



Appendix F

*Preliminary Geotechnical Engineering Report
and Phase I ESA*

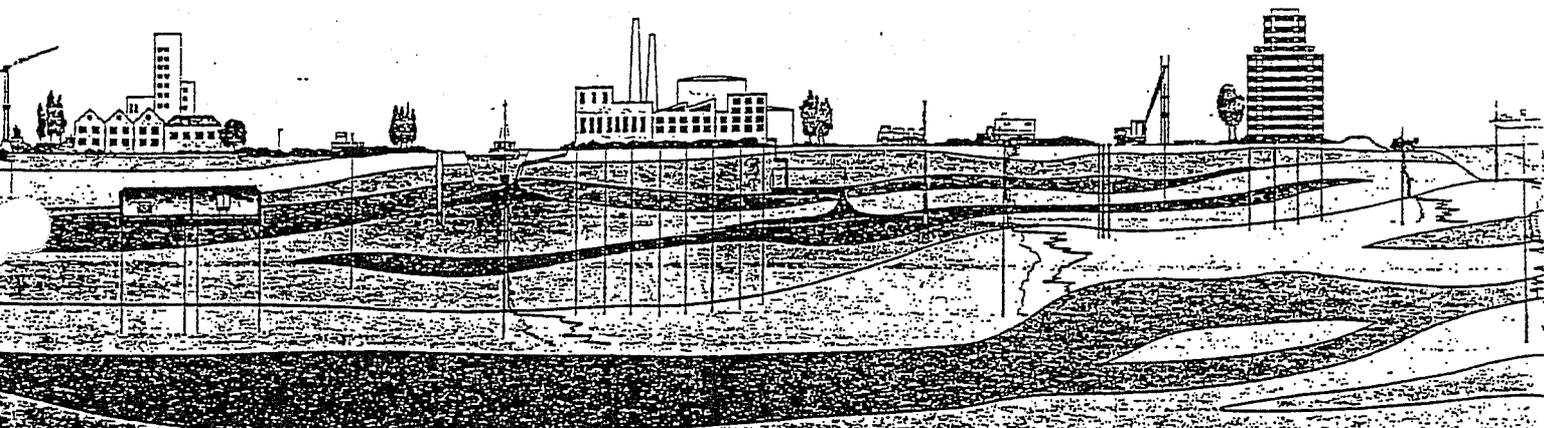
FUGRO WEST, INC.



**TECHNICAL MEMORANDUM DISCUSSING
PRELIMINARY GEOTECHNICAL ENGINEERING
CONSIDERATIONS FOR THE CHANDLER RANCH
DEVELOPMENT IN PASO ROBLES, CALIFORNIA**

Prepared for:
DEL WEBB COMMUNITIES, INC.

October 1995





FUGRO WEST, INC.

1012 Pacific Street, Suite A
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October 27, 1995
Project No. 95-92-8031

Del Webb Communities, Inc.
Post Office Box 29040
6001 North 24th Street
Phoenix, Arizona 85038

Attention: Mr. Sam Colgan

Subject: Technical Memorandum Discussing Preliminary Geotechnical Engineering Considerations for the Chandler Ranch Development in Paso Robles, California

Dear Mr. Colgan:

Fugro is pleased to present herein a summary of some of the preliminary results of our geotechnical engineering study being performed for the Chandler Ranch Development in Paso Robles, California. This memorandum was prepared to provide a summary of what appear to be the primary geotechnical engineering considerations that we anticipate will need to be addressed during: 1) this study, 2) the conceptual planning for development of the site, and 3) subsequent phases of design. This memorandum was prepared in accordance with our Agreement for Geotechnical Services with Del Webb Communities, Inc., effective October 12, 1995.

This memorandum discusses items that, in our opinion, will likely be the primary geotechnical considerations for the project. The discussion of these items, as presented herein, is intended to be relatively brief. We can provide additional input or clarification of these items, if needed. In accordance with our agreement with Del Webb, the results of our field and laboratory testing program and preliminary evaluation are currently being compiled and they will be presented in a preliminary geotechnical engineering report also being prepared for the project.

SUMMARY OF GEOTECHNICAL CONDITIONS

The field exploration program for this study was performed between October 16 and 24, 1995. Field exploration for the project consisted of a program of reconnaissance photogeologic mapping, surficial geologic mapping, drilling of 9 large-diameter bucket-auger borings, drilling of 12 hollow-stem-auger borings, and excavating of 44 backhoe pits at the site (Plate 1 - Subsurface Exploration Map). The soil conditions encountered at the site generally consist of colluvium and older alluvium overlying Pleistocene-age alluvial deposits of the Paso Robles Formation. The Paso Robles Formation is typically composed of weakly indurated silt and clay with sand and



gravel. The older alluvium and colluvium are derived from the underlying Paso Robles Formation, and are similar in lithology. Older and recent landslide deposits are present at several locations within the colluvium and Paso Robles Formation. Although not explored during this phase of site exploration, recent alluvial deposits were observed along Huerhuero Creek, which bounds a portion of the northern end of the site. The approximate distribution of the geologic units is shown on the geologic maps, Plate 2 - Geologic Map, and Plate 3 - Geologic Map of Part of the Paso Robles 15 Minute Quadrangle.

Ground water seepage was encountered in Boring RB-100 at depths of 32 and 49 feet below the existing ground surface. That seepage appeared to be entering the drill hole along shear planes within a landslide. Ground water was not encountered in the other borings or trenches to the maximum depths explored (up to approximately 70 feet below the existing ground surface). We understand from conversations with Chandler Ranch Manager, Mr. Jim Wilcox, that existing wells on the property pump from ground water aquifers that are about 150 feet or deeper below the lower ground elevations at the site. We anticipate that ground water and soil moisture conditions will vary as a result of changes in precipitation, irrigation schedules, site drainage, and other factors. Perched ground water conditions may develop on the site, particularly following periods of heavy precipitation.

Geologic Structure and Faults

The geologic structure of the site consists of a northwest-trending anticlinal fold that passes through the central portion of the site. The anticline is characterized by nearly flat to gently dipping limbs. Bedding attitudes measured at the site typically dip up to about 5 degrees to the northeast or southwest on the limbs of the anticline (Plate 2). Bedding attitudes within the Paso Robles Formation were observed to be as steep as 11 to 13 degrees near the southeastern corner of the property (Plate 2).

Although there are mapped active and potentially active faults in the surrounding region, to our knowledge no faults have been mapped through the project site (Dibblee [1976], San Luis Obispo County Seismic Safety Element [1975], California Division of Mines and Geology Special Publication 42 - Alquist-Priolo Fault Hazards Act). The closest mapped fault is the Huerhuero fault, shown by Dibblee (1976) to follow the general trend of Huerhuero Creek southeast of the project site (Plate 3). Although the Huerhuero fault is not classified as active or potentially active by the San Luis Obispo County Seismic Safety Element (1975), Jennings (1994) indicates that the fault is an "undivided Quaternary fault," a classification of faults that have evidence of displacement within the last 1.6-million years.



GEOLOGIC HAZARDS

We have performed a preliminary evaluation of potential geologic hazards that may impact the site development. A discussion of those potential geologic hazards follows.

Liquefaction

Because of the relatively fine-grained nature of the soils encountered in our onsite exploration and the relatively deep ground water conditions, it appears that the onsite soil materials encountered by our exploration should have a relatively low potential for liquefaction. Although we have not explored them, we suspect that there may be a potential for liquefaction in the recent alluvial deposits located along Huerhuero Creek, if shallow ground water conditions are present there. We understand that Del Webb does not plan to develop in the flood plain area along Huerhuero Creek.

Landslides

Recent and older landslide deposits were identified during our study. Areas of potential landslides and slope instability were initially identified using stereo aerial photographs of the property (Plate 4 - Suspected Landslide Features Map). Black and white, stereo aerial photographs from six different years (1957, 1962, 1963, 1969, 1978, and 1987) were used to perform that initial photogeologic mapping. A few of the suspected landslide features were explored by test pits and drill holes in an effort to verify the existence of the landslide features.

The recent landslides typically appear to be relatively shallow, surficial failures that have occurred within the colluvium and the near-surface portion of the Paso Robles Formation materials. The older landslides generally appear to be relatively deep-seated, rotational slides developed within the Paso Robles Formation. Erosion has subsequently subdued some of the older landslide morphology. A general discussion of slope stability and potential impacts of the mapped landslides is provided below.

Faulting and Ground Motion

On the basis of our literature review and evaluation, the site does not appear to be traversed by active or potentially active faults shown on published maps. The closest mapped fault is the Huerhuero fault (Plate 3). The closest significant fault is the potentially active to active Rinconada fault mapped by Dibblee (1976) about 2 miles west of the site (Plate 3). We estimate that the Rinconada fault may be capable of generating a maximum credible earthquake (MCE) of about $M_w=7.5$ (Mualchin and Jones, 1992). The site is located approximately 20 miles west of the San Andreas fault, which is thought to be capable of generating an MCE of about $M_w=7.5$ to 8.0 (Mualchin and Jones, 1992).



GEOTECHNICAL CONSIDERATIONS

The following presents our preliminary conclusions and recommendations for the proposed development of the site. Our conclusions and recommendations are based on the preliminary findings of our field exploration and laboratory testing program, and on our assessment of geologic hazards that could potentially impact the site.

Grading Considerations

A summary of some of the main geotechnical considerations that we suspect are likely to impact the mass grading for the project follows:

1. Although most of the onsite soils encountered are potentially expansive, it appears that they can be used as compacted fill. Imported fill will likely be needed for use as select material for roadway base, retaining wall backfill, and utility trench backfill.
2. Materials encountered at depth in our explorations were typically at moisture contents greater than the estimated optimum moisture content needed for compaction. As a result of the relatively high moisture content of the soil, portions of the excavated material may need to be aerated or dried prior to being placed as compacted fill.
3. Because of its low density, compressibility, and the inhomogeneity of the material, we recommend that the existing colluvium be removed from areas to receive fill so as to reduce the potential for adverse settlement and/or deformation of those materials. The thickness of the colluvium encountered in our subsurface explorations generally ranged from less than 1 foot up to about 12 feet. On the basis of our subsurface exploration, we suspect that an average depth of 5 feet of colluvium may need to be removed from the proposed fill areas. Additional exploration will be needed to further evaluate the thickness of the colluvium in areas to receive fill.
4. Deep fills that will support residential structures should be designed to reduce the potential for post-construction settlement. Geotechnical factors that can be implemented to reduce post-construction settlements include:
 - Compacting fill materials wet of the optimum moisture content;
 - Removing colluvium and potentially compressible alluvium from areas that are to receive fill materials;
 - Providing higher levels of compaction in the deeper fill materials to help reduce the potential consolidation settlement of the fill materials; and



- Providing a uniform thickness of fill below individual building units to reduce the potential for differential movements.

Generally where clay soil is used to construct deep fills, a higher degree of compaction should be provided in the deeper portions of the fill to reduce the potential for settlement of the fill upon wetting. The shallower fill materials should be compacted to a lower (more normal) degree of compaction to reduce the potential for expansion of the fill upon wetting. For preliminary estimates, we recommend that the upper 10 to 20 feet of the fill should be compacted to a minimum of 90 percent relative compaction, and that fill materials to be placed more than about 20 feet below finished grade should be compacted to at least 95 percent relative compaction.

5. The colluvium, older alluvium, and Paso Robles Formation materials generally consist of relatively stiff to hard clay and soft rock materials with interbedded layers of sand and gravel. In our opinion, those materials are likely to be relatively difficult to excavate using conventional mass grading equipment. Excavation will likely require that scrapers be push-loaded with one or two D8- to D9-sized bulldozers. Ripping of the material in some areas may be needed prior to excavation to break up layers of conglomerate and/or hard or cemented soil prior to excavation.
6. As noted above, the soils encountered by our subsurface exploration generally consist of relatively fine-grained material. It has been our experience that those types of materials can be sensitive to changes in moisture content and could be relatively difficult to compact.
7. As described above, we observed evidence of recent landslide movement at various locations on the property. The recent slides appear to have occurred primarily within the colluvium and within the upper weathered portion of the Paso Robles Formation. During mass grading, efforts should be made to remove the recent slide materials. The normal removal of existing topsoil and colluvium throughout the site (indicated under Item 3) should result in the removal of some of the recent landslide materials. Additional removals probably will be needed to remove the remainder of the surficial landslide materials, but at the present time we do not know how deep they will need to be. For purposes of preliminary estimations we suspect that those additional surficial landslide removals are likely to be less than one-half percent of the 20,000,000 cubic yards of earthwork estimated for the project.
8. Older landslides have also been mapped at various locations over the site, as indicated on Plate 4. Because of the extensive nature of the proposed cut and fill grading, we suspect that many of the older landslides within the interior of the project are likely to be buttressed by the planned mass grading. However, older landslides on slopes



around the periphery of the site or those on slopes that will remain in a natural condition could require additional mitigations. Considerations that should be addressed for mass grading of the site are:

- Caution should be exercised so that excavations do not result in the removal of existing support material from the toes of the slides such that planes of potentially weak material associated with past movement of the landslides are exposed in cuts; and
- Caution should be exercised so that grading does not result in surcharging of the heads of landslide deposits.

Those considerations are likely to be consistent with the approach shown on the Conceptual Grading Plan prepared by Crosby, Mead, Benton & Associates. As indicated on that plan, mass grading would generally result in filling of valleys and that would likely result in the buttressing of the toes of the older landslide deposits. The lowering of hill tops would likely reduce the driving forces of the slide masses. Further evaluation and exploration of older landslide deposits should be performed to provide specific recommendations for mass grading as the project progresses.

9. In our opinion, there is a potential that some of the natural slopes will be potentially unstable if left in their current condition. Potentially unstable slopes are present along the east-facing hillsides that bound the eastern edge of the site along Huerhuero Creek. In planning the development of the site, we recommend that homes not be sited within 50 feet of the tops of relatively steep natural slopes. If homes are to be sited below natural slopes, setbacks and/or debris-deflection walls may be needed to reduce the potential for adverse effects of slope failures on the structures.
10. Because of the generally fine-grained nature of the onsite soils, graded cut- and fill-slopes should be designed at inclinations of 2H:1V (horizontal to vertical) or flatter.
11. Stereo aerial photographs and subsurface exploration suggest that debris flow deposits may be present in the northern portion of the site. Within those areas, loose or potentially compressible materials could be encountered during grading. For example, approximately 10 feet of relatively loose material with voids was encountered in a backhoe test pit excavated in the northwestern corner of the site. That material may have originated as a debris flow from the nearby hillsides. According to the conceptual grading plan, cuts in that area are likely to be deep enough to remove most of the debris flow deposits like those encountered in the backhoe pit. Subsequent phases of exploration should evaluate the potential for debris flows to impact the grading on the site.



12. Zones of trash and debris were observed along selected drainages in the northern portion of the site. Trash and other unsuitable materials should be removed during clearing and grubbing, and prior to placing compacted fill materials.
13. Site grading and drainage swales should be provided so that positive drainage away from foundations, slabs, pavements, and slopes is provided. Water should not be allowed to pond near the structures or flow uncontrolled over slopes. Particular emphasis should be given to the reduction of the potential for drainage water to flow over the east-facing slopes that bound the eastern margin of the property.

Foundation And Floor Slab Design

Foundations and floor slabs should be designed to resist the adverse affects of potentially expansive soil conditions encountered on the site. Expansion index tests that we have performed on selected samples range from 77 to 118, indicating a medium to high potential for expansion. Some of the main geotechnical considerations for foundation design include:

1. Foundation support for the planned single-family, one-story, residential structures probably can be provided by spread footings bearing in compacted fill or in dense undisturbed Paso Robles Formation in cut areas. An allowable bearing pressure of about 1,500 to 2,000 pounds per square foot can likely be used for the design of residential foundations.
2. From the measured expansion indices of the soil encountered, we expect that the building foundation systems probably should have a continuous perimeter footing with a minimum embedment depth of 2 feet below the lowest adjacent grade. Interior footings probably will need to be embedded to at least 1 foot below the lowest adjacent grade. Footings will probably need to be reinforced with at least four number 4 bars, two near the top and two near the bottom of the footings.
3. Pre-moistening of the subgrade and stiffening of floor slabs using steel reinforcement, grade beams, or post-tensioning techniques can be used to reduce the potential for expansive soils to adversely impact floor slab and foundation areas.

Seismic Considerations

The site is within the seismically active central California region where relatively strong earthquakes have occurred in the past and are likely to occur again in the future. Based on Title 24 of the California Code of Regulations, the site is located in Seismic Zone 4. Structures should be designed to at least the minimum standards of Seismic Zone 4.



Pavement Design Considerations

Because of the fine-grained nature of the onsite soils encountered by our exploration, we suspect that pavement-section design will be based on relatively low R-values. Geotechnical considerations that can be evaluated for the preliminary design of pavements include:

1. Assuming a range of traffic indices of 4 to 6 for residential streets, and an R-value of about 10 for clayey subgrade materials, roadway structural sections will likely have an asphaltic concrete thickness of about 0.25 to 0.35 feet, and an aggregate base thickness of about 0.50 to 1.0 feet.
2. In conformance with Caltrans design methods, soils that form the upper 1 foot of the subgrade, as measured below the bottom of the base material, should be compacted to at least 95 percent relative compaction.

Geosynthetically Reinforced Slopes

We understand that geosynthetically reinforced slopes are being considered to allow the construction of steeper slope inclinations than might otherwise be allowable using conventionally graded fill slopes. In our opinion, the main geotechnical considerations for the design of geosynthetically reinforced slopes are as follows:

1. Geosynthetically reinforced slopes often can be used to provide for steeper slope inclinations than can otherwise be achieved using conventional grading techniques. Although all geosynthetically reinforced slopes deform to some extent to develop strength along their reinforcing elements, because of the generally clayey nature of the onsite soils encountered during our site exploration, we expect that even larger deformations are likely to result. Consequently, geosynthetically reinforced slopes may not be suitable for use throughout this project. Because reinforced clayey soils often exhibit long-term creep behavior, we recommend that if Del Webb wants to consider the use of geosynthetically reinforced slopes on this project, they should be used in areas such as golf courses or open-space areas where large deformations can be tolerated. Geosynthetically reinforced clayey slopes should not be used adjacent to structural areas or other areas where large deformations or settlements cannot be tolerated.
2. The faces of slopes inclined at 1H:1V or steeper should be wrapped to reduce the potential for surface erosion and slumping. Wrapping of the slope face can limit landscaping options; however, various landscape components can be added to the facing to provide for landscape treatments.



3. If geosynthetically reinforced slopes as steep as $\frac{1}{2}H:1V$ are desired, imported granular materials may be needed to reduce estimated slope deformations.

Retaining Walls

We understand that retaining wall systems may be needed to provide for grade differences between building pads. We understand that Del Webb is interested in evaluating retaining wall alternatives that may be more conducive to aesthetic treatments than conventional cast-in-place concrete retaining walls. Some retaining wall options that can be considered include:

1. Mechanically stabilized earth (MSE) retaining systems generally consist of precast concrete panels and backfill materials reinforced with metallic or geosynthetic materials. The panels can be purchased with various architectural treatments and designs.
2. Segmental masonry unit (SMU) retaining systems generally consist of masonry units that can be battered or supported by mechanically reinforced backfill. Those types of systems are typically limited to wall heights of about 6 feet, but can be stacked or battered to form planter areas for landscape improvements. Masonry units also can be purchased with various architectural treatments and designs.
3. Crib- or bin-wall type systems generally consist of interconnected concrete elements backfilled with earth materials to form a gravity type retaining system. There are many different gravity-type wall systems that provide for planter-type facing elements.

The number of alternative retaining wall systems presently available is significant. For reasons of either cost or availability other retaining wall options could be considered. We can evaluate other retaining wall alternatives for the project, if requested. An important consideration with alternative retaining wall systems is the amount of ground deformation that often occurs with such systems. We recommend that if alternative retaining wall systems are to be considered, the potential for adverse deformation should be evaluated to confirm that the alternative wall systems are compatible with the proposed adjacent development.

ADDITIONAL SERVICES

As the development of the site progresses, additional geotechnical engineering studies should be performed to further evaluate geotechnical considerations, such as those described in this memorandum, and to provide recommendations for project design. Such services will likely consist of design-level studies, plan and specification review, and construction observation and testing. Design geotechnical studies will be needed to evaluate options for lot development, construction of deep fills, site preparation and grading, and to further evaluate the impact that



potential geologic hazards, such as slope instability, landslides, expansive soils, and earthquakes could have on the project.

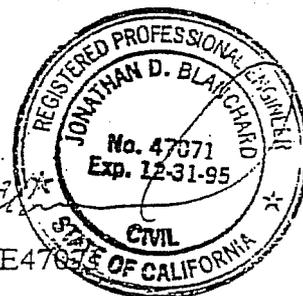
CLOSURE

This memorandum has been prepared for use by Del Webb Communities, Inc., and their authorized agents only. It may not contain sufficient information for other parties or other uses. This memorandum was prepared on the basis of preliminary and limited field exploration, laboratory testing, and engineering evaluations. The professional opinions and conclusions presented in this memorandum are intended to assist Del Webb Communities, Inc., in their evaluation of geotechnical considerations at the site that could potentially impact their proposed development. This memorandum and the drawings contained herein are intended for conceptual planning purposes only; they are not intended to be used for final design or construction.

Please contact the undersigned if you have questions or require additional information.

Sincerely,
FUGRO WEST, Inc.


Jonathan D. Blanchard, CE47871
Project Engineer

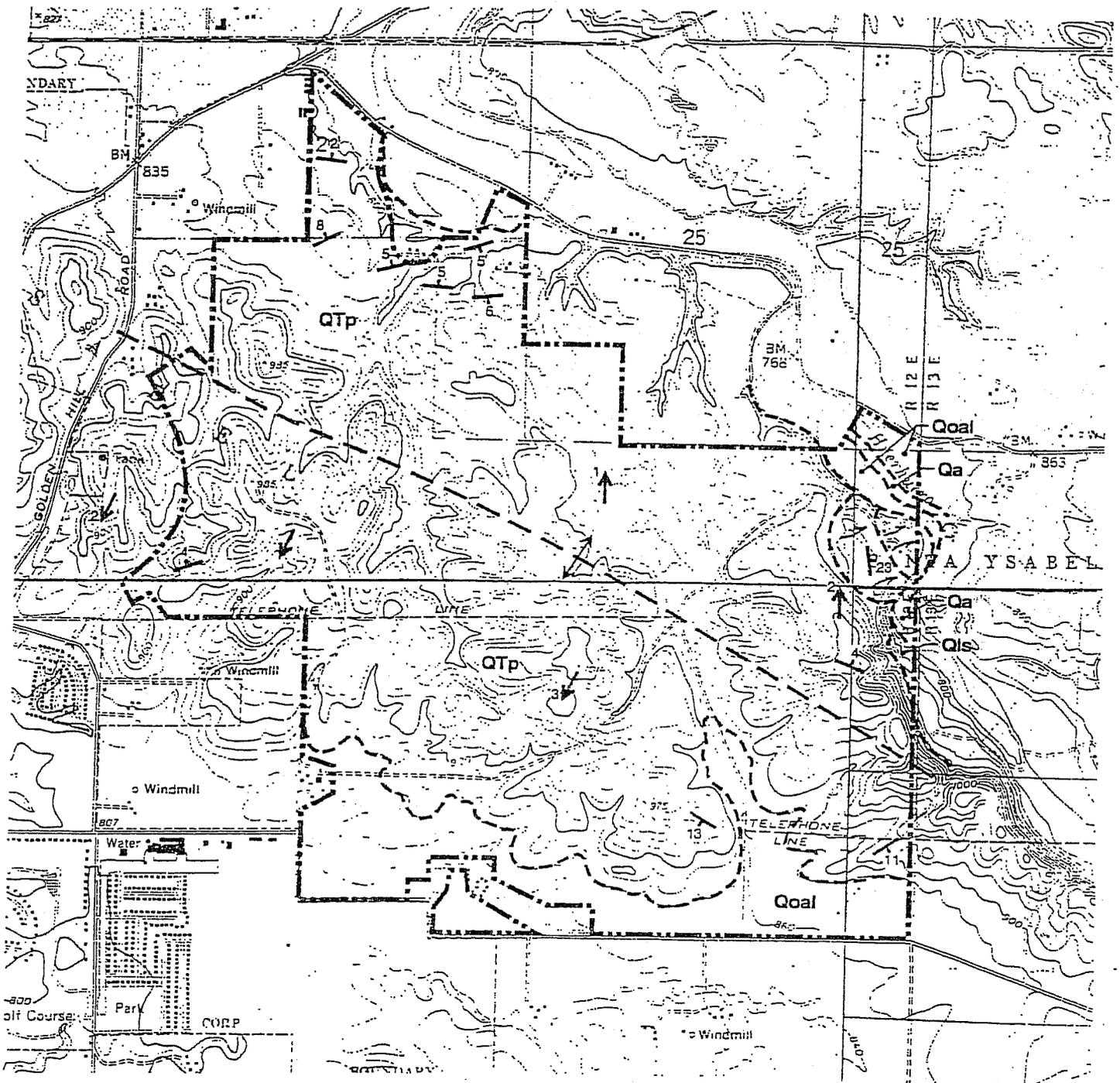



Thomas F. Blake, G.E. 2003., C.E.G. 1062
Principal Engineering Geologist/
Geotechnical Engineer

JDB:TFB:ts

Copies submitted: (3)

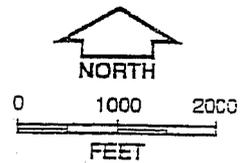
Attachments: Plates 1 through 4



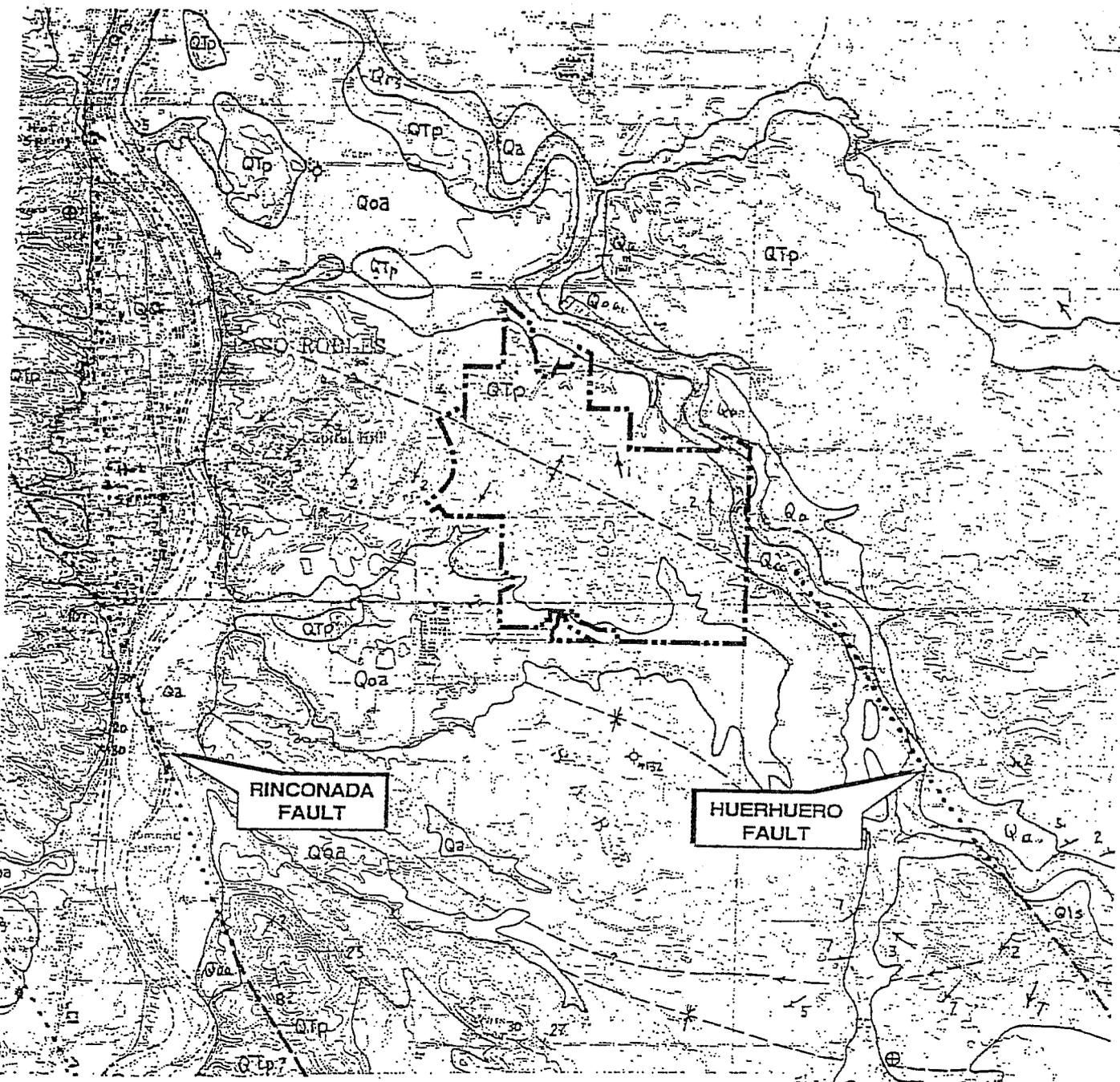
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- Qa** Alluvium
- Qls** Landslide Deposits
- Qoal** Older Alluvium
- QTp** Paso Robles Formation

- Geologic Contact
- Anticlinal Axis
- Strike and Dip of Bedding
- Apparent Dip of Bedding (Dibblee, 1976)



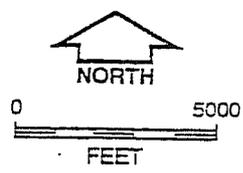
GEOLOGIC MAP
 Chandler Ranch



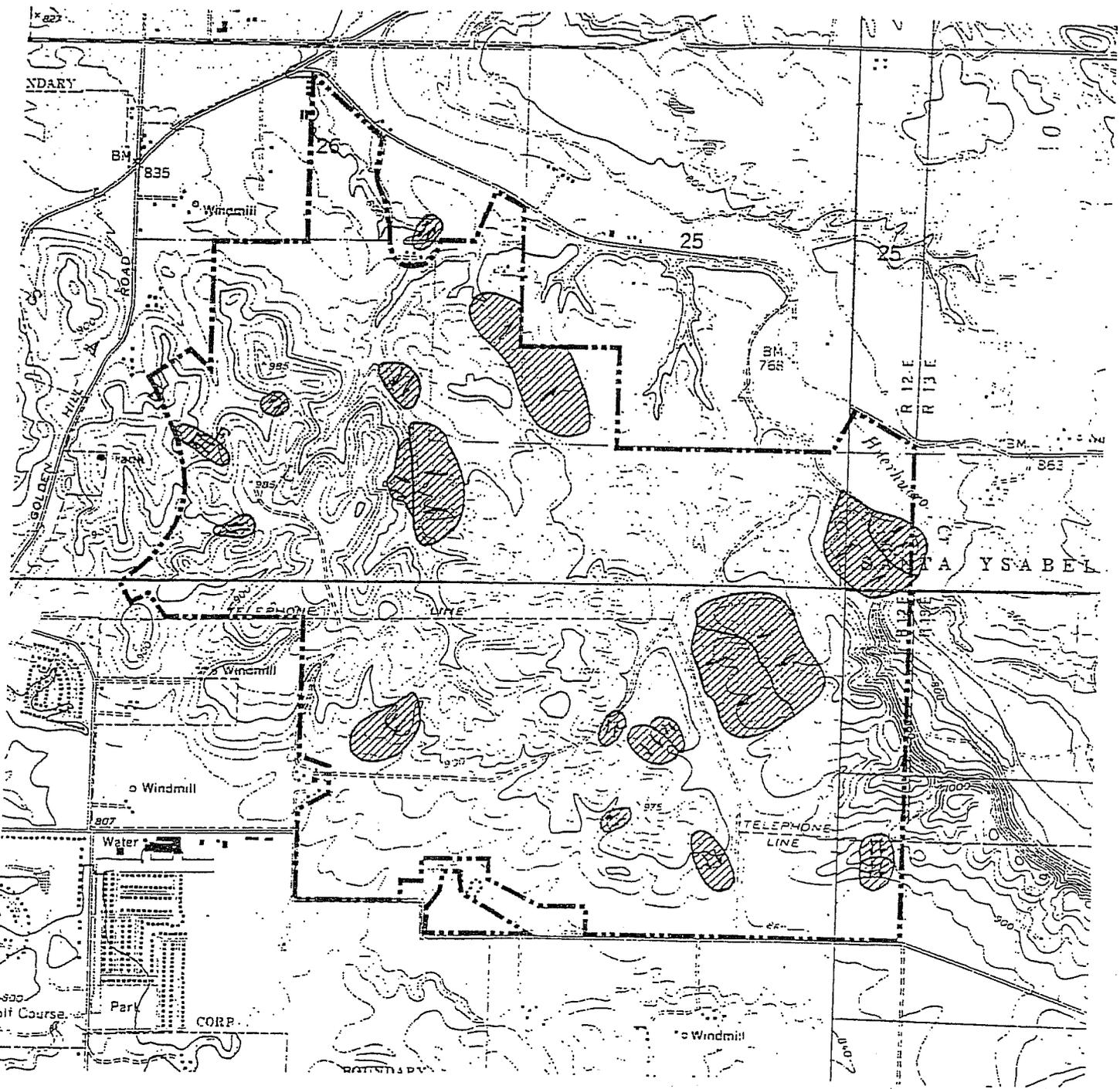
SOURCE: Dibblee (1976) Geologic Map of the Paso Robles Quadrangle, California

LEGEND

- | | | |
|-----------------------|--|----------------------------------|
| Qrs River Sand | Qls Landslide Deposits | <u>Unconformity</u> |
| Qa Alluvium | Qoa Older or Dissected Alluvium | QTP Paso Robles Formation |



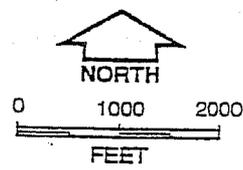
**GEOLOGIC MAP OF PART OF THE
 PASO ROBLES 15 MINUTE QUADRANGLE
 Chandler Ranch**



LEGEND



Suspected Landslide Deposits (Based on Interpretation of Aerial Photographs)



SUSPECTED LANDSLIDE FEATURES MAP
Chandler Ranch

FUGRO WEST, INC.



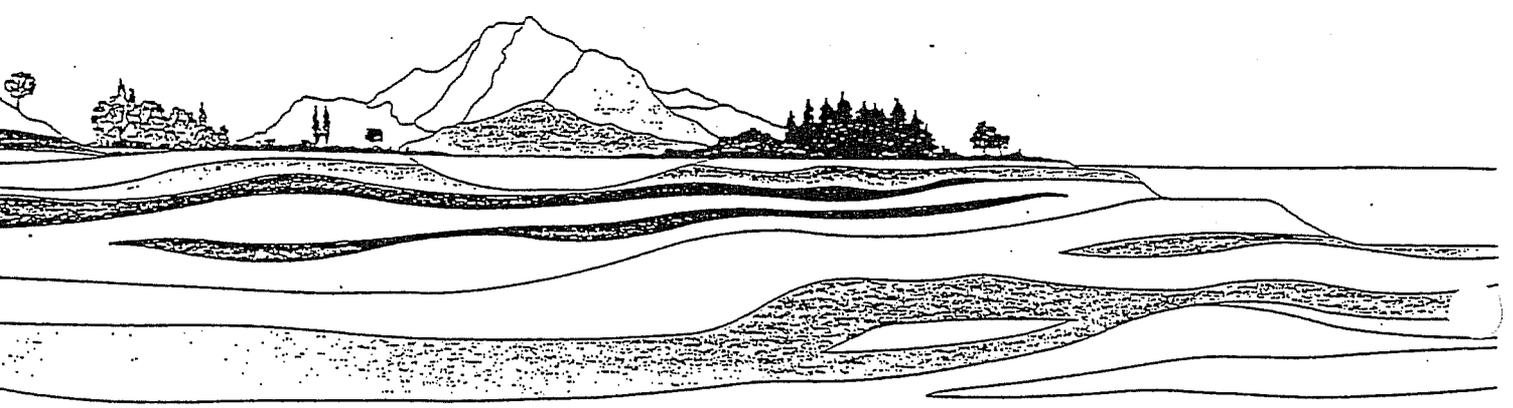
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OCT 27 1999

PHASE I
ENVIRONMENTAL SITE ASSESSMENT REPORT

FOR THE
CHANDLER RANCH PROPERTY

Prepared for:
Del Webb Communities, Inc.
December, 1995



FUGRO WEST, INC.



1421 State Street
Santa Barbara, CA 93101
Tel: (805) 963-4450
Fax: (805) 564-1327

December 28, 1995
File No. 95-92-8032

Del Webb Communities, Inc.
6001 North 24th Street
Phoenix, Arizona 85038

Attention: Mr. Samuel C. Colgan

Subject: PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
Chandler Ranch Property
Paso Robles, San Luis Obispo County, California

Dear Mr. Colgan:

Fugro, is pleased to provide the following Phase I Environmental Site Assessment Report (ESA) for the Chandler Ranch property located east of the City of Paso Robles, San Luis Obispo County, California. Our services were provided in accordance with our Proposal for Preliminary Environmental Site Assessment Services dated October 18, 1995, and authorized by Del Webb Communities, Inc. (Del Webb), on November 6, 1995. This report presents our findings and conclusions as to the potential for the occurrence of soil and ground water contamination at the site from on-site activities and off-site sources.

We trust this report meets your current needs. We appreciate the opportunity to be of service on this project and look forward to working with you in the future. Please contact the undersigned should you have any questions or comments regarding the report.

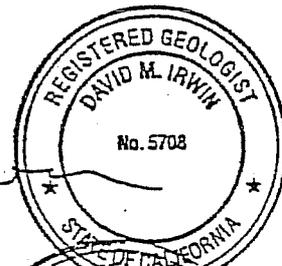
Very truly yours,
FUGRO WEST, INC.

A handwritten signature in cursive script that reads "David M. Irwin".

David M. Irwin
Project Geologist, RG 5708

A handwritten signature in cursive script that reads "Kenneth M. Clements".

Kenneth M. Clements
Principal Engineer, GE 2010



Copies: 2 - Addressee



1421 State Street
Santa Barbara, CA 93101
Tel: (805) 963-4450
Fax: (805) 564-1327

December 28, 1995
Project No. 95-92-8032

Del Webb Communities, Inc.
6001 North 24th Street
Phoenix, Arizona 85038

Attention: Mr. Samuel C. Colgan, P.E.

Subject: Recommendations, Phase I Environmental Site Assessment,
Chandler Ranch, Paso Robles, California

Dear Mr. Colgan:

Fugro is pleased to provide the following recommendations based on our findings contained in the Phase I Environmental Site Assessment Report (ESA), prepared for the Chandler Ranch, Paso Robles, California. Fugro conducted ESA services at the ranch on behalf of the Del Webb Communities, Inc. (Del Webb). Our services were documented in our Phase I ESA Report dated December 11, 1995. This letter presents our recommendations for the site based on information contained in the ESA Report.

Recommendations

On the basis of the information provided in the ESA report, Fugro recommends the following actions be taken to address the potentials discussed in that report.

- Remove the trash dump areas from the site. Removal should be conducted by a qualified firm experienced in working in areas containing potentially hazardous materials. Drums and other potential contaminant-containing containers should be segregated. Fluids contained in containers should then be sampled and analyzed to assess their chemical nature. The drums and container locations should be mapped to help in assessing future soil sampling locations beneath the dump. Sampling and testing should then be conducted to assess for the presence of contaminants in the potentially impacted soil and stream channel sediments.
- We recommend that the well pipe on Parcel 5 be capped with a locking seal. The fluids in the well should be sampled and tested to assess for the potential presence of contaminants.



This letter has been prepared for use by Del Webb Communities, Inc., and their authorized agents only. The recommendations were prepared on the basis of preliminary and limited field work, literature reviews and information sources. The professional opinions and recommendations presented are intended to assist Del Webb Communities, Inc., in their evaluation of environmental considerations at the site that could potentially impact their proposed development project and is intended to be used in conjunction with the Phase I ESA report dated December 11, 1995, prepared for Del Webb Communities, Inc., by Fugro.

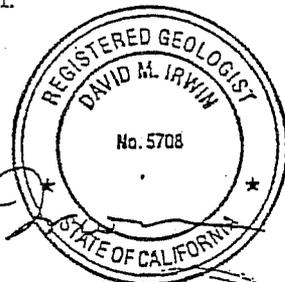
We trust the information provided herein meets your current needs. Please contact the undersigned if you have any questions or require further information.

Sincerely,

FUGRO WEST, Inc.

David M. Irwin, C.E.G. 1988
Project Geologist

Kenneth M. Clements, G.E. 2010
Principal Engineer



Copies: 2 - Addressee



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APPENDIX A-1 COPY OF FIRST AMERICAN TITLE COMMITMENT OF TITLE
 INSURANCE
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 AND VICINITY
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PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
CHANDLER RANCH PROPERTY
PASO ROBLES, SAN LUIS OBISPO COUNTY, CALIFORNIA

I. INTRODUCTION

Fugro, is pleased to provide the following Phase I Environmental Site Assessment Report (ESA) for the Chandler Ranch property located east of the City of Paso Robles, San Luis Obispo County, California. Our services were provided in accordance with our Proposal for Preliminary Environmental Site Assessment Services dated October 18, 1995, and authorized by Del Webb Communities, Inc. (Del Webb), on November 6, 1995. This report presents our findings and conclusions as to the potential for the occurrence of soil and ground water contamination at the site from on-site activities and off-site sources.

II. PROJECT DESCRIPTION

A. Site Description

The Chandler Ranch property is an approximately 1,679-acre parcel located at the eastern end of Paso Robles, California. The property is approximately half within the city limits of Paso Robles and half within the unincorporated area of San Luis Obispo County. The property is generally bound by Union Road on the north, Linne Road on the south, Golden Hill Road and Creston Road on the west, and Huerhuero Creek on the east. The existing terrain generally consists of gently rolling hills. The exception is the eastern boundary of the property where the terrain forms a steep bluff along the banks of Huerhuero Creek. Vegetation within the property generally consists of low grasses, scattered trees, and isolated woodland areas. Existing elevations range from a high of approximately elevation 1,014 feet near the center of the property to a low approximately 760 feet to the north and east of the site along Huerhuero Creek.

B. Present and Intended Uses

The property is currently used for agricultural crops, grazing of sheep and as open and wooded range land. We understand that the property is proposed for development as a planned residential community. The project will generally consist of developing the site as a seniors' community with approximately 3,000 to 3,500 single-family homes. The typical lot size will probably be about 70 feet by 100 feet. As planned, essentially the entire site will be developed. Appurtenant improvements will likely consist of a community center and a 27-



hole golf course. We understand that mass grading for the project probably will involve moving 18 to 25 million cubic yards of material to excavate cuts approximately 60 to 80 feet below the existing ground surface and construct fills up to approximately 60 feet thick. Del Webb Corporation is presently in the process of evaluating the feasibility of developing the site as planned.

C. Purpose and Scope of Work

The purpose of our work was to preliminarily assess the potential for the presence of soil and ground water contamination at the site from on-site activities and off-site sources, and to document our findings in this report. Our scope of services was presented in our proposal dated October 18, 1994. The work conducted by Fugro is as follows:

- Review of selected literature for the site and site vicinity consisting of geologic, hydrogeologic, and geotechnical reports and maps.
- Review of historical land use at the site and within the site vicinity from aerial photographs, Sanborn Insurance Maps, Polk's City Directories, title and chain of ownership information, topographic maps, and interviews with persons familiar with the site and site vicinity.
- Visual reconnaissance of the site and site vicinity to observe current conditions.
- Review of federal, state, and local regulatory agency information pertaining to hazardous materials occurrence at the site and in the site vicinity.
- Preparation of this report of our findings and our opinions as to the potential for soil and ground water contamination at the site from on-site activities and off-site sources.

III. SITE SETTING

A. Existing Site Topography and Land Uses

The existing site topography generally consists of relatively gentle rolling ridges and canyons. The general trend of the major ridges and canyons is north-south with east-west trending secondary drainages. Huerhuero Creek flows northerly across the northeast corner of the property. Elevations across the site range from a high of about 1,035 feet at the top of a ridge line in the east-central portion of the property, to a low of about 760 feet within Huerhuero Creek located at the northeast corner of the property.



Vegetation at the site generally consists of grasses with scattered oak trees, with the northwest portion of the property occupied by an oak woodland. Land use on the property is basically dry-land farming and sheep grazing.

B. Geological Setting

The site is located within the Coast Ranges Geomorphic Province. The province is locally dominated by the Salinas Valley and the La Panza mountain range (Dibblee 1976). The geologic structure of the site consists of a northwest-trending anticlinal fold that passes through the central portion of the site. The anticline is characterized by nearly flat to gently dipping limbs. Bedding attitudes measured at the site typically dip up to about 5 degrees to the northeast or southwest on the limbs of the anticline. Bedding attitudes within the Paso Robles Formation were observed to be as steep as to 13 degrees near the southeastern corner of the property (Fugro 1995).

C. Earth Materials

Fugro provided geotechnical investigation services for the property (Fugro 1995). As part of these services, a drilling and sampling program was conducted at various locations within the property. Earth materials encountered during the drilling program are described below.

Colluvium. Colluvium and/or residual soil was typically encountered at the ground surface within the explorations. Colluvium generally consists of soil deposits that result from the downslope migration of surface soils as a result of the forces of gravity and water. Residual soil is generally a deposit that forms from the in-place weathering of underlying formational materials. For the purposes of the study, the two units are not differentiated.

The colluvium predominantly consists of lean to fat clay with varying amounts of sand and gravel. The colluvium was encountered to depths of 3 to 15 feet, with an average thickness of about 5 feet below the existing ground surface. The thickest colluvium was encountered in the bottom of canyons and drainages. Where encountered the colluvium was underlain by older alluvium or Paso Robles Formation.

Alluvium. Although not encountered in the subsurface explorations, recent alluvium is mapped along the Huerhuero Creek drainage in the northeast corner of the site.

Older Alluvium. Older alluvium was encountered in relatively flat lying areas that are mapped along the northern and southern ends of the site. The older alluvium consists of silty to clayey sand. The older alluvium was encountered to a maximum depth of 6 feet



below the existing ground surface. The older alluvium likely has a low to medium potential for expansion.

Paso Robles Formation. Paso Robles Formation was encountered below the colluvium and older alluvium in the explorations. Paso Robles Formation is the predominant bedrock unit mapped in the project area, and is likely the parent material from which the overlying sediments are derived. Paso Robles Formation encountered in the explorations generally consists of consolidated and nonindurated to moderately indurated units of mudstone with interbedded layers of siltstone, claystone, sandstone, and conglomerate. The Paso Robles Formation was encountered to the maximum depth explored, approximately 71 feet below the existing ground surface.

D. Ground Water

Ground Water. Ground water seepage was encountered in one drill hole. On the basis of our observations during drilling, the ground water in the drill hole appeared to be running along shear planes within a landslide mass. Ground water was not encountered in the other borings or trenches to the maximum depth explored, about 71 feet below the existing ground surface. We understand from conversations with Mr. Jim Wilcox, Chandler Ranch manager, that existing wells on the property pump from ground water aquifers at about 150 feet below the lower ground elevations at the site, or deeper.

IV. HISTORICAL LAND USE

A. Sources Reviewed

Fugro conducted a review of the historical land use of the site and site vicinity. As part of our review, Fugro reviewed historical aerial photographs and topographic maps, Polk's and other city directories, in-house reports, San Luis Obispo County files, title information and a chain-of-title report, and California Department of Oil and Gas (DOG) maps. In addition, we interviewed persons familiar with the project site and vicinity. Our review of the Sanborn fire insurance map index and Polk's and other directories indicated that information is not available for the project site area from these sources. This section presents a summary of the information reviewed that, in our opinion, is significant to our evaluation of the potential for the presence of soil and ground water contamination at the project site.

Fugro reviewed selected aerial photographs of the project site and vicinity and topographic maps at the Map and Imagery Library located at the University of California at



Santa Barbara, California (UCSB). Table 1 lists the aerial photographs reviewed for this project.

Fugro interviewed persons familiar with the current and historical land use of the project site and vicinity. Interviews were conducted by telephone or in person. A list of persons interviewed and thier relation to the site or Agency affiliation is presented on Table 2. Information obtained through our interviews is presented below, where appropriate.

Fugro reviewed land use and building information for the site obtained at the San Luis Obispo County and City of Paso Robles Building and Safety and Planning Departments. Information obtained at the County and City offices consisted of building permits, land use zoning, site project zoning reports, and historical site plans.

Fugro reviewed a summary of title information for the site obtained by Del Webb through First American Title of Paso Robles. In addition, Fugro obtained and reviewed chain of ownership information for the site provided through Ameristar Information Network, Inc. of Dallas, Texas. A copy of the title and chain of ownership information reviewed is provided in Appendix A.

B. Summary of Historical Land Use

Aerial photos, topographic maps, title information and interviews indicate that the site was originally part of the Rancho Ysabel, located east of the City of Paso Robles. The 1949 aerial photo shows that the site and vicinity were generally open range land with some agricultural crops and orchards present. The site appeared to be partially in agricultural use.

On the basis of our review of the 1949 aerial photo, agricultural grain crops (wheat or barley, etc.) were being cultivated in the southern, southeastern, and northwestern portions of the property. The remaining portions of the property consisted of open and wooded range land. House and barn structures were present on two separate areas of the property; the northeast portion of Parcel 5, and the northeast portion of Parcel 10. House and barn structures were also present directly adjacent to the current property boundary at two locations; on the Wilcox Parcel southwest of Parcel 8, and on the Barney Schwartz Park property along the northeast perimeter of Parcel 3. Telephone poles were present in an approximate east-west alignment along the northern portions of Parcels 11, 12, and 13.

In 1949, properties surrounding the site consisted primarily of agricultural and open range land. Orchards were present along the west and northwest perimeters of the site. Sherwood, Fontana, Linne, Pelham, Union and Golden Hill Roads were all present in the photo. A small airport was present west of Fontana Road, southwest of the site. On the



basis of information provided by Mr. Neil Rombo of the Historical Society, the airport was built around 1940. High density residential communities were not located near the site.

According to the chain ownership report, the property was owned by Hans and Anna Aaroe from 1936 to 1951. In 1951 ownership transferred to Anna Aaroe upon the death of her husband.

The 1957 aerial photo indicated little change had occurred on the property since 1949. Agricultural crops were indicated in the northern and central portions of the property. A string of high power towers and lines were present in an alignment trending across the southeast corner of the property. Additional houses and barn structures were observed in the site vicinity. A small housing tract was situated on a portion of the small airport observed in the 1949 photograph.

The chain of ownership report indicates that the property was transferred to Our Town Development Corp. in 1961, and then to Our Town Land Company in 1962. The 1962 aerial photo shows the Our Town development being constructed along the south-central perimeter of the subject property where it is currently located.

In 1964, title for the site was transferred to Chandler's Palos Verdes Sand and Gravel Company. According to Mr. Jim Wilcox, current ranch manager, he began working the ranch in 1965. The property boundaries have changed over the years so that the ranch is somewhat smaller in size than in 1965. He stated that the house and barn facility in the northeast corner of the property has generally been used for housing ranch personnel.

Mr Wilcox stated that various portions of the ranch have been used for dry farming and to graze sheep and/or cattle. He indicated that crops historically cultivated on the property consisted of wheat, hay, barley, and safflower. Herbicides and pesticides used historically on the ranch have consisted of Round-Up, Glean, and Chlorofasine. Mr. Wilcox provided copies of Material Safety Data Sheets (MSDS's) for these products to Fugro. On the basis of the information provided, these materials do not appear to pose a long-term hazard. Review of site information obtained from the Agricultural Commissioners Office for the use of these materials indicates that they are classified as unrestricted, and that their use at the site has been registered with the Agricultural Commissions Office. According to Mr. Wilcox, there has not been a significant accidental release of these materials at the site historically.

The 1969 aerial photo indicated little change had occurred on or around the property since 1962. However, by 1978, the areas east and south of the property had been generally developed. Many of the current housing tracts were in place along Creston Road,



east of the property. The airport to the southwest was now redeveloped as a housing tract with several commercial/industrial buildings located along Sherwood Road to the intersection of Fontana Road.

By the time of the 1989 aerial photo, additional industrial buildings were in place along the west end of Linne Road, south of the subject property. In addition, a housing tract was in place along the southwestern property boundary.

C. Oil and Gas Wells

Fugro reviewed the title information provided by First American Title, the chain of ownership report and DOG map W3-4 to assess the potential for oil or gas well drilling on or adjacent to the site. The title and chain of ownership information does not indicate that oil and gas leases have been obtained for the site. According to the DOG maps, from 1949 through 1957, several exploratory oil wells were drilled in the general site vicinity, however oil or gas wells had not been drilled at the site. Several oil wells are indicated to have been drilled within a 3-mile radius of the site; however, these wells were listed as plugged and abandoned dry holes. The closest of these wells was located approximately 3,400 feet from the site, to the south.

V. SITE RECONNAISSANCE

Fugro conducted a site reconnaissance of the project site on October 26 and 28, 1995. We drove and walked the site to observe for evidence of hazardous materials use, storage, or contamination, and for signs of historical activities that could have impacted the site. In addition, Fugro personnel were on site from October 16 through October 24, 1995, conducting drilling and sampling activities related to a geotechnical engineering investigation (Fugro 1995). During drilling and sampling, Fugro observed the surface and subsurface site conditions in the areas drilled.

Fugro also drove the project site vicinity within an approximate one block radius of the site to observe for operations likely to handle hazardous materials. Fugro obtained photographs of selected areas of the project site and vicinity during our reconnaissance. Selected copies of these photographs are presented in Appendix B.

A. Project Site

On October 26, 1995, Fugro personnel drove portions of the site with Mr. Jim Wilcox and discussed the various historical and current ranch activities. We then returned to drive and/or walk the site to further observe site conditions on October 28, 1995. Due to the size and topography of the property, we cannot state that we observed conditions in all



areas of the site. However, based on our understanding of historical and present site use, we believe that we generally observed the majority of the property, with emphasis on those areas most likely to have been impacted by historical practices on the site.

The following 5 areas were observed to have conditions which, in our opinion, indicate a potential for impacting the subject property: The approximate locations of these areas is shown on Figure 2, Site Plan. Photos of the areas are presented in Appendix B.

Area 1 - Trash dump located at the head of a north-south trending stream canyon located along the east side of Parcel 3. A dump containing household trash and ranch materials was observed at the head of the drainage where it intersected one of the ranch roads. Among the items observed were multiple 55-gallon, 30-gallon, 10-gallon, and 5-gallon containers and drums. The containers did not have content labels, however, they appeared to be typical of containers used for storing paints, chemicals, and petroleum products. Observations indicated that more materials may be buried under the trash pile and in the sediments deposited in and along the stream channel.

Area 2 - Trash and debris along the north-south trending stream canyon located along the northeast corner of Parcel 3. Scattered trash consisting of old gas cans, 30-gallon drums and automotive parts was observed. Observations indicated that additional trash and debris may be buried under sediments accumulated in and adjacent to the stream channel.

Area 3 - Two, 55-gallon drums in the confluence of two stream canyons located in the northwestern portion of Parcel 10. The drums appeared to contain some quantity of fluids (3 to 8 gallons estimated) and were capped. One of the drums was observed to have a black oily fluid on the inside of its cap and emitted a heavy hydrocarbon-like odor. Our observations of the ground adjacent to the drums did not indicate that the drums had leaked, however, the presence of leakage could be undetected at the site reconnaissance level conducted.

Area 4 - Small trash dump in the north-south trending stream canyon located on the north side of Parcel 5, just west of an existing house and barn complex. The trash observed in this area consisted primarily of old bottles, an old washing machine, bed springs, and some paint-can-type containers. Observations indicated that additional trash may be buried in the vicinity of



the dump as well as in sediments accumulated in and along the stream channel.

Area 5 - An apparent open well located in the house and barn complex in the north portion of Parcel 5. Adjacent to a functional, sealed well, we observed a 5- to 6-inch diameter pipe that, based on our observations, appeared to extend well below ground. The pipe was not dissimilar to the piping observed on the nearby functional well. The pipe was not capped. While the open well does not itself pose a threat to the integrity of the property, it potentially provides a direct vertical pathway to the subsurface for materials placed in the well. In addition, this well is readily accessible to the general public from Union Road.

B. Site Vicinity

The site vicinity was observed to consist of a mixture of residential areas and commercial and industrial businesses. The site is bordered by residential tract areas to the west and southwest. The site is generally bordered by sparsely populated farm and agricultural land to the southeast, east, north, and northwest. Commercial and industrial buildings are located along Sherwood, Fontana and Linne Roads, adjacent to the property to the south and southwest. Our reconnaissance of the site vicinity indicated that hazardous materials are used and stored at the commercial and industrial facilities located south-southwest of the site. However, we did not observe indications of spills or leaks from these facilities that may have impacted the site.

VI. AGENCY CONTACTS

Fugro contracted with Environmental Data Resources, Inc. (EDR), a database research company, to conduct a review of federal, state, and local regulatory agency records and lists for information pertaining to the occurrence of hazardous materials for sites located within the radius of the property specified in accordance with ASTM guidelines. In addition, we contacted numerous City and County agencies to discuss known conditions in the vicinity of the project site and their potential impact. The EDR report is presented in Appendix C. A summary of the information provided by EDR, and our conversations with the local agency representatives is presented below.

A. EDR Report

EDR provided a report dated October 24, 1995. The EDR report identified six separate properties within an approximate 1-mile radius of the subject site that are listed on



a local, state or federal environmental database. Of the six sites, five are indicated to use, store, or generate hazardous materials, but are not indicated to have had an identified release of these materials. One site, however, is indicated to have had a potential release; CTS Keene, Inc., 500 Linne Road (CTS).

The CTS site is located adjacent to the Chandler Ranch property to the south, at the southwest corner of the intersection of Fontana and Linne Road. The site is located topographically down gradient of the subject site, and is indicated to contain up to 10 underground storage tanks (USTs) for storage of product and waste materials. Waste materials listed for the CTS site indicate the presence of spent solvents, metals plating sludges and residues, cyanides and acids. While the CTS site is not listed on the leaking underground storage tank (LUST) list, it is listed as being under investigation by the Federal government under its CERCLA program to assess the extent of further action.

B. File Review

Fugro obtained and reviewed file information for the CTS site identified in the EDR report. The information reviewed was obtained from the San Luis Obispo County Environmental Health Services (EHS), and from the Central Coast Region - Regional Water Quality Control Board (RWQCB). According to a report prepared by CET Environmental Services, Inc., dated May 11, 1994, the property was developed by CTS in 1979. From 1980 to 1990, the site was a manufacturing facility, producing digital in-line package switches and automotive push button switches.

A Fact Sheet prepared for the site by the California Department of Toxic Substance Control (DTSC) indicates that the facility contained a metals plating facility and associated drum storage area for waste materials. The drum storage area was regulated as a Resource Conservation and Recovery Act (RCRA) facility, while the process and waste water treatment areas were regulated as non-RCRA permitted hazardous waste use storage and waste facilities.

We reviewed letters and reports contained in files at EHS that indicated the removal of 7 underground storage tanks (UST's) from the site in 1986, under witness by EHS personnel. Releases of hazardous materials were not identified during the removal activities. CTS ceased operations at the site in 1990. Between 1990 and 1993, several RCRA and non-RCRA audits and investigations were conducted at the site, under the supervision of the California Department of Toxic Substances Control (DTSC). According to information on file at RWQCB, significant soil contamination was not identified at the site. Based on the findings of these investigations, in a letter dated June 29, 1993, the DTSC accepted CTS's request for closure of the site.



C. Local Agency Contacts

Fugro contacted local government agencies which have or may have historically had jurisdiction over the property or surrounding areas. As the property is located partially within both the City of Paso Robles and the County of San Luis Obispo, these City and County agencies were contacted. Information provided by these agencies is discussed below

County Agencies

Fugro contacted the San Luis Obispo County Environmental Health Services, Building and Safety Department, Planning Department, Fire Department, and Agriculture Commissioners Office. Files were not found for the site at the Environmental Health Services or Building and Safety Department. Information on file for the site at the Planning Department, Fire Department, and Agriculture Commissioners Office did not indicate the use or unregulated release or storage of hazardous materials at the site. The Wilcox Ranch is on file with the Agriculture Commissioners Office for the use of various pesticides, herbicides and fertilizers, however, these materials have been regulated and are not indicated to have been released in unauthorized quantities at the site. UST's were not located on the property, however, 2 to 3 above ground storage tanks (AST) used for fuel storage were located on the adjacent Wilcox property. File information indicated that a release from these tanks has not been reported.

City Agencies

Fugro contacted the Paso Robles City Building and Safety Department, Planning Department, and Fire Department. Information was not found on file for the site at the Building and Safety Department or Planning Department. Incidences on or adjacent to site were not found on file at the City Fire Department. A wildfire occurred at the site several years ago, however, hazardous materials were not indicated to have been involved.

VII. SUMMARY AND CONCLUSIONS

The purpose of our work was to preliminarily assess the potential for the presence of soil and ground water contamination at the site from on-site activities and off-site sources. On the basis of the data presented in this report, we have provided the following summary and conclusions regarding our opinion of sources that have the potential to contribute to the presence of soil and ground water contamination at the site.



A. Summary

The project site and site vicinity is underlain by 3 to 15 feet of quaternary alluvium, colluvium and/or residual soil. In general, these soils consist of lean to fat clay with varying amounts of sand and gravel. The Paso Robles Formation was encountered below the colluvium and older alluvium in the field explorations. Paso Robles Formation is the predominant bedrock unit mapped in the project area, and is likely the parent material from which the overlying sediments are derived. Paso Robles Formation encountered in the explorations generally consists of units of mudstone with interbedded layers of siltstone, claystone, sandstone, and conglomerate. Water for the site is generally obtained from hydrogeologic storage units located about 150 feet, or deeper, below the lower ground elevations of the site.

Our review of historical land use indicates that the area in the vicinity of the project site was used for agricultural purposes in the early to mid-1900's. Our review of aerial photographs, DOG maps, and information from our interviews indicates that oil well drilling and related activities have not been conducted at the site, and that the site has generally remained vacant until the present. Residential developments occurred along the western and southwestern portions of the property in the 1960's and 1970's. On the basis of the information obtained, it is our opinion that there is a low potential for soil or ground water contamination at the site from these historical on-site and off-site activities.

Our reconnaissance of the site indicated the presence of four small and large trash and debris dumping areas at the site. Among the items observed were multiple 55-gallon, 30-gallon, 10-gallon, and 5-gallon containers and drums. The containers did not have content labels, however, these containers appeared to be typical of those used for storing paints, chemicals, and petroleum products. Scattered trash consisting of old gas cans and automotive parts was also observed. Our observations indicated that more materials may be buried under the trash piles and in the sediments deposited in and along the stream channels. The presence of what appeared to be petroleum and chemical product drums and containers in trash dumps on the site, indicates that there is a potential for contaminants that may have been contained in the drums to have leaked into subsurface soils and adjacent stream channel sediments. In our opinion there is a moderate to high potential for the presence of soil contamination from this on-site source.

We observed an apparent open well during our site reconnaissance near located in the house and barn complex in the north portion of Parcel 5. The pipe was not capped. While the open well does not itself pose a threat to the integrity of the property, it potentially provides a direct vertical pathway to the subsurface for materials placed in the



well. On the basis of our observations, it is our opinion that there is a moderate potential for soil or ground water contamination from this on-site source.

Review of agency databases and site lists, and review of regulatory file information indicates there are at least six separate properties within a 1-mile radius of the subject site that are listed on a local, state or federal environmental database. Of the six sites, five are indicated to use, store, or generate hazardous materials, but are not indicated to have had an identified release of these materials. One site, however, is indicated to have had a potential release; CTS Keene, Inc., 500 Linne Road (CTS). Fugro obtained and reviewed file information for the CTS Keene property obtained from EHS and from RWQCB. Our review of the information identified that the site was investigated by DTSC, and that significant soil contamination was not indicated at the site. Based on the findings of these investigations, the DTSC accepted a request for closure of the site. Therefore, it is our opinion that there is a low potential for soil or ground water contamination at the site from this off-site source.

Several other commercial/industrial businesses were observed along Linne and Sherwood Roads during our reconnaissance. On the basis of the aerial photos reviewed, these businesses were generally developed in the 1980's. We observed indicators that several of these business use, store, or generate hazardous materials at their sites. However, we did not observe indications that there had been spills or releases at these sites. In addition, these sites are generally topographically and hydrologically down-gradient of the subject site. Therefore, it is our opinion that there is a low potential for soil or ground water contamination at the site from these off-site sources.

B. Conclusions

On the basis of the information generated to date, the Chandler Ranch property is not directly indicated to have known contamination from offsite sources. However, two onsite activities reviewed indicate a potential for contaminants to have impacted the site. These items consist of:

- Trash dumping on and adjacent to the subject property. The presence of what appeared to be petroleum and chemical product drums and containers in several trash dumps on the site, indicates that there is a potential for contaminants that may have been contained in the drums to have leaked into subsurface soils and adjacent stream channel sediments.



- The presence of an open well on Parcel 5. This well appears to extend downward to depth and represents a potential direct vertical pathway to the subsurface for contaminants placed in the well historically or in the future.

VIII. GENERAL CONDITIONS

Fugro prepared the findings presented in this report based on our observations, on our review of selected literature and public records, and on the personal recollections of individuals we interviewed. No warranty is intended or inferred that observations made during the site reconnaissance, data collected from the literature review and aerial photographs, or conditions or information recalled by persons interviewed accurately represent the conditions at the site. We do not claim that the data reviewed on agency lists or in agency files is complete and represents all existing information pertaining to hazardous materials at, or near, the site. We did not provide for radon gas testing, domestic water testing, ground water sampling, or for chemical analysis of soil samples as part of our assessment. Fugro prepared the professional opinions presented herein according to principals and practices of our profession generally accepted at the time and location this report was prepared.

END OF TEXT

REFERENCES

- CET Environmental Services, Inc. (1994), "RCRA Facility Investigation And Corrective Measures Study, Former CTS Electronics, Inc., Paso Robles, California, Project No. 3611", unpublished consultant report, May 11, 1994.
- Department of Toxic Substances Control, "Fact Sheet - CTS Corporation, Switch Division, AKA CTS Keene Corporation, Facility Interim Status Closure For Storage Pad, San Luis Obispo-County, EPA ID No. CAT 080010705", Data report provided for public review process, undated
- Dibblee, T.W. Jr. (1976), "The Rinconda and Related Faults in the Southern Coast Ranges, California, and Their Tectonic Significance", U.S. Geological Survey, Professional Paper 981.
- Fugro West, Inc. (1995), "Preliminary Geotechnical Engineering Report, Chandler Ranch Development, Paso Robles, San Luis Obispo County, California," File No. 95-92-8031, unpublished consultant report, November 1995.



TABLE I

SUMMARY OF AERIAL PHOTOGRAPHS REVIEWED*

<u>Date</u>	<u>Flight</u>	<u>Frame</u>	<u>Scale</u>	<u>Type</u>
1949	AXH-1949	72-74,102-104, 186-188	1:20,000	B&W
1950	C-15340	I-41,42,43,43	1:20,000	B&W
1957	AXH-1957	23R-188-191	1:20,000	B&W
1962	HA-GI	not listed	1:12,000	B&W
1969	AXH-1969	I-KK-64-66,86-88	1:40,000	B&W
1978	USDA-40-06079	478-118 & 119	1:40,000	B&W
1989	GS-VFLO-C	4-65-69	1:40,000	Color

- Photographs located at Maps and Imagery Laboratory, in the Library at the University of California, Santa Barbara.

TABLE 2

LIST OF PERSONS INTERVIEWED

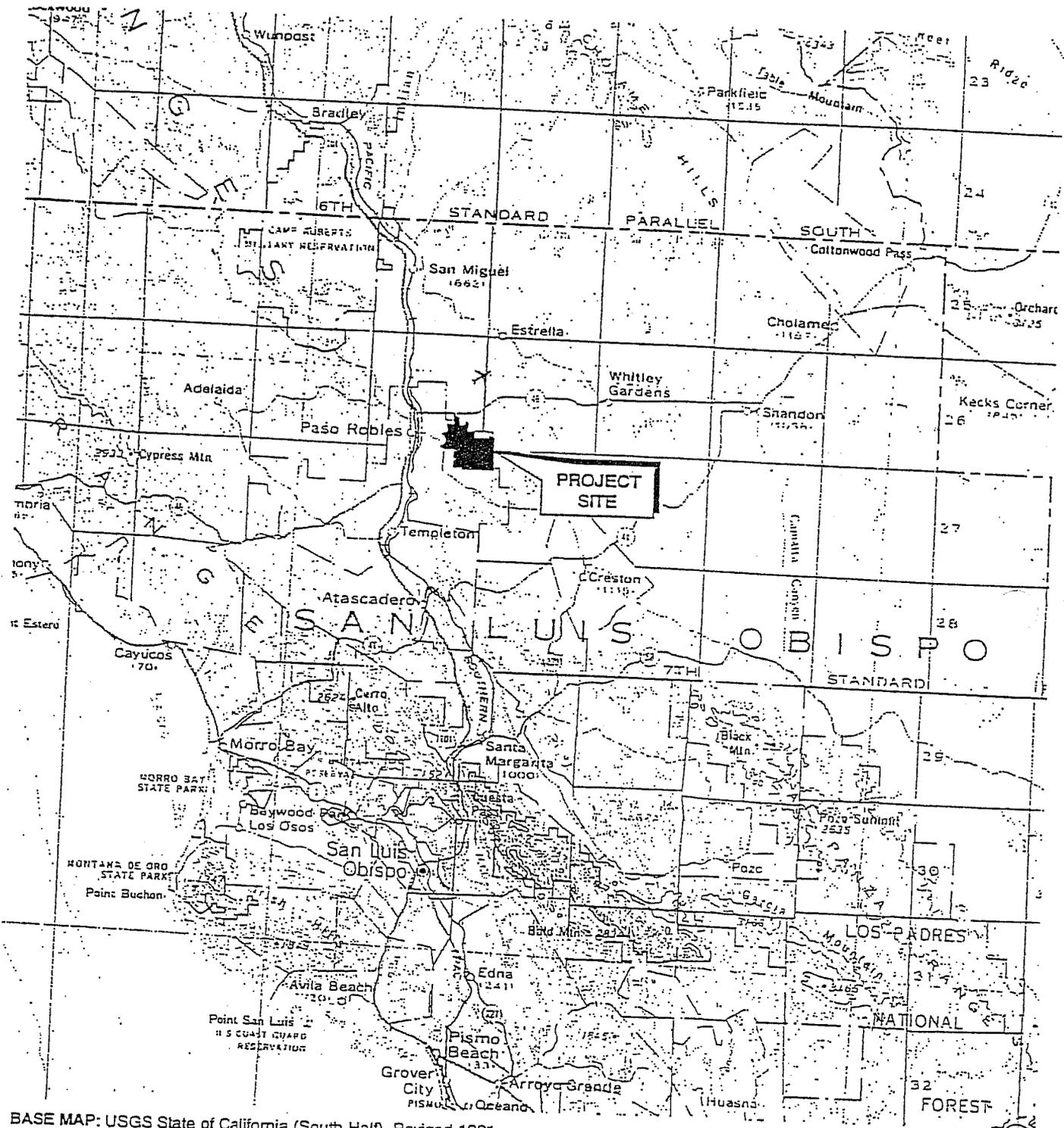
<u>Individuals Contacted</u>	<u>Project Association</u>	<u>Comments</u>
Mr. Jim Wilcox	Chandler Ranch Manager since 1965	See Sections III-D, IV-B and V-A
Mr. Neil Rambo	City of Paso Robles (City) Historical Society	See Section IV-B
Mr. Paul Taylor	Taylor and Company, conducted independent reconnaissance of the property	See Section IV-B
Mr. Terry Minshall	City Fire Department for the past 32 years.	See Sections IV-B and VI-C
Mr. Ben Stewart	County of San Luis Obispo (County) Fire Department.	See Sections IV-B and VI-C
Mr. Mat Jaueregui	County Fire Department.	See Sections IV-B and VI-C
Ms. Betty Machado	County Building and Safety Department.	See Sections IV-B and VI-C
Mr. Doug Monn	City Building and Safety Department.	See Sections IV-B and VI-C
Mr. Robert Hopkins	County Agricultural Commissioner	See Sections IV-B and VI-C
Mr. John Schultes	County Environmental Health Services Division.	See Sections VI-B and VI-C





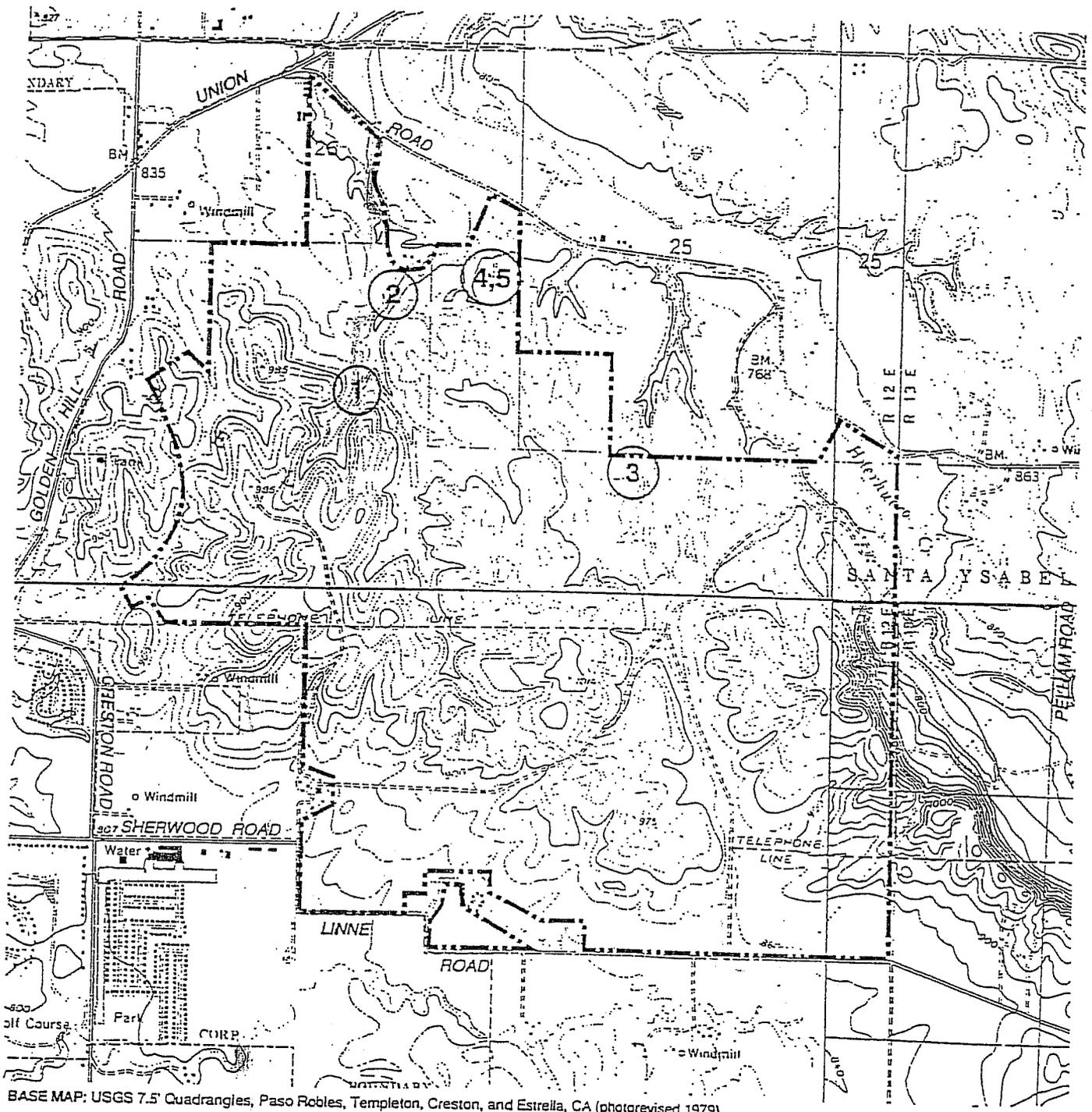
TABLE 2 (CONTINUED)

<u>Individuals Contacted</u>	<u>Project Association</u>	<u>Comments</u>
Mr. Mike McGee	County Environmental Health Services Division.	See Sections VI-B and VI-C
Mr. Steve Watson	U. S. Environmental Protection Agency	See Section VI-B
Mr. Steve Masera	California State Water Resources Control Board	See Section VI-B
Mr. Paul Johnson	California State Water Resources Control Board	See Section VI-B



BASE MAP: USGS State of California (South Half), Revised 1981

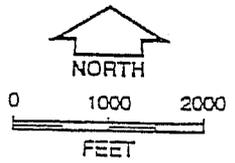
VICINITY MAP
Chandler Ranch



BASE MAP: USGS 7.5' Quadrangles, Paso Robles, Templeton, Creston, and Estrella, CA (photorevised 1979)

LEGEND

- ① - Approximate Areas Observed to Have Potential Adverse Environmental Conditions (See Section V of the Report)
- Site Property Boundaries



SITE PLAN
 Chandler Ranch