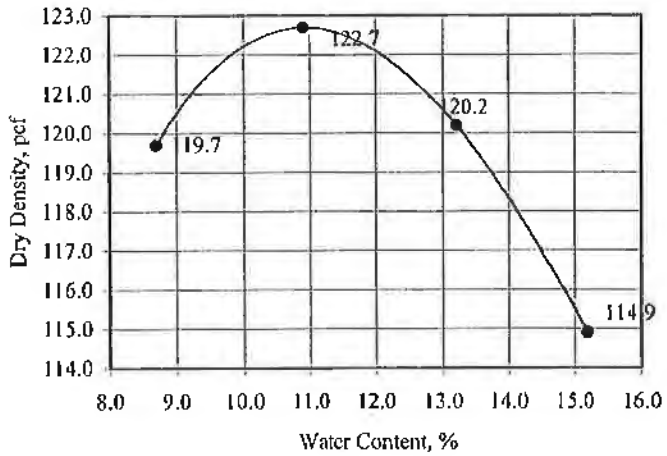
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	17
Expansion Potential:	Very Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02 [e1]



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve = 2.6

Trial #	1	2	3	4
Water Content:	8.7	10.9	13.2	15.2
Dry Density:	119.7	122.7	120.2	114.9

Maximum Dry Density, pcf:	122.8
Optimum Water Content, %:	11.1

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description
B-18	9.0	18.4	101.9	-	Strong Brown Sandy CLAY (CL)
B-18	14.0	19.7	-	-	Strong Brown Sandy CLAY (CL)

Report By: Darren Harrold

GeoSolutions, Inc.	SOILS REPORT	(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/18/2006
Client:		Project #:	SL05322-2
Sample:	C Depth: 1.0 ft.	Lab #:	5667
Location:	B-6	Sample Date:	4/28/2006
		Sampled By:	DW

Soil Classification
ASTM D2487-00, D2488-00

Result:	Yellowish Brown Clayey SAND w/ Silt and Gravel
Specification:	SC

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	99	
No. 8	93	
No. 16	81	
No. 30	68	
No. 50	57	
No. 100	48	
No. 200	40.4	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

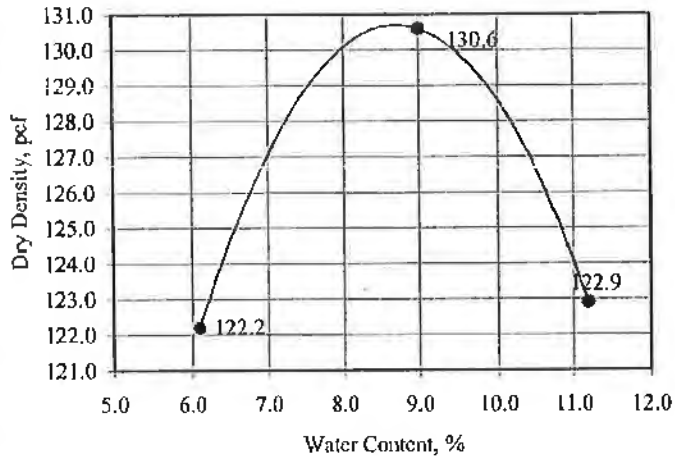
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	8
Expansion Potential:	Very Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02 [e1]



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve = 2.6

Trial #	1	2	3	4
Water Content:	6.1	9.0	11.2	
Dry Density:	122.2	130.6	122.9	

Maximum Dry Density, pcf:	130.7
Optimum Water Content, %:	8.7

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Darren Harrold

GeoSolutions, Inc. | **SOILS REPORT** | **(805) 543-8539**

Project:	Hot Springs Master Plan	Date Tested:	5/18/2006
Client:		Project #:	SL05322-2
Sample:	D Depth: 5.0 ft.	Lab #:	5667
Location:	B-6	Sample Date:	4/28/2006
		Sampled By:	DW

Soil Classification
ASTM D2487-00, D2488-00

Result:	Dark Yellowish Brown Sandy CLAY w/Silt
Specification:	CL

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	100	
No. 8	100	
No. 16	98	
No. 30	95	
No. 50	89	
No. 100	78	
No. 200	63.6	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

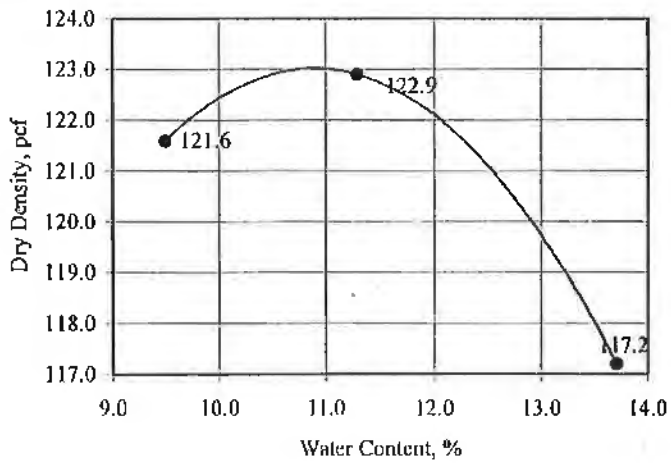
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	33
Expansion Potential:	Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02 [a]



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve = 2.6

Trial #	1	2	3	4
Water Content:	9.5	11.3	13.7	
Dry Density:	121.6	122.9	117.2	

Maximum Dry Density, pcf:	123.2
Optimum Water Content, %:	10.7

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Darren Harrold

GeoSolutions, Inc. **SOILS REPORT** **(805) 543-8539**

Project:	Hot Springs Master Plan	Date Tested:	5/18/2006
Client:		Project #:	SL05322-2
Sample:	E Depth: 11.0 ft.	Lab #:	5667
Location:	B-7	Sample Date:	4/28/2006
		Sampled By:	DW

Soil Classification
ASTM D2487-00, D2488-00

Result: Yellowish Brown Sandy CLAY

Specification: CL

Sieve Analysis
ASTM D422-63R02

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	99	
No. 8	98	
No. 16	97	
No. 30	94	
No. 50	88	
No. 100	80	
No. 200	71.7	

Sand Equivalent Cal 217 (11/1999)

1		SE
2		
3		
4		

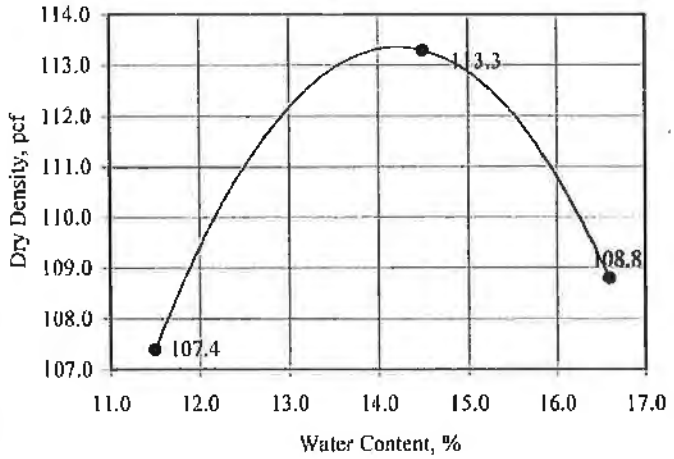
Plasticity Index
ASTM D4318-05

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-03

Expansion Index:	0
Expansion Potential:	Very Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02 [e1]



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve = 2.5

Trial #	1	2	3	4
Water Content:	11.5	14.5	16.6	
Dry Density:	107.4	113.3	108.8	

Maximum Dry Density, pcf:	113.4
Optimum Water Content, %:	14.1

Moisture-Density ASTM D2937-04, ASTM D2216-05

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

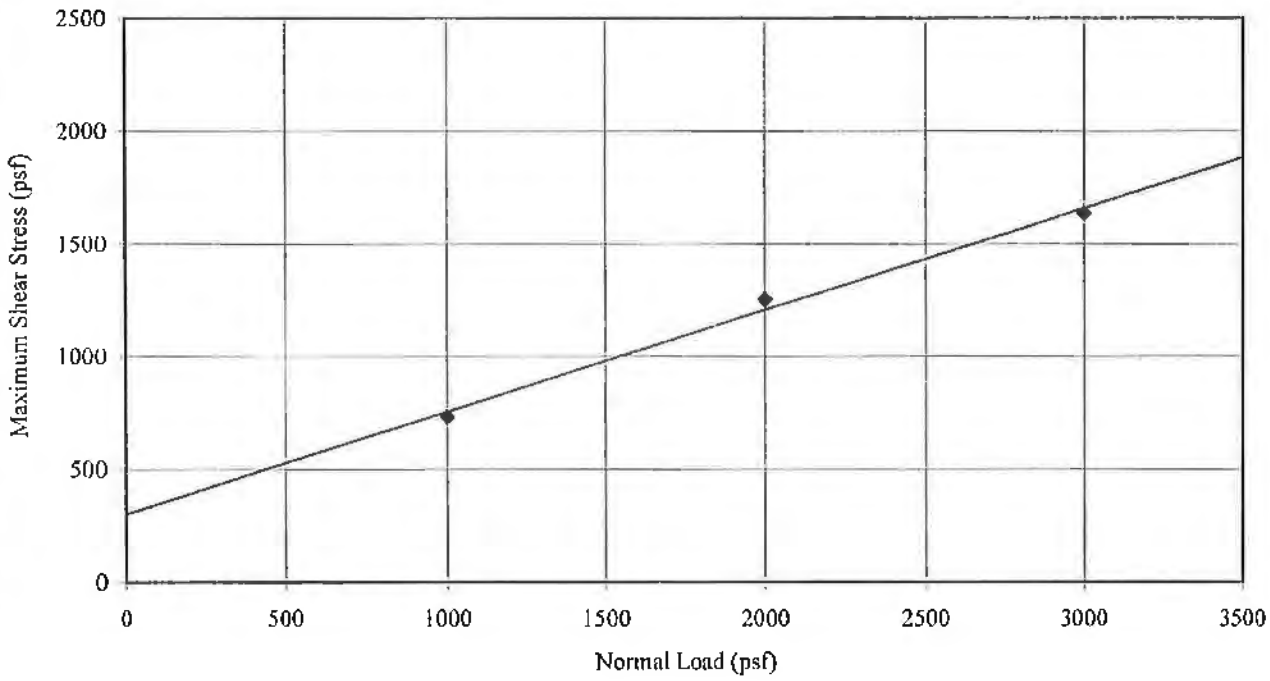
Report By: Darren Harrold

GeoSolutions, Inc. | **DIRECT SHEAR TEST REPORT D3080-04** | **(805) 543-8539**

Project:	Hot Springs Master Plan	Date Tested:	5/15/2006
Client:		Project #:	SL05322-2
Sample #:	A Depth: 1.0 ft.	Lab #:	5667
Location:	B-2	Sample Date:	4/28/2006
Material:	Dark Yellowish Brown Sandy CLAY (CL) w/ Silt	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density*,%
1	-	-	1000	732	20.3	111.4	90
2	-	-	2000	1252	19.1	111.4	90
3	-	-	3000	1635	18.5	111.4	90
4							
5							



*The test specimens were initially remolded at 90% of the maximum dry density (ASTM D1557) and at 2% above the optimum moisture content of the material.

Maximum Dry Density, pcf:	123.8	Optimum Moisture, %:	10.5

Angle of Internal Friction @ 90% Rel. Compaction, Phi:	24.3 °
Cohesion @ 90% Relative Compaction, C:	303 psf

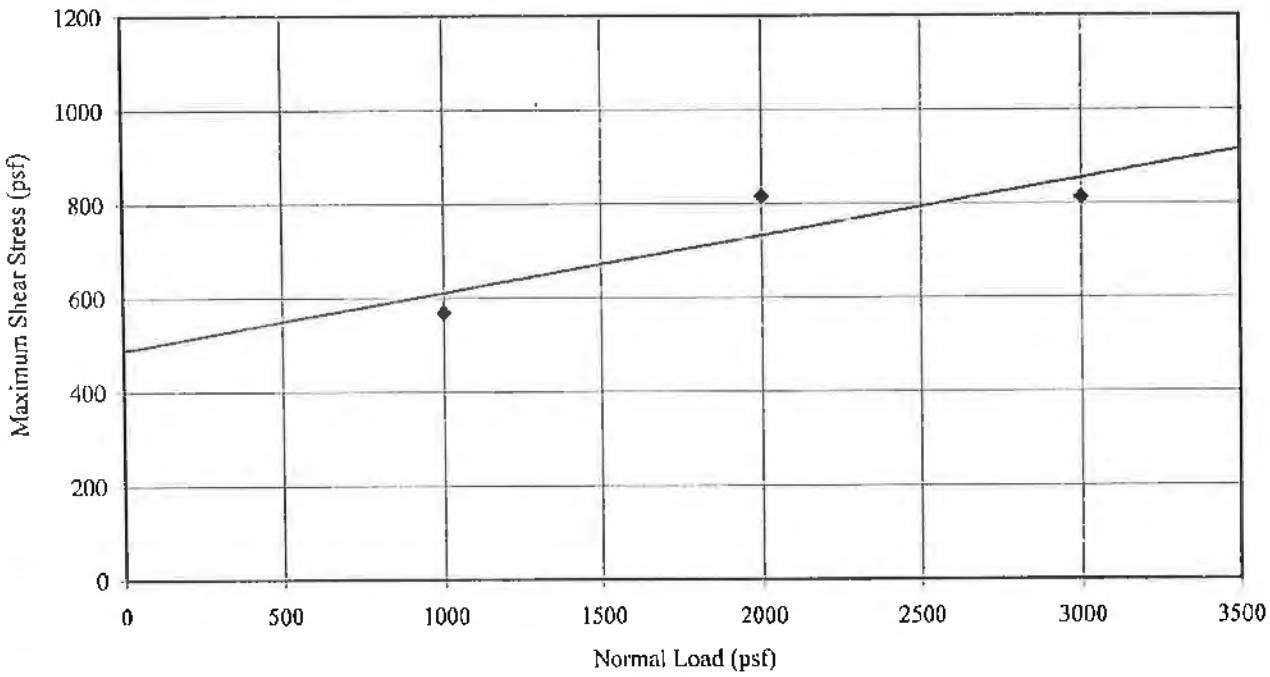
Report By: Darren Harrold

GeoSolutions, Inc. | **DIRECT SHEAR TEST REPORT** D3080-04 | **(805) 543-8539**

Project:	Hot Springs Master Plan	Date Tested:	5/15/2006
Client:		Project #:	SL05322-2
Sample #:	C Depth: 5.0 ft.	Lab #:	5667
Location:	B-6	Sample Date:	4/28/2006
Material:	Dark Yellowish Brown Sandy CLAY (CL) w/ Silt	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density*,%
1	-	-	1000	569	22.0	110.9	90
2	-	-	2000	816	21.5	110.9	90
3	-	-	3000	813	22.0	110.9	90
4							
5							



*The test specimens were initially remolded at 90% of the maximum dry density (ASTM D1557) and at 2% above the optimum moisture content of the material.

Maximum Dry Density, pcf:	123.2	Optimum Moisture, %:	10.7

Angle of Internal Friction @ 90% Rel. Compaction, Phi:	7.0 °
Cohesion @ 90% Relative Compaction, C:	488 psf

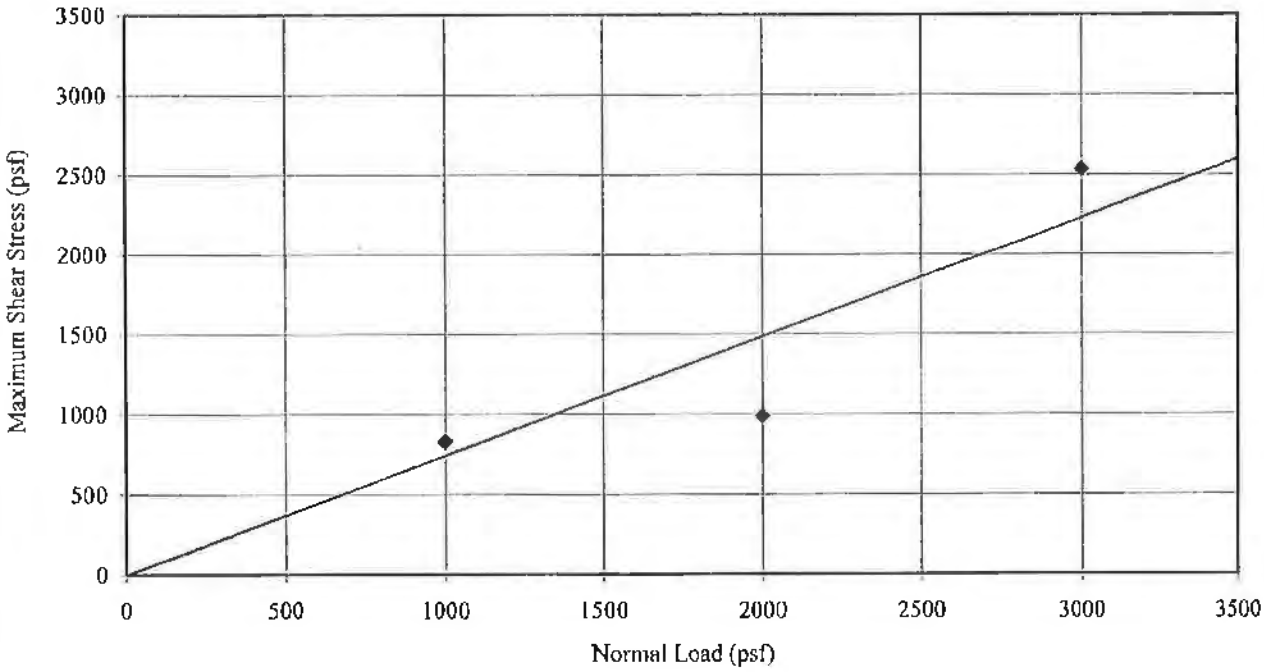
Report By: Darren Harrold

GeoSolutions, Inc.	DIRECT SHEAR TEST REPORT ASTM D3080-04	(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/8/2006
Client:		Project #:	SL05322-2
Sample #:	B-3 @ 4.0 ft Depth: 4.0 feet	Lab #:	5667
Location:	B-3	Sample Date:	4/28/2006
Material:	Yellowish Brown Clayey SAND w/ Silt (SC)	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density, %
1	-	-	1000	830	25.8	109.7	-
2	-	-	2000	988	25.8	112.7	-
3	-	-	3000	2532	15.7	111.2	-
4							
5							



The test specimens were in-situ samples.

Angle of Internal Friction (In-Situ), Phi:	36.6 °
Cohesion (In-Situ), C:	0 psf

Report By: Darren Harrold

GeoSolutions, Inc.

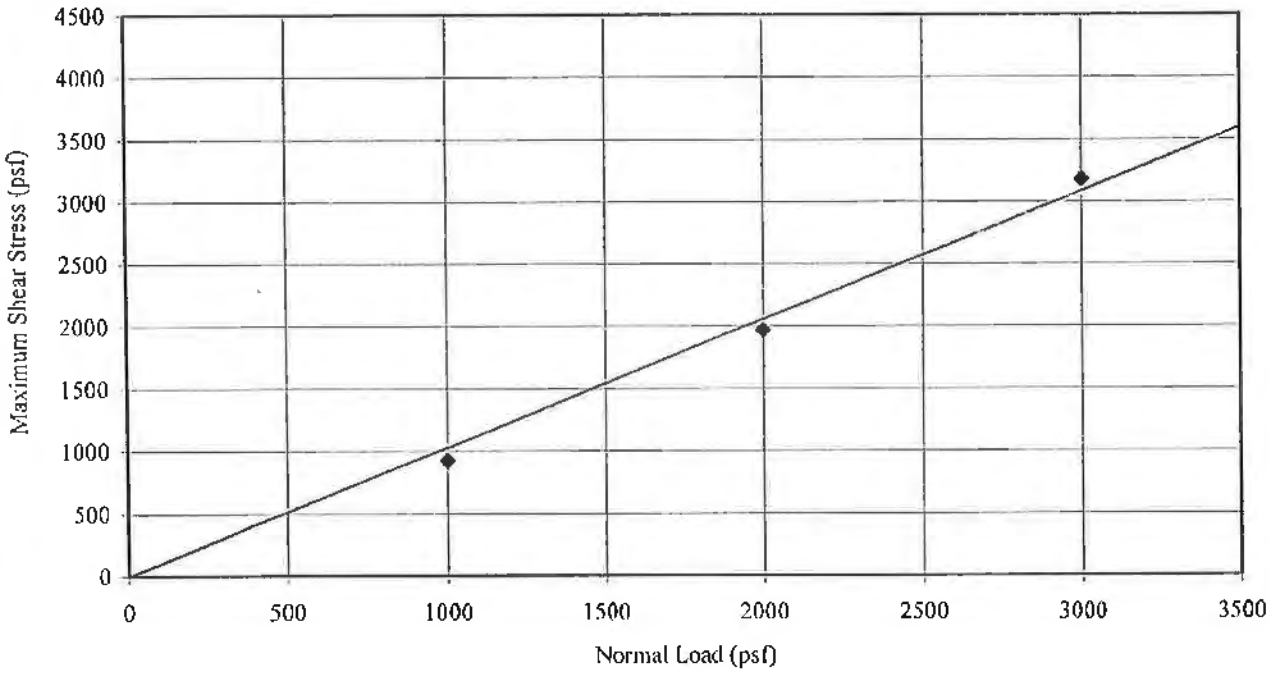
DIRECT SHEAR TEST REPORT
ASTM D3080-04

(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/9/2006
Client:		Project #:	SL05322-2
Sample #:	B-5 @ 4.0 ft Depth: 4.0 feet	Lab #:	5667
Location:	B-5	Sample Date:	4/28/2006
Material:	Dark Yellowish Brown Silty SAND w/ Clay (SM)	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density, %
1	-	-	1000	926	20.9	115.2	-
2	-	-	2000	1966	18.3	91.1	-
3	-	-	3000	3179	19.3	82.6	-
4							
5							



The test specimens were in-situ samples.

Angle of Internal Friction (In-Situ), Phi:	45.8 °
Cohesion (In-Situ), C:	0 psf

Report By: Darren Harrold

GeoSolutions, Inc.

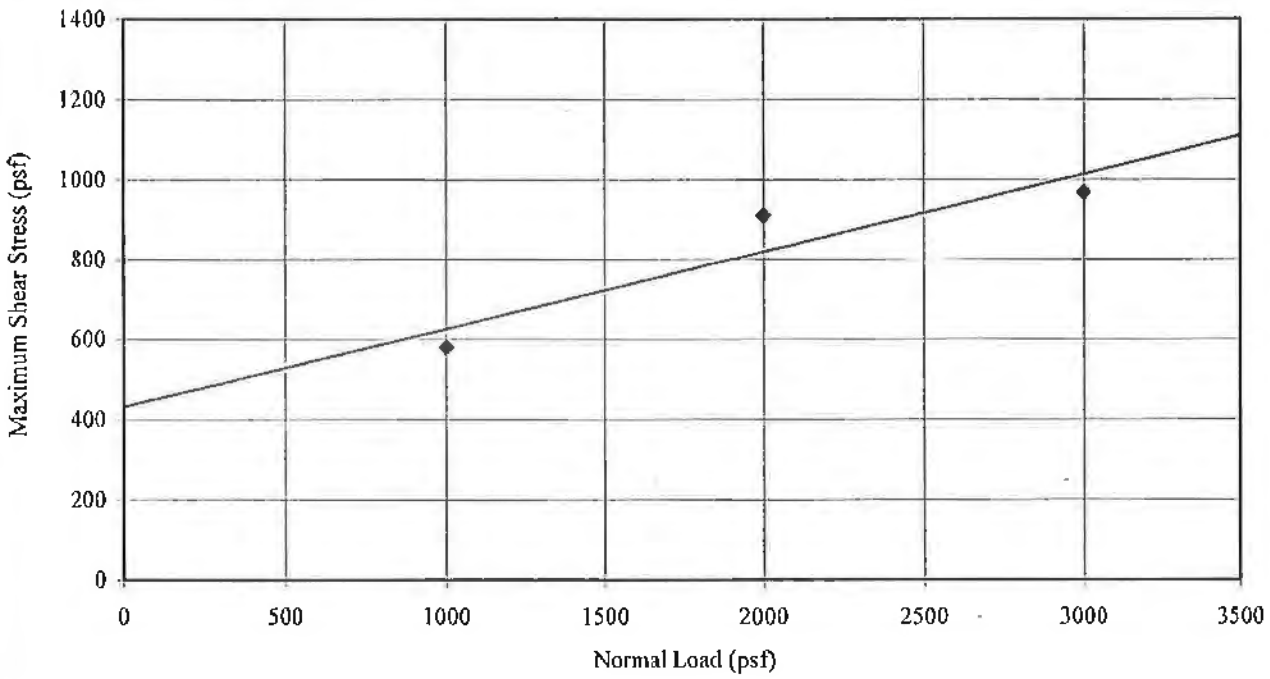
DIRECT SHEAR TEST REPORT
ASTM D3080-04

(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/9/2006
Client:		Project #:	SL05322-2
Sample #:	B-10 @ 4.0 ft Depth: 4.0 feet	Lab #:	5667
Location:	B-10	Sample Date:	4/28/2006
Material:	Yellowish Brown Sandy CLAY (CL)	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density, %
1	-	-	1000	580	30.6	86.4	-
2	-	-	2000	911	29.6	87.8	-
3	-	-	3000	968	32.0	92.1	-
4							
5							



The test specimens were in-situ samples.

Angle of Internal Friction (In-Situ), Phi:	11.0 °
Cohesion (In-Situ), C:	432 psf

Report By: Darren Harrold

GeoSolutions, Inc.

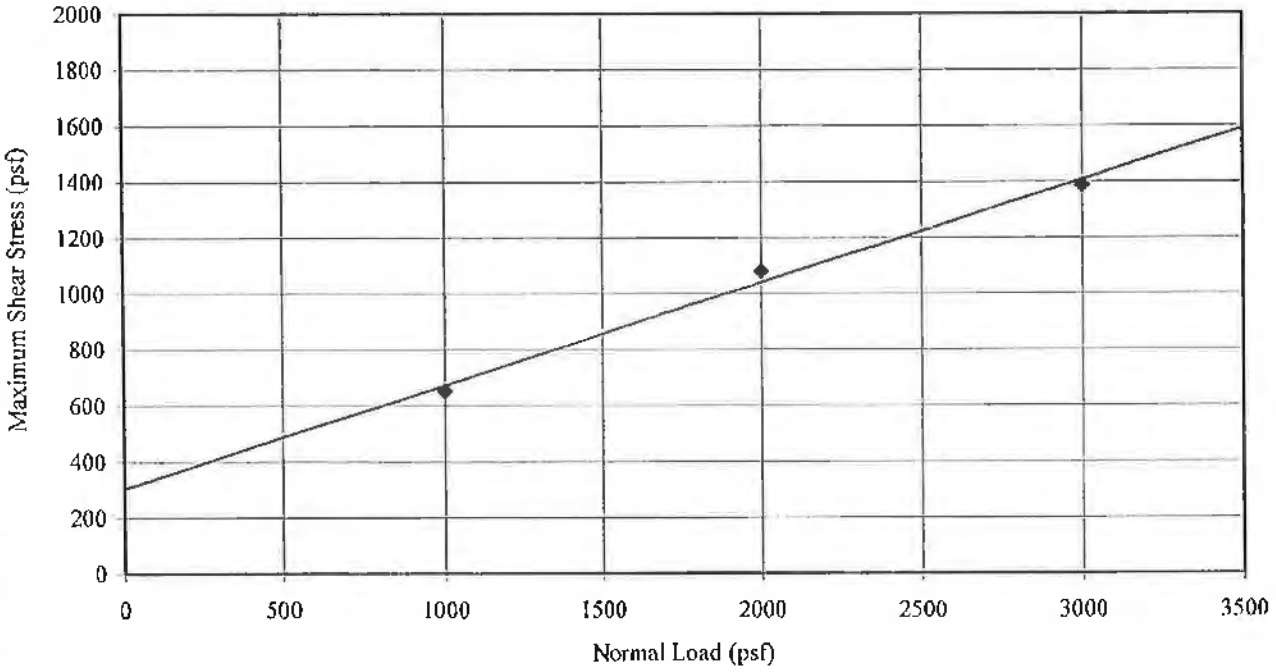
DIRECT SHEAR TEST REPORT
ASTM D3080-04

(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/10/2006
Client:		Project #:	SL05322-2
Sample #:	B-12 @ 4.0 ft Depth: 4.0 feet	Lab #:	5667
Location:	B-12	Sample Date:	4/28/2006
Material:	Dark Yellowish Brown Sandy CLAY w/ Gravel (CL)	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density, %
1	-	-	1000	652	27.8	102.5	-
2	-	-	2000	1079	24.6	99.0	-
3	-	-	3000	1387	25.1	25.1	-
4							
5							



The test specimens were in-situ samples.

Angle of Internal Friction (In-Situ), Phi:	20.2 °
Cohesion (In-Situ), C:	304 psf

Report By: Darren Harrold

GeoSolutions, Inc.

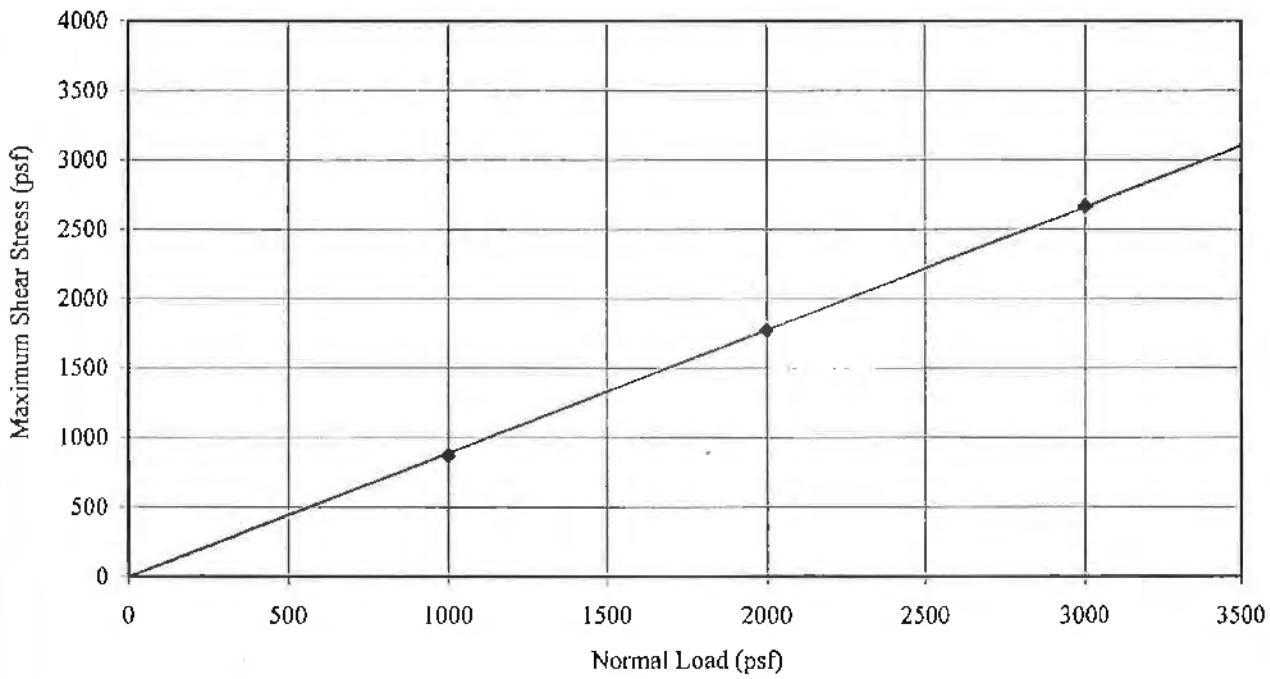
DIRECT SHEAR TEST REPORT
ASTM D3080-04

(805) 543-8539

Project:	Hot Springs Master Plan	Date Tested:	5/10/2006
Client:		Project #:	SL05322-2
Sample #:	B-16 @ 4.0 ft Depth: 4.0 feet	Lab #:	5667
Location:	B-16	Sample Date:	4/28/2006
Material:	Yellowish Brown Clayey SAND (SC)	Sampled By:	DW

Test Data

Specimen Number	Void Ratio	Saturation, %	Normal Load, psf	Max Shear Stress, psf	Water Content, %	Dry Density, pcf	Relative Density, %
1	-	-	1000	871	28.2	92.8	-
2	-	-	2000	1771	25.7	93.2	-
3	-	-	3000	2669	24.5	96.3	-
4							
5							



The test specimens were in-situ samples.

Angle of Internal Friction (In-Situ), Phi:	41.6 °
Cohesion (In-Situ), C:	0 psf

Report By: Darren Harrold

APPENDIX C

Preliminary Grading Specifications

Key and Bench with Backdrain

PRELIMINARY GRADING SPECIFICATIONS

A. General

i. These preliminary specifications have been prepared for the subject site; GeoSolutions, Inc. should be consulted prior to the commencement of site work associated with site development to ensure compliance with these specifications.

ii. GeoSolutions, Inc. should be notified at least 72 hours prior to site clearing or grading operations on the property in order to observe the stripping of surface materials and to coordinate the work with the grading contractor in the field.

iii. These grading specifications may be modified and/or superseded by recommendations contained in the text of this report and/or subsequent reports.

iv. If disputes arise out of the interpretation of these grading specifications, the Soils Engineer shall provide the governing interpretation.

B. Obligation of Parties

i. The Soils Engineer should provide observation and testing services and should make evaluations to advise the client on geotechnical matters. The Soils Engineer should report the findings and recommendations to the client or the authorized representative.

ii. The client should be chiefly responsible for all aspects of the project. The client or authorized representative has the responsibility of reviewing the findings and recommendations of the Soils Engineer. During grading the client or the authorized representative should remain on-site or should remain reasonably accessible to all concerned parties in order to make decisions necessary to maintain the flow of the project.

iii. The contractor is responsible for the safety of the project and satisfactory completion of all grading and other operations on construction projects, including, but not limited to, earthwork in accordance with project plans, specifications, and controlling agency requirements.

C. Site Preparation

i. The client, prior to any site preparation or grading, should arrange and attend a meeting which includes the grading contractor, the design Structural Engineer, the Soils Engineer, representatives of the local building department, as well as any other concerned parties. All parties should be given at least 72 hours notice.

ii. All surface and sub-surface deleterious materials should be removed from the proposed building and pavement areas and disposed of off-site or as approved by the Soils Engineer. This includes, but is not limited to, any debris, organic materials, construction spoils, buried utility line, septic systems, building materials, and any other surface and subsurface structures within the proposed building areas. Trees designated for removal on the construction plans should be removed and their primary root systems grubbed under the observations of a representative of GeoSolutions, Inc. Voids left from site clearing should be cleaned and backfilled as recommended for structural fill.

iii. Once the Site has been cleared, the exposed ground surface should be stripped to remove surface vegetation and organic soil. A representative of GeoSolutions, Inc. should determine the required depth of stripping at the time of work being completed. Strippings may either be disposed of off-site or stockpiled for future use in landscape areas, if approved by the landscape architect.

D. Site Protection

i. Protection of the Site during the period of grading and construction should be the responsibility of the contractor.

ii. The contractor should be responsible for the stability of all temporary excavations.

iii. During periods of rainfall, plastic sheeting should be kept reasonably accessible to prevent unprotected slopes from becoming saturated. Where necessary during periods of rainfall, the contractor should install check-dams, de-silting basins, sand bags, or other devices or methods necessary to control erosion and provide safe conditions.

E. Excavations

i. Materials that are unsuitable should be excavated under the observation and recommendations of the Soils Engineer. Unsuitable materials include, but may not be limited to: 1) dry, loose, soft, wet, organic, or compressible natural soils; 2) fractured, weathered, or soft bedrock; 3) non-engineered fill; 4) other deleterious materials; and 5) materials identified by the Soils Engineer or Engineering Geologist.

ii. Unless otherwise recommended by the Soils Engineer and approved by the local building official, permanent cut slopes should not be steeper than 2:1 (horizontal to vertical). Final slope configurations should conform to California Building Code Chapter 33 unless specifically modified by the Soil Engineer/Engineering Geologist.

iii. The Soil Engineer/Engineer Geologist should review cut slopes during excavations. The contractor should notify the Soils Engineer/Engineer Geologist prior to beginning slope excavations.

F. Structural Fill

i. Structural fill should not contain rocks larger than 3 inches in greatest dimension, and should have no more than 15 percent larger than 2.5 inches in greatest dimension.

ii. Imported fill should be free of organic and other deleterious material and should have very low expansion potential, with a plasticity index of 12 or less. Before delivery to the Site, a sample of the proposed import should be tested in our laboratory to determine its suitability for use as structural fill.

G. Compacted Fill

i. Structural fill using approved import or native should be placed in horizontal layers, each approximately 8 inches in thickness before compaction. On-site inorganic soil or approved imported fill should be conditioned with water to produce a soil water content near optimum moisture and compacted to a minimum relative density of 90 percent based on ASTM D1557-02$^{\epsilon 1}$.

ii. Fill slopes should not be constructed at gradients greater than 2 to 1 (horizontal to vertical). The contractor should notify the Soils Engineer/Engineer Geologist prior to beginning slope excavations.

iii. If fill areas are constructed on slopes greater than 10 to 1 (horizontal to vertical), we recommend that benches be cut every 4 feet as fill is placed. Each bench shall be a minimum of 10 feet wide with a minimum of 2 percent gradient into the slope.

iv. If fill areas are constructed on slopes greater than 5 to 1, we recommend that the toe of all areas to receive fill be keyed a minimum of 24 inches into underlying dense material. Key depths are to be observed and approved by a representative of GeoSolutions, Inc. Sub-drains shall be placed in the keyway and benches as required. See Detail A: Key and Bench with Backdrain.

H. Drainage

i. During grading, a representative of GeoSolutions, Inc. should evaluate the need for a sub-drain or back-drain system. Areas of observed seepage should be provided with sub-surface drains to release the hydrostatic pressures. Sub-surface drainage facilities may include gravel blankets, rock filled trenches or Multi-Flow systems or equal. The drain system should discharge in a non-erosive manner into an approved drainage area.

ii. All final grades should be provided with a positive drainage gradient away from foundations. Final grades should provide for rapid removal of surface water runoff. Ponding of water should not be allowed on building pads or adjacent to foundations. Final grading should be the responsibility of the contractor, general Civil Engineer, or architect.

iii. Concentrated surface water runoff within or immediately adjacent to the Site should be conveyed in pipes or in lined channels to discharge areas that are relatively level or that are adequately protected against erosion.

iv. Water from roof downspouts should be conveyed in solid pipes that discharge in controlled drainage localities. Surface drainage gradients should be planned to prevent ponding and promote drainage of surface water away from building foundations, edges of pavements and sidewalks. For soil areas we recommend that a minimum of 4 percent gradient be maintained.

v. Attention should be paid by the contractor to erosion protection of soil surfaces adjacent to the edges of roads, curbs and sidewalks, and in other areas where hard edges of structures may cause concentrated flow of surface water runoff. Erosion resistant matting such as Miramat, or other similar products, may be considered for lining drainage channels.

vi. Sub-drains should be placed in established drainage courses and potential seepage areas. The location of sub-drains should be determined after a review of the grading plan. The sub-drain outlets should extend into suitable facilities or connect to the proposed storm drain system or existing drainage control facilities. The outlet pipe should consist of a non-perforated pipe the same diameter as the perforated pipe.

I. Maintenance

i. Maintenance of slopes is important to their long-term performance. Precautions that can be taken include planting with appropriate drought-resistant vegetation as recommended by a landscape architect, and not over-irrigating, a primary source of surficial failures.

ii. Property owners should be made aware that over-watering of slopes is detrimental to long term stability of slopes.

J. Underground Facilities Construction

i. The attention of contractors, particularly the underground contractors, should be drawn to the State of California Construction Safety Orders for "Excavations, Trenches, Earthwork." Trenches or excavations greater than 5 feet in depth should be shored or sloped back in accordance with OSHA Regulations prior to entry.

ii. Bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding. Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand to be used as bedding should be tested in our laboratory to verify its suitability and to measure its compaction characteristics. Sand bedding should be compacted by mechanical means to achieve at least 90 percent relative density based on ASTM D1557-02$^{\epsilon 1}$.

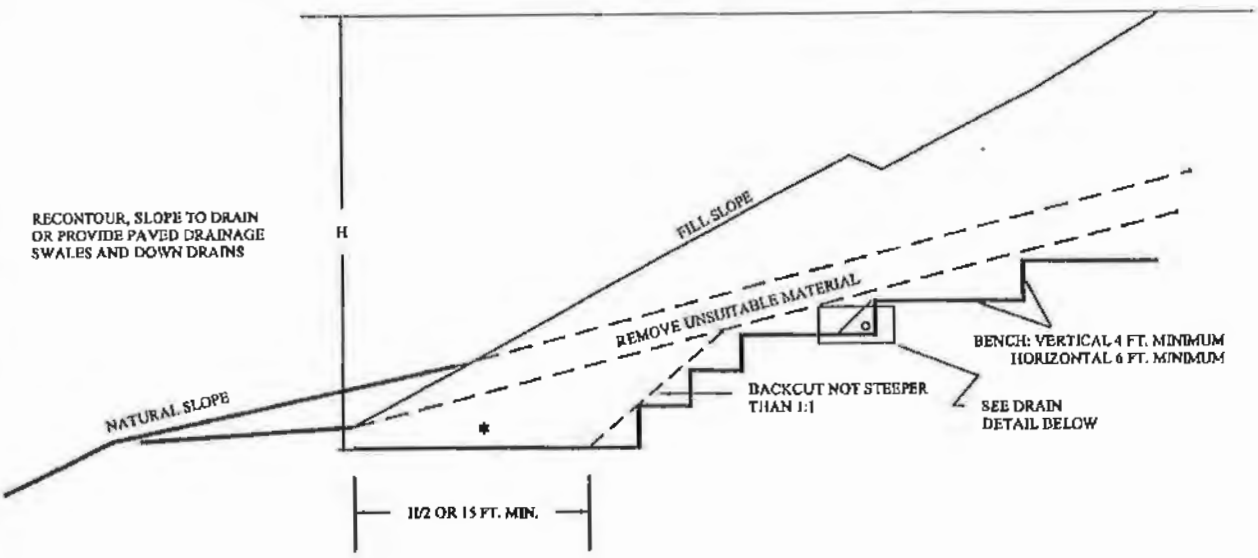
iii. On-site inorganic soils, or approved import, may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs, and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry), to produce a soil water content of about 2 to 3 percent above the optimum value and placed in horizontal layers, each not exceeding 8 inches in thickness before compaction. Each layer should be compacted to at least 90 percent relative density based on ASTM D1557-02$^{\epsilon 1}$. The top lift of trench backfill under vehicle pavements should be compacted to the requirements given in report under Preparation of Paved Areas for vehicle pavement sub-grades. Trench walls must be kept moist prior to and during backfill placement.

K. Completion of Work

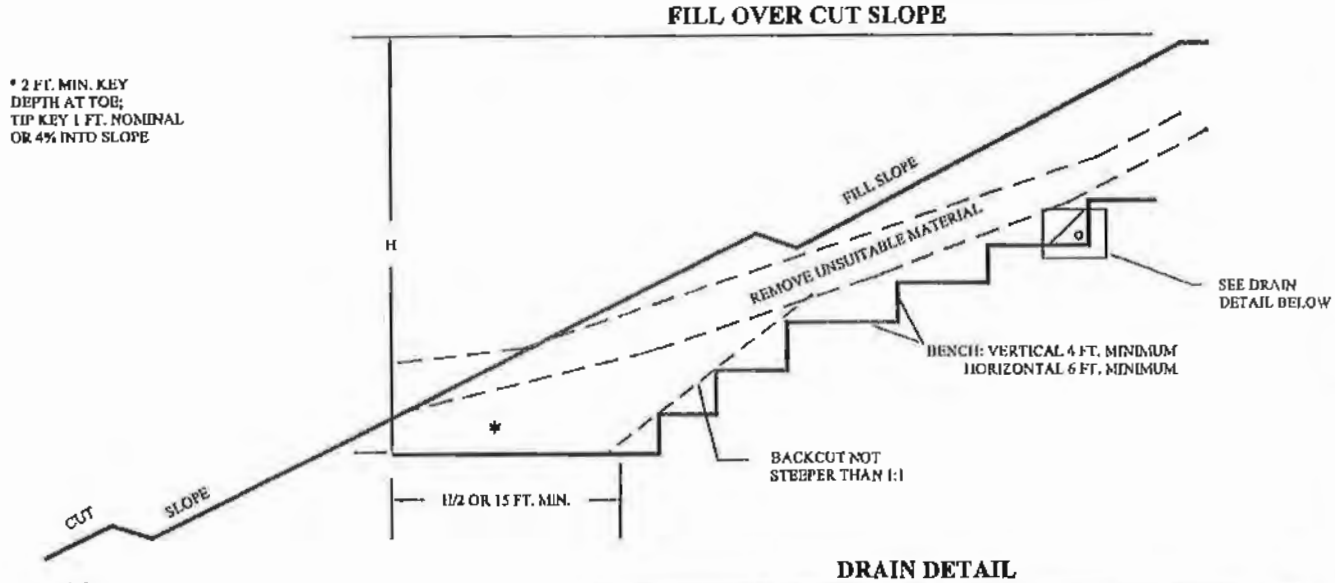
i. After the completion of work, a report should be prepared by the Soils Engineer retained to provide such services in accordance with Section 3317 of the California Building Code (CBC). The report should including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved Soils Engineering Report.

ii. Soils Engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibilities is in accordance with the approved soils engineering report and applicable provisions within Chapter 33 of the CBC.

FILL OVER NATURAL SLOPE



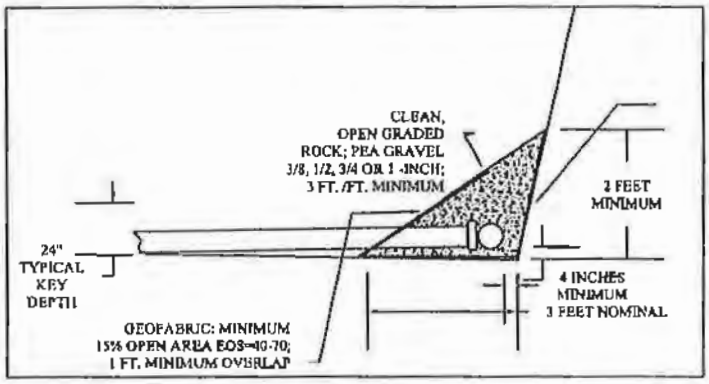
FILL OVER CUT SLOPE



NOTES:
1 - IF OVERFILLING AND CUTTING BACK TO GRADE IS ADOPTED, 15 FT. MIN. FILL WIDTH MAY BE REDUCED TO 12 FT. MIN. IN NO CASE SHOULD THE FILL WIDTH BE LESS THAN 1/2 THE HEIGHT OF FILL REMAINING.

1 - BACKDRAIN AS RECOMMEDNED BY GEOTECHNICAL CONSULTANT PER BUTTRESS BACKDRAIN DETAIL.

DRAIN DETAIL



GeoSolutions, Inc.
220 High Street
San Luis Obispo, CA 93401
(805) 543-8539 Fax: (805) 543-2171

KEY AND BENCH WITH BACKDRAIN

DETAIL
A

SOILS ENGINEERING REPORT
PASO ROBLES HOT SPRINGS MASTER PLAN
DAM INVESTIGATION, APN: 025-390-003
PASO ROBLES, CALIFORNIA

PROJECT SL05322-1

Prepared for

Dick Willhoit
Estrella Associates, Inc.
2727 Buena Vista Drive
Paso Robles, California 93446

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©

February 28, 2006

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info@GeoSolutions.net

February 28, 2006
Project No. SL05322-1

Mr. Dick Willhoit
Estrella Associates, Inc.
2727 Buena Vista Drive
Paso Robles, California 93446

Subject: **Preliminary Soils Engineering Report**
Paso Robles Hot Springs Master Plan
Dam Investigation, APN: 025-390-003
Paso Robles, California

Dear Mr. Willhoit

This Preliminary Soils Engineering Report has been prepared for the existing dam located on the Paso Robles Hots Springs Property, APN: 025-390-003, in the City of Paso Robles, California. A review of available published and unpublished geotechnical data pertinent to the existing dam indicates that the dam was built in 1971 and satisfied design codes for non-traffic carrying dams at the time of its construction. The dam has been utilized as an agricultural retention system feature for the past 35 years. Geotechnically, the dam is suitable for the proposed use provided the recommendations provided herein are implemented.

Thank you for the opportunity to have been of service in preparing this report. If you have any questions or require additional assistance, please feel free to contact the undersigned at (805) 543-8539.

Sincerely,
GeoSolutions, Inc.

Michael Conner
Staff Engineer, EIT

Patrick B. McNeill, PE
Principal

REGISTERED PROFESSIONAL ENGINEER
PATRICK B. McNEILL
C59577
EXP. 12/31/07
CIVIL
STATE OF CALIFORNIA

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TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 PURPOSE AND SCOPE 1

3.0 FIELD AND LABORATORY INVESTIGATION 2

4.0 LIQUEFACTION POTENTIAL 5

5.0 CONCLUSIONS AND RECOMMENDATIONS 5

5.1 Preliminary Pavement Design 6

6.0 ADDITIONAL GEOTECHNICAL SERVICES 6

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS 7

REFERENCES

APPENDIX A

Field Investigation
Soil Classification Chart
Boring Logs
Piezometer Log

APPENDIX B

Laboratory Testing
Soil Test Reports

APPENDIX C

Preliminary Grading Specifications

Key and Bench Detail

LIST OF FIGURES

Figure 1: Area Location Map 1

Figure 2: Site Location Map 1

Figure 3: Site Plan 2

Figure 4: Site Plan Detail Area 2

Figure 5: Site Cross-Section 3

Figure 6: Dam Cross-Section 4

LIST OF TABLES

Table 1: Engineering Properties 4

Table 2: 2001 California Building Code, Chapter 16, Structural Design Parameters 5

Table 3: Recommended Pavement Design Thickness 6

SOILS ENGINEERING REPORT
PASO ROBLES HOT SPRINGS MASTER PLAN
DAM INVESTIGATION, APN: 025-390-003
PASO ROBLES, CALIFORNIA

PROJECT SL05322-1

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation of an existing dam for an agricultural retention pond located between North River Road and Buena Vista Drive, APN: 025-390-003, in the City of Paso Robles, San Luis Obispo County, California. **Figure 1: Area Location Map**, depicts the location of the property. **Figure 2: Site Location Map**, is an approximate outline of the property.

The existing earth-filled dam is approximately 250 feet long and 21 feet high in the middle. It is located near the Paso Robles Hot Springs. See **Figure 3: Site Plan**. The maximum quantity of water impounded by the dam is roughly 11 acre-feet. A single-lane dirt road presently travels the length of the dam, and the dam is vegetated with grasses and bushes.

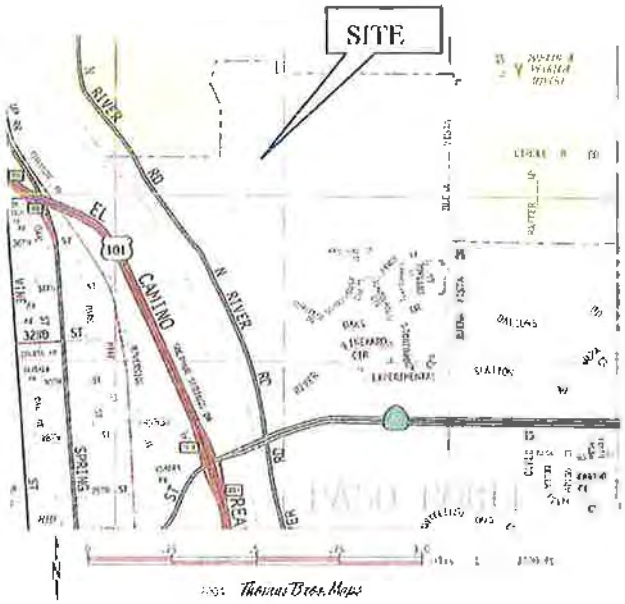

Figure 1: Area Location Map

2.0 PURPOSE AND SCOPE

It is our understanding that the future development of the surrounding area will consist of the construction of residential housing surrounding the current agricultural stock pond and dam. The purpose of this study is to evaluate and determine the sub-surface soil conditions of the existing earth-filled dam in order to establish whether the current dam construction is adequate for the proposed future development. The scope of this study includes the following items:

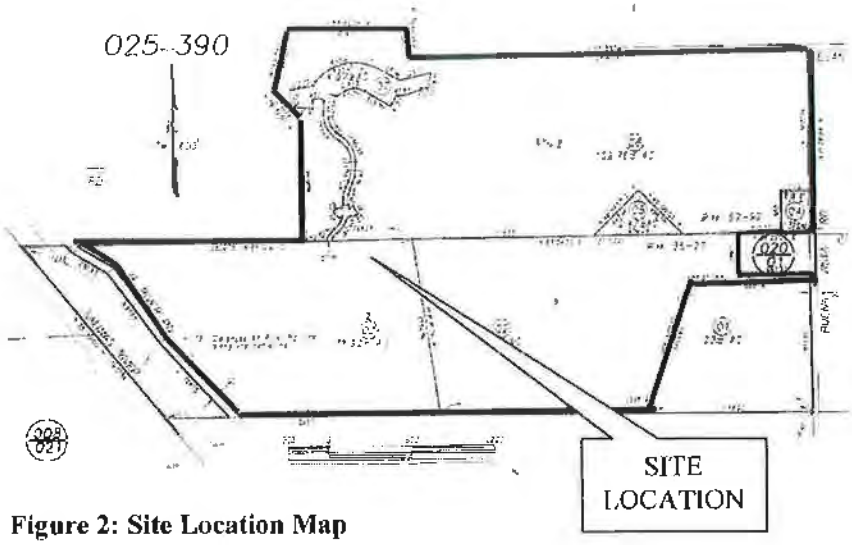

Figure 2: Site Location Map

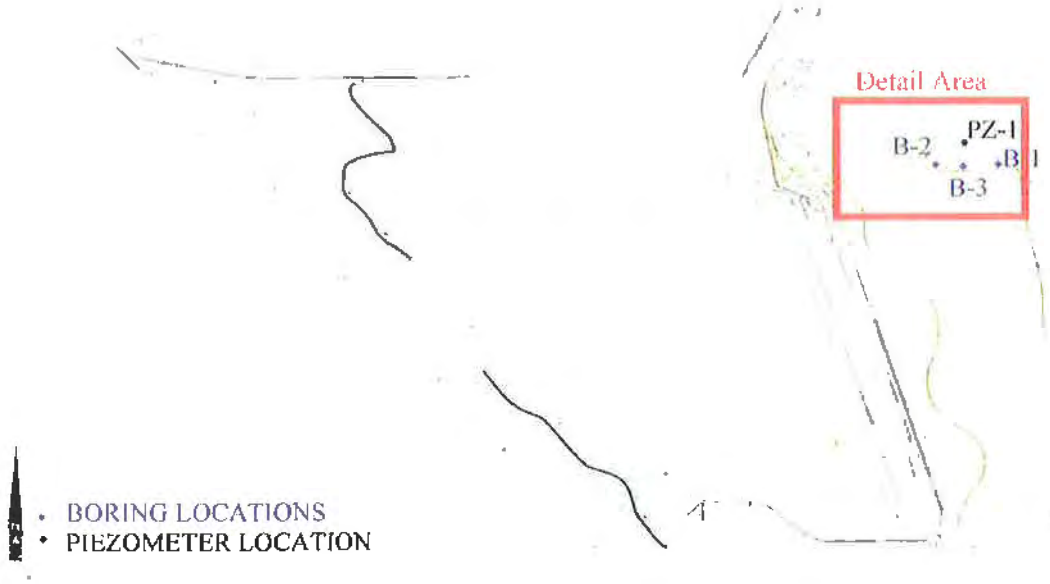

Figure 3: Site Plan

1. A review of available published and unpublished geotechnical data pertinent to the project site.

2. A field study consisting of a site reconnaissance and an exploratory boring program to formulate a description of the sub-surface conditions.

3. A laboratory-testing program performed on representative soil samples collected from our field study.

4. Analysis of the data gathered during our field study and laboratory testing.

5. Development of dam competency recommendations with regard to the future planned development near the site suitability and pertinent geotechnical design criteria.

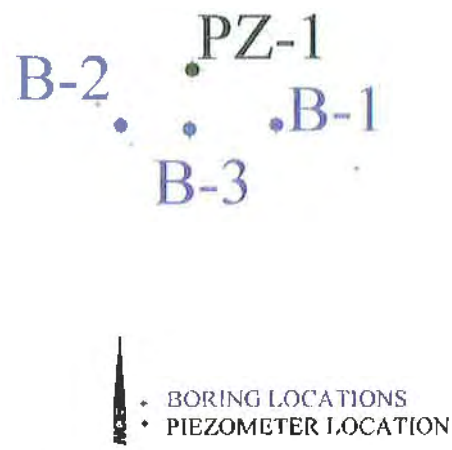

Figure 4: Site Plan Detail Area

3.0 FIELD AND LABORATORY INVESTIGATION

The field investigation was conducted on February 7 through 9th, 2006 using a track-mounted CME 55 drill rig. Three exploratory borings to a maximum depth of 55.5 feet below ground surface (bgs) and one piezometer boring to a depth of 30 feet bgs were placed at the approximate locations indicated on the Site Plan.

The surface materials at the site of the dam generally were fill which consisted of dark brown sandy lean CLAY (CL) encountered in slightly moist and stiff to firm condition to depths of 9 to 12 feet bgs on the west and east dam flanks, respectively, and to a depth of 8 feet bgs near the center of the dam.

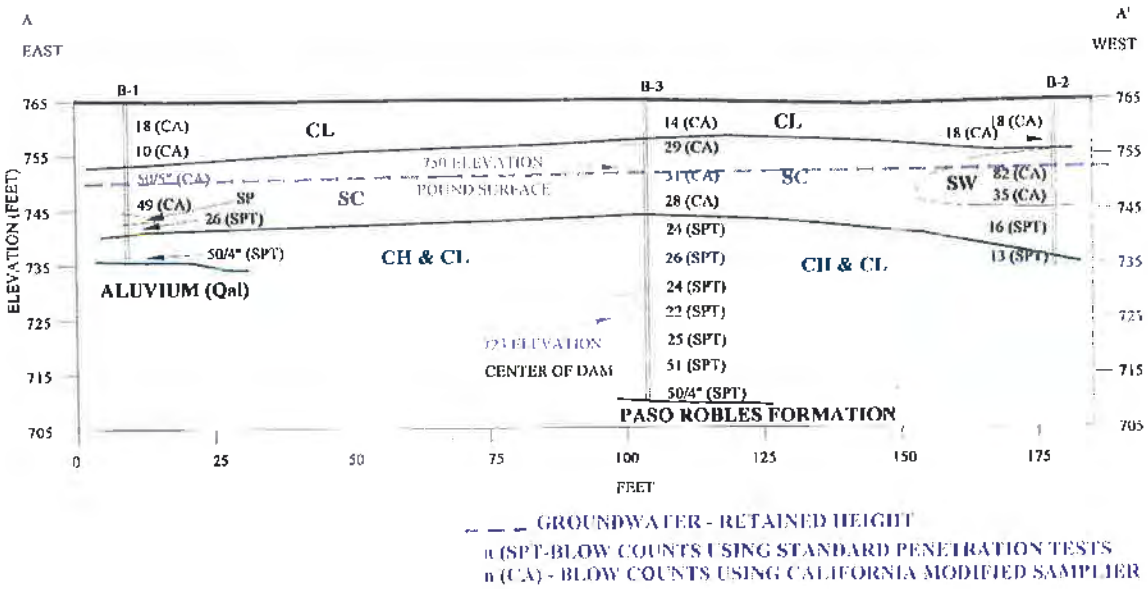

Figure 5: Site Cross-Section

On the eastern flank in boring B-1, the sub-surface materials consisted of light brownish gray clayey SAND (SC) encountered in a slightly moist and very dense to dense condition to 24 feet bgs. Below that were sub-surface materials consisting of a thin lens of poorly-graded SAND (SP) and then an olive brown sandy lean CLAY (CL) layer encountered in a slightly moist and very stiff to hard condition to termination of the boring at 29.5 feet bgs. This material was identified as colluvium (Qoa).

On the western flank in boring B-2, the sub-surface materials consisted of an 11-foot layer of well-graded SAND (SW) encountered in a slightly moist and medium dense condition to approximately 20 feet bgs. Below that were materials consisting of light brownish gray clayey SAND (SC) encountered in slightly moist and medium dense to very dense condition to termination of the boring at 30.5 feet bgs.

Near the center of the dam in boring B-3, the sub-surface materials consisted of light brownish gray clayey SAND (SC) encountered in a slightly moist and very dense to dense condition to 21 feet bgs. Below that were layers of soil consisting of olive brown to yellowish brown sandy CLAY's (CH) and silty CLAY's (CL) encountered in slightly moist and very stiff conditions to a depth of approximately 54 feet bgs. The boring was termination at 55.5 feet bgs in a yellowish brown CLAY (CL) encountered in a slightly moist and hard condition. This material was identified as Paso Robles formation, which is considered competent native material.

Groundwater was not encountered in any of the borings on the date of placement; however, static groundwater was encountered in Boring B-3 at 42 feet bgs the following day. See **Figure 5: Site Cross-Section** for a cross section of the soils encountered across the dam, and **Figure 6: Dam Cross-Section** for a view of measured water levels through the dam core.

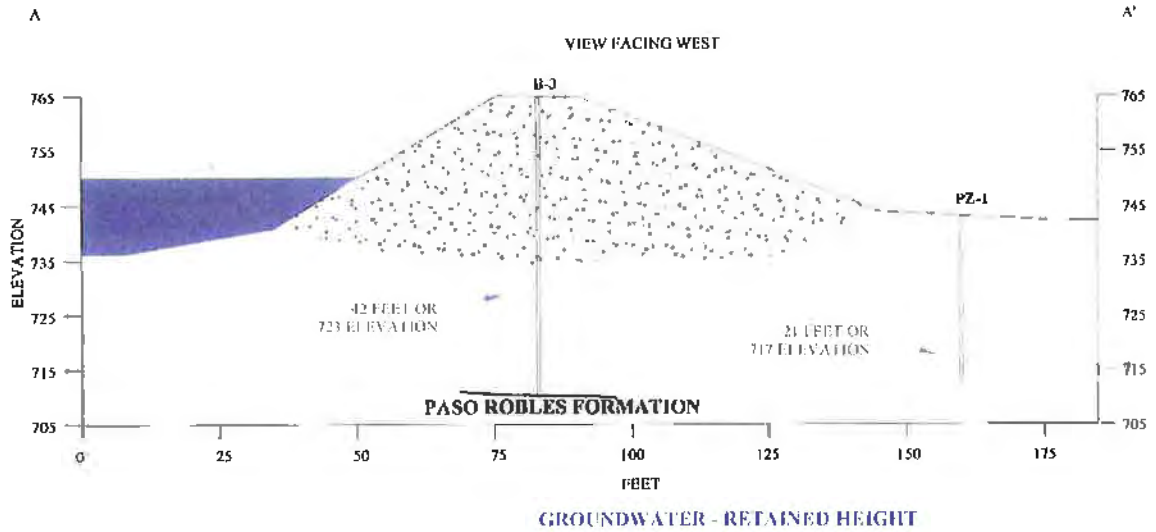

Figure 6: Dam Cross-Section

The piezometer (PZ-1) was placed at the toe of the dam near the center of the span. No groundwater was encountered at the time of field exploration; however, approximately one week after placement, the static groundwater was measured at approximately 21 feet bgs.

During the boring operations the soils encountered were continuously examined, visually classified, and sampled for general laboratory testing. A project engineer has reviewed a continuous log of the soils encountered at the time of field investigation. The Boring Logs are attached in **Appendix A**.

The results of the laboratory tests performed on the soils sampled from the Site during boring operations are listed below. A detailed explanation of each laboratory test performed is provided in **Appendix B**, along with the laboratory data reports.

Table 1: Engineering Properties

Sample Name	Sample Description	Specification	Expansion Index	Expansion Potential	Plasticity Index
A	Dark Brown Sandy Lean CLAY	CL	30	Low	20
B	Light Brownish Gray Clayey SAND	SC	-	-	24
C	Brown Clayey SAND	SC	-	-	-
D	Very Dark Brown Clayey SAND	SC	-	-	19

Structural building design parameters within the 2001 California Building Code (CBC) are dependent upon several factors including site soil characteristics and faults near the Site. This data is presented in tabular form in Table 2.

Table 2: 2001 California Building Code, Chapter 16, Structural Design Parameters

Soil Profile Type	S_D -- Stiff Soil
Seismic Source Type	Greater than 15 kilometers from an A fault Approximately 4.5 kilometers from a B fault.
Seismic Zone	Seismic Zone 4 Z= 0.4
Near Source Factor	$N_a = 1.05$ $N_v = 1.27$
Seismic Coefficient	$C_a = 0.44N_a = 0.44\ (1.05) = 0.46$ $C_v = 0.64N_v = 0.64\ (1.27) = 0.81$

4.0 LIQUEFACTION POTENTIAL

Liquefaction occurs when saturated, cohesionless soils lose shear strength due the increase in pore water pressure and the loss of soil effective stress caused by earthquake shaking. Ground motion from an earthquake may induce cyclic reversals of shear stresses of large amplitude. Lateral and vertical movement of the soil mass, combined with the loss of bearing strength, usually results from liquefaction.

Liquefaction potential of soil deposits during earthquake activity depends on soil type, void ratio, ground water conditions, the duration of shaking, and confining pressures on the potentially liquefiable soil unit. Poorly-graded loose fine sand, shallow ground water, high intensity earthquakes, and long duration of ground shaking are the principal factors leading to liquefaction. Based on the following features of the soils found at the site, the potential for seismic liquefaction of soils appears to be low:

i. Surface and sub-surface soils contain over 30% fine material.

ii. Sands encountered were well-graded, very dense, and not saturated.

Assuming the recommendations of this Soils Engineering Report are implemented, the potential for seismically induced settlement and differential settlement is considered to be low.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Natural Resources Conservation Service (NRCS) Conservation Practice Standard 378 is the standard to which this dam should conform regarding design and construction. Due to the historical satisfactory operation of the dam and the presence of competent fine-grained soils within the core of the dam, it is recommended that the dam be considered suitable for continued use as an agricultural retention dam within the scope of the future planned development in the surrounding area.

However, due to the presence of animal burrows on the face of the dam, it is recommended that face of the dam be compacted at present grade to 90 percent relative density using modern compaction equipment existing per ASTM D-1557.

GeoSolutions, Inc. understands that construction of a paved roadway may be planned on the surface of the dam. From the soils encountered, an assumed R-Value of 10 was used for roadway structural section

calculations. If construction of this road proceeds, additional testing to determine actual R-Values of the soil materials encountered at finished grade will be required for roadway structural section calculations. In addition, NRCS Conservation Practice Standard 378 specifies minimum widths for using the top of the dam as a public roadway. These minimums should be met or exceeded for the intended design.

5.1 Preliminary Pavement Design

1. All paving construction and materials used should conform to applicable sections of the latest edition of the State of California Department of Transportation Standard Specifications.

2. Aggregate bases and sub-bases should be compacted to a minimum relative density of 95 percent based on the ASTM D1557-91 test method at slightly above optimum moisture content.

3. A minimum of 12 inches of Class II Aggregate Base is recommended for all pavement sections. All pavement sections should be crowned for good drainage. All pavement construction and materials used should conform to Sections 25, 26 and 39 of the latest edition of the State of California Department of Transportation Standard Specifications.

4. Preliminary recommended pavement sections were determined based on various traffic indexes (assumed), an R-Value of 10 (assumed based on soils encountered during field investigation), and specifications of the County of San Luis Obispo. Our analysis was based on the Caltrans Highway Design Manual and our recommended structural sections are presented in Table 3. Final design section will be determined after preliminary grading is finished and the California Test Method No. 301-F test is performed as a representative sample encountered at the Site.

Table 3: Recommended Pavement Design Thickness

Traffic Index	Street Section Thickness in Inches	
	AC*	AB**
5.0	2.00	12.00
5.5	2.00	13.00
6.0	2.25	15.00
6.5	2.50	16.00
7.0	3.00	17.00

*AC = Asphaltic Concrete meeting Caltrans Specification for Class 2 Asphalt Concrete
**AB = Aggregate Base meeting Caltrans Specification for Class 2 aggregate base (R-Value = 78 Min)

6.0 ADDITIONAL GEOTECHNICAL SERVICES

The recommendations contained in this report are based on a limited number of borings and on the continuity of the sub-surface conditions encountered. It is assumed that GeoSolutions, Inc. will be retained to perform the following services:

1. Consultation during plan development.

2. Plan review of grading and foundation documents prior to any future construction.

3. Construction inspections and testing as required including, but not limited to, stripping, grading, over-excavating, backfill placement, imported materials, foundation excavation observations and compaction.

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed during our study. Should any variations or undesirable conditions be encountered during the development of the Site, GeoSolutions, Inc. should be notified immediately and GeoSolutions, Inc. will provide supplemental recommendations as dictated by the field conditions.

2. This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project, and incorporated into the project plans and specifications. The owner or his/her representative is responsible to ensure that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Therefore, this report should not be relied upon after a period of 3 years without our review nor should it be used or is it applicable for any properties other than those studied. However many events such as floods, earthquakes, grading of the adjacent properties and building and municipal code changes could render sections of this report invalid in less than 3 years.

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2001 California Building Code. California Code of Regulations Title 24, Part 2, Volume 2. Whittier, California: International Conference of Building Officials, 2002.

Bowles, Joseph E. *Foundation Analysis and Design.* 5th ed. New York: McGraw-Hill, 1996.

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Natural Resources Conservation Service. *Conservation Practice Standard: Pond, No. 378.* California, 2005. < ftp://ftp-fc.sc.egov.usda.gov/NHQ/practice-standards/standards/378.pdf >

APPENDIX A

Field Investigation

Soil Classification Chart

Boring Logs

Piezometer Logs

FIELD INVESTIGATION

The field investigation was conducted February 7 through 9th, 2006 using a track-mounted CME 55 drill rig. The surface and sub-surface conditions were studied by advancing three exploratory borings and one piezometer. This exploration was conducted in accordance with presently accepted geotechnical engineering procedures consistent with the scope of the services authorized to GeoSolutions, Inc.

The CME 55 drill rig with an 8-inch diameter hollow-stem continuous flight auger bored three exploratory borings near the approximate locations indicated on the Site Plan. The drilling and field observation was performed under the direction of the project engineer. A representative of GeoSolutions, Inc. maintained a log of the soil conditions and obtained soil samples suitable for laboratory testing. The soils were classified in accordance with the Unified Soil Classification System. See Soil Classification Chart, **Appendix A**.

Standard Penetration Tests with a 3-inch outside diameter Modified California (CA) split tube sampler were performed to obtain an indication, in the field, of the density of the soil and to allow visual observation of at least a portion of the soil column. Soil samples obtained with the sampler are retained for further observation and testing. A 140-pound hammer free falling 30 inches drives the sampler. The sampler is initially seated 6 inches to penetrate any loose cuttings and is then driven an additional 12 inches with the results (N-values) recorded in the boring logs as the number of blows per foot required to advance the sample the 12 inches.

The CA sampler is a larger diameter sampler than the standard (SPT) split tube sampler with a 2-inch outside diameter and provides additional material for normal geotechnical testing such as in-situ shear and consolidation testing. Either sampler may be used in the field investigation, but the N-values obtained from using the CA sampler will be greater than that of the SPT. The N-values for samples collected using the CA can be roughly correlated to SPT N-values using a conversion factor that may vary from about 0.5 to 0.7 with the average conversion factor approximately 0.63 (1÷1.6). More information about standardized samplers can be found in the California Geological Survey Special Publication 117 (DMG SP117), updated May 28, 2002.

Disturbed bulk samples are obtained from cuttings developed during boring operations. The bulk samples are selected for classification and testing purposes and may represent a mixture of soils within the noted depths. Recovered samples are placed in transport containers and returned to the laboratory for further classification and testing.

Logs of the borings showing the depths and descriptions of the soils encountered, geologic structure where applicable, penetration resistance, and results of in-place density and moisture content tests are presented in this appendix. The logs represent the interpretation of field logs and tests, the interpolation of soil conditions between samples and the results of laboratory observations and tests. The noted stratification lines represent the approximate boundaries between the surface soil types. The actual transition between soil types may be gradual.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS		LABORATORY CLASSIFICATION CRITERIA		GROUP SYMBOLS	PRIMARY DIVISIONS
COARSE GRAINED SOILS More than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retainined on No. 4 (4.75mm) sieve	Clean gravels (less than 5% fines*)	C_u greater than 4 and C_z between 1 and 3	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			Not meeting both criteria for GW	GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		Gravel with fines (more than 12% fines*)	Atterberg limits plot below "A" line or plasticity index less than 4	GM	Silty gravels, gravel-sand-silt mixtures
			Atterberg limits plot below "A" line and plasticity index greater than 7	GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 (4.75mm) sieve	Clean sand (less than 5% fines*)	C_u greater than 6 and C_z between 1 and 3	SW	Well graded sands, gravely sands, little or no fines
			Not meeting both criteria for SW	SP	Poorly graded sands and gravelly sand sands, little or no fines
		Sand with fines (more than 12% fines*)	Atterberg limits plot below "A" line or plasticity index less than 4	SM	Silty sands, sand-silt mixtures
			Atterberg limits plot above "A" line and plasticity index greater than 7	SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS 50% or more passes No. 200 sieve	SILTS AND CLAYS (liquid limit less than 50)	Inorganic soil	PI < 4 or plots below "A"-line	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
		Inorganic soil	PI > 7 and plots on or above "A" line**	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Organic Soil	LL (oven dried)/LL (not dried) < 0.75	OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS (liquid limit 50 or more)	Inorganic soil	Plots below "A" line	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		Inorganic soil	Plots on or above "A" line	CH	Inorganic clays of high plasticity, fat clays
		Organic Soil	LL (oven dried)/LL (not dried) < 0.75	OH	Organic silts and organic clays of high plasticity
Peat	Highly Organic	Primarily organic matter, dark in color, and organic odor		PT	Peat, muck and other highly organic soils

*Fines are those soil particles that pass the No. 200 sieve. For gravels and sands with between 5 and 12% fines, use of dual symbols is required (i.e. GW-GM, GW-GC, GP-GM, or GP-GC).

**If the plasticity index is between 4 and 7 and it plots above the "A" line, then dual symbols (i.e. CL-ML) are required.

CLASSIFICATIONS BASED ON PERCENTAGE OF FINES

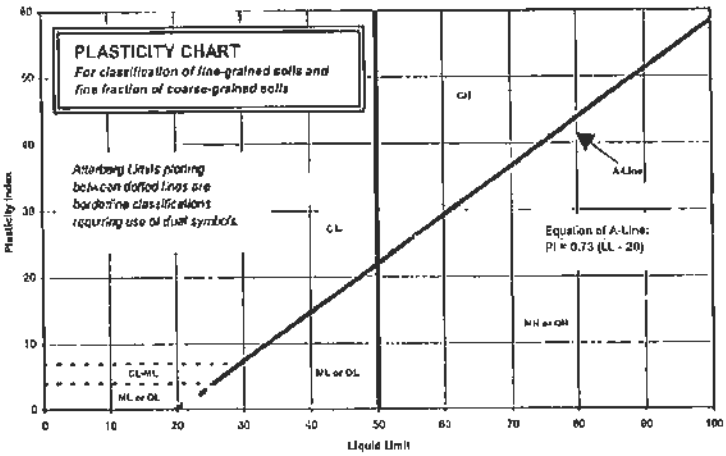
Less than 5%, Pass No. 200 (75mm)sieve)	GW, GP, SW, SP
More than 12% Pass N. 200 (75 mm) sieve	GM, GC, SM, SC
5%-12% Pass No. 200 (75 mm) sieve	Borderline Classification requiring use of dual symbols

CONSISTENCY

CLAYS AND PLASTIC SILTS	STRENGTH TON/SQ. FT ++	BLOWS/ FOOT +
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16 -
VERY STIFF	2 - 4	16 - 32
HARD	Over 4	Over 32

RELATIVE DENSITY

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/ FOOT +
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
. VERY DENSE	Over 50



+ Number of blows of a 140-pound hammer falling 30-inches to drive a 2-inch O.D. (1-3/8-inch I.D.) split spoon (ASTM D1586).

++ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D1586), pocket penetrometer, torvane, or visual observation.

Drilling Notes:

1. Sampling and blow counts
   a. California Modified – number of blows per foot of a 140 pound hammer falling 30 inches
   b. Standard Penetration Test – number of blows per 12 inches of a 140 pound hammer falling 30 inches

Types of Samples:
X – In-Situ
SPT - Standard Penetration
CA - California Modified
N - Nuclear Gauge
PO – Pocket Penetrometer (tons/sq.ft.)

GeoSolutions, Inc.

220 High Street
San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-1**

JOB NO. **SL05322-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Paso Robles Hot Springs Dam Investigation**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**2/7/06**	SAMPLING METHOD:	**CA & SPT**
LOGGED BY:	**MC**	HOLE ELEVATION:	**765 feet MSL**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **29.5 feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	POCKET PEN. tsf	IN-SITU WATER CONTENT%	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY LEAN CLAY: fill, dark brown, slightly moist; darker brown and more clayey with depth, stiff to firm	CL		A								
-4				CA	18							
-9				CA	10							
-12	CLAYEY SAND: light brownish gray, slightly moist, very dense to dense	SC		B								
-14				CA	50/5"							
-19				CA	49							
-24	POORLY GRADED SAND: brown, saturated, medium dense	SP		SPT	26							
-25	SANDY LEAN CLAY: olive brown to light gray, moist to slightly moist, very stiff to hard	CL										
-29	Alluvium Qoa			SPT	50/4"							
-30												

GeoSolutions, Inc.

220 High Street
San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-2**

JOB NO. **SL05322-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Paso Robles Hot Springs Dam Investigation**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**2/7/06**	SAMPLING METHOD:	**CA & SPT**
LOGGED BY:	**MC**	HOLE ELEVATION:	**765 feet MSL**

▼ Depth of Groundwater: **Not Encountered** Boring Terminated At: **30.5 feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	POCKET PEN, tsf	IN-SITU WATER CONTENT%	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY LEAN CLAY: fill, dark brown, slightly moist to moist, stiff	CL										
-1												
-2												
-3												
-4				CA	18							
-5												
-6												
-7												
-8												
-9	WELL-GRADED SAND: yellowish brown, well graded, slightly moist, medium dense to very dense layers; some layers of lean clay encountered	SW		CA	18							
-10												
-11												
-12												
-13												
-14				CA	82							
-15												
-16												
-17												
-18												
-19				CA	35							
-20	CLAYEY SAND: brown, slightly moist to moist, medium dense	SC		C								
-21												
-22												
-23												
-24				SPT	16							
-25												
-26												
-27												
-28												
-29				SPT	13							
-30												

GeoSolutions, Inc.

220 High Street
San Luis Obispo, CA 93401

BORING LOG

BORING NO. **B-3**

JOB NO. **SL05322-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Paso Robles Hot Springs Dam Investigation**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER:	**8 Inches**
DATE DRILLED:	**2/7/06**	SAMPLING METHOD:	**CA & SPT**
LOGGED BY:	**MC**	HOLE ELEVATION:	**765 feet MSL**

▼ Depth of Groundwater: **N/E @ drilling; 42 ft. bgs @ +24hrs** Boring Terminated At: **55.5 feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	POCKET PEN, tsf	IN-SITU WATER CONTENT%	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
0	SANDY LEAN CLAY: fill, dark brown, slightly moist, stiff	CL										
-4				CA	1[illegible]							
-8	CLAYEY SAND: very dark brown, moist, medium dense	SC		D								
-9				CA	29							
-14				CA	31							
-18	organic smell											
-19				CA	28							
-21	SANDY CLAY: dark brown, moist, very stiff	CH										
-24				SPT	24							
-29				SPT	26							

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

BORING LOG

BORING NO. (cont) **B-3**

JOB NO. **SL05322-1**

Depth of Groundwater: **N/E @ drilling; 42 ft @ 24 hrs** Boring Terminated At: **55.5 feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	SAMPLE	BLOWS/ 12 IN	POCKET PEN, tsf	IN-SITU WATER CONTENT%	IN-SITU DRY DENSITY, pcf	OPTIMUM WATER CONTENT, %	MAXIMUM DRY DENSITY, pcf	EXPANSION INDEX (EI)	ATTERBERG LIMIT (PI)
-30	brown to light brown, with sand, very stiff											
-31												
-32												
-33												
-34	CLAY: light olive brown to mottled, slightly moist, very stiff	CL		SPT	24							
-35												
-36												
-37												
-38	SANDY CLAY: olive brown, with sand, very stiff	CH		E								
-39				SPT	22							
-40												
-41												
-42												
-43												
-44	SILTY CLAY: light olive brown to light brown, slightly moist, very stiff	CL		SPT	25							
-45												
-46												
-47												
-48												
-49				SPT	51							
-50												
-51												
-52												
-53												
-54	CLAY: yellowish brown with sand and fractured chert, hard Paso Robles Formation	CL		SPT	50/4"							
-55												

GeoSolutions, Inc.

220 High Street

San Luis Obispo, CA 93401

PERCOLATION LOG

BORING NO. **PZ-1**

JOB NO. **SL05322-1**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**Paso Robles Hot Springs Dam Investigation**	DRILL RIG:	**CME 55**
DRILLING LOCATION:	**See Figure 2, Site Plan**	HOLE DIAMETER	**8 Inches**
DATE DRILLED:	**2/9/06**	SAMPLING METHOD:	
LOGGED BY:	**MC**	HOLE ELEVATION:	**738 feet MSL**

▼ Depth of Groundwater: **N/E @ drilling; @ 21 feet @ 1 hr** Boring Terminated At: **30 feet**

DEPTH	SOIL DESCRIPTION	USCS	LITHOLOGY	ANNULAR MATERIAL DESCRIPTION	WELL CASING MATERIAL DESCRIPTION	WELL CROSS-SECTION
0	SANDY CLAY: dark brown, slightly moist	CL		POORLY GRADED #2/12 SAND	PVC SOLID	
-3	LEAN CLAY: light gray, dry	CL				
-5	SILTY SAND: grayish white, with gravel, dry	SM				
-7	SANDY CLAY: light brown to olive brown, slightly moist, layers of fatter clay	CL			PVC SCREEN	

0, -1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30

APPENDIX B

Laboratory Testing

Soil Test Reports

LABORATORY TESTING

This appendix includes a discussion of test procedures and results of the laboratory-testing program performed. The purposed of the laboratory testing is to assess the soil engineering properties of the soil materials underlying the Site. The program is carried out employing, wherever practical, currently accepted test methods of the American Society for Testing and Materials (ASTM).

Undisturbed and disturbed bulk samples used in the laboratory-testing program are obtained from various locations during the course of the field exploration as discussed in **Appendix A** of this report. Identification of each sample is by sample letter and depth. The method of identifying and classifying soils according to their engineering properties parallels the Unified Soils Classification System. The various laboratory tests performed are described below.

Expansion Index of Soils (ASTM D4829-03) is conducted in accordance with the ASTM test method and the California Building Code Standard, and are performed on representative bulk and undisturbed soil samples. The purpose of this test is to evaluate expansion potential of the site soils due to fluctuations in moisture content. The sample specimens are placed in a consolidometer, surcharged under a 144-psf vertical confining pressure, and then inundated with water. The amount of expansion is recorded over a 24-hour period with a dial indicator. The expansion index is calculated by determining the difference between final and initial height of the specimen divided by the initial height.

Liquid Limit, Plastic Limit, and Plasticity Index of Soils (ASTM D4318-00) are the water contents at certain limiting or critical stages in cohesive soil behavior. The liquid limit (LL or W_L) is the lower limit of viscous flow, the plastic limit (PL or W_P) is the lower limit of the plastic stage of clay and plastic index (PI or I_P) is a range of water content where the soil is plastic. The Atterberg Limits are performed on samples that have been screened to remove any material retained on a No. 40 sieve. The liquid limit is determined by performing trials in which a portion of the sample is spread in a brass cup, divided in two by a grooving tool, and then allowed to flow together from the shocks caused by repeatedly dropping the cup in a standard mechanical device. To determine the Plastic Limit a small portion of plastic soil is alternately pressed together and rolled into a 1/8-inch diameter thread. This process is continued until the water content of the sample is reduced to a point at which the thread crumbles and can no longer be pressed together and re-rolled. The water content of the soil at this point is reported as the plastic limit. The plasticity index is calculated as the difference between the liquid limit and the plastic limit.

Particle Size Analysis of Soils (ASTM D422-63R02) is used to determine the particle-size distribution of fine and coarse particle sizes in soils. In the test method the sample is passed through a series of sieves of progressively smaller openings for determination of particle size distribution. The total percentage passing each sieve is reported and used to determine the distribution of fine and coarse particle sizes in the sample.

GeoSolutions, Inc. | **SOILS REPORT** | **(805) 543-8539**

Project:	Parcel 3, North River Road Dam	Date Tested:	2/17/2006
Client:		Project #:	SL05322-1
Sample:	A Depth: 1.0 ft	Lab #:	5500
Location:	B-1	Sample Date:	2/9/2006
		Sampled By:	MC

Soil Classification
ASTM D2487-93, D2488-93

Result: Dark Brown Sandy Lean CLAY

Specification: CL

Sieve Analysis
ASTM D422

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	99	
No. 8	96	
No. 16	89	
No. 30	80	
No. 50	71	
No. 100	62	
No. 200	53.0	

Sand Equivalent Cal 217

1		SE
2		
3		
4		

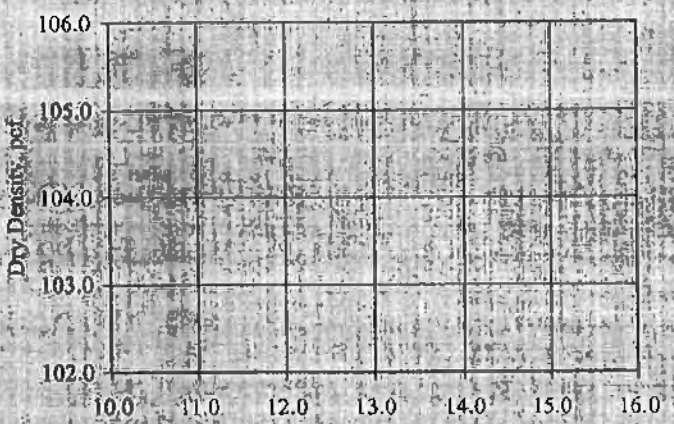
Plasticity Index
ASTM D4318-95a

Liquid Limit:	35
Plastic Limit:	15
Plasticity Index:	20

Expansion Index
ASTM D4829-95

Expansion Index:	30
Expansion Potential:	Low
Initial Saturation, %:	50

Laboratory Maximum Density
ASTM D1557-02



Mold ID:	n/a	Mold Diameter, ins:	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve =

Trial #	1	2	3	4
Water Content:				
Dry Density:				
Maximum Dry Density, pcf:				
Optimum Water Content, %:				

Moisture-Density ASTM D2937-94, ASTM D2216-92

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Darren Harrold

GeoSolutions, Inc. **SOILS REPORT** **(805) 543-8539**

Project:	Parcel 3, North River Road Dam	Date Tested:	2/17/2006
Client:		Project #:	SL05322-1
Sample:	B Depth: 12.0 ft	Lab #:	5500
Location:	B-1	Sample Date:	2/9/2006
		Sampled By:	MC

Soil Classification
ASTM D2487-93, D2488-93

Result: Light Brownish Gray Clayey SAND

Specification: SC

Sieve Analysis
ASTM D422

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	97	
No. 8	95	
No. 16	92	
No. 30	84	
No. 50	69	
No. 100	52	
No. 200	41.9	

Sand Equivalent Cal 217

1		SE
2		
3		
4		

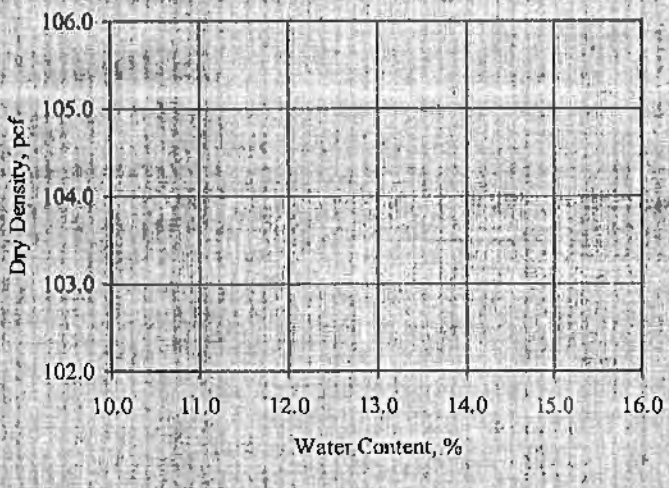
Plasticity Index
ASTM D4318-95a

Liquid Limit:	40
Plastic Limit:	16
Plasticity Index:	24

Expansion Index
ASTM D4829-95

Expansion Index:	
Expansion Potential:	
Initial Saturation, %:	

Laboratory Maximum Density
ASTM D1557-02



Mold ID	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve =

Trial #	1	2	3	4
Water Content:				
Dry Density:				

Maximum Dry Density, pcf:	
Optimum Water Content, %:	

Moisture-Density ASTM D2937-94, ASTM D2216-92

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Darren Harrold

GeoSolutions, Inc. **SOILS REPORT** **(805) 543-8539**

Project:	Parcel 3, North River Road Dam	Date Tested:	2/17/2006
Client:		Project #:	SL05322-1
Sample:	C Depth: 20.0 ft	Lab #:	5500
Location:	B-2	Sample Date:	2/9/2006
		Sampled By:	MC

Soil Classification
ASTM D2487-93, D2488-93

Result: Brown Clayey SAND

Specification: SC

Sieve Analysis
ASTM D422

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	100	
No. 8	96	
No. 16	87	
No. 30	74	
No. 50	61	
No. 100	49	
No. 200	39.3	

Sand Equivalent Cal 217

1		SE
2		
3		
4		

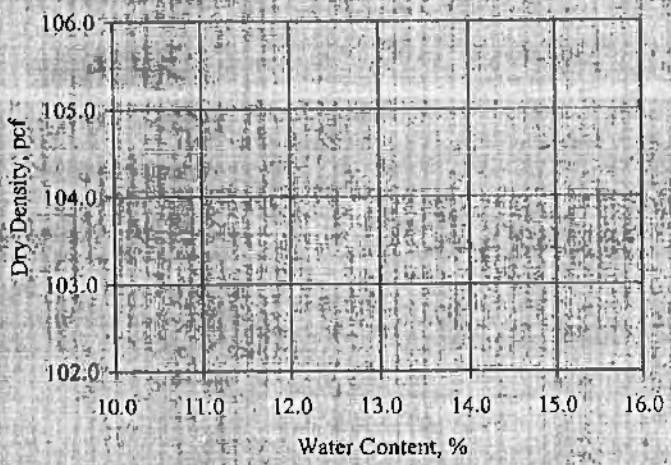
Plasticity Index
ASTM D4318-95a

Liquid Limit:	
Plastic Limit:	
Plasticity Index:	

Expansion Index
ASTM D4829-95

Expansion Index:	
Expansion Potential:	
Initial Saturation, %:	

Laboratory Maximum Density
ASTM D1557-02



Mold ID:	n/a	Mold Diameter, ins:	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve =

Trial #	1	2	3	4
Water Content:				
Dry Density:				

Maximum Dry Density, pcf:	
Optimum Water Content, %:	

Moisture-Density ASTM D2937-94, ASTM D2216-92

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Darren Harrold

GeoSolutions, Inc. **SOILS REPORT** **(805) 543-8539**

Project:	Parcel 3, North River Road Dam	Date Tested:	2/17/2006
Client:		Project #:	SL05322-1
Sample:	D Depth: 8.0 ft	Lab #:	5500
Location:	B-3	Sample Date:	2/9/2006
		Sampled By:	MC

Soil Classification
ASTM D2487-93, D2488-93

Result: Very Dark Brown Clayey SAND

Specification: SC

Sieve Analysis
ASTM D422

Sieve Size	Percent Passing	Project Specifications
3"		
2"		
1 1/2"		
1"		
3/4"		
No. 4	98	
No. 8	95	
No. 16	87	
No. 30	77	
No. 50	64	
No. 100	51	
No. 200	40.0	

Sand Equivalent Cal 217

1		SE
2		
3		
4		

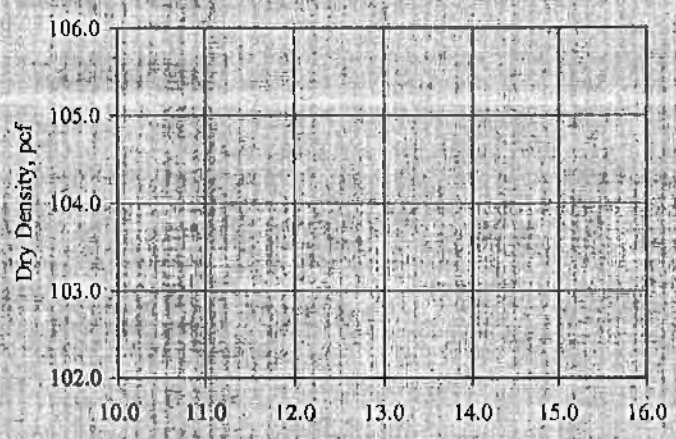
Plasticity Index
ASTM D4318-95a

Liquid Limit:	35
Plastic Limit:	16
Plasticity Index:	19

Expansion Index
ASTM D4829-95

Expansion Index:	
Expansion Potential:	
Initial Saturation, %:	

Laboratory Maximum Density
ASTM D1557-02



Mold ID:	n/a	Mold Diameter, ins.	4.00
No. of Layers	5	Weight of Rammer, lbs.	10.00
No. of Blows	25		

Estimated Specific Gravity for 100% Saturation Curve =

Trial #	1	2	3	4
Water Content:				
Dry Density:				
Maximum Dry Density, pcf:				
Optimum Water Content, %:				

Moisture-Density ASTM D2937-94, ASTM D2216-92

Sample	Depth (ft)	Water Content (%)	Dry Density (pcf)	Relative Density	Sample Description

Report By: Darren Harrold

APPENDIX C

Preliminary Grading Specifications

Key and Bench Detail

PRELIMINARY GRADING SPECIFICATIONS

A. General

i. These preliminary specifications have been prepared for the subject site; GeoSolutions, Inc. should be consulted prior to the commencement of site work associated with site development to ensure compliance with these specifications.

ii. GeoSolutions, Inc. should be notified at least 72 hours prior to site clearing or grading operations on the property in order to observe the stripping of surface materials and to coordinate the work with the grading contractor in the field.

iii. These grading specifications may be modified and/or superseded by recommendations contained in the text of this report and/or subsequent reports.

iv. If disputes arise out of the interpretation of these grading specifications, the Soils Engineer shall provide the governing interpretation.

B. Obligation of Parties

i. The Soils Engineer should provide observation and testing services and should make evaluations to advise the client on geotechnical matters. The Soils Engineer should report the findings and recommendations to the client or the authorized representative.

ii. The client should be chiefly responsible for all aspects of the project. The client or authorized representative has the responsibility of reviewing the findings and recommendations of the Soils Engineer. During grading the client or the authorized representative should remain on-site or should remain reasonably accessible to all concerned parties in order to make decisions necessary to maintain the flow of the project.

iii. The contractor is responsible for the safety of the project and satisfactory completion of all grading and other operations on construction projects, including, but not limited to, earthwork in accordance with project plans, specifications, and controlling agency requirements.

C. Site Preparation

i. The client, prior to any site preparation or grading, should arrange and attend a meeting which includes the grading contractor, the design Structural Engineer, the Soils Engineer, representatives of the local building department, as well as any other concerned parties. All parties should be given at least 72 hours notice.

ii. All surface and sub-surface deleterious materials should be removed from the proposed building and pavement areas and disposed of off-site or as approved by the Soils Engineer. This includes, but is not limited to, any debris, organic materials, construction spoils, buried utility line, septic systems, building materials, and any other surface and subsurface structures within the proposed building areas. Trees designated for removal on the construction plans should be removed and their primary root systems grubbed under the observations of a representative of GeoSolutions, Inc. Voids left from site clearing should be cleaned and backfilled as recommended for structural fill.

iii. Once the Site has been cleared, the exposed ground surface should be stripped to remove surface vegetation and organic soil. A representative of GeoSolutions, Inc. should determine the required depth of stripping at the time of work being completed. Strippings may either be disposed of off-site or stockpiled for future use in landscape areas, if approved by the landscape architect.

D. Site Protection

i. Protection of the Site during the period of grading and construction should be the responsibility of the contractor.

ii. The contractor should be responsible for the stability of all temporary excavations.

iii. During periods of rainfall, plastic sheeting should be kept reasonably accessible to prevent unprotected slopes from becoming saturated. Where necessary during periods of rainfall, the contractor should install check-dams, de-silting basins, sand bags, or other devices or methods necessary to control erosion and provide safe conditions.

E. Excavations

i. Materials that are unsuitable should be excavated under the observation and recommendations of the Soils Engineer. Unsuitable materials include, but may not be limited to: 1) dry, loose, soft, wet, organic, or compressible natural soils; 2) fractured, weathered, or soft bedrock; 3) non-engineered fill; 4) other deleterious materials; and 5) materials identified by the Soils Engineer or Engineering Geologist.

ii. Unless otherwise recommended by the Soils Engineer and approved by the local building official, permanent cut slopes should not be steeper than 2:1 (horizontal to vertical). Final slope configurations should conform to California Building Code Chapter 33 unless specifically modified by the Soil Engineer/Engineering Geologist.

iii. The Soil Engineer/Engineer Geologist should review cut slopes during excavations. The contractor should notify the Soils Engineer/Engineer Geologist prior to beginning slope excavations.

F. Structural Fill

i. Structural fill should not contain rocks larger than 3 inches in greatest dimension, and should have no more than 15 percent larger than 2.5 inches in greatest dimension.

ii. Imported fill should be free of organic and other deleterious material and should have very low expansion potential, with a plasticity index of 12 or less. Before delivery to the Site, a sample of the proposed import should be tested in our laboratory to determine its suitability for use as structural fill.

G. Compacted Fill

i. Structural fill using approved import or native should be placed in horizontal layers, each approximately 8 inches in thickness before compaction. On-site inorganic soil or approved imported fill should be conditioned with water to produce a soil water content near optimum moisture and compacted to a minimum relative density of 90 percent based on ASTM D1557-02E01.

ii. Fill slopes should not be constructed at gradients greater than 2 to 1 (horizontal to vertical). The contractor should notify the Soils Engineer/Engineer Geologist prior to beginning slope excavations.

iii. If fill areas are constructed on slopes greater than 10 to 1 (horizontal to vertical), we recommend that benches be cut every 4 feet as fill is placed. Each bench shall be a minimum of 10 feet wide with a minimum of 2 percent gradient into the slope.

iv. If fill areas are constructed on slopes greater than 5 to 1, we recommend that the toe of all areas to receive fill be keyed a minimum of 24 inches into underlying dense material. Key depths are to be observed and approved by a representative of GeoSolutions, Inc. Sub-drains shall be placed in the keyway and benches as required. See Detail A: Key and Bench with Backdrain.

H. Drainage

i. During grading, a representative of GeoSolutions, Inc. should evaluate the need for a sub-drain or back-drain system. Areas of observed seepage should be provided with sub-surface drains to release the hydrostatic pressures. Sub-surface drainage facilities may include gravel blankets, rock filled trenches or Multi-Flow systems or equal. The drain system should discharge in a non-erosive manner into an approved drainage area.

ii. All final grades should be provided with a positive drainage gradient away from foundations. Final grades should provide for rapid removal of surface water runoff. Ponding of water should not be allowed on building pads or adjacent to foundations. Final grading should be the responsibility of the contractor, general Civil Engineer, or architect.

iii. Concentrated surface water runoff within or immediately adjacent to the Site should be conveyed in pipes or in lined channels to discharge areas that are relatively level or that are adequately protected against erosion.

iv. Water from roof downspouts should be conveyed in solid pipes that discharge in controlled drainage localities. Surface drainage gradients should be planned to prevent ponding and promote drainage of surface water away from building foundations, edges of pavements and sidewalks. For soil areas we recommend that a minimum of 4 percent gradient be maintained.

v. Attention should be paid by the contractor to erosion protection of soil surfaces adjacent to the edges of roads, curbs and sidewalks, and in other areas where hard edges of structures may cause concentrated flow of surface water runoff. Erosion resistant matting such as Miramat, or other similar products, may be considered for lining drainage channels.

vi. Sub-drains should be placed in established drainage courses and potential seepage areas. The location of sub-drains should be determined after a review of the grading plan. The sub-drain outlets should extend into suitable facilities or connect to the proposed storm drain system or existing drainage control facilities. The outlet pipe should consist of a non-perforated pipe the same diameter as the perforated pipe.

I. Maintenance

i. Maintenance of slopes is important to their long-term performance. Precautions that can be taken include planting with appropriate drought-resistant vegetation as recommended by a landscape architect, and not over-irrigating, a primary source of surficial failures.

ii. Property owners should be made aware that over-watering of slopes is detrimental to long term stability of slopes.

J. Underground Facilities Construction

i. The attention of contractors, particularly the underground contractors, should be drawn to the State of California Construction Safety Orders for "Excavations, Trenches, Earthwork." Trenches or excavations greater than 5 feet in depth should be shored or sloped back in accordance with OSHA Regulations prior to entry.

ii. Bedding is defined as material placed in a trench up to 1 foot above a utility pipe and backfill is all material placed in the trench above the bedding. Unless concrete bedding is required around utility pipes, free-draining sand should be used as bedding. Sand to be used as bedding should be tested in our laboratory to verify its suitability and to measure its compaction characteristics. Sand bedding should be compacted by mechanical means to achieve at least 90 percent relative density based on ASTM D1557-02E01.

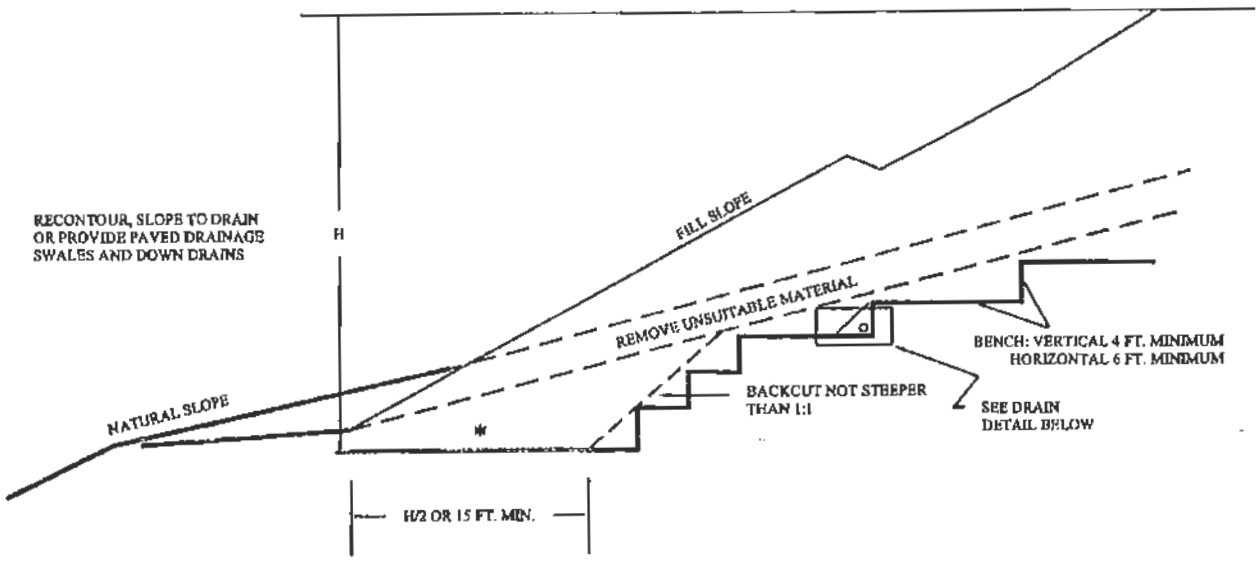
iii. On-site inorganic soils, or approved import, may be used as utility trench backfill. Proper compaction of trench backfill will be necessary under and adjacent to structural fill, building foundations, concrete slabs, and vehicle pavements. In these areas, backfill should be conditioned with water (or allowed to dry), to produce a soil water content of about 2 to 3 percent above the optimum value and placed in horizontal layers, each not exceeding 8 inches in thickness before compaction. Each layer should be compacted to at least 90 percent relative density based on ASTM D1557-02E01. The top lift of trench backfill under vehicle pavements should be compacted to the requirements given in report under Preparation of Paved Areas for vehicle pavement sub-grades. Trench walls must be kept moist prior to and during backfill placement.

K. Completion of Work

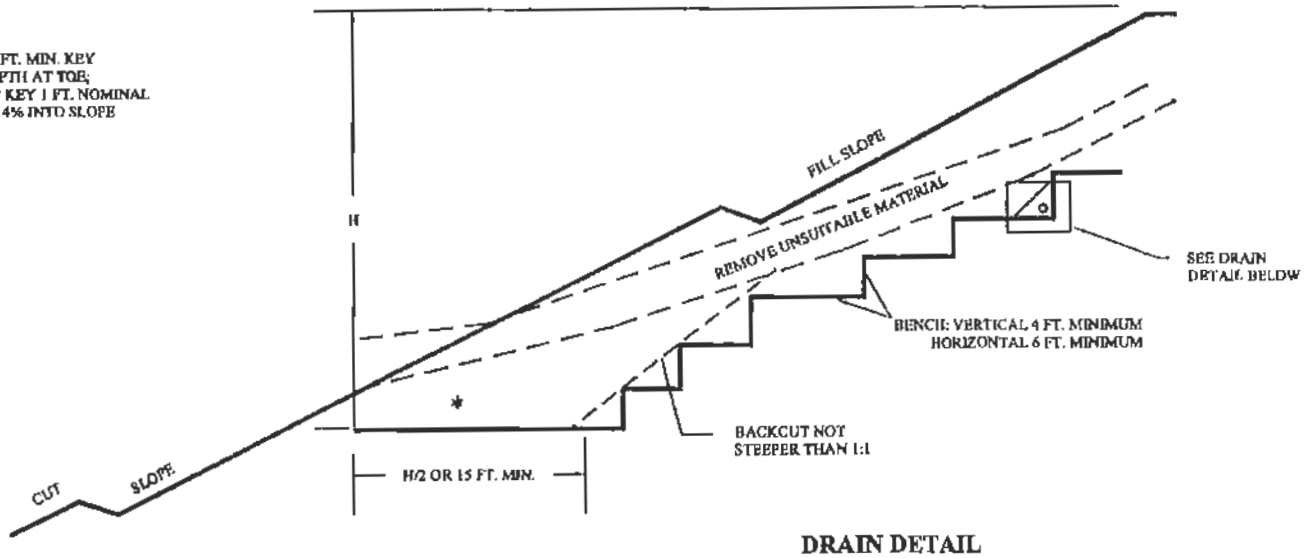
i. After the completion of work, a report should be prepared by the Soils Engineer retained to provide such services in accordance with Section 3317 of the California Building Code (CBC). The report should including locations and elevations of field density tests, summaries of field and laboratory tests, other substantiating data, and comments on any changes made during grading and their effect on the recommendations made in the approved Soils Engineering Report.

ii. Soils Engineers shall submit a statement that, to the best of their knowledge, the work within their area of responsibilities is in accordance with the approved soils engineering report and applicable provisions within Chapter 33 of the CBC.

FILL OVER NATURAL SLOPE



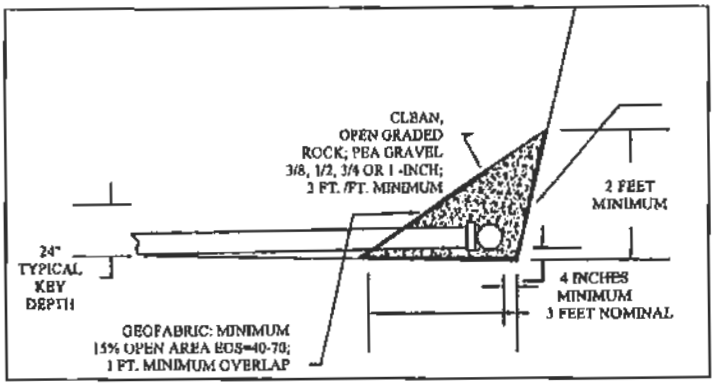
FILL OVER CUT SLOPE



NOTES:
1 - IF OVERFILLING AND CUTTING BACK TO GRADE IS ADOPTED, 15 FT. MIN. FILL WIDTH MAY BE REDUCED TO 12 FT. MIN. IN NO CASE SHOULD THE FILL WIDTH BE LESS THAN 1/2 THE HEIGHT OF FILL REMAINING.

1 - BACKDRAIN AS RECOMMEDNED BY GEOTECHNICAL CONSULTANT PER BUTTRESS BACKDRAIN DETAIL.

DRAIN DETAIL



GeoSolutions, Inc.
220 High Street
San Luis Obispo, CA 93401
(805) 543-8539 Fax: (805) 543-2171

KEY AND BENCH WITH BACKDRAIN

DETAIL
A

Attachment E

Phase I Environmental Site Assessment

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
KIESSIG / PASO ROBLES HOT SPRINGS AND SPA
APN: 025-390-002, 003, 004, 006, 007, AND 008
PASO ROBLES, CALIFORNIA

PROJECT No. SL05048-1

Prepared for:

Estrella Associates, Inc.
C/o: Mr. Dick Willhoit
2727 Buena Vista Road
Paso Robles, Ca 93446

Prepared by

GEOSOLUTIONS, INC.
220 HIGH STREET
SAN LUIS OBISPO, CALIFORNIA 93401

©

September 6, 2005

GeoSolutions, INC.

220 High Street, San Luis Obispo, CA 93401
(805) 543-8539, 543-2171 fax
info@GeoSolutions.net

September 6, 2005
Project No. SL05048-1

Estrella Associates, Inc.,
Mr. Dick Willhoit
2727 Buena Vista Drive
Paso Robles, CA 93446

Dear Mr. Willhoit:

GeoSolutions, Inc. has performed a Phase I Environmental Site Assessment (ESA) in conformance with the standard practice of the American Society for Testing and Materials (ASTM) Designation: E 1527-00 for the property known as Kiessig/ Paso Robles Hot Springs and Spa, located on APNs: 025-390-002, 003, 004, 006, 007, and 008, in the City of Paso Robles, California.

Based on the findings of the Phase I ESA report, there were no recognized environmental conditions in the general area of the subject Site. However, it is our opinion all trash, debris, automobiles, and automobile parts be removed from the property and properly disposed. Soil and water testing should be considered. No further inquiry regarding potential or recognized environmental conditions is required for past uses of the Site.

We appreciate the opportunity to provide you with professional services. If you should have any questions, please do not hesitate to contact us at (805) 543-8539.

Sincerely,
GEOSOLUTIONS, INC.

PROFESSIONAL GEOLOGIST
JOHN M.D. KAMMER
NO. 2118
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

John M.D. Kammer, C.E.G. #2118
Senior Engineering Geologist

Shawn Lager
Environmental Specialist

S:\Environmental\Phase I Environmental Site Assessments\SL05048-1 Kiessig, PR Hotspring - PR\SL05048-1 Kiessig, PR Hotsprings ESA.doc

TABLE OF CONTENTS

1.0 INTRODUCTION 1

1.1 Purpose 1
1.2 Site Location 2

2.0 SCOPE OF SERVICES 2

3.0 FINDINGS 3

3.1 Physical Site Setting 3
3.2 Current Site Conditions 3
3.3 Neighboring Sites 5
3.4 Regulatory Agency Information 5
3.5 Aerial Photo Review 6
3.6 File Review 7
3.7 Environmental Questionnaire 8
3.8 Sanborn Maps 8

4.0 SUMMARY OF FINDINGS, OPINION, AND CONCLUSIONS 8

4.1 Summary of Findings 8
4.2 Conclusions and Recommendations 9

5.0 LIMITATIONS OF INVESTIGATION 9

6.0 CREDENTIALS 10

REFERENCES

APPENDIX A
Environmental Record Search

APPENDIX B
Questionnaire

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
KIESSIG, PASO ROBLES HOT SPRINGS
BETWEEN NORTH RIVER ROAD AND BUENA VISTA DRIVE
APN: 025-390-002, 003, 004, 006, 007, AND 008
PASO ROBLES, CALIFORNIA

PROJECT No. SL05048-1

1.0 INTRODUCTION

A Phase I Environmental Site Assessment (ESA) has been conducted by GeoSolutions, Inc. in conformance with the standard practice of the American Society for Testing and Materials (ASTM) Designation: E 1527-00. The ESA was conducted for the property located between North River Road and Buena Vista Drive, APN: 025-390-002, 003, 004, 006, 007, and 008, in the City of Paso Robles, San Luis Obispo County, California. Figure 1 - Site Location Map, depicts the location of the property. Figure 2, Site Plan, is an approximate outline of the property.

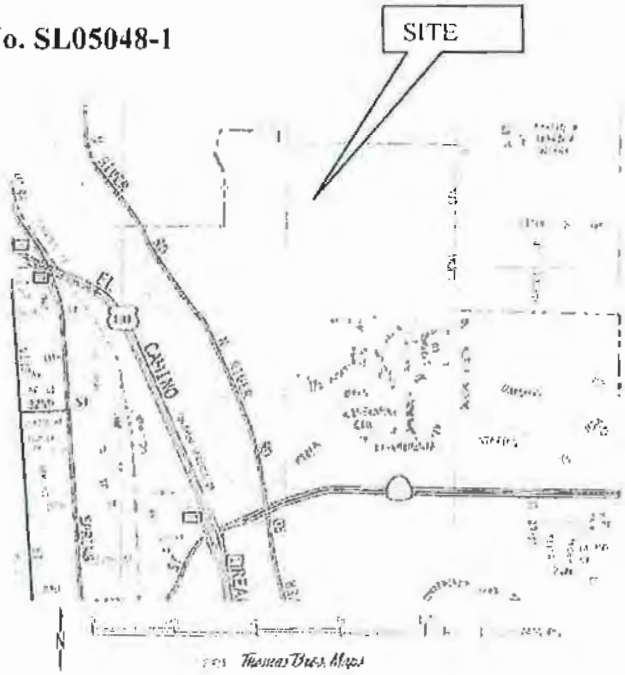


Figure 1: Site Location Map

1.1 Purpose

The purpose of an ESA is to perform a general inquiry of the property by a qualified environmental professional regarding the potential for Recognized Environmental Conditions (REC's), which may affect the property physically and financially. A REC is defined as any hazardous substance or petroleum product which has existed, exists, or can likely be released at or adjacent to the property soil, surface water, or groundwater. This ESA is intended for the user, property buyer or lender, to satisfy a requirement to qualify for the "Innocent Landowner Defense" as outlined by the Comprehensive Environmental

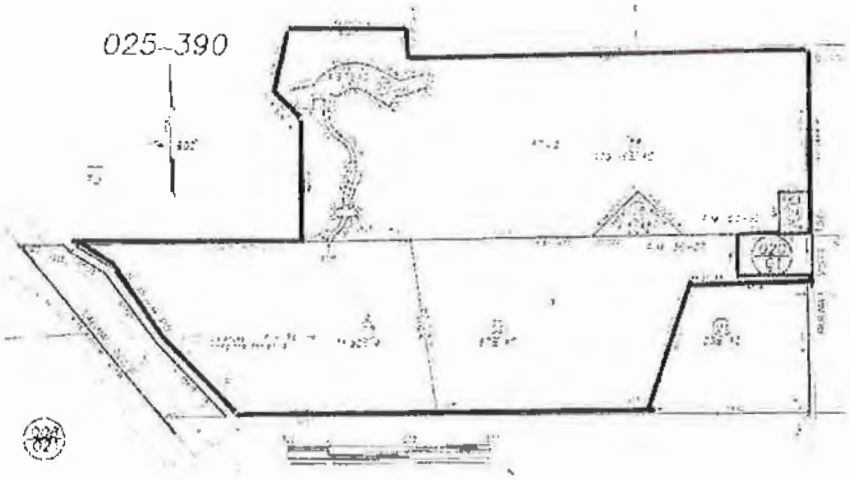


Figure 2: Site Plan

Response, Compensation and Liability Act (CERCLA). This ESA was performed using the recommended guidelines established by ASTM Designation: E 1527-00, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." An ESA does not include soil, water, or other material sampling for analysis of possible hazardous substances on the property. The property will hereafter be referred collectively as the "Site".

1.2 Site Location

The Site is located approximately 0.75 miles north of Highway 46 between North River Road and Buena Vista Drive, APN: 025-390-002, 003, 004, 006, 007, and 008, in the City of Paso Robles, California. This area is comprised of light to medium density residential developments and agricultural land.

2.0 SCOPE OF SERVICES

The following work was performed for this Phase I ESA and described in more detail in individual sections throughout this report:

- Conduct a Site and neighboring properties reconnaissance and visual inspection to assess the presence of REC's;
- Review list of documented hazardous materials spills, leaks, accidents, generators, and storage facilities provided by sub-contracted information retrieval service;
- Determine Site historical use by reviewing available aerial photographs, Polk's Directories, Sanborn fire insurance maps, and other available historical documents pertaining to the Site;
- Review geologic and topographic maps and other information available pertaining to the Site maintained within our office;
- Review available files of hazardous substance storage, generators, spills, leaks, and accidents with local agencies as applicable;
- Interview various professionals regarding knowledge of the Site;
- Preparation of this written report documenting our findings, conclusions, and opinion.

The following documents our investigation and summarizes our conclusions for the Site. All REC's are numbered throughout the report, if any, and are discussed in the findings, conclusions, and opinion section of this report.

3.0 FINDINGS

3.1 Physical Site Setting

The Site is located within the Coast Range Geomorphic Province of California located between the Pacific Ocean and the Sacramento-San Joaquin Valley. The Coast Ranges trend northwesterly along the California coast for approximately 600 miles between Santa Maria and the Oregon border. Based on a geology map for the Site area (Dibblee, 2004), the geologic formation underlying the Site consists of Pleistocene age (last 2 million years) Older Surficial Sediments and the Paso Robles Formation. The Older Surficial Sediments are comprised of terraces of dissected alluvial gravel and sand. The Paso Robles Formation is composed of weakly indurated pebbles, gravels, sand, and clay.

Based on our Site reconnaissance and a review of topographic maps for the Site area, the Site and adjacent properties are relatively level with a slight down-slope toward the southwest. The Salinas River is along the western property boundary.

3.2 Current Site Conditions

Representatives of GeoSolutions, Inc. performed a Site reconnaissance on July 29, 2005. The Site reconnaissance was performed by walking around the Site and driving the Site vicinity. The following describes our observations:

The Site is approximately 245 acres in size and is currently occupied by two hot spring and spa facilities and one residential structure. It is our understanding (as described by a maintenance person) that municipal water is supplied to the hot springs building for drinking purposes, that a water well on the east side of the property supplies hot spring water, and that a well near the Salinas River supplies irrigation water to the property. Due to the size of the property and mixed uses of the property, the current site conditions are described by assessor parcel number as follows:

APN: 025-390-002: This parcel is approximately 57 acres in size and is located in the south central and eastern portion of the property. Access to this parcel is via Buena Vista Drive and along an asphalt road located in the eastern and southern portion of this parcel. During our Site reconnaissance, two former building envelopes were observed but the majority of the parcel is in agricultural cropland. In one of the building locations, a house was removed and only a concrete building pad remained. Small amounts of household trash and building materials were observed around the perimeter of the building pad. Approximately 500 feet west of the concrete pad, it appears that a trailer or mobile home once existed. This was evident by the footprint of the pad and absence of a concrete foundation. Underground utilities that may have been hooked to the trailer were observed in the western portion of the building envelope. An unidentified pipe sticking out of the ground was observed in the area north of the former trailer location. Located between both former building locations is a water well and water storage tank. The remaining area surrounding both building pads is used to grow grain crops and currently wheat was observed to be growing.

No REC's were observed on this parcel during our site reconnaissance.

APN: 025-390-003: This parcel is located in the southwestern portion of the Site and is approximately 72 acres in size. Currently located on this property are two hot spring and spa facilities and a radio station antenna site. Paso Robles Hot Springs and Spa occupies the eastern portion of the parcel and consists of one large building, a parking lot, and pond. Inside the Paso Robles Hot Springs and Spa building are three hot spring spas, private rooms for massages, and offices. The heaters, filters, and pumps for the hot spring spas are located in a shed north of the main building. Located in this same area are unused fiberglass spas, masonry bricks, stockpiles of dirt and plant material, and electrical transformers. No leaks were observed around the transformers. Un-finished concrete and masonry pads for hot-tubs were observed in this area. A landscape tool shed is located directly behind the main building. Small amounts of yard maintenance tools, pesticides, gasoline, and fertilizers were observed in the tool shed. No spills or stained soil was observed inside the shed. Parking for the customers is located south of the hot springs and spa building. It is unknown where spa water is discharged; it is recommended that the location of spa discharge be verified.

West of the parking lot is a dirt road leading to the western portion of the property and terminating into North River Road. Near the western border of the property is a second hot spring and spa facility. This facility consisted of a metal warehouse, three hot spring spas, and detached restrooms. The warehouse is used by employees of the hot springs facility and is used to store tools, pesticides, and furniture. The chemicals and pesticides were stored on a storage rack and no leaks were observed. Located behind the warehouse was a pump, filter and water storage tank for the hot spring spas. Ponding water was observed in this area. The restrooms for the facility are located north of the warehouse in a detached building. The location of the septic tank and leach field for the restrooms is unknown. Three hot spring spas were observed west of the warehouse and restrooms. Flat bed trailers, pipes, wood, and a 55-gallon barrel were observed south of the warehouse. The barrel appeared empty and its previous contents were unknown.

A cellular tower and connected building are located to the south of the western hot springs facility. Following the western portion of the Site are high voltage power lines traversing the Site in a north to south direction. Several small piles of trash and debris were observed near the radio tower. The debris consisted of chunks of concrete, steel pipes, engines, and engine parts.

To the north of the hot springs facility and on the north side of the dirt road, a spray-trailer was observed. This trailer may have been used to spray pesticides, herbicides, or other agricultural products. Northeast of this location was another radio tower and attached building for the tower. A propane tank and pick-up bed camper was observed in this same location. A private water well was observed on the south side of the dirt road and located approximately between the Paso Robles Hot Springs and Spa parking lot and the western hot springs spa facility.

No REC's were observed on this parcel during our site reconnaissance.

APN: 025-390-004: This parcel is located on the eastern border of the property, is approximately 1.5 acres in size, and is occupied by one residential structure and detached garage. A private water well was observed on the southern portion of the property and the house was currently occupied by tenants. It is recommended that the location of the septic system of the house be verified.

No REC's were observed on this parcel during our site reconnaissance.

APNs: 025-390-006, 007, and 008: These parcels occupy approximately 118 acres of the Site and are located on the northern half of the subject property. This side of the property is mainly used to grow tomatoes, grain crops, and hay. Located in the northwest corner of the property, piles of household trash, automobiles, and agricultural equipment was observed. A small gully was filled with trash and discarded material. Tomato plants, plant nurseries, and an unidentified building were observed near the western border of the property. In this same area trash, debris, plastic, and wood was observed.

In the central portion of APN: 025-390-006 stockpiles of telephone poles, irrigations pipes, steel beams, debris, and automobile parts were observed. No petroleum odors or stained soil was observed in this area. A private water well also observed in this area. North of this location near the north-central border of the property, bales of hay were observed. A leaking, private water well located inside a small structure was observed approximately 300 feet east of the hay bales. Water was observed leaking underneath the door of the structure and standing water was observed on the west side of the structure. The remaining portion of the parcel was undeveloped and used to grow grain crops.

3.3 Neighboring Sites

A representative of GeoSolutions, Inc. performed a reconnaissance of neighboring sites on July 29, 2005. The neighboring site reconnaissance was performed by driving and walking various local streets.

Located north of the Site are vineyards and agricultural fields and light density residential developments. Forming the eastern boundary of the property is Buena Vista Drive and beyond Buena Vista Drive are light density residential homes. To the south of Site is the River Oaks residential development and to the west of Site is North River Road. Beyond North River Road is the Salinas River.

No REC's were observed on the neighboring sites during our reconnaissance on July 29, 2005.

3.4 Regulatory Agency Information

Environmental Data Resources, Inc. was subcontracted to search various databases for regulatory agency listings and files of hazardous material incidents pertaining to the Site and within 1 mile of the Site. The information obtained was used to assess the potential of REC's at the Site.

No mapped sites were found in EDR's search of available ("reasonably ascertainable") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the databases listed in the executive summary of the EDR report found in APPENDIX A of this report.

Please refer to Appendix A - Environmental Record Search, for more details regarding Environmental Data Resources, Inc.

3.5 Aerial Photo Review

Aerial photos are used to determine past uses of a property. Structures, above ground fuel tanks, ponds, stockpiles of soil or debris, and major amounts of stained soil typically appear in aerial photos. Aerial photos were reviewed at the San Luis Obispo County Assessors Office on August 9, 2005 for the years 1978, 1985, 1998, and 2003. Aerial photos were also provided by EDR for the years of 1937, 1949, 1956, 1962, 1971, 1989, 1994, and 2002. The following describes our observations:

1937 Photo (1476437-3)

In this photo, no development is seen on the site. Development is observed on the adjoining property to the north of the subject site and on the west side of North River Road. Some of the property appears in agricultural use.

1949 Photo (1476437-3)

In this photo, the site is still undeveloped and appears to be used for agricultural farming. The very eastern portion of the Site is not observed in this photo.

1956 Photo (1476437-3)

The Site is still undeveloped in this photo. The adjoining properties to the south and north are still undeveloped. The water treatment plant located across the Salinas River appears to be under construction in this photo.

1962 Photo (1476437-3)

This is an aerial photo of the northwestern portion of the property. No development is observed on the Site or adjoining sites in this photo. The property is in agricultural use.

1971 Photo (1476437-3)

This is an aerial photo of only the northwest potion of the Site. No development is observed. However, the property is being used for agricultural activity (crop rows are seen on the property).

1978 Photo (06079-478)

In this photo, a stream is seen leading from a reservoir on the adjoining property to the south and connects to a pond currently on the subject property. .

1985 Photo (#62)

In this photo, the northern most radio tower is observed. The same pond mentioned in the previous photo is observed on the Site and appears to be fed by the reservoir on the adjoining property to the south.

1989 Photo (1476437-3)

In this photo, it appears most of the Site is used for agricultural farming. The radio tower and attached building currently located in the northwestern portion of the property are observed in this photo. A dirt road is observed originating from the current River Oaks development and terminating approximately where the main building of the Paso Robles Hot Spring and Spa is located. A well, stockpiles of telephone poles, irrigation pipes, steel beams, debris, and automobile parts are located in the north-central portion of the property. More development is observed north and west of the subject site.

1994 Photo (1476437-3)

The two building pads described in the site reconnaissance section of this report are observed and developed in this photo (top of knolls in east central portion of the property). Paso Robles Hot Springs and Spa is still not developed.

2002 Photo (1476437-3)

In this photo, both hot springs and spa locations and the reservoir are observed. The River Oaks Golf Course and development are being developed. Agricultural farming is observed on the east side of the subject property. Structures are still located on the building pads located on the center of the Site.

2003 Photo

The two residential structures (east-central area of property) are observed in this photo. Water storage tanks are depicted to the southwest of the western residential structure. Both structures are surrounded by crops. The main building for Paso Robles Hot Springs and Spa is depicted to the west of these sites.

3.6 File Review

The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions in connection with the property. Environmental Health is the responsible governmental agency for hazardous materials cases in the County of San Luis Obispo. Information pertaining to hazardous materials within the County of San Luis Obispo is available for public review. When an environmental concern affects water, the file is transferred to the California Regional Water Quality Control Board (CRWQCB). GeoTracker is also used to assist us in obtaining information to evaluate the Site for potential REC's. GeoTracker is a geographic information system (GIS) that provides online access to environmental data, which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. One file was located in the EDR report as a possible REC to the Site, however no files were located for that property. No files were found within a 1 mile radius of the Site on GeoTracker's website or CRWQCB's database.

3.7 Environmental Questionnaire

An environmental questionnaire was completed by Mr. Steve Gregory, representative for the owners of the Site. Responses to some of the questions are listed below:

Question No.

1a. Is the property used for an industrial use?
Response: No

1b. Is any adjoining property used for an industrial use?
Response: No

2a. Did you observe evidence or do you have any prior knowledge that the property has been used for an industrial use in the past?
Response: No

2b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used for an industrial use in the past?
Response: No

3a. Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage disposal, processing, or recycling facility (if applicable, identify which)?
Response: No

A copy of the environmental questionnaire can be found in APPENDIX B.

3.8 Sanborn Maps

Sanborn maps are historical fire insurance maps that depict locations, types of structures, the material used for the structures, and underground and aboveground storage tanks within city limits. These maps may be used to determine the past use of the Site.

No coverage was found in this area of San Luis Obispo County for Sanborn maps.

4.0 SUMMARY OF FINDINGS, OPINION, AND CONCLUSIONS

4.1 Summary of Findings

Based on the information found during the preparation of this Phase I ESA report, the subject site located at APNs: 025-390-002, 003, 004, 006, 007, and 008 within the City of Paso Robles is currently occupied by one residential structure in the eastern portion of the property and Paso Robles Hot Springs and Spa in the western portion. Based on our site visit, two residential buildings pads were observed in the central portion of the property and debris and trash was observed near the western border of the Site. Based on our aerial photo research, Paso Robles Hot Springs and Spa was constructed after 1998 and two residential sites located in the center of the property were

developed/occupied after 1989 and vacant after 2003. Based on our database search, no recognized environmental conditions were located within 1 mile of the Site.

4.2 Conclusions and Recommendations

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-00 for the property known as Kiessig/Paso Robles Hot Springs and Spa, located on APNs: 025-390-002, 003, 004, 006, 007, and 008 in the City of Paso Robles, San Luis Obispo County, California. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. **This assessment has revealed no evidence of recognized environmental condition in connection with the property.** However, the following are considerations for the property:

1. Stockpiles of trash, automobiles, automobile parts, and debris should be removed from the property and properly disposed. This includes the far northwest portion of the property and various small deposits throughout the site.
2. If existing water wells are not to be used, the new owner should consider properly abandoning the wells.
3. Consider a water quality test on the hot spring water and any non-municipal water supplies depending upon use. Also, determine where the hot spring water is disposed.
4. Consider testing soil at various portions of the property for pesticide use especially those areas in the vicinity of the current tomato farm.
5. Locate areas of existing or past septic disposal for the properties.

It should be noted that according to ASTM E 1527-00, Section 4.5.1, "No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property."

5.0 LIMITATIONS OF INVESTIGATION

GeoSolutions, Inc.'s investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by Engineers and Geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is issued with the understanding that it is the responsibility of the OWNER or his/her representative to ensure that the information and recommendations contained herein are brought to the attention of the regulatory agencies, where required.

The findings of this report are valid as of the present date and up to 180 days after the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control.

6.0 CREDENTIALS

As required by the ASTM Practice E 1527-00, this report shall include the qualifications of the environmental professionals responsible for this Phase I ESA.

The primary environmental professional used in the preparation of this report is Mr. John Kammer. Mr. Kammer holds a Bachelors degree in Geology and a Masters degree in Hydrogeology and has performed ESA's and other environmental services for approximately 19 years. Mr. Kammer is a Professional Geologist, a Certified Hydrogeologist, and a Certified Engineering Geologist with the State of California Board of Consumer Affairs.

REFERENCES

ASTM, ASTM Standards on Environmental Site Assessment for Commercial Real Estate, Third Edition, Designation E 1527, 2000.

Dibblee, Thomas W., 2004, Geologic map of the Paso Robles Quadrangle, Dibblee Foundation map DF-137.

Environmental Data Resources, Inc. for SL05048-1, North River Road, Paso Robles, California, dated July 28, 2005.

APPENDIX A

Environmental Record Search

The EDR Radius Map
with GeoCheck®

SL05048-1
North River Road
Paso Robles, CA 93446

Inquiry Number: 1476437.2s

July 28, 2005

EDR® Environmental
Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

TABLE OF CONTENTS

SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	6
Orphan Summary	7
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting Source Map	A-7
Physical Setting Source Map Findings	A-8
Physical Setting Source Records Searched	A-20

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-00. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY INFORMATION

ADDRESS

NORTH RIVER ROAD
PASO ROBLES, CA 93446

COORDINATES

Latitude (North):	35.656800 - 35' 39' 24.5"
Longitude (West):	120.682600 - 120' 40' 57.4"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	709786.4
UTM Y (Meters):	3948158.0
Elevation:	759 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	35120-F6 PASO ROBLES, CA
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-00 search radius around the target property for the following databases:

FEDERAL ASTM STANDARD

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRA-TSDF..... Resource Conservation and Recovery Act Information
RCRA-LQG..... Resource Conservation and Recovery Act Information
RCRA-SQG..... Resource Conservation and Recovery Act Information
ERNS..... Emergency Response Notification System

STATE ASTM STANDARD

AWP..... Annual Workplan Sites

EXECUTIVE SUMMARY

Cal-Sites	Calsites Database
CHMIRS	California Hazardous Material Incident Report System
Cortese	"Cortese" Hazardous Waste & Substances Sites List
Notify 65	Proposition 65 Records
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
LUST	Geotracker's Leaking Underground Fuel Tank Report
CA BOND EXP. PLAN	Bond Expenditure Plan
UST	Active UST Facilities
VCP	Voluntary Cleanup Program Properties
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land
CA FID UST	Facility Inventory Database
HIST UST	Hazardous Substance Storage Container Database

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens
PADS	PCB Activity Database System
US ENG CONTROLS	Engineering Controls Sites List
ODI	Open Dump Inventory
DOD	Department of Defense Sites
INDIAN RESERV	Indian Reservations
UMTRA	Uranium Mill Tailings Sites
FUDS	Formerly Used Defense Sites
RAATS	RCRA Administrative Action Tracking System
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
SSTS	Section 7 Tracking Systems
FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST	Aboveground Petroleum Storage Tank Facilities
CLEANERS	Cleaner Facilities
CA WDS	Waste Discharge System
DEED	Deed Restriction Listing
REF	Unconfirmed Properties Referred to Another Agency
WIP	Well Investigation Program Case List
EMI	Emissions Inventory Data
NFA	No Further Action Determination
NFE	Properties Needing Further Evaluation
SCH	School Property Evaluation Program
SLIC	Statewide SLIC Cases
HAZNET	Facility and Manifest Data

EXECUTIVE SUMMARY

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas..... Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS..... A Listing of Brownfields Sites
US INST CONTROL..... Sites with Institutional Controls
VCP..... Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

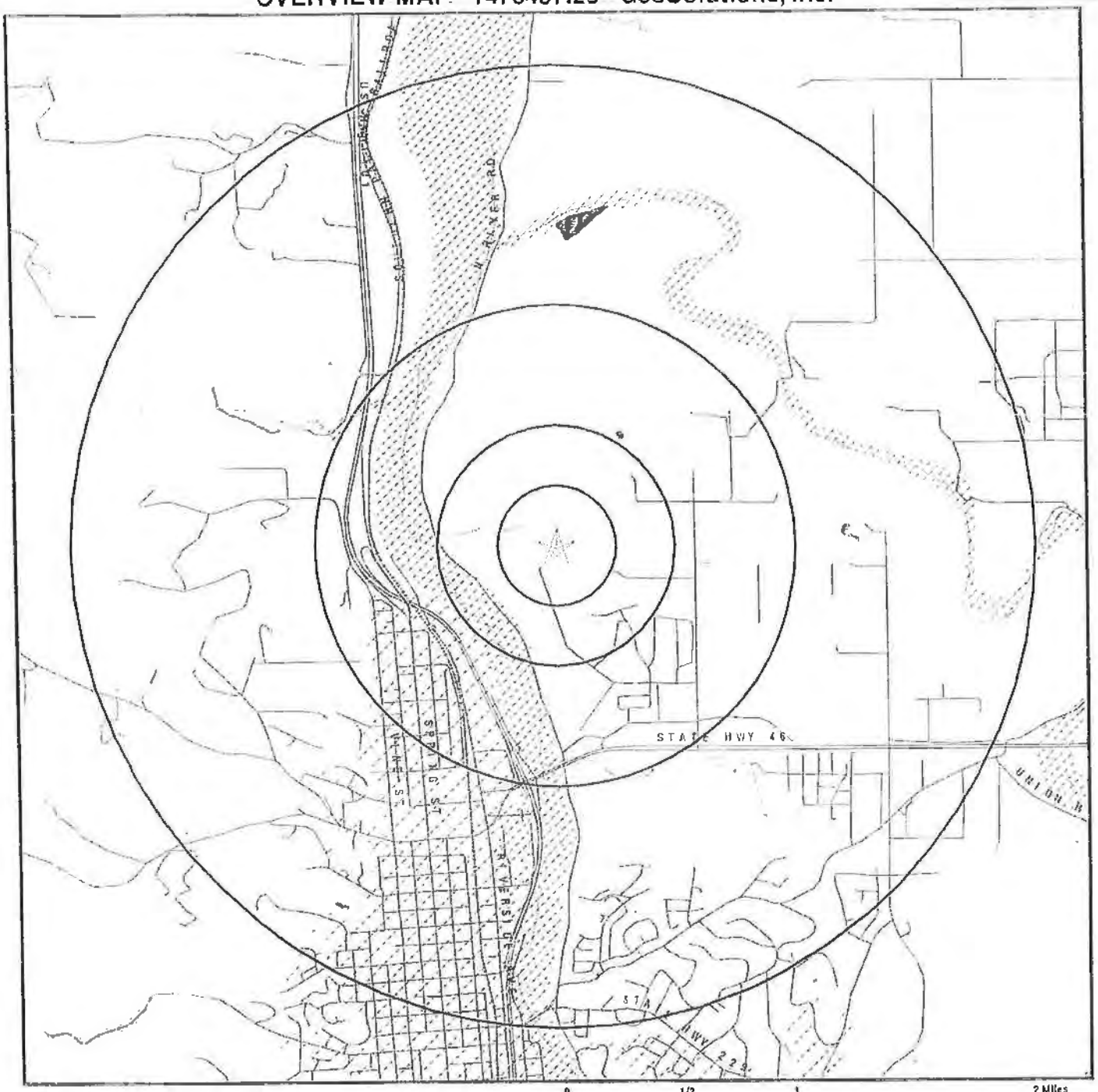
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

Site Name	Database(s)
THUNDERBIRD BOATS	CERC-NFRAP
COMINO RANCH	HIST UST
KENNETH D WILLETT	HIST UST
CHIMNEY ROCK VINEYARD	HIST UST
LAS TABLAS STATION	HIST UST
ERICKSON RANCH	HIST UST
HARDHAM RANCH	HIST UST
RANCHO SECO	HIST UST
CAROL C. GUTTEY	HIST UST
LOREN MCWILLIAMS	HIST UST
SMILING M. RANCH	HIST UST
SHAW RANCH	HIST UST
PASO ROBLES AUTO WRECKING	HAZNET
HUNTER RANCH GOLF COURSE	HAZNET
CONTINENTAL VINYARDS	HAZNET
PASO ROBLES CELLARS	HAZNET
WALLACE MACHINERY COMPANY	HAZNET
CALTRANS PASO OVERHEADS	HAZNET
WEYRICK SAND AND GRAVEL	FINDS, EMI
SYCAMORE FARMS	CA WDS
PASO ROBLES CITY LANDFILL	CA WDS
EBERLE WINERY	CA WDS
THE RAVINE	CA WDS
CHUMEIA VINEYARDS	CA WDS
HOSPITALITY BUILDING	CA WDS

OVERVIEW MAP - 1476437.2s - GeoSolutions, Inc.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	SL05048-1	CUSTOMER:	GeoSolutions, Inc.
ADDRESS:	North River Road	CONTACT:	Shawn Lager
CITY/STATE/ZIP:	Paso Robles CA 93446	INQUIRY #:	1476437.2s
LAT/LONG:	35.6568 / 120.6826	DATE:	July 28, 2005 4:13 pm

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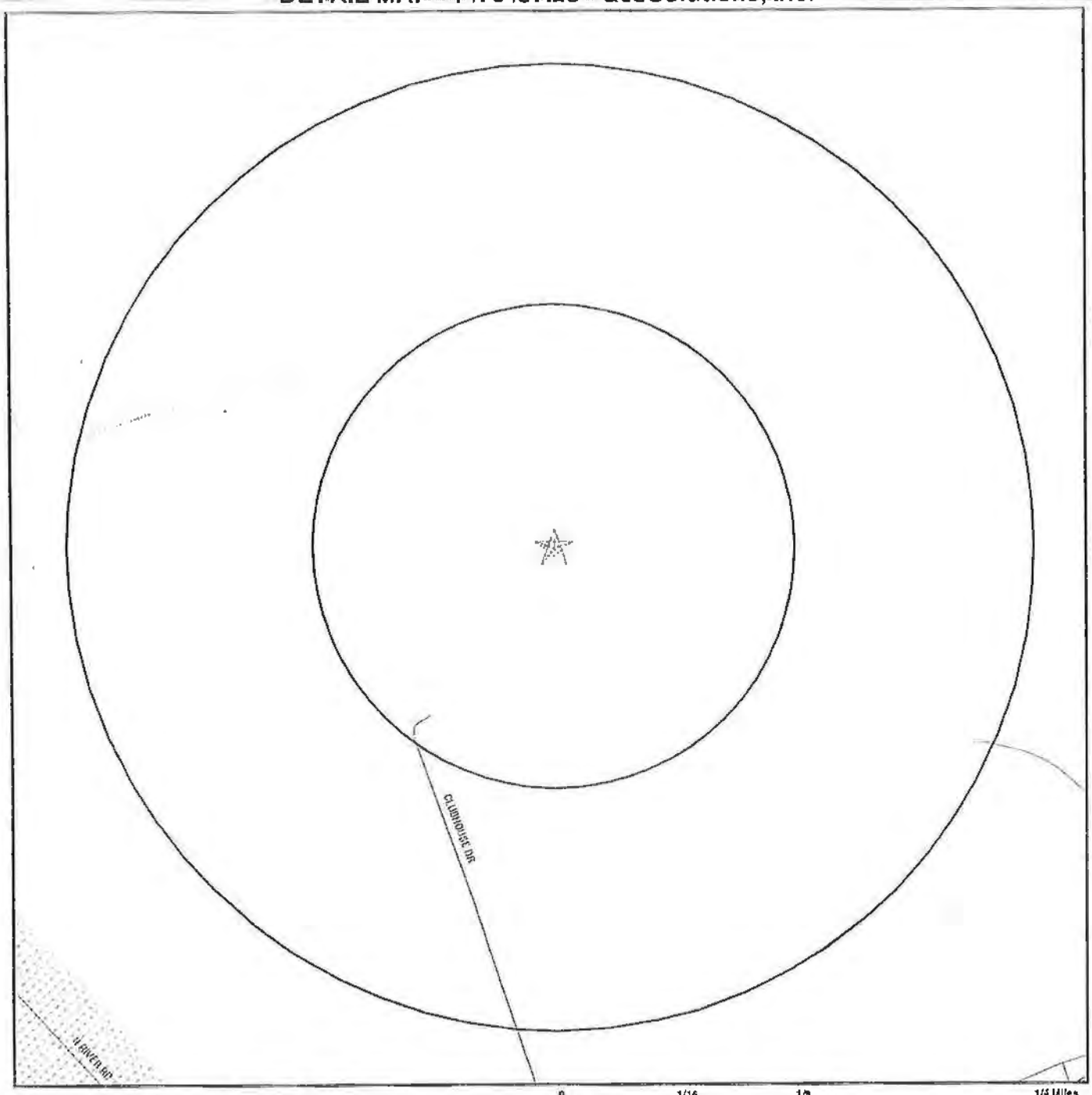
DETAIL MAP - 1476437.2s - GeoSolutions, Inc.



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	SL05048-1	CUSTOMER:	GeoSolutions, Inc.
ADDRESS:	North River Road	CONTACT:	Shawn Lager
CITY/STATE/ZIP:	Paso Robles CA 93446	INQUIRY #:	1476437.2s
LAT/LONG:	35.6568 / 120.6826	DATE:	July 28, 2005 4:13 pm

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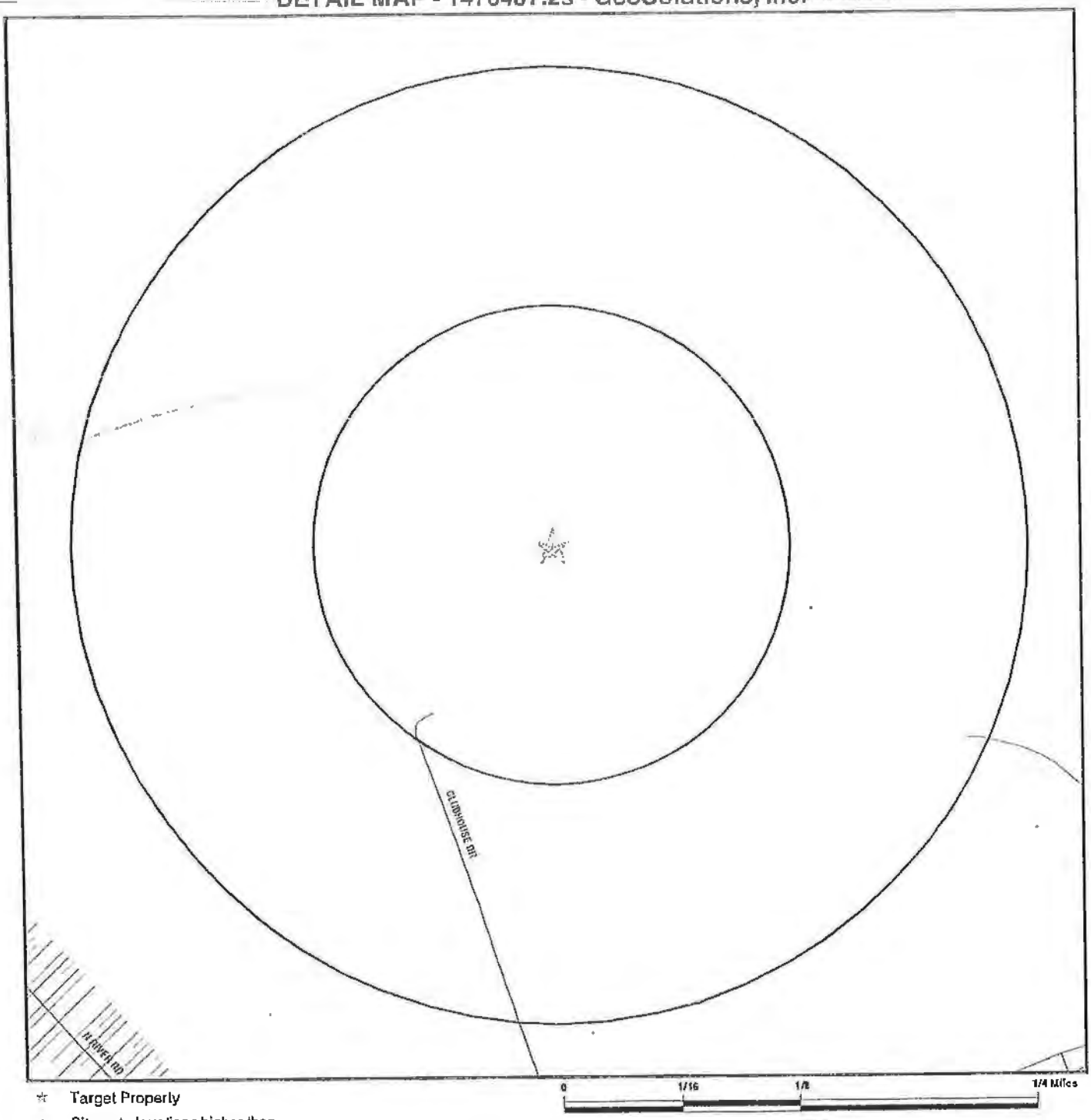
DETAIL MAP - 1476437.2s - GeoSolutions, Inc.



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Coal Gasification Sites
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

TARGET PROPERTY:	SL05048-1	CUSTOMER:	GeoSolutions, Inc.
ADDRESS:	North River Road	CONTACT:	Shawn Lager
CITY/STATE/ZIP:	Paso Robles CA 93446	INQUIRY #:	1476437.2s
LAT/LONG:	35.6568 / 120.6826	DATE:	July 28, 2005 4:13 pm

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MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
FEDERAL ASTM STANDARD								
NPL		1.125	0	0	0	0	0	0
Proposed NPL		1.125	0	0	0	0	0	0
CERCLIS		0.625	0	0	0	0	NR	0
CERC-NFRAP		0.375	0	0	0	NR	NR	0
CORRACTS		1.125	0	0	0	0	0	0
RCRA TSD		0.625	0	0	0	0	NR	0
RCRA Lg. Quan. Gen.		0.375	0	0	0	NR	NR	0
RCRA Sm. Quan. Gen.		0.375	0	0	0	NR	NR	0
ERNS		0.125	0	NR	NR	NR	NR	0
STATE ASTM STANDARD								
AWP		1.125	0	0	0	0	0	0
Cal-Sites		1.125	0	0	0	0	0	0
CHMIRS		0.125	0	NR	NR	NR	NR	0
Cortese		0.625	0	0	0	0	NR	0
Notify 65		1.125	0	0	0	0	0	0
Toxic Pits		1.125	0	0	0	0	0	0
State Landfill		0.625	0	0	0	0	NR	0
WMUDS/SWAT		0.625	0	0	0	0	NR	0
LUST		0.625	0	0	0	0	NR	0
CA Bond Exp. Plan		1.125	0	0	0	0	0	0
UST		0.375	0	0	0	NR	NR	0
VCP		0.625	0	0	0	0	NR	0
INDIAN LUST		0.625	0	0	0	0	NR	0
INDIAN UST		0.375	0	0	0	NR	NR	0
CA FID UST		0.375	0	0	0	NR	NR	0
HIST UST		0.375	0	0	0	NR	NR	0
FEDERAL ASTM SUPPLEMENTAL								
CONSENT		1.125	0	0	0	0	0	0
ROD		1.125	0	0	0	0	0	0
Delisted NPL		1.125	0	0	0	0	0	0
FINDS		0.125	0	NR	NR	NR	NR	0
HMIRS		0.125	0	NR	NR	NR	NR	0
MLTS		0.125	0	NR	NR	NR	NR	0
MINES		0.375	0	0	0	NR	NR	0
NPL Liens		0.125	0	NR	NR	NR	NR	0
PADS		0.125	0	NR	NR	NR	NR	0
US ENG CONTROLS		0.625	0	0	0	0	NR	0
ODI		0.625	0	0	0	0	NR	0
DOD		1.125	0	0	0	0	0	0
INDIAN RESERV		1.125	0	0	0	0	0	0
UMTRA		0.625	0	0	0	0	NR	0
FUDS		1.125	0	0	0	0	0	0
RAATS		0.125	0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
TRIS		0.125	0	NR	NR	NR	NR	0
TSCA		0.125	0	NR	NR	NR	NR	0
SSTS		0.125	0	NR	NR	NR	NR	0
FTTS		0.125	0	NR	NR	NR	NR	0
STATE OR LOCAL ASTM SUPPLEMENTAL								
AST		0.125	0	NR	NR	NR	NR	0
CLEANERS		0.375	0	0	0	NR	NR	0
CA WDS		0.125	0	NR	NR	NR	NR	0
DEED		0.625	0	0	0	0	NR	0
REF		0.375	0	0	0	NR	NR	0
WIP		0.375	0	0	0	NR	NR	0
EMI		0.125	0	NR	NR	NR	NR	0
NFA		0.375	0	0	0	NR	NR	0
NFE		0.375	0	0	0	NR	NR	0
SCH		0.375	0	0	0	NR	NR	0
SLIC		0.625	0	0	0	0	NR	0
HAZNET		0.125	0	NR	NR	NR	NR	0
EDR PROPRIETARY HISTORICAL DATABASES								
Coal Gas		1.125	0	0	0	0	0	0
BROWNFIELDS DATABASES								
US BROWNFIELDS		0.625	0	0	0	0	NR	0
US INST CONTROL		0.625	0	0	0	0	NR	0
VCP		0.625	0	0	0	0	NR	0

NOTES:

AQUIFLOW - see EDR Physical Setting Source Addendum

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID Direction Distance Distance (ft.) Elevation	Site	Database(s)	EDR ID Number EPA ID Number

MAP FINDINGS

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
COUNTY	U001585742	COMINO RANCH	OFF OF RIVER GROVE RD.	93446	HIST UST
PASO ROBLES	U001585764	KENNETH D WILLETT	HWY 101/YSABEL	93446	HIST UST
PASO ROBLES	S103981100	PASO ROBLES AUTO WRECKING	RT 2 BOX 320 MONTEREY RD	93446	HAZNET
PASO ROBLES	S104577542	HUNTER RANCH GOLF COURSE	4041 HWY 46 EAST	93446	HAZNET
PASO ROBLES	S105088230	CONTINENTAL VINYARDS	11000 HWY 46 EAST	93446	HAZNET
PASO ROBLES	S105090687	PASO ROBLES CELLARS	5620 HWY 46 E	93446	HAZNET
PASO ROBLES	S106800411	SYCAMORE FARMS	2485 HWY 46 WEST	93446	CA WDS
PASO ROBLES	S103678860	WALLACE MACHINERY COMPANY	HIGHWAY 46 EAST		HAZNET
PASO ROBLES	S106102243	PASO ROBLES CITY LANDFILL	HWY 46 / UNION ROAD		CA WDS
PASO ROBLES	S106571234	EBERLE WINERY	3830 HWY 46 EAST		CA WDS
PASO ROBLES	U001585739	CHIMNEY ROCK VINEYARD	ADELAIDA STAR ROUTE, CHIMNEY R	93446	HIST UST
PASO ROBLES	U001585768	LAS TABLAS STATION	ADELAIDE STAR ROUTE	93446	HIST UST
PASO ROBLES	S106800398	THE RAVINE	NW CORNER E HWY 46 / AIRPORT		CA WDS
PASO ROBLES	U001585749	ERICKSON RANCH	CRESTON S., RTE.	93446	HIST UST
PASO ROBLES	U001585756	HARDHAM RANCH	CRESTON STAR RTE	93446	HIST UST
PASO ROBLES	U001585790	RANCHO SECO	CRESTON STAR ROUTE	93446	HIST UST
PASO ROBLES	S106203347	CHUMEIA VINEYARDS	8331 E HWY 46	93446	CA WDS
PASO ROBLES	S106800406	HOSPITALITY BUILDING	MILL RD / HWY 46		CA WDS
PASO ROBLES	1003878708	THUNDERBIRD BOATS	RAMADA DR	93446	CERC-NFRAP
PASO ROBLES	1006823648	WEYRICK SAND AND GRAVEL	S. RIVER RD.	93446	FINDS, EMI
PASO ROBLES	S103954613	CALTRANS PASO OVERHEADS	SAN LUIS OBISPO CO HWY 101 PM 55 7158 8		HAZNET
PASO ROBLES	U001585738	CAROL C. GUTTEY	SHANDON STAR RT. ALMOND DR.	93446	HIST UST
PASO ROBLES	U001585770	LOREN MCWILLIAMS	SHANDON STAR RT WHITLEY GARDEN	93446	HIST UST
PASO ROBLES	U001585797	SMILING M. RANCH	SHANDON STAR RT.	93446	HIST UST
WHITLEY GARDENS	U001585796	SHAW RANCH	SHANDON STAR RTE.	93446	HIST UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the 90-day updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List
Source: EPA
Telephone: N/A
National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/28/05
Date Made Active at EDR: 05/16/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 05/04/05
Elapsed ASTM days: 12
Date of Last EDR Contact: 05/04/05

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 6
Telephone: 214-655-6659

EPA Region 8
Telephone: 303-312-6774

Proposed NPL: Proposed National Priority List Sites
Source: EPA
Telephone: N/A

Date of Government Version: 04/27/05
Date Made Active at EDR: 05/16/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 05/04/05
Elapsed ASTM days: 12
Date of Last EDR Contact: 05/04/05

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
Source: EPA
Telephone: 703-413-0223
CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/15/05
Date Made Active at EDR: 04/06/05
Database Release Frequency: Quarterly
Date of Data Arrival at EDR: 03/22/05
Elapsed ASTM days: 15
Date of Last EDR Contact: 07/22/05

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned
Source: EPA
Telephone: 703-413-0223
As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

SI 05048-1
NORTH RIVER ROAD
PASO ROBLES, CA 93446

TARGET PROPERTY COORDINATES

Latitude (North):	35.656799 - 35' 39' 24.5''
Longitude (West):	120.682602 - 120' 40' 57.4"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	709786.4
UTM Y (Meters):	3948158.0
Elevation:	759 ft. above sea level

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-00, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

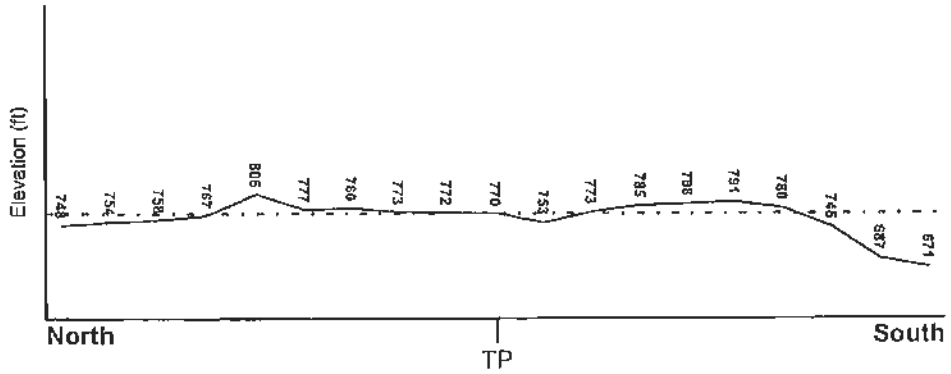
TOPOGRAPHIC INFORMATION

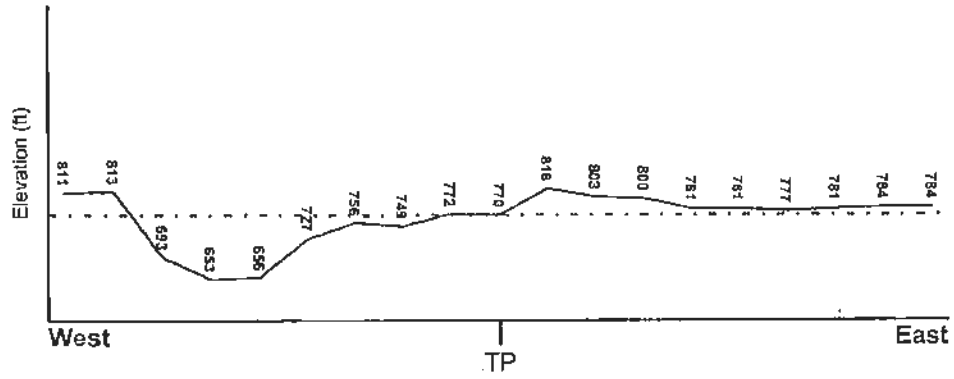
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

USGS Topographic Map:	35120-F6 PASO ROBLES, CA
General Topographic Gradient:	General West
Source:	USGS 7.5 min quad index

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 770 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County	FEMA Flood Electronic Data
SAN LUIS OBISPO, CA	YES - refer to the Overview Map and Detail Map

Flood Plain Panel at Target Property:	0603040250B
Additional Panels in search area:	0603040228B 0603080002B

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
PASO ROBLES	Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1998 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were compiled under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Tertiary
Series:	Pliocene
Code:	Tpc *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Continental Deposits

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Servica (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	ARBUCKLE
Soil Surface Texture:	fine sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	MODERATE
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	23 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 5.60
2	23 inches	40 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 0.60 Min: 0.20	Max: 7.80 Min: 5.60
3	40 inches	52 inches	gravelly - loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 0.60 Min: 0.20	Max: 7.80 Min: 5.60
4	52 inches	60 inches	stratified	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 0.60 Min: 0.20	Max: 7.80 Min: 5.60

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: loam
shaly - clay loam
coarse sandy loam
clay loam
shaly - loam
loamy sand
sandy loam

Surficial Soil Types: loam
shaly - clay loam
coarse sandy loam
clay loam
shaly - loam
loamy sand
sandy loam

Shallow Soil Types: clay

Deeper Soil Types: weathered bedrock
shaly - clay loam
gravelly - fine sandy loam

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

clay loam

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-00, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1.1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS3200323	1/2 - 1 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

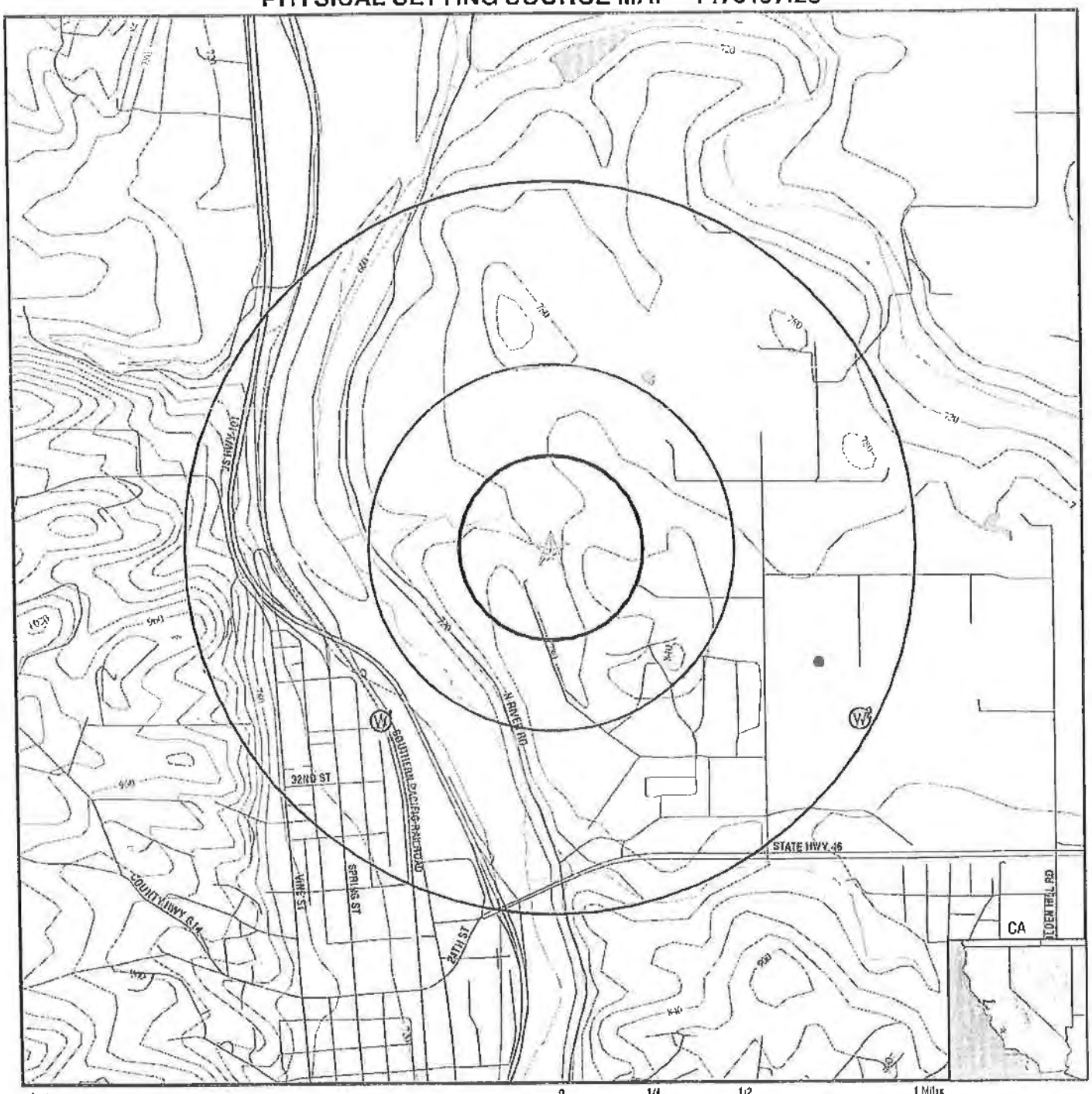
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
2	16107	1/2 - 1 Mile ESE

STATE OIL/GAS WELL INFORMATION

DISTANCE FROM TP (Miles)	DISTANCE FROM TP (Miles)
1/2 - 1 Mile ESE	

PHYSICAL SETTING SOURCE MAP - 1476437.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

TARGET PROPERTY:	SL05048-1	CUSTOMER:	GeoSolutions, Inc.
ADDRESS:	North River Road	CONTACT:	Shawn Lager
CITY/STATE/ZIP:	Paso Robles CA 93446	INQUIRY #:	1476437.2s
LAT/LONG:	35.6568 / 120.6826	DATE:	July 28, 2005 4:13 pm

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GEOCHECK®- PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation	Database	EDR ID Number
1 SW 1/2 - 1 Mile Lower	FED USGS	USGS3200323

Agency cd:	USGS	Site no:	353900120412401
Site name:	026S012E21D006M		
Latitude:	353900		
Longitude:	1204124	Dec lat:	35.64996979
Dec lon:	-120.69100436	Coor meth:	M
Coor accr:	T	Latlong datum:	NAD27
Dec latlong datum:	NAD83	District:	06
State:	06	County:	079
Country:	US	Land net:	NWNWS021T026S R012E M
Location map:	PASO ROBLES NW/4	Map scale:	24000
Altitude:	700.00	Altitude method:	M
Altitude accuracy:	50	Altitude datum:	NGVD29
Hydrologic:	Salinas. California. Area = 3250 sq.mi.		
Topographic:	Not Reported		
Site type:	Ground-water other than Spring	Date construction:	Not Reported
Date inventoried:	Not Reported	Mean greenwich time offset:	PST
Local standard time flag:	Y	Type of ground water site:	Single well, other than collector or Ranney type
Aquifer Type:	Not Reported		
Aquifer:	Not Reported		
Well depth:	Not Reported	Hole depth:	Not Reported
Source of depth data:	Not Reported	Project number:	CA-9-358M
Real time data flag:	Not Reported	Daily flow data begin date:	Not Reported
Daily flow data end date:	Not Reported	Daily flow data count:	Not Reported
Peak flow data begin date:	Not Reported	Peak flow data end date:	Not Reported
Peak flow data count:	Not Reported	Water quality data begin date:	Not Reported
Water quality data end date:	Not Reported	Water quality data count:	Not Reported
Ground water data begin date:	Not Reported	Ground water data end date:	Not Reported
Ground water data count:	Not Reported		

Ground-water levels, Number of Measurements: 0

2 ESE 1/2 - 1 Mile Higher	CA WELLS	16107

Water System Information:

Prime Station Code:	26S/12E-22J01 M	User ID:	TAP
FRDS Number:	4010007004	County:	San Luis Obispo
District Number:	06	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	353900.0 1204000.0	Precision:	Undefined
Source Name:	BUTTERFIELD WELL 12		
System Number:	4010007		
System Name:	PASO ROBLES WATER DEPARTMENT		
Organization That Operates System:			
	1240 PASO ROBLES ST. PASO ROBLES, CA 93447		
Pop Served:	21450	Connections:	6171
Area Served:	CITY OF PASO ROBLES		

APPENDIX B

Questionnaire

Site Address: 3725 BUENA VISTA DR P.R.

Name of person filling out the questionnaire: STEVE GREGORY

Relation to the subject property: PROPERTY AGENT

Owner of the property: CAROL KIESSIG

Please include a response to any "yes" answers.

		(circle one)	
1a. Is the property used for an industrial use?	Yes	No	Unk
1b. Is any adjoining property used for an industrial use?	Yes	No	Unk
2a. Did you observe evidence or do you have any prior knowledge that the property has been used for an industrial use in the past?	Yes	No	Unk
2b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used for an industrial use in the past?	Yes	No	Unk
3a. Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
3b. Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
4a. Did you observe evidence or do you have any prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk

4b. Did you observe evidence or do you have any prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility (if applicable, identify which)?	Yes	No	Unk
5a. Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?	Yes	No	Unk
5a. Did you observe evidence or do you have any prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5 gal (19 L) in volume or 50 gal (190 L) in the aggregate, stored on or used at the property or at the facility?	Yes	No	Unk
6a. Are there currently any industrial drums (typically 55 gal (208 L) or sacks of chemicals located on the property or at the facility?	Yes	No	Unk
6b. Did you observe evidence or do you have any prior knowledge that there have been previously any industrial drums (typically 55 gal (208 L) or sacks of chemicals located on the property or at the facility?	Yes	No	Unk
7a. Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that originated from a contaminated site?	Yes	No	Unk
7b. Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that is of an unknown knowledge?	Yes	No	Unk

8a. Are there currently any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	Yes	No	Unk
8b. Did you observe evidence or do you have any prior knowledge that there have been previously, any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	Yes	No	Unk
9a. Is there currently any stained soil on the property?	Yes	No	Unk
9b. Did you observe evidence or do you have any prior knowledge that there has been previously, any stained soil on the property?	Yes	No	Unk
10a. Are there currently any registered or unregistered storage tanks (above or underground) located on the property?	Yes	No	Unk
10b. Did you observe evidence or do you have any prior knowledge that there have been previously, any registered or unregistered storage tanks (above or underground) located on the property?	Yes	No	Unk
11a. Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Yes	No	Unk
11b. Did you observe evidence or do you have any prior knowledge that there have been previously, any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	Yes	No	Unk
12a. Is there currently evidence of leaks, spills or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	Yes	No	Unk
12b. Did you observe evidence or do you have any prior knowledge that have been previously any leaks, spills or staining by substances other than water, or foul odors,	Yes	No	Unk

associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?

13a. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	Yes	No	Unk
13b. If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	Yes	No	Unk
14. Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	Yes	No	Unk
15a. Has the owner or occupant of the property been informed of the past existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Yes	No	Unk
15b. Has the owner or occupant of the property been informed of the current existence of hazardous substances or petroleum products with respect to the property or any facility located on the property?	Yes	No	Unk
15c. Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property?	Yes	No	Unk
15d. Has the owner or occupant of the property been informed of the current existence of environmental violations with respect to the property or any facility located on the property?	Yes	No	Unk
16. Does the owner or occupant of the property have any knowledge of any	Yes	No	Unk

environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?

17. Does the owner or occupant of the property know of any past, threatened, or pending lawsuits or administrative proceedings concerning a release of any hazardous substances or petroleum products involving the property by any owner or occupant of the property?	Yes	No	Unk
18a. Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?	Yes	No	Unk
18b. Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a sanitary sewer system?	Yes	No	Unk
19. Did you observe evidence or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried and/or burned on the property?	Yes	No	Unk
20. Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	Yes	No	Unk

Preparer represents that to the best of the preparer's knowledge, the above statements and facts are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

Signature_____ Date 8-12-05

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
PRACTICE FACILITY & COLLEGE STATION
RIVER OAKS PLANNED COMMUNITY
APNs: 020-011-063, -064, -069, -070, and 025-390-003
PASO ROBLES, CALIFORNIA

PROJECT No. SL05048-3

Prepared for:

Estrella Associates, Inc.
Attn: Wes Willhoit
2727 Buena Vista Drive
Paso Robles, California 93446

Prepared by

GEOSOLUTIONS, INC.
220 HIGH STREET
SAN LUIS OBISPO, CALIFORNIA 93401

©

August 22, 2008

GeoSolutions, INC.

220 High Street, San Luis Obispo, CA 93401
(805) 543-8539, 543-2171 fax
info@GeoSolutions.net

August 22, 2008
Project No. SL05048-3

Estrella Associates, Inc.
Attn: Wes Willhoit
2727 Buena Vista Drive
Paso Robles, California 93446

Dear Mr. Willhoit,

GeoSolutions, Inc. has performed a Phase I Environmental Site Assessment (ESA) in conformance with the standard practice of the American Society for Testing and Materials (ASTM) Designation: E 1527-05 for the proposed Practice Facility and College Station, located in the River Oaks Planned Community, APNs: 020-011-063, -064, -069, -070, and portion of 025-390-003, in the City of Paso Robles, San Luis Obispo County, California.

This assessment has revealed no evidence of recognized environmental conditions in connection with the subject property at the current time of this report.

We appreciate the opportunity to provide you with professional services. If you should have any questions, please do not hesitate to contact us at (805) 543-8539.

Sincerely,
GeoSolutions, Inc.

PROFESSIONAL GEOLOGIST
JOHN M.D. KAMMER
NO. 2118
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

John M.D. Kammer, C.E.G. 2118
California Certified Engineering Geologist

Shawn Lager
Environmental Specialist

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
- 1.1 Purpose 1
- 1.2 Site Location 2

2.0 SCOPE OF SERVICES 2

3.0 SITE RECONNAISSANCE 3
- 3.1 Physical Site Setting 3
- 3.2 Current Site Conditions 3
- 3.3 Neighboring Sites 4

4.0 RECORDS REVIEW 4
- 4.1 Regulatory Agency Information 4
- 4.2 Public Records Review 7
- 4.3 Aerial Photo Review 7
- 4.4 Sanborn Map Review 9
- 4.5 Water Wells and Potable Water Supply 9
- 4.6 Department of Conservation - Division of Oil, Gas, and Geothermal Resources 9
- 4.7 Environmental Questionnaire 9
- 4.8 Interviews 10
- 4.9 Environmental Liens 10

5.0 SUMMARY OF FINDINGS, DATA GAPS, AND CONCLUSIONS 10
- 5.1 Summary of Findings 10
- 5.2 Data Gaps 11
- 5.3 Conclusions 11

6.0 LIMITATIONS OF INVESTIGATION 11

7.0 CREDENTIALS 12

REFERENCES

APPENDIX A
- Environmental Record Search
- Aerial Photos

APPENDIX B
- Site Photographs

LIST OF FIGURES

Figure 1: Site Location Map 1

Figure 2: Site Plan 2

PHASE I
ENVIRONMENTAL SITE ASSESSMENT
PROPOSED PRACTICE FACILITY & COLLEGE STATION
RIVER OAKS PLANNED COMMUNITY
APNs: 020-011-063, -064, -069, -070, & 025-390-003
PASO ROBLES, CALIFORNIA

PROJECT No. SL05048-3

1.0 INTRODUCTION

A Phase I Environmental Site Assessment (ESA) has been conducted by GeoSolutions, Inc. in conformance with the standard practice of the American Society for Testing and Materials (ASTM) Designation: E 1527-05. This ESA was conducted for the proposed Practice Facility and College Station to be located in Tract 1895, River Oaks Planned Community, APNs: 020-011-063, -064, -069, -070, and 025-390-003 in the City of Paso Robles, San Luis Obispo County, California (Figure 1: Site Location Map).

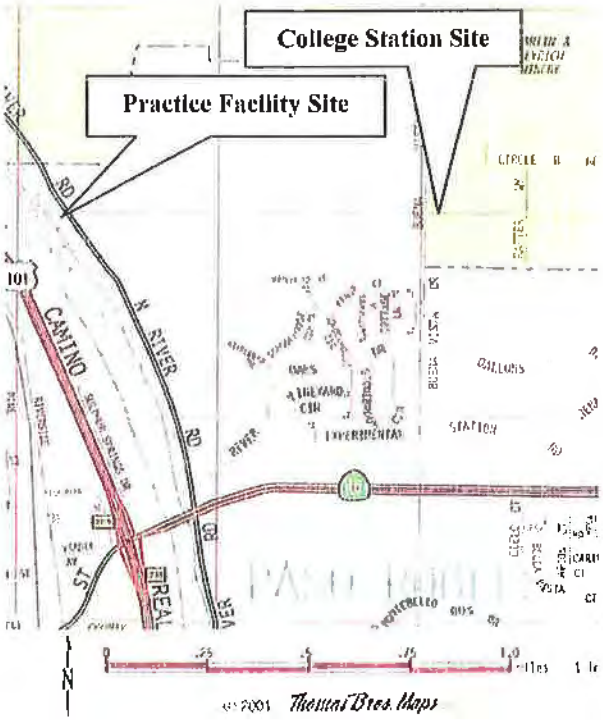

Figure 1: Site Location Map

1.1 Purpose

The purpose of an ESA is to perform a general inquiry of the property by a qualified environmental professional regarding the potential for Recognized Environmental Conditions (REC's), which may affect the property physically and financially. A REC is defined as any hazardous substance or petroleum product which has existed, exists, or can likely be released at or adjacent to the property soil, surface water, or groundwater. This ESA is intended for the user, property buyer or lender, to satisfy a requirement to qualify for the "Innocent Landowner Defense" as outlined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This ESA was performed using the recommended guidelines established by ASTM Designation: E 1527-05, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." An ESA does not include soil, water, or other material sampling for analysis of possible hazardous substances on the property. The property will hereafter be referred collectively as the "Site".

1.2 Site Location

The River Oaks Planned Community is a 200-acre mixed use project including a 6-hole golf course, elementary school, commercial center, and residential neighborhoods located in the City of Paso Robles, California. The proposed Practice Facility is located between N. River Road and the Salinas River on the western portion of parcel number 025-390-003. The proposed College Station is located on the east Side of Buena Vista Drive and north of Cuesta College on parcels 020-011-063, -064, -069, and -070. The Site is surrounded by medium density residential structures (Figure 2: Site Plan).

2.0 SCOPE OF SERVICES

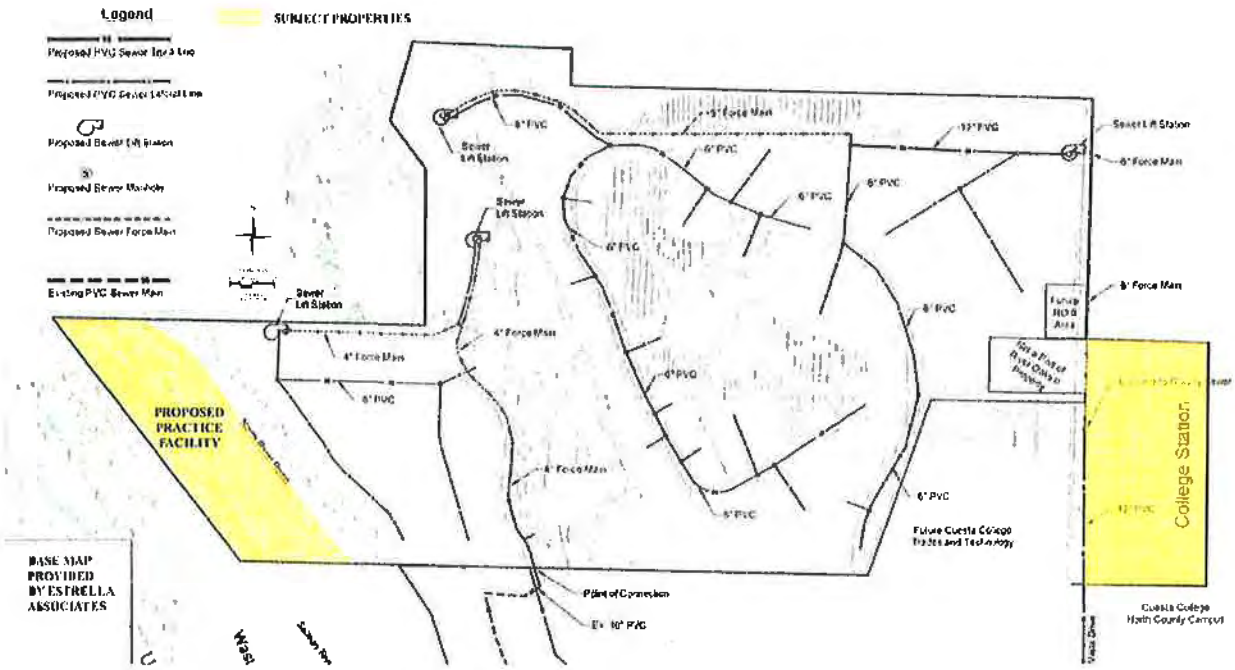

Figure 2: Site Plan

The following work was performed for this Phase I ESA and is described in more detail in individual sections throughout this report:

- Conduct a Site and neighboring properties reconnaissance and visual inspection to assess the presence of REC's;
- Review list of documented hazardous materials spills, leaks, accidents, generators, and storage facilities provided by sub-contracted information retrieval service;
- Determine Site historical use by reviewing available aerial photographs, Polk's Directories, Sanborn fire insurance maps, and other available historical documents pertaining to the Site;

- Review geologic and topographic maps and other information available pertaining to the Site maintained within our office;
- Review available files of hazardous substance storage, generators, spills, leaks, and accidents with local agencies as applicable;
- Interview various professionals regarding knowledge of the Site;
- Preparation of this written report documenting our findings, conclusions, and opinion.

The following documents our investigation and summarizes our conclusions for the Site. All REC's are numbered throughout the report, if any, and are discussed in the findings, conclusions, and opinion section of this report.

3.0 SITE RECONNAISSANCE

3.1 Geologic Site Setting

The Site is located within the Coast Range Geomorphic Province of California located between the Pacific Ocean and the Sacramento-San Joaquin Valley. The Coast Ranges trend northwesterly along the California coast for approximately 600 miles between Santa Maria and the Oregon border.

Based on a geology map for the Site area (Dibblee, 2004), the geologic formation underlying the Site consists of Pleistocene age (last 2 million years) Surficial Sediments and Older Surficial Sediments. The Surficial Sediments are comprised of alluvial sand and gravel of valley areas. The Older Surficial Sediments are comprised of terraces of dissected alluvial gravel and sand.

3.2 Current Site Conditions

The signing Certified Engineering Geologist of GeoSolutions, Inc. performed a Site reconnaissance on August 21, 2008. The Site reconnaissance was performed by walking around the Site and driving the Site vicinity. The following describes our observations:

Proposed Practice Facility: This parcel is approximately 3.1 acres in size and rectangular in shape. The proposed practice facility is located in the western portion of APN: 025-390-003 between N. River Road and the Salinas River. No development was observed on the Site during our site visit. During the time of our site reconnaissance large (approximately 36" diameter) concrete water pipes were observed in a row and ready to be installed into the ground. The area was approximately flat-lying with thick vegetation in the vicinity of the river channel.

No recognized environmental conditions were observed on the proposed Practice Facility site during our site reconnaissance.

Proposed College Station: The proposed College Station is located on the east side of Buena Vista Drive and north of the Cuesta College North Campus. This Site is approximately 20 acres in size

and is currently comprised of four assessor parcel numbers 020-011-063, -064, -069, and -070. Parcels 063, -064, and -069 are currently occupied with one single family residence each and parcel -070 is currently undeveloped.

No recognized environmental conditions were observed on the proposed College Station site during our site reconnaissance. No evidence of paints, pesticides or other chemicals was observed in storage during our Site visit. No evidence suggesting under ground or above ground storage tanks, fill pipes, or product piping was observed on Site.

3.3 Neighboring Sites

The proposed Practice Facility is currently bounded by undeveloped parcels to the north, south, and west. To the east, residential development and a golf course are in the vicinity. and North River Road to the east, the road is in the prop. The prop goes up the hill. The Salinas River forms the western border of the property. A groundwater monitoring well was observed on the adjoining property to the south. The groundwater monitoring well was exposed approximately 3 feet above ground surface and the steel casing was painted yellow. This well was not locked and groundwater was recorded at an approximate depth of 13.5 feet below ground surface in the well.

The proposed College Station is bounded by Circle B Road to the north, residential parcels to the east, Cuesta College North Campus to the south, and Buena Vista Drive to the west. One residential structure was observed on the west side of Buena Vista Drive and west of Site. Fill dirt was observed on the Cuesta College property near the southern border of the Site.

No REC's were observed on the adjoining sites during the time of our reconnaissance on August 21, 2008.

4.0 RECORDS REVIEW

4.1 Regulatory Agency Information

GeoSearch was subcontracted to search various databases for regulatory agency listings and files of hazardous material incidents pertaining to the Site and within 1 mile of the Site. Below is a summary of the GeoSearch database report.

State Records

Calsites Database (CALSITES): This historical database was maintained by the Department of Toxic Substance Control for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

A review of the CALSITES list, as provided by GeoSearch, and updated 9/2004 has revealed that there are 2 CALSITES sites within 0.28 miles of the target property.

These addresses are:

- 3230 Riverside Avenue CTS Keene Inc. Metals Division
- 2198 Riverside Avenue California Mid-State Fair

Envirostor Cleanup Sites (ENVIROSTOR): The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites where DTSC has made a "No Action Required" determination are not included in this database, as these sites had assessments that revealed no evidence of recognized environmental conditions in connection with the property.

A review of the ENVIROSTOR list, as provided by GeoSearch, and updated 6/2008 has revealed that there are 2 ENVIROSTOR sites within 0.28 miles of the target property.

These addresses are:

- 3230 Riverside Avenue CTS Keene Inc. Metals Division
- 2198 Riverside Avenue California Mid-State Fair

Historical Underground Storage Tanks (HISTUST): The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites, compiled from tank survey and registration information collected at one time between 1984 and 1987. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials.

A review of the HISTUST list, as provided by GeoSearch, and updated 12/1987 has revealed that there is 1 HISTUST site within 0.04 miles of the target property.

This address is:

- 3061 Buena Vista Drive Sunbank Airport Facility

Listing of Certified Processors (PROC): Listing of Certified Processors that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

A review of the PROC list, as provided by GeoSearch, and updated 6/2008 has revealed that there is 1 PROC site within 0.25 miles of the target property.

This address is:

- 3350 Riverside Avenue Paso Robles Recycling Center

Referred to Another Local or State Agency (REF): UNCONFIRMED PROPERTIES - This category contains properties where contamination has not been confirmed and which were

determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

A review of the REF list, as provided by GeoSearch, and updated 7/2005 has revealed that there is 1 REF site within 0.28 miles of the target property.

This address is:

- 3230 Riverside Avenue CTS Keene Inc. Metals

Recycling Centers (SWRCY): Listing of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

A review of the SWRCY list, as provided by GeoSearch, and updated 6/2008 has revealed that there is 1 SWRCY site within 0.20 miles of the target property.

This address is:

- 3350 Riverside Avenue Paso Robles Recycling

School Property Evaluations (SCH): This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

A review of the SCH list, as provided by GeoSearch, and updated 7/2004 has revealed that there is 1 SCH site within 0.30 miles of the target property.

This address is:

- Buena Vista Road Kermit King School Site

Federal Records

Resource Conservation and Recovery Act – Generator (RCRAG): This database includes sites listed as generators of hazardous waste (large, small, and exempt) in the RCRAInfo system. See RCRA Description page for more information. The EPA defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

A review of the RCRAG list, as provided by GeoSearch, and last updated 3/2008 has revealed that there are 2 RCRAG sites within 0.12 miles of the target property.

These addresses are:

- 3025 Buena Vista Drive Applied Navigation Devices

- 2800 Buena Vista Drive Cuesta College North County Campus

Please refer to Appendix A - Environmental Record Search, for more details regarding GeoSearch database report. Appendix A also includes ancillary record data.

4.2 Public Records Review

The purpose of the records review is to obtain and review records that will help identify recognized environmental conditions in connection with the property. Environmental Health is the responsible governmental agency for hazardous materials cases in the County of San Luis Obispo. Information pertaining to hazardous materials within the County of San Luis Obispo is available for public review. When an environmental concern affects water, the file is transferred to the California Regional Water Quality Control Board (CRWQCB). GeoTracker is also used to assist us in obtaining information to evaluate the Site for potential REC's. GeoTracker is a geographic information system (GIS) that provides online access to environmental data, which tracks regulatory data about underground fuel tanks, fuel pipelines, and public drinking water supplies. Two files were reviewed at the San Luis Obispo County Environmental Health Department on July 23, 2008. Below is a description of our public file review:

3230 Riverside Avenue, CTS Keene Inc. Metals Division (Status: Closed Case) – An application for the request to abandon five underground storage tanks (one fuel tank and four wastewater collection tanks) was found in the file for this site. The County application stated soil samples must be collect prior to abandonment of the tanks. A closure letter from the San Luis Obispo County Health Agency dated April 3, 1986 stated that based on the visual inspection of the fuel tank no contamination was detected and was approved for backfill. Additionally, after reviewing lab results for the soil borings approval was given for in-place abandonment of the tanks with cement slurry. This site is located approximately 0.25 miles southwest of the proposed practice facility.

3061 Buena Vista Drive, Sunbank Airport Facility (Status: Closed Case) – In this file an application stating a 10,000 gallon diesel underground storage tank was installed at this site in 1983. A closure letter issued by San Luis Obispo County Health Agency and dated February 7, 1996 stated no further action to the UST closure is required by the County Health Agency. This site was formerly located in aircraft hangar 1 in the Paso Robles Muncipal Airport approximately 3 miles northeast of the College Station Site.

4.3 Aerial Photo Review

Aerial photos are used to determine past uses of a property. Structures, above ground fuel tanks, ponds, stockpiles of soil or debris, and major amounts of stained soil typically appear in aerial photos. Aerial photos were supplied by Environmental Data Resources for the years of 1937, 1949, 1959, 1969, 1971, 1978, 1989, 1994, and 2005. Below is a description of the photos reviewed:

1937 Photo (Source: ASCS-USDA)

In this photo, no development is observed on the proposed practice facility or proposed College Station Site. One residential dwelling is observed on the Site to the north of College Station.

1949 Photo (Source: ASCS-USDA)

A dirt road is observed in the northwest corner of the proposed College Station Site. Other than the dirt road no development is observed on either Site.

1959 Photo (Source: Mark Hurd)

No development is observed on either Site in this photo. The same dirt road is observed in the northwest corner of the College Station Site. Highway 46 east is observed in this photo.

1969 Photo (Source: ASCS-USDA)

In this photo, it appears the proposed College Station Site is used for agriculture growing. The proposed practice facility Site is still not developed. The wastewater treatment facility is observed to the south of the practice facility.

1971 Photo (Source: Mark Hurd)

No development is observed on either Site in this photo. A dirt road is still observed in the northwest corner of the College Station Site.

1978 Photo (Source: USDA)

Crop rows are observed on the proposed College Station Site in this photo. The dirt road is no longer observed in the northwest portion of this Site. No development is observed on the practice facility Site.

1989 Photo (Source: USGS)

Two residential dwellings are observed on the proposed College Station Site in this photo. Residential dwellings are also observed on the adjoining sites to the north and east of the College Station Site. In this photo it appears the practice facility Site may be used for agricultural growing. No development is observed on the practice facility Site.

1994 Photo (Source: USGS)

In this photo, three residential dwellings are observed on the proposed College Station Site. More residential development is observed to the north and east of this Site. The practice facility Site still appears to be used for agricultural growing. What appears to be a job site trailer is observed in the center of the present day River Oaks Community.

2005 Photo (Source: USGS)

The same three residential dwellings are observed on the proposed College Station Site. Cuesta College North Campus is observed on the adjoining property to the south of College Station. The practice facility Site still appears to be used for agricultural growing in this photo. The first phase of the River Oaks Residential Community, River Oaks Golf Course, and Kermit King Elementary School are observed in this photo.

4.4 Sanborn Map Review

Sanborn maps are historical fire insurance maps that depict locations, types of structures, the material used for the structures, and underground and aboveground storage tanks within city limits. These maps may be used to determine the past use of the Site. Sanborn maps were not found for this area of Paso Robles.

4.5 Water Wells and Potable Water Supply

The three residential structures located on the College Station site each have private wells and private wastewater disposal systems. No wells were observed on the Practice Facility site. Depth to water in a monitor well in the vicinity of the Practice Facility is 13.5 feet below ground surface.

4.6 Department of Conservation – Division of Oil, Gas, & Geothermal Resources

GeoSolutions, Inc. maintains oil and natural gas well maps provided by the Division of Oil and Gas (DOG). According to the oil well maps reviewed for the Paso Robles Area, one plugged and abandoned well formerly existed 30 feet north and 3,520 feet west of the southwest corner of section 23. This well was drilled in 1950 and was never used for oil production. This well was converted into a private water well which was used agriculture purposed by the owner of the property at that time. It is unknown exactly where this well was drilled.

4.7 Environmental Questionnaire

An environmental questionnaire was emailed to Wes Willhoit on July 16, 2008. However, the questionnaire was not received prior to the issuance of this report.

4.8 Interviews

The main focus of interviewing persons with pertinent knowledge of the Site was to supplement and verify our understanding of the Site history and current use of the Site and adjacent properties. This information assisted in our determination of potential sources of REC's.

According to Matt from Estrella Associates, the residential structures on the proposed College Station site were built sometime in the 1980's.

4.9 Environmental Lien Search

The Environmental Lien Search Report provides results from a search of available current land title records for environmental clean up liens and other activity and use limitations, such as engineering controls and institutional controls. A search for environmental liens was conducted on July 23, 2008 through the San Luis Obispo County Clerk/Recorder office in San Luis Obispo. No environmental liens were found on any of the parcels:

College Station
APN: 020-011-070
Owner: Kim, Tae M & Chung S.

APN: 020-011-069
Owner: Willhoit, Gloria J. ETAL

APN: 020-011-063
Owner: Wilhoit, Richard Tre ETAL

APN: 020-011-064
Owner: King, Lowell P. Tre ETAL

Practice Facility
APN: 025-390-003
Owner: River Oaks II LLC

5.0 SUMMARY OF FINDINGS, DATA GAPS, AND CONCLUSIONS

5.1 Summary of Findings

Based on the information found during the preparation of this Phase I ESA report, for the proposed practice facility and college station, within the River Oaks Planned Community, located on APNs: 020-011-063, -064, -069, -070, and 025-390-003, in the City of Paso Robles is currently developed with three residential structures on the proposed College Station site and the proposed Practice Facility site was undeveloped during the time of our site visit. Based on aerial photos for the Sites, the proposed College Station Site was not developed until approximately 1989 and the proposed Practice Facility Site has been undeveloped since at least 1937. Based on our record search for known recognized environmental conditions, two small quantity hazardous material generators exist within ¼ mile of the Site. However, no records were found indicating these sites have had an unauthorized leak of hazardous materials that would have affected the subject property. No environmental liens were found in connection with the Sites.

5.2 Data Gaps

Data gaps, or time periods during which an opinion cannot be rendered, are the following:

- Actual time of construction of structures on site
- Condition of the Site between Aerial Photo intervals.

5.3 Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-05 for the proposed practice facility and college station development, within the River Oaks Planned Community, located on APNs: 020-011-063, -064, -069, -070, and 025-390-003, in the City of Paso Robles, California. Any exceptions to, or deletions from, this practice are described in Section 2.0 of this report. **This assessment has revealed no evidence of recognized environmental condition in connection with the property.** However, it should be noted that according to ASTM E 1527-05, Section 4.5.1, "No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property."

6.0 LIMITATIONS OF INVESTIGATION

GeoSolutions, Inc.'s investigation was performed using the degree of care and skill ordinarily exercised, under similar circumstances, by Engineers and Geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is issued with the understanding that it is the responsibility of the OWNER or his/her representative to ensure that the information and recommendations contained herein are brought to the attention of the regulatory agencies, where required.
The findings of this report are valid as of the present date and up to 180 days after the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control.

7.0 CREDENTIALS

As required by the ASTM Practice E 1527-05, this report shall include the qualifications of the environmental professionals responsible for this Phase I ESA.

The primary environmental professional used in the preparation of this report is Mr. John Kammer. Mr. Kammer holds a Bachelors degree in Geology and a Masters degree in Hydrogeology and has performed ESA's and other environmental services for approximately 19 years. Mr. Kammer is a

Professional Geologist, a Certified Hydrogeologist, and a Certified Engineering Geologist with the State of California Board of Consumer Affairs.

END OF TEXT

REFERENCES

ASTM, ASTM Standards on Environmental Site Assessment for Commercial Real Estate, Fifth Edition, Designation E 1527, 2005.

Department of Conservation, Division of Oil, Gas, and Geothermal Resources, Kern and San Luis Obispo Counties, Map W3-4.

Dibblee, Thomas, 2004, Geologic map of the Paso Robles Quadrangle, San Luis Obispo County, California, Map DF-137.

GeoSearch Radius Report for Proposed Practice Facility and College Station, River Oaks Planned Community, Paso Robles, Ca, Job #: 76307, dated 07/17/08.

APPENDIX A

Environmental Record Search

Aerial Photos

GeoSearch

On time. On target. In touch.

RADIUS REPORT

Target Property:

Proposed Practice Facility and College Station
River Oaks Planned Community
Paso Robles, CA
Project #: SL05048-3

Prepared For:

GeoSolutions, Inc. - San Luis Obispo

Job #: 76307 / Date: 07/17/08

2705 Bee Caves Rd, Suite 330 · Austin, Texas 78746 · phone: 888-396-0042 · fax: 512-472-9967 · www.geo-search.net

SITE SUMMARY

Proposed Practice Facility and College Station
River Oaks Planned Community
Paso Robles, CA

Latitude:	*35.653857000*
Longitude:	*-120.67106600*
Centroid Zip Code:	*93446*

USGS Quadrangle:	*Paso Robles*
County:	*San Luis Obispo*

Target property is located in Radon Zone 2 (San Luis Obispo County, CA). Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.

Disclaimer - The information provided in this report was obtained from a variety of public sources. GeoSearch cannot ensure and makes no warranty or representation as to the accuracy, reliability, quality, errors occurring from data conversion or the customer's interpretation of this report. This report was made by GeoSearch for exclusive use by its clients only. Therefore, this report may not contain sufficient information for other purposes or parties. GeoSearch and its partners, employees, officers and independent contractors cannot be held liable for actual, incidental, consequential, special or exemplary damages suffered by a customer resulting directly or indirectly from any information provided by GeoSearch.

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DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA-TABLE	UNLOCA-TABLE	SEARCH RADIUS
FEDERAL				
DELISTED NATIONAL PRIORITY LIST	DNPL	0	0	1.000 miles
DEPARTMENT OF DEFENSE	DOD	0	0	1.000 miles
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.000 miles
NATIONAL PRIORITY LIST	NPL	0	0	1.000 miles
NO LONGER REGULATED RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION	NLRRCRAC	0	0	1.000 miles
PROPOSED NATIONAL PRIORITY LIST	PNPL	0	0	1.000 miles
RECORDS OF DECISION	RODS	0	0	1.000 miles
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION	RCRAC	0	0	1.000 miles
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.500 miles
COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION & LIABILITY INFORMATION SYSTEM	CERCLIS	0	0	0.500 miles
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	0.500 miles
NO FURTHER REMEDIAL ACTION PLANNED	NFRAP	0	0	0.500 miles
NO LONGER REGULATED RESOURCE CONSERVATION & RECOVERY ACT - TREATMENT, STORAGE & DISPOSAL	NLRRCRAT	0	0	0.500 miles
OPEN DUMP INVENTORY	ODI	0	0	0.500 miles
RESOURCE CONSERVATION & RECOVERY ACT - TREATMENT, STORAGE & DISPOSAL	RCRAT	0	0	0.500 miles
NO LONGER REGULATED RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	NLRRCRAG	0	0	Target Property and Adjoining
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAG	2	0	Target Property and Adjoining
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	Target Property
BIENNIAL REPORT SYSTEM	BRS	0	0	Target Property
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	Target Property
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNS	0	0	Target Property
EPA DOCKET DATA	DOCKETS	0	0	Target Property
FACILITY REGISTRY SYSTEM	FRS	0	0	Target Property
FEDERAL INSTITUTIONAL / ENGINEERING CONTROLS	EC	0	0	Target Property
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRS	0	0	Target Property
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	Target Property
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	Target Property
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDES	0	0	Target Property
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	Target Property
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	Target Property
TOXIC SUBSTANCES CONTROL ACT	TSCA	0	0	Target Property

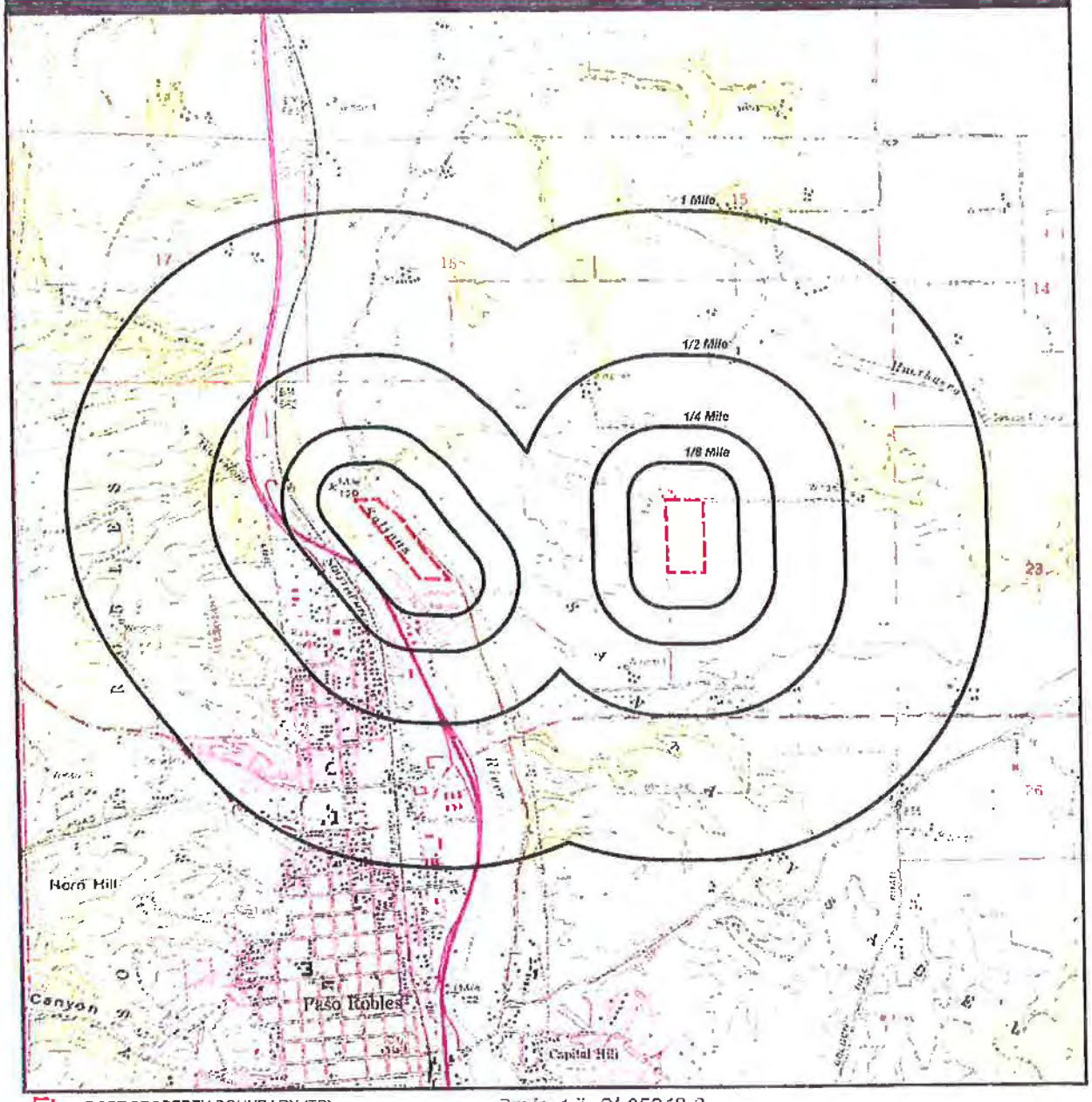
DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA-TABLE	UNLOCA-TABLE	SEARCH RADIUS
TOXICS RELEASE INVENTORY	TRI	0	0	Target Property
TRIBAL				
INDIAN RESERVATIONS	INDIANRES	0	0	1.000 miles
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR09	0	0	0.500 miles
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.500 miles
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR09	0	0	0.250 miles
STATE				
CALSITES DATABASE	CALSITES	2	0	1.000 miles
ENVIROSTOR CLEANUP SITES	ENVIROSTOR	2	0	1.000 miles
ENVIROSTOR PERMITTED AND CORRECTIVE ACTION SITES	ENVIROSTORPCA	0	0	1.000 miles
TOXIC PITS CLEANUP ACT SITES	TOXPITS	0	0	1.000 miles
CORTESE LIST	CORTESE	0	0	0.500 miles
LEAKING UNDERGROUND STORAGE TANKS	LUST	0	0	0.500 miles
LISTING OF CERTIFIED PROCESSORS	PROC	1	0	0.500 miles
NEEDING FURTHER EVALUATION	NFE	0	0	0.500 miles
NO FURTHER ACTION	NFA	0	0	0.500 miles
RECYCLING CENTERS	SWRCY	1	0	0.500 miles
REFERRED TO ANOTHER LOCAL OR STATE AGENCY	REF	1	0	0.500 miles
SCHOOL PROPERTY EVALUATION PROGRAM PROPERTIES	SCH	1	0	0.500 miles
SOLID WASTE INFORMATION SYSTEM	SWIS	0	0	0.500 miles
VOLUNTARY CLEANUP PROGRAM	VCP	0	0	0.500 miles
WASTE MANAGMENT UNIT DATABASE	WMUDS	0	0	0.500 miles
ABOVEGROUND STORAGE TANKS	ABST	0	0	0.250 miles
CALIFORNIA MEDICAL WASTE MANAGEMENT PROGRAM FACILITY LIST	MWMP	0	0	0.250 miles
DRY CLEANER FACILITIES	CLEANER	0	0	0.250 miles
DTSC'S REGISTERED HAZARDOUS WASTE TRANSPORTERS	DTSCHWT	0	0	0.250 miles
HISTORICAL UNDERGROUND STORAGE TANKS	HISTUST	1	0	0.250 miles
SPILLS, LEAKS, INVESTIGATION & CLEANUP RECOVERY LISTING	SLIC	0	0	0.250 miles
STATEWIDE ENVIRONMENTAL EVALUATION AND PLANNING SYSTEM	SWEEPS	0	0	0.250 miles
UNDERGROUND STORAGE TANKS - CERTIFIED UNIFIED PROGRAM AGENCIES	USTCUPA	0	0	0.250 miles
CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM	CHMIRS	0	0	Target Property
CLANDESTINE DRUG LABS	CDL	0	0	Target Property
DTSC'S DEED RESTRICTIONS	DTSCDR	0	0	Target Property
EMISSIONS INVENTORY DATA	EMI	0	0	Target Property
HAZARDOUS WASTE TANNER SUMMARY	HWTS	0	0	Target Property
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDES	0	0	Target Property

DATABASE FINDINGS SUMMARY

DATABASE	ACRONYM	LOCA-TABLE	UNLOCA-TABLE	SEARCH RADIUS
FACILITIES IN CALIFORNIA				
TOTAL		11	0	

TOPOGRAPHIC MAP



TARGET PROPERTY BOUNDARY (TP)

Project #: SL05048-3
Quadrangle(s): Paso Robles
Source: USGS, 1979
Proposed Practice Facility and
College Station
River Oaks Planned Community
Paso Robles, CA

N
W E
S

0' 1400' 2800' 4200'
SCALE: 1" = 2800'

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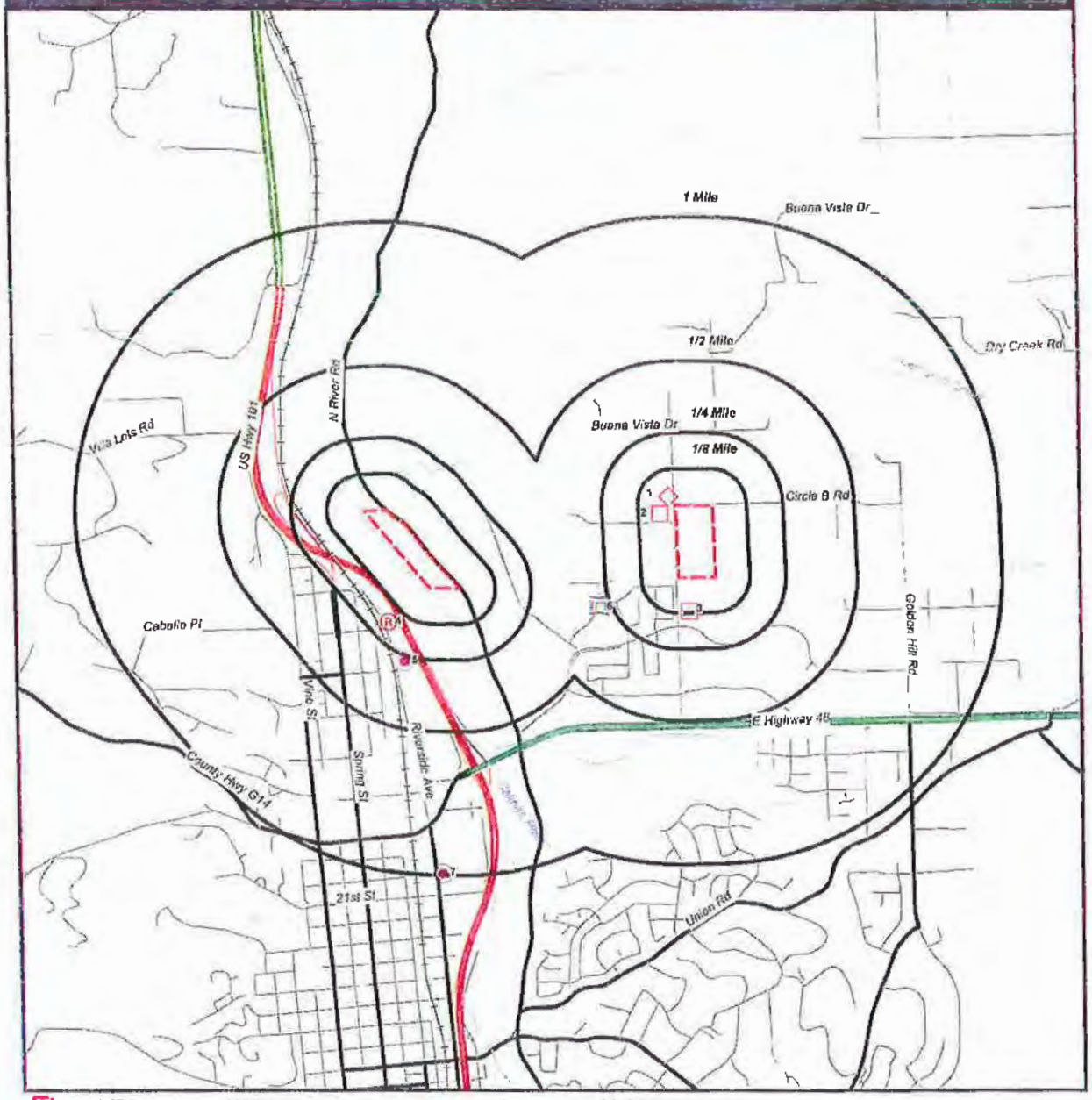
JOB #: 76307 - 7/17/2008

RADIUS MAP



- TARGET PROPERTY BOUNDARY (TP)
- RCRAG
- CALSITES
- SCH
- HISTUST
- SWRCY

Project #: SL05048-3
Proposed Practice Facility and
College Station
River Oaks Planned Community
Paso Robles, CA

N W E S

0' 1400' 2800' 4200
SCALE: 1" = 2800'

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JOB #: 76307 - 7/17/2008

RADIUS MAP

TARGET PROPERTY BOUNDARY (TP)
RCRAG
CALSITES
SCH
HISTUST
SWRCY

Project #: SL05048-3
Proposed Practice Facility and
College Station
River Oaks Planned Community
Paso Robles, CA

N
W E
S

0' 900' 1800' 2700'
SCALE: 1" = 1800'

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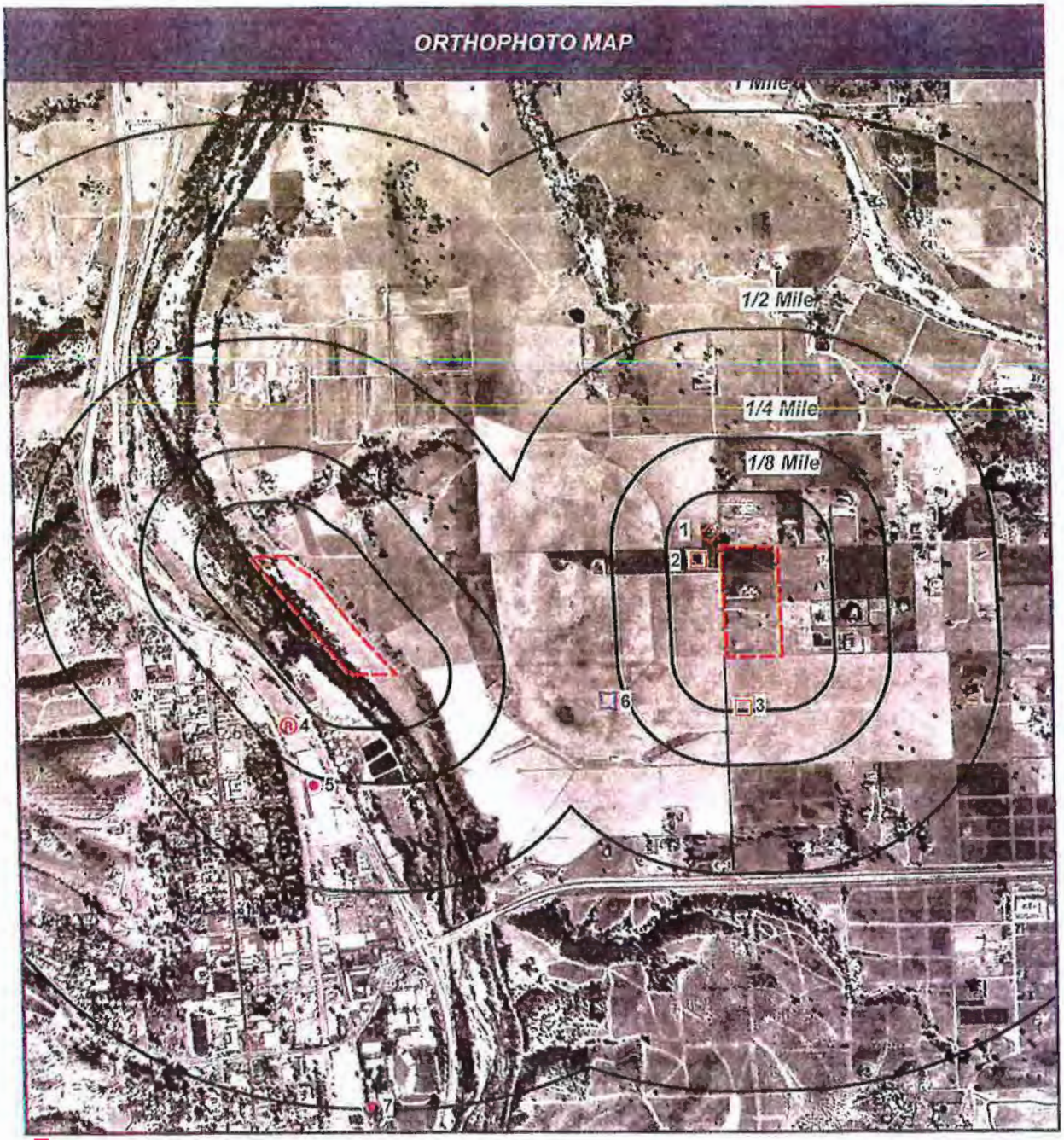
JOB #: 76307 - 7/17/2009

ORTHOPHOTO MAP



TARGET PROPERTY BOUNDARY (TP)
RCRAG
CALSITES
SCH
HISTUST
SWRCY

Project #: SL05048-3
Quadrangle(s): Paso Robles
Source: USGS (09/03/1994)
Proposed Practice Facility and
College Station
River Oaks Planned Community
Paso Robles, CA

N
W E
S

0' 900' 1800' 2700'
SCALE: 1" = 1800'

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JOB #. 76397 - 7/17/2003

REPORT SUMMARY OF LOCATABLE SITES

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
1	HISTUST	0002BA1D	0.040 NW	SUNBANK AIRPORT FACILITY	3061 BUENA VISTA	PASO ROBLES, 93446	1
2	RCRAG	CAD982485070	0.080 NW	APPLIED NAVIGATION DEVICES	3025 BUENA VISTA DR	PASO ROBLES, 93446	2
3	RCRAG	CAR000171108	0.120 S	CUESTA COLLEGE NORTH COUNTY CAMPUS	2800 BUENA VISTA DR	PASO ROBLES, 93446	3
4	PROC	PR0457	0.200 W	PASO ROBLES RECYCLING CENTER	3350 RIVERSIDE AVE	PASO ROBLES, 93446	5
4	SWRCY	RC12542	0.200 W	PASO ROBLES RECYCLING	3350 RIVERSIDE AVE	PASO ROBLES, 93446	6
5	CALSITES	40330001	0.280 W	CTS KEENE INC METALS DIVISION	3230 RIVERSIDE AVE.	PASO ROBLES, 93446	7
5	ENVIROSTOR	40330001	0.280 W	CTS KEENE INC METALS DIVISION	3230 RIVERSIDE AVE.	PASO ROBLES, 93446	8
5	REF	000040330001	0.280 W	CTS KEENE INC METALS DIVISION	3230 RIVERSIDE AVE.	PASO ROBLES, 93446	9
6	SCH	000040010003	0.300 SW	KERMIT KING SCHOOL SITE	BUENA VISTA ROAD	PASO ROBLES, 93447	10
7	CALSITES	40070005	1.000 SW	CALIF MID-STATE FAIR	2198 RIVERSIDE AVE	PASO ROBLES, 93446	11
7	ENVIROSTOR	40070005	1.000 SW	CALIF MID-STATE FAIR	2198 RIVERSIDE AVE	PASO ROBLES, 93446	12

HISTORICAL UNDERGROUND STORAGE TANKS (HISTUST)

MAP ID# 1 Distance from Property: 0.04 mi. NW

SUNBANK AIRPORT FACILITY, 3061 BUENA VISTA, Paso Robles, CA 93446

UNIQUE ID: 0002BA1D

*** NUL ***

PAGE 937 STATE WATER RESOURCES CONTROL BOARD 06/01/88

HAZARDOUS SUBSTANCE STORAGE CONTAINER INFORMATION FOR SAN LUIS OBISPO COUNTY

CONTAINER TYPES: 1,2,3,4,5

(1=FARM MOTOR VEHICLE FUEL TANKS, 2=ALL OTHER PRODUCT TANKS, 3=WASTE TANKS, 4=SUMPS, 5=PITS, PONDS, LAGOONS & OTHERS)

I OWNER
ROY E. COATS
ROCKY CANYON ROAD CRESTON CA 93432

II FACILITY

	MAILING ADDRESS / TOWNSHIP/RANGE/SECTION	DEALER/FOREMAN/SUPERVISOR / TELEPHONE	TYPE OF BUSINESS / NO. OF CONTAINERS
SUNBANK AIRPORT FACILITY 3061 BUENA VISTA PASO ROBLES CA 93446	3061 BUENA VISTA PASO ROBLES CA 93446	(805) 239-0202	AIRCRAFT HANGAR 1

CROSS STREET :
HANGAR WAY

III 24-HR. CONTACT PERSON / TELEPHONE
DAY: WARD VOORHEES (805) 238-2840 NIGHT: AL SPANG (805) 239-3368

********** OWNER ASSIGNED CONTAINER NUMBER: 04 ********** STATE BOARD ASSIGNED CONTAINER ID NUMBER: 0000004222001 **********

IV DESCRIPTION
A. CONTAINER TYPE : TANK
B. MANUFACTURER/YR OF MFG:
C. YEAR INSTALLED : 1983
D. CAPACITY (GALLONS) : 10,000
E. REPAIRS : NONE IF YES WHEN :
F. CURRENTLY USED : YES IF NO, YEAR OF LAST USE:
G. STORED : PRODUCT
H. MOTOR VEHICLE FUEL/WASTE OIL : YES CONTAINS: DIESEL

IS CONTAINER LOCATED ON A FARM : NO

V CONTAINER CONSTRUCTION
A. THICKNESS: B. VAULTING: NON-VAULTED C. WALLING: UNKNOWN
D. MATERIAL : CARBON STEEL
E. LINING : UNLINED
F. WRAPPING : UNKNOWN

VI PIPING
A. ABOVEGROUND PIPING : B. UNDERGROUND PIPING : GRAVITY
C. REPAIRS : NONE IF YES, YEAR OF MOST RECENT REPAIR:

VII LEAK DETECTION
VISUAL

URE TEST COMPOSITION OF SUBSTANCES CURRENTLY STORED IN CONTAINER
12034 DIESEL MOTOR VEHICLE FUEL

*** 006 ***

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RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR (RCRAG)

MAP ID# 2 Distance from Property: 0.06 mi. NW

FACILITY INFORMATION

EPA ID#: CAD982485070
NAME: APPLIED NAVIGATION DEVICES
ADDRESS: 3025 BUENA VISTA DR
PASO ROBLES, CA 93446
CONTACT NAME: ENVIRONMENTAL MANAGER
CONTACT ADDRESS: 3025 BUENA VISTA DR
PASO ROBLES, CA 93446
CONTACT PHONE: (805)239-9910
NON-NOTIFIER: NOT A NON-NOTIFIER

OWNER TYPE: PRIVATE
OWNER NAME: APPLIED TECHNOLOGY ASSOC
OPERATOR TYPE: PRIVATE
OPERATOR NAME: NOT REQUIRED

INDUSTRY CLASSIFICATION (NAICS) - NO NAICS INFORMATION REPORTED

ACTIVITY INFORMATION

GENERATOR STATUS: SMALL QUANTITY GENERATOR
SUBJECT TO CORRECTIVE ACTION UNIVERSE: NO
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: NO
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: NO
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: NO
CORRECTIVE ACTION WORKLOAD UNIVERSE: NO

IMPORTER: UNKNOWN
MIXED WASTE GENERATOR: UNKNOWN
RECYCLER: NO
TRANSPORTER: NO
ONSITE BURNER EXEMPTION: UNKNOWN
FURNACE EXEMPTION: UNKNOWN
USED OIL REFINER: NO
USED OIL TRANSFER FACILITY: NO
OFF-SITE WASTE RECEIPT: UNKNOWN

UNDERGROUND INJECTION: NO
UNIVERSAL WASTE DESTINATION FACILITY: NOT REPORTED
TRANSFER FACILITY: UNKNOWN
USED OIL FUEL BURNER: NO
USED OIL PROCESSOR: NO
USED OIL FUEL MARKETER TO BURNER: NO
SPECIFICATION USED OIL MARKETER: NO
USED OIL TRANSPORTER: NO

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS - NO EVALUATIONS REPORTED -

VIOLATIONS - NO VIOLATIONS REPORTED -

ENFORCEMENTS - NO ENFORCEMENTS REPORTED -

HAZARDOUS WASTE – NO HAZARDOUS WASTE INFORMATION REPORTED

RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR (RCRAG)

MAP ID# 3 Distance from Property: 0.12 mi. S

FACILITY INFORMATION

EPA ID#: CAR000171108
NAME: CUESTA COLLEGE NORTH COUNTY CAMPUS
ADDRESS: 2800 BUENA VISTA DR
PASO ROBLES, CA 93446
CONTACT NAME: PETER J SYSAK
CONTACT ADDRESS: PO BOX 8106
SAN LUIS OBISPO, CA 93403
CONTACT PHONE: (805)546-6320
NON-NOTIFIER: NOT A NON-NOTIFIER

OWNER TYPE: DISTRICT
OWNER NAME: SAN LUIS OBISPO CNTY COMMUNITY COLLEGE
OPERATOR TYPE: PRIVATE
OPERATOR NAME: PETER J SYSAK

INDUSTRY CLASSIFICATION (NAICS)

61121 - JUNIOR COLLEGES

ACTIVITY INFORMATION

GENERATOR STATUS: SMALL QUANTITY GENERATOR
SUBJECT TO CORRECTIVE ACTION UNIVERSE: NO
TDSFs POTENTIALLY SUBJECT TO CORRECTIVE ACTION UNDER 3004 (u)/(v) UNIVERSE: NO
TDSFs ONLY SUBJECT TO CORRECTIVE ACTION UNDER DISCRETIONARY AUTHORITIES UNIVERSE: NO
NON TSDFs WHERE RCRA CORRECTIVE ACTION HAS BEEN IMPOSED UNIVERSE: NO
CORRECTIVE ACTION WORKLOAD UNIVERSE: NO

IMPORTER: NO
MIXED WASTE GENERATOR: NO
RECYCLER: NO
TRANSPORTER: NO
ONSITE BURNER EXEMPTION: NO
FURNACE EXEMPTION: NO
USED OIL REFINER: NO
USED OIL TRANSFER FACILITY: NO
OFF-SITE WASTE RECEIPT: UNKNOWN

UNDERGROUND INJECTION: NO
UNIVERSAL WASTE DESTINATION FACILITY: NO
TRANSFER FACILITY: NOT REPORTED
USED OIL FUEL BURNER: NO
USED OIL PROCESSOR: NO
USED OIL FUEL MARKETER TO BURNER: NO
SPECIFICATION USED OIL MARKETER: NO
USED OIL TRANSPORTER: NO

COMPLIANCE, MONITORING AND ENFORCEMENT INFORMATION

EVALUATIONS - NO EVALUATIONS REPORTED -

VIOLATIONS - NO VIOLATIONS REPORTED -

ENFORCEMENTS - NO ENFORCEMENTS REPORTED -

HAZARDOUS WASTE

D001 IGNITABLE WASTE

D002 CORROSIVE WASTE

F001 THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE,TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE ANDCHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

F002 THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE,TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE,CHLOROBENZENE,

1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001,F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

LISTING OF CERTIFIED PROCESSORS (PROC)

MAP ID# 4 Distance from Property: 0.20 mi. W

SITE INFORMATION

ID#: PR0457
NAME: PASO ROBLES RECYCLING CENTER
ADDRESS: 3350 RIVERSIDE AVE
CITY: PASO ROBLES
STATE: CA
ZIP: 93446
COUNTY: SAN LUIS OBISPO

SITE DETAILS

CERTIFICATION DATE: 09/25/07
OPERATIONAL DATE: 11/01/07
DECERTIFICATION DATE: NOT REPORTED
PROCESSOR PHONE: (805) 238-4678
GLASS BEVERAGE CONTAINERS REDEEMED: ACCEPTED
ALUMINUM BEVERAGE CONTAINERS REDEEMED: ACCEPTED
PLASTIC BEVERAGE CONTAINERS REDEEMED: ACCEPTED
NON REDEEMABLE GLASS : NOT ACCEPTED
OTHER MATERIAL BEVERAGE CONTAINERS REDEEMED: ACCEPTED
NEWSPAPER: NOT ACCEPTED
CARDBOARD: NOT ACCEPTED
WHITE OFFICE PAPER: NOT ACCEPTED
COMPUTER PAPER: NOT ACCEPTED
OTHER ALUMINUM METAL: NOT ACCEPTED
SCRAP METALS: NOT ACCEPTED
AUTO BATTERIES: NOT ACCEPTED
USED OIL: NOT ACCEPTED
OTHER PLASTIC: NOT ACCEPTED
OTHER MATERIALS: NOT ACCEPTED

RECYCLING CENTERS (SWRCY)

MAP ID# 4 Distance from Property: 0.20 mi. W

SITE INFORMATION

ID#: **RC12542**
NAME: **PASO ROBLES RECYCLING**
ADDRESS: **3350 RIVERSIDE AVE**
CITY: **PASO ROBLES**
STATE: **CA**
ZIP: **93446**
COUNTY: **SAN LUIS OBISPO**

SITE DETAILS

CERTIFICATION STATUS: **OPERATONAL**
CERTIFICATION DATE: **03/21/05**
OPERATIONAL DATE: **04/01/05**
CEASED DATE: **STILL OPERATING**
FACILITY PHONE: **(805) 238-4678**
GLASS BEVERAGE CONTAINERS REDEEMED: **ACCEPTED**
ALUMINUM BEVERAGE CONTAINERS REDEEMED: **ACCEPTED**
PLASTIC BEVERAGE CONTAINERS REDEEMED: **ACCEPTED**
BI-METAL BEVERAGE CONTAINERS REDEEMED: **ACCEPTED**
OTHER MATERIAL BEVERAGE CONTAINERS REDEEMED: **NOT ACCEPTED**

CALSITES DATABASE (CALSITES)

MAP ID# 5 Distance from Property: 0.28 mi. W

FACILITY INFORMATION

ID#: 40330001

NAME: CTS KEENE INC METALS DIVISION

ADDRESS: 3230 RIVERSIDE AVE.
PASO ROBLES, CA

STATUS (DATE): PROPERTY/SITE REFERRED TO RWQCB (01/01/1992)

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:

MANU - PRIMARY METAL INDUSTRIES

ACCESS TO SITE: NOT REPORTED

GROUNDWATER CONTAMINATION: NOT REPORTED

COMMENTS

FACILITY IDENTIFIED INDUSTRIAL WASTE HAULERS SURVEY INSPECTION(OTHER) BSK & ASSOCIATES: TCE IN SHALLOW GROUND WATER. POSSIBLE PLUME UNDER FACILITY AND OFFSITE. SITE SCREENING DONE PENDING RWQCB ACTION (GW MONITORING)

ENVIROSTOR CLEANUP SITES (ENVIROSTOR)

MAP ID# 5 Distance from Property: 0.28 mi. W

SITE INFORMATION

ID#: 40330001 ASSESSOR'S PARCEL #: NONE SPECIFIED
NAME: CTS KEENE INC METALS DIVISION
ADDRESS: 3230 RIVERSIDE AVE.
PASO ROBLES, CA 93446
COUNTY: SAN LUIS OBISPO
SITE SIZE (ACRES): NOT REPORTED
LEAD AGENCY: NONE SPECIFIED
DTSC PROJECT MANAGER: NOT REPORTED
DTSC SUPERVISOR: REFERRED - NOT ASSIGNED
DTSC DIVISION BRANCH: SACRAMENTO
NPL LISTED: NO RESTRICTED LAND USE: NO
SITE TYPE: HISTORICAL - * HISTORICAL

SITE TYPE DESCRIPTION

HISTORICAL: IDENTIFIES SITES FROM AN OLDER DATABASE WHERE NO SITE TYPE WAS IDENTIFIED. MOST OF THESE SITES HAVE A STATUS OF REFERRED OR NO FURTHER ACTION. DTSC IS WORKING TO CLEAN UP THIS DATA BY IDENTIFYING AN APPROPRIATE SITE TYPE FOR EACH "HISTORIC" SITE.

DTSC's CURRENT INVOLVEMENT AT SITE (as of 1992-01-15)

REFER: RWQCB -- REFERRED: RWQCB: IDENTIFIES SITES THAT, BASED ON LIMITED INFORMATION AVAILABLE TO DTSC, APPEAR TO BE MORE APPROPRIATELY ADDRESSED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS (RWQCB).

PAST USE/S THAT CAUSED THE CONTAMINATION

NONE SPECIFIED

CONFIRMED CONTAMINANTS OF CONCERN

NONESPECIFIED -

REFERRED TO ANOTHER LOCAL OR STATE AGENCY (REF)

MAP ID# 5 Distance from Property: 0.28 mi. W

ID#: 000040330001
NAME: CTS KEENE INC METALS DIVISION
ADDRESS: 3230 RIVERSIDE AVE.
PASO ROBLES, CA 93446
COUNTY: SAN LUIS OBISPO
DTSC BRANCH: CENTRAL CALIFORNIA
REGIONAL WATER QUALITY BOARD: NOT REPORTED
LEAD AGENCY: N/A
STATUS: 01/15/1992 - PROPERTY/SITE REFERRED TO RWQCB
SITE TYPE: N/A
STANDARD INDUSTRIAL CLASSIFICATION: MANU - PRIMARY METAL INDUSTRIES
NPL: NOT REPORTED
STAFF: NOT REPORTED
SITE ACCESS: NOT REPORTED
CORTESE LISTING: NOT REPORTED
HAZARD RANKING SCORE: NOT REPORTED
HAZARD RANKING DATE: NOT REPORTED
GROUNDWATER CONTAMINATION: NOT REPORTED
CAUSE OF RELEASE OR POTENTIAL FOR RELEASE OF A HAZARDOUS SUBSTANCE:
NOT REPORTED
COMMENTS BY DTSC STAFF :
01191981
FACILITY IDENTIFIED INDUSTRIAL WASTE HAULERS SURVEY
05091988
SITE SCREENING DONE. PENDING RWQCB ACTION (GROUNDWATER MONITORING).
06011987
INSPECTION(OTHER) BSK & ASSOCIATES: TCE IN SHALLOW GROUND WATER. POSSIBLE PLUME UNDER FACILITY AND OFFSITE.

PROJECTED ACTIVITIES TO BE COMPLETED AT SITE:

COMPLETION DATE: 01/19/1981
ACTIVITY: DISC
NAME: DISCOVERY

COMPLETION DATE: 05/09/1988
ACTIVITY: SS
NAME: SITE SCREENING

SCHOOL PROPERTY EVALUATIONS (SCH)

MAP ID# 6 Distance from Property: 0.30 mi. SW

ID#: **000040010003**
NAME: **KERMIT KING SCHOOL SITE**
ADDRESS: **BUENA VISTA ROAD**
PASO ROBLES, CA 93447
COUNTY: **SAN LUIS OBISPO**
DTSC BRANCH: **SCHOOL EVALUATION**
REGIONAL WATER QUALITY BOARD: **NOT REPORTED**
LEAD AGENCY: **DEPT OF TOXIC SUBSTANCES CONTROL**
STATUS: **10/04/1999 - NO ACTION - FOR CALMORTGAGE ONLY**
SITE TYPE: **PROPOSED SCHOOL SITE PROPERTY**
STANDARD INDUSTRIAL CLASSIFICATION: **AGRICULTURAL PRODUCTION - CROPS**
NPL: **NOT REPORTED**
STAFF: **SKARINEN**
SITE ACCESS: **NOT REPORTED**
CORTESE LISTING: **NOT REPORTED**
HAZARD RANKING SCORE: **NOT REPORTED**
HAZARD RANKING DATE: **NOT REPORTED**
GROUNDWATER CONTAMINATION: **NOT REPORTED**
CAUSE OF RELEASE OR POTENTIAL FOR RELEASE OF A HAZARDOUS SUBSTANCE:
THIS SITE HAS BEEN USED FOR DRY FARMING FROM 1949 TO 1999.
COMMENTS BY DTSC STAFF :
10041999
PHSE1 - PURSUANT TO AN AGREEMENT BETWEEN THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC) AND THE CALIFORNIA DEPARTMENT OF EDUCA- TION, DTSC'S SITE MITIGATION PROGRAM COMPLETED A REVIEW OF A PHASE I ENVIRONMENTAL ASSESSMENT AND HAS DETERMINED THAT NO ACTION IS NECESSARY.
PROJECTED ACTIVITIES TO BE COMPLETED AT SITE:

COMPLETION DATE	ACTIVITY	NAME
10/04/1999	PHSE1	PHASE 1 - CALMORTGAGE AND SCHOOL SITE PROPERTIES

CALSITES DATABASE (CALSITES)

MAP ID# 7 Distance from Property: 1.00 mi. SW

FACILITY INFORMATION

ID#: 40070005

NAME: CALIF MID-STATE FAIR

ADDRESS: 2198 RIVERSIDE AVE
PASO ROBLES, CA

STATUS (DATE): VOLUNTARY CLEANUP AGREEMENT COMPLETE (09/09/1995)

STANDARD INDUSTRIAL CLASSIFICATION BELIEVED TO BE CAUSE OF (POTENTIAL) CONTAMINATION:

AGRICULTURAL SERVICES

ACCESS TO SITE: NOT REPORTED

GROUNDWATER CONTAMINATION: UNKNOWN

BACKGROUND

THE WORK IS BEING DONE UNDER AN INTERAGENCY AGREEMENT AND ASSOCIATED AMENDMENTS. NO ORDERS ISSUED AND NO OTHER ACTIVITIES ANTICIPATED. FAIRGROUNDS. UST THAT CONTAINED GASOLINE. NO RECEPTORS, NO PATHWAYS BECAUSE NO RELEASE DETECTED. SITE IS CLOSED.

ENVIROSTOR CLEANUP SITES (ENVIROSTOR)

MAP ID# 7 Distance from Property: 1.00 mi. SW

SITE INFORMATION

ID#: **40070005** ASSESSOR'S PARCEL #: **NONE SPECIFIED**
NAME: **CALIF MID-STATE FAIR**
ADDRESS: **2198 RIVERSIDE AVE**
PASO ROBLES, CA 93446
COUNTY: **SAN LUIS OBISPO**
SITE SIZE (ACRES): **NOT REPORTED**
LEAD AGENCY: **NONE SPECIFIED**
DTSC PROJECT MANAGER: **NOT REPORTED**
DTSC SUPERVISOR: *** RMCJUNKI**
DTSC DIVISION BRANCH: **SACRAMENTO**
NPL LISTED: **NO** RESTRICTED LAND USE: **NO**
SITE TYPE: **VOLUNTARY CLEANUP - VOLUNTARY CLEANUP**

SITE TYPE DESCRIPTION

VOLUNTARY CLEANUP: IDENTIFIES SITES WITH EITHER CONFIRMED OR UNCONFIRMED RELEASES, AND THE PROJECT PROPONENTS HAVE REQUESTED THAT DTSC OVERSEE EVALUATION, INVESTIGATION, AND/OR CLEANUP ACTIVITIES AND HAVE AGREED TO PROVIDE COVERAGE FOR DTSC'S COSTS.

DTSC's CURRENT INVOLVEMENT AT SITE (as of 1995-09-29)

REFER: RWQCB -- REFERRED: RWQCB: IDENTIFIES SITES THAT, BASED ON LIMITED INFORMATION AVAILABLE TO DTSC, APPEAR TO BE MORE APPROPRIATELY ADDRESSED BY THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARDS (RWQCB).

PAST USE/S THAT CAUSED THE CONTAMINATION

NONE SPECIFIED

CONFIRMED CONTAMINANTS OF CONCERN

NONESPECIFIED -

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem (3/2008)

The EPA modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BF United States Brownfields Management System (1/2008)

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The EPA maintains the activities, including grantee assessment, cleanup and redevelopment, of the various Brownfield grant programs through the Brownfields Management System database.

BRS Biennial Reporting System (1/2003)

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The purpose of this report is to communicate the findings of EPA's Biennial Reporting System (BRS) data collection efforts to the public, government agencies, and the regulated community.
Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations (9/2007)

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

CERCLIS Comprehensive Environmental Response, Compensation & Liability (4/2008)

CERCLIS is the repository for site and non-site specific Superfund information in support of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This database contains an extract of sites that have been investigated or are in the process of being investigated for potential environmental risk.

DNPL Delisted National Priorities List (4/2008)

This database includes U.S. Environmental Protection Agency (EPA) Final National Priorties List sites where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

DOCKETS Epa Docket Data (12/2005)

EPA Docket data lists Civil Case Defendents, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards all by facility and geographically.

DOD Department Of Defense Sites (12/2005)

This information originates from the National Atlas of the United States, publication date October 2005. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

EC Federal Engineering Controls (7/2007)

A listing of site locations where Engineering Controls are in effect, such as a cap, barrier, or other device engineering to prevent access, exposure, or continued migration of contamination. Used in conjunction with Institutional Controls.

ERNS Emergency Response Notification System (12/2007)

This database contains data on reported releases of oil and hazardous substances. The data comes from spill reports made to the EPA, U.S. Coast Guard, the National Response Center and/or the Department of Transportation.

FRS Facility Registry System (4/2008)

The EPA's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

FUDS Formerly Used Defense Sites (8/2007)

The 2006 FUDS inventory includes properties previously owned or leased to the United States and under Secretary of Defense jurisdiction. The remediation of these properties is the responsibility of the Department of Defense.

HMIRS Hazardous Materials Incident Reporting System (12/2007)

The HMIRS database contains unintentional hazardous materials release information reported to the US Department of Transportation.

ICIS Integrated Compliance Information System (formerly Dockets) (3/2008)

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal EPA enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

LUCIS Land Use Control Information System (9/2006)

The LUCIS database is maintained by the US Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System (4/2007)

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to Nuclear Regulatory Commission (NRC) licensing requirements.

NFRAP No Further Remedial Action Planned- Cerclis Archives (2/2008)

This database includes sites, which have been determined by the EPA, following preliminary assessment, to no longer pose a significant risk or require further activity under CERCLA. After initial investigation, no contamination was found, contamination was quickly removed or contamination was not serious enough to require Federal Superfund action or NPL consideration.

NLRRCRAC No Longer Regulated Rcra Corrective Action Facilities (3/2008)

This database includes RCRA Corrective Action facilities that are no longer regulated by the EPA or do not meet other RCRA reporting requirements.

NLRRCRAG No Longer Regulated Rcra Generator Facilities (3/2008)

This database includes RCRA Generator facilities that are no longer regulated by the EPA or do not meet other RCRA reporting requirements. This listing includes facilities that formerly generated hazardous waste.

NLRRCRAT No Longer Regulated Rcra Non-corracts Tsd Facilities (3/2008)

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the EPA or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

NPDES National Pollutant Discharge Elimination System (4/2007)

Information in this database is extracted from the (PCS) Water Permit Compliance System database which is used by EPA to track surface water permits issued under the Clean Water Act.

NPL National Priorities List (4/2008)

This database includes U.S. Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

ODI Open Dump Inventory (6/1985)

Information on facilities or sites where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 6944 of the Solid Waste Disposal Act (42 U.S.C. 6941 et seq.) and which is not a facility for disposal of hazardous waste.

PADS Pcb Activity Database (12/2007)

The PCB Activity Database System (PADS) is used by the EPA to monitor the activities of polychlorinated biphenyls (PCB) handlers.

PNPL Proposed National Priorities List (4/2008)

This database contains sites proposed to the National Priorities List (NPL) in the Federal Register. The EPA investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action (3/2008)

This database includes hazardous waste sites listed with corrective action activity in the RCRAInfo system. The Corrective Action Program requires owners or operators of RCRA facilities (or treatment, storage, and disposal facilities) to investigate and cleanup contamination in order to protect human health and the environment. The EPA defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RCRAG Resource Conservation & Recovery Act - Generator (3/2008)

This database includes sites listed as generators of hazardous waste (large, small, and exempt) in the RCRAInfo system. See RCRA Description page for more information. The EPA defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RCRAT Resource Conservation & Recovery Act - Treatment, Storage & Disposal (3/2008)

This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste in the RCRAInfo system. The EPA defines RCRAInfo as the comprehensive information system which provides access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS).

RODS Record Of Decision System (4/2008)

These decision documents maintained by the U.S. EPA describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

SSTS Section Seven Tracking System (12/2005)

SSTS is the system that EPA uses to track pesticide producing establishments and the amount of pesticides they produce. SSTS records the registration of new establishments and records pesticide production at each establishment. It is a repository for information on the establishments that produce pesticides.

TRI Toxics Release Inventory (12/2006)

This EPA database includes information about releases and transfers of toxic chemicals from manufacturing facilities.

TSCA Toxic Substance Control Act Inventory (12/2002)

The TSCA Chemical Substance Inventory contains information on the production amount of toxic chemicals from each manufacturer and importer site.

ABST Above Ground Storage Tanks (12/2007)

This database contains registered AST facility listings from the State Water Resources Control Board. Since 2006, tanks are required to contain a minimum (even as cumulative) of 1320 gallons to be in the program.

CDL Clandestine Drug Labs (12/2007)

The California Department of Toxic Substance Control (DTSC) maintains this listing of illegal drug laboratories. The DTSC is required by Health and Safety code section 25354.5 to remove hazardous contaminants found at drug lab locations, such as highly volatile organic solvents and semi-volatile organic compounds, corrosive inorganic acids and bases, and any derivatives of the illicit drug. DTSC does not perform additional assessment work beyond standard emergency removal actions and makes no further determination regarding the need for future cleanup work at the emergency removal location. The reported location information may or may not include the actual location of the illegal drug lab.

CHMIRS California Hazardous Material Incident Report System (12/2005)

CHMIRS contains accidental or spill release information on reported hazardous material incidents from 1993 to 2005.

CLEANER Dry Cleaner Facilities (10/2007)

This database includes dry cleaner facilities that have registered EPA identification numbers. These facilities are categorized with one of the following NAICS Codes: 81231 or 81232.

CORTESE Cortese List (11/2002)

This historical listing includes sites designated by the State Water Resources Control Board (LUST), the Integrated Waste Board (SWIS), and the Department of Toxic Substance Control (CALSITES).

DTSCDR Dtsc's Deed Restrictions (5/2008)

The Department of Toxic Substances Control's Deed Restrictions. According to the DTSC, restricted land use indicates whether the site or area within the site has an environmental restriction recorded and/or other institutional control preventing certain types of land use or activities.

DTSCHWT Dtsc's Registered Hazardous Waste Transporters (5/2008)

The Department of Toxic Substances Control's Registered Hazardous Waste Transporters.

EMI Emissions Inventory Data (12/2005)

The Air Resources Board's Emissions Inventory Database contains criteria pollutant data and toxic data on facilities throughout the state of California for the 2005 inventory year.

ENVIROSTOR Envirostor Cleanup Sites (6/2008)

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. Sites where DTSC has made a "No Action Required" determination are not included in this database, as these sites had assessments that revealed no evidence of recognized environmental conditions in connection with the property.

ENVIROSTORPCA Envirostor Permitted And Corrective Action Sites (6/2008)

The Department of Toxic Substances Control (DTSC) has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database contains detailed information on hazardous waste permitted and corrective action facilities. Investigation and cleanup activities at hazardous waste facilities (either Resource Conservation and Recovery Act (RCRA) or State-only) that either were eligible for a permit or received a permit are called "corrective action." These facilities treated stored, disposed and/or transferred hazardous waste.

HISTUST Historical Underground Storage Tanks (12/1987)

The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites, compiled from tank survey and registration information collected at one time between 1984 and 1987. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials.

HWTS Hazardous Waste Tanner Summary (12/2006)

This data is prepared from information extracted from copies of hazardous waste manifests received each year by the Department of Toxic Substances Control. The Hazardous Waste Summary Report (Tanner Report) currently includes manifest data from the 1993 through the 2006 reporting years.

CALSITES Calsites Database (9/2004)

This historical database was maintained by the Department of Toxic Substance Control for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields

site database.

LUST Leaking Underground Storage Tanks (6/2008)

This database is maintained by the State Water Resources Control Board. LUST records contain an inventory of reported leaking underground storage tank incidents.

MWMP California Medical Waste Management Program Facility List

To protect the public and the environment from potential infectious exposure to disease causing agents, the Medical Waste Management Program (MWMP), in the Environmental Management Branch, regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities and medical waste transfer stations. The transporters and transfer stations included on this listing are current as of October 2007, and the off-site treatment facilities listed are current as of June 2007.

NFA No Further Action Determination (7/2005)

NO FURTHER ACTION DETERMINATION - This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health.

NFE Sites Needing Further Evaluation (7/2005)

PROPERTIES NEEDING FURTHER EVALUATION - This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need further assessment.

NPDES National Pollutant Discharge Elimination System Facilities (10/2006)

NPDES permits are required from all facilities that discharge their wastewater from a point source into a waterbody. This database contains all active NPDES facilities.

PROC Listing Of Certified Processors (6/2008)

Listing of Certified Processors that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

REF Referred To Another Local Or State Agency (7/2005)

UNCONFIRMED PROPERTIES - This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.

SCH School Property Evaluations (7/2005)

SCHOOL PROPERTY EVALUATION PROGRAM - This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

SLIC Spills, Leaks, Investigation & Cleanup Recovery Listing (6/2008)

These records are maintained by the California Regional Water Quality Control Board (RWOCB). This list includes contaminated sites that impact groundwater or have the potential to impact ground water.

SWEEPS Statewide Environmental Evaluation And Planning System (10/1994)

The Statewide Environmental Evaluation and Planning System (SWEEPS) contains a historical listing of active and inactive underground storage tank locations from the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials. Refer to CUPA listing for source of current data.

SWIS Solid Waste Information System (6/2008)

These records contain an inventory of solid waste disposal facilities or landfills. These may be active or inactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

SWRCY Recycling Centers (6/2008)

Listing of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program. This list is maintained by the Department of Conservation.

TOXPITS Toxic Pits Cleanup Act Sites (7/1995)

Toxic Pits are sites with possible contamination of hazardous substances where cleanup is necessary. This listing is no longer updated by the State Water Resources Control Board.

USTCUPA Underground Storage Tanks (6/2008)

An underground storage tank is an individual tank or group of tanks that store hazardous substances. Underground storage tanks are completely or considerably below the ground surface. This database contains UST permit data submitted from the Certified Unified Program Agencies (CUPA) directly to the State Water Board Resources Control Board. CUPA's are local agencies that have been certified by the California EPA to implement state environmental programs within the local agency's jurisdiction.

VCP Voluntary Cleanup Program (9/2004)

The California Voluntary Cleanup program provides regulatory oversight by the Department of Toxic Substance Control (DTSC) to project proponents desiring to address mitigation activities at sites which have lower health and/or environmental risk than sites which are currently being addressed by DTSC. Refer to Envirostor database as source of current data.

WMUDS Waste Management Unit Database (1/2000)

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

INDIANRES Indian Reservations (1/2000)

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

LUSTR09 Leaking Underground Storage Tanks On Tribal Lands (5/2008)

Leaking underground storage tanks on Tribal lands located in Region 9 include the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

USTR09 Underground Storage Tanks On Tribal Lands (4/2008)

Underground storage tanks on Tribal lands located in Region 9 include the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ODINDIAN Open Dump Inventory On Tribal Lands (11/2006)

Information on facilities or sites on Tribal lands where solid waste is disposed of which is not a sanitary landfill and meets the criteria promulgated under section 6944 of the Solid Waste Disposal Act (42 U.S.C. 6941 et seq.) and is not a facility for disposal of hazardous waste.

RCRA DESCRIPTIONS

Acronyms

RCRAG - Generator
RCRAT - Treatment, Storage & Disposal (Non-Corracts)
RCRAC - Corrective Action

Generator Types

Large Quantity Generators

- Generate 1,000 kg or more of hazardous waste during any calendar month; or
- Generate more than 1 kg of acutely hazardous waste during any calendar month; or
- Generate more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month; or
- Generate 1 kg or less of acutely hazardous waste during any calendar month, and accumulate more than 1kg of acutely hazardous waste at any time; or
- Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulated more than 100 kg of that material at any time.

Small Quantity Generators

- Generate more than 100 and less than 1000 kilograms of hazardous waste during any calendar month and accumulate less than 6000 kg of hazardous waste at any time; or
- Generate 100 kg or less of hazardous waste during any calendar month, and accumulate more than 1000 kg of hazardous waste at any time.

Conditionally Exempt Small Quantity Generators

- Generate 100 kilograms or less of hazardous waste per calendar month, and accumulate 1000 kg or less of hazardous waste at any time; or
- Generate one kilogram or less of acutely hazardous waste per calendar month, and accumulate at any time:
  - 1 kg or less of acutely hazardous waste; or
  - 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste; or
- Generate 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, or acutely hazardous waste during any calendar month, and accumulate at any time:
  - 1 kg or less of acutely hazardous waste; or
  - 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste.

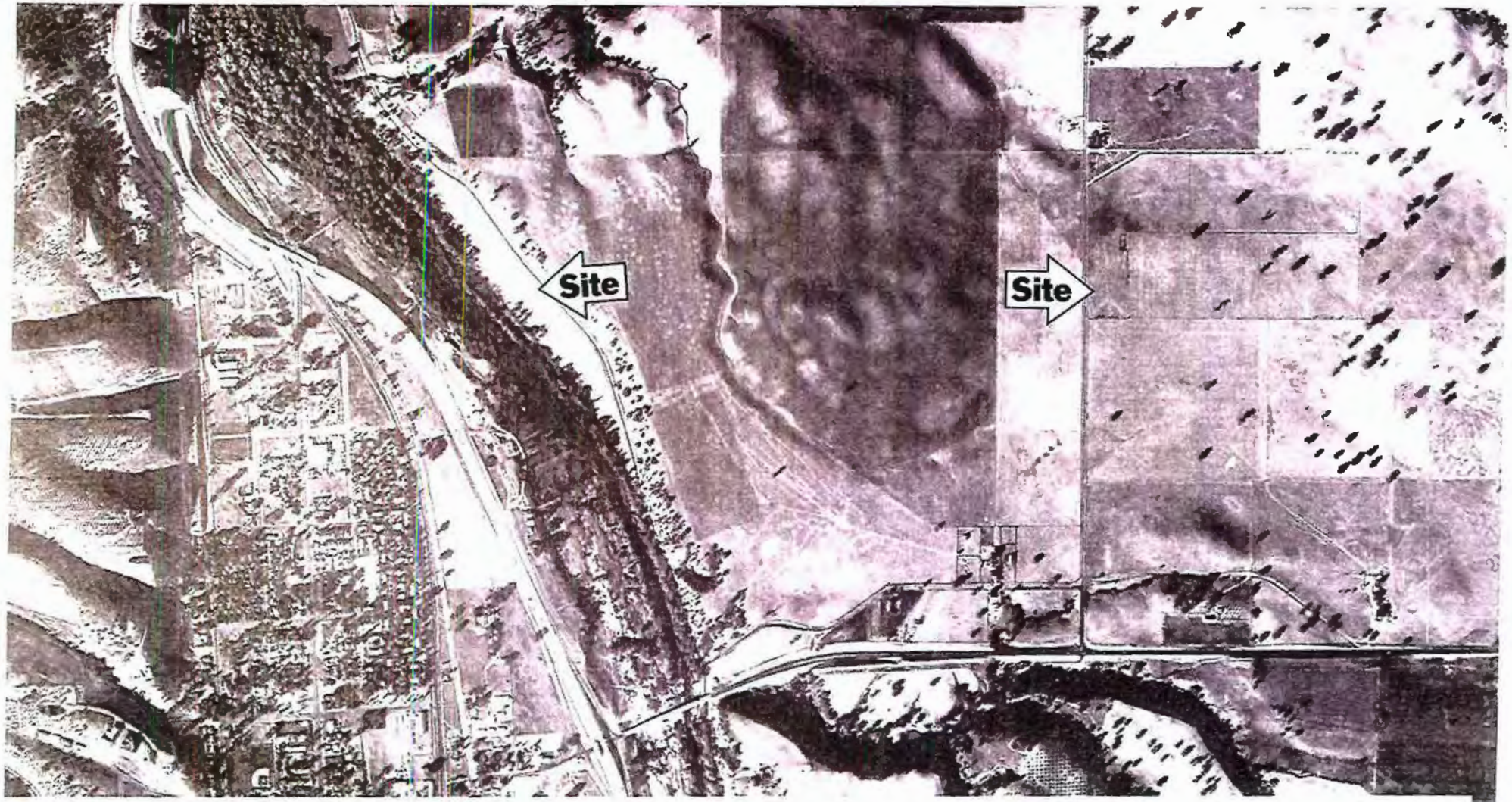
Note: Descriptions also apply to No Longer Regulated RCRA sites
(NLRRCRAG, NLRRCRAT, and NLRRCRAC)

SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: ASCS-USDA
DATE: 1937
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch

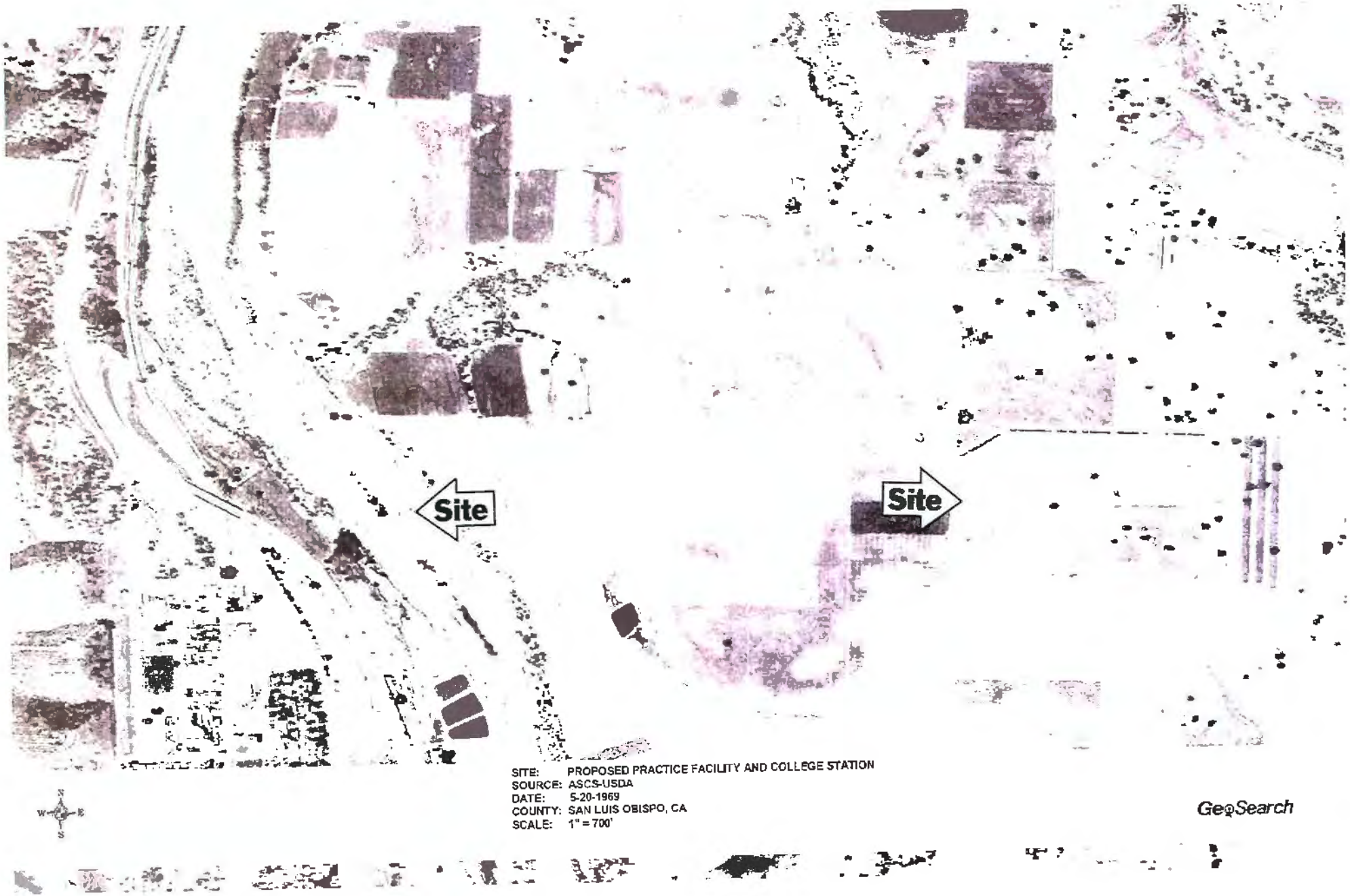
SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: ASCS-USDA
DATE: 4-3-1949
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch



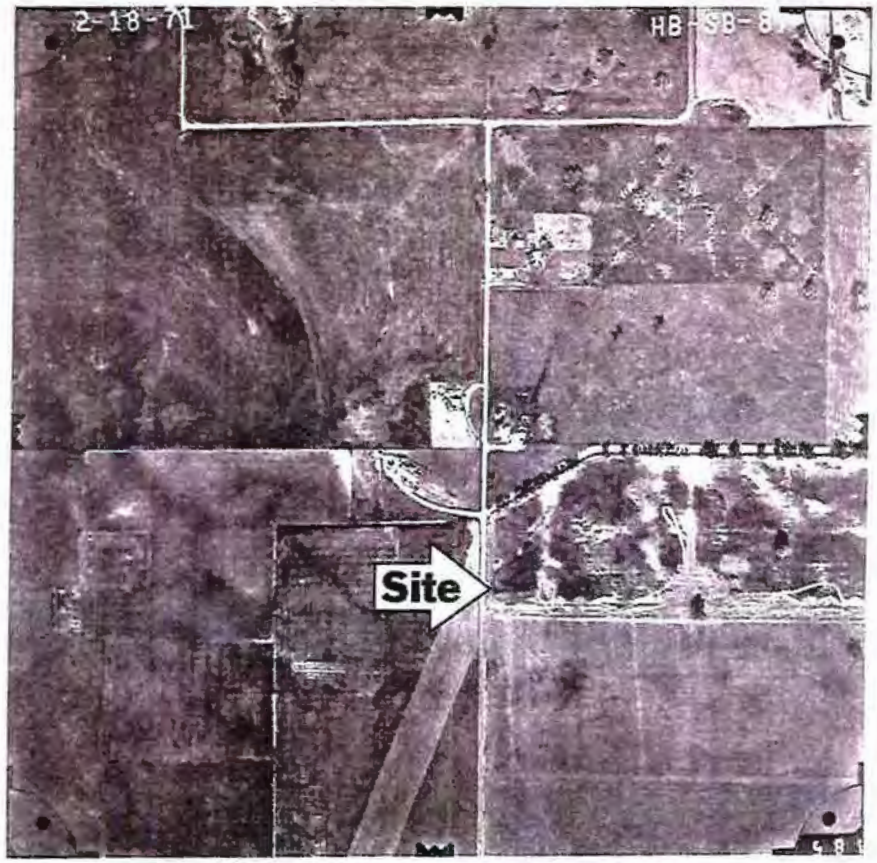
SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: MARK HURD
DATE: 11-6-1959
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch



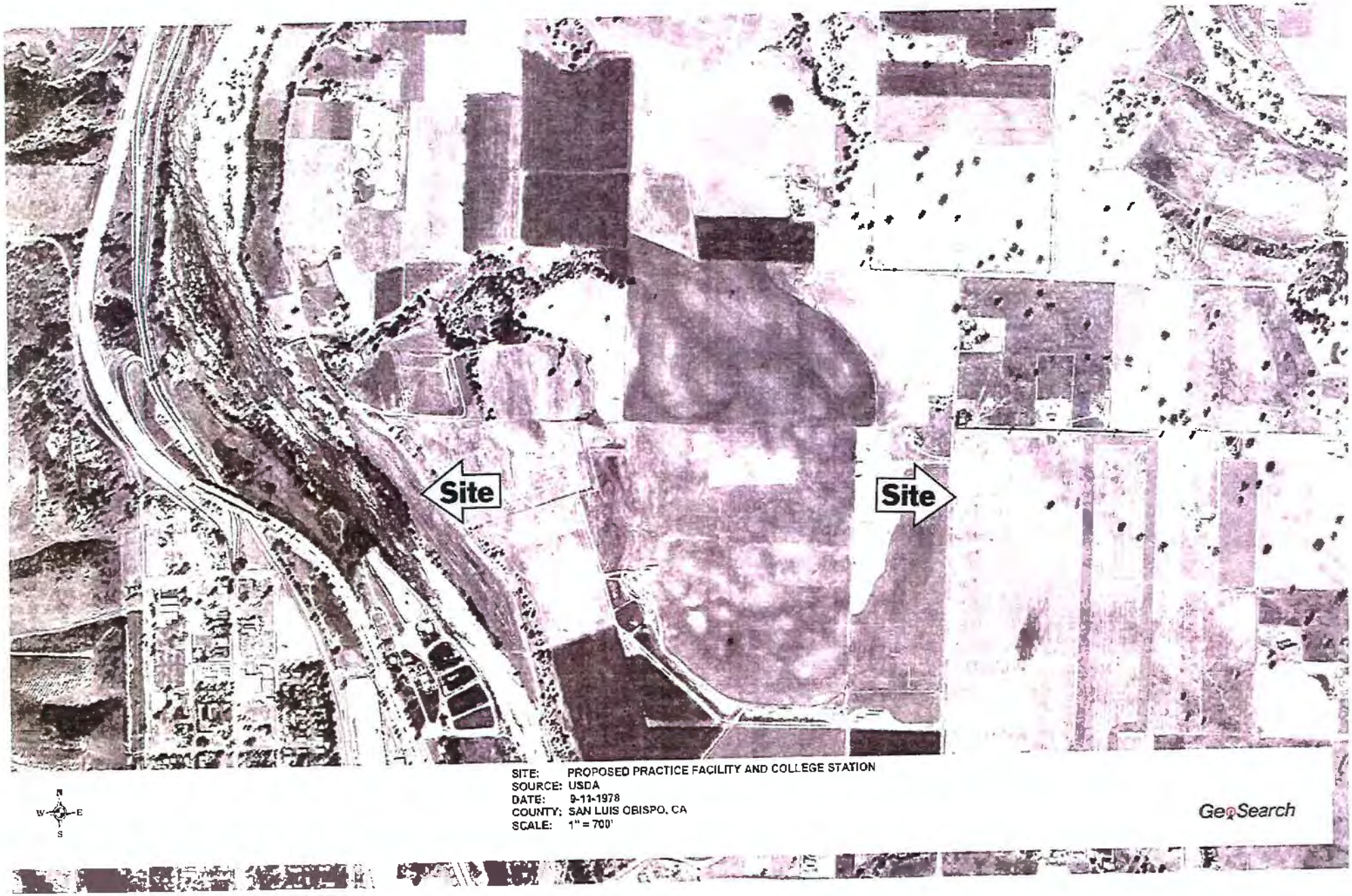
SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: ASCS-USDA
DATE: 5-20-1969
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch



SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: MARK HURD
DATE: 2-18-1971
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700' APPOX.

GeoSearch



SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: USDA
DATE: 9-11-1978
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: USGS
DATE: 6-13-1989
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch

SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: USGS
DATE: 9-3-1994
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch

SITE: PROPOSED PRACTICE FACILITY AND COLLEGE STATION
SOURCE: USGS
DATE: 2005
COUNTY: SAN LUIS OBISPO, CA
SCALE: 1" = 700'

GeoSearch

APPENNDIX B

Site Photographs

Photo 1: Proposed Practice Facility Site

Photo 2: Groundwater Monitoring Well on Adjoining Site to the South

Photo 3: Proposed College Station Site (southern portion)

Photo 4: Proposed College Station Site (central portion)

Photo 5: Proposed College Station Site (northern portion)