Geotechnical Engineering
Construction Inspection
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OFFICE LOCATIONS

ORANGE COUNTY
CORPORATE BRANCH

2992 E. La Palma Avenue
Suite A
Anaheim, CA 92806

Tel: 714.632.2999
Fax: 714.632.2974

SAN DIEGO
IMPERIAL COUNTY

6295 Ferris Square
Suite C
San Diego, CA 92121

Tel: 858.537.3999
Fax: 858.537.3990

INLAND EMPIRE

14467 Meridian Parkway
Building 2A
Riverside, CA 92518

Tel: 951.653.4999
Fax: 951.653.4666

INDIO

44917 Golf Center Pkwy
Suite 1
Indio, CA 92201

Tel: 760.342.4677
Fax: 760.342.4525

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800.491.2990

SAN DIEGO DISPATCH

888.844.5060

www.mtglinc.com

GEOTECHNICAL INVESTIGATION

Palomar Community College
Learning Resource Center
1140 West Mission Road
San Marcos, California

Prepared For:
Palomar Community College District
1140 West Mission Road
San Marcos, California 92069

Prepared By:
MTGL, Inc.
6295 Ferris Square, Suite C
San Diego, California 92121

December 6, 2012

MTGL Project No. 4060A11
MTGL Log No. 12-183

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CORPORATE BRANCH

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Suite A
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December 6, 2012

MTGL Project No. 4090A11
MTGL Log No. 12-183

Palomar Community College District
1140 West Mission Road
San Marcos, California 92069

Attention: Mr. Chris Miller

Subject: **GEOTECHNICAL INVESTIGATION**
Palomar Community College
Learning Resource Center
1140 West Mission Road, San Marcos, CA

Dear Mr. Miller:

In accordance with your request and authorization we have completed a Geotechnical Investigation for the subject site. We are pleased to present the following report which addresses both engineering geologic and geotechnical conditions including a description of the site conditions, results of our field exploration and laboratory testing, and our conclusions and recommendations.

It is our understanding that a building is planned to be constructed at the existing school site. Based on our findings during the course of this investigation, it is our opinion that the site will be suitable for construction, provided the recommendations presented herein are incorporated into the plans and specifications.

Details related to geologic conditions, seismicity, site preparation, foundation and pavement design, and construction considerations are also included in the subsequent sections of this report.

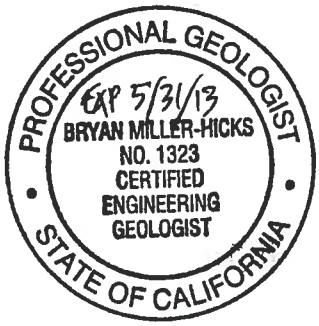
We appreciate this opportunity to be of continued service and look forward to providing additional consulting services during the planning and construction of the project. Should you have any questions regarding this report, please do not hesitate to contact us at your convenience.

Respectfully submitted,

MTGL, Inc.

Sam E. Valdez, GE 2813
Vice President/Engineering Manager

Bryan Miller-Hicks, CEG 1323
Engineering Geologist



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1.00 INTRODUCTION

In accordance with your request and authorization, MTGL, Inc. has completed a Geotechnical Investigation for the subject site. The following report presents as summary of our findings, conclusions and recommendations based on our investigation, laboratory testing, and engineering analysis.

1.01 PLANNED CONSTRUCTION

It is our understanding that a new four-story Learning Resource Center (LRC) building is to be constructed just immediately north of the new Humanities Building that is currently under construction. As part of construction of the new LRC building, the existing asphalt concrete parking lot and Building E are scheduled to be demolished.

The new LRC building is expected to have a total area of between 80,000 and 100,000 square feet, divided over the four-stories and be a steel framed building supported on conventional isolated spread and/or continuous footings. Appurtenant improvements may include underground utility service lines, pavements, and concrete flatwork. The approximate location of the site is depicted on the accompanying Site Location Map (Figure 1). The layout of the proposed LRC building is presented on the Site Plan (Figure 2).

1.02 SCOPE OF WORK

The scope of our Geotechnical services included the following:

- Review of geologic, seismic, ground water and geotechnical literature.
- Logging, sampling and backfilling of 11 exploratory borings drilled with an 8" hollow stem auger drill rig to practical refusal with a maximum depth of 16 feet below existing grades.
- Performing percolation testing at four locations around the site in accordance with the County of San Diego guidelines (see Appendix F).
- Performing of two seismic refraction survey lines to help identify the consistency and hardness of the formational materials (see Appendix E).
- Laboratory testing of representative samples (see Appendix C).
- Geotechnical engineering review of data and engineering recommendations.

- Preparation of this report summarizing our findings and presenting our conclusions and recommendations for the proposed construction.

1.03 SITE DESCRIPTION

The site is located within Palomar Community College campus which is located at 1140 West Mission Road, San Marcos, California. The site is bounded on west by Comet Circle Drive, to the south by the new humanities building that is currently under construction, the school campus to the east and a parking lot to the north. The approximate location of the site is illustrated on the accompanying Site Plan (Figure 2). The site is located at an approximate latitude of 33.151° North and longitude 117.184° West.

1.04 FIELD INVESTIGATION

Prior to the field investigation, a site reconnaissance was performed by a staff from our office to mark the boring locations, as shown on the Site Plan, and to evaluate the boring location with respect to obvious subsurface structures and access for the drilling rig. Underground Service Alert and campus maintenance personnel were then notified of the marked location for utility clearance.

Our subsurface investigation consisted of eleven (11) exploratory borings advanced to a maximum depth of approximately 16 feet. The borings were drilled utilizing a CME 55 truck-mounted hollow-stem auger drill rig equipped with 8-inch diameter augers. Approximate drilled locations of all the borings are shown on the Site Plan.

Borings were logged and sampled using California Ring (Ring) and Standard Penetration Test (SPT) samplers at selected depth intervals. Samplers were driven into the bottom of the boring with successive drops of a 140-pound weight falling 30 inches. Blows required driving the last 12 inches of the 18-inch Ring and SPT samplers are shown on the boring logs in the "blows/foot" column (Appendix B). SPT was performed in the borings in general accordance with the American Standard Testing Method (ASTM) D1586 Standard Test Method. Representative bulk soil samples were also obtained from our borings.

Each soil sample collected was inspected and described in general conformance with the Unified Soil Classification System (USCS). The soil descriptions were entered on the boring logs. All samples were sealed and packaged for transportation to our laboratory. After completion of

drilling, borings were backfilled in accordance with State of California and County of San Diego Standards which included bentonite chips and compacted soil.

A seismic refraction survey was performed at the site on November 17, 2012 by Southwest Geophysics, Inc. The purpose of the survey was to assess the depth to bedrock and the rippability of the subsurface materials. Two seismic lines were performed on the existing asphalt Concrete parking lot. The results of the seismic lines indicate that the depth to weathered bedrock ranged from 3½ to 7 feet deep, with degree of weathering decreasing significantly with depth. The depth to unweathered bedrock was estimated to be about 9 feet in the area surveyed. The Southwest Geophysics, Inc. report is presented in Appendix E

1.05 LABORATORY TESTING

Laboratory tests were performed on representative samples to verify the field classification of the recovered samples and to determine the geotechnical properties of the subsurface materials. All laboratory tests were performed in general conformance with ASTM or State of California Standard Methods. The results of our laboratory tests are presented in Appendix C of this report.

1.06 PERCOLATION TEST RESULTS

Percolation testing was conducted in general accordance with the guidelines presented in the Design Manual for Onsite Wastewater Treatment Systems, March 22, 2010 Edition of the County of San Diego Department of Environmental Health Land and Water Quality Division. Four test holes were drilled with an 8-inch diameter hallow-stem auger drill rig to about 10 feet below existing grade. The Site Plan, Figure 2, shows the location of the percolation testing. The logs of the percolation holes drilled for as part of this investigation are presented in Appendix B. The results of the percolation testing are presented below:

- P-1 Test Hole – 110 minutes/inch
- P-2 Test Hole – 94 minutes/inch
- P-3 Test Hole – No percolation
- P-4 Test Hole – No percolation

2.00 FINDINGS

2.01 REGIONAL GEOLOGIC CONDITIONS

The site is located in the coastal portion of the Peninsular Range Province of California. This area of the Peninsular Range Province has undergone several episodes of marine inundation and subsequent marine regression throughout the last 54 million years, which has resulted in the deposition of a thick sequence of marine and nonmarine sedimentary rocks on the basement rock of the Southern California Batholith. Gradual emergence of the region from the sea occurred in Pleistocene time, and numerous wave-cut platforms, most of which were covered by relatively thin marine and nonmarine terrace deposits, formed as the sea receded from the land. Accelerated fluvial erosion during periods of heavy rainfall, coupled with the lowering of the base sea level during Quaternary times, resulted in the rolling hills, mesas, and deeply incised canyons which characterize the landforms in the general site vicinity today.

2.02 SITE GEOLOGIC CONDITIONS

As observed during this investigation, the site is underlain by undocumented fill materials and residual soils over Cretaceous Tonalite. Logs of the subsurface conditions encountered in our borings are provided in Appendix B. Geologic cross sections of the site are depicted on Figure 3. The Regional Geology Map, Figure 4, shows the site in reference to surrounding geology. Generalized descriptions of the materials encountered during this investigation are presented below.

Artificial fill soils were encountered in all borings, with the exception of B-3. Fill soils can be characterized as silty sand, fine to medium-grained, moist and medium dense. Color varied from yellow brown, medium brown to dark brown, red brown, and dark gray. Small amounts of gravel were found in the fill materials. In borings B-6 and B-7, sandy clays of medium to high plasticity were encountered just above contacts with weathered tonalite bedrock. Thickness of fills encountered in the borings ranged from 2½ to 6 feet below existing grade. The undocumented fill materials are considered compressible and not suitable for support of the structures or other improvements in their current condition.

Residual soil was encountered in boring B-3, consisting of loose, moist, silty fine sand, with gravel, orange to red brown in color. This soil layer is approximately 4½ feet in thickness and is derived

from weathering of the parent tonalite bedrock below. The residual soils are not considered suitable for support of structures or other improvements in their current condition.

The formational bedrock which underlies the fill and residual soils at the site consists of Cretaceous-age Tonalite, which is a variety of granite. This igneous rock was observed to be generally weathered to depths of 9 to 16 feet below ground surface. The drill rig encountered refusal at depths where the weathered tonalite transitioned into relatively unweathered bedrock. The seismic refraction survey is consistent with the information from the borings and depicts the hardness of the formational material with depth. As weathered bedrock, the tonalite consists of gray to yellow gray and olive gray medium to coarse silty sand, with distinguishable crystals of biotite, quartz and feldspar. Much of the feldspar appears weathered into clayey minerals. The weathered tonalite was medium dense to dense and moist throughout. The weathered and unweathered formational materials typically exhibit a high bearing capacity.

2.03 FLOODING POTENTIAL

The site is not included within a FEMA Flood Zone. The site is not located within a dam inundation zone. In our opinion, the potential for flooding to impact the site is considered negligible.

2.04 SURFACE AND GROUNDWATER CONDITIONS

There are no impoundments of surface water observed on or adjacent to the subject site or with the immediate site area. Storm drain improvements constructed at the site should minimize the potential for flooding. At the time of our field investigation, no groundwater was encountered in any of the borings. Based on the relative density of the formational materials at the site there is a high potential for perched groundwater to appear along the contact between the weathered materials/fills and the unweathered formational materials. Additional groundwater seepage may be encountered in the future due to rainfall, irrigation or broken pipes. Since the prediction of the locations of such conditions is difficult, they are typically mitigated if and when they occur.

2.05 FAULTING AND SEISMICITY

Faults are one of the most widespread geologic hazards to development in California. Faults of most concern are those designated as active (less than about 11,000 years since last movement) and

potentially active (11,000 to about 750,000 years). The subject site is not located within an area previously known for significant geologic hazards due to active faults. The site is not located within any mapped Alquist-Priolo Special Studies Zones (CDMG, 1997).

Potential seismic hazards at the site are anticipated to be the result of ground shaking from distant active faults. The nearest known active fault is the Newport-Inglewood-Rose Canyon fault zone, which is located about 11.8 miles (19.0 kilometers) southwest of the site. The fault zone is composed of a northwest trending line of en-echelon faults extending from the Los Angeles basin to San Diego. This fault, located both on and off shore has been active in Holocene time.

A number of other significant faults also occur in the San Diego metropolitan area suggesting that the regional faulting pattern is very complex. Faults such as those offshore are known to be active and any could cause a damaging earthquake. The San Diego metropolitan area has experienced some major earthquakes in the past, and will likely experience future major earthquakes. Other significant faults within the site vicinity include the Elsinore fault zone which is located 18.4 miles (22.8 kilometers) northeast of the site. A summary of the active faults, and associated properties, within 100 miles of the site is presented on a table within Appendix D. Figure 5 shows the location of known active faults in the area of the site.

2.06 LIQUEFACTION POTENTIAL

Liquefaction is a phenomenon where earthquake induced ground vibrations increase the pore pressure in saturated, granular soils until it is equal to the confining, overburden pressure. When this occurs, the soil can completely loose its shear strength and enter a liquefied state. The possibility of liquefaction is dependent upon grain size, relative density, confining pressure, saturation of the soils, strength of the ground motion and duration of ground shaking. In order for liquefaction to occur three criteria must be met: underlying loose, coarse-grained (sandy) soils, a groundwater depth of less than about 50 feet and a nearby large magnitude earthquake.

Given the relatively dense nature of the materials beneath the site, and the absence of a shallow groundwater table, the potential for liquefaction to occur is negligible.

2.07 LANDSLIDES

The site is not located in a hillside area where earthquake induced landslides would cause permanent ground displacements. No reported occurrences of landslides or debris flows are known to have affected the site. Therefore, the potential for landslides and mudflows is considered to be very low at the site.

2.08 TSUNAMI AND SEICHE HAZARD

The site is not located within an area mapped by the California Geological Survey as subject to inundation by tsunami. Given the inland location of the site at an elevation of approximately 600 feet MSL, within a densely developed area, the inundation hazard posed by tsunami is considered to be very low. Seiches are not considered to be a hazard due to the absence of above-ground tanks or reservoirs located immediately up gradient from the site.

2.09 OTHER GEOLOGIC HAZARD CONSIDERATIONS

California Geological Survey Note 48 (2007) identifies a number of exceptional geologic hazards that can occur at individual sites, but do not occur statewide. Evaluation of these exceptional conditions is referred to as a conditional geologic assessment by Note 48. Specific assessment items listed in Note 48 are addressed in the table below.

Geologic Hazard	Conditional Assessment	Reference
Methane gas, hydrogen-sulfide gas, tar seeps	Not applicable. No wells found in site vicinity. Geologic site and land use are not conducive to accumulation of methane or hydrogen sulfide gases or formation of tar seeps.	Regional Wildcat Map, Dept. of Conservation, Division of Oil, Gas and Geothermal Resources
Volcanic eruption	Not applicable, site is not is a known hazard area for volcanic eruptions.	Miller, 1989 (U.S.G.S. Bulletin 1847)
Flooding	The proposed development area is not located within the boundaries of a 100-year flood zone	FEMA Online Maps
Tsunami and seiches inundation	Not applicable.	California Geological Survey Tsunami Inundation Maps
Radon-222 gas	Low Potential. Typically a concern with Marine Rich Organic Shale of the California Coast Ranges.	U.S. E.PA. online Map of Radon Zones
Naturally occurring asbestos	Not applicable, site is not in an area more likely to contain naturally occurring asbestos.	Churchill and Hill, 2000 (DMG OFR 2000-19).
Hydrocollapse due to anthropic use of water	The regional geologic setting, drilling data and field observation indicate that the soils present are not likely to experience hydrocollapse.	Geologic Setting of the site and Appendix B
Clays and cyclic softening	Clay soils are not present at the site	Not applicable

3.00 CONCLUSIONS

3.01 GENERAL CONCLUSIONS

Given the findings of the investigation, it appears that the site geology is suitable for the proposed construction. Based on the investigation, it is our opinion that the proposed development is safe against landslides, slippage, and settlement provided the recommendations presented in our report are incorporated into the design and construction of the project. Grading and construction of the proposed project will not adversely affect the geologic stability of adjacent properties. The nature and extent of the investigation conducted for the purposes of this declaration are, in our opinion, in conformance with generally accepted practice in this area. Therefore, the proposed project appears to be feasible from a geologic standpoint. There appears to be no significant geologic constraint onsite that cannot be mitigated by proper planning, design, and sound construction practices. Specific conclusions pertaining to geologic conditions are summarized below:

- Due to proximity of the site to regional active and potentially active faults, the site could experience moderate to high levels of ground shaking from regional seismic events within the projected life of the building. A design performed in accordance with the current California Building Code and the seismic design parameters of the Structural Engineers Association of California is expected to satisfactorily mitigate the effects of future ground shaking.

- The potential for active (on-site) faulting or landslides is considered low.

- A potential for liquefaction during strong ground motion is very low.

3.02 EARTHQUAKE ACCELERATIONS \ CBC SEISMIC PARAMETERS

The computer program Earthquake Ground Motion Parameters Version 5.0.8 was used to calculate the CBC site specific design parameters as required by the 2010 California Building Code. Based upon boring data, SPT values, and seismic refraction survey, the site can be classified as Site Class C. The spectral acceleration values for 0.2 second and 1 second periods obtained from the computer program and in accordance with Section 1613.5 of the 2010 California Building Code are tabulated below.

Ground Motion Parameter	Value	2010 CBC Reference
S_S	1.050g	Section 1613.5.1
S_1	0.399g	Section 1613.5.1
Site Class	C	Section 1613.5.2
F_a	1.0	Table 1613.5.3(1)
F_v	1.401	Table 1613.5.3(2)
S_{MS}	1.050g	Section 1613.5.3
S_{M1}	0.559g	Section 1613.5.3
S_{DS}	0.700g	Section 1613.5.4
S_{D1}	0.373g	Section 1613.5.4

3.03 SEISMIC INDUCED SETTLEMENT

Seismically induced settlement occurs most frequently in areas of high seismicity that are underlain by loose, granular sediments. Based on the shallow depth to unweathered formational material the vertical movement due to seismically induced settlement will be negligible.

3.04 BEARING FAILURE

When liquefaction occurs, the soil can completely lose its shear strength and lose its capacity to support buildings resulting in a foundation bearing failure. Lightweight structures which are embedded in liquefiable soil and extend below the groundwater table contain large void spaces which may "float" or lift up and out of the ground surface during or after an earthquake.

Since the liquefaction potential is very low at the subject site, the potential for bearing capacity failure due to liquefaction is negligible.

3.05 LATERAL SPREADING (LATERAL DISPLACEMENT)

Lateral spreading is a condition where a relatively stiff block of soil moves laterally toward a free face or slope on a liquefied zone of subsurface soil. Lateral spreads generally develop along gentle slopes and move toward a free face such as an incised river channel. Lateral spreads can cause significant horizontal movement causing fissures, and scarps to develop at the surface. Lateral spreads have been observed to disrupt foundations of buildings located across a failure, to rupture sewers, pipelines and other utilities and compress or buckle structures at the toe of the spread. Due to the low gradient of the site, the potential for lateral spreading is considered negligible.

3.06 LIFELINE HAZARDS

In the event of an earthquake, natural gas pipelines may break and catch fire and water lines may break preventing firefighters from accessing water. Thus, consideration should be given to providing isolated and flexible connections for gas and water utility lines as a preventive measure.

4.00 RECOMMENDATIONS

Our recommendations are considered minimum and may be superseded by more conservative requirements of the architect, structural engineer, building code, or governing agencies. The foundation recommendations are based on the expansion index and shear strength of the onsite soils. Import soils, if necessary should be a very low expansion potential (Expansion Index less than 20) and should be approved by the Geotechnical Engineer prior to importing to the site. In addition to the recommendations in this section, additional general earthwork and grading specifications are included in Appendix G.

Based on our findings during the course of our investigation, it is recommended conventional spread footings and/or continuous wall footings be used to support the proposed structures. Continuous footings are recommended for retaining walls, if proposed.

4.01 EXCAVATION CHARACTERISTICS/SHRINKAGE

Our exploratory borings were advanced within the fill material and weathered formational materials with some difficulty but no oversize materials were encountered in these materials. Our exploratory borings were terminated upon refusal of the unweathered formational materials. Accordingly we expect that the upper earth materials will be rippable with conventional heavy duty grading equipment with some oversized materials expected. When encountered, the unweathered formational materials may be difficult to excavate with conventional earthmoving equipment and may require the use of heavy ripping equipment, blasting, rock splitting or other specialty construction techniques. Excavations within the unweathered formational materials may result in oversized materials that are considered unsuitable for use in the structural fills at the site. Unsuitable materials should be hauled to an appropriate offsite disposal site.

Shrinkage is the decrease in volume of soil upon removal and recompaction expressed as a percentage of the original in-place volume, which will account for changes in earth volumes that will occur during grading. Our estimate for shrinkage of the onsite fill and weathered formational soils are expected to range from 5 to 15 percent.

4.02 Settlement Considerations

Based on the known subsurface conditions and site geology, we anticipate that properly designed and constructed foundations that are supported on compacted fill materials will experience a total and differential settlement on the order of 1.0 inch and ½ inch, respectively. As a minimum, structures supported by shallow conventional foundations should be designed to accommodate a total settlement of at least 1.0 inch with differential settlements of ½ inch over a horizontal distance of 50 feet.

4.03 Site Clearing Recommendations

All surface vegetation, trash, debris, asphalt concrete, Portland cement concrete and underground pipes should be cleared and removed from the proposed construction site. Underground facilities such as utilities, pipes or underground storage tanks may exist at the site. Removal of underground tanks is subject to state law as regulated by the County, City and/or Fire Department. If storage tanks containing hazardous or unknown substances are encountered, the proper authorities must be notified prior to any attempts at removing such objects.

Any water wells, if encountered during construction, should be exposed and capped in accordance with the requirements of the regulating agencies.

Depressions resulting from the removal of foundations of existing buildings, underground tanks and pipes, buried obstructions and/or tree roots should be backfilled with properly compacted material.

4.04 Site Grading Recommendations

All fill materials beneath the building envelope should be compacted to at least 95 percent of maximum dry density as determined by ASTM Test Method D1557. Fill materials outside the building footprint should be compacted to at least 90 percent of maximum dry density as determined by ASTM D 1557. Fill materials should be placed in loose lifts, no greater than 8 inches prior to applying compactive effort. All engineered fill materials should be moisture-conditioned and processed as necessary to achieve a uniform moisture content that is near optimum moisture content and within moisture limits required to achieve adequate bonding between lifts.

4.05 SITE OVEREXCAVATION

Building plans, grading plans and foundation elevations were not available at the time of our investigation. Therefore, once formal plans are prepared and available for review, this office should review these plans from a geotechnical viewpoint, comment on any changes, and revise the recommendations of this report as necessary.

All organics, debris, trash and topsoil should be removed from the grading area and hauled offsite. Recommendation for site grading to prepare the building pad area for the support of the planned structure is as follows.

We recommend that all existing fill materials and residual soils beneath the building pad be removed and re-compacted as an engineered fill. In addition, to provide a uniform fill mat beneath the proposed building, we recommend that the entire building pad be excavated to the depth of the maximum amount of fill exposed beneath the building, which based on the boring logs is approximately 6 feet below existing grade. The horizontal limits of the removal and re-compaction should extend at least 5 feet beyond the building footprint. Prior to the re-compaction process, the bottom of the excavation to receive fill should be scarified to a depth of 8 to12 inches, moisture conditioned and re-compacted.

The purpose of the over-excavation is to provide a uniform fill mat beneath the building. Assuming the bottom of footings are at 2 feet below grade, then the footings would have 4 feet of compacted fill beneath them. If deeper footings are planned, then the depth of the over-excavation should extend to that depth which would provide a minimum of 3 feet of compacted fill beneath all footings.

Hardscape and pavement areas should have the upper 2 feet of undocumented fill materials removed and re-compacted as engineered fill. Prior to the re-compaction process, the bottom of the excavation to receive fill should be scarified to a depth of 6 to 8 inches, moisture conditioned and re-compacted. Processing for hardscape and pavement areas should extend a minimum of 2 feet outside the hardscape/pavement limits.

Any expansive clayey materials (Expansion Index greater than 20) that are encountered during grading operations should not be used in the engineered fill. Those clayey materials should be removed from the grading area and properly disposed of off-site.

4.06 FILL MATERIALS

Removed and/or overexcavated soils may be moisture-conditioned to slightly above optimum moisture content and recompacted as engineered fill, except for soils containing detrimental amounts of organic material or expansive clayey soils (expansion index greater than 20). The fill materials derived from the on-site soils should not contain rocks or lumps of a greater dimension than 4 inches. The fill materials should be compacted to a minimum of 95% of the maximum dry density per ASTM D-1557 within the building pad and 90% of the maximum dry density throughout the rest of the site.

Imported materials shall be free from vegetable matter and other deleterious substances, should have an expansion index less than 20, shall not contain rocks or lumps of a greater dimension than 4 inches, and shall be approved by the geotechnical consultant. In addition, the contractor must ensure that all imported materials conform to the requirements of DTSC/DSA Clean Fill Imported Fill Materials for School Sites by providing proper documentation for the imported materials.

4.07 FOUNDATIONS

Spread and/or continuous footings on compacted fill materials, may be used to support these structures and designed using an allowable bearing pressure of 3,000 psf. This allowable bearing pressure may be increased by 20% for each additional foot of width and/or depth, to a maximum value of 4,500 psf. The allowable bearing capacity may also be increased by one-third for considerations of short term wind or seismic loads. The recommended minimum footing width and embedment depth below the lowest adjacent grade are as follows:

Foundation Type	Minimum Width	Minimum Depth
Continuous (Interior)	18 inches	24 inches
Continuous (Perimeter)	18 inches	24 inches
Spread Footings	24 inches	24 inches

Soil resistance developed against lateral structural movement can be obtained from the passive pressure value of 250 pcf. For sliding resistance, a friction coefficient of 0.30 may be used at the concrete and soil interface. The passive pressure and the friction of resistance could be combined

without reduction. In addition, the lateral passive resistance is taken into account only if it is ensured that the soil against embedded structures will remain intact with time.

The minimum reinforcement for footings should consist of two No. 5 bars placed within 3 inches of the top of footings and two No. 5 bars placed within 3 inches of the bottom of footings is recommended. However, the structural engineer may require heavier reinforcement.

4.08 Concrete Slabs on Grade

Concrete floors with a minimum thickness of 5.0 inches are recommended for slabs on grade considering normal floor loading conditions. However, if heavy concentrated or moving loads are anticipated, slabs should be designed using a modulus of subgrade reaction (k) of 150 psi/in when soils are prepared in conformance with the grading recommendations contained within the report. Nominal reinforcement of slabs should consist of No. 4 bars placed 18 inches on center, each direction at the mid-height of the slab

A base course capillary break is not required for slabs on grade at the subject site. However, damp proofing should be provided under all slabs on grade with moisture sensitive floor coverings as specified in the 2010 California Building Code. The damp proofing material should consist of a minimum 10 mil polyethylene liner. The liner should be placed with 2 inches of sand below and 2 inches of sand above the polyethylene liner. The liner should be carefully fitted around service openings with joints lapped not less than 6 inches.

4.09 Miscellaneous Flatwork

Miscellaneous concrete flatwork and walkways may be designed with a minimum thickness of 5.0 inches. All flatwork should be reinforced with No. 4 bars, 18 inches on center, each direction at the mid-height of the slab. The structural engineer may require heavier reinforcement. Control joints should be constructed to create squares or rectangles with a maximum spacing of 15 feet on large slab areas.

4.10 Prewetting Recommendation

The soils underlying the slab-on-grade should be brought to a minimum of 2% and a maximum of 4% above their optimum moisture content for a depth of 12 inches prior to the placement of

concrete. The geotechnical consultant should perform insitu moisture tests to verify that the appropriate moisture content has been achieved a maximum of 24 hours prior to the placement of concrete or moisture barriers.

4.11 CORROSIVITY

Soluble sulfate tests indicate that concrete at the subject site will have a negligible exposure to water soluble sulfate in the soil. Type II/V cement may be used for concrete in direct contact with onsite soils. Based on the soluble chloride levels the on-site soils have a degree of corrosivity to metals that is negligible to corrosive.

Corrositivity testing consisting of soils reactivity (pH) and resistivity (ohms-cm) were also tested on representative soils. The test results indicate that the soils have a soil reactivity ranging from 6.6 to 7.1 and a resistivity of 820 to 1,900 ohms-cm. A neutral or non-corrosive soil has a reactivity value ranging from 5.5 to 8.4. Generally, soils that could be considered corrosive to metal have resistivities less than 3,000 ohms. Those soils with resistivity values of less than 1000 ohms-cm can be considered extremely corrosive.

Based on our test results, it is our opinion that the underlying soils at the site have a corrosion potential. The actual corrosive potential is determined by many factors in addition to those presented herein. MTGl, Inc. does not practice corrosion engineering. Protection of buried metal pipes with sand bedding and protective coating may be used to further reduce the corrosion potential. We recommend that a corrosion engineer be consulted.

4.12 RETAINING WALLS

Embedded structural walls should be designed for lateral earth pressures exerted on the walls. The magnitude of these earth pressures will depend on the amount of deformation that the wall can yield under the load. If the wall can yield sufficiently to mobilize the full shear strength of the soils, it may be designed for the active condition. If the wall cannot yield under the applied load, then the shear strength of the soil cannot be mobilized and the earth pressures will be higher. These walls such as basement walls and swimming pools should be designed for the at rest condition. If a structure moves towards the retained soils, the resulting resistance developed by the soil will be the passive resistance.

For design purposes, the recommended equivalent fluid pressure for each case for walls constructed above the static groundwater table and backfilled with non-expansive soils is provided below. Retaining wall backfill should be compacted to at least 90% relative compaction based on the maximum density defined by ASTM D1557. Retaining structures may be designed to resist the following lateral earth pressures.

- Allowable Bearing Pressure – 3,000 psf
- Passive Earth Pressure - equivalent fluid weight of 250 pcf.
- At rest lateral earth pressure - 60 pcf
- Active Earth Pressures – equivalent fluid weights:

Slope of Retained Material	Equivalent Fluid Weight (pcf)
Level	40
2:1 (H:V)	65

It is recommended that all retaining wall footings be embedded at least 24 inches below the lowest adjacent finish grade. In addition, the wall footings should be designed and reinforced as required for structural considerations. The wall areas should be over excavated to a minimum depth of 2 feet below the bottom of the proposed footings. The required horizontal limits of the over excavated area shall be defined as the area extending from the edge of the footing for a minimum distance of 2 feet.

Lateral resistance parameters provided above are ultimate values. Therefore, a suitable factor of safety should be applied to these values for design purposes. The appropriate factor of safety will depend on the design condition and should be determined by the project Structural Engineer. If any super-imposed loads are anticipated, this office should be notified so that appropriate recommendations for earth pressures may be provided.

Retaining structures should be drained to prevent the accumulation of subsurface water behind the walls. Back drains should be installed behind all retaining walls exceeding 3.0 feet in height. A typical detail for retaining wall back drains is presented as Figure 6. All back drains should be outlet to suitable drainage devices. Walls and portions thereof that retain soil and enclose interior spaces and floors below grade should be waterproofed and dampproofed in accordance with the 2010 CA Building Code.

4.13 Seismically Induced Lateral Earth Pressures

The limit equilibrium Coulomb theory for static stress conditions is based on the Mononobe-Okabe method, which is commonly utilized for determining seismically induced active and passive lateral earth pressures. This method assumes three fundamental principals:

1. Wall movement is sufficient to ensure either active or passive conditions.

2. The driving soil wedge inducing the lateral earth pressures is formed by a planar failure surface starting at the heel of the wall and extending to the free surface of the backfill.

3. The driving soil wedge and the retaining structure act as rigid bodies and therefore experiences uniform accelerations throughout the respective bodies (US Army Corps of Engineers, 2003, Engineering and Design - Stability Analysis of Concrete Structures).

A seismic lateral increment of 23 pcf (equivalent fluid weight) may be applied as an incremental force which should be applied to the back of the wall in the upper 1/3 of the wall and also applied as a reduction of force to the front of the wall in the upper 1/3 of the footing.

4.14 Pavement Recommendations

Recommended pavement structural sections are based on the procedures outlined in "Design Procedures for Flexible Pavements" of the Highway Design Manual, California Transportation Department. This procedure uses the principal that the pavement structural section must be of adequate thickness to distribute the load from the design traffic (TI) to the subgrade soils in such a manner that the stresses from the applied loads do not exceed the strength of the soil (R value).

Pavement sections were designed based on an assumed Traffic Index of 4 for parking areas, 5 for driveway and 7 for truck access/fire lane using an assumed R-Value of 30. R-Value testing should be done on the finished pavement grade and pavement design should be based on the actual conditions. The preliminary recommend structural sections are as follows:

ASPHALT PAVEMENT STRUCTURAL SECTION

Pavement Area	Traffic Index	AC Thickness (in)	Base Thickness (in)
Parking Areas	4	3.0	4.0
Driveways	5	3.0	6.0
Truck Access/Fire Lane	7	4.0	10.0

Portland cement concrete (PCC) pavements for areas which are subject to traffic loads may be designed with a minimum thickness of 7.5 inches of Portland cement concrete on 4.0 inches of crushed aggregate base.

Immediately prior to constructing pavement sections, the upper 12 inches of pavement subgrade should be scarified, brought to about optimum moisture content, and compacted to at least 95 percent of the maximum dry density as determined by ASTM D 1557. Aggregate base should also be compacted to at least 95 percent relative compaction. Aggregate base should conform to Caltrans Class II or Standard Specifications for Public Works Constructions (SSPWC), Section 200 for crushed aggregate base. Asphalt concrete should be compacted to at least 95 percent of the Hveem unit weight. Asphalt concrete should conform to SSPWC Section 400-4.

4.15 CONSTRUCTION CONSIDERATIONS

4.15.1 MOISTURE SENSITIVE SOILS/WEATHER RELATED CONCERNS

The upper soils encountered at this site may be sensitive to disturbances caused by construction traffic and to changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and its support capabilities. In addition, soils that become excessively wet may be slow to dry and thus significantly delay the progress of the grading operations. Therefore, it will be advantageous to perform earthwork and foundation construction activities during the dry season. Much of the on-site soils may be susceptible to erosion during periods of inclement weather. As a result, the project Civil Engineer/Architect and Grading Contractor should take appropriate precautions to reduce the potential for erosion during and after construction.

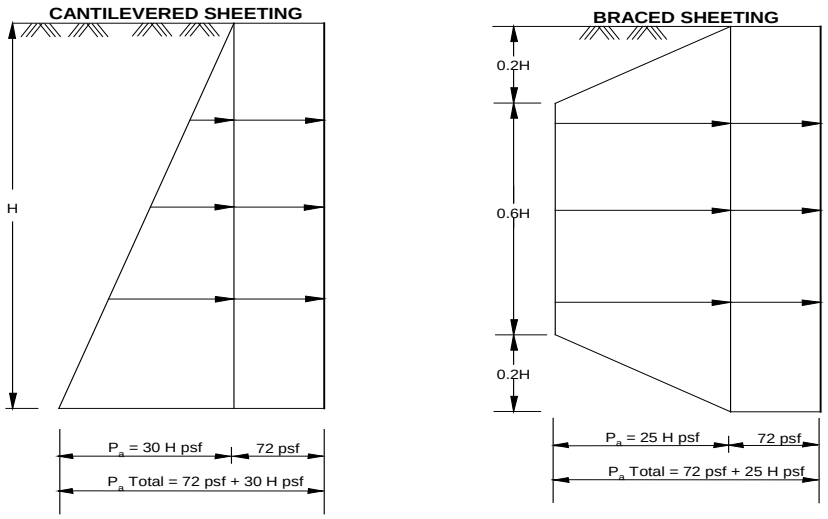
4.15.2 Drainage and Groundwater Considerations

Groundwater was not encountered during our field investigation. Based on the relative density of the formational materials at the site there is a high potential for perched groundwater to appear along the contact between the weathered materials and unweathered formation materials. In addition, groundwater seepage may be encountered in the future due to rainfall, irrigation or broken pipes. Therefore, we recommend that a representative of MTGL, Inc. be present during grading operations to evaluate areas of seepage. Drainage devices for reduction of water accumulation can be recommended should these conditions occur.

Water should not be allowed to collect in the foundation excavation, on floor slab areas, or on prepared subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs. The grades should be sloped away from the building and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

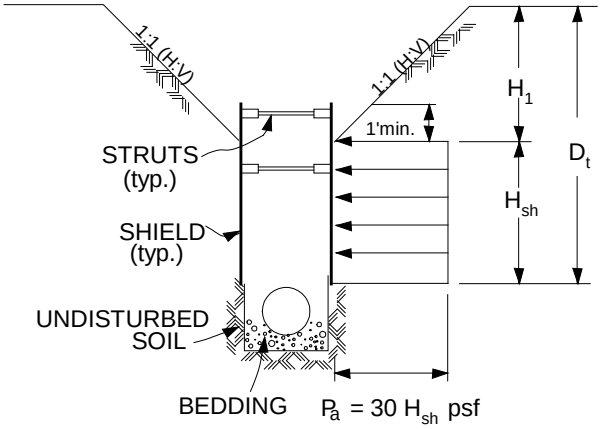
4.15.3 Temporary Excavations and Shoring

Short term temporary excavations in existing soils may be safely made at an inclination of 1:1 (horizontal to vertical) or flatter. If vertical sidewalls are required in excavations greater than 3 feet in depth, the use of cantilevered or braced shoring is recommended. Excavations less than 3 feet in depth may be constructed with vertical sidewalls without shoring or shielding. Our recommendations for lateral earth pressures to be used in the design of cantilevered and/or braced shoring are presented below. These values incorporate a uniform lateral pressure of 72 psf to provide for the normal construction loads imposed by vehicles, equipment, materials, and workmen on the surface adjacent to the trench excavation. However, if vehicles, equipment, materials, etc. are kept a minimum distance equal to the height of the excavation away from the edge of the excavation, this surcharge load need not be applied.



SHORING DESIGN: LATERAL SHORING PRESSURES

Design of the shield struts should be based on a value of 0.65 times the indicated pressure, Pa, for the approximate trench depth. The wales and sheeting can be designed for a value of 2/3 the design strut value.



HEIGHT OF SHIELD, H_{sh} = DEPTH OF TRENCH, D_t , MINUS DEPTH OF SLOPE, H_1

TYPICAL SHORING
DETAIL

Placement of the shield may be made after the excavation is completed or driven down as the material is excavated from inside of the shield. If placed after the excavation, some overexcavation may be required to allow for the shield width and advancement of the shield. The shield may be placed at either the top or the bottom of the pipe zone. Due to the anticipated thinness of the shield walls, removal of the shield after construction should have

negligible effects on the load factor of pipes. Shields may be successively placed with conventional trenching equipment.

Vehicles, equipment, materials, etc. should be set back away from the edge of temporary excavations a minimum distance of 15 feet from the top edge of the excavation. Surface waters should be diverted away from temporary excavations and prevented from draining over the top of the excavation and down the slope face. During periods of heavy rain, the slope face should be protected with sandbags to prevent drainage over the edge of the slope, and a visqueen liner placed on the slope face to prevent erosion of the slope face.

Periodic observations of the excavations should be made by the geotechnical consultant to verify that the soil conditions have not varied from those anticipated and to monitor the overall condition of the temporary excavations over time. If at any time during construction conditions are encountered which differ from those anticipated, the geotechnical consultant should be contacted and allowed to analyze the field conditions prior to commencing work within the excavation. All Cal/OSHA construction safety orders should be observed during all underground work.

4.15.4 Utility Trenches

All utility trench backfill within street right of way, utility easements, under or adjacent to sidewalks, driveways, or building pads should be observed and tested by the geotechnical consultant to verify proper compaction. Trenches excavated adjacent to foundations should not extend within the footing influence zone defined as the area within a line projected at a 1:1 (horizontal to vertical) drawn from the bottom edge of the footing. Trenches crossing perpendicular to foundations should be excavated and backfilled prior to the construction of the foundations. The excavations should be backfilled in the presence of the geotechnical engineer and tested to verify adequate compaction beneath the proposed footing.

Utilities should be bedded and backfilled with clean sand or approved granular soil to a depth of at least 1-foot over the pipe. The bedding materials shall consist of sand, gravel, crushed aggregate, or native, free draining soils with a sand equivalence of not less than 30. The bedding should be uniformly watered and compacted to a firm condition for pipe support.

The remainder of the backfill shall be typical on-site soil or imported soil which should be placed in lifts not exceeding 8 inches in thickness, watered or aerated to near optimum moisture content, and mechanically compacted to at least 90 percent of maximum dry density (based on ASTM D1557). All Cal/OSHA construction safety orders should be observed during all underground work.

4.15.5 Site Drainage

The site should be drained to provide for positive drainage away from structures in accordance with the building code and applicable local requirements. Unpaved areas should slope no less than 2% away from structure. Paved areas should slope no less than 1% away from structures. Concentrated roof and surface drainage from the site should be collected in engineered, non-erosive drainage devices and conducted to a safe point of discharge. The site drainage should be designed by a civil engineer.

4.16 Geotechnical Observation/Testing of Earthwork Operations

The recommendations provided in this report are based on preliminary design information and subsurface conditions as interpreted from the investigation. Our preliminary conclusion and recommendations should be reviewed and verified during site grading, and revised accordingly if exposed Geotechnical conditions vary from our preliminary findings and interpretations. The Geotechnical consultant should perform Geotechnical observation and testing during the following phases of grading and construction:

- During site grading and overexcavation.
- During foundation excavations and placement.
- Upon completion of retaining wall footing excavation prior to placing concrete.
- During excavation and backfilling of all utility trenches
- During processing and compaction of the subgrade for the access and parking areas and prior to construction of pavement sections.
- When any unusual or unexpected Geotechnical conditions are encountered during any phase of construction.

5.00 LIMITATIONS

The findings, conclusions, and recommendations contained in this report are based on the site conditions as they existed at the time of our investigation, and further assume that the subsurface conditions encountered during our investigation are representative of conditions throughout the site. Should subsurface conditions be encountered during construction that are different from those described in this report, this office should be notified immediately so that our recommendations may be re-evaluated.

This report was prepared for the exclusive use and benefit of the owner, architect, and engineer for evaluating the design of the facilities as it relates to geotechnical aspects. It should be made available to prospective contractors for information on factual data only, and not as a warranty of subsurface conditions included in this report.

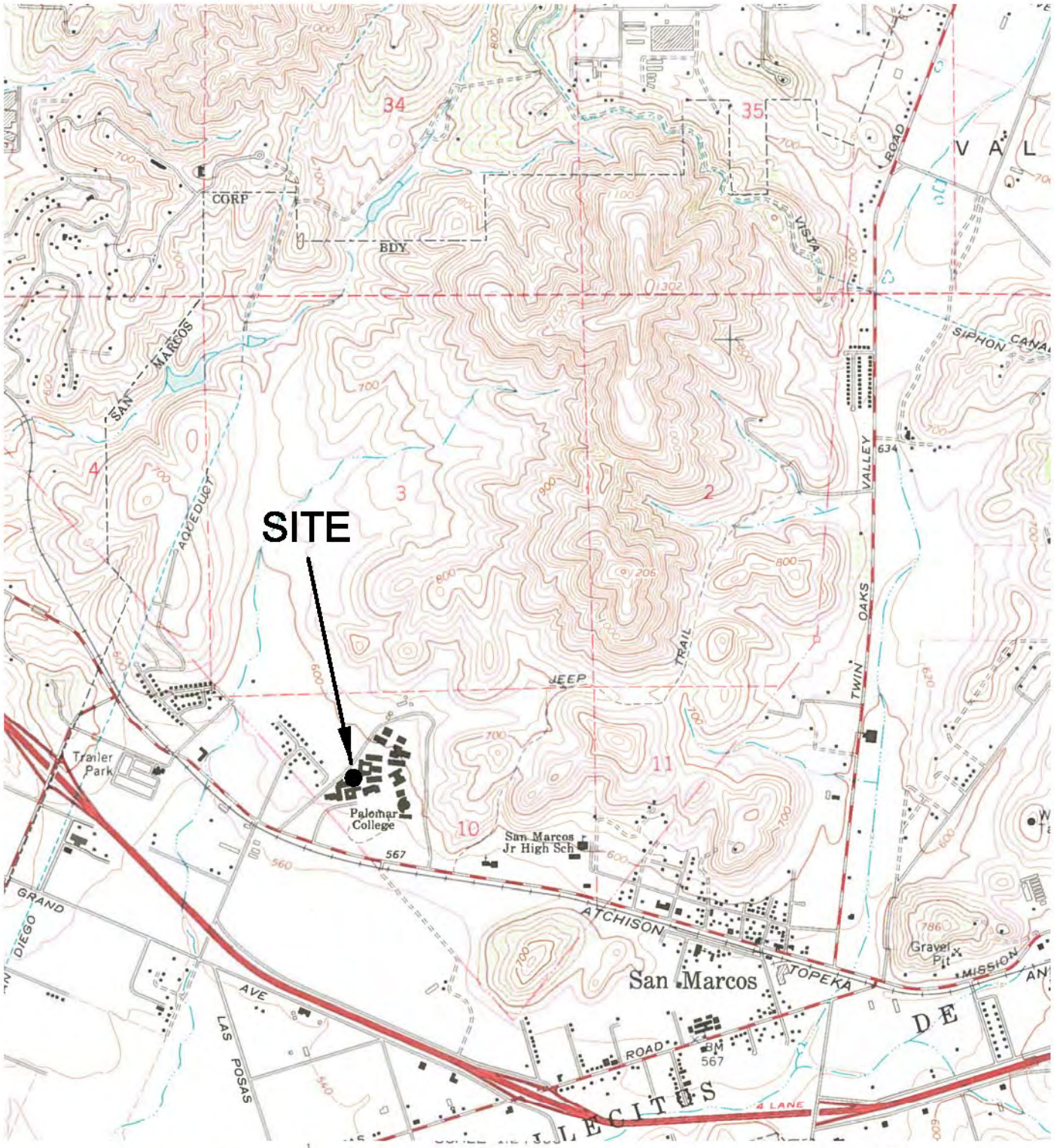
Our investigation was performed using the standard of care and level of skill ordinarily exercised under similar circumstances by reputable soil engineers and geologists currently practicing in this or similar localities. No warranty, express or implied, is made as to the conclusions and professional advice included in this report.

This firm does not practice or consult in the field of safety engineering. We do not direct the Contractor's operations, and we are not responsible for their actions. The contractor will be solely and completely responsible for working conditions on the job site, including the safety of all persons and property during performance of the work. This responsibility will apply continuously and will not be limited to our normal hours of operation.

The findings of this report are considered valid as of the present date. However, changes in the conditions of a site can occur with the passage of time, whether they are due to natural events or to human activities on this or adjacent sites. In addition, changes in applicable or appropriate codes and standards may occur, whether they result from legislation or the broadening of knowledge.

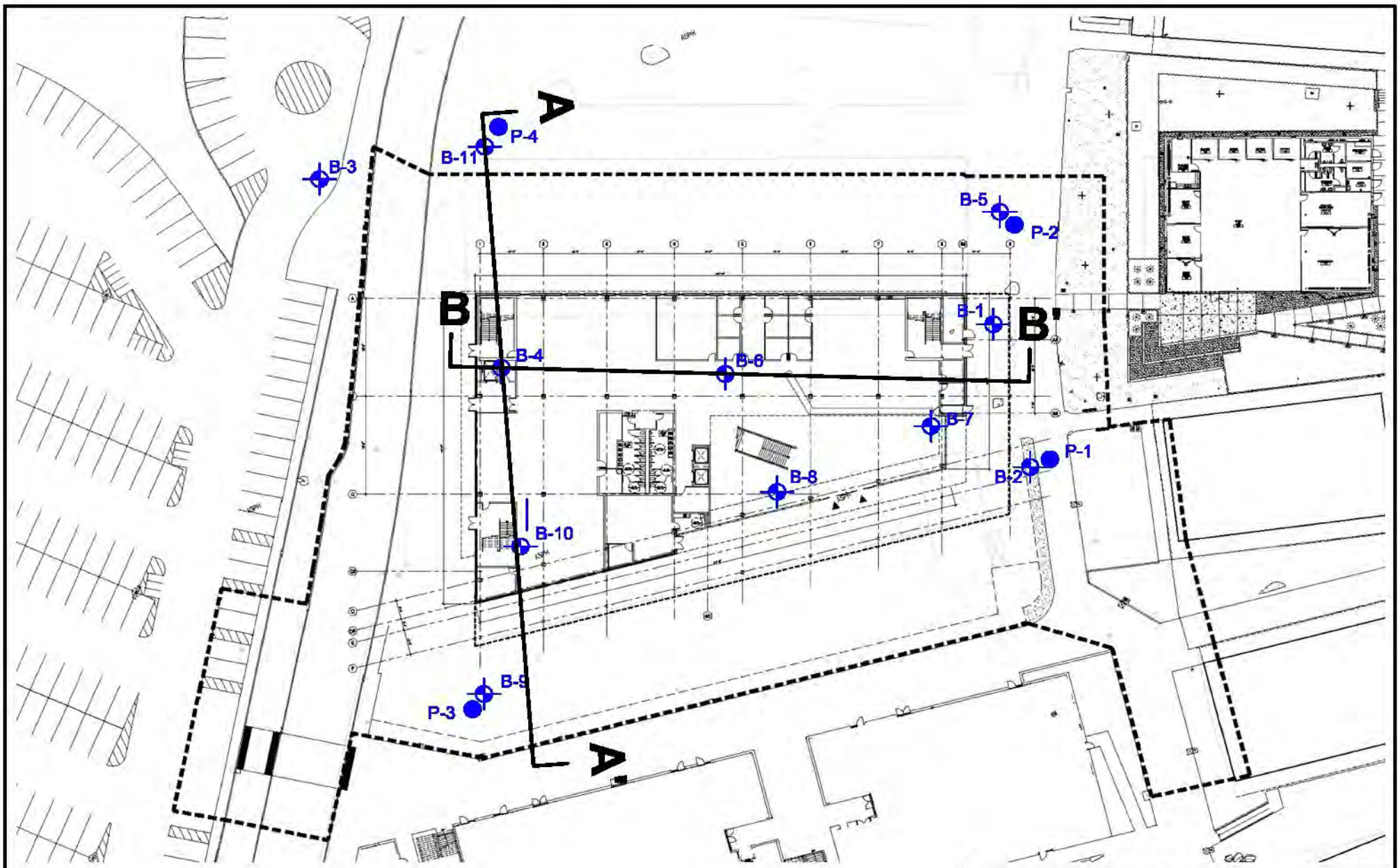
Accordingly, this report may become invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and revision as changed conditions are identified.

FIGURES



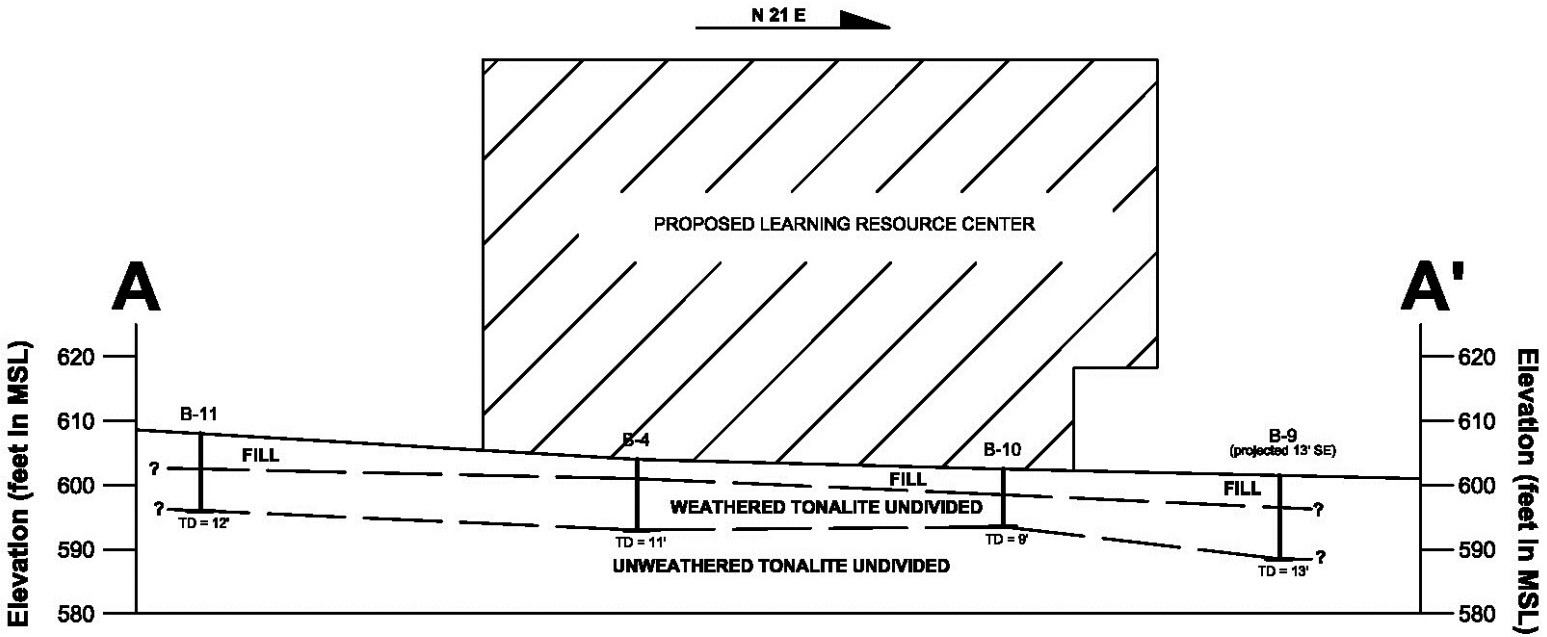
REFERENCE: USGS, San Marcos Quadrangle, 1968.

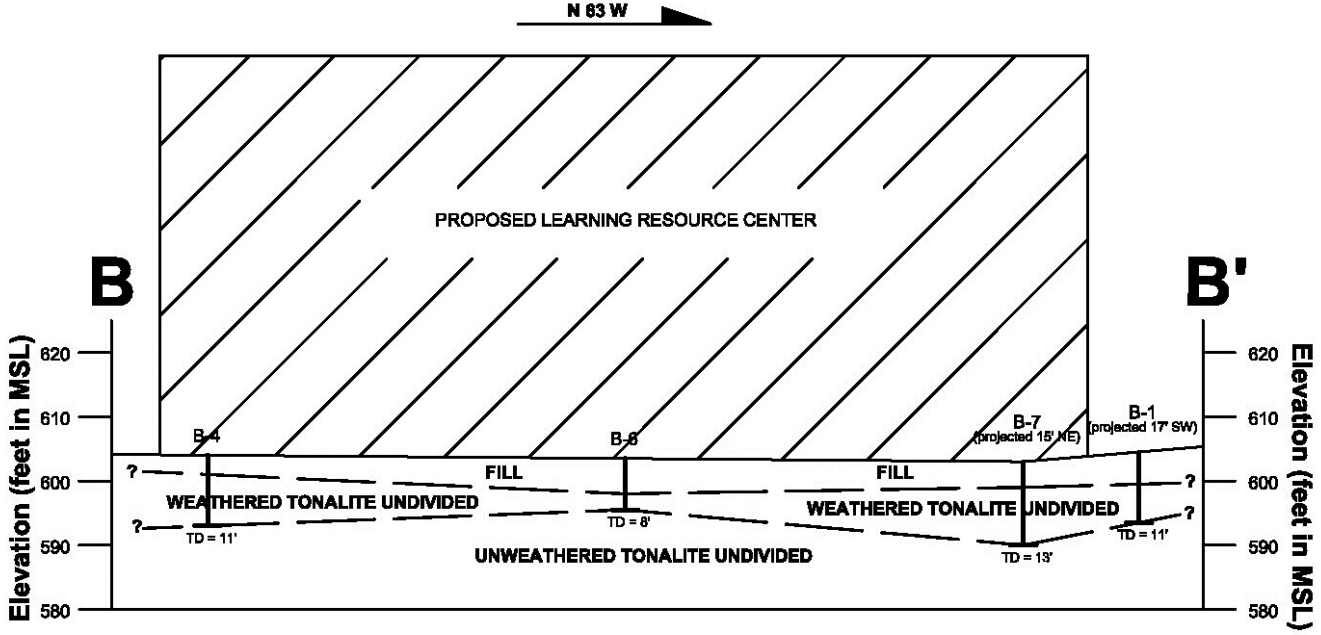
SITE LOCATION MAP	
MTGL, INC	PROJECT NO. 4060A11 LOG NO. 12-183 **FIGURE 1**



SITE PLAN

MTGL, INC	PROJECT NO. 4060A11 LOG NO. 12-183 FIGURE 2





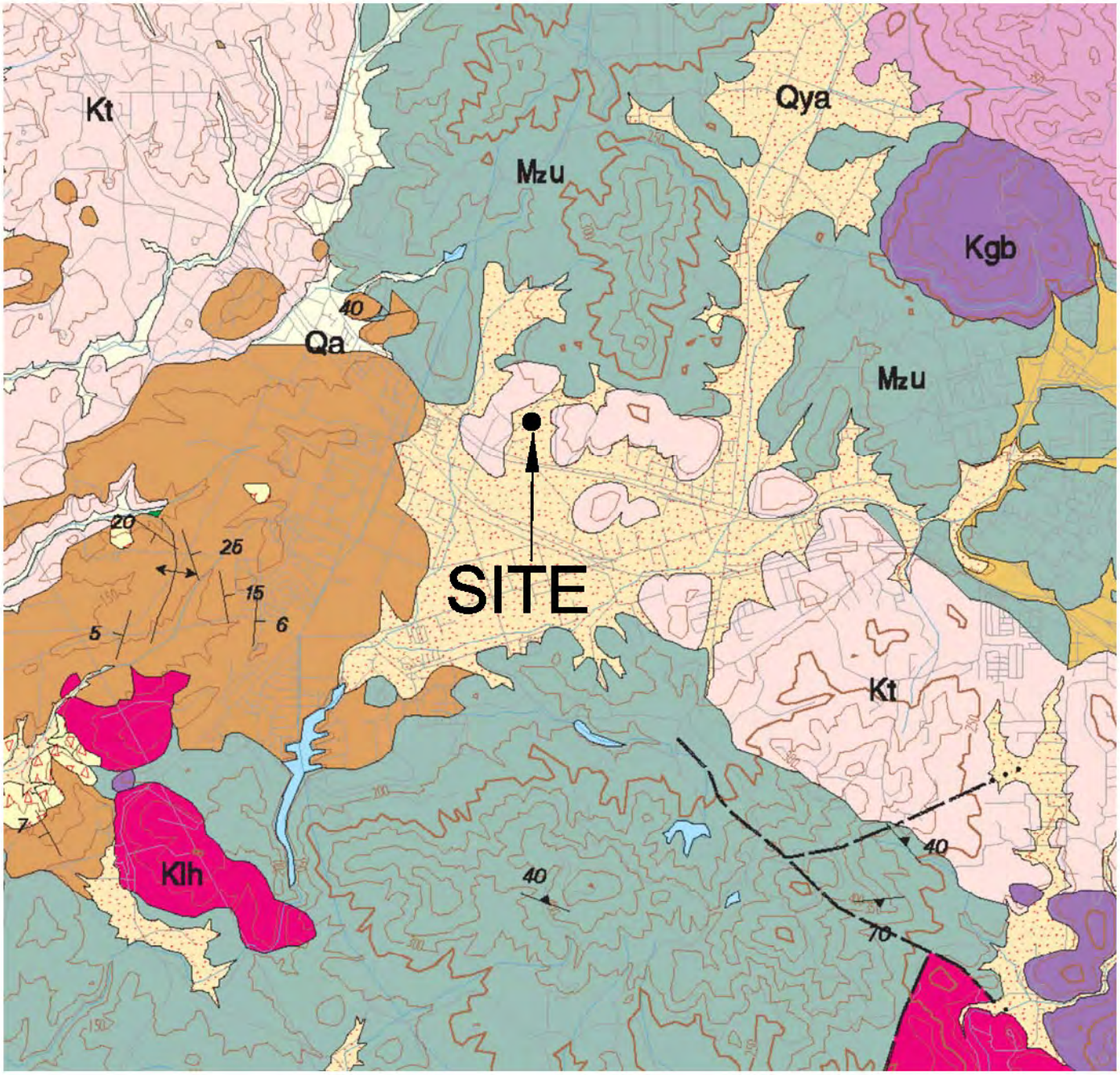
SCALE: 1" = 30'

KEY:

——?—— Approximate location of geologic contact (queried where uncertain)

GEOLOGIC CROSS SECTIONS

MTGL, INC	PROJECT NO. 4060A11 LOG NO. 12-183 **FIGURE 3**



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MILES

1 .5 0 1 2 3 4

REFERENCE: Geologic Map of the Oceanside 30' X 60' Quadrangle, California, compiled by Michael P. Kennedy and Siang S. Tan, USGS 2005.

REGIONAL GEOLOGIC MAP

MTGL, INC	PROJECT NO. 4060A11 LOG NO. 12-183 **FIGURE 4**

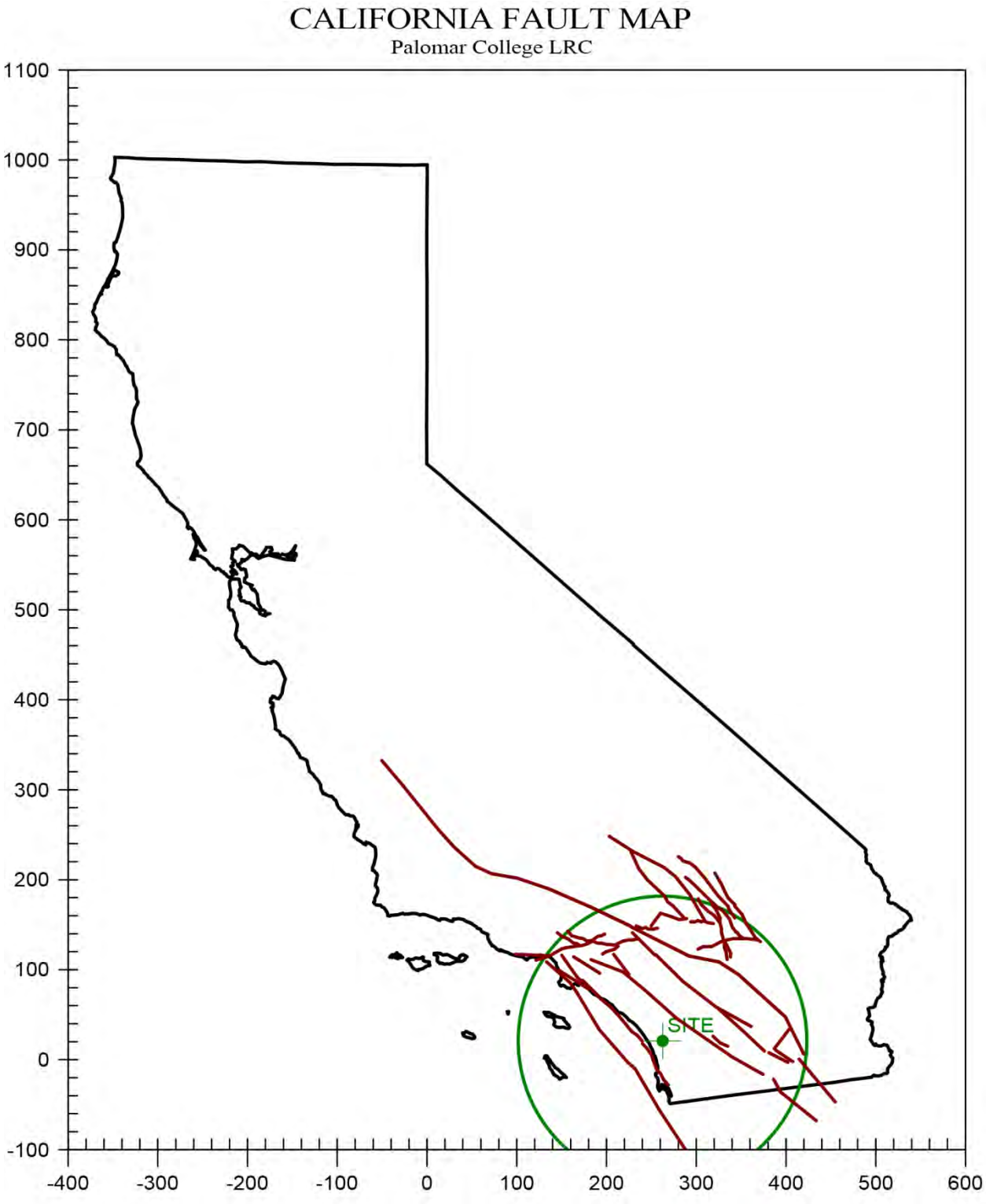
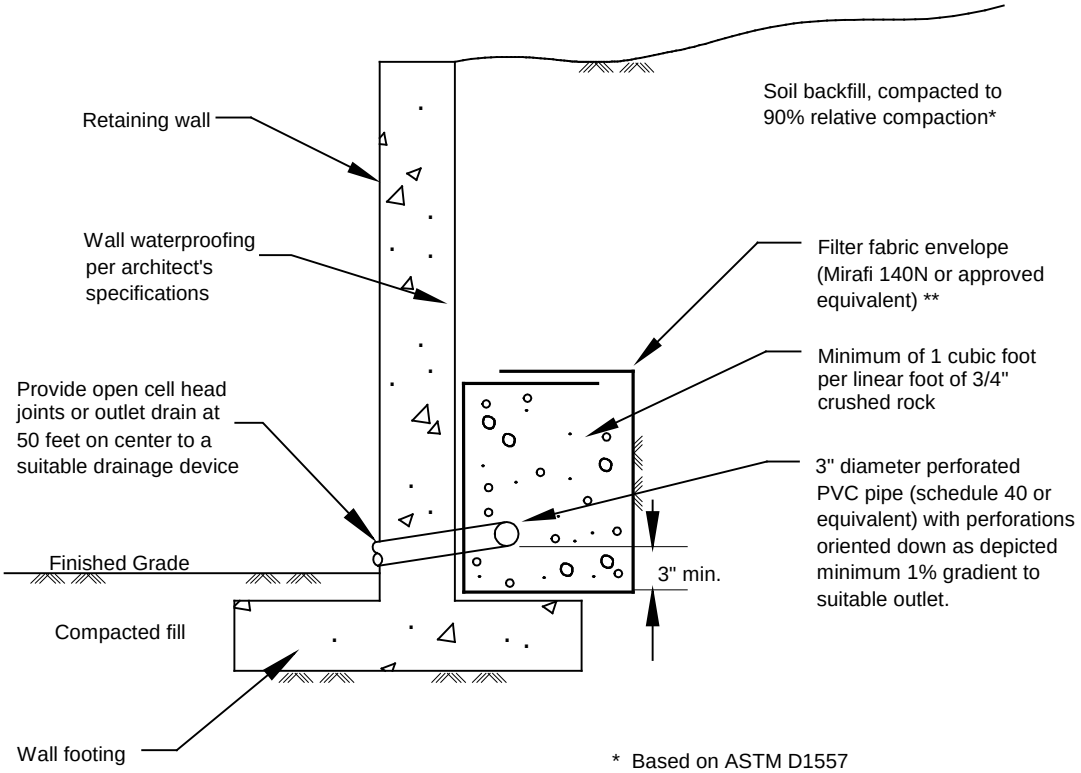

CALIFORNIA FAULT MAP
Palomar College LRC
SITE
1100
1000
900
800
700
600
500
400
300
200
100
0
-100
-400
-300
-200
-100
0
100
200
300
400
500
600

Figure 5



* Based on ASTM D1557

** If class 2 permeable material (See gradation to left) is used in place of 3/4" - 1 1/2" gravel. Filter fabric may be deleted. Class 2 permeable material compacted to 90% relative compaction. *

SPECIFICATIONS FOR CLASS 2 PERMEABLE MATERIAL (CAL TRANS SPECIFICATIONS)

Sieve Size	% Passing
1"	100
3/4"	90-100
3/8"	40-100
No.4	25-40
No.8	18-33
No.30	5-15
No.50	0-7
No.200	0-3

RETAINING WALL DRAINAGE DETAIL

Figure 6

APPENDIX A

REFERENCES

APPENDIX A

REFERENCES

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APPENDIX B

FIELD EXPLORATION PROGRAM

APPENDIX B

FIELD EXPLORATION PROGRAM

The subsurface conditions for this Geotechnical Investigation were explored by excavating exploratory borings with an 8-inch hollow-stem-auger to practical refusal, with a maximum depth of 16 feet below existing grade. All drive samples were obtained by SPT or California Tube Sampler. The approximate locations of the borings are shown on the Site Plan (Figure 2). The field exploration was performed under the supervision of our Geologist who maintained a continuous log of the subsurface soils encountered and obtained samples for laboratory testing.

Subsurface conditions are summarized on the accompanying Logs of Borings. The logs include the information obtain from drilling of the borings and from drilling of the percolation test holes. The logs contain factual information and interpretation of subsurface conditions between samples. The stratum indicated on these logs represents the approximate boundary between earth units and the transition may be gradual. The logs show subsurface conditions at the dates and locations indicated, and may not be representative of subsurface conditions at other locations and times.

Identification of the soils encountered during the subsurface exploration was made using the field identification procedure of the Unified Soils Classification System (ASTM D2488). A legend indicating the symbols and definitions used in this classification system and a legend defining the terms used in describing the relative compaction, consistency or firmness of the soil are attached in this appendix. Bag samples of the major earth units were obtained for laboratory inspection and testing, and the in-place density of the various strata encountered in the exploration was determined

The exploratory borings were located in the field by using cultural features depicted on a preliminary site plan provided by the client. Each location should be considered accurate only to the scale and detail of the plan utilized.

The exploratory borings were backfilled in accordance with State of California and County of San Diego Standards which included bentonite chips and compacted soil cuttings.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

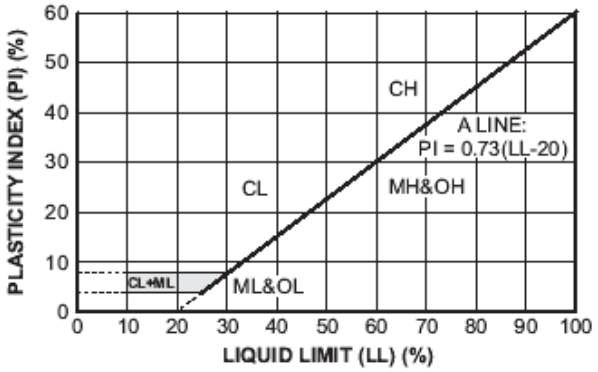
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



UNIFORM SOIL CLASSIFICATION SYSTEM

BORING NO. B-1

Logged by: BMH **Date Drilled:** 11/12/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 603' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand, medium brown, fine to medium grained, moist, medium dense.	
2							
3	26	CAL		110	9.1		
4						Semi rounded gravels.	
5							
6						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray to olive gray, medium grained, moist, very dense.	
7	50-6"	SPT					
8							
9							
10						Gray and yellowish gray, coarse grained.	
11	50-5"	SPT				(REFUSAL AT 11 FEET)	
12						Boring terminated at 11 feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11 **LOG OF BORING** **FIGURE B-1**

BORING NO. B-2

Logged by: BMH **Date Drilled:** 11/12/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 608' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand with gravel (SM), dark brown, fine to medium grained, moist to wet, medium dense.	
2							
3							
4	60-11.5"	CAL		116	8.5	**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand with gravel (SM), yellowish gray to olive gray, medium grained, moist, very dense.	
5							
6							
7							
8							
9							
10						Less weathered.	
11							
12							
13							
14							
15							
16						(REFUSAL AT 16 FEET)	
17						Boring terminated at 16 feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

MTGI

LOG OF BORING

FIGURE B-2

BORING NO. B-3

Logged by: BMH **Date Drilled:** 11/12/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 610' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**RESIDUAL SOIL:** Silty sand (SM), orange to reddish brown, fine grained, moist, loose.	
2							
3						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray with orange oxidation, coarse grained, moist, dense.	
4							
5							
6							
7							
8	50-2"	SPT				Very dense. (REFUSAL AT 8 FEET)	
9						Boring terminated at 8 feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	
10							
11							
12							
13							
14							
15							
16							
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27							
28							
29							
30							

PROJECT NO. 4060A11

LOG OF BORING

FIGURE B-3

BORING NO. B-4

Logged by: BMH **Date Drilled:** 11/12/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 604' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
						3 inches Asphalt Concrete (AC).	
1						**FILL:** Silty sand (SM), dark reddish brown, fine grained, moist, medium dense, some gravel.	
2							
3							
4						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium grained, moist, dense.	
5							
6							
7							
8							
9							
10						Very dense.	
11						(REFUSAL AT 11 FEET)	
12						Boring terminated at 11 feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

LOG OF BORING

FIGURE B-4

BORING NO. B-5

Logged by: BMH **Date Drilled:** 11/12/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 608' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1–5						**FILL:** Silty sand with gravel (SM), yellowish brown to dark brown and very dark gray, fine grained, moist, medium dense.	
6	20	CAL		109	10.4	**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium grained, moist, dense.	
10	50-6"	SPT				Fragments of fresh blue gray tonalite, very dense.	
15						(REFUSAL AT 15 FEET)	
16						Boring terminated at 15 feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	

PROJECT NO. 4060A11

LOG OF BORING

FIGURE B-5

BORING NO. B-6

Logged by: BMH **Date Drilled:** 11/12/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 603½' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
						3 inches Asphalt Concrete (AC).	
1						**FILL:** Silty sand (SM), dark brown to very dark gray, fine grained, moist, medium dense.	
2							
3	12	CAL		110	14.8		
4							
5						Lean to fat clay (CL/CH), dark brown and grayish green, low to medium plasticity, moist, hard.	
						Sandy clay (CL), gray with green, low plasticity, wet, hard.	
6	65-11"	CAL		118	12.2		
7						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray to olive gray, coarse grained, moist, very dense.	
8						(REFUSAL AT 8 FEET)	
9						Boring terminated at 8 feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
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28							
29							
30							

PROJECT NO. 4060A11

MTGI

LOG OF BORING

FIGURE B-6

BORING NO. B-7

Logged by: BMH
Date Drilled: 11/12/2012
Method of Drilling: 8-inch diameter hollow-stem auger
Elevation: 603' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand (SM), reddish brown, fine to medium grained, moist, medium dense.	
2							
3							
4						Silty sand / sandy clay (SM/CH), reddish brown, fine grained, medium to high plasticity, wet, medium dense, medium stiff.	
5						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, coarse grained, moist, dense.	
6							
7							
8							
9							
10							
11							
12						Very dense.	
13						(REFUSAL AT 13 FEET)	
14						Boring terminated at 13 feet due to refusal.	
15						Groundwater not encountered	
16						Backfilled on 11/12/2012	
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

LOG OF BORING

FIGURE B-7

BORING NO. B-8

Logged by: BMH
Date Drilled: 11/12/2012
Method of Drilling: 8-inch diameter hollow-stem auger
Elevation: 602½' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
						3 inches Asphalt Concrete (AC).	
1						**FILL:** Clayey sand (SC), medium brown and dark gray, medium grained, moist, medium dense.	
2							
3							
4							
5						Dark brown, moist to wet.	
6							
7						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, coarse grained, moist, dense to very dense.	
8							
9							
10							
11							
12						(REFUSAL AT 12½ FEET)	
13						Boring terminated at 12½ feet due to refusal. Groundwater not encountered Backfilled on 11/12/2012	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

LOG OF BORING

FIGURE B-8

BORING NO. B-9

Logged by: BMH **Date Drilled:** 11/16/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 601½' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
						3 inches Asphalt Concrete (AC).	
1						**FILL:** Silty sand (SM), orangish brown, medium grained, moist, medium dense.	
2						Some clay.	
3	20	CAL		118	13.1		
4						Silty sand with gravel (SM), yellowish gray, fine grained, moist, medium dense, angular gravel to 2 inches in size.	
5							
6						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium grained, moist, dense.	
7							
8							
9							
10							
11							
12							
13						(REFUSAL AT 13 FEET)	
14						Boring terminated at 13 feet due to refusal.	
15						Groundwater not encountered	
16						Backfilled on 11/16/2012	
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11 **LOG OF BORING** **FIGURE B-9**

BORING NO. B-10

Logged by: BMH **Date Drilled:** 11/16/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 602½' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand (SM), yellowish gray, medium grained, moist, medium dense.	
2						Some clay.	
3							
4							
5						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, fine to coarse grained, moist, dense to very dense, some angular gravel.	
6							
7							
8							
9						(REFUSAL AT 9 FEET)	
10						Boring terminated at 9 feet due to refusal. Groundwater not encountered Backfilled on 11/16/2012	
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
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29							
30							

PROJECT NO. 4060A11

MTG

LOG OF BORING

FIGURE B-10

BORING NO. B-11

Logged by: BMH **Date Drilled:** 11/16/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 608' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand (SM), yellowish gray to reddish brown, medium grained, moist, medium dense.	
2							
3	17	CAL		111	8.3		
4							
5						Silty sand with gravel (SM), reddish brown, medium grained, moist, medium dense.	
6	81-8"	CAL		102	7.3	**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium to coarse grained, moist, dense to very dense, some clay weathering of feldspar.	
7							
8							
9							
10							
11							
12						(REFUSAL AT 12 FEET)	
13						Boring terminated at 12 feet due to refusal. Groundwater not encountered Backfilled on 11/16/2012	
14							
15							
16							
17							
18							
19							
20							
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30							

PROJECT NO. 4060A11

MTGI

LOG OF BORING

FIGURE B-11

BORING NO. P-1

Logged by: BMH
Date Drilled: 11/12/2012
Method of Drilling: 8-inch diameter hollow-stem auger
Elevation: 603' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand with gravel (SM), dark brown, fine to medium grained, moist to wet, medium dense.	
2							
3							
4						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand with gravel (SM), yellowish gray to olive gray, medium grained, moist, very dense.	
5							
6							
7							
8							
9							
10							
11						Total depth 9'-7"	
12						Percolation test performed on 11/17/12	
13						Percolation hole backfilled on 11/17/12	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

MTG

LOG OF BORING

FIGURE P-1

BORING NO. P-2

Logged by: BMH
Date Drilled: 11/12/2012
Method of Drilling: 8-inch diameter hollow-stem auger
Elevation: 608' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1–4						**FILL:** Silty sand with gravel (SM), yellowish brown to dark brown, fine grained, moist, medium dense.	
5–9						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium grained, moist, dense.	
10–30						Total depth 10'-0" Percolation test performed on 11/17/12 Percolation hole backfilled on 11/17/12	

PROJECT NO. 4060A11

LOG OF BORING

FIGURE P-2

BORING NO. P-3

Logged by: BMH **Date Drilled:** 11/16/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 601½' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
						3 inches Asphalt Concrete (AC).	
1						**FILL:** Silty sand (SM), orangish brown, medium grained, moist, medium dense.	
2						Some clay.	
3							
4							
5						Silty sand with gravel (SM), yellowish gray, fine grained, moist, medium dene, angular gravel to 2 inches in size.	
6						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium grained, moist, dense.	
7							
8							
9							
10							
11						Total depth 10'-0"	
12						Percolation test performed on 11/17/12	
13						Percolation hole backfilled on 11/17/12	
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

MTGL

LOG OF BORING

FIGURE P-3

BORING NO. P-4

Logged by: BMH **Date Drilled:** 11/16/2012

Method of Drilling: 8-inch diameter hollow-stem auger **Elevation:** 608' msl

DEPTH (FT)	BLOWS PER FT	DRIVE SAMPLE	BULK SAMPLE	DENSITY (PCF)	MOISTURE (%)	DESCRIPTION	LAB TESTS
1						**FILL:** Silty sand (SM), yellowish gray to reddish brown, medium grained, moist, medium dense.	
2							
3							
4						Silty sand with gravel (SM), reddish brown, medium grained, moist, medium dense.	
5							
6						**TONALITE UNDIVIDED (CRETACEOUS, Kt):** Decomposed to silty sand (SM), yellowish gray, medium to coarse grained, moist, dense to very dense, some feldspar.	
7							
8							
9							
10							
11						Total depth 10'-0" Percolation test performed on 11/17/12 Percolation hole backfilled on 11/17/12	
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

PROJECT NO. 4060A11

MTGL

LOG OF BORING

FIGURE P-4

APPENDIX C

LABORATORY TEST PROCEDURES

APPENDIX C

LABORATORY TESTING PROCEDURES

1. Classification

Soils were classified visually according to the Unified Soil Classification System as established by the American Society of Civil Engineers. Visual classification was supplemented by laboratory testing of selected soil samples and classification in general accordance with the laboratory soil classification tests outlined in ASTM test method D 2487. The resultant soil classifications are shown on the boring logs in Appendix B.

2. In-Situ Moisture/Density

The in-place moisture content and dry unit weight of selected soil samples were determined using relatively undisturbed samples from the liner rings of a CAL sampler. The dry unit weight and moisture content are shown on the boring logs in Appendix B

3. Maximum Density/Optimum Moisture

Maximum dry density and optimum moisture content on selected samples of the near surface soils were estimated in accordance with ASTM D1557, modified proctor. The results of the test are presented on Figures C-1 and C-2.

4. Direct Shear

Direct Shear Tests were performed on two remolded samples of site soils in accordance with ASTM D3080. The samples were re-molded to 90 percent of the relative maximum dry density at optimum moisture content. The results are summarized on Figures C-3 and C-4.

5. Corrosion

Chemical testing was performed on representative samples to determine the corrosion potential of the onsite soils. Testing consisted of pH, chlorides (CTM 422), soluble sulfates (CTM 417), and resistivity (CTM 643). Test results are as follows:

Sample Location	pH	Chlorides (ppm)	Sulfates (ppm)	Resistivity (ohm-cm)
B-1 at 0 to 5 ft	6.6	322	230	1,900
B-7 at 2 ft to 4 ft	7.1	139	362	820

6. Expansion Index

Expansion Index testing was completed in accordance with the standard test method ASTM D4829. Test results are presented below.

Sample Location	Soil Description	Expansion Index (EI)	Expansion Index
B-1 at 0 to 5 ft	Silty Sand – Medium brown	14	Very Low
B-7 at 2 ft to 4 ft	Clayey Sand – Reddish brown	31	Low

COMPACTION TEST REPORT

Project No.: 4060-A11 **Date:** 11/26/12
Project: PALOMAR COLLEGE - TRC
Client:
Sample Number: B1 **Depth:** 0-5'

Remarks:

MATERIAL DESCRIPTION

Description: SILTY SAND (SM), medium brown

Classifications - **USCS:** **AASHTO:**
Nat. Moist. = **Sp.G. =**
Liquid Limit = **Plasticity Index =**
% < No.200 =

TEST RESULTS
Maximum dry density = 129.7 pcf
Optimum moisture = 9.5 %

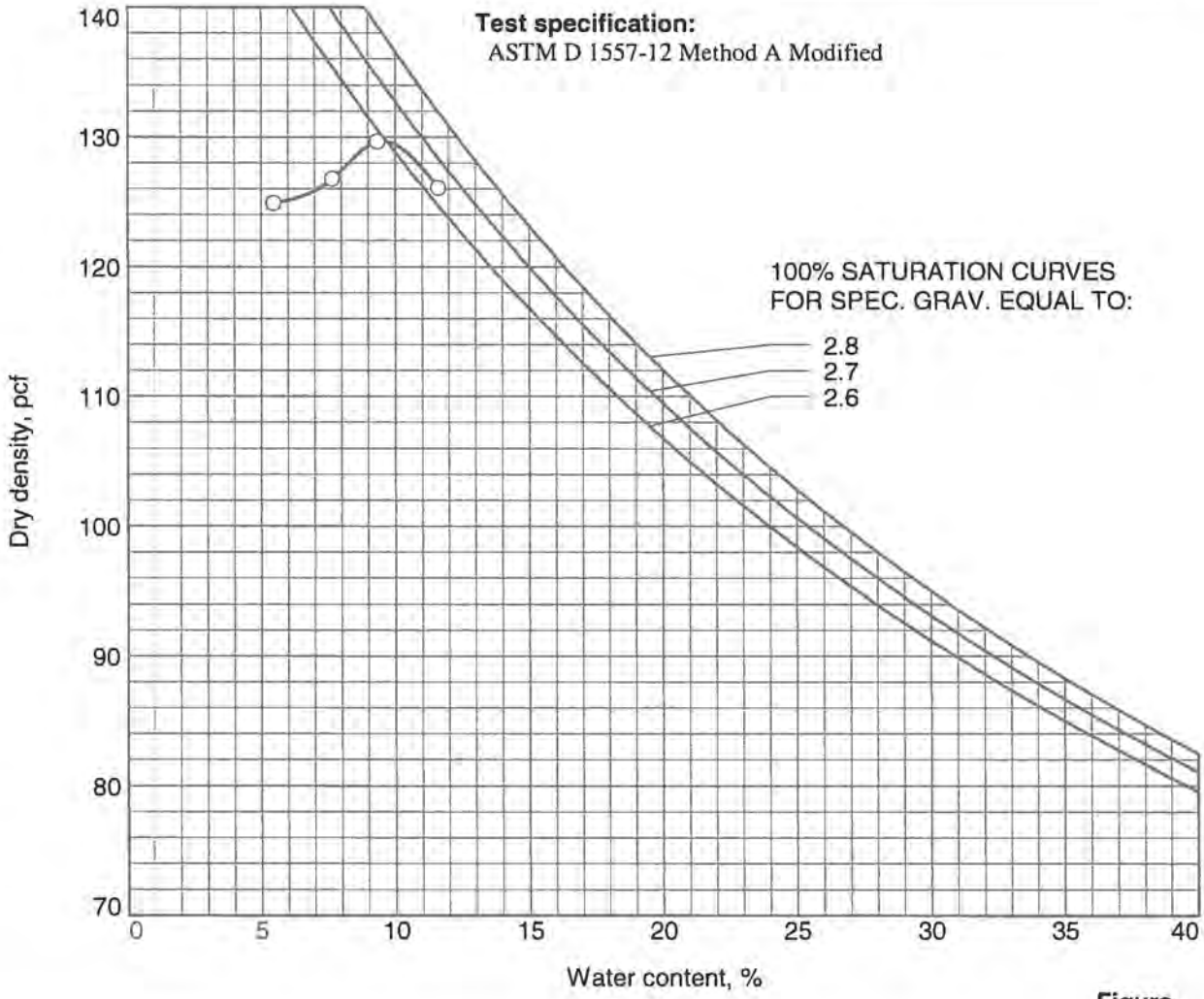


Figure C-1

MTGL, Inc.

Tested By: JH **Checked By:** SV

COMPACTION TEST REPORT

Project No.: 4060-A11 **Date:** 11/28/12
Project: PALOMAR COLLEGE - TRC
Client:
Sample Number: B7 **Depth:** 2-4'

Remarks:

MATERIAL DESCRIPTION

Description: SANDY CLAY (CL), reddish-brown

Classifications - **USCS:** **AASHTO:**
Nat. Moist. = **Sp.G. =**
Liquid Limit = **Plasticity Index =**
% < No.200 =

TEST RESULTS
Maximum dry density = 123.5 pcf
Optimum moisture = 10.9 %

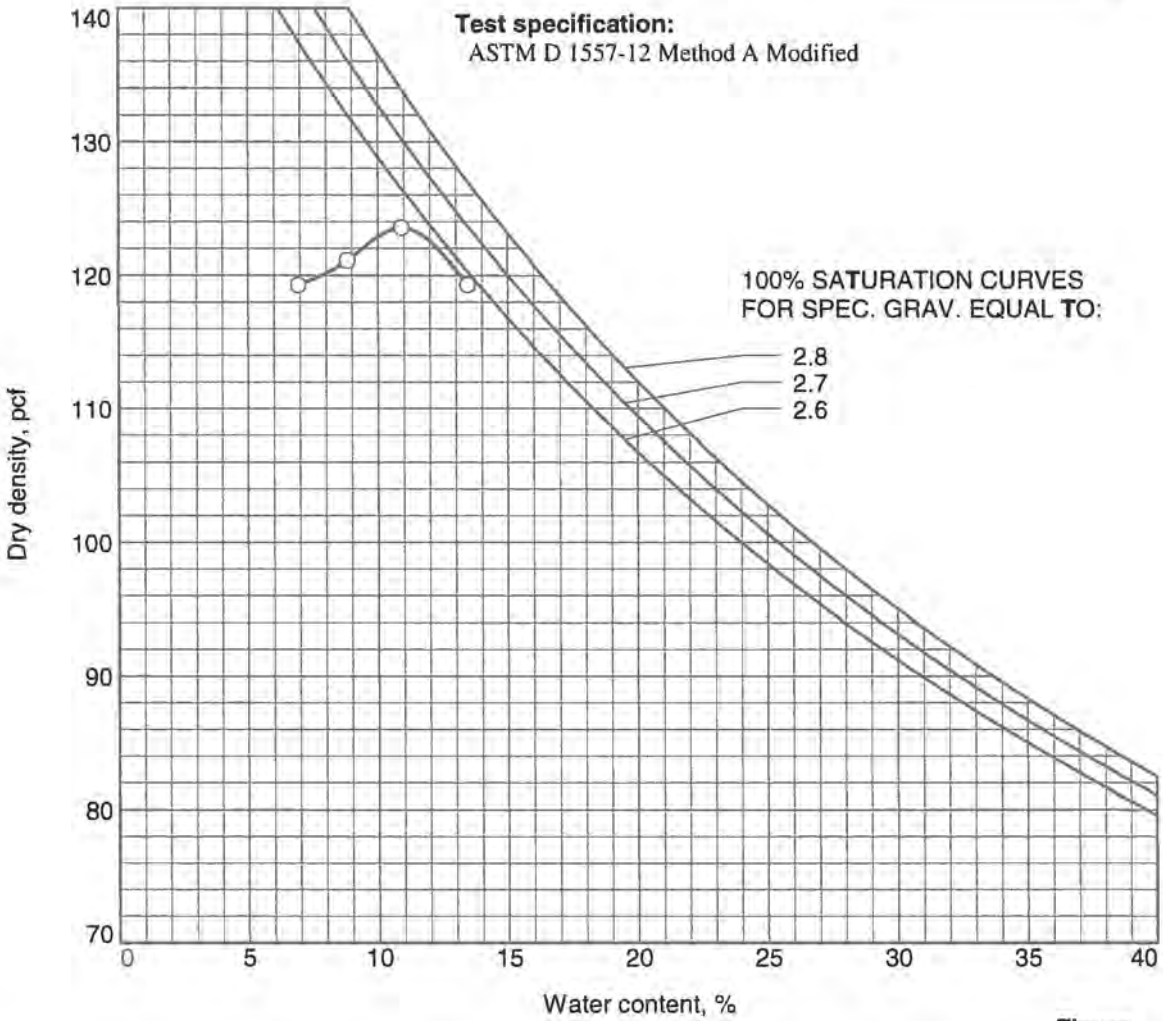
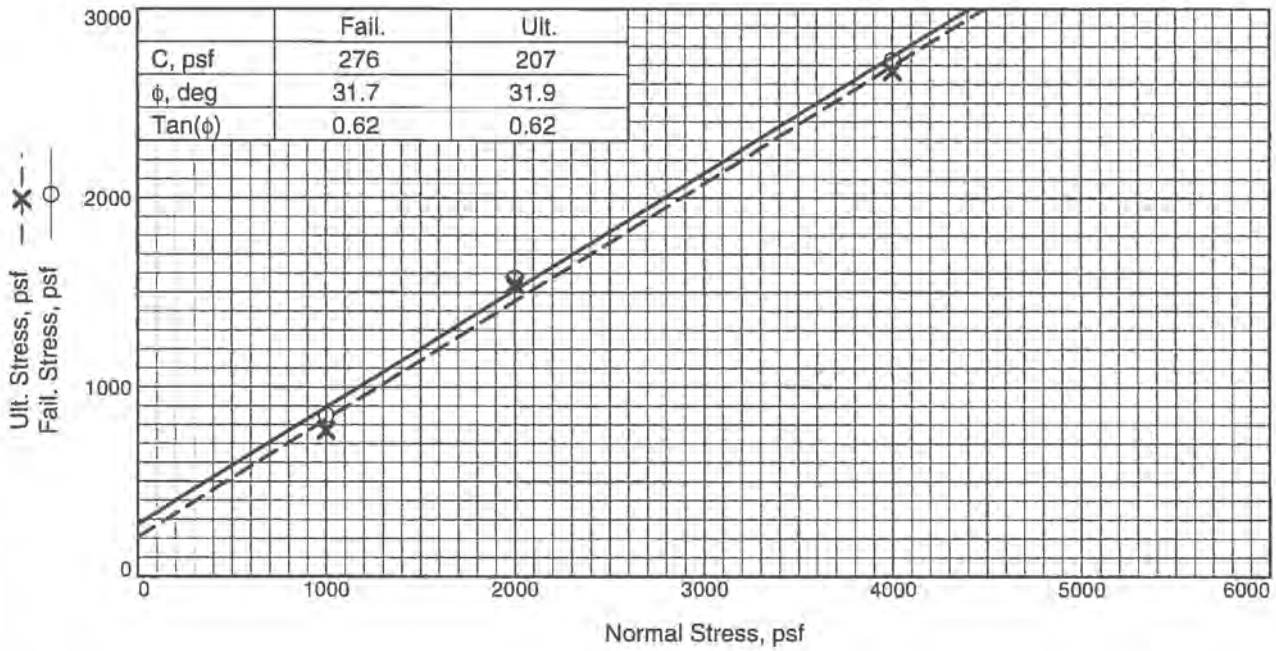
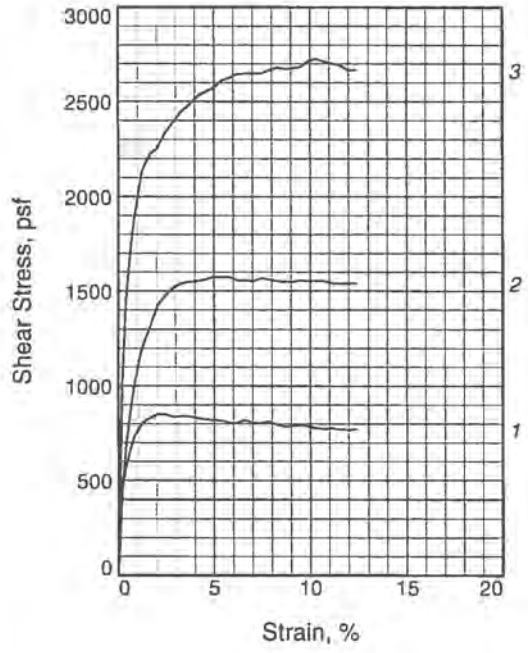


Figure C-2

MTGL, Inc.

Tested By: JH **Checked By:** SV





Sample No.		1	2	3
Initial	Water Content, %	9.4	9.4	9.5
	Dry Density, pcf	116.7	116.8	116.9
	Saturation, %	59.4	60.0	60.7
	Void Ratio	0.4176	0.4166	0.4146
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	14.9	14.6	14.2
	Dry Density, pcf	118.0	118.8	120.1
	Saturation, %	98.2	98.6	99.3
	Void Ratio	0.4020	0.3925	0.3778
	Diameter, in.	2.42	2.42	2.42
	Height, in.	0.99	0.98	0.97
Normal Stress, psf		1000	2000	4000
Fail. Stress, psf		852	1575	2727
Strain, %		2.1	5.0	10.3
Ult. Stress, psf		770	1540	2667
Strain, %		12.4	12.4	12.4
Strain rate, in./min.		0.01	0.01	0.01

Sample Type:
Description: SILTY SAND (SM), medium brown

Specific Gravity= 2.65
Remarks: REMOLDED AT 90% RELATIVE COMPACTION.

Figure C-3

Client:

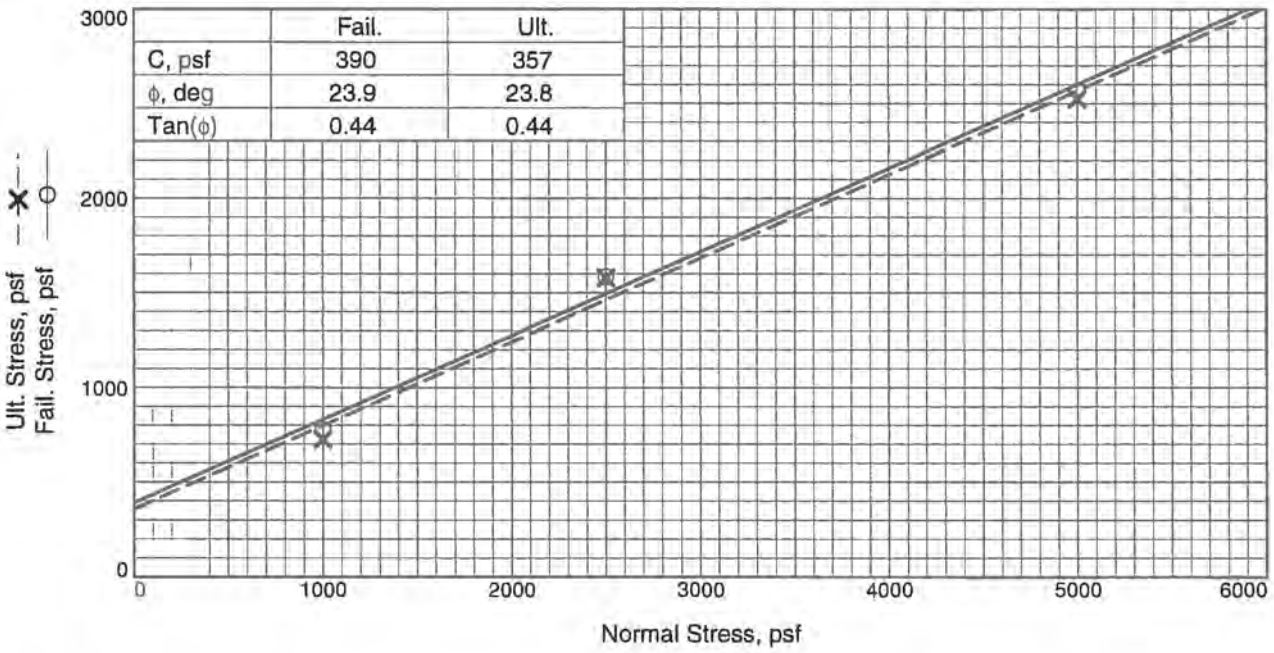
Project: PALOMAR COLLEGE - TRC

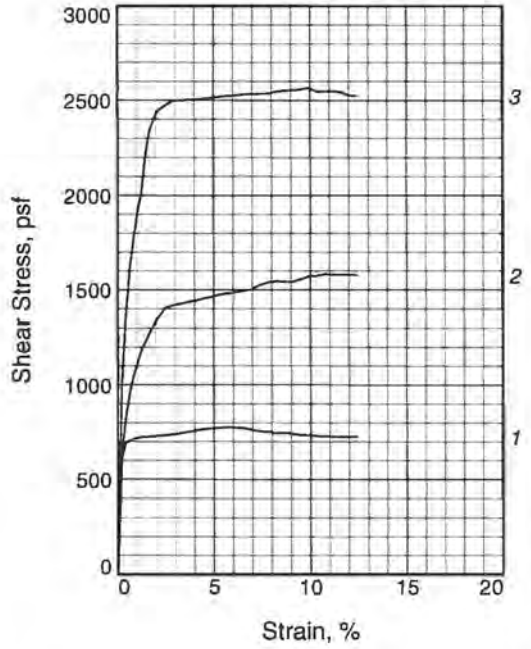
Sample Number: B1 **Depth:** 0-5'

Proj. No.: 4060-A11 **Date Sampled:**

DIRECT SHEAR TEST REPORT
MTGL, Inc.
Anaheim, CA

Tested By: JH **Checked By:** SV





Sample No.		1	2	3
Initial	Water Content, %	10.9	11.0	10.9
	Dry Density, pcf	111.2	111.1	111.2
	Saturation, %	59.1	59.7	59.1
	Void Ratio	0.4873	0.4895	0.4873
	Diameter, in.	2.42	2.42	2.42
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	18.0	17.8	17.1
	Dry Density, pcf	111.9	112.2	113.5
	Saturation, %	99.8	99.5	98.8
	Void Ratio	0.4784	0.4746	0.4575
	Diameter, in.	2.42	2.42	2.42
	Height, in.	0.99	0.99	0.98
Normal Stress, psf		1000	2500	5000
Fail. Stress, psf		776	1584	2567
Strain, %		5.8	10.7	9.9
Ult. Stress, psf		726	1578	2523
Strain, %		12.4	12.4	12.4
Strain rate, in./min.		0.01	0.01	0.01

Sample Type:
Description: SANDY CLAY (CL), reddish-brown

Specific Gravity= 2.65
Remarks:

Client:

Project: PALOMAR COLLEGE - TRC

Sample Number: B7 **Depth:** 2-4'

Proj. No.: 4060-A11 **Date Sampled:**

DIRECT SHEAR TEST REPORT
MTGL, Inc.
Anaheim, CA

Figure C-4

Tested By: JH **Checked By:** SV

APPENDIX D

SEISMICITY

USGS Java Ground Motion Parameter Calculator, Version 5.0.9, ASCE 7 Standard Calculations:
(http://earthquake.usgs.gov/hazards/designmaps/javacalc.php)

Conterminous 48 States - 2005 ASCE 7 Standard
Latitude = 33.151°
Longitude = -117.184°

Spectral Response Accelerations Ss and S1
Ss and S1 = Mapped Spectral Acceleration Values
Site Class B - Fa = 1.0 ,Fv = 1.0
Data are based on a 0.01 deg grid spacing

Period (sec)	Sa (g)
0.2	1.050 (Ss, Site Class B)
1.0	0.399 (S1, Site Class B)

Spectral Response Accelerations SMs and SM1
SMs = Fa x Ss and SM1 = Fv x S1
Site Class C - Fa = 1.0 ,Fv = 1.401

Period (sec)	Sa (g)
0.2	1.050 (SMs, Site Class C)
1.0	0.559 (SM1, Site Class C)

Design Spectral Response Accelerations SDs and SD1
SDs = 2/3 x SMs and SD1 = 2/3 x SM1
Site Class C - Fa = 1.0 ,Fv = 1.401

Period (sec)	Sa (g)
0.2	0.700 (SDs, Site Class C)
1.0	0.373 (SD1, Site Class C)

```
**********************
*                    *
*    E Q F A U L T   *
*                    *
*    Version 3.00    *
*                    *
**********************

     DETERMINISTIC ESTIMATION OF
PEAK ACCELERATION FROM DIGITIZED FAULTS


JOB NUMBER: 4060A11
                                                DATE: 12-04-2012

JOB NAME: Palomar College LRC

CALCULATION NAME: Test Run Analysis

FAULT-DATA-FILE NAME: CDMGFLTE.DAT

SITE COORDINATES:
   SITE LATITUDE:  33.1510
   SITE LONGITUDE:  117.1840

SEARCH RADIUS:   100  mi

ATTENUATION RELATION:   5) Boore et al. (1997) Horiz. - SOIL (310)
   UNCERTAINTY (M=Median, S=Sigma): M       Number of Sigmas:  0.0
   DISTANCE MEASURE:  cd_2drp
   SCOND:   0
   Basement Depth:  5.00 km     Campbell SSR:        Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

FAULT-DATA FILE USED:  CDMGFLTE.DAT

MINIMUM DEPTH VALUE (km):  0.0
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EQFAULT SUMMARY

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	ESTIMATED MAX. EARTHQUAKE EVENT: PEAK SITE ACCEL. g	ESTIMATED MAX. EARTHQUAKE EVENT: EST. SITE INTENSITY MOD.MERC.
ROSE CANYON	11.8(19.0)	6.9	0.201	VIII
NEWPORT-INGLEWOOD (Offshore)	14.2(22.8)	6.9	0.176	VIII
ELSINORE-JULIAN	18.4(29.6)	7.1	0.161	VIII
ELSINORE-TEMECULA	18.5(29.7)	6.8	0.137	VIII
CORONADO BANK	27.1(43.6)	7.4	0.141	VIII
EARTHQUAKE VALLEY	34.9(56.2)	6.5	0.072	VI
ELSINORE-GLEN IVY	35.3(56.8)	6.8	0.084	VII
SAN JACINTO-ANZA	41.2(66.3)	7.2	0.092	VII
SAN JACINTO-SAN JACINTO VALLEY	43.6(70.1)	6.9	0.075	VII
SAN JACINTO-COYOTE CREEK	44.4(71.5)	6.8	0.070	VI
PALOS VERDES	44.6(71.8)	7.1	0.082	VII
ELSINORE-COYOTE MOUNTAIN	49.3(79.3)	6.8	0.065	VI
CHINO-CENTRAL AVE. (Elsinore)	51.1(82.3)	6.7	0.073	VII
NEWPORT-INGLEWOOD (L.A.Basin)	53.1(85.5)	6.9	0.064	VI
WHITTIER	55.2(88.8)	6.8	0.059	VI
SAN JACINTO - BORREGO	57.4(92.3)	6.6	0.052	VI
SAN JACINTO-SAN BERNARDINO	59.9(96.4)	6.7	0.053	VI
SAN ANDREAS - San Bernardino	61.6(99.2)	7.3	0.071	VI
SAN ANDREAS - Southern	61.6(99.2)	7.4	0.075	VII
COMPTON THRUST	62.8(101.1)	6.8	0.065	VI
ELYSIAN PARK THRUST	64.1(103.2)	6.7	0.061	VI
SAN ANDREAS - Coachella	67.4(108.5)	7.1	0.059	VI
PINTO MOUNTAIN	68.1(109.6)	7.0	0.056	VI
SAN JOSE	71.8(115.6)	6.5	0.050	VI
BURNT MTN.	72.1(116.0)	6.4	0.039	V
CUCAMONGA	72.8(117.2)	7.0	0.065	VI
SUPERSTITION MTN. (San Jacinto)	73.8(118.8)	6.6	0.043	VI
SIERRA MADRE	74.4(119.8)	7.0	0.064	VI
EUREKA PEAK	74.8(120.4)	6.4	0.038	V
NORTH FRONTAL FAULT ZONE (West)	75.1(120.8)	7.0	0.063	VI
NORTH FRONTAL FAULT ZONE (East)	77.2(124.2)	6.7	0.053	VI
ELMORE RANCH	77.4(124.5)	6.6	0.041	V
CLEGHORN	77.7(125.1)	6.5	0.039	V
SUPERSTITION HILLS (San Jacinto)	78.4(126.2)	6.6	0.041	V
LAGUNA SALADA	80.8(130.1)	7.0	0.049	VI
SAN ANDREAS - 1857 Rupture	82.6(132.9)	7.8	0.073	VII
SAN ANDREAS - Mojave	82.6(132.9)	7.1	0.051	VI
LANDERS	82.8(133.3)	7.3	0.056	VI
CLAMSHELL-SAWPIT	84.4(135.8)	6.5	0.044	VI
RAYMOND	84.8(136.4)	6.5	0.044	VI

DETERMINISTIC SITE PARAMETERS

ABBREVIATED FAULT NAME	APPROXIMATE DISTANCE mi (km)	ESTIMATED MAX. EARTHQUAKE EVENT: MAXIMUM EARTHQUAKE MAG.(Mw)	PEAK SITE ACCEL. g	EST. SITE INTENSITY MOD.MERC.
HELENDALE - S. LOCKHARDT	86.2(138.7)	7.1	0.049	VI
BRAWLEY SEISMIC ZONE	86.5(139.2)	6.4	0.034	V
VERDUGO	87.9(141.5)	6.7	0.048	VI
LENWOOD-LOCKHART-OLD WOMAN SPRGS	89.0(143.2)	7.3	0.053	VI
HOLLYWOOD	90.2(145.2)	6.4	0.040	V
EMERSON So. - COPPER MTN.	90.3(145.4)	6.9	0.043	VI
JOHNSON VALLEY (Northern)	91.2(146.8)	6.7	0.038	V
IMPERIAL	94.9(152.8)	7.0	0.043	VI
SANTA MONICA	95.6(153.9)	6.6	0.042	VI
PISGAH-BULLION MTN.-MESQUITE LK	96.3(154.9)	7.1	0.045	VI
MALIBU COAST	98.9(159.2)	6.7	0.044	VI
CALICO - HIDALGO	99.0(159.3)	7.1	0.044	VI

-END OF SEARCH- 52 FAULTS FOUND WITHIN THE SPECIFIED SEARCH RADIUS.

THE ROSE CANYON FAULT IS CLOSEST TO THE SITE.
IT IS ABOUT 11.8 MILES (19.0 km) AWAY.

LARGEST MAXIMUM-EARTHQUAKE SITE ACCELERATION: 0.2013 g

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*                      *
*    E Q S E A R C H   *
*                      *
*     Version 3.00     *
*                      *
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      ESTIMATION OF
  PEAK ACCELERATION FROM
CALIFORNIA EARTHQUAKE CATALOGS


JOB NUMBER: 4060A11
                                                DATE: 12-04-2012

JOB NAME: Palomar College LRC

EARTHQUAKE-CATALOG-FILE NAME: ALLQUAKE.DAT

SITE COORDINATES:
   SITE LATITUDE:  33.1510
   SITE LONGITUDE:  117.1840

SEARCH DATES:
           START DATE:   1800
           END DATE:   1999

SEARCH RADIUS:
           100.0 mi
           160.9 km

ATTENUATION RELATION:   5) Boore et al. (1997) Horiz. - SOIL (310)
   UNCERTAINTY (M=Median, S=Sigma): M       Number of Sigmas:  0.0
   ASSUMED SOURCE TYPE:  DS [SS=Strike-slip, DS=Reverse-slip, BT=Blind-thrust]
   SCOND:   0  Depth Source:  A
   Basement Depth:  5.00 km     Campbell SSR:        Campbell SHR:
   COMPUTE PEAK HORIZONTAL ACCELERATION

MINIMUM DEPTH VALUE (km):  0.0
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EARTHQUAKE SEARCH RESULTS

Page 1

FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
MGI	33.2000	117.0000	07/20/1923	7 0 0.0	0.0	4.00	0.055	VI	11.2(17.9)
DMG	33.0000	117.3000	11/22/1800	2130 0.0	0.0	6.50	0.191	VIII	12.4(19.9)
DMG	33.2670	117.0170	06/07/1935	1633 0.0	0.0	4.00	0.051	VI	12.5(20.2)
DMG	33.0000	117.0000	03/03/1906	2025 0.0	0.0	4.50	0.058	VI	14.9(24.0)
MGI	33.0000	117.0000	12/29/1914	10 0 0.0	0.0	4.00	0.045	VI	14.9(24.0)
MGI	33.0000	117.0000	09/21/1856	730 0.0	0.0	5.00	0.076	VII	14.9(24.0)
MGI	33.1000	116.8000	06/22/1918	557 0.0	0.0	4.00	0.033	V	22.5(36.2)
GSP	33.0700	116.8000	12/04/1991	071057.5	15.0	4.20	0.036	V	22.9(36.8)
MGI	32.8000	117.1000	05/25/1803	0 0 0.0	0.0	5.00	0.052	VI	24.7(39.8)
T-A	33.5000	117.0700	12/29/1880	7 0 0.0	0.0	4.30	0.036	V	25.0(40.2)
DMG	33.5000	117.0000	08/08/1925	1013 0.0	0.0	4.50	0.038	V	26.3(42.4)
DMG	33.4540	116.8980	07/29/1936	142252.8	10.0	4.00	0.029	V	26.6(42.9)
DMG	33.4560	116.8960	06/16/1938	55916.9	10.0	4.00	0.029	V	26.8(43.2)
DMG	33.2000	116.7200	05/12/1930	172548.5	0.0	4.20	0.032	V	27.0(43.5)
DMG	32.8500	117.4830	02/23/1943	92112.0	0.0	4.00	0.029	V	27.0(43.5)
DMG	33.2000	116.7000	01/01/1920	235 0.0	0.0	5.00	0.047	VI	28.2(45.3)
DMG	33.5000	116.9170	11/04/1935	355 0.0	0.0	4.50	0.036	V	28.6(46.0)
MGI	32.7000	117.2000	04/19/1906	028 0.0	0.0	4.30	0.030	V	31.1(50.1)
MGI	32.7000	117.2000	05/20/1920	1330 0.0	0.0	4.00	0.026	V	31.1(50.1)
DMG	32.7000	117.2000	05/27/1862	20 0 0.0	0.0	5.90	0.070	VI	31.1(50.1)
MGI	32.7000	117.2000	09/08/1915	742 0.0	0.0	4.00	0.026	V	31.1(50.1)
DMG	33.1000	116.6330	02/08/1952	174028.0	0.0	4.00	0.025	V	32.1(51.6)
PAS	32.6790	117.1510	06/18/1985	32228.7	5.7	4.00	0.025	V	32.6(52.5)
MGI	33.5000	116.8000	06/02/1917	435 0.0	0.0	4.00	0.025	V	32.7(52.7)
MGI	33.5000	116.8000	11/26/1916	17 5 0.0	0.0	4.00	0.025	V	32.7(52.7)
MGI	33.5000	116.8000	05/31/1917	435 0.0	0.0	4.00	0.025	V	32.7(52.7)
MGI	33.5000	116.8000	03/30/1918	16 5 0.0	0.0	4.60	0.034	V	32.7(52.7)
DMG	32.8000	116.8000	10/23/1894	23 3 0.0	0.0	5.70	0.060	VI	32.9(52.9)
MGI	32.8000	116.8000	08/14/1927	1448 0.0	0.0	4.60	0.034	V	32.9(52.9)
DMG	33.4880	116.7770	06/12/1959	11 313.0	5.7	4.00	0.025	V	33.1(53.2)
T-A	32.6700	117.1700	01/25/1863	1020 0.0	0.0	4.30	0.029	V	33.2(53.5)
T-A	32.6700	117.1700	04/15/1865	840 0.0	0.0	4.30	0.029	V	33.2(53.5)
T-A	32.6700	117.1700	12/00/1856	0 0 0.0	0.0	5.00	0.041	V	33.2(53.5)
T-A	32.6700	117.1700	05/24/1865	0 0 0.0	0.0	5.00	0.041	V	33.2(53.5)
T-A	32.6700	117.1700	10/21/1862	0 0 0.0	0.0	5.00	0.041	V	33.2(53.5)
PAS	33.4200	116.6980	06/05/1978	16 3 3.9	11.9	4.40	0.030	V	33.6(54.1)
MGI	33.2000	116.6000	10/12/1920	1748 0.0	0.0	5.30	0.048	VI	33.9(54.6)
MGI	33.1000	116.6000	02/05/1922	1915 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	02/16/1915	1330 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	08/10/1921	19 6 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	05/11/1915	1145 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	05/28/1917	1017 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	03/04/1915	1250 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	08/10/1921	2151 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	02/09/1920	220 0.0	0.0	4.00	0.024	V	33.9(54.6)
MGI	33.1000	116.6000	08/19/1917	710 0.0	0.0	4.00	0.024	V	33.9(54.6)
DMG	33.1500	116.5830	12/02/1935	319 0.0	0.0	4.00	0.024	IV	34.7(55.9)
PAS	32.9470	117.7360	01/15/1989	153955.2	6.0	4.20	0.026	V	34.9(56.2)
MGI	33.0000	116.6000	06/11/1917	354 0.0	0.0	4.00	0.023	IV	35.4(56.9)
DMG	33.4500	116.6830	04/25/1955	25515.0	0.0	4.00	0.023	IV	35.5(57.2)
DMG	33.4830	116.7000	12/28/1948	125341.0	0.0	4.00	0.023	IV	36.1(58.1)
PAS	32.6150	117.1520	10/29/1986	23815.3	14.6	4.10	0.024	IV	37.1(59.6)
USG	33.0170	117.8170	07/16/1986	1247 3.7	10.0	4.11	0.023	IV	37.8(60.8)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
USG	33.0170	117.8170	07/14/1986	11112.6	10.0	4.12	0.024	IV	37.8(60.8)
PAS	32.6270	117.3770	06/29/1983	8 836.4	5.0	4.60	0.030	V	37.9(60.9)
PAS	32.9700	117.8030	07/14/1986	03246.2	10.0	4.00	0.022	IV	37.9(61.0)
DMG	33.7000	117.1000	06/11/1902	245 0.0	0.0	4.50	0.029	V	38.2(61.5)
GSP	32.9700	117.8100	04/04/1990	085439.3	6.0	4.00	0.022	IV	38.3(61.7)
DMG	33.1100	116.5230	01/24/1957	205449.9	3.9	4.60	0.030	V	38.3(61.7)
GSP	32.9850	117.8180	06/21/1995	211736.2	6.0	4.30	0.026	V	38.4(61.8)
DMG	33.4670	116.6330	02/20/1934	1035 0.0	0.0	4.00	0.022	IV	38.6(62.0)
PAS	32.9450	117.8060	09/07/1984	11 313.4	6.0	4.30	0.025	V	38.7(62.3)
PAS	33.1380	116.5010	10/10/1984	212258.9	11.6	4.50	0.028	V	39.5(63.6)
DMG	33.4000	116.5670	02/04/1953	43616.0	0.0	4.30	0.025	V	39.5(63.6)
DMG	33.1670	116.5000	06/23/1932	23037.1	0.0	4.00	0.021	IV	39.5(63.6)
DMG	33.1670	116.5000	06/23/1932	22552.7	0.0	4.00	0.021	IV	39.5(63.6)
PAS	32.9860	117.8440	10/01/1986	201218.6	6.0	4.00	0.021	IV	39.8(64.1)
DMG	33.7000	117.4000	05/13/1910	620 0.0	0.0	5.00	0.036	V	39.9(64.2)
DMG	33.7000	117.4000	05/15/1910	1547 0.0	0.0	6.00	0.061	VI	39.9(64.2)
DMG	33.7000	117.4000	04/11/1910	757 0.0	0.0	5.00	0.036	V	39.9(64.2)
PAS	32.9900	117.8490	07/13/1986	14 133.0	12.0	4.60	0.029	V	40.0(64.4)
PAS	32.9450	117.8310	07/29/1986	81741.8	10.0	4.10	0.022	IV	40.1(64.5)
DMG	33.4170	116.5670	12/22/1950	2 536.0	0.0	4.00	0.021	IV	40.1(64.5)
DMG	33.5080	116.6310	08/11/1967	05711.4	10.7	4.10	0.022	IV	40.3(64.9)
DMG	33.7380	117.1870	04/27/1962	91232.1	5.7	4.10	0.022	IV	40.5(65.2)
PAS	32.9330	117.8410	07/29/1986	81741.6	10.0	4.30	0.024	V	40.9(65.8)
DMG	33.4670	116.5830	03/26/1937	2124 0.0	0.0	4.00	0.021	IV	41.0(65.9)
DMG	33.4670	116.5830	01/04/1938	029 0.0	0.0	4.50	0.027	V	41.0(65.9)
DMG	33.4670	116.5830	03/27/1937	528 0.0	0.0	4.00	0.021	IV	41.0(65.9)
DMG	33.4670	116.5830	03/27/1937	742 0.0	0.0	4.50	0.027	V	41.0(65.9)
PAS	33.5580	116.6670	06/15/1982	234921.3	12.2	4.80	0.032	V	41.0(65.9)
DMG	33.5330	116.6330	09/21/1942	7 754.0	0.0	4.00	0.021	IV	41.3(66.5)
DMG	33.7100	116.9250	09/23/1963	144152.6	16.5	5.00	0.035	V	41.4(66.6)
DMG	33.1670	116.4670	08/01/1960	193930.0	0.0	4.20	0.023	IV	41.5(66.7)
PAS	32.9710	117.8700	07/13/1986	1347 8.2	6.0	5.30	0.041	V	41.6(66.9)
MGI	32.7000	116.7000	03/21/1918	2325 0.0	0.0	4.00	0.020	IV	41.9(67.4)
DMG	33.6990	117.5110	05/31/1938	83455.4	10.0	5.50	0.045	VI	42.3(68.0)
DMG	33.5060	116.5850	05/21/1967	144234.4	19.4	4.70	0.029	V	42.4(68.2)
DMG	33.6820	117.5530	07/05/1938	18 655.7	10.0	4.50	0.026	V	42.4(68.2)
DMG	33.6500	116.7500	09/05/1950	191956.0	0.0	4.80	0.031	V	42.6(68.5)
DMG	33.1000	116.4500	11/23/1953	1339 7.0	0.0	4.30	0.024	IV	42.6(68.5)
PDP	33.6320	116.7190	07/19/1999	220927.5	14.0	4.20	0.022	IV	42.7(68.7)
DMG	33.7500	117.0000	06/06/1918	2232 0.0	0.0	5.00	0.034	V	42.7(68.7)
DMG	33.7500	117.0000	04/21/1918	223225.0	0.0	6.80	0.088	VII	42.7(68.7)
PAS	33.7010	116.8370	08/22/1979	2 136.3	5.0	4.10	0.021	IV	42.9(69.1)
GSP	33.6500	116.7400	12/02/1989	231647.8	14.0	4.20	0.022	IV	42.9(69.1)
DMG	33.0970	116.4440	08/18/1959	215221.3	17.3	4.30	0.023	IV	42.9(69.1)
DMG	33.4000	116.5000	10/11/1918	4 0 0.0	0.0	4.00	0.020	IV	43.1(69.3)
DMG	33.7170	117.5070	08/06/1938	22 056.0	10.0	4.00	0.020	IV	43.3(69.6)
DMG	33.7330	117.4670	10/26/1954	162226.0	0.0	4.10	0.021	IV	43.4(69.8)
DMG	33.7170	117.5170	06/19/1935	1117 0.0	0.0	4.00	0.020	IV	43.5(70.1)
DMG	33.7250	117.4980	01/03/1956	02548.9	13.7	4.70	0.029	V	43.6(70.1)
DMG	33.4200	116.4900	03/29/1937	17 316.8	10.0	4.00	0.020	IV	44.1(71.0)
PAS	33.5200	116.5580	08/02/1975	014 7.7	13.4	4.70	0.028	V	44.2(71.1)
DMG	33.1670	116.4170	07/10/1938	18 6 0.0	0.0	4.00	0.020	IV	44.3(71.4)
DMG	33.1670	116.4170	10/14/1935	1550 0.0	0.0	4.00	0.020	IV	44.3(71.4)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.1670	116.4170	12/05/1939	173352.0	0.0	4.00	0.020	IV	44.3(71.4)
DMG	33.1170	116.4170	10/21/1940	64933.0	0.0	4.50	0.025	V	44.4(71.5)
DMG	33.1170	116.4170	06/04/1940	103656.0	0.0	4.00	0.020	IV	44.4(71.5)
DMG	33.0020	116.4360	07/02/1957	65638.5	12.8	4.10	0.021	IV	44.5(71.6)
DMG	33.7480	117.4790	06/22/1971	104119.0	8.0	4.20	0.022	IV	44.6(71.7)
DMG	33.5340	116.5610	09/23/1956	112441.9	12.2	4.30	0.023	IV	44.6(71.8)
DMG	33.0000	116.4330	06/04/1940	1035 8.3	0.0	5.10	0.035	V	44.7(71.9)
PAS	33.0330	117.9440	02/22/1983	21830.4	10.0	4.30	0.023	IV	44.7(71.9)
DMG	32.8000	117.8330	01/24/1942	214148.0	0.0	4.00	0.019	IV	44.7(72.0)
PAS	33.4840	116.5130	08/11/1976	152455.5	15.4	4.30	0.023	IV	45.0(72.5)
DMG	33.5450	117.8070	10/27/1969	1316 2.3	6.5	4.50	0.025	V	45.1(72.5)
DMG	33.3330	116.4330	02/12/1954	94428.0	0.0	4.50	0.025	V	45.1(72.7)
DMG	33.3680	116.4440	03/25/1937	232026.7	10.0	4.00	0.019	IV	45.3(72.9)
GSP	33.1100	116.4000	04/01/1984	071702.3	11.0	4.00	0.019	IV	45.4(73.1)
PAS	33.5010	116.5130	02/25/1980	104738.5	13.6	5.50	0.042	VI	45.6(73.4)
DMG	33.4830	116.5000	02/15/1951	104957.0	0.0	4.80	0.029	V	45.6(73.4)
DMG	33.4830	116.5000	02/15/1951	104759.0	0.0	4.80	0.029	V	45.6(73.4)
DMG	33.2670	116.4000	06/06/1940	2321 4.0	0.0	4.00	0.019	IV	46.0(74.0)
DMG	33.8000	117.0000	12/25/1899	1225 0.0	0.0	6.40	0.067	VI	46.0(74.1)
DMG	33.5000	116.5000	09/30/1916	211 0.0	0.0	5.00	0.032	V	46.2(74.4)
DMG	33.1830	116.3830	10/14/1949	02925.0	0.0	4.10	0.020	IV	46.3(74.6)
DMG	33.5000	116.4830	02/23/1941	183614.0	0.0	4.50	0.024	V	47.1(75.8)
MGI	33.8000	116.9000	12/18/1920	1726 0.0	0.0	4.00	0.018	IV	47.7(76.8)
MGI	33.8000	116.9000	04/29/1918	2 0 0.0	0.0	4.00	0.018	IV	47.7(76.8)
MGI	33.8000	116.9000	04/23/1918	1415 0.0	0.0	4.00	0.018	IV	47.7(76.8)
MGI	33.8000	116.9000	06/14/1918	1024 0.0	0.0	4.00	0.018	IV	47.7(76.8)
DMG	33.4170	116.4170	01/02/1943	141118.0	0.0	4.50	0.024	V	47.9(77.1)
DMG	33.4260	116.4210	03/25/1937	20 4 8.3	10.0	4.00	0.018	IV	48.0(77.2)
DMG	32.9670	116.3830	10/31/1942	15 758.0	0.0	4.00	0.018	IV	48.1(77.3)
DMG	32.7170	117.8330	11/06/1950	205546.0	0.0	4.40	0.023	IV	48.1(77.4)
PAS	33.4580	116.4340	02/12/1979	44842.3	3.9	4.20	0.020	IV	48.2(77.5)
DMG	33.0380	116.3610	02/26/1957	211652.2	0.0	4.10	0.019	IV	48.2(77.6)
DMG	33.1210	116.3490	05/25/1971	10 252.9	8.0	4.10	0.019	IV	48.3(77.8)
DMG	33.4670	116.4330	05/12/1939	1925 2.2	0.0	4.50	0.024	IV	48.5(78.1)
DMG	33.8330	117.4000	06/05/1940	82727.0	0.0	4.00	0.018	IV	48.7(78.4)
PAS	33.4830	116.4380	07/02/1988	02658.2	12.6	4.00	0.018	IV	48.8(78.5)
DMG	33.2830	116.3500	04/13/1949	75336.0	0.0	4.10	0.019	IV	49.0(78.9)
GSP	33.5100	116.4500	02/18/1990	155259.9	9.0	4.10	0.019	IV	49.1(79.0)
DMG	33.5010	116.4290	02/23/1971	0 739.2	8.0	4.20	0.020	IV	49.8(80.2)
PAS	32.7590	117.9060	10/18/1976	172753.1	13.8	4.20	0.020	IV	49.8(80.2)
DMG	33.3430	116.3460	04/28/1969	232042.9	20.0	5.80	0.046	VI	50.2(80.7)
DMG	33.8000	117.6000	09/16/1903	1210 0.0	0.0	4.00	0.018	IV	50.8(81.8)
MGI	33.8000	117.6000	04/22/1918	2115 0.0	0.0	5.00	0.030	V	50.8(81.8)
GSP	33.3990	116.3540	07/26/1997	031456.0	11.0	4.80	0.027	V	50.9(81.9)
DMG	33.2910	116.3170	03/19/1966	142156.0	10.9	4.00	0.018	IV	51.0(82.1)
DMG	33.2000	116.3000	05/12/1930	414 0.0	0.0	4.00	0.017	IV	51.2(82.4)
DMG	33.0530	116.3060	04/02/1967	201538.6	1.0	4.30	0.020	IV	51.2(82.4)
PAS	33.4600	116.3700	09/07/1984	175730.3	15.2	4.10	0.018	IV	51.6(83.0)
DMG	33.9000	117.2000	12/19/1880	0 0 0.0	0.0	6.00	0.050	VI	51.7(83.2)
PAS	32.7140	117.9100	10/18/1976	172652.6	15.1	4.20	0.019	IV	51.8(83.3)
DMG	33.3150	116.3050	04/09/1968	1831 3.8	12.6	4.70	0.025	V	52.0(83.7)
DMG	33.3000	116.3000	01/04/1940	8 711.0	0.0	4.00	0.017	IV	52.1(83.8)
GSP	33.6200	117.9000	04/07/1989	200730.2	13.0	4.50	0.022	IV	52.5(84.4)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.3330	116.3000	08/05/1933	2331 0.0	0.0	4.40	0.021	IV	52.6(84.6)
DMG	33.3330	116.3000	08/06/1933	332 0.0	0.0	4.70	0.025	V	52.6(84.6)
DMG	33.8000	116.7000	08/11/1911	2340 0.0	0.0	4.50	0.022	IV	52.8(84.9)
DMG	33.8000	116.7000	08/11/1911	1820 0.0	0.0	4.00	0.017	IV	52.8(84.9)
DMG	32.5830	117.8000	04/19/1939	741 0.0	0.0	4.50	0.022	IV	53.0(85.4)
DMG	33.2350	116.2660	04/09/1968	93833.0	5.2	4.00	0.017	IV	53.4(85.9)
DMG	32.9610	116.2900	08/25/1971	23 033.0	8.0	4.00	0.017	IV	53.4(85.9)
DMG	33.4000	116.3000	02/09/1890	12 6 0.0	0.0	6.30	0.056	VI	53.8(86.6)
DMG	33.0430	116.2600	08/22/1961	231933.6	12.1	4.40	0.021	IV	54.0(86.8)
PAS	32.7560	117.9880	01/12/1975	212214.8	15.3	4.80	0.026	V	54.0(86.9)
DMG	32.9520	116.2790	09/13/1973	173039.8	8.0	4.80	0.026	V	54.1(87.1)
DMG	32.9900	116.2680	11/08/1958	132044.1	2.4	4.10	0.018	IV	54.1(87.1)
DMG	33.5670	117.9830	04/17/1934	1833 0.0	0.0	4.00	0.017	IV	54.3(87.4)
DMG	33.5670	117.9830	07/07/1937	1112 0.0	0.0	4.00	0.017	IV	54.3(87.4)
DMG	33.5750	117.9830	03/11/1933	518 4.0	0.0	5.20	0.031	V	54.6(87.8)
DMG	33.2790	116.2490	01/07/1966	191023.0	-1.7	4.00	0.017	IV	54.7(88.1)
MGI	32.6000	116.5000	05/03/1918	425 0.0	0.0	4.00	0.017	IV	55.0(88.4)
DMG	33.9330	117.3670	10/24/1943	02921.0	0.0	4.00	0.017	IV	55.0(88.5)
DMG	33.2000	116.2330	04/05/1942	92039.0	0.0	4.00	0.017	IV	55.1(88.6)
DMG	32.9230	116.2720	10/14/1969	131842.7	10.0	4.50	0.021	IV	55.1(88.6)
DMG	33.0500	116.2380	08/23/1961	1 047.8	11.9	4.70	0.024	IV	55.2(88.8)
PAS	33.4710	118.0610	02/27/1984	101815.0	6.0	4.00	0.016	IV	55.2(88.9)
DMG	33.6170	117.9670	03/11/1933	154 7.8	0.0	6.30	0.055	VI	55.4(89.2)
DMG	33.0330	116.2330	09/20/1961	5 410.0	0.0	4.00	0.016	IV	55.6(89.5)
DMG	32.9500	116.2500	11/14/1951	2355 3.0	0.0	4.10	0.017	IV	55.8(89.8)
DMG	33.7670	117.8170	08/22/1936	521 0.0	0.0	4.00	0.016	IV	56.0(90.1)
DMG	33.8000	116.6000	09/10/1931	436 0.0	0.0	4.00	0.016	IV	56.0(90.2)
MGI	33.7000	117.9000	07/08/1902	945 0.0	0.0	4.00	0.016	IV	56.0(90.2)
PAS	32.9050	116.2610	12/25/1975	71852.3	3.6	4.00	0.016	IV	56.1(90.2)
DMG	33.4080	116.2610	03/25/1937	1649 1.8	10.0	6.00	0.047	VI	56.2(90.4)
DMG	33.3330	116.2360	10/05/1962	1529 2.6	13.9	4.10	0.017	IV	56.2(90.4)
DMG	33.0190	116.2250	08/20/1969	152957.2	0.6	4.00	0.016	IV	56.2(90.5)
DMG	33.0210	116.2230	01/13/1963	23938.9	13.0	4.20	0.018	IV	56.3(90.6)
DMG	33.3330	116.2330	06/09/1942	5 633.0	0.0	4.00	0.016	IV	56.3(90.7)
DMG	33.6000	118.0000	03/11/1933	217 0.0	0.0	4.50	0.021	IV	56.3(90.7)
DMG	33.6000	118.0000	03/11/1933	231 0.0	0.0	4.40	0.020	IV	56.3(90.7)
DMG	33.3100	116.2240	05/22/1968	132655.4	7.5	4.40	0.020	IV	56.5(90.9)
PAS	33.0580	116.2110	03/22/1982	85328.6	4.6	4.50	0.021	IV	56.6(91.1)
PAS	33.5080	118.0710	11/20/1988	53928.7	6.0	4.50	0.021	IV	56.8(91.4)
DMG	33.2000	116.2000	05/28/1892	1115 0.0	0.0	6.30	0.054	VI	57.0(91.7)
MGI	33.8000	117.8000	11/09/1926	1535 0.0	0.0	4.60	0.022	IV	57.1(92.0)
MGI	33.8000	117.8000	11/10/1926	1723 0.0	0.0	4.60	0.022	IV	57.1(92.0)
MGI	33.8000	117.8000	11/07/1926	1948 0.0	0.0	4.60	0.022	IV	57.1(92.0)
MGI	33.8000	117.8000	05/20/1917	945 0.0	0.0	4.00	0.016	IV	57.1(92.0)
MGI	33.8000	117.8000	05/19/1917	635 0.0	0.0	4.00	0.016	IV	57.1(92.0)
MGI	33.8000	117.8000	11/04/1926	2238 0.0	0.0	4.60	0.022	IV	57.1(92.0)
MGI	33.8000	117.8000	05/19/1917	719 0.0	0.0	4.00	0.016	IV	57.1(92.0)
DMG	33.6000	118.0170	12/25/1935	1715 0.0	0.0	4.50	0.021	IV	57.2(92.0)
DMG	33.3670	118.1500	04/16/1942	72833.0	0.0	4.00	0.016	IV	57.7(92.9)
DMG	33.2370	116.1900	04/14/1968	125558.7	10.8	4.30	0.019	IV	57.7(92.9)
DMG	33.6590	117.9810	10/20/1961	20 714.5	6.1	4.00	0.016	IV	57.8(93.0)
DMG	33.6170	118.0170	10/02/1933	1326 1.0	0.0	4.00	0.016	IV	57.8(93.0)
DMG	33.6170	118.0170	03/15/1933	111332.0	0.0	4.90	0.026	V	57.8(93.0)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.6170	118.0170	03/14/1933	19 150.0	0.0	5.10	0.028	V	57.8(93.0)
DMG	33.5610	118.0580	01/15/1937	183547.0	10.0	4.00	0.016	IV	57.8(93.0)
DMG	33.6650	117.9790	10/20/1961	214240.7	7.2	4.00	0.016	IV	58.0(93.3)
DMG	32.6800	116.3540	01/21/1970	1124 0.4	8.0	4.10	0.017	IV	58.1(93.4)
DMG	33.6540	117.9940	10/20/1961	194950.5	4.6	4.30	0.019	IV	58.2(93.6)
DMG	33.9500	116.8500	09/28/1946	719 9.0	0.0	5.00	0.027	V	58.4(94.0)
DMG	33.9170	116.7500	01/25/1933	1444 0.0	0.0	4.00	0.016	IV	58.5(94.1)
DMG	33.8540	117.7520	10/04/1961	22131.6	4.3	4.10	0.017	IV	58.5(94.2)
DMG	33.2830	116.1830	04/04/1954	42920.0	0.0	4.10	0.017	IV	58.5(94.2)
DMG	33.2830	116.1830	10/26/1944	225410.0	0.0	4.20	0.018	IV	58.5(94.2)
DMG	33.2830	116.1830	03/20/1954	41919.0	0.0	4.90	0.025	V	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	957 7.0	0.0	4.60	0.022	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	10 139.0	0.0	4.20	0.018	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	102610.0	0.0	4.00	0.016	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	101957.0	0.0	4.50	0.021	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	14 057.0	0.0	4.10	0.017	IV	58.5(94.2)
DMG	33.2830	116.1830	03/20/1954	6 353.0	0.0	4.30	0.018	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	102117.0	0.0	5.50	0.035	V	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	143750.0	0.0	4.00	0.016	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	95748.0	0.0	4.00	0.016	IV	58.5(94.2)
DMG	33.2830	116.1830	03/23/1954	41450.0	0.0	5.10	0.028	V	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	101522.0	0.0	4.50	0.021	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	13 8 4.0	0.0	4.30	0.018	IV	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	95556.0	0.0	5.00	0.027	V	58.5(94.2)
DMG	33.2830	116.1830	03/19/1954	95429.0	0.0	6.20	0.050	VI	58.5(94.2)
DMG	33.9960	117.2700	02/17/1952	123658.3	16.0	4.50	0.021	IV	58.5(94.2)
DMG	33.5170	118.1000	03/22/1941	82240.0	0.0	4.00	0.016	IV	58.6(94.3)
DMG	33.6170	118.0330	05/21/1938	944 0.0	0.0	4.00	0.016	IV	58.6(94.3)
DMG	34.0000	117.2500	11/01/1932	445 0.0	0.0	4.00	0.016	IV	58.7(94.5)
DMG	34.0000	117.2500	07/23/1923	73026.0	0.0	6.25	0.051	VI	58.7(94.5)
DMG	33.1670	116.1670	11/16/1937	1057 0.0	0.0	4.00	0.016	IV	58.8(94.6)
DMG	34.0000	117.2830	11/07/1939	1852 8.4	0.0	4.70	0.023	IV	58.9(94.8)
DMG	33.9680	116.8820	06/27/1959	162211.1	13.8	4.00	0.016	IV	59.0(95.0)
DMG	33.3490	116.1880	05/19/1969	144033.0	8.6	4.50	0.020	IV	59.1(95.1)
DMG	33.6800	117.9930	11/20/1961	85334.7	4.4	4.00	0.016	IV	59.2(95.3)
DMG	33.9330	116.7500	10/28/1944	183016.0	0.0	4.40	0.019	IV	59.5(95.7)
DMG	33.9330	116.7500	08/06/1938	228 0.0	0.0	4.00	0.016	IV	59.5(95.7)
DMG	34.0000	117.0000	06/30/1923	022 0.0	0.0	4.50	0.020	IV	59.6(95.9)
DMG	33.6710	118.0120	10/20/1961	223534.2	5.6	4.10	0.016	IV	59.7(96.1)
DMG	33.9500	117.5830	04/11/1941	12024.0	0.0	4.00	0.016	IV	59.7(96.2)
DMG	33.9170	116.7000	11/17/1943	112841.0	0.0	4.50	0.020	IV	59.8(96.2)
MGI	34.0000	117.4000	05/22/1907	652 0.0	0.0	4.60	0.021	IV	59.9(96.4)
DMG	32.7000	116.3000	02/24/1892	720 0.0	0.0	6.70	0.064	VI	59.9(96.5)
PAS	32.6250	118.0090	07/11/1981	215029.4	5.0	4.30	0.018	IV	60.1(96.6)
T-A	34.0000	117.4200	09/10/1920	1415 0.0	0.0	4.30	0.018	IV	60.2(96.8)
T-A	34.0000	117.4200	04/12/1888	1315 0.0	0.0	4.30	0.018	IV	60.2(96.8)
DMG	34.0170	117.0500	02/19/1940	12 655.7	0.0	4.60	0.021	IV	60.3(97.0)
PAS	34.0230	117.2450	10/02/1985	234412.4	15.2	4.80	0.023	IV	60.3(97.0)
GSP	34.0240	117.2300	03/11/1998	121851.8	14.0	4.50	0.020	IV	60.3(97.1)
DMG	33.9670	116.8000	09/07/1945	153424.0	0.0	4.30	0.018	IV	60.5(97.4)
MGI	33.8000	117.9000	05/22/1902	740 0.0	0.0	4.30	0.018	IV	60.9(98.0)
DMG	33.2170	116.1330	08/15/1945	175624.0	0.0	5.70	0.037	V	60.9(98.0)
DMG	33.9500	116.7330	04/26/1942	151023.0	0.0	4.00	0.015	IV	61.0(98.1)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.1900	116.1290	04/09/1968	22859.1	11.1	6.40	0.054	VI	61.0(98.2)
DMG	32.6800	118.0770	10/28/1973	22 0 2.7	8.0	4.50	0.020	IV	61.1(98.4)
PAS	32.3020	116.8810	08/19/1978	931 5.7	19.8	4.10	0.016	IV	61.2(98.5)
MGI	34.0000	117.5000	12/16/1858	10 0 0.0	0.0	7.00	0.074	VII	61.4(98.8)
DMG	34.0000	117.5000	07/03/1908	1255 0.0	0.0	4.00	0.015	IV	61.4(98.8)
DMG	34.0330	117.3170	09/03/1935	647 0.0	0.0	4.50	0.020	IV	61.4(98.8)
DMG	32.9500	116.1500	10/25/1942	185939.0	0.0	4.00	0.015	IV	61.4(98.8)
DMG	32.8170	116.2000	11/22/1953	81138.0	0.0	4.10	0.016	IV	61.5(98.9)
DMG	33.9730	116.7690	06/10/1944	111531.9	10.0	4.00	0.015	IV	61.6(99.1)
DMG	33.9760	116.7750	10/17/1965	94519.0	17.0	4.90	0.024	V	61.6(99.2)
DMG	34.0430	117.2280	04/03/1939	25044.7	10.0	4.00	0.015	IV	61.6(99.2)
DMG	34.0330	117.3500	04/18/1940	184343.9	0.0	4.40	0.019	IV	61.6(99.2)
DMG	33.1670	116.1170	04/09/1968	23930.0	0.0	4.40	0.019	IV	61.7(99.3)
DMG	33.1670	116.1170	04/09/1968	233 9.0	0.0	4.30	0.018	IV	61.7(99.3)
DMG	33.1170	116.1170	06/18/1943	161546.0	0.0	4.50	0.020	IV	61.7(99.3)
DMG	33.2000	116.1170	12/28/1950	52211.0	0.0	4.20	0.017	IV	61.8(99.4)
MGI	32.8000	116.2000	07/23/1929	1155 0.0	0.0	4.30	0.018	IV	61.9(99.7)
DMG	33.6830	118.0500	03/11/1933	1250 0.0	0.0	4.40	0.019	IV	62.0(99.7)
DMG	33.6830	118.0500	03/11/1933	658 3.0	0.0	5.50	0.033	V	62.0(99.7)
DMG	33.8980	116.5690	11/17/1964	145228.2	10.3	4.00	0.015	IV	62.6(100.7)
DMG	33.7500	118.0000	11/16/1934	2126 0.0	0.0	4.00	0.015	IV	62.6(100.8)
GSP	32.6810	118.1090	06/20/1997	043540.5	6.0	4.70	0.022	IV	62.7(100.8)
DMG	33.6170	118.1170	01/20/1934	2117 0.0	0.0	4.50	0.019	IV	62.7(100.9)
GSP	32.8220	116.1750	05/24/1992	122225.8	12.0	4.10	0.016	IV	62.7(100.9)
DMG	33.9760	116.7210	06/12/1944	104534.7	10.0	5.10	0.027	V	62.9(101.2)
GSP	33.9510	117.7090	01/05/1998	181406.5	11.0	4.30	0.017	IV	63.0(101.3)
DMG	32.6000	116.3170	06/15/1946	194653.0	0.0	4.80	0.023	IV	63.0(101.5)
PAS	33.9760	116.7130	08/06/1984	81436.6	14.2	4.30	0.017	IV	63.1(101.5)
DMG	33.2670	116.1000	01/04/1954	233152.0	0.0	4.20	0.017	IV	63.1(101.6)
DMG	33.7000	118.0670	07/20/1940	4 113.0	0.0	4.00	0.015	IV	63.4(102.1)
DMG	33.7000	118.0670	03/11/1933	51022.0	0.0	5.10	0.026	V	63.4(102.1)
DMG	33.7000	118.0670	02/08/1940	165617.0	0.0	4.00	0.015	IV	63.4(102.1)
DMG	33.7000	118.0670	03/11/1933	85457.0	0.0	5.10	0.026	V	63.4(102.1)
GSP	33.2240	116.0880	07/10/1998	212913.8	12.0	4.10	0.016	IV	63.5(102.2)
DMG	33.9590	116.6510	09/23/1949	214440.1	12.2	4.00	0.015	IV	63.7(102.4)
DMG	33.1330	116.0830	05/07/1936	1147 0.0	0.0	4.50	0.019	IV	63.7(102.4)
DMG	33.1330	116.0830	02/28/1940	1728 7.0	0.0	4.50	0.019	IV	63.7(102.4)
DMG	33.1330	116.0830	10/16/1940	175213.0	0.0	4.00	0.015	IV	63.7(102.4)
DMG	33.1330	116.0830	10/06/1940	181953.0	0.0	4.00	0.015	IV	63.7(102.4)
DMG	33.9810	116.7020	06/12/1944	222119.5	10.0	4.20	0.016	IV	63.7(102.4)
DMG	33.2330	116.0860	08/26/1965	133814.0	-2.0	4.50	0.019	IV	63.7(102.5)
DMG	33.3330	116.1000	06/12/1943	192141.0	0.0	4.00	0.015	IV	63.8(102.7)
GSP	32.6850	118.1380	06/20/1997	053855.0	6.0	4.20	0.016	IV	64.0(102.9)
PAS	33.9790	116.6810	12/16/1988	553 5.0	8.1	4.80	0.022	IV	64.1(103.1)
DMG	33.2780	116.0850	08/26/1965	125351.0	1.0	4.20	0.016	IV	64.1(103.1)
DMG	34.0140	116.7710	06/10/1944	111150.5	10.0	4.50	0.019	IV	64.1(103.2)
DMG	32.8940	116.1190	09/16/1961	194939.4	18.5	4.40	0.018	IV	64.2(103.2)
DMG	33.9940	116.7120	06/12/1944	111636.0	10.0	5.30	0.029	V	64.2(103.4)
T-A	34.0800	117.2500	10/07/1869	0 0 0.0	0.0	4.30	0.017	IV	64.3(103.4)
PAS	33.1360	116.0710	02/29/1984	2 731.7	6.6	4.30	0.017	IV	64.3(103.6)
DMG	33.0020	116.0850	11/21/1964	172559.7	4.1	4.20	0.016	IV	64.4(103.6)
DMG	32.7180	118.1720	04/28/1938	6 728.0	10.0	4.50	0.019	IV	64.6(103.9)
DMG	32.8670	118.2500	02/13/1952	151337.0	0.0	4.70	0.021	IV	64.8(104.2)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
PAS	33.5380	118.2070	05/25/1982	134430.3	13.7	4.10	0.015	IV	64.8(104.2)
DMG	34.0290	116.7870	04/30/1954	03623.9	11.1	4.20	0.016	IV	64.8(104.2)
T-A	32.2500	117.5000	01/13/1877	20 0 0.0	0.0	5.00	0.025	V	64.9(104.4)
DMG	34.0000	116.7000	08/25/1944	73025.0	0.0	4.20	0.016	IV	64.9(104.4)
DMG	33.8000	118.0000	10/21/1913	938 0.0	0.0	4.00	0.015	IV	64.9(104.5)
DMG	33.1030	116.0610	04/09/1968	111754.5	4.8	4.00	0.015	IV	65.0(104.6)
DMG	32.7500	118.2000	06/25/1939	149 0.0	0.0	4.50	0.019	IV	65.0(104.7)
PAS	33.9670	116.6170	07/08/1986	155526.2	6.0	4.00	0.015	IV	65.1(104.8)
PAS	33.9670	116.6170	07/08/1986	102240.6	6.0	4.40	0.018	IV	65.1(104.8)
GSP	34.0850	116.9890	06/30/1992	214900.3	3.0	4.40	0.018	IV	65.5(105.3)
DMG	33.3170	116.0670	09/04/1944	125528.0	0.0	4.10	0.015	IV	65.5(105.4)
MGI	34.1000	117.2000	04/23/1923	2113 0.0	0.0	4.00	0.014	IV	65.5(105.4)
PAS	33.9890	116.6490	07/17/1986	203515.0	6.2	4.00	0.014	IV	65.5(105.5)
PAS	33.9530	116.5720	10/15/1986	22847.8	8.7	4.70	0.021	IV	65.6(105.6)
PAS	33.9910	116.6490	07/17/1986	215445.2	7.4	4.40	0.018	IV	65.7(105.7)
MGI	34.0000	117.7000	12/03/1929	9 5 0.0	0.0	4.00	0.014	IV	65.7(105.7)
DMG	34.1000	117.3000	02/16/1931	1327 0.0	0.0	4.00	0.014	IV	65.9(106.0)
MGI	34.1000	117.3000	07/15/1905	2041 0.0	0.0	5.30	0.029	V	65.9(106.0)
MGI	34.1000	117.3000	11/22/1911	257 0.0	0.0	4.00	0.014	IV	65.9(106.0)
MGI	34.1000	117.3000	12/27/1901	11 0 0.0	0.0	4.60	0.020	IV	65.9(106.0)
GSP	33.2500	116.0500	08/31/1990	033800.0	8.0	4.20	0.016	IV	65.9(106.0)
DMG	33.5000	118.2500	06/18/1920	10 8 0.0	0.0	4.50	0.019	IV	66.0(106.3)
DMG	33.8800	116.4370	04/17/1959	1619 0.2	22.2	4.20	0.016	IV	66.2(106.5)
GSP	34.0970	116.9960	12/05/1997	170438.9	4.0	4.10	0.015	IV	66.2(106.5)
DMG	33.7500	118.0830	03/11/1933	618 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/13/1933	1532 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/25/1933	1346 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	034 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	027 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	513 0.0	0.0	4.70	0.021	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	23 5 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/17/1933	1651 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	515 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1129 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	2240 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	22 0 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/30/1933	1225 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	04/01/1933	642 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	2 4 0.0	0.0	4.90	0.023	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	259 0.0	0.0	4.60	0.020	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	252 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/13/1933	617 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	210 0.0	0.0	4.60	0.020	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	216 0.0	0.0	4.80	0.022	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	611 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/23/1933	1831 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	1738 0.0	0.0	4.50	0.019	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	227 0.0	0.0	4.60	0.020	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	2354 0.0	0.0	4.50	0.019	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1956 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/19/1933	2123 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/21/1933	326 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	553 0.0	0.0	4.00	0.014	IV	66.3(106.7)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7500	118.0830	03/11/1933	2231 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1138 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	448 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	635 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	2128 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	8 8 0.0	0.0	4.50	0.019	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	211 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1357 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	2 9 0.0	0.0	5.00	0.024	V	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	15 2 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	222 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	910 0.0	0.0	5.10	0.026	V	66.3(106.7)
DMG	33.7500	118.0830	03/16/1933	1529 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1944 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	1825 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1045 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	257 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/13/1933	343 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	258 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	2232 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	555 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	311 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/31/1933	1049 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	6 1 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	616 0.0	0.0	4.60	0.020	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	759 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	436 0.0	0.0	4.60	0.020	IV	66.3(106.7)
DMG	33.7500	118.0830	03/15/1933	540 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	740 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/16/1933	1456 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	837 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	911 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	230 0.0	0.0	5.10	0.026	V	66.3(106.7)
DMG	33.7500	118.0830	03/18/1933	2052 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	521 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/13/1933	432 0.0	0.0	4.70	0.021	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	524 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/20/1933	1358 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/13/1933	131828.0	0.0	5.30	0.028	V	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1141 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/13/1933	1929 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	2 5 0.0	0.0	4.30	0.017	IV	66.3(106.7)
DMG	33.7500	118.0830	04/02/1933	8 0 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	347 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	04/02/1933	1536 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/15/1933	2 8 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	439 0.0	0.0	4.90	0.023	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	1651 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	835 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	440 0.0	0.0	4.70	0.021	IV	66.3(106.7)
DMG	33.7500	118.0830	03/16/1933	1530 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1025 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	751 0.0	0.0	4.20	0.016	IV	66.3(106.7)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.7500	118.0830	03/14/1933	2242 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	336 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	11 0 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/23/1933	840 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/14/1933	1219 0.0	0.0	4.50	0.019	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	339 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/12/1933	546 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1147 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	832 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/15/1933	432 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/14/1933	036 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1547 0.0	0.0	4.00	0.014	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	926 0.0	0.0	4.10	0.015	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	3 5 0.0	0.0	4.20	0.016	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	323 0.0	0.0	5.00	0.024	V	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	3 9 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7500	118.0830	03/11/1933	1653 0.0	0.0	4.80	0.022	IV	66.3(106.7)
DMG	33.7330	118.1000	03/11/1933	1447 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7330	118.1000	03/11/1933	15 9 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.7330	118.1000	03/11/1933	1350 0.0	0.0	4.40	0.018	IV	66.3(106.7)
DMG	33.1130	116.0370	04/09/1968	3 353.5	5.0	5.20	0.027	V	66.4(106.8)
DMG	33.1040	116.0360	04/09/1968	34810.3	4.8	4.70	0.021	IV	66.5(106.9)
DMG	33.2400	116.0360	04/28/1961	63021.2	-1.2	4.20	0.016	IV	66.6(107.2)
GSP	32.6260	118.1510	06/20/1997	080413.6	6.0	4.60	0.020	IV	66.8(107.4)
DMG	33.2830	116.0330	03/16/1949	18 027.0	0.0	4.00	0.014	IV	67.1(108.0)
DMG	33.2830	116.0330	03/29/1951	233929.0	0.0	4.40	0.017	IV	67.1(108.0)
PAS	34.0060	117.7390	02/18/1989	717 4.8	3.3	4.30	0.017	IV	67.1(108.0)
DMG	33.6300	118.2000	09/13/1929	132338.2	0.0	4.00	0.014	IV	67.3(108.2)
PAS	33.9980	116.6060	07/08/1986	92044.5	11.7	5.60	0.033	V	67.3(108.3)
DMG	33.6330	118.2000	11/01/1940	20 046.0	0.0	4.00	0.014	IV	67.4(108.4)
DMG	34.1180	117.3410	09/22/1951	82239.1	11.9	4.30	0.017	IV	67.4(108.4)
DMG	32.5290	118.0820	05/26/1973	234633.3	8.0	4.30	0.017	IV	67.5(108.6)
PAS	33.9870	116.5690	07/09/1986	01232.1	6.0	4.40	0.017	IV	67.7(108.9)
GSP	34.1200	116.9980	06/29/1992	144126.0	4.0	4.40	0.017	IV	67.8(109.0)
DMG	34.1000	116.8830	10/24/1935	1452 0.0	0.0	4.50	0.018	IV	67.8(109.1)
DMG	34.1000	116.8830	10/24/1935	1527 0.0	0.0	4.00	0.014	IV	67.8(109.1)
DMG	34.1000	116.8830	10/24/1935	1451 0.0	0.0	4.50	0.018	IV	67.8(109.1)
DMG	34.1120	117.4260	03/19/1937	12338.4	10.0	4.00	0.014	IV	67.8(109.1)
DMG	33.7830	116.2830	03/04/1937	16 4 0.0	0.0	4.00	0.014	IV	67.8(109.1)
DMG	33.0500	116.0170	08/26/1955	52322.0	0.0	4.30	0.016	IV	67.9(109.2)
MGI	33.7500	116.2500	11/19/1917	1730 0.0	0.0	4.00	0.014	IV	67.9(109.2)
PAS	34.0310	116.6570	07/08/1986	92412.8	6.0	4.40	0.017	IV	67.9(109.3)
DMG	34.1270	117.3380	02/23/1936	222042.7	10.0	4.50	0.018	IV	68.0(109.4)
DMG	33.2880	116.0180	07/27/1965	14 441.4	0.6	4.30	0.016	IV	68.0(109.4)
GSP	34.1120	116.9200	10/01/1998	181816.0	4.0	4.70	0.020	IV	68.1(109.5)
DMG	33.1070	116.0070	04/09/1968	8 038.5	4.0	4.00	0.014	IV	68.1(109.6)
MGI	33.7000	116.2000	08/12/1917	11 0 0.0	0.0	4.00	0.014	IV	68.2(109.8)
DMG	33.2310	116.0040	05/26/1957	155933.6	15.1	5.00	0.024	IV	68.4(110.1)
DMG	33.2000	116.0000	08/15/1951	1227 9.0	0.0	4.00	0.014	IV	68.5(110.2)
DMG	33.7670	118.1170	11/04/1939	2141 0.0	0.0	4.00	0.014	IV	68.5(110.3)
DMG	33.7500	118.1330	03/11/1933	11 4 0.0	0.0	4.60	0.019	IV	68.5(110.3)
GSP	34.1210	116.9280	08/16/1998	133440.2	6.0	4.70	0.020	IV	68.6(110.3)
DMG	33.0400	116.0050	05/11/1968	810 4.0	8.8	4.20	0.015	IV	68.6(110.4)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	34.1160	117.4750	06/28/1960	20 048.0	12.0	4.10	0.015	IV	68.7(110.5)
DMG	34.1400	117.3390	02/26/1936	93327.6	10.0	4.00	0.014	IV	68.9(110.8)
DMG	34.1330	116.9500	06/10/1938	1440 0.0	0.0	4.00	0.014	IV	69.1(111.2)
DMG	34.1000	116.8000	10/24/1935	1448 7.6	0.0	5.10	0.025	V	69.1(111.3)
DMG	34.1320	117.4260	04/15/1965	20 833.3	5.5	4.50	0.018	IV	69.1(111.3)
DMG	33.0560	115.9930	04/09/1968	35836.0	7.9	4.30	0.016	IV	69.2(111.3)
USG	34.1390	117.3860	02/21/1987	231530.1	2.6	4.07	0.014	IV	69.2(111.4)
PAS	33.9650	117.8860	01/01/1976	172012.9	6.2	4.20	0.015	IV	69.2(111.4)
DMG	33.0000	116.0000	05/18/1920	625 0.0	0.0	4.50	0.018	IV	69.3(111.5)
DMG	34.1240	117.4800	05/15/1955	17 326.0	7.6	4.00	0.014	IV	69.3(111.5)
DMG	33.1670	115.9830	07/21/1940	836 3.0	0.0	4.40	0.017	IV	69.4(111.7)
DMG	33.0830	115.9830	12/15/1937	958 0.0	0.0	4.00	0.014	IV	69.6(112.0)
DMG	33.0830	115.9830	07/14/1940	0 144.0	0.0	4.00	0.014	IV	69.6(112.0)
DMG	33.0830	115.9830	07/13/1940	163923.0	0.0	4.00	0.014	IV	69.6(112.0)
DMG	33.0830	115.9830	12/10/1938	312 0.0	0.0	4.00	0.014	IV	69.6(112.0)
DMG	33.0830	115.9830	03/02/1934	2130 0.0	0.0	4.50	0.018	IV	69.6(112.0)
PAS	34.1350	117.4480	01/08/1983	71930.4	4.6	4.10	0.015	IV	69.6(112.0)
DMG	33.0480	115.9860	04/16/1968	33029.9	8.3	4.80	0.021	IV	69.7(112.1)
DMG	32.9670	116.0000	11/03/1942	5 629.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	11/12/1942	0 737.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/07/1942	439 6.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	01/08/1943	024 3.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/02/1942	125942.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	225031.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/02/1943	165716.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/22/1942	181326.0	0.0	5.00	0.023	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	1638 6.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	03/07/1943	205631.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	214928.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	191028.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	10/29/1942	162157.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	04/30/1943	155256.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/22/1942	63951.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/02/1943	164759.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	163439.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	11/16/1943	18 9 9.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	08/17/1943	155058.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/22/1942	113951.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	03/26/1943	62957.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/22/1942	125553.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	04/07/1943	34614.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	02/24/1943	15831.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	08/20/1944	113310.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/03/1942	101834.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/02/1943	175041.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	10/29/1942	1556 0.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	162519.0	0.0	5.00	0.023	IV	69.7(112.1)
DMG	32.9670	116.0000	04/27/1943	32833.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	162654.0	0.0	5.00	0.023	IV	69.7(112.1)
DMG	32.9670	116.0000	10/30/1942	53545.0	0.0	4.50	0.018	IV	69.7(112.1)
DMG	32.9670	116.0000	11/02/1943	18 134.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	11/02/1943	1753 5.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/21/1942	162213.0	0.0	6.50	0.051	VI	69.7(112.1)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	32.9670	116.0000	10/29/1942	173552.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.9670	116.0000	10/26/1942	434 4.0	0.0	4.00	0.014	IV	69.7(112.1)
DMG	32.7960	116.0550	11/30/1965	84325.1	16.4	4.00	0.014	III	69.8(112.4)
DMG	33.7830	118.1330	10/02/1933	91017.6	0.0	5.40	0.029	V	69.9(112.5)
DMG	33.7830	118.1330	01/13/1940	749 7.0	0.0	4.00	0.014	III	69.9(112.5)
DMG	33.7830	118.1330	11/20/1933	1032 0.0	0.0	4.00	0.014	III	69.9(112.5)
DMG	32.7860	116.0550	07/04/1938	215945.3	10.0	4.00	0.014	III	70.1(112.8)
PAS	34.1510	116.9720	11/20/1978	655 9.5	6.1	4.30	0.016	IV	70.1(112.8)
DMG	34.1270	117.5210	12/27/1938	10 928.6	10.0	4.00	0.014	III	70.1(112.8)
DMG	33.7500	118.1670	05/16/1933	205855.0	0.0	4.00	0.014	III	70.1(112.8)
DMG	32.3330	116.4670	01/13/1935	224 0.0	0.0	4.00	0.014	III	70.2(112.9)
GSP	33.2100	115.9700	07/19/1991	024136.8	3.0	4.00	0.014	III	70.3(113.1)
DMG	33.9330	116.4000	12/10/1948	204257.0	0.0	4.40	0.017	IV	70.4(113.2)
DMG	33.9670	116.4500	12/11/1948	161220.0	0.0	4.50	0.018	IV	70.4(113.3)
DMG	32.9830	115.9830	05/23/1942	154729.0	0.0	5.00	0.023	IV	70.4(113.4)
GSP	32.5920	116.1650	02/19/1999	030832.2	3.0	4.20	0.015	IV	70.6(113.6)
GSP	32.5880	116.1670	03/13/1999	133120.4	6.0	4.30	0.016	IV	70.6(113.7)
GSP	32.5930	116.1630	04/07/1999	062640.1	8.0	4.00	0.014	III	70.6(113.7)
GSP	34.1680	117.3370	06/28/1997	214525.1	9.0	4.20	0.015	IV	70.8(113.9)
T-A	34.1700	117.3200	12/02/1859	2210 0.0	0.0	4.30	0.016	IV	70.8(113.9)
GSP	32.5870	116.1630	04/18/1999	155301.1	7.0	4.20	0.015	IV	70.9(114.0)
DMG	33.7500	118.1830	08/04/1933	41748.0	0.0	4.00	0.014	III	70.9(114.0)
DMG	34.1400	117.5150	01/01/1965	8 418.0	5.9	4.40	0.017	IV	70.9(114.1)
GSP	34.1410	116.8570	09/19/1997	223714.5	10.0	4.10	0.014	IV	70.9(114.1)
DMG	33.9330	116.3830	12/04/1948	234317.0	0.0	6.50	0.051	VI	71.0(114.2)
DMG	33.9670	116.4330	12/05/1948	04235.0	0.0	4.60	0.019	IV	71.0(114.3)
GSP	33.9450	116.3990	07/05/1992	054938.2	3.0	4.00	0.014	III	71.0(114.3)
DMG	33.9630	116.4250	01/13/1950	5 719.4	5.9	4.10	0.014	IV	71.1(114.4)
DMG	34.1670	116.9830	10/16/1951	1241 5.0	0.0	4.00	0.014	III	71.1(114.4)
DMG	34.1000	116.7000	02/07/1889	520 0.0	0.0	5.30	0.027	V	71.2(114.6)
DMG	34.1170	116.7500	08/22/1942	125913.0	0.0	4.00	0.014	III	71.2(114.6)
DMG	32.8170	118.3500	12/26/1951	04654.0	0.0	5.90	0.037	V	71.4(114.8)
DMG	33.7830	116.2000	10/31/1943	131210.0	0.0	4.50	0.018	IV	71.5(115.1)
DMG	34.1000	117.6830	01/18/1934	214 0.0	0.0	4.00	0.013	III	71.5(115.1)
DMG	34.1000	117.6830	01/09/1934	1410 0.0	0.0	4.50	0.018	IV	71.5(115.1)
DMG	34.0170	116.5000	08/08/1947	64745.0	0.0	4.00	0.013	III	71.6(115.2)
DMG	34.0170	116.5000	07/24/1947	225341.0	0.0	4.30	0.016	IV	71.6(115.2)
DMG	34.0170	116.5000	07/29/1947	163615.0	0.0	4.20	0.015	IV	71.6(115.2)
DMG	34.0170	116.5000	07/30/1947	52217.0	0.0	4.20	0.015	IV	71.6(115.2)
DMG	34.0170	116.5000	08/01/1947	17 137.0	0.0	4.10	0.014	IV	71.6(115.2)
DMG	34.0170	116.5000	07/25/1947	75730.0	0.0	4.20	0.015	IV	71.6(115.2)
DMG	34.0170	116.5000	07/24/1947	225426.0	0.0	4.90	0.022	IV	71.6(115.2)
DMG	34.0170	116.5000	07/26/1947	24941.0	0.0	5.10	0.024	V	71.6(115.2)
DMG	34.0170	116.5000	07/26/1947	231351.0	0.0	4.10	0.014	IV	71.6(115.2)
DMG	34.0170	116.5000	07/26/1947	23 425.0	0.0	4.50	0.018	IV	71.6(115.2)
DMG	34.0170	116.5000	07/25/1947	61949.0	0.0	5.20	0.025	V	71.6(115.2)
DMG	34.0170	116.5000	07/25/1947	51752.0	0.0	4.30	0.016	IV	71.6(115.2)
DMG	34.0170	116.5000	07/25/1947	15647.0	0.0	4.60	0.018	IV	71.6(115.2)
DMG	34.0170	116.5000	07/25/1947	04631.0	0.0	5.00	0.023	IV	71.6(115.2)
DMG	34.0170	116.5000	07/25/1947	161453.0	0.0	4.50	0.018	IV	71.6(115.2)
DMG	34.0170	116.5000	07/24/1947	221046.0	0.0	5.50	0.030	V	71.6(115.2)
DMG	34.0170	116.5000	07/26/1947	12415.0	0.0	4.20	0.015	IV	71.6(115.2)
DMG	33.9330	116.3670	12/05/1948	0 721.0	0.0	4.90	0.022	IV	71.6(115.2)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
USG	32.7700	118.3340	06/16/1985	1027 0.7	5.0	4.14	0.015	IV	71.6(115.3)
GSP	34.1800	117.0200	12/04/1991	081703.5	11.0	4.00	0.013	III	71.7(115.3)
DMG	34.0000	116.4670	12/06/1948	246 8.0	0.0	4.30	0.016	IV	71.7(115.3)
DMG	34.0000	116.4670	12/05/1948	05057.0	0.0	4.40	0.017	IV	71.7(115.3)
GSP	33.9460	116.3790	04/24/1992	123605.7	10.0	4.10	0.014	IV	71.8(115.6)
DMG	33.0390	115.9490	05/06/1968	173147.6	6.7	4.00	0.013	III	71.9(115.6)
DMG	33.5430	118.3400	09/14/1963	35116.2	2.2	4.20	0.015	IV	72.0(115.8)
GSP	34.1920	117.0950	04/06/1994	190104.1	7.0	4.80	0.020	IV	72.1(116.0)
DMG	32.5330	116.1830	02/22/1939	1030 0.0	0.0	4.00	0.013	III	72.1(116.0)
DMG	32.5330	116.1830	11/12/1939	1849 0.0	0.0	4.00	0.013	III	72.1(116.0)
DMG	34.0650	116.5740	08/26/1959	53250.2	16.7	4.30	0.016	IV	72.2(116.2)
DMG	33.9330	116.3500	12/05/1948	04032.0	0.0	4.40	0.017	IV	72.2(116.2)
GSP	34.1300	116.7340	06/30/1992	212254.4	12.0	4.80	0.020	IV	72.4(116.5)
GSP	34.1630	116.8550	06/28/1992	144321.0	6.0	5.30	0.027	V	72.4(116.5)
MGI	33.5000	116.0000	09/30/1916	425 0.0	0.0	4.00	0.013	III	72.4(116.6)
GSP	34.1780	116.9220	06/28/1992	170131.9	13.0	4.70	0.019	IV	72.5(116.7)
DMG	34.2000	117.1000	09/20/1907	154 0.0	0.0	6.00	0.038	V	72.6(116.8)
DMG	34.1800	116.9200	01/16/1930	034 3.6	0.0	5.10	0.024	IV	72.6(116.9)
DMG	34.1800	116.9200	01/16/1930	02433.9	0.0	5.20	0.025	V	72.6(116.9)
GSP	34.1900	117.3900	12/28/1989	094108.1	15.0	4.50	0.017	IV	72.7(117.0)
DMG	33.2670	115.9330	12/30/1960	214025.0	0.0	4.00	0.013	III	72.7(117.0)
MGI	34.2000	117.3000	04/13/1913	1045 0.0	0.0	4.00	0.013	III	72.7(117.0)
GSP	33.8760	116.2670	06/29/1992	160142.8	1.0	5.20	0.025	V	72.7(117.1)
GSP	34.1630	116.8270	06/28/1992	150451.5	12.0	4.40	0.016	IV	72.8(117.2)
GSP	33.9400	116.3410	05/04/1992	011602.6	6.0	4.00	0.013	III	72.9(117.4)
DMG	34.1670	117.5330	03/01/1948	81213.0	0.0	4.70	0.019	IV	73.0(117.4)
DMG	33.7830	118.2000	12/27/1939	192849.0	0.0	4.70	0.019	IV	73.0(117.5)
GSP	34.1100	117.7200	04/17/1990	223227.2	4.0	4.60	0.018	IV	73.0(117.5)
PAS	33.9850	116.4020	02/15/1985	232626.6	2.3	4.00	0.013	III	73.1(117.6)
DMG	32.7170	116.0330	06/01/1959	163536.0	0.0	4.60	0.018	IV	73.1(117.7)
GSP	34.1110	116.6460	06/28/1992	140928.8	7.0	4.10	0.014	IV	73.1(117.7)
GSP	33.9050	116.2880	05/07/1995	110333.0	10.0	4.80	0.020	IV	73.3(117.9)
GSP	33.9020	116.2840	07/24/1992	181436.2	9.0	5.00	0.022	IV	73.3(117.9)
PAS	34.1980	116.9590	04/01/1978	105227.4	8.0	4.00	0.013	III	73.4(118.2)
DMG	32.6000	116.1000	12/24/1941	73012.0	0.0	4.50	0.017	IV	73.5(118.2)
DMG	34.2000	117.4000	07/22/1899	046 0.0	0.0	5.50	0.029	V	73.5(118.2)
DMG	32.1670	117.6670	10/29/1935	1017 0.0	0.0	4.50	0.017	IV	73.5(118.3)
GSP	33.9510	116.3380	05/18/1992	154418.0	7.0	4.90	0.021	IV	73.6(118.5)
DMG	33.9580	116.3460	01/08/1952	63427.4	11.4	4.40	0.016	IV	73.7(118.6)
GSG	33.9430	116.3250	04/23/1992	052316.2	5.0	4.00	0.013	III	73.7(118.6)
GSP	33.9470	116.3300	09/09/1992	125045.1	5.0	4.30	0.015	IV	73.7(118.6)
DMG	33.2830	115.9170	03/28/1952	11622.0	0.0	4.20	0.015	IV	73.7(118.7)
GSP	34.1300	117.7000	03/01/1990	003457.1	4.0	4.00	0.013	III	73.8(118.8)
DMG	33.9000	118.1000	07/08/1929	1646 6.7	13.0	4.70	0.019	IV	73.8(118.8)
DMG	32.7500	116.0000	02/19/1919	458 0.0	0.0	4.50	0.017	IV	74.0(119.0)
DMG	33.9960	117.9750	06/15/1967	458 5.5	10.0	4.10	0.014	IV	74.0(119.1)
GSP	33.9430	116.3150	05/06/1992	023843.3	7.0	4.50	0.017	IV	74.1(119.2)
GSP	33.9330	116.3020	04/27/1992	031119.3	0.0	4.20	0.015	IV	74.1(119.2)
PDP	33.9370	116.3060	07/25/1992	043160.0	5.0	4.90	0.021	IV	74.1(119.3)
GSP	34.1400	117.6900	03/02/1990	172625.4	6.0	4.60	0.018	IV	74.2(119.4)
MGI	34.2000	116.9000	10/10/1915	5 6 0.0	0.0	4.00	0.013	III	74.2(119.5)
DMG	34.1830	117.5480	09/01/1937	163533.5	10.0	4.50	0.017	IV	74.3(119.5)
PAS	34.0220	116.4260	08/14/1975	8 849.8	10.9	4.00	0.013	III	74.3(119.5)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.1000	115.9000	04/25/1957	22 5 0.0	0.0	4.20	0.015	IV	74.3(119.6)
DMG	33.1000	115.9000	04/25/1957	2248 0.0	0.0	4.10	0.014	IV	74.3(119.6)
DMG	33.1000	115.9000	04/25/1957	2249 0.0	0.0	4.20	0.015	IV	74.3(119.6)
PAS	34.1360	117.7090	06/26/1988	15 458.5	7.9	4.60	0.018	IV	74.4(119.7)
GSP	34.1950	116.8620	08/17/1992	204152.1	11.0	5.30	0.026	V	74.4(119.8)
GSP	34.1400	117.7000	02/28/1990	234336.6	5.0	5.20	0.025	V	74.4(119.8)
GSP	33.9420	116.3040	05/04/1992	161949.7	12.0	4.80	0.020	IV	74.5(119.8)
DMG	34.1000	117.8000	03/31/1931	2033 0.0	0.0	4.00	0.013	III	74.5(119.9)
DMG	32.0830	117.0000	05/10/1948	34925.0	0.0	4.00	0.013	III	74.5(119.9)
DMG	33.0360	115.9030	10/05/1964	121 9.5	-2.0	4.10	0.014	IV	74.5(119.9)
DMG	33.7590	118.2530	08/31/1938	31814.2	10.0	4.50	0.017	IV	74.5(119.9)
GSP	34.1830	116.8020	06/28/1992	192637.6	1.0	4.00	0.013	III	74.6(120.0)
DMG	34.0000	116.3830	05/05/1944	134715.0	0.0	4.00	0.013	III	74.6(120.0)
GSP	34.1980	116.8620	08/18/1992	094640.7	12.0	4.20	0.015	IV	74.6(120.1)
GSP	33.9530	116.3140	11/27/1996	014243.8	6.0	4.10	0.014	IV	74.6(120.1)
GSP	33.9510	116.3110	04/26/1992	062608.0	0.0	4.20	0.014	IV	74.7(120.1)
DMG	34.2000	117.5000	06/14/1892	1325 0.0	0.0	4.90	0.021	IV	74.7(120.2)
GSP	33.9570	116.3170	04/23/1992	022529.9	11.0	4.60	0.018	IV	74.7(120.3)
DMG	34.1830	117.5830	10/03/1948	24628.0	0.0	4.00	0.013	III	74.8(120.5)
DMG	32.9550	115.9110	04/10/1967	04717.3	4.4	4.00	0.013	III	74.9(120.5)
GSP	33.9610	116.3180	04/23/1992	045023.0	12.0	6.10	0.039	V	74.9(120.5)
MGI	34.0000	118.0000	05/05/1929	735 0.0	0.0	4.00	0.013	III	75.1(120.8)
MGI	34.0000	118.0000	05/05/1929	1 7 0.0	0.0	4.60	0.018	IV	75.1(120.8)
MGI	34.0000	118.0000	12/25/1903	1745 0.0	0.0	5.00	0.022	IV	75.1(120.8)
DMG	33.8170	118.2170	10/22/1941	65718.5	0.0	4.90	0.021	IV	75.2(121.0)
DMG	33.9670	118.0500	01/30/1941	13446.9	0.0	4.10	0.014	III	75.2(121.0)
DMG	32.2000	116.5500	11/05/1949	20 2 7.0	0.0	4.00	0.013	III	75.3(121.2)
DMG	32.2000	116.5500	11/06/1949	23 510.0	0.0	4.00	0.013	III	75.3(121.2)
DMG	32.2000	116.5500	11/05/1949	43524.0	0.0	5.10	0.023	IV	75.3(121.2)
DMG	32.2000	116.5500	11/11/1949	1354 0.0	0.0	4.20	0.014	IV	75.3(121.2)
DMG	32.2000	116.5500	11/04/1949	204238.0	0.0	5.70	0.032	V	75.3(121.2)
DMG	33.9850	116.3400	02/01/1957	75215.4	11.0	4.60	0.018	IV	75.3(121.2)
DMG	33.7830	118.2500	11/14/1941	84136.3	0.0	5.40	0.027	V	75.3(121.2)
DMG	32.1130	116.7850	04/23/1968	131825.4	10.0	4.20	0.014	IV	75.3(121.2)
DMG	34.2170	117.4670	03/25/1941	234341.0	0.0	4.00	0.013	III	75.4(121.3)
DMG	33.9170	116.2500	08/15/1946	19 1 8.0	0.0	4.00	0.013	III	75.4(121.3)
PAS	33.0290	115.8880	11/26/1987	1739 2.0	1.8	4.30	0.015	IV	75.4(121.4)
GSN	34.2030	116.8270	06/28/1992	150530.7	5.0	6.70	0.054	VI	75.5(121.5)
GSP	34.1500	117.7200	03/01/1990	032303.0	11.0	4.70	0.019	IV	75.5(121.6)
GSP	34.0040	116.3610	06/30/1992	143811.6	0.0	4.80	0.020	IV	75.6(121.6)
DMG	34.0500	116.4330	02/08/1938	739 0.0	0.0	4.00	0.013	III	75.6(121.7)
DMG	33.0330	115.8830	08/27/1945	112520.0	0.0	4.00	0.013	III	75.7(121.8)
PAS	33.1330	115.8730	11/24/1987	133355.8	0.0	4.00	0.013	III	75.8(122.0)
DMG	34.2110	117.5300	09/01/1937	1348 8.2	10.0	4.50	0.017	IV	75.8(122.0)
PAS	34.2110	117.5300	10/19/1979	122237.8	4.9	4.10	0.014	III	75.8(122.0)
PAS	33.0170	115.8810	11/24/1987	185040.3	0.0	4.30	0.015	IV	75.9(122.2)
DMG	34.0170	116.3670	06/06/1940	235637.2	0.0	4.40	0.016	IV	76.0(122.4)
GSP	34.0300	116.3790	06/28/1992	160115.2	1.0	4.10	0.014	III	76.3(122.8)
DMG	34.0830	116.4670	01/26/1934	1844 0.0	0.0	4.00	0.013	III	76.4(123.0)
DMG	34.0830	116.4670	03/01/1942	104631.0	0.0	4.00	0.013	III	76.4(123.0)
DMG	33.8670	118.2000	11/13/1933	2128 0.0	0.0	4.00	0.013	III	76.6(123.2)
DMG	34.0670	116.4320	12/04/1957	25144.0	3.7	4.30	0.015	IV	76.6(123.3)
GSP	34.2250	116.8440	07/09/1992	023435.0	0.0	4.10	0.013	III	76.7(123.4)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
PAS	32.9930	115.8720	11/24/1987	133259.9	0.0	4.20	0.014	IV	76.7(123.4)
DMG	33.0450	115.8630	12/17/1968	225351.2	8.0	4.70	0.018	IV	76.8(123.5)
GSP	34.2070	116.7570	06/28/1992	161719.2	3.0	4.20	0.014	IV	76.9(123.8)
DMG	34.0000	116.3170	06/06/1940	222115.1	0.0	4.30	0.015	IV	77.0(123.9)
GSP	34.2320	116.8460	07/10/1992	012940.0	0.0	4.20	0.014	IV	77.1(124.1)
DMG	33.1830	115.8500	04/25/1957	222412.0	0.0	5.10	0.023	IV	77.1(124.1)
DMG	33.1830	115.8500	04/25/1957	222148.0	0.0	4.20	0.014	IV	77.1(124.1)
GSP	34.2110	116.7600	06/28/1992	152429.3	6.0	4.50	0.017	IV	77.1(124.1)
DMG	33.0530	115.8550	10/05/1964	12455.5	0.0	4.40	0.016	IV	77.2(124.2)
PAS	34.2430	116.8960	06/30/1979	03411.6	5.8	4.90	0.020	IV	77.2(124.2)
GSP	34.0340	116.3600	05/14/1999	105235.2	1.0	4.20	0.014	IV	77.2(124.3)
GSG	34.0120	116.3250	04/23/1992	051009.4	3.0	4.60	0.017	IV	77.3(124.4)
PAS	34.2460	116.9010	06/29/1979	55320.5	5.7	4.60	0.017	IV	77.3(124.4)
DMG	33.8670	118.2170	06/19/1944	0 333.0	0.0	4.50	0.017	IV	77.3(124.4)
DMG	33.8670	118.2170	06/19/1944	3 6 7.0	0.0	4.40	0.016	IV	77.3(124.4)
GSP	34.2190	116.7710	07/21/1992	211029.0	1.0	4.10	0.013	III	77.5(124.7)
GSP	34.0120	116.3190	11/20/1994	043143.5	6.0	4.20	0.014	IV	77.5(124.7)
PAS	34.2490	116.9000	06/30/1979	7 353.0	5.6	4.50	0.016	IV	77.5(124.8)
GSP	33.9900	116.2870	05/02/1992	124641.4	4.0	4.10	0.013	III	77.6(124.8)
DMG	33.6330	118.4000	10/17/1934	938 0.0	0.0	4.00	0.013	III	77.6(124.9)
DMG	33.9500	118.1330	10/25/1933	7 046.0	0.0	4.30	0.015	IV	77.6(124.9)
DMG	32.7920	115.9140	10/12/1936	135631.8	10.0	4.00	0.013	III	77.6(124.9)
DMG	34.2290	116.7950	05/11/1956	163050.5	13.3	4.70	0.018	IV	77.7(125.1)
GSP	34.2390	116.8370	07/09/1992	014357.6	0.0	5.30	0.025	V	77.7(125.1)
GSP	33.9910	116.2840	04/23/1992	185603.0	3.0	4.40	0.016	IV	77.7(125.1)
GSP	34.2560	116.9120	06/28/1992	170557.5	8.0	4.60	0.017	IV	77.9(125.3)
GSP	33.8900	116.1600	10/12/1991	143932.0	3.0	4.00	0.013	III	78.0(125.5)
GSP	34.2370	116.8110	06/28/1992	125730.8	10.0	4.00	0.013	III	78.0(125.5)
DMG	34.2670	116.9670	08/29/1943	34513.0	0.0	5.50	0.028	V	78.1(125.6)
DMG	34.2670	116.9670	08/29/1943	35754.0	0.0	4.00	0.013	III	78.1(125.6)
DMG	34.2670	116.9670	08/29/1943	51630.0	0.0	4.00	0.013	III	78.1(125.6)
GSP	34.0890	116.4260	06/28/1992	143906.9	0.0	4.30	0.015	IV	78.1(125.6)
MGI	33.9000	118.2000	10/08/1927	1914 0.0	0.0	4.60	0.017	IV	78.1(125.6)
GSP	33.7300	116.0200	12/18/1989	062704.5	10.0	4.20	0.014	IV	78.1(125.6)
GSP	34.0570	116.3710	06/28/1992	160953.9	3.0	4.10	0.013	III	78.1(125.7)
DMG	33.7710	116.0500	09/02/1956	24637.0	14.1	4.20	0.014	IV	78.1(125.7)
GSP	33.9920	116.2740	08/07/1994	151026.0	7.0	4.00	0.013	III	78.2(125.8)
GSP	34.0610	116.3740	08/11/1992	061117.3	0.0	4.30	0.015	IV	78.2(125.9)
GSG	33.9820	116.2600	05/12/1992	023111.0	6.0	4.00	0.013	III	78.2(125.9)
DMG	33.2330	115.8330	06/14/1942	213623.0	0.0	4.00	0.013	III	78.3(125.9)
DMG	33.2330	115.8330	06/14/1942	222549.0	0.0	4.00	0.013	III	78.3(125.9)
DMG	33.2330	115.8330	06/24/1942	235240.0	0.0	4.00	0.013	III	78.3(125.9)
GSP	34.0290	116.3210	08/21/1993	014638.4	9.0	5.00	0.021	IV	78.3(126.1)
DMG	33.8000	118.3000	11/03/1931	16 5 0.0	0.0	4.00	0.013	III	78.3(126.1)
MGI	33.8000	118.3000	12/31/1928	1045 0.0	0.0	4.00	0.013	III	78.3(126.1)
GSP	34.0950	116.4270	06/28/1992	211316.5	3.0	4.60	0.017	IV	78.4(126.1)
GSP	34.0690	116.3820	07/07/1992	082103.1	3.0	4.00	0.013	III	78.4(126.1)
PAS	33.0130	115.8390	11/24/1987	131556.5	2.4	6.00	0.036	V	78.4(126.1)
DMG	32.8850	115.8650	10/27/1963	145822.4	-2.0	4.40	0.015	IV	78.5(126.4)
GSP	34.0620	116.3660	05/14/1999	075403.2	1.0	4.90	0.020	IV	78.5(126.4)
GSP	32.7270	115.9260	01/13/1999	132056.0	2.0	4.40	0.015	IV	78.6(126.4)
DMG	32.7640	115.9080	10/12/1936	17 750.1	10.0	4.00	0.013	III	78.6(126.5)
GSP	34.0920	116.4140	12/21/1992	114402.9	3.0	4.00	0.013	III	78.6(126.5)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.0580	116.3550	06/28/1992	221312.0	7.0	4.00	0.013	III	78.7(126.7)
DMG	34.0330	116.3170	06/11/1940	195118.1	0.0	4.40	0.015	IV	78.7(126.7)
GSP	34.0960	116.4170	07/18/1992	000611.2	2.0	4.00	0.013	III	78.7(126.7)
GSP	34.0880	116.4020	08/15/1992	082414.7	0.0	4.80	0.019	IV	78.8(126.8)
GSP	34.0640	116.3610	09/15/1992	084711.3	9.0	5.20	0.024	IV	78.8(126.8)
PAS	32.9320	115.8470	09/05/1982	52126.6	4.2	4.40	0.015	IV	78.8(126.9)
DMG	33.8500	118.2670	03/11/1933	1425 0.0	0.0	5.00	0.021	IV	78.8(126.9)
DMG	33.8500	118.2670	03/11/1933	629 0.0	0.0	4.40	0.015	IV	78.8(126.9)
DMG	33.0000	115.8330	01/08/1946	185418.0	0.0	5.40	0.026	V	78.9(126.9)
GSP	34.0500	116.3350	04/26/1992	172138.0	0.0	4.30	0.015	IV	79.0(127.1)
DMG	33.6630	118.4130	01/08/1967	738 5.3	17.7	4.00	0.012	III	79.2(127.4)
GSP	34.0820	116.3780	07/06/1992	194137.9	3.0	4.40	0.015	IV	79.2(127.5)
DMG	33.0330	115.8210	09/30/1971	224611.3	8.0	5.10	0.022	IV	79.3(127.5)
PAS	33.0360	115.8200	11/24/1987	21435.5	4.7	4.50	0.016	IV	79.3(127.6)
DMG	34.2670	117.5180	09/12/1970	141011.2	8.0	4.10	0.013	III	79.4(127.8)
DMG	34.2500	116.7700	03/16/1956	203344.3	0.8	4.00	0.012	III	79.5(128.0)
DMG	32.0830	116.6670	10/12/1938	1231 0.0	0.0	4.00	0.012	III	79.6(128.1)
DMG	32.0830	116.6670	09/27/1934	2140 0.0	0.0	4.00	0.012	III	79.6(128.1)
DMG	32.0830	116.6670	11/25/1934	818 0.0	0.0	5.00	0.021	IV	79.6(128.1)
DMG	33.2160	115.8080	04/25/1957	215738.7	-0.3	5.20	0.023	IV	79.6(128.2)
PAS	33.0330	115.8140	11/24/1987	22159.6	4.5	4.00	0.012	III	79.7(128.2)
PAS	33.0400	115.8120	11/24/1987	253 0.7	3.5	4.70	0.018	IV	79.7(128.3)
GSP	34.1120	116.4150	07/28/1992	182703.9	0.0	4.60	0.017	IV	79.7(128.3)
DMG	33.7450	115.9970	09/01/1956	55752.8	15.1	4.00	0.012	III	79.7(128.3)
PAS	33.0140	115.8150	11/24/1987	131848.9	6.0	4.10	0.013	III	79.8(128.4)
DMG	32.0000	117.0670	06/23/1939	2048 0.0	0.0	4.50	0.016	IV	79.8(128.4)
GSP	34.1060	116.4020	06/29/1992	140837.7	11.0	4.90	0.020	IV	79.8(128.4)
GSP	34.1110	116.4100	06/28/1992	135045.7	0.0	4.90	0.020	IV	79.8(128.5)
GSP	34.1080	116.4040	06/29/1992	141338.8	9.0	5.40	0.026	V	79.9(128.5)
PAS	32.9960	115.8160	11/27/1987	11010.5	6.0	4.70	0.018	IV	79.9(128.5)
PAS	33.0470	115.8080	11/24/1987	143629.9	0.0	4.00	0.012	III	79.9(128.6)
DMG	34.2700	117.5400	09/12/1970	143053.0	8.0	5.40	0.026	V	79.9(128.6)
GSP	34.0970	116.3820	07/01/1992	070149.2	0.0	4.30	0.014	IV	79.9(128.7)
DMG	34.0670	116.3330	05/18/1940	72132.7	0.0	5.00	0.021	IV	80.0(128.7)
DMG	34.0670	116.3330	05/18/1940	55120.2	0.0	5.20	0.023	IV	80.0(128.7)
PAS	32.9790	115.8160	11/25/1987	135410.0	0.6	4.20	0.014	III	80.0(128.8)
PAS	32.9950	115.8130	12/02/1987	4 3 6.2	1.7	4.00	0.012	III	80.0(128.8)
DMG	33.9390	118.2050	01/11/1950	214135.0	0.4	4.10	0.013	III	80.1(128.9)
PAS	33.0220	115.8080	11/24/1987	62323.1	3.4	4.00	0.012	III	80.1(128.9)
GSP	34.0920	116.3690	07/06/1992	120059.2	1.0	4.50	0.016	IV	80.1(128.9)
DMG	32.1000	116.6000	01/07/1950	93735.0	0.0	4.00	0.012	III	80.1(128.9)
DMG	32.0000	117.0000	04/27/1942	112754.0	0.0	4.00	0.012	III	80.2(129.0)
DMG	32.0000	117.0000	02/11/1949	95725.0	0.0	4.00	0.012	III	80.2(129.0)
GSP	34.1020	116.3830	08/04/1992	190612.3	0.0	4.00	0.012	III	80.2(129.1)
PAS	33.0500	115.8000	11/24/1987	21647.2	6.0	4.00	0.012	III	80.3(129.3)
PAS	32.9800	115.8090	11/28/1987	03910.9	0.8	4.20	0.014	III	80.4(129.4)
GSP	34.1520	116.4680	06/28/1992	224822.9	11.0	4.10	0.013	III	80.4(129.4)
GSP	34.2500	116.7190	06/29/1992	164141.9	1.0	4.90	0.020	IV	80.4(129.5)
PAS	33.0480	115.7980	11/24/1987	21523.2	5.0	4.80	0.019	IV	80.5(129.5)
DMG	34.0670	116.3170	05/18/1940	6 430.6	0.0	4.60	0.017	IV	80.5(129.6)
MGI	34.1000	118.0000	01/27/1930	2026 0.0	0.0	4.60	0.017	IV	80.6(129.7)
DMG	34.2640	116.7550	03/16/1956	203613.6	3.3	4.00	0.012	III	80.7(129.9)
GSP	34.1390	116.4310	06/28/1992	123640.6	10.0	5.10	0.022	IV	80.8(130.0)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.8140	116.0280	05/28/1961	125946.7	18.5	4.40	0.015	IV	80.8(130.0)
DMG	34.2810	117.5520	09/13/1970	44748.6	8.0	4.40	0.015	IV	80.8(130.1)
DMG	34.0830	116.3330	06/01/1940	527 1.2	0.0	4.70	0.018	IV	80.8(130.1)
DMG	34.0830	116.3330	06/02/1940	61310.2	0.0	4.50	0.016	IV	80.8(130.1)
DMG	34.0500	116.2830	05/19/1940	22730.0	0.0	4.50	0.016	IV	80.9(130.1)
DMG	34.0500	116.2830	05/22/1940	63137.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	05/19/1940	35145.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	05/22/1940	1410 5.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	06/14/1940	215850.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	08/01/1940	193140.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	06/24/1940	163936.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	06/01/1940	55646.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	06/06/1940	234849.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	08/04/1940	181520.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	05/27/1940	32727.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	05/19/1940	226 2.0	0.0	4.50	0.016	IV	80.9(130.1)
DMG	34.0500	116.2830	06/08/1940	171032.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	05/19/1940	193941.0	0.0	4.00	0.012	III	80.9(130.1)
DMG	34.0500	116.2830	05/18/1940	134719.0	0.0	4.50	0.016	IV	80.9(130.1)
PAS	34.0500	118.0870	10/01/1987	155953.5	10.4	4.00	0.012	III	80.9(130.2)
PAS	34.0770	118.0470	02/11/1988	152555.7	12.5	4.70	0.018	IV	80.9(130.2)
GSP	34.2730	116.7740	08/24/1992	135146.0	1.0	4.30	0.014	IV	81.0(130.3)
MGI	34.3000	116.9000	12/01/1915	14 5 0.0	0.0	4.00	0.012	III	81.0(130.3)
DMG	33.6320	118.4670	01/08/1967	73730.4	11.4	4.00	0.012	III	81.1(130.5)
PAS	34.0520	118.0900	10/01/1987	151231.8	10.8	4.70	0.018	IV	81.1(130.6)
GSP	34.1270	116.3970	06/30/1992	000608.5	2.0	4.30	0.014	IV	81.2(130.6)
PAS	34.0610	118.0790	10/01/1987	144220.0	9.5	5.90	0.033	V	81.2(130.7)
DMG	32.1670	116.4170	09/17/1950	194330.0	0.0	4.50	0.016	IV	81.3(130.8)
PAS	33.0720	115.7820	11/24/1987	153 3.2	4.2	4.00	0.012	III	81.3(130.8)
PAS	33.0670	115.7810	11/24/1987	13248.1	4.0	4.20	0.014	III	81.3(130.9)
DMG	34.3000	117.5000	07/22/1899	2032 0.0	0.0	6.50	0.046	VI	81.4(131.0)
PAS	34.0490	118.1010	10/01/1987	144541.5	13.6	4.70	0.018	IV	81.4(131.0)
DMG	31.9920	116.9270	04/10/1968	104237.8	10.0	4.50	0.016	IV	81.4(131.0)
PAS	33.0080	115.7860	11/24/1987	1321 0.2	6.0	4.10	0.013	III	81.5(131.1)
DMG	32.3340	116.1700	08/24/1963	204749.5	4.8	4.10	0.013	III	81.5(131.2)
DMG	32.0000	117.5000	06/24/1939	1627 0.0	0.0	5.00	0.021	IV	81.6(131.3)
DMG	32.0000	117.5000	06/25/1939	1 9 0.0	0.0	4.00	0.012	III	81.6(131.3)
DMG	32.0000	117.5000	05/01/1939	2353 0.0	0.0	5.00	0.021	IV	81.6(131.3)
DMG	32.0000	117.5000	05/03/1939	2358 0.0	0.0	4.50	0.016	IV	81.6(131.3)
DMG	32.0000	117.5000	05/03/1939	828 0.0	0.0	4.00	0.012	III	81.6(131.3)
DMG	32.0000	117.5000	05/01/1939	2357 0.0	0.0	4.50	0.016	IV	81.6(131.3)
PAS	33.0820	115.7750	11/24/1987	15414.5	4.9	5.80	0.031	V	81.6(131.3)
DMG	32.9310	115.7980	01/12/1972	1231 9.6	0.0	4.00	0.012	III	81.6(131.4)
DMG	34.1000	116.3330	06/01/1940	65428.0	0.0	4.30	0.014	IV	81.8(131.6)
GSP	34.2750	116.7300	07/01/1992	204617.8	1.0	4.20	0.013	III	81.9(131.7)
DMG	33.1670	115.7670	05/10/1955	43840.0	0.0	4.30	0.014	IV	81.9(131.8)
PAS	34.0600	118.1000	10/01/1987	1449 5.9	11.7	4.70	0.018	IV	81.9(131.9)
DMG	34.0830	116.3000	05/18/1940	5 358.5	0.0	5.40	0.025	V	82.0(132.0)
DMG	34.3120	116.8790	01/31/1972	155 4.2	8.0	4.00	0.012	III	82.0(132.0)
DMG	34.3200	116.9250	04/18/1968	174213.4	4.7	4.00	0.012	III	82.1(132.1)
DMG	33.1750	115.7640	10/28/1963	81417.1	0.9	4.00	0.012	III	82.1(132.1)
GSP	34.2980	116.8040	07/05/1992	200303.1	3.0	4.00	0.012	III	82.1(132.2)
DMG	33.7450	115.9480	04/02/1957	42247.4	4.5	4.10	0.013	III	82.2(132.2)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
GSP	34.2810	116.7310	07/01/1992	205356.8	1.0	4.00	0.012	III	82.2(132.3)
DMG	34.3330	117.0000	02/27/1942	1 853.0	0.0	4.00	0.012	III	82.3(132.4)
DMG	34.3070	116.8350	08/28/1950	194526.4	11.7	4.20	0.013	III	82.3(132.4)
T-A	33.5000	115.8200	05/00/1868	0 0 0.0	0.0	6.30	0.041	V	82.3(132.4)
PAS	34.0760	118.0900	10/01/1987	1448 3.1	11.7	4.10	0.013	III	82.4(132.6)
DMG	33.8830	118.3170	03/11/1933	1457 0.0	0.0	4.90	0.019	IV	82.5(132.8)
DMG	34.2990	116.7840	03/18/1956	24217.3	6.3	4.40	0.015	IV	82.5(132.8)
GSP	34.2740	116.6920	07/01/1992	170715.1	4.0	4.20	0.013	III	82.5(132.8)
PAS	34.0730	118.0980	10/04/1987	105938.2	8.2	5.30	0.024	V	82.5(132.8)
DMG	34.3040	117.5700	05/05/1969	16 2 9.6	8.8	4.40	0.015	IV	82.6(133.0)
DMG	32.1000	116.5000	01/08/1937	1246 0.0	0.0	4.00	0.012	III	82.7(133.2)
MGI	34.0000	118.2000	06/26/1917	2130 0.0	0.0	4.60	0.017	IV	82.8(133.2)
MGI	34.0000	118.2000	02/13/1917	13 5 0.0	0.0	4.60	0.017	IV	82.8(133.2)
MGI	34.0000	118.2000	06/26/1917	2115 0.0	0.0	4.60	0.017	IV	82.8(133.2)
MGI	34.0000	118.2000	06/26/1917	424 0.0	0.0	4.00	0.012	III	82.8(133.2)
MGI	34.0000	118.2000	06/26/1917	2120 0.0	0.0	4.60	0.017	IV	82.8(133.2)
DMG	34.3240	116.8850	12/01/1962	03548.8	9.6	4.30	0.014	IV	82.8(133.2)
DMG	32.0830	117.8330	09/13/1940	144548.0	0.0	4.50	0.016	IV	82.8(133.3)
DMG	34.3000	117.6000	07/30/1894	512 0.0	0.0	6.00	0.035	V	82.8(133.3)
GSP	34.1620	116.4050	06/28/1992	132605.1	6.0	4.90	0.019	IV	82.9(133.4)
GSP	34.0200	118.1800	06/12/1989	172225.5	16.0	4.10	0.013	III	83.0(133.5)
GSP	34.3200	116.8500	10/27/1998	154017.1	4.0	4.10	0.013	III	83.0(133.5)
DMG	34.3250	116.8750	12/02/1962	04138.4	6.7	4.40	0.015	IV	83.0(133.5)
DMG	34.3250	116.8650	10/29/1962	24253.9	8.6	4.80	0.018	IV	83.1(133.7)
PDP	34.3220	116.8460	09/20/1999	070249.2	2.0	4.20	0.013	III	83.1(133.8)
DMG	33.8870	116.0400	01/23/1969	23 1 1.0	17.7	4.80	0.018	IV	83.2(133.9)
GSP	34.3230	116.8440	10/27/1998	010840.7	5.0	4.90	0.019	IV	83.2(134.0)
DMG	34.2000	117.9000	08/28/1889	215 0.0	0.0	5.50	0.026	V	83.3(134.0)
DMG	34.2000	117.9000	07/13/1935	105416.5	0.0	4.70	0.017	IV	83.3(134.0)
DMG	33.8260	115.9850	01/25/1969	3 0 4.0	13.6	4.10	0.013	III	83.3(134.0)
GSP	34.1710	116.4090	06/30/1992	151905.0	0.0	4.00	0.012	III	83.3(134.1)
DMG	32.7000	115.8500	11/01/1941	142434.0	0.0	4.00	0.012	III	83.3(134.1)
DMG	33.7830	118.4170	10/12/1940	024 0.0	0.0	4.00	0.012	III	83.3(134.1)
DMG	33.7830	118.4170	11/02/1940	25826.0	0.0	4.00	0.012	III	83.3(134.1)
DMG	33.7830	118.4170	10/14/1940	205111.0	0.0	4.00	0.012	III	83.3(134.1)
DMG	33.7830	118.4170	11/01/1940	725 3.0	0.0	4.00	0.012	III	83.3(134.1)
DMG	34.3370	116.9090	11/30/1962	2351 5.5	7.0	4.30	0.014	IV	83.4(134.2)
DMG	34.3060	116.7590	03/16/1956	202933.6	1.3	4.80	0.018	IV	83.4(134.2)
DMG	34.3330	116.8830	10/14/1943	142844.0	0.0	4.50	0.016	IV	83.4(134.2)
GSP	34.0300	118.1800	06/12/1989	165718.4	16.0	4.40	0.015	IV	83.5(134.3)
DMG	34.3170	116.8000	08/12/1950	21717.0	0.0	4.30	0.014	IV	83.5(134.3)
PAS	32.9420	115.7630	11/24/1987	133439.9	14.0	4.80	0.018	IV	83.5(134.4)
PAS	34.3220	116.8150	08/29/1985	759 8.7	6.1	4.10	0.013	III	83.6(134.5)
GSG	34.1570	116.3730	06/29/1992	103657.8	5.0	4.00	0.012	III	83.6(134.6)
GSP	34.3400	116.9000	11/27/1992	160057.5	1.0	5.30	0.024	IV	83.7(134.7)
MGI	34.1000	118.1000	07/11/1855	415 0.0	0.0	6.30	0.040	V	84.1(135.3)
GSP	34.1990	116.4390	09/05/1995	202718.4	0.0	4.40	0.015	IV	84.1(135.3)
DMG	33.2840	115.7350	10/27/1963	145023.4	-2.0	4.00	0.012	III	84.2(135.5)
GSP	34.1980	116.4320	07/20/1992	040822.6	0.0	4.10	0.013	III	84.2(135.5)
GSN	34.2010	116.4360	06/28/1992	115734.1	1.0	7.60	0.079	VII	84.3(135.6)
DMG	32.0000	116.7000	12/02/1929	1124 0.0	0.0	4.50	0.015	IV	84.3(135.7)
DMG	33.7670	118.4500	10/11/1940	55712.3	0.0	4.70	0.017	IV	84.4(135.9)
DMG	31.9540	117.5060	09/29/1972	141341.2	8.0	4.30	0.014	IV	84.7(136.4)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	32.9830	115.7330	01/24/1951	733 7.0	0.0	4.00	0.012	III	84.8(136.4)
DMG	32.9830	115.7330	01/24/1951	717 2.6	0.0	5.60	0.027	V	84.8(136.4)
DMG	34.3500	116.8670	10/15/1943	1650 1.0	0.0	4.50	0.015	IV	84.8(136.4)
T-A	34.0000	118.2500	01/10/1856	0 0 0.0	0.0	5.00	0.020	IV	84.8(136.5)
T-A	34.0000	118.2500	09/23/1827	0 0 0.0	0.0	5.00	0.020	IV	84.8(136.5)
T-A	34.0000	118.2500	03/26/1860	0 0 0.0	0.0	5.00	0.020	IV	84.8(136.5)
T-A	34.0000	118.2500	05/02/1856	810 0.0	0.0	4.30	0.014	IV	84.8(136.5)
T-A	34.0000	118.2500	01/17/1857	1 0 0.0	0.0	4.30	0.014	IV	84.8(136.5)
T-A	34.0000	118.2500	05/04/1857	6 0 0.0	0.0	4.30	0.014	IV	84.8(136.5)
T-A	34.0000	118.2500	03/21/1880	1425 0.0	0.0	4.30	0.014	IV	84.8(136.5)
GSP	34.3620	116.9230	12/07/1992	033331.5	1.0	4.00	0.012	III	84.9(136.7)
DMG	33.2330	115.7170	10/26/1942	615 4.0	0.0	4.50	0.015	IV	84.9(136.7)
DMG	33.2330	115.7170	10/26/1942	3 215.0	0.0	4.50	0.015	IV	84.9(136.7)
DMG	33.2330	115.7170	10/22/1942	15038.0	0.0	5.50	0.026	V	84.9(136.7)
DMG	33.2330	115.7170	10/26/1942	34316.0	0.0	4.00	0.012	III	84.9(136.7)
GSP	34.3610	116.9130	12/04/1992	125942.1	0.0	4.20	0.013	III	85.0(136.8)
USG	32.6450	115.8440	02/28/1988	5 259.5	7.1	4.21	0.013	III	85.2(137.1)
GSP	34.3640	116.9040	11/27/1992	183225.0	1.0	4.10	0.012	III	85.3(137.2)
DMG	31.9390	116.8930	04/10/1968	1055 3.2	10.0	4.30	0.014	IV	85.4(137.4)
GSP	34.1750	116.3500	06/11/1992	002419.2	0.0	4.30	0.014	IV	85.4(137.4)
DMG	34.3360	116.7420	03/16/1956	233456.4	1.7	4.40	0.014	IV	85.7(137.8)
GSP	34.3690	116.8970	12/04/1992	020857.5	3.0	5.30	0.023	IV	85.7(137.9)
PAS	32.2020	116.2290	12/12/1979	213741.0	5.5	4.00	0.012	III	85.9(138.2)
DMG	32.8330	115.7500	02/24/1933	1933 0.0	0.0	4.50	0.015	IV	85.9(138.2)
DMG	33.2330	115.7000	08/30/1946	111645.0	0.0	4.60	0.016	IV	85.9(138.3)
GSP	34.3700	116.8800	11/29/1992	142120.5	3.0	4.00	0.012	III	86.0(138.3)
GSP	34.3770	116.9180	12/04/1992	052511.2	2.0	4.80	0.018	IV	86.0(138.4)
DMG	33.7700	118.4800	04/24/1931	182754.8	0.0	4.40	0.014	IV	86.0(138.4)
DMG	32.9500	115.7170	06/14/1953	41729.9	0.0	5.50	0.026	V	86.0(138.4)
DMG	32.9500	115.7170	06/14/1953	42958.0	0.0	4.80	0.018	IV	86.0(138.4)
DMG	33.9830	118.3000	02/11/1940	192410.0	0.0	4.00	0.012	III	86.1(138.6)
MGI	34.2000	118.0000	01/09/1921	530 0.0	0.0	4.60	0.016	IV	86.3(138.8)
DMG	31.9700	116.6980	04/23/1968	132234.8	10.0	4.00	0.012	III	86.3(138.9)
GSP	34.2390	116.4430	06/29/1992	030156.4	7.0	4.40	0.014	IV	86.3(138.9)
DMG	32.3830	116.0000	01/03/1956	1424 1.0	0.0	4.70	0.017	IV	86.8(139.7)
MGI	34.0000	118.3000	06/22/1920	2035 0.0	0.0	4.00	0.012	III	86.9(139.9)
MGI	34.0000	118.3000	06/30/1920	350 0.0	0.0	4.00	0.012	III	86.9(139.9)
MGI	34.0000	118.3000	09/03/1905	540 0.0	0.0	5.30	0.023	IV	86.9(139.9)
DMG	32.5000	115.9000	06/25/1941	1715 0.0	0.0	4.00	0.012	III	87.0(140.0)
DMG	32.2000	116.2000	03/03/1957	11 6 3.0	0.0	4.40	0.014	IV	87.1(140.1)
GSP	34.2450	116.4290	07/08/1993	225744.9	2.0	4.00	0.012	III	87.1(140.2)
PAS	33.0790	115.6800	04/26/1981	124043.4	6.0	4.20	0.013	III	87.1(140.2)
DMG	34.0520	116.1210	03/28/1968	212133.4	10.2	4.00	0.012	III	87.2(140.4)
DMG	33.0270	115.6810	05/23/1963	1553 1.8	0.4	4.80	0.018	IV	87.4(140.6)
DMG	34.4000	116.9170	01/25/1942	215133.0	0.0	4.00	0.012	III	87.6(140.9)
DMG	34.4000	116.9170	02/01/1942	16 334.0	0.0	4.50	0.015	IV	87.6(140.9)
DMG	34.4000	116.9170	02/01/1942	151828.0	0.0	4.50	0.015	IV	87.6(140.9)
DMG	34.4000	116.9170	02/01/1942	151555.0	0.0	4.00	0.012	III	87.6(140.9)
DMG	32.9150	115.6970	05/23/1963	63635.7	1.2	4.30	0.013	III	87.6(141.0)
DMG	32.9900	115.6820	11/29/1964	142526.4	13.8	4.20	0.013	III	87.6(141.0)
DMG	32.9000	115.7000	10/02/1928	19 1 0.0	0.0	5.00	0.020	IV	87.6(141.0)
PAS	34.2570	116.4350	07/13/1979	226 3.5	5.0	4.00	0.012	III	87.6(141.0)
DMG	34.0000	116.0500	12/27/1948	1119 4.0	0.0	4.00	0.012	III	87.7(141.1)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	32.8560	115.7100	09/18/1936	144032.1	10.0	4.50	0.015	IV	87.7(141.2)
MGI	34.1000	118.2000	04/21/1921	1538 0.0	0.0	4.00	0.012	III	87.8(141.3)
MGI	34.1000	118.2000	01/27/1860	830 0.0	0.0	4.30	0.013	III	87.8(141.3)
MGI	34.1000	118.2000	05/02/1916	1432 0.0	0.0	4.00	0.012	III	87.8(141.3)
PAS	34.1490	118.1350	12/03/1988	113826.4	13.3	4.90	0.018	IV	87.9(141.5)
DMG	33.2670	115.6670	08/10/1951	1130 8.0	0.0	4.40	0.014	IV	88.0(141.6)
MGI	33.8000	118.5000	06/18/1915	15 5 0.0	0.0	4.00	0.011	III	88.0(141.7)
PAS	34.2300	116.3630	03/18/1979	2253 2.7	3.4	4.20	0.013	III	88.2(141.9)
DMG	34.3700	117.6500	12/08/1812	15 0 0.0	0.0	7.00	0.056	VI	88.3(142.1)
PAS	32.9140	115.6840	01/28/1988	254 2.4	5.9	4.70	0.017	IV	88.4(142.2)
DMG	34.1740	116.2570	02/15/1938	74539.8	10.0	4.50	0.015	IV	88.5(142.4)
PAS	33.0940	115.6550	06/13/1979	194645.9	6.0	4.10	0.012	III	88.5(142.4)
GSP	34.3740	117.6490	08/20/1998	234958.4	9.0	4.40	0.014	IV	88.6(142.5)
DMG	33.9030	118.4310	11/29/1938	192115.8	10.0	4.00	0.011	III	88.6(142.6)
PAS	34.3020	116.4990	03/31/1979	016 8.6	0.1	4.20	0.013	III	88.7(142.7)
DMG	33.0080	115.6600	06/17/1965	74013.5	8.8	4.10	0.012	III	88.7(142.8)
GSP	34.2500	117.9900	06/28/1991	170055.5	9.0	4.30	0.013	III	88.9(143.0)
DMG	34.1540	116.2100	07/30/1963	63457.3	12.9	4.70	0.016	IV	89.0(143.3)
MGI	34.0800	118.2600	07/16/1920	18 8 0.0	0.0	5.00	0.019	IV	89.1(143.4)
GSP	34.2680	116.4020	06/16/1994	162427.5	3.0	5.00	0.019	IV	89.2(143.6)
DMG	34.4330	116.9830	04/18/1945	458 2.0	0.0	4.30	0.013	III	89.3(143.6)
DMG	34.2330	116.3330	05/11/1947	5 620.0	0.0	4.90	0.018	IV	89.3(143.7)
GSP	34.2940	116.4530	06/28/1992	173121.5	6.0	4.10	0.012	III	89.4(143.8)
DMG	32.0250	116.4240	08/20/1961	42843.0	12.6	4.60	0.016	IV	89.4(143.9)
GSP	34.2720	116.4030	12/11/1992	013834.2	2.0	4.10	0.012	III	89.5(144.0)
DMG	34.4170	116.8500	02/11/1932	231120.0	0.0	4.00	0.011	III	89.5(144.0)
DMG	33.2000	115.6330	10/27/1963	145245.2	-2.0	4.10	0.012	III	89.7(144.3)
DMG	34.1570	116.1940	08/22/1963	43355.9	5.8	4.40	0.014	IV	89.8(144.5)
PAS	33.0980	115.6320	04/26/1981	12 928.4	3.8	5.70	0.028	V	89.8(144.5)
GSP	34.3010	116.4520	09/28/1997	155723.0	7.0	4.40	0.014	IV	89.8(144.6)
DMG	34.0000	116.0000	09/05/1928	1442 0.0	0.0	5.00	0.019	IV	89.9(144.6)
DMG	34.0000	116.0000	04/03/1926	20 8 0.0	0.0	5.50	0.025	V	89.9(144.6)
GSG	31.8490	117.1980	01/29/1995	160231.5	12.0	4.40	0.014	IV	89.9(144.7)
PAS	33.0990	115.6300	04/26/1981	12 557.4	4.2	4.00	0.011	III	89.9(144.7)
GSP	34.2620	118.0020	06/28/1991	144354.5	11.0	5.40	0.024	IV	90.0(144.8)
DMG	33.0380	118.7340	09/13/1937	221439.5	10.0	4.00	0.011	III	90.0(144.8)
PAS	33.1100	115.6270	04/25/1981	21155.3	4.8	4.10	0.012	III	90.1(144.9)
PAS	32.0580	116.3370	01/29/1980	1949 3.3	5.0	4.40	0.014	IV	90.1(145.0)
DMG	32.1020	116.2580	05/07/1966	32657.4	12.7	4.50	0.015	IV	90.2(145.2)
T-A	34.1700	118.1700	03/07/1888	1554 0.0	0.0	4.30	0.013	III	90.3(145.4)
GSP	34.3410	116.5290	06/28/1992	124053.5	6.0	5.20	0.021	IV	90.4(145.4)
PAS	33.1030	115.6220	11/04/1976	133127.7	3.7	4.20	0.012	III	90.4(145.4)
PAS	33.1030	115.6210	11/04/1976	1139 8.4	0.9	4.10	0.012	III	90.4(145.5)
PAS	33.1090	115.6190	11/04/1976	114940.4	2.2	4.10	0.012	III	90.5(145.7)
PAS	34.3090	116.4400	03/15/1979	201749.9	2.0	4.90	0.018	IV	90.6(145.9)
DMG	33.0560	115.6200	06/16/1965	242 6.1	-0.5	4.40	0.014	IV	90.7(145.9)
DMG	32.7330	115.7000	04/21/1960	233920.0	0.0	4.20	0.012	III	90.7(146.0)
DMG	33.8500	115.8500	10/13/1949	42040.0	0.0	4.00	0.011	III	90.7(146.0)
DMG	34.3000	116.4170	08/07/1942	11533.0	0.0	4.50	0.015	IV	90.7(146.0)
DMG	34.3000	116.4170	08/07/1942	15314.0	0.0	4.00	0.011	III	90.7(146.0)
DMG	34.3000	116.4170	08/07/1942	12358.0	0.0	4.00	0.011	III	90.7(146.0)
PAS	33.1170	115.6150	04/26/1976	64637.5	14.8	4.00	0.011	III	90.7(146.0)
GSP	34.3130	116.4440	07/02/1992	001622.4	6.0	4.00	0.011	III	90.8(146.1)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
PAS	33.1810	115.6110	03/07/1989	02458.2	2.8	4.10	0.012	III	90.9(146.3)
DMG	33.1310	115.6110	10/27/1963	181250.7	7.8	4.20	0.012	III	90.9(146.4)
DMG	34.4360	116.8340	07/14/1973	8 020.1	8.0	4.80	0.017	IV	91.0(146.4)
PAS	34.3820	116.6130	06/11/1984	222110.4	1.8	4.00	0.011	III	91.1(146.6)
DMG	32.5510	115.7850	01/23/1971	22 736.0	8.0	4.10	0.012	III	91.1(146.6)
DMG	32.5000	118.5500	02/24/1948	81510.0	0.0	5.30	0.022	IV	91.1(146.6)
DMG	34.1800	116.1910	12/12/1957	8 0 7.2	16.0	4.40	0.014	IV	91.1(146.6)
GSP	33.1920	115.6080	12/31/1997	122245.1	10.0	4.10	0.012	III	91.1(146.6)
MGI	34.0000	118.4000	01/29/1927	2324 0.0	0.0	4.00	0.011	III	91.3(146.9)
MGI	34.0000	118.4000	02/07/1927	429 0.0	0.0	4.60	0.015	IV	91.3(146.9)
MGI	34.0000	118.4000	02/22/1920	1610 0.0	0.0	4.60	0.015	IV	91.3(146.9)
MGI	34.0000	118.4000	10/01/1930	040 0.0	0.0	4.60	0.015	IV	91.3(146.9)
GSP	34.3320	116.4620	07/01/1992	074029.9	9.0	5.40	0.023	IV	91.5(147.2)
DMG	34.4050	116.6670	07/02/1955	162938.5	10.0	4.20	0.012	III	91.5(147.3)
DMG	33.2000	115.6000	11/12/1942	175612.0	0.0	4.00	0.011	III	91.6(147.4)
PAS	34.3270	116.4450	03/15/1979	21 716.5	2.5	5.20	0.021	IV	91.6(147.4)
PAS	33.1820	115.5990	03/06/1989	221647.6	1.0	4.30	0.013	III	91.6(147.5)
MGI	34.1000	118.3000	07/16/1920	2022 0.0	0.0	4.60	0.015	IV	91.7(147.6)
MGI	34.1000	118.3000	07/16/1920	2130 0.0	0.0	4.60	0.015	IV	91.7(147.6)
MGI	34.1000	118.3000	07/26/1920	1215 0.0	0.0	4.00	0.011	III	91.7(147.6)
MGI	34.1000	118.3000	07/16/1920	2127 0.0	0.0	4.60	0.015	IV	91.7(147.6)
PAS	34.4010	116.6410	02/10/1975	125117.6	8.0	4.40	0.014	III	91.8(147.7)
PAS	33.1230	115.5960	11/04/1976	54820.9	5.0	4.20	0.012	III	91.8(147.8)
PAS	34.3300	116.4430	03/15/1979	23 758.2	2.8	4.80	0.017	IV	91.8(147.8)
PAS	33.1180	115.5950	11/04/1976	62110.7	5.0	4.10	0.012	III	91.9(147.9)
PAS	33.1170	115.5950	11/04/1976	141250.2	5.0	4.40	0.014	III	91.9(147.9)
PAS	33.1820	115.5940	03/07/1989	74344.1	0.5	4.20	0.012	III	91.9(147.9)
GSP	34.3420	116.4670	07/07/1992	220928.3	2.0	4.40	0.014	III	92.0(148.0)
DMG	34.0000	118.4170	12/07/1938	338 0.0	0.0	4.00	0.011	III	92.0(148.1)
PAS	33.1180	115.5900	11/04/1976	635 3.5	4.5	4.10	0.012	III	92.2(148.4)
DMG	32.0280	116.3230	09/20/1961	1036 2.6	11.4	4.20	0.012	III	92.3(148.5)
DMG	32.0320	116.3090	08/27/1963	121 1.8	14.6	4.00	0.011	III	92.5(148.9)
DMG	31.8110	117.1310	12/22/1964	205433.2	2.3	5.60	0.026	V	92.6(149.0)
DMG	32.8830	115.6170	01/16/1946	11 654.0	0.0	4.20	0.012	III	92.6(149.0)
DMG	34.4500	116.7830	05/22/1942	151829.0	0.0	4.00	0.011	III	92.6(149.0)
DMG	33.0120	115.5920	04/11/1965	04646.1	-2.0	4.10	0.012	III	92.6(149.0)
PAS	34.3480	116.4530	03/15/1979	213425.6	1.5	4.50	0.014	IV	92.7(149.2)
DMG	33.3830	115.6000	06/29/1938	1040 0.0	0.0	4.00	0.011	III	92.8(149.4)
DMG	33.3830	115.6000	12/31/1939	151243.0	0.0	4.00	0.011	III	92.8(149.4)
DMG	31.9940	116.3700	08/20/1961	125245.9	8.2	4.00	0.011	III	92.9(149.4)
DMG	33.0370	115.5840	06/17/1965	73020.9	-1.3	4.30	0.013	III	92.9(149.5)
PAS	34.2900	116.3220	12/14/1975	181620.1	1.8	4.70	0.016	IV	92.9(149.5)
PAS	34.3290	116.3980	03/16/1979	173659.1	5.0	4.00	0.011	III	93.0(149.7)
GSP	33.0300	115.5800	03/24/1989	231648.0	6.0	4.00	0.011	III	93.2(149.9)
PAS	34.3040	116.3410	11/15/1975	61327.6	5.8	4.60	0.015	IV	93.2(149.9)
DMG	34.4000	117.8000	02/24/1946	6 752.0	0.0	4.10	0.012	III	93.2(150.0)
DMG	33.1170	115.5670	07/29/1950	15 9 0.0	0.0	4.50	0.014	IV	93.5(150.5)
DMG	33.1170	115.5670	07/29/1950	143632.0	0.0	5.50	0.024	V	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	1727 0.0	0.0	4.70	0.016	IV	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	1949 0.0	0.0	4.20	0.012	III	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	175812.0	0.0	4.80	0.017	IV	93.5(150.5)
DMG	33.1170	115.5670	07/29/1950	017 0.0	0.0	4.50	0.014	IV	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	2113 0.0	0.0	4.10	0.012	III	93.5(150.5)

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	33.1170	115.5670	07/28/1950	1817 0.0	0.0	4.20	0.012	III	93.5(150.5)
DMG	33.1170	115.5670	07/29/1950	1843 0.0	0.0	4.70	0.016	IV	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	175048.0	0.0	5.40	0.023	IV	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	1730 0.0	0.0	4.10	0.012	III	93.5(150.5)
DMG	33.1170	115.5670	08/14/1950	1916 0.0	0.0	4.70	0.016	IV	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	1840 0.0	0.0	4.00	0.011	III	93.5(150.5)
DMG	33.1170	115.5670	07/27/1950	12 2 0.0	0.0	4.20	0.012	III	93.5(150.5)
DMG	33.1170	115.5670	07/27/1950	954 0.0	0.0	4.10	0.012	III	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	1624 0.0	0.0	4.00	0.011	III	93.5(150.5)
DMG	33.1170	115.5670	07/28/1950	325 0.0	0.0	4.70	0.016	IV	93.5(150.5)
DMG	33.1170	115.5670	08/01/1950	83720.0	0.0	4.70	0.016	IV	93.5(150.5)
DMG	33.1170	115.5670	07/27/1950	112926.0	0.0	4.80	0.017	IV	93.5(150.5)
DMG	33.1170	115.5670	07/29/1950	1714 0.0	0.0	4.30	0.013	III	93.5(150.5)
DMG	33.1170	115.5670	07/27/1950	2251 0.0	0.0	4.50	0.014	IV	93.5(150.5)
PAS	33.0010	115.5760	10/16/1979	74947.2	8.5	4.00	0.011	III	93.6(150.6)
DMG	33.0190	115.5730	06/17/1965	743 5.0	-2.0	4.20	0.012	III	93.6(150.7)
GSP	32.9750	118.7910	03/04/1992	190627.0	6.0	4.20	0.012	III	93.8(150.9)
PAS	34.1160	116.0300	02/17/1986	21233.5	11.3	4.00	0.011	III	94.0(151.3)
DMG	32.6000	115.7000	12/19/1958	1437 0.0	0.0	4.10	0.011	III	94.1(151.4)
DMG	32.6000	115.7000	04/26/1963	1 342.0	0.0	4.00	0.011	III	94.1(151.4)
PAS	32.7880	115.6180	10/15/1979	2355 2.6	5.0	4.20	0.012	III	94.1(151.4)
DMG	32.7940	115.6150	04/23/1968	1624 9.5	5.0	4.10	0.011	III	94.2(151.5)
DMG	34.3810	116.4740	01/06/1964	234712.8	12.3	4.50	0.014	IV	94.2(151.6)
DMG	31.8590	116.6570	11/15/1972	205117.4	8.0	4.00	0.011	III	94.3(151.8)
DMG	32.9820	115.5660	05/23/1963	9 6 4.7	25.4	4.60	0.015	IV	94.3(151.8)
GSP	34.3770	116.4580	08/08/1992	153743.3	2.0	4.40	0.013	III	94.3(151.8)
DMG	32.8830	115.5830	04/13/1938	1929 0.0	0.0	4.50	0.014	IV	94.5(152.1)
PAS	31.7940	117.4100	03/31/1979	213656.7	5.0	4.70	0.016	IV	94.6(152.3)
PAS	32.9040	115.5760	10/17/1979	191438.4	15.9	4.10	0.011	III	94.6(152.3)
PAS	33.0140	115.5550	10/16/1979	65842.8	9.1	5.50	0.024	V	94.7(152.4)
GSP	34.3830	116.4520	07/02/1992	051632.2	0.0	4.00	0.011	III	94.9(152.7)
DMG	32.4170	115.8000	05/13/1960	123640.0	0.0	4.10	0.011	III	95.0(152.9)
PAS	32.9070	115.5660	10/16/1979	114655.3	11.4	4.80	0.016	IV	95.2(153.1)
PAS	34.4220	116.5420	07/18/1985	14 525.8	6.0	4.20	0.012	III	95.2(153.2)
PAS	32.9500	115.5570	10/16/1979	33934.3	12.1	4.50	0.014	IV	95.2(153.2)
PAS	33.1980	115.5350	07/13/1983	211648.3	1.1	4.00	0.011	III	95.3(153.4)
PAS	32.8390	115.5780	10/15/1979	232552.6	8.1	4.00	0.011	III	95.5(153.6)
DMG	31.8670	116.5710	02/27/1937	12918.4	10.0	5.00	0.018	IV	95.6(153.8)
DMG	34.0000	118.5000	08/04/1927	1224 0.0	0.0	5.00	0.018	IV	95.7(154.1)
DMG	34.0000	118.5000	11/08/1914	1140 0.0	0.0	4.50	0.014	IV	95.7(154.1)
MGI	34.0000	118.5000	03/08/1918	1230 0.0	0.0	4.00	0.011	III	95.7(154.1)
MGI	34.0000	118.5000	11/19/1918	2018 0.0	0.0	5.00	0.018	IV	95.7(154.1)
DMG	34.0000	118.5000	03/06/1918	1820 0.0	0.0	4.00	0.011	III	95.7(154.1)
MGI	34.0000	118.5000	06/23/1920	1220 0.0	0.0	4.00	0.011	III	95.7(154.1)
DMG	34.0000	118.5000	06/22/1920	248 0.0	0.0	4.90	0.017	IV	95.7(154.1)
DMG	34.2500	116.1670	03/20/1945	2155 7.0	0.0	5.00	0.018	IV	95.8(154.1)
PAS	32.9600	115.5440	10/16/1979	31047.1	9.4	4.50	0.014	IV	95.8(154.2)
DMG	32.1170	116.0830	07/09/1951	9 622.0	0.0	4.20	0.012	III	95.9(154.3)
GSP	34.4050	116.4640	02/15/1993	075933.2	5.0	4.20	0.012	III	95.9(154.4)
PAS	32.9450	115.5430	10/16/1979	31625.4	7.2	4.10	0.011	III	96.0(154.5)
DMG	33.0000	115.5330	10/25/1955	174942.0	0.0	4.30	0.013	III	96.1(154.6)
DMG	32.0500	116.1670	02/06/1958	111530.0	0.0	4.50	0.014	IV	96.3(155.0)
DMG	32.9670	115.5330	02/13/1951	1716 0.0	0.0	4.20	0.012	III	96.4(155.1)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
DMG	32.9670	115.5330	02/13/1951	174634.0	0.0	4.10	0.011	III	96.4(155.1)
PAS	32.9270	115.5400	10/16/1979	54910.2	10.4	5.10	0.019	IV	96.4(155.1)
PAS	32.9280	115.5390	10/16/1979	61948.7	9.2	5.10	0.019	IV	96.4(155.2)
GSP	34.4140	116.4610	06/28/1992	131050.5	10.0	4.80	0.016	IV	96.6(155.4)
DMG	31.9670	116.3000	05/31/1961	72339.0	0.0	4.00	0.011	III	96.6(155.4)
DMG	32.1520	116.0200	02/16/1967	194127.4	5.3	4.00	0.011	III	96.6(155.5)
DMG	34.4000	116.4170	11/10/1947	22255.0	0.0	4.50	0.014	IV	96.8(155.8)
PAS	32.9130	115.5340	10/16/1979	6 439.0	8.0	4.00	0.011	III	96.9(156.0)
PAS	32.9320	115.5300	10/16/1979	61346.5	8.0	4.10	0.011	III	96.9(156.0)
DMG	32.0500	116.1500	03/01/1945	111958.0	0.0	4.40	0.013	III	96.9(156.0)
DMG	34.2830	116.1830	03/29/1945	4 417.0	0.0	4.20	0.012	III	97.0(156.1)
PAS	32.9470	115.5250	10/16/1979	139 3.3	2.0	4.00	0.011	III	97.0(156.2)
PAS	33.0030	115.5140	10/16/1979	65522.9	8.7	4.60	0.015	IV	97.2(156.3)
PAS	32.9580	115.5200	10/16/1979	02214.2	10.0	4.20	0.012	III	97.2(156.4)
PAS	32.9090	115.5280	10/16/1979	1 013.9	4.8	4.60	0.015	IV	97.3(156.6)
DMG	33.1670	115.5000	12/20/1935	745 0.0	0.0	5.00	0.018	IV	97.3(156.6)
PAS	32.9260	115.5230	10/16/1979	11421.3	9.6	4.30	0.012	III	97.4(156.7)
MGI	33.1000	115.5000	05/11/1918	8 5 0.0	0.0	4.60	0.015	IV	97.4(156.8)
MGI	33.2500	115.5000	12/27/1910	1715 0.0	0.0	4.60	0.015	IV	97.5(156.9)
PAS	33.0260	115.5040	10/16/1979	15 0 2.7	6.8	4.00	0.011	III	97.6(157.0)
GSP	32.6120	115.6280	07/27/1992	204008.8	15.0	4.10	0.011	III	97.6(157.1)
PAS	33.0190	115.5040	10/16/1979	231632.3	15.2	4.90	0.017	IV	97.6(157.1)
DMG	34.3500	116.2830	09/20/1942	161414.0	0.0	4.00	0.011	III	97.6(157.1)
PAS	32.8920	115.5260	01/12/1980	2011 6.4	5.0	4.10	0.011	III	97.6(157.1)
PAS	32.9390	115.5150	10/16/1979	93641.1	9.9	4.00	0.011	III	97.7(157.2)
DMG	34.3500	116.2800	04/27/1931	23 758.6	0.0	4.00	0.011	III	97.7(157.2)
PAS	32.9340	115.5150	10/16/1979	61160.0	11.0	4.00	0.011	III	97.7(157.3)
PAS	32.8990	115.5190	10/16/1979	72324.2	9.0	4.20	0.012	III	97.9(157.6)
MGI	33.0000	115.5000	05/27/1917	930 0.0	0.0	4.00	0.011	III	98.0(157.7)
DMG	33.0000	115.5000	12/20/1917	825 0.0	0.0	4.00	0.011	III	98.0(157.7)
MGI	33.0000	115.5000	03/23/1908	1357 0.0	0.0	4.60	0.014	IV	98.0(157.7)
DMG	33.0000	115.5000	12/17/1955	51721.0	0.0	4.30	0.012	III	98.0(157.7)
MGI	33.0000	115.5000	10/24/1924	739 0.0	0.0	4.60	0.014	IV	98.0(157.7)
DMG	33.0000	115.5000	10/30/1933	1059 0.0	0.0	4.20	0.012	III	98.0(157.7)
DMG	33.0000	115.5000	12/17/1955	19 543.0	0.0	4.30	0.012	III	98.0(157.7)
DMG	33.0000	115.5000	12/17/1955	652 3.0	0.0	4.60	0.014	IV	98.0(157.7)
MGI	33.0000	115.5000	12/20/1920	529 0.0	0.0	4.00	0.011	III	98.0(157.7)
DMG	33.0000	115.5000	02/26/1930	230 0.0	0.0	5.00	0.018	IV	98.0(157.7)
DMG	33.0000	115.5000	12/20/1920	1447 0.0	0.0	4.50	0.014	III	98.0(157.7)
MGI	33.0000	115.5000	04/30/1915	820 0.0	0.0	4.00	0.011	III	98.0(157.7)
DMG	33.0000	115.5000	03/01/1930	23 5 0.0	0.0	4.50	0.014	III	98.0(157.7)
DMG	33.0000	115.5000	03/01/1930	2344 0.0	0.0	4.50	0.014	III	98.0(157.7)
DMG	33.0000	115.5000	12/17/1955	61736.0	0.0	4.10	0.011	III	98.0(157.7)
MGI	33.0000	115.5000	08/31/1925	1 7 0.0	0.0	4.00	0.011	III	98.0(157.7)
MGI	33.0000	115.5000	04/28/1915	310 0.0	0.0	4.00	0.011	III	98.0(157.7)
T-A	33.0000	115.5000	10/23/1924	739 0.0	0.0	4.30	0.012	III	98.0(157.7)
MGI	33.0000	115.5000	05/31/1917	210 0.0	0.0	4.60	0.014	IV	98.0(157.7)
DMG	33.0000	115.5000	12/17/1955	6 729.0	0.0	5.40	0.022	IV	98.0(157.7)
DMG	33.0000	115.5000	03/02/1930	150 0.0	0.0	4.50	0.014	III	98.0(157.7)
DMG	33.0000	115.5000	12/21/1920	1452 0.0	0.0	4.50	0.014	III	98.0(157.7)
DMG	33.3330	115.5000	01/02/1936	354 0.0	0.0	4.00	0.011	III	98.1(157.8)
PAS	32.9860	115.5000	01/25/1975	1431 1.0	6.0	4.30	0.012	III	98.1(157.9)
PAS	33.0460	115.4900	10/17/1979	224534.3	3.9	4.50	0.014	III	98.2(158.1)

EARTHQUAKE SEARCH RESULTS

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FILE CODE	LAT. NORTH	LONG. WEST	DATE	TIME (UTC) H M Sec	DEPTH (km)	QUAKE MAG.	SITE ACC. g	SITE MM INT.	APPROX. DISTANCE mi [km]
PAS	32.9030	115.5110	10/21/1977	132424.6	15.5	4.20	0.012	III	98.3(158.3)
PAS	32.9900	115.4950	01/23/1975	232434.4	5.3	4.00	0.011	III	98.4(158.3)
PAS	33.9190	118.6270	01/19/1989	65328.8	11.9	5.00	0.018	IV	98.5(158.6)
DMG	33.8670	115.7000	04/28/1946	173123.0	0.0	4.40	0.013	III	98.7(158.8)
PAS	32.6630	115.5830	10/31/1980	125536.7	3.6	4.40	0.013	III	98.7(158.9)
PDP	34.3300	116.2100	10/22/1999	124052.0	7.0	4.30	0.012	III	98.8(158.9)
PAS	32.9090	115.5020	10/22/1977	183042.7	5.0	4.00	0.010	III	98.8(159.0)
PAS	32.8860	115.5070	10/20/1977	102935.9	4.9	4.00	0.010	III	98.8(159.0)
PAS	32.8930	115.5050	10/21/1977	61236.2	5.9	4.30	0.012	III	98.8(159.0)
DMG	32.5000	115.6670	02/12/1932	23021.0	0.0	4.00	0.010	III	98.8(159.0)
GSP	34.4570	116.4760	07/06/1992	180636.3	0.0	4.30	0.012	III	98.9(159.1)
PAS	32.8730	115.5070	10/16/1979	12 145.6	14.4	4.00	0.010	III	99.0(159.3)
PAS	32.9520	115.4900	01/23/1975	17 229.4	4.3	4.80	0.016	IV	99.0(159.3)
GSP	34.4560	116.4690	08/31/1992	092540.6	11.0	4.30	0.012	III	99.0(159.3)
PAS	32.8800	115.5040	10/30/1977	53014.1	4.5	4.00	0.010	III	99.0(159.4)
DMG	31.9670	116.2170	02/18/1955	152728.0	0.0	4.70	0.015	IV	99.2(159.7)
PAS	32.9450	115.4850	01/23/1975	154539.6	4.4	4.30	0.012	III	99.3(159.9)
PAS	32.9450	115.4850	01/23/1975	134719.0	4.4	4.00	0.010	III	99.3(159.9)
DMG	32.2000	115.9000	05/31/1960	191736.0	0.0	4.00	0.010	III	99.4(160.0)
GSG	34.4880	116.5400	06/29/1992	015808.8	5.0	4.10	0.011	III	99.4(160.0)
PAS	32.9330	115.4810	01/23/1975	123016.0	4.0	4.00	0.010	III	99.7(160.5)
PAS	32.9290	115.4810	01/23/1975	125548.6	4.7	4.40	0.013	III	99.7(160.5)
DMG	33.9500	118.6320	08/31/1930	04036.0	0.0	5.20	0.020	IV	99.9(160.8)

****

-END OF SEARCH- 1189 EARTHQUAKES FOUND WITHIN THE SPECIFIED SEARCH AREA.

TIME PERIOD OF SEARCH: 1800 TO 1999

LENGTH OF SEARCH TIME: 200 years

THE EARTHQUAKE CLOSEST TO THE SITE IS ABOUT 11.2 MILES (18.0 km) AWAY.

LARGEST EARTHQUAKE MAGNITUDE FOUND IN THE SEARCH RADIUS: 7.6

LARGEST EARTHQUAKE SITE ACCELERATION FROM THIS SEARCH: 0.191 g

COEFFICIENTS FOR GUTENBERG & RICHTER RECURRENCE RELATION:
a-value= 4.144
b-value= 0.849
beta-value= 1.955

TABLE OF MAGNITUDES AND EXCEEDANCES:

Earthquake Magnitude	Number of Times Exceeded	Cumulative No. / Year
4.0	1189	5.97487
4.5	428	2.15075
5.0	149	0.74874
5.5	51	0.25628
6.0	26	0.13065
6.5	10	0.05025
7.0	3	0.01508
7.5	1	0.00503

APPENDIX E

SEISMIC REFRACTION SURVEY

By

SOUTHWEST GEOPHYSICS

SOUTHWEST GEOPHYSICS, INC.
YOUR SUBSURFACE SOLUTION

December 5, 2012
Project No. 112484

Mr. Sam Valdez
MTGL Inc.
6295 Ferris Square, Suite C
San Diego, CA 92121

Subject: Geophysical Evaluation
Palomar Community College, Learning Resource Center
San Marcos, California

Dear Mr. Valdez:

In accordance with your authorization, we have performed geophysical survey services pertaining to the proposed Learning Resource Center project located at the Palomar Community College in San Marcos, California (Figure 1). The purpose of our survey was to assess the depth to bedrock and the rippability of the subsurface materials for a portion of the site through the collection of seismic surface waves and P-waves. This report presents the survey methodology, equipment used, analysis, and findings.

The project site consists of an asphalt paved parking lot which is currently being used as a construction staging area. The site is bounded by chain link fencing. The study area is generally flat with a gentle slope towards the east and south.

Our scope of services included the performance of two seismic profiles (SL-1 and SL-2) along the west and north sides of the project site (Figure 2). Both P-wave and surface wave data were collected along each profile. The presence of asphalt pavement can adversely affect the P-wave results, specifically in regards to near-surface layer depth calculations. Surface waves, however, are not similarly affected by the asphalt pavement. Therefore, the purpose of the P-wave survey

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was to evaluate the rippability of the bedrock, whereas the purpose of the surface study was to assess the depth to bedrock.

Surface waves (specifically Rayleigh waves) were generated by a hammer and plate (shot), and were recorded using a 24-channel Geometrics StrataView seismograph and 24 14-Hz vertical component geophones. The geophones were installed in ¼-inch diameter holes drilled approximately 1 inch into the asphalt. The geophones were spaced 4 feet apart and shots were conducted 8 feet from the end of the line. Three shots were recorded and then the shot and geophones were moved 8 feet longitudinally, and the line was reshot. Up to eight "moves" were made. The recorded data were processed using SurfSeis® (Kansas Geological Survey, 2012), a Multichannel Analysis of Surface Waves (MASW) software program.

P-wave refraction data were collected using the same geophone geometry, instrumentation and source. The line, however, remained stationary. Data were processed and analyzed using SIPwin (Rimrock Geophysics, 2003) a layer-based seismic interpretation program. In general, seismic P-wave velocities can be correlated to material density and/or rock hardness. The relationship between rippability and seismic velocity is empirical and assumes a homogenous mass. Localized areas of differing composition, texture, and/or structure may affect both the measured data and the actual rippability of the mass. The rippability of a mass is also dependent on the excavation equipment used and the skill and experience of the equipment operator.

The rippability values presented in Table 1 are based on our experience with similar materials and assumes that a Caterpillar D-9 dozer ripping with a single shank is used. We emphasize that the cutoffs in this classification scheme are approximate and that rock characteristics, such as fracture spacing and orientation, play a significant role in determining rock rippability. These characteristics may also vary with location and depth. For trenching operations, the rippability values should be scaled downward. For example, velocities as low as 3,500 feet/second may indicate difficult ripping during trenching operations. In addition, the presence of boulders, which can be troublesome in a narrow trench, should be anticipated.

Table 1 – Rippability Classification	
Seismic P-wave Velocity	**Rippability**
0 to 2,000 feet/second	Easy
2,000 to 4,000 feet/second	Moderate
4,000 to 5,500 feet/second	Difficult, Possible Local Blasting
5,500 to 7,000 feet/second	Very Difficult, Probable Local to General Blasting
Greater than 7,000 feet/second	Blasting Generally Required

It should be noted that the rippability cutoffs presented in Table 1 are slightly more conservative than those published in the Caterpillar Performance Handbook (Caterpillar, 2011). Accordingly, the above classification scheme should be used with discretion, and contractors should not be relieved of making their own independent evaluation of the rippability of the on-site materials prior to submitting their bids.

The results of the surface wave survey are presented on Figures 4a and 4b as Shear-wave (S-wave) velocity models. It should be noted that S-wave velocities typically range from 0.4 to 0.6 times that of the P-wave velocity for unconsolidated soils and bedrock, respectively. As presented, the approximate depth to weathered bedrock varies across the site and appears to range from 3½ to 7 feet deep. In addition, the degree of weathering decreases significantly with depth. The results of the P-wave survey revealed a bedrock velocity of over 10,000 feet per second, which likely represents slightly weathered granitic rock. Due to the presence of the asphalt pavement, the depth to this contact is uncertain but is expected to be on the order of 9 feet below the existing ground surface.

The field evaluation and geophysical analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be present. Uncertainties relative to subsurface condi-

tions can be reduced through additional subsurface exploration. Additional subsurface surveying will be performed upon request.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Southwest Geophysics, Inc. should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document. This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

We appreciate the opportunity to be of service on this project. Should you have any questions related to this report, please contact the undersigned at your convenience.

Sincerely,

SOUTHWEST GEOPHYSICS, INC.

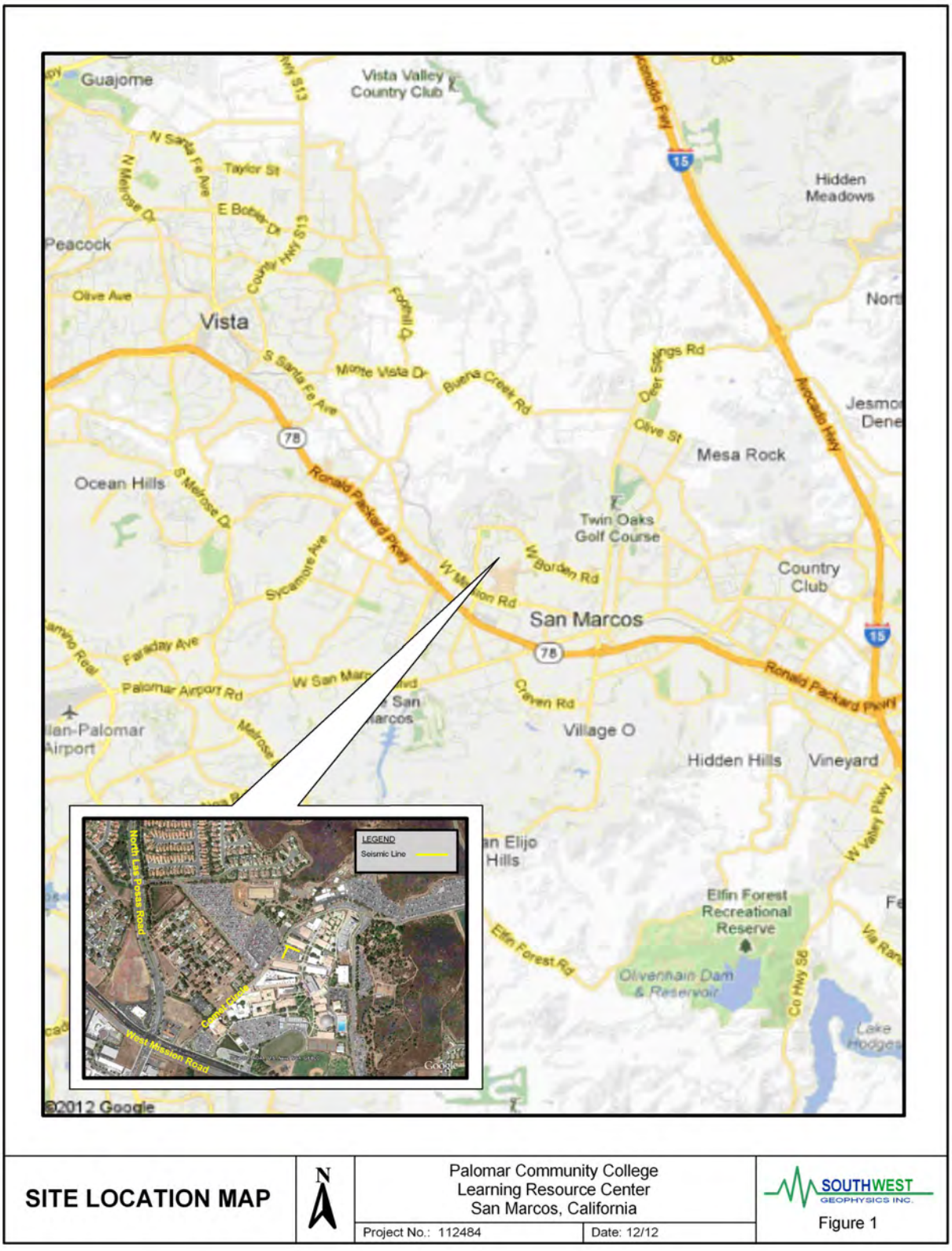
Patrick F. Lehrmann, P.G., P.Gp.
Principal Geologist/Geophysicist

Hans van de Vrugt, C.E.G., P.Gp.
Principal Geologist/Geophysicist

HV/PFL/hv

Attachments: Figure 1 – Site Location Map
Figure 2 – Line Location Map
Figure 3 – Site Photographs
Figure 4a – Seismic Results, SL-1
Figure 4b – Seismic Results, SL-2

Distribution: Addressee (electronic)



SITE LOCATION MAP	N	Palomar Community College Learning Resource Center San Marcos, California	SOUTHWEST GEOPHYSICS INC.
		Project No.: 112484 / Date: 12/12	Figure 1


LINE LOCATION MAP
N
Palomar Community College
Learning Resource Center
San Marcos, California
Project No.: 112484
Date: 12/12
SOUTHWEST GEOPHYSICS INC.
Figure 2
0
100
200
approximate scale in feet
Comet Circle
SL-1
SL-2
LEGEND
Seismic Line

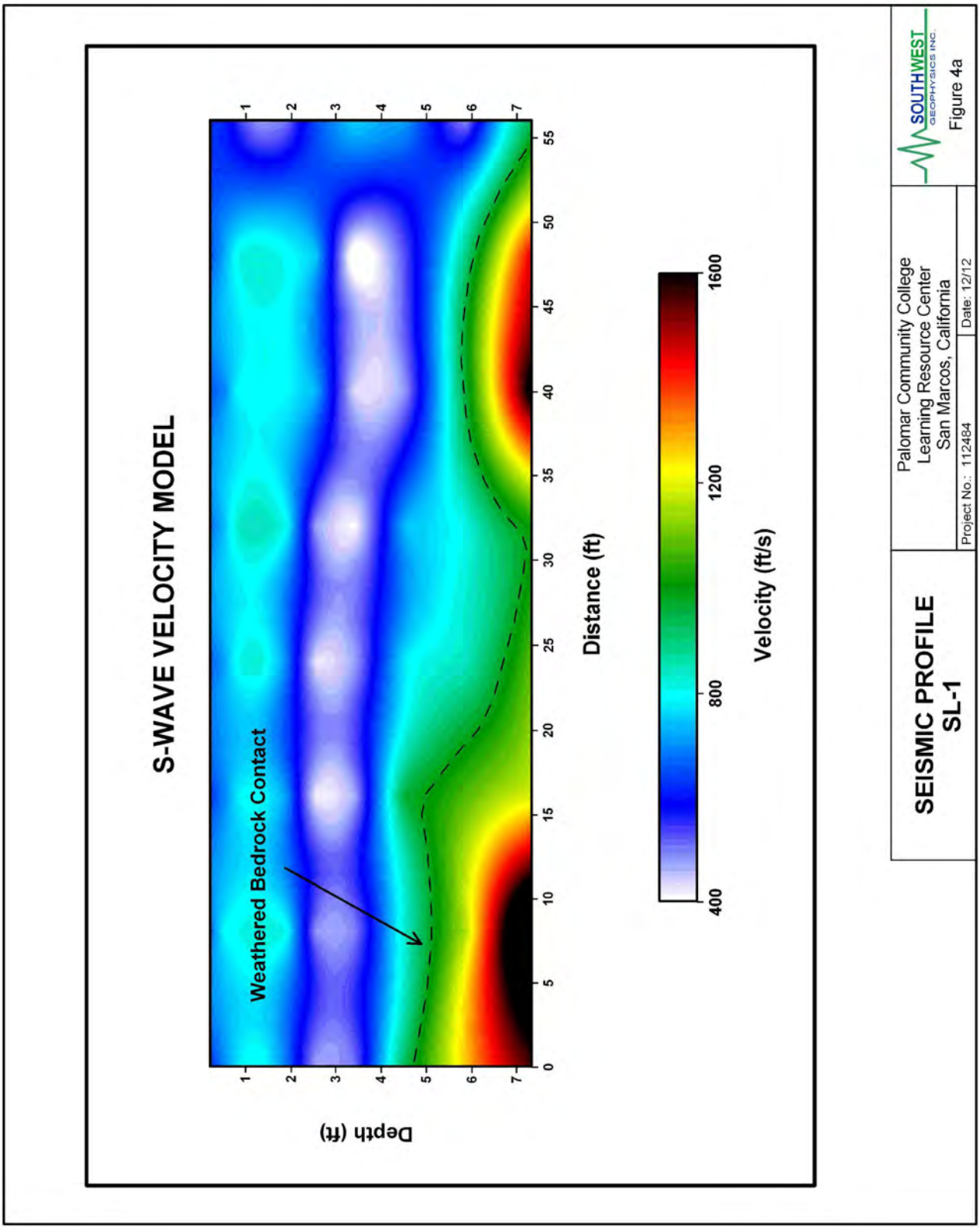
SITE PHOTOGRAPHS

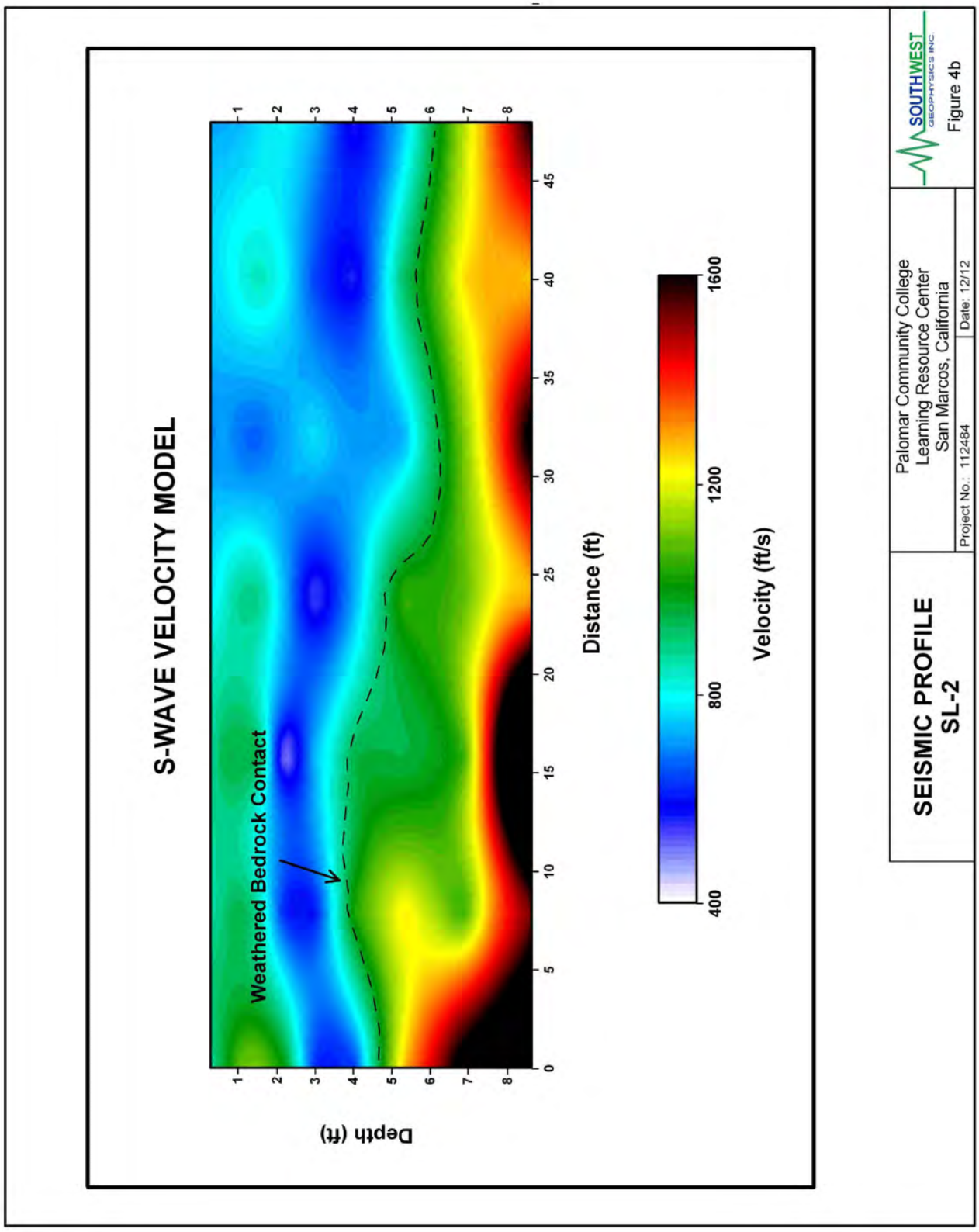
Palomar Community College
Learning Resource Center
San Marcos, California

Project No.: 112484 | Date: 12/12

SOUTHWEST GEOPHYSICS INC.

Figure 3


S-WAVE VELOCITY MODEL
Weathered Bedrock Contact
Depth (ft)
Distance (ft)
Velocity (ft/s)
400
800
1200
1600
SEISMIC PROFILE
SL-1
Palomar Community College
Learning Resource Center
San Marcos, California
Project No.: 112484
Date: 12/12
SOUTHWEST
GEOPHYSICS INC.
Figure 4a


S-WAVE VELOCITY MODEL
Weathered Bedrock Contact
Depth (ft)
Distance (ft)
Velocity (ft/s)
400
800
1200
1600
SEISMIC PROFILE
SL-2
Palomar Community College
Learning Resource Center
San Marcos, California
Project No.: 112484
Date: 12/12
SOUTHWEST
GEOPHYSICS INC.
Figure 4b

APPENDIX F

PERCOLATION TEST RESULTS

APPENDIX F

PERCOLATION TEST RESULTS

Percolation testing was conducted in general accordance with the guidelines presented in the Design Manual for Onsite Wastewater Treatment Systems, March 22, 2010 Edition of the County of San Diego Department of Environmental Health Land and Water Quality Division. Four test holes were drilled with an 8-inch diameter hallow-stem auger drill rig to about 10 feet below existing grade. The Site Plan, Figure 2, shows the location of the percolation testing. The logs of the percolation holes drilled for as part of this investigation are presented in Appendix B.

The test holes were presoaked overnight with 5 gallons of clean water. The following are the percolation test results determined from the testing:

P-1 Test Hole – 110 minutes/inch
P-2 Test Hole – 94 minutes/inch
P-3 Test Hole – No percolation
P-4 Test Hole – No percolation

APPENDIX G

STANDARD GRADING SPECIFICATIONS

APPENDIX G

GENERAL EARTHWORK AND GRADING SPECIFICATIONS

GENERAL

These specifications present general procedures and requirements for grading and earthwork as shown on the approved grading plans, including preparation of areas to be filled, placement of fill, installation of subdrains, and excavations. The recommendations contained in the attached geotechnical report are a part of the earthwork and grading specifications and shall supersede the provisions contained herein in the case of conflict. Evaluations performed by the Consultant during the course of grading may result in new recommendations, which could supersede these specifications, or the recommendations of the geotechnical report.

EARTHWORK OBSERVATION AND TESTING

Prior to the start of grading, a qualified Geotechnical Consultant (Geotechnical Engineer and Engineering Geologist) shall be employed for the purpose of observing earthwork procedures and testing the fills for conformance with the recommendations of the geotechnical report and these specifications. It will be necessary that the Consultant provide adequate testing and observation so that he may determine that the work was accomplished as specified. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that he may schedule his personnel accordingly.

It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans.

Maximum dry density tests used to determine the degree of compaction will be performed in accordance with the American Society for Testing and Materials Test Method (ASTM) D1557.

PREPARATION OF AREAS TO BE FILLED

Clearing and Grubbing: All brush, vegetation and debris shall be removed or piled and otherwise disposed of.

Processing: The existing ground which is determined to be satisfactory for support of fill shall be scarified to a minimum depth of 8 to 12 inches. Existing ground, which is not satisfactory, shall be overexcavated as specified in the following section.

Overexcavation: Soft, dry, spongy, highly fractured or otherwise unsuitable ground, extending to such a depth that surface processing cannot adequately improve the condition, shall be overexcavated down to firm ground, approved by the Consultant.

Moisture conditioning: Overexcavated and processed soils shall be watered, dried-back, blended, and mixed as required to have a relatively uniform moisture content near the optimum moisture content as determined by ASTM D1557.

Recompaction: Overexcavated and processed soils, which have been mixed, and moisture conditioned uniformly shall be recompacted to a minimum relative compaction of either 90 or 95 percent of ASTM D1557 based on location.

Benching: Where soils are placed on ground with slopes steeper than 5:1 (horizontal to vertical), the ground shall be stepped or benched. Benches shall be excavated in firm material for a minimum width of 4 feet.

FILL MATERIAL

General: Material to be placed as fill shall be free of organic matter and other deleterious substances, and shall be approved by the Consultant.

Oversize: Oversized material defined as rock, or other irreducible material with a maximum dimension greater than 4 inches, shall not be buried or placed in fill, unless the location, material, and disposal methods are specifically approved by the Consultant. Oversize disposal operations shall be such that nesting of oversized material does not occur, and such that the oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 feet vertically of finish grade or within the range of future utilities or underground construction, unless specifically approved by the Consultant.

Import: If importing of fill material is required for grading, the import material shall meet the general requirements.

FILL PLACEMENT AND COMPACTION

Fill Lifts: Approved fill material shall be placed in areas prepared to receive fill in near-horizontal layers not exceeding 6 inches in compacted thickness. The Consultant may approve thicker lifts if testing indicates the grading procedures are such that adequate compaction is being achieved with lifts of greater thickness. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to attain uniformity of material and moisture in each layer.

Fill Moisture: Fill layers at a moisture content less than optimum shall be watered and mixed, and wet fill layers shall be aerated by scarification or shall be blended with drier material. Moisture conditioning and mixing of fill layers shall continue until the fill material is at uniform moisture content at or near optimum.

Compaction of Fill: After each layer has been evenly spread, moisture conditioned, and mixed, it shall be uniformly compacted to not less than 90 or 95 percent of maximum dry density in accordance with ASTM D1557. Compaction equipment shall be adequately sized and shall be either specifically designed for soil compaction or of proven reliability, to efficiently achieve the specified degree of compaction.

Fill Slopes: Compacting on slopes shall be accomplished, in addition to normal compacting procedures, by backrolling of slopes with sheepsfoot rollers at frequent increments of 2 to 3 feet as the fill is placed, or by other methods producing satisfactory results. At the completion of grading, the relative compaction of the slope out to the slope face shall be at least 90 percent in accordance with ASTM D1557.

Compaction Testing: Field tests to check the fill moisture and degree of compaction will be performed by the consultant. The location and frequency of tests shall be at the consultant's discretion. In general, these tests will be take at an interval not exceeding 2 feet in vertical rise, and/or 1,000 cubic yards of fill placed. In addition, on slope faces, at least one test shall be taken for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope.

SUBDRAIN INSTALLATION

Subdrain systems, if required, shall be installed in approved ground to conform to the approximate alignment and details shown on the plans or herein. The subdrain location or materials shall not be changed or modified without the approval of the Consultant. The Consultant, however, may recommend and, upon approval, direct changes in subdrain line, grade or materials. All subdrains

should be surveyed for line and grade after installation and sufficient time shall be allowed for the surveys, prior to commencement of fill over the subdrain.

EXCAVATION

Excavations and cut slopes will be examined during grading. If directed by the Consultant, further excavation or overexcavation and refilling of cut areas, and/or remedial grading of cut slopes shall be performed. Where fill over cut slopes are to be graded, unless otherwise approved, the cut portion of the slope shall be made and approved by the Consultant prior to placement of materials for construction of the fill portion of the slope.