GEOHAZARD REPORT EL RODEO K-8 SCHOOL 605 WHITTIER DRIVE BEVERLY HILLS, LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

BEVERLY HILLS UNIFIED SCHOOL DISTRICT

255 South Lasky Drive Beverly Hills, California 90212-3697

Project No. 10274.006

March 2, 2015



A LEIGHTON GROUP COMPANY



Monday, March 02, 2015

Project No. 10274.006

Beverly Hills Unified School District Facilities Planning Office 255 South Lasky Drive Beverly Hills, California 90212-3697

Attention: Ms. Barbara Beach

Administrative Assistant II

Subject: Geohazard Report

El Rodeo K-8 School 605 Whittier Drive

Beverly Hills, Los Angeles County, California

In accordance with our May 6 and July 3, 2014 proposals, with augmented scope as documented in *Exhibit "C" Amendment to Agreement*, approved by the Board on July 8, 2014, Leighton Consulting, Inc. has completed this *Geohazard Report* for the existing El Rodeo K-8 School campus located in western Beverly Hills, California. This report is intended to meet requirements of Section 1803A.6 of the 2013 California Building Code (CBC) and the California Geological Survey's (CGS's) Note 48 regarding assessment of site-specific geologic hazards. Purposes of our exploration were to evaluate geologic/geotechnical conditions at and in the vicinity of this public school, and to provide preliminary geotechnical recommendations for potential seismic lateral-load-resistance-strengthening of existing school buildings. **No** new buildings are currently proposed.

A May 6, 2014 fault study was conducted by Geocon West Inc. (GWI) for property at 9900 Wilshire Boulevard in Beverly Hills, which is located just south of this campus. Based upon analyses including correlation of primary stratigraphy, buried soils and differences in groundwater levels, GWI concluded in their May 6, 2014 report that southwest to northeast trending Holocene stratigraphy is offset along inferred faults; and are therefore active faults in accordance with the California Geological Survey's (CGS's) definition of active faulting. In addition, published geologic reports (Dolan et al. 2000a) also identify escarpments possibly associated with the Santa Monica Fault system terminating just within campus boundaries and trending toward the El Rodeo K-8 School. This combination of data and conclusions by others is the reason for this currently authorized evaluation for presence or absence of active surface-rupture faults through this existing El Rodeo K-8 School campus. Most recent compilation of fault

studies for this El Rodeo K-8 school campus is presented in our February 27, 2015 Fault Hazard Assessment, El Rodeo K-8 School report.

We find this site is <u>not</u> within a currently designated Alquist-Priolo Special Studies Zone. Based on our review of published and available unpublished geologic reports for the site vicinity, review of aerial photos, interpolation of 16 continuous core borings and two fault trenches, it is our opinion that there is no evidence to suggest active faults underlie the El Rodeo K-8 School campus buildings. In addition, building setback from active faults is deemed unnecessary for any existing El Rodeo K-8 School campus building. Although shallow isolated seepage was encountered in our borings as shallow as 20 feet, free groundwater was encountered in only four of our borings at depths of 128 feet or deeper. This campus is also not within a currently designated liquefaction hazard zone and damaging liquefaction is not expected to impact these existing buildings. There are no significant slopes on this site, and, other than strong ground shaking, there are no other known site-specific geologic hazards.

We appreciate the opportunity to be of additional service to the District. If you have any questions or if we can be of further service, please contact us at your convenience at **866-LEIGHTON**, directly at the phone extensions and/or e-mail addresses listed below.

Respectfully submitted,

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1.0 INTRODUCTION

1.1 Site Location and Description

As can be seen on Figure 1, *Site Location Map*, El Rodeo K-8 School is located in the northwestern corner of the intersection of Wilshire Boulevard and Whittier Drive (N34.0676° latitude, W-118.4158° longitude), within the United States Geological Survey (USGS) *Beverly Hills*, Los Angeles County, California 7.5 Minute Series Quadrangle. To the west and north of this school is the Los Angeles Country Club golf course and a buried 20- by 15-foot box-culvert storm drain aligned parallel to the west property line and City of Los Angeles/Beverly Hills city limits; as mapped on Plate 1, *Exploration Map* (in pocket). Also depicted on Plate 1 (in pocket), this site is extensively developed with multi-level and split-level school buildings, paved play yards, track and field facilities, parking and driveways, exterior stairs and retaining walls to accommodate terraced pads and landscaped areas with extensive fencing around and within the campus.

As can be seen on Figure 1, site topography slopes relatively uniformly down to the south-southeast on this alluvial fan. This school campus is on the eastern edge of low hills referred to as Beverly and Cheviot Hills. These hills are characterized as terrestrial fluvial and alluvial sediments, which are locally incised from drainages emanating from the Santa Monica Mountains to the north and west; and are elevated 10 to 20 feet above Benedict Canyon drainage to the east. Campus elevations range from a high of approximately 310 feet above mean sea level (msl) in the northwest corner to a low of 290 feet msl in the southeast. The artificially channelized Moreno Creek Drainage transects the eastern portion of this campus within a buried 5½- by 7-foot box culvert, which intercepts local drainage from storm drain catch basins on the campus flowing southerly under Wilshire Boulevard.

This school was originally known as El Rodeo de Las Aguas Elementary School, which was built in 1927. Reportedly, following the Long Beach Earthquake, initial earthquake renovations were made in 1934. With rising enrollment, a two story addition was completed in 1963, which included a gymnasium, a new shop and music rooms. In the latter 1960's, there were a series of additions including a three story structure and additional classrooms.



1.2 Proposed Improvements

We understand that <u>no</u> new buildings are currently proposed at this school. Reportedly, a braced frame was installed in or around 2000, to provide enhanced lateral load resistance for existing Building C (see Plate 1, in pocket). However, seismic lateral-load resistance improvements are once again proposed for the main reinforced-concrete classroom building(s) to further improve seismic lateral load resistance more consistent with 2013 California Building Code (CBC) requirements.

Based on our brief discussion with the project Structural Engineer, Mr. Leslie Tso, SE at Kanda & Tso Associates, we understand that proposed seismic improvements have not been designed, but could include stiffening and/or augmentation of existing shear walls, either with new steel braced frames, fiber-wrapped concrete and/or new conventionally-reinforced concrete shear walls (e.g. pneumatically-applied concrete augmenting existing shear walls). Exact location for these improvements within these buildings has not yet been determined. A location-specific final-design geotechnical exploration will be performed once location of existing building improvements and strengthening is known.

1.3 Purpose and Scope of Exploration

Purposes of our exploration were to: (1) evaluate geotechnical conditions in the vicinity of the school, (2) identify significant geotechnical or geologic issues that would impact existing school buildings, and (3) provide initial geotechnical recommendations for design and construction of conceptually-proposed seismic strengthening of existing buildings. In accordance with our May 6 and July 3, 2014 proposals, with augmented scope as documented in *Exhibit "C" Amendment to Agreement*, approved by the Board on July 8, 2014, scope of our exploration and *Geohazard Report* included the following:

- Research: We reviewed readily available published and unpublished geotechnical literature, reports and aerial photographs relevant to this site. This included review of our prior fault assessment report (Leighton 2012c) for this campus. Pertinent geotechnical documents and aerial photos are referenced at the end of this report text.
- Subsurface Exploration: Prior to beginning fieldwork, we prepared a health and safety plan in compliance with 29 CFR 1910.120, and cleared utilities at proposed subsurface exploration locations. To supplement our previous



borings CB-1 through CB-6 (Leighton, 2012c) we drilled, logged and sampled an additional ten continuous core borings (CB-7 through CB-16) to depths ranging from 75 feet to 195 feet, from June 17 through July 17, 2014. After sampling and logging, all borings were immediately backfilled with bentonite grout and patched to match existing conditions. Two fault trenches were also excavated, logged and backfilled, as depicted on Plate A-1, Fault Trench Logs FT-1 and FT-2 (in pocket in Appendix A). Approximate boring and trench locations are depicted in blue and orange on Plate 1, Exploration Map (in pocket). A description of our field exploration, boring and trench logs are presented in Appendix A, Field Explorations.

- Geotechnical Laboratory Testing: Geotechnical laboratory tests were conducted on selected bulk soil samples obtained from our continuous core borings. This laboratory testing program was designed to evaluate geotechnical (physical) characteristics of site soil. A description of geotechnical laboratory test-procedures and results are presented in Appendix B, Geotechnical Laboratory Testing.
- Analytical Laboratory Testing: Soils generated during continuous core exploration were contained in drums and removed from the site. Analytical (chemical) testing conducted on composite samples from these drums, for proper disposal, are presented in Appendix C, Analytical Laboratory Test Results.
- Engineering and Geologic Analysis: Data obtained from field explorations and geotechnical laboratory testing was evaluated and analyzed to develop geotechnical conclusions and provide recommendations in accordance with the California Geological Survey (CGS) Note 48 (October 2013 version). Geologic cross sections prepared for this campus are presented on Plates 2 and 3, Geotechnical Cross Sections AA' and BB' (in pockets). Site-specific geotechnical analyses for seismicity and piles are presented in Appendix D, Geotechnical Calculations.
- Report Preparation: Results of our geologic hazards review and geotechnical exploration have been summarized in this report, presenting our findings, conclusions and preliminary geotechnical design recommendations for future seismic retrofit of existing school structures.

2.0 FINDINGS

2.1 Regional Geologic Setting

Regionally mapped on Figure 2, Regional Geologic Map, this school is located within the northwest portion of the Los Angeles Basin at a transition between



elevated and dissected old Pleistocene alluvial and fluvial fan deposits (Qoa) transitioning to younger Pleistocene to Holocene age alluvial sediments associated with Benedict Canyon Drainage to the east (Qa). This uplifted area, commonly referred to as Beverly Hills, was dissected by streams emerging from the Santa Monica Mountains to the north. Older alluvium is exposed near-surface, and underlain by interbedded Pleistocene-age marine and terrestrial fan deposits.

The Santa Monica Mountains are north of this area, as can be seen on Figure 3, Regional Surface Fault Map. Uplift of the Santa Monica Mountains is considered a result mainly from movement along the Santa Monica and Hollywood Fault Zones. These faults are two of a series of east-west trending, reverse, left-lateral oblique-slip structures along the southern Transverse Ranges Geomorphic Province that accommodate north-directed shortening between the Peninsular Ranges Geomorphic Province (including the Los Angeles Basin), against the Transverse Ranges and westerly escape to accommodate NW-vergent portion of tectonic strain (Dolan et al., 1997).

2.2 On Site Geologic Units

In addition to our borings, recent (2014) borings and Cone Penetrometer Test (CPT) soundings performed by others within Wilshire Boulevard are shown in green on Plate 1 (in pocket). Our core borings (CB-1 through CB-16, shown in blue on Plate 1, in pocket) generally exposed flat lying to gently dipping Holocene to Pleistocene age sediments. Most sediments range in grain size from basal channel gravels overlain by progressively fining upward sands, silt and clays. These were mainly laid down by now dissected distributary fans emanating from the Santa Monica Mountains to the north. Clast composition typically consisted of angular Santa Monica Slate (Jsm), siltstone and sandstone of the Monterey Formation (Tm), and occasional rounded basalt or granitic cobbles and pebbles. For subsurface interpretation and distribution of the following earth units, see *Geologic Cross Sections A-A' and B-B'*, Plates 2 and 3, respectively, in pocket. Encountered geologic units are presented from youngest to oldest as follows:

2.2.1 <u>Artificial Fill, Undocumented (Afu)</u>: Up to 18 feet of undocumented fill was observed during our exploration onsite, the deepest in the eastern ends of Fault Trenches FT-1 and FT-2 (see Plate A-1, in pocket in Appendix A). We are unaware of any documentation regarding compaction of fill material associated with prior grading and construction of the campus or within Wilshire



Boulevard. Encountered fill consisted of locally derived sandy silt and silty sand, locally with clay and varying amounts of gravel and artificial debris. Abundant concrete rubble exceeding 24-inches in diameter, was observed in places within backfill of Moreno Creek drainage in Fault Trenches FT-1 and FT-2. Localized seepage along root traces was observed in backfill along the southern sidewall of Fault Trench FT-1 and near a storm drain inlet within Fault Trench FT-2. As depicted on Cross-Sections A-A' and B-B', this unit included the top sections not logged from the auger spoils and the hand-augured section at the top of CPTs (Geocon, 2014, see too Appendix A).

- 2.2.2 <u>Modern and Holocene Alluvium in Historical Moreno Creek (Qw)</u>: This unit consisted of very recent alluvial washes, apparently occurring since asphalt pavement was placed within the area; consisting of silty sand to clayey sand grading to sand at depth, with minor gravel and thin gravel beds; light yellowish brown, brown to dark reddish brown; massive to crudely stratified; with small fragments of asphalt observed locally in CB-3.
- 2.2.3 Holocene Alluvium of Benedict Canyon Wash (Qal): This slightly older alluvium consisted of sandy clay to clayey sand grading laterally to silty sand to sand with silt; coarsening downward near the thalweg of the channel to sand with gravel, sandy gravel or gravelly sand; brown, dark yellowish brown, dark brown to reddish brown; locally laminated; gravel consist of fine- to coarse-grained sub-angular to sub-rounded fragments of siltstone and slate; with few to common manganese oxide and iron oxide stains; and few roots.
- 2.2.4 Pleistocene Alluvium of Benedict Canyon Wash (BCW₁): Recent continuous core borings exposed a repeating fining upward sequence of terrestrially derived fluvial, alluvial fan and mudflow sediments emanating from the Santa Monica Mountains via Benedict Canyon Wash and its tributaries. This unit consists predominately of dark yellowish brown, brown, dark brown to reddish brown; mottled; locally gleyed, poorly to moderately sorted channel (fluvial) deposits occurring in fining upward sequences beginning at basal gravel or sand beds grading upwards to sandy clay, clayey sand, sand with clay, and silty sand with clay. This unit grades laterally to silty sand and sand with silt. Near the channel centerline, this deposit coarsens downward to gravelly sand to clayey sand with gravel. Material was slightly moist to moist; massive too thinly laminated with few to many scattered gravel that consisted of sub-angular to sub-rounded and tabular fragments of siltstone, slate and weathered basalt.

Paleosols cap these sequences suggesting these sediments had frequent depositional hiatuses allowing time for the stable ground surface to develop a pedogenic weathering profile. Observed finer-grained sections were both gleyed and oxidized, resulting in a "tiger banded" appearance due to oxidation and reduction reactions along individual thin stratigraphic units. Observed



material contained sporadic to heavy manganese oxide development along poorly to moderately well-developed blocky ped structure. Incision associated with low sea level stand of Marine Isotope 6 (MI6), approximately 150,000 years ago, is estimated to correlate with cessation of BCW₁ deposition (Kenney, 2014).

- 2.2.5 Pleistocene Alluvium of Benedict Canyon Wash (BCW₂): continuous core borings exposed a similar repetitive fining upward sequence of terrestrially derived fluvial, alluvial fan, and mudflow sediments derived from the Santa Monica Mountains to the north. This unit consisted predominately of dark grayish brown, reddish brown, very dark brown, and dark yellowish brown; locally mottled and/or gleyed; poorly to moderately sorted channel (fluvial) deposits characterized as sandy clay, clayey sand and silty clay grading laterally to silty sand to sand with silt. This unit contained lenses and interbeds of sandy gravel coarsening downwards to basal channel deposits of sand, Observed weathering consisted of oxidationgravelly sand and gravel. reduction banding; iron oxide and manganese oxide stains common on rock clasts and along basal channel contact. Encountered gravel consisted of fineto medium-grained sub-rounded to sub-angular fragments of siltstone, slate, basalt and quartz. BCW2 is characterized by moderate to well-developed paleosols with many moderately thin to thick clay films on ped faces and moderate to strong angular blocky soil structure with a distinctive erosional contact with underlying Cheviot Hills deposits. Cessation of deposition of the BCW₂ deposits may have been associated with the end of a glacial maximum estimated to be around Marine Isotope Stage 10 to 11 (MI 10 to 11), approximately 400,000 to 350,000 years ago (Kenney, 2014).
- 2.2.6 <u>Pleistocene Cheviot Hills Deposits (CHD)</u>: This unit correlates to Leighton Consulting, Inc.'s "Quaternary Old Alluvial and Fluvial Deposits (Qoaf)" identified and characterized as part of the work performed on the Beverly Hills High School (BHHS) campus (Leighton, 2012a, 2012d) and with the "Older Surficial Sediments (Qoa)" of Hoots, 1931.

Encountered Cheviot Hills Deposits were reddish brown, brown, and grayish brown locally gleyed alluvial sediments characterized as poorly to well-sorted sandy clay, clayey sand and silty clay; with thin silty sand and gravel layers and beds. Where encountered, this unit was moist to wet along sand beds with manganese oxide stains, streaks and nodules and iron oxide stains on rock fragments. Weathering, profiles of light gray to dark orange brown coloring as a result of oxidation-reduction banding were observed. Gravel consisted of sub-rounded to sub-angular fragments of siltstone and slate. At depth, encountered CHDs included abundant calcium carbonate in the form of specks, filaments, horizontal layers, and coatings on ped faces; color changes to grayish brown, gray and blue green reminiscent of the Lomita Marl with iron oxide staining along layers and locally on ped faces. Unit has been modified



by soil-forming processes, with pedogenic characteristics, including clay films on ped faces and moderate to strong angular blocky soil structure, observed at several intervals, including directly at or below its contact with the overlying Benedict Canyon Wash deposits. Predominately a terrestrial deposit consisting of fluvial and alluvial sediments derived from the San Pedro Formation deposited over a long period of time, with depositional hiatuses that allowed for soil development. This unit was exposed at the surface for thousands of years before it was buried by the Pleistocene alluvium of Benedict Canyon Wash.

The upper portion of the Cheviot Hills Deposits (CHD) is recognized as an approximately 12- to 15-foot thick, fine-grained clayey sequence that is typically well oxidized and gleyed forming a "tiger-banded" appearance due to oxidation and reduction of individual layers, possibly indicating seasonal variations, i.e. water-logging and aeration of soils. This sequence marked the erosional boundary between overlying Benedict Canyon Wash sediments. Several buried soils observed in borings performed at BHHS (Leighton, 2012a) estimates a minimum age for the Cheviot Hills Deposits (CHSs) of about 530,000 to 1,300,000 years at the contact between the underlying San Pedro sequences which include Marine Isotope Stages 19 through 15 at a minimum.

2.2.7 Quaternary San Pedro Formation (Qsp): In continuous corings, we recognized the San Pedro Formation, as described by Parsons (2011b) and encountered during fault study at BHHS (Leighton 2012a, b and d) as "Upper San Pedro Formation: (Qsp₁)". At El Rodeo, the San Pedro Formation was encountered at 132.1 feet below grade in boring CB-6 (see Plate 1, in pocket). This formation is typically a massive, friable to loose, yellow, olive brown to reddish orange brown to light greenish-gray, fine to medium-grained sand with scattered gravel and few silty to clayey laminations. Where encountered, this formation was described as loose to hard; dry near upper contact, becoming moist to wet at depth. Sand fraction consisted of fine to coarse, well-rounded quartz grains with scattered bi-valve shell fragments. This is a transitional terrestrial to marine unit deposited in a wave-dominated (beach) environment. In short, this is an overconsolidated beach sand.

2.3 **Groundwater**

Perched Groundwater was encountered in several of the core borings (Appendix A). The groundwater conditions encountered in each boring (including previously performed core borings, CB-1 through CB-6) is summarized below:



Table 1. Encountered Depth to Groundwater

Boring	Perched Water Depth (feet)	Groundwater Depth (feet)		
CB-1	20-21.8, 35-37.4, 81.8-82.5, 91.5-93, 124.4-125	NE		
CB-2	36.3, 41.6-44.5, 54.5-56.4, 61.7-62.3, 70-73.9, 75-78, 80-82, 90-91,100-100.7	NE		
CB-3	44-45, 45.8-49.3, 51.5-53, 55.8-58.1, 60-64.3, 66.3-66.9, 90.3-92.8, 103.8-104.3, 107.8-109.3, 111.3-112, 112.5-112.7			
CB-4	24.5-25.8, 40-40.6, 54.5-55.8, 70-73, 80-81.5, 101.2-105, 107.1-109.8, 120.9-121.4	NE		
CB-5	94.2-95, 101.7-103.4, 110-111.3, 113-113.9, 125-125.4, 130-130.9, 137.9-185			
CB-6	25-27 5 35-35 7 40-76 7 88-88 9 90 9-92 1 92 6-98 1 100-101 6 105-111 114-115.7.			
CB-7	40-40.9, 41.8-43.7, 52-52.5, 100-100.2, 105-108.1, 110-110.8, 120-121.8, 135-139, 140-140.7, 145-145.1, 145.3-148.2			
CB-8	38.5-39.4, 40-43.6, 47.2-48.8, 51.5-52, 55-57, 58.6-59, 60-61.1,81.4-81.6, 81.9-82.2, 94.5-95, 95.7-99.3,99.7-102.4, 110-110.7, 111.6-111.9, 115-124.1, 128.4	128.4		
CB-9	34.7-37.8, 40-41.8, 53.9-54.6			
CB-10	35.4-36.5, 36.8-39.6, 43-46, 48.6-50, 55-56.2	NE in borings shallower than 95 feet		
CB-11	34-34.5, 42-43.2, 43.8-49			
CB-12	32.7-33.4, 38.4-40.5, 41-43.7, 45-45.3, 60-60.5, 67.9-74.6			
CB-13	32.7-33.4, 36.4-40.5, 41-43.7, 43-43.5, 60-00.3, 67.9-74.0			
CB-14	35-39.7, 40-41.6, 43.2-43.5, 45-47.3, 52.2-52.4, 60-60.2, 64.4-64.5, 67.7-69.7			
CB-15	39.4-40.4, 45.5-48.8, 65.3-65.5, 70-70.2, 71.7-71.9, 75-82.3			
CB-16	35-38.2, 40-42.1, 50-50.5, 53.6-54.4, 62.8-65., 69-69.5, 70-74.2, 76.5-77			

NE=groundwater table not encountered

3.0 SITE-SPECIFIC SURFACE FAULTING HAZARDS

3.1 <u>Aerial Photograph Review</u>

We obtained and interpreted several vintage aerial photographs of the site to look for landforms potentially indicative of faulting associated with the Santa Monica Fault. Most images came from the University of California at Los Angeles (UCLA) as well as from our in-house collection (see references for a listing of photographs). Particularly relevant photographs with **annotation** are provided in Appendix E, *Historical Aerial Photographs*. Features visible in these photos are described as follows:

Aerial Photo E-1 (1926): Available aerial photographs did not show obvious geomorphic expression of recent faulting. The north, northwest-trending, east facing erosional escarpment between the elevated Cheviot Hills and the Benedict Canyon Wash that defines the West Beverly Hills Lineament (WBHL) is identifiable as a meandering feature marked by erosion of Moreno



Creek and stands of trees in Figure E-1 (in Appendix E). The historical channel of Moreno Creek visible in the early photographs (see Appendix E), and the current location of the box culvert storm drain (see Plate 1, in pocket) that captures upstream water from Moreno Creek, is located to the east of the original channel alignment (Hoots, 1931). Specifically, we focused on geomorphic evidence of faulting where Dolan and others (2000a) have mapped the Santa Monica Fault. This buried, inactive fault, mapped by Dolan and others, along and oblique to Santa Monica Boulevard is not readily visible in the photographs.

- Aerial Photo E-2 (1927): An inferred fault location is marked by a slight topographical rise and row of trees in Figure E-2 along the west property line with the City of Los Angeles limits and The Los Angeles Country Club. We did find evidence of offset marker beds that we interpreted to be a result of faulting generally associated with this lineament at depth in the core borings interpreted to occur between core borings CB-2 and CB-8 (see Plate 2, Cross Section A-A'), located in the southwest corner of this campus. A linear depression is evident across the Los Angeles Country Club west of the campus (Figures E-1 and E-2) as depicted in northern, oblique 1920's imagery.
- Aerial Photo E-3 (1947): Postulated fault escarpments (Dolan et al., 1997) are shown as a wide zone of suspect faulting (Figure E-3). However, we found no evidence of active faulting associated with this lineament during our study of the El Rodeo campus. Rather we interpret this linear depression as an erosional incision into the elevated fan surface, due to drainage courses associated with tributary drainages emanating from the Santa Monica Mountains and Benedict Canyon Wash. No active faults were observed in our fault trenches and no active faults have been interpreted from extensive review of recovered cores from the excavations (see Plates 2 and 3, Geologic Cross Section AA' and BB', respectively, in pockets).

3.2 Nearby Surface Rupture Fault Zones

3.2.1 North-South Trending West Beverly Hills Lineament (WBHL): Dolan and Sieh (1992) described the West Beverly Hills Lineament (WBHL) as a north, northwest-trending lineament oriented west of, but parallel to the projected trend of the Newport Inglewood fault zone (NIFZ) suggesting that the lineament is the possible northern extension of the NIFZ (see Figure 3, Regional Surface Fault Map). This lineament is mainly comprised of continuous, east-facing erosional escarpments that separate the elevated alluvial terrain to the west (within the Cheviot and Beverly Hills) from the gently sloping younger alluvium within the Benedict Canyon drainage to the east. Earlier work at Beverly Hills High School has shown this slope to be erosional and the geologic contact



between these two units to be unconformable and not faulted (Leighton 2012a, 2012d).

- 3.2.2 East-West Trending Santa Monica Fault: The Santa Monica Fault consists of one or more strands is about 40 kilometers (km, 25 miles) in length and is one of a series of east-southeast trending reverse, left-lateral oblique-slip structures that extend more than 200 km (125 miles) across southern California and accommodate westward motion of the Transverse Ranges (Dolan et al., It has been delineated locally at depths of several-thousand feet through exploratory oil well drilling and oil field development (Wills et al., 2008). High resolution seismic reflection profiles across the Santa Monica Fault zone were acquired (Pratt, et al., 1998) as part of an integrated hazard assessment of this fault, which showed a series of near vertical strike-slip faults beneath topographic scarps inferred to be caused by thrust faulting on the Santa Monica Fault. Pleistocene or Holocene movement had been postulated, but not directly proven along some upper plate secondary fault segments related to the Santa Monica Fault in this zone (Dolan et al., 2000a). But recurrence interval and recency of movement along many fault segments are neither well documented nor understood, mainly because intense urbanization has modified or destroyed any surface traces of the fault (Hill et al., 1979). The Santa Monica Fault zone at the presumed eastern terminus (at El Rodeo K-8 School) had been mapped (Dolan et al., 2000a) to occupy a broad zone approximately 300 feet wide extending into the southern portion of the school campus (see Figure E-3, Aerial Photo), even though unconformities interpreted in the seismic profile (Pratt, et al., 1998) were constrained to a relatively narrow zone of approximately 150 feet wide.
- 3.2.3 2012 and 2014 Site-Specific Surface Fault Studies Synopsis: Based on our 2012 and 2014 site-specific trenching and core logging, we interpreted four stratigraphic anomalies in older deposits as possible faults (see Plate 2, in pocket). However, we found no active (Holocene-age) faults. Rather, we demonstrably correlated sediments and soils, dated by relative methods, as being un-faulted and overlying postulated faults; and these deposits were found to be substantially older than 11,700 years. This is older than defining age for an active fault hazard in California. Soil development age estimation of the sedimentary packages within the cores, and from the trench exposures, support an age of at least 100,000 years for stratigraphy lying un-faulted over postulated fault traces. Accordingly, we conclude that no active faults have ruptured to the surface at the El Rodeo K-8 school campus for at least 100,000 years and possibly considerably farther back in time. Therefore, we conclude that surface rupture along active faults does not pose a direct surface-rupture hazard to the El Rodeo K-8 school campus structures. For a compilation of fault assessment data see our February 27, 2015 Fault Hazard Assessment, El Rodeo K-8 School report.



3.3 Surface Fault Rupture

Based on our review of available in-house literature and recently completed (2012 to 2014) continuous coring and fault trenching, there are no currently known active surface faults that traverse this site, and this site is <u>not</u> located within a currently designated Alquist-Priolo Earthquake Fault Zone (CGS, 2007). However, as very roughly mapped for this region on Figure 4, *Regional Surface Fault Map*, the West Beverly Hills Lineament (WBHL) is labeled as the Pleistocene age Newport-Inglewood Fault, but should not be construed to project through this site. As described previously in Sections 2.3 of this report, it is our opinion, based on a high degree of intensive fault investigation across Beverly Hills High School and this El Rodeo K-8 School campus, that there is no evidence of active surface faulting through the El Rodeo K-8 School campus.

Location of closest active faults to the site was generated using the United States Geological Survey (USGS) Earthquake Hazards Program (USGS, 2008a) and site decimal degree (latitude-longitude) coordinates N34.0676° and W-118.4158°. Closest faults to the site considered active are the Santa Monica-Hollywood Fault Zone and the Newport Inglewood Fault Zone (NIFZ) electronically modeled to be within (<) two miles from this site. The San Andreas Fault, which is the largest active fault in California, is approximately 37 miles northeast of the site. Local active faults are described below:

- 3.3.1 <u>Santa Monica Fault Zone (SMFZ)</u>: Although not yet recognized by the State of California as a Special Studies Zone, the Santa Monica Fault is the closest known fault to the site, considered but not proven to be active, mapped as being located primarily along Santa Monica Boulevard. This fault zone trends east-west along the southern boundary of the Santa Monica Mountains for more than 40 km included as part of the Transverse Ranges Southern Boundary fault system which consists of east-west trending, left-lateral and oblique-reverse movements along several active faults. North-dip west-slip rate across the SMFZ is estimated to vary with location along en-echelon faults to be minimally on the order of 0.6 mm/year (Dolan et. al., 2000) and as high as 3.9 to 5.9mm/year (Davis and Namson, 1994). For this fault, a deterministic estimated maximum magnitude earthquake is generally modeled between Magnitude (M_o) 6.0 and 7.0 if the entire Santa Monica Fault ruptured at once.
- 3.3.2 <u>Hollywood Fault</u>: The Hollywood Fault begins near the Los Angeles River and eastern edge of the Santa Monica Mountains and extends westward for approximately 9½ miles before shifting its locus of active deformation to the area of the West Beverly Hills Lineament (WBHL), where faulting takes a left step to the Santa Monica Fault. The Hollywood Fault is capable of producing a



 $M_{\rm w}$ 6.4 to 6.6 earthquake (Dolan et al., 1997). Investigators have estimated the lateral slip rate to be about 1.0 \pm 0.5mm/year, with a vertical slip rate to be 0.25 mm/year (Dolan et al., 1997). Conversely, a lower slip rate of 0.04-0.4 mm/year (Ziony and Yerkes, 1985) leads to a long return period.

Recent detailed geologic and geotechnical studies have provided cumulative physical evidence for Holocene displacements resulting in a Alquist-Priolo Special Study Zone being established for the Hollywood Fault (CGS, 2014). Exposures identified in prior explorations (Crook and Proctor, 1992), coupled with bulk-soil radiocarbon ages provide scant evidence for an early to mid-Holocene age for the most recent surface rupture approximately 6,000 years to 11,000 years ago; suggesting a long period of quiescence between surface rupturing on the Hollywood Fault (Dolan, 1997, 2000) (Ziony and Yerkes, 1985).

- 3.3.3 Newport Inglewood Fault Zone (NIFZ): The Newport Inglewood Fault Zone (NIFZ) is an active northwest-trending, approximately 2- to 4-mile wide belt of anticlinal folds and faults disrupting early Holocene to Late Pleistocene-age and older deposits (Barrows, 1974). The NIFZ is characterized by trends related to right-lateral shearing at depth (Moody and Hill, 1956). The zone defines the boundary between the western basement complex of Catalina type schist and related rocks to the southwest, and the eastern basement complex of metasedimentary, metavolcanic and plutonic rocks to the northeast (Yerkes, et al., 1965). Right-lateral, strike-slip displacement of 3,000 to 5,000 feet has been measured in Lower Pliocene strata along the NIFZ (Dudley, 1954; Hill, 1954; Poland, et al., 1959). Apparent vertical offset across faults of the NIFZ ranges from 4,000 feet at the basement interface, to 1,000 feet in the Pliocene strata, and 200 feet at the Plio-Pleistocene boundary (Yerkes, et al., 1965). Movement along this structural zone is inferred to have been initiated during middle Miocene time (circa 15 million years ago), with seismic activity continuing to the present time. There is abundant seismic evidence that the zone is tectonically active; thus, the surrounding metropolitan area is subject to certain seismic risks. At least five earthquakes of magnitude 4.9 or larger have been associated with the NIFZ since 1920 (Barrows, 1974). maximum deterministic magnitude earthquake is generally modeled between Magnitude (M_o) 6.5 and 7.2.
- 3.3.4 <u>Las Cienegas Fault</u>: Seismic models developed for the downtown Los Angeles area, based on oil well data, indicate oil development in the 1960's took place largely along a monocline overlying the Las Cienegas structural shelf located in the subsurface between the deep, regionally continuous, northwest trending syncline of the central trough in the Los Angeles Basin and the northern shelf of the Los Angeles Basin. The northern shelf defines the north and northeastern margin of the central trough and comprises a series of active folds and blind surface cutting faults. This monocline is interpreted to be



surface expression of the buried Las Cienegas thrust fault system, which terminates westward against the Newport-Inglewood Fault system and north against the Santa Monica Mountains. Cores of late Quaternary sediments, collected on both sides of this fault, indicate a differential vertical uplift rate for the past 330 thousand-years (ky) as 0.09-0.13 mm/year (Ponti et al., 1996).

- 3.3.5 San Vicente Fault: This east striking San Vicente blind fault, included in the northern Los Angeles fault system, extends through the San Vicente and South Salt Lake oil fields, and has a long varied history as an early to late Miocene extensional, north-dipping normal fault. At approximately the beginning of Pliocene (5.3 to 2.5 million years ago), contraction of the Los Angeles Basin began, resulting in reactivation of Miocene normal faults in a reverse sense with the initiation of monoclinal and secondary compressive structures. The San Vicente Fault is believed to account for approximately 20 percent of the structural relief represented by the northern Los Angeles shelf. Deformation modeling (Schneider, et al., 1996) based on the length and thickness of growth strata suggests the northern Los Angeles fault system is growing at a reverse slip rate of 1.5 to 1.9 mm/year.
- 3.3.6 <u>Salt Lake Anticline</u>: Early Pliocene uplift on the monoclinal high of the northern Los Angeles Shelf has produced a structural buttress impinging on the position of the east Beverly Hills fold. This structure, the South Salt Lake anticline, plunges and dies out to the west under the San Vicente thrust. The Salt Lake anticlinal structures are highly permeable and porous serving as a trapping mechanism for oilfield gas migration which consistently produces high volumes of oil field gas from the Salt Lake Oilfield.

4.0 SEISMIC SHAKING AND FLOODING HAZARDS

4.1 <u>Historical Seismicity</u>

Although southern California has been seismically active during the historic recorded past 200 years, written accounts of only the strongest shocks survive the early part of this historical period. Early descriptions of earthquakes were rarely specific enough to allow an association with any particular fault zone. It is also not possible to locate epicenters of earthquakes that have occurred prior to the twentieth century precisely. A search of historical earthquakes listed in the ANSS Comprehensive Earthquake Catalog (ComCat) was performed from the USGS website for the time period between 1900 and July 29, 2014.

Within that time frame, 168 earthquakes (>M_o 4) were found within a 100-kilometer (62-mile) radius of the site. As plotted on Figure 4, *Historical Seismicity*



Map, of these earthquakes, the closest was located 1.8 miles (2.8 km) east of the site and occurred on September 9, 2001. Although not precisely located, its epicenter (N34.0590° latitude, W-118.3870° longitude) is approximately located within the Benedict Canyon Wash Drainage at a focal depth of approximately 2.4 miles (4 km). This magnitude 4.2 Mw earthquake was located near the tectonic intersection of the Newport Inglewood Fault and Hollywood Fault. The focal mechanism suggests horizontal strike slip motion of a northwest striking plane suggesting this event may be associated with the north end of the Newport Inglewood Fault.

4.2 Modeled Seismicity (Ground Shaking)

Principal seismic hazard that could affect El Rodeo K-8 School is ground shaking resulting from an earthquake occurring along several major active or potentially active faults in southern California. Blind-thrust-faults also exist throughout the Los Angeles Basin. Therefore, a site specific response analysis was developed using the computer program *EZ-FRISK* by Risk Engineering (v. 7.62) and the 2008 CGS Statewide Fault Model. Site-specific probabilistic and deterministic response spectra were developed using the average of the median ground motions obtained from the following next generation attenuation relationships (NGA):

- Boore and Atkinson (2008),
- Campbell and Bozorgnia (2008), and
- Abrahamson-Silva (2008).

Our probabilistic seismic hazard analysis (PSHA) performed using these NGA relationships considered the maximum rotated component of ground motion. Deterministic seismic hazard analysis (DSHA) performed using the NGA relations incorporated the 84th percentile of the maximum rotated component of ground motion. Site-specific acceleration response spectra are attached in Appendix D, *Geotechnical Calculations* as Figure D-1. Site-specific MCE and site-specific design response spectra in tabulated numerical form are shown on Tables D-1 through D-4, also included in Appendix D.

4.3 Secondary Seismic Hazards

In general, secondary seismic hazards for sites in this region could include soil liquefaction, earthquake-induced settlement, lateral spreading, slope instability and landslides, earthquake-induced seiches and tsunamis flooding. These potential secondary seismic hazards are discussed in the subsections below.



- 4.3.1 <u>Liquefaction Potential</u>: Liquefaction is the loss of soil strength due to a buildup of excess pore-water pressure during strong and long-duration ground shaking. Liquefaction is associated primarily with loose (low density), saturated, relatively uniform fine- to medium-grained, clean cohesionless soils. As shaking action of an earthquake progresses, soil granules are rearranged and the soil densifies within a short period. This rapid densification of soil results in a buildup of pore-water pressure. When the pore-water pressure approaches the total overburden pressure, soil shear strength reduces abruptly and temporarily behaves similar to a fluid. For liquefaction to occur there must be:
 - (1) loose, clean granular soils,
 - (2) shallow groundwater, and
 - (3) strong, long-duration ground shaking.

The site is <u>not</u> located within an area defined by the State of California as a liquefaction susceptibility zone (CDMG, March 25, 1999); as overlain in <u>green</u> on Figure 5, *Seismic Hazard Zone Map*, and as shown on the CGS web page:

http://gmw.consrv.ca.gov/shmp/download/pdf/ozn_bevh.pdf

Based on results of our current and prior explorations, alluvium below the historic-high ground-water level is predominantly stiff to very stiff, silty clay, silt, and sandy clay with thin layers of very dense sand. Susceptibility of these materials to liquefaction is considered to be low. In addition, except for some thin perched zones, encountered groundwater was well below 50 feet from the surface.

- 4.3.2 <u>Seismically Induced Settlement</u>: During a strong seismic event, seismically induced settlement can occur within loose to moderately dense, unsaturated granular soils, separate from liquefaction. Settlement caused by ground shaking is often non-uniformly distributed, which can result in differential settlement. Based primarily on CPT results (Leighton, 2014), seismically induced differential settlements of up to 1 inch over a distance of 30 feet should be anticipated in the vicinity of the school.
- 4.3.3 <u>Lateral Spreading</u>: Lateral spreading is a phenomenon in which large blocks of intact, non-liquefied soil move downslope on a liquefied soil layer. Lateral spreading is often a regional event. For lateral spreading to occur, the liquefiable soil zone must be laterally continuous, unconstrained laterally and free to move along sloping ground. Benedict Canyon Wash has been in-filled to the current grade thereby constraining the site laterally. In addition, liquefaction at this site is unlikely. Therefore, potential for lateral spreading is considered very low at this site.



- 4.3.4 <u>Seismically Induced Landslides</u>: Significant slopes are <u>not</u> located at this campus. Based on the State of California Seismic Hazard Zones Map for the Beverly Hills Quadrangle (CDMG, 1999), as reproduced on Figure 5, this campus and vicinity are <u>not</u> located within an area that has been identified by the State of California as being potentially susceptible to seismically induced landslides (depicted in <u>blue</u> on Figure 5). Therefore, the potential for seismically induced landslides to affect the site is not a consideration for this campus.
- 4.3.5 <u>Earthquake-Induced Seiches and Tsunamis</u>: Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Tsunamis are predominately ocean waves generated by undersea large magnitude fault displacement or major ground movement. Based on separation of this campus from large bodies of water, site elevation approximately 300 feet above mean sea level and the inland location of the site relative to the Pacific Ocean (see California Geological Survey, 2009), seiche and tsunami risks at the site are not a concern.
- 4.3.6 <u>Earthquake-Induced Inundation</u>: This inundation hazard is flooding caused by failure of dams or other water-retaining structures as a result of earthquakes. Due to the absence of such structures upslope/up-gradient and near this site, the potential for earthquake-induced flooding is considered to be low. Stone Canyon Reservoir is located northwest of this site in the Santa Monica Mountains. Note that if Stone Canyon Reservoir were to fail, it would flood UCLA and areas to the northwest, and not likely to impact this site. Franklin Canyon Dam is currently empty.

4.4 Storm-Induced Flood Hazard

As depicted on Figure 6, *Flood Hazard Zone Map*, El Rodeo K-8 School is **not** located within a "100-year" or "500-year" flood zone as defined by the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM).

5.0 CONCLUSIONS AND RECOMMENDATIONS

This site is <u>not</u> located within a currently designated Alquist-Priolo Special Studies Zone for surface fault rupture. However, as is the case for most of Southern California, strong ground shaking has and will occur at this site. This site is also <u>not</u> within a currently designated liquefaction hazard zone. Due to the depth to groundwater and density of the native soil, damaging liquefaction is unlikely to occur at this site.

Tested site clays had an Expansion Index (EI) of 23 or less, indicative of very low expansion potential. Samples from similar soil types taken from the near-by Beverly



Hills High School were found to be moderately expansive (El≤70) and highly corrosive for ferrous metals.

Based upon our exploration and analysis, the proposed seismic retrofit shear walls can be founded on a system of deep foundations penetrating into older alluvium at least 5 feet below existing shallow foundations. Drilled cast-in-place concrete piles can be used to support new shear walls. Micropiles can also be considered to support new shear walls; see:

http://www.haywardbaker.com/WhatWeDo/Techniques/StructuralSupport/Micropiles/default.aspx

Detailed geotechnical recommendations for new shear wall foundations in existing buildings are presented in the following subsections.

5.1 Earthwork

Earthwork within existing buildings is expected to be limited to shear wall foundation backfill and possibly buried utility repair and rerouting. Project earthwork is expected to include complete demolition/removal of existing slabs-on-grade in new foundation areas and complete overexcavation and recompaction of any remaining unsuitable or disturbed soils below new improvement footprints as described in the following subsections:

5.1.1 <u>Earthwork Observation and Testing</u>: Leighton Consulting, Inc. should observe and test all earthwork, to check that the site is properly prepared, the selected fill materials are satisfactory, and that placement and compaction of fills has been performed in accordance with our recommendations and the project specifications. Sufficient notification to us prior to earthwork is essential. Project plans and specifications should incorporate recommendations contained in the text of this report.

Variations in site conditions are possible and may be encountered during construction. To confirm correlation between soil data obtained during our field and laboratory testing and actual subsurface conditions encountered during construction, and to observe conformance with approved plans and specifications, it is essential that we be retained to perform continuous or intermittent review during earthwork, excavation and foundation construction phases. Therefore, conclusions and recommendations presented in this report are contingent upon us performing construction observation services.

5.1.2 Subgrade Preparation: Resulting removal excavation bottom-surfaces should be observed by Leighton Consulting, Inc., prior to placement of any



backfill or new construction. After these over-excavations are completed, and prior to fill placement, exposed surfaces should be scarified to a minimum depth of 6 inches, moisture-conditioned to or slightly above optimum moisture content, and recompacted to a minimum 90 percent relative compaction as determined by ASTM D 1557 standard test method (modified Proctor compaction curve). Efforts should be made to locate any existing utility lines that conflict with new foundations. Those lines should be removed or rerouted where interfering with proposed new foundations. It is essential that excavation not undermine existing building foundations to remain.

- 5.1.3 Reuse of Concrete and Asphalt In Fill: Pulverized demolition concrete free of rebar and other materials and demolished asphalt pavement can be pulverized to particles no-larger-than (≤) 3-inches, and mixed with site soils for use in compacted fill. Blended pulverized concrete and asphalt should be mixed with at least 25% soils by weight. Such materials must be free of and segregated from any hazardous materials and/or organic material of any kind.
- 5.1.4 <u>Fill Placement and Compaction</u>: Onsite soils free of organics, debris and oversized material (greater-than 3-inches in largest dimension) are suitable for use as compacted structural fill. However, any soil to be placed as fill, whether onsite or imported material, should be first viewed by Leighton Consulting, Inc., and then tested if and as necessary, prior to approval for use as compacted fill. All structural fill must be free of hazardous materials.

All fill soil should be placed in thin, loose lifts, moisture-conditioned, as necessary, to within 3 percent above optimum moisture content, and compacted to a minimum 90% relative compaction as determined by ASTM D 1557 standard test method (modified Proctor compaction curve) within building footprints. Aggregate base for pavement sections should be compacted to a minimum of 95% relative compaction.

- **5.1.5** Pipeline Backfilling: Pipeline trenches should be backfilled with compacted fill in accordance with this report, and applicable Standard Specifications For Public Works Construction (Greenbook), 2012 Edition standards. Backfill in and above the pipe zone should be as follows:
 - Pipe Zone: Pipe bedding zone should be backfilled with Controlled Low Strength Material (CLSM) consisting of at least one sack of Portland cement per cubic-yard of sand, conforming to Section 201-6 of the 2012 Edition of the Standard Specifications For Public Works Construction (Greenbook). Due to expansive clays, sand bedding for conduits should not be allowed on this site. CLSM bedding should be placed to 1-foot (0.3 m) over the top of the conduit, and vibrated. CLSM should not be jetted.



 Over Pipe Zone: Above the pipe zone, trenches can be backfilled with excavated on-site soils free of debris, organic and oversized material greater-than (>) 3-inches in largest dimension. As an option, the whole trench can be backfilled with one-sack CLSM same as presented above for the pipe bedding zone. Oversized rock (cobbles and/or boulders) should either be removed from any backfill, or pulverized for use in backfill only above the pipe zone. Gravel larger than 3/4-inch in diameter should be mixed with at least 80-percent soil by weight passing the No. 4 sieve. Native soil backfill over the pipe-bedding zone should be placed in thin lifts, moisture conditioned, as necessary, and mechanically compacted using a minimum standard of 90% relative compaction (relative to the laboratory modified Proctor maximum **dry** density), relative to the ASTM D 1557 laboratory maximum dry density within building footprints, or 85% under hardscape areas. Backfill above the pipe zone should not be jetted. In any case, backfill above the pipe zone (bedding) should be observed and tested by Leighton Consulting, Inc..

5.2 Seismic Design Parameters

To accommodate effects of ground shaking produced by regional seismic events, seismic design can, at the discretion of the designing Structural Engineer, be performed in accordance with the 2013 Edition of the California Building Code (CBC). Table 2, 2013 CBC Seismic Parameters (next page), lists seismic design parameters based on the 2013 CBC methodology and ASCE 41-13 methodology, using the USGS 2008 design maps:



2013 CBC and ASCE 41-13 Site Specific Seismic Parameters 7 Table

2013 CBC Seismic Design Parameters	2013 CBC		ASCE 41-13 Re	ASCE 41-13 Retrofit Standard	
		BSE-1E	BSE-2E	BSE-1N	BSE-2N
Site Longitude (decimal degrees) West			-118.4158		
Site Latitude (decimal degrees) North			34.0676		
Site Class Definition (Table 1613.5.2)			٥		
Mapped Spectral Response Acceleration at 0.2s Period, S _s (Figure 1613.5(3))	2.276g	0.803	1.658	2.2	2.276
Mapped Spectral Response Acceleration at 1s Period, S ₁ (Figure 1613.5(4))	0.835	0.288	0.589	0.8	0.835
Short Period Site Coefficient at 0.2s Period, Fa (Table 1613.5.3(1))	1.0	1.179	1.0		0.
Long Period Site Coefficient at 1s Period, F_v (Table 1613.5.3(2))	1.5	1.824	1.5		.5
Adjusted Spectral Response Acceleration at 0.2s Period, S _{MS} (Eq. 16-36)	2.276	0.946	1.658	2.2	2.276
Adjusted Spectral Response Acceleration at 1s Period, S _{M1} (Eq. 16-37)	1.252	0.526	0.884	1.2	1.252
Design Spectral Response Acceleration at 0.2s Period, S_{DS} (Eq. 16-38)	1.517	0.946	1.658	1.517	2.276
Design Spectral Response Acceleration at 1s Period, S_{D1} (Eq. 16-39)	0.835	0.526	0.884	0.835	1.252

*All were derived from the USGS web page: http://earthquake.usgs.gov/designmaps/us/application.php (2008 seismic hazard maps); all coefficients in units of g (spectral acceleration).



A site specific ground motion analysis was also performed. Details of the site specific evaluation are provided in Appendix D.

5.3 <u>Drilled Cast-In-Place Concrete Piles (New Shear Walls)</u>

New shear walls can be supported solely on drilled, cast-in-place concrete friction piles, as space permits and at the discretion of the project Structural Engineer (SE) based on uplift load demands and other structural considerations. Piles should be designed as specified in Section 1810A.3.9 of the 2013 California Building Code (CBC). Specific pile design recommendations are presented below.

5.3.1 Pile Vertical Load Capacity: Piles must derive support solely from the underlying native alluvium below any undocumented fill. allowable vertical downward pile capacities are presented on Figure 7, Pile Downward Capacities, as a function of penetration into undisturbed native alluvium below undocumented fill soils. Fill depth at proposed pile locations (on the order of 5 feet) should be added to desired pile penetration into native sands from above, to determine total design length of piles. This, ultimately, must be verified at the time of pile drilling, during construction, by geotechnical observation during pile installation. These are "net" capacities. Therefore, weight of the below-grade portion of piles need not be added to the anticipated vertical loads for structural design. Plotted pile capacities shown are for friction only, without end bearing, and these values include a factor-of-safety (FS) of 2.0. Plotted allowable downward capacities are for total dead loads and frequently applied live loads, and can be increased by one-third for short duration wind and seismic loads. Uplift for dynamic loads only, not sustained static loads, can be assumed to be half of downward capacities plotted on Figure 7.

These capacities are for undisturbed native alluvium capacities, and do not consider the pile as a reinforced-concrete structural element. Pile reinforcement should be designed by the project Structural Engineer. Relatively low skin friction values have been provided considering reductions in pile capacities due to anticipated undocumented fill downdrag. Capacities can be increased based on results of pile load tests. These values are for isolated single piles. Otherwise, a group action reduction in capacity will be required for piles spaced closer than three diameters on center. For closely spaced piles, vertical capacities should be reduced as follows:



Table 3. Reduction In Closely-Spaced Pile Vertical Capacities

Horizontal Pile Spacing		Vertical Capacity cent)*
Center-To-Center (pile diameters)	2 piles in a row	3 piles in a row
21/2	90	80
2	80	70
1½	70	60

^{*}Percent of capacity for pile spaced three or more diameters on center

Piles should not be spaced closer than 11/2 diameters on center.

5.3.2 Pile Lateral Load Capacity: We do not expect sustained (static) lateral loads on piles. Short duration lateral wind and seismic loads exerted on new shear walls supported on piles and grade beams may be resisted by passive pressures against both the piles and grade beams. A passive equivalent fluid pressure of 240 pounds-per-square-foot per foot of embedment (pcf) acting against grade beams or pile caps can be used, not to exceed total passive pressure of 2,000 pounds-per-square-foot (psf). A passive resistance based on an equivalent fluid pressure of 480 pcf, acting against the projected area of an individual pile below lowest adjacent grade, can also be used for design, assuming ½-inch lateral deflection of a free pile head. This maximum passive pressure on piles, however, should not exceed 4,000 psf.

For design of pile lateral load resistance during short duration wind and/or seismic loads, laterally loaded pile design capacities are tabulated below:

Table 4. Drilled Cast-In-Place Pile Preliminary Lateral Capacities

Lateral Load Parameter	18-inch		24-Inch		30-Inch	
As A Function Of Pile Diameter (inches)	Free	Fixed	Free	Fixed	Free	Fixed
Maximum Lateral Load for ¼-Inch Deflection At Head (kips)	7	16	12	26	19	40
Maximum Moment (kip-feet)	26	-50	51	-89	93	-151
Depth To Maximum Moment (feet)	5	-0-	6½	-0-	7	-0-
Depth To First Zero Moment (feet)	16	3½	19½	3½	23	4

These capacities are for a ¼-inch dynamic (elastic) deflection at the top of 18-, 24- and 30-inch diameter drilled cast-in-place concrete piles, with a 28-day concrete compressive strength of 3,000 pounds-per-square-inch (psi). Both free head (no moment at head) and fixed head (translation without rotation at the head) lateral capacities are provided. For this analysis, a 40-foot-long pile



was modeled with level ground around the pile in the direction of loading, for at least 40 feet. No factor of safety has been applied to these capacities. Individual pile lateral load/deflection criteria can also be developed upon request, based upon the pile stiffness (EI) and sustained vertical load. Lateral capacities should be reduced for pile groups when the lateral (horizontal) load vector is in the direction of aligned piles as follows:

Table 5. Reduction In Closely-Spaced Pile Lateral Capacities

Horizontal Pile Spacing Center-To-Center (pile diameters)	Reduced Pile Capacity In Direction of Lateral Load (percent)*
7	94
6	88
5	82
4	75
3	70
2	65
1½	60

^{*}Percent of capacity for pile spaced eight or more diameters on center aligned parallel to the lateral (horizontal) load vector

Lateral load capacity of piles need <u>not</u> be reduced for load vectors in a direction perpendicular to a row of piles.

5.3.3 <u>Pile Settlement</u>: Settlement of drilled cast-in-place concrete piles includes elastic shortening of the pile, as well as settlement of surrounding soil induced by mobilization skin-fiction resistance. For design loads presented above, individual pile settlement is anticipated to be on the order of ¼-inch or less (in areas of 10 feet of undocumented fill or less where raising grade is <u>not</u> proposed), and will most likely be negligible. These settlement estimates are based on the assumption that finish grades will be approximately the same as existing grades. In the unlikely event that finish grades are raised substantially (>5 feet) where piles are installed, then underlying compressible undocumented fill soils could settle more relative to these piles, resulting in additional downdrag. Piles may experience additional settlement to mobilize adequate resistance to accommodate any downdrag.

Total post construction settlement for the recommended pile foundations should not exceed ¼-inch, and post construction differential settlement between columns spaced no more than 50 feet on center (founded solely on piles) should be less-than (<) ¼-inch due to static loads.



5.4 Concrete Slab-On-Grade

New replacement concrete slabs-on-grade should be designed by the structural engineer in accordance with 2013 CBC requirements for soils with a moderate expansion potential. More stringent requirements may be required by the structural engineer and/or architect; however, slabs-on-grade should have the following minimum recommended components:

- Subgrade: On-site soils are sometimes expansive and will shrink and swell with changes in the moisture content. Therefore, floor slabs-on-grade and adjacent concrete flatwork should be underlain by at least 18-inches of relatively non-expansive soil (EI<30). Slab-on-grade subgrade soil should be moisture conditioned to or within 3% of optimum moisture content, to a minimum depth of 18-inches within building footprints, and compacted to 90% of the modified proctor (ASTM D 1557) laboratory maximum density prior to placing either a moisture barrier, steel and/or concrete.
- Moisture Barrier: A moisture barrier consisting of at least 15-mil-thick Stego-wrap vapor barriers (see: http://www.stegoindustries.com/products/stego-wrap vapor barrier.php), or equivalent, should then be placed below slabs where moisture-sensitive floor coverings or equipment will be placed.
- Reinforced Concrete: A conventionally reinforced concrete slab-on-grade with a thickness of at least 5-inches should be placed in pedestrian areas without heavy loads. This thickness can be reduced to 4-inches in areas where solely one-sack (or more) CLSM backfill is used. Reinforcing steel should be designed by the structural engineer, except when placed on potentially expansive site clays, where we recommend as a minimum that No. 3 rebar be placed at 18-inches on-center, each direction (perpendicularly), mid-depth in the slab. We defer to the project Structural Engineer to design/choose reinforcing for slabs-on-grade overlying solely CLSM backfill. A modulus of subgrade reaction (k) as a linear spring constant, of 75 poundsper-square-inch per inch deflection (pci) can be used for design of heavily loaded slabs-on-grade, assuming a linear response up to deflections on the order of ¾-inch.

Minor cracking of concrete after curing due to expansion, drying and shrinkage is normal and should be expected. However, cracking is often aggravated by a high water-to-cement ratio, high concrete temperature at the time of placement, small nominal aggregate size, and rapid moisture loss due to hot, dry, and/or windy weather conditions during placement and curing. Cracking due to temperature and moisture fluctuations can also be expected. The use of low-slump concrete or low water/cement ratios can reduce the potential for shrinkage cracking.



6.0 CONSTRUCTION CONSIDERATIONS

6.1 Wet Clays

Site clays likely are already predominantly over optimum moisture content; and therefore, will be more difficult to compact compared to sands. Disking, blending, cement and/or lime treatment may be considered by the earthwork contractor to facilitate compaction. However, additional sulfate testing will be required prior to treating/mixing soils with lime, to avoid an adverse sulfate heave reaction. Lime and/or cement treatment also require specialized equipment to blend plastic clay thoroughly with cement or lime, to be effective. Choice of means and methods to mitigate wet clay compaction difficulty will be at the discretion of the contractor based on weather at the time of earthwork, available materials and equipment, among other considerations specific to the contractor. However any proposed cement and/or lime treatment must be reviewed and approved by Leighton Consulting, Inc. and the District prior to implementation.

6.2 Excavations

Based on our field observations, caving of cohesionless strata and loose fill soil will likely be encountered in unshored excavations. To protect workers entering excavations, excavations should be performed in accordance with OSHA and Cal-OSHA requirements, and the current edition of the California Construction Safety Orders, see:

http://www.dir.ca.gov/title8/sb4a6.html

Contractors should be advised that fill soil should be considered Type C soil as defined in the California Construction Safety Orders. As indicated in Table B-1 of Article 6, Section 1541.1, Appendix B, of the California Construction Safety Orders, excavations less-than (<) 20 feet deep within Type C soil should be sloped back no steeper than 1½:1 (horizontal:vertical), where workers are to enter the excavation. This may be impractical near adjacent existing utilities and structures; so shoring may be required depending on trench locations. Stiff undisturbed native clay will stand steeper. Loose, non-cohesive sandy gravel channels below the site should be expected to ravel and cave in unshored excavations.

During construction, soil conditions should be regularly evaluated to verify that conditions are as anticipated. The contractor is responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions.



Close coordination between the competent person and Leighton Consulting, Inc. should be maintained to facilitate construction while providing safe excavations.

Excavations must <u>not</u> undermine existing foundations for existing buildings to remain. Excavations must not encroach within a 1:1 (horizontal:vertical) wedge extending down and out from existing shallow footings to remain. Shoring or underpinning of existing building foundations will likely be required if excavations will undermine adjacent existing structures.

6.3 Cast-In-Place Concrete Piles Construction

Bottoms of drilled cast-in-place pile excavations should be reasonably free of loose soil before reinforcing steel is installed and concrete is placed. We recommend that Leighton Consulting, Inc. observe pile drilling, in accordance with Section 1705A.8 of the 2013 California Building Code, to establish that piles are founded in suitable undisturbed native materials and constructed in accordance with the recommendations presented in this report. Cast-in-place piles should be constructed in accordance with Section 205-3.3.2 of the 2012 Standard Specifications for Public Works Construction (Green Book).

Due to the loose nature of fill and cohesionless alluvium, casing of each shaft may be necessary. If water cannot be removed from excavations prior to concrete placement, then concrete will need to be placed by tremie pipe or concrete pump hose. The concrete should be tremied or pumped to the bottom of the hole keeping the tremie or pipe below the surface of the concrete to avoid entrapment of water in placed concrete. As concrete is poured, water is displaced out of the hole. Some difficult drilling through the fill soils may be experienced due to rubble in the fill. The drilling contractor should be equipped to penetrate through this rubble, if encountered.

We understand that closely spaced piles may be required for this congested site. Care should be taken to avoid "blow-outs" into open drilled shafts when placing fresh concrete in adjacent closely spaced drilled shafts. Fluid pressure of uncured concrete under on-the-order-of (≈) 40-feet of head can deform or displace soils into an adjacent closely spaced shaft, particularly in rubble fill with voids. For new piles placed closer-than (<) 2½ diameters on center, construction sequencing should require curing concrete in one shaft before drilling the adjacent closely spaced shaft. Or, multiple (two or more) temporary steel casings can be used to stabilize multiple (two or more) adjacent closely-spaced



shafts simultaneously. Other options can be considered as the means-and-methods of the foundation contractor.

6.4 Geotechnical Services During Construction

Our geotechnical recommendations are contingent upon Leighton Consulting, Inc., providing geotechnical observation and testing services during earthwork and foundation construction. There is a potential for encountering deeper undocumented fill or otherwise unacceptable existing soil between or beyond our boring locations. We are unaware of any existing fill placement documentation for these building sites. Therefore, inconsistent existing fill materials and consistencies may be encountered during construction, possibly requiring revised geotechnical recommendations.

Our geotechnical recommendations provided in this report are based on information available at the time the report was prepared and may change as plans are developed. Additional geotechnical exploration, testing and/or analysis may be required based on final plans. Leighton Consulting, Inc. should review site grading, foundation and shoring (if any) plans when available, to comment further on geotechnical aspects of this project and check to see general conformance of final project plans to recommendations presented in this report.

Leighton Consulting, Inc. should be retained to provide geotechnical observation and testing during excavation and all phases of earthwork. Our conclusions and recommendations should be reviewed and verified by us during construction and revised accordingly if geotechnical conditions encountered vary from our findings and interpretations. Geotechnical observation and testing should be provided:

- During all excavation,
- During compaction of all fill materials,
- During pile installation,
- During utility trench backfilling and compaction,
- During pavement subgrade and base preparation, and/or
- If and when any unusual geotechnical conditions are encountered.



7.0 LIMITATIONS

Although some analytical testing of a site soil sample was performed as documented in Appendix C, this report does not address the potential for encountering hazardous materials in site soils nor groundwater.

This report was necessarily based in part upon data obtained from a limited number of observances, site visits, soil samples, tests, analyses, histories of occurrences, spaced subsurface explorations and limited information on historical events and observations. Such information is necessarily incomplete. The nature of many sites is such that differing characteristics can be experienced within small distances and under various climatic conditions. Changes in subsurface conditions can and do occur over time. This exploration was performed with the understanding that this subject site is proposed for development as described in Section 1.2 of this report. Important information about limitations of geotechnical reports in general is presented in Appendix F, ASFE's Important Information About Your Geotechnical Report.

Until reviewed and accepted by the California Geological Survey (CGS), this report may be subject to change. Changes may be required as part of the CGS review process. Leighton Consulting, Inc. assumes **no** risk or liability for consequential damages that may arise due to design work progressing before this report is reviewed and accepted by CGS.

This report was prepared for the Beverly Hills Unified School District based on their needs, directions and requirements at the time of our exploration, in accordance with generally accepted geotechnical engineering practices at this time in California for public schools. This report is not authorized for use by, and is not to be relied upon by, any party except the District and their design and construction management team, with whom Leighton Consulting, Inc. has contracted for this work. Use of or reliance on this report by any other party is at that party's risk. Unauthorized use of or reliance on this report constitutes an agreement to defend and indemnify Leighton Consulting, Inc. from and against any liability which may arise as a result of such use or reliance, regardless of any fault, negligence, and/or strict liability of Leighton Consulting, Inc.

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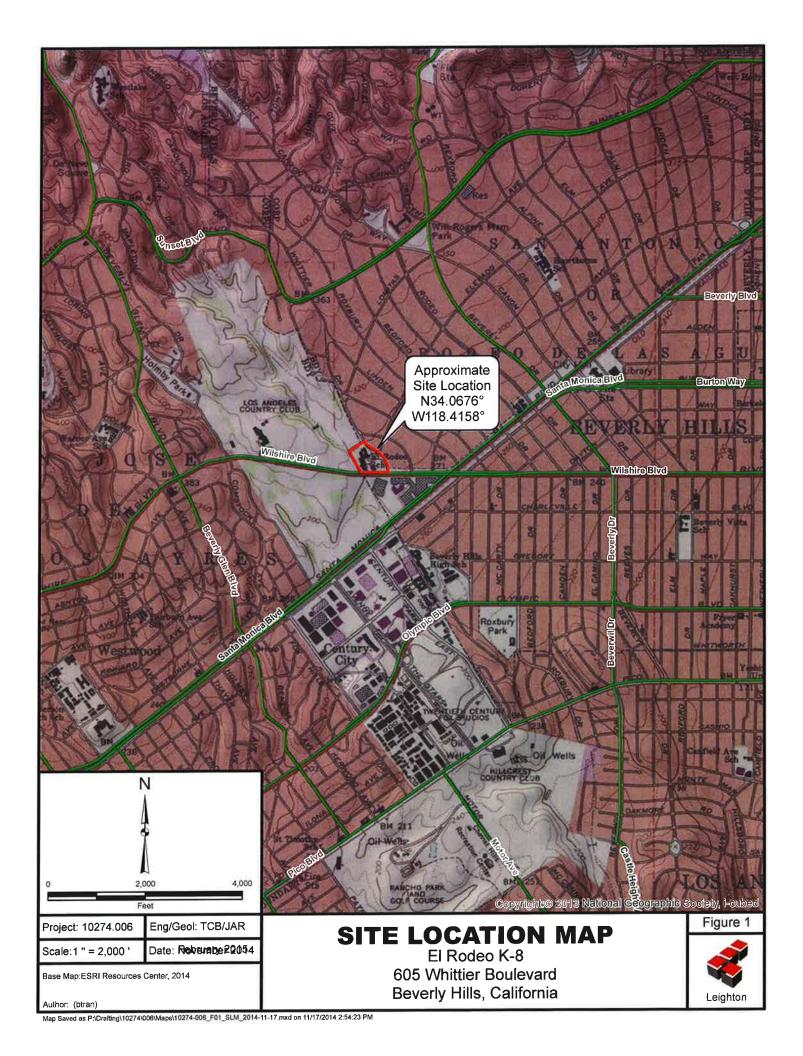


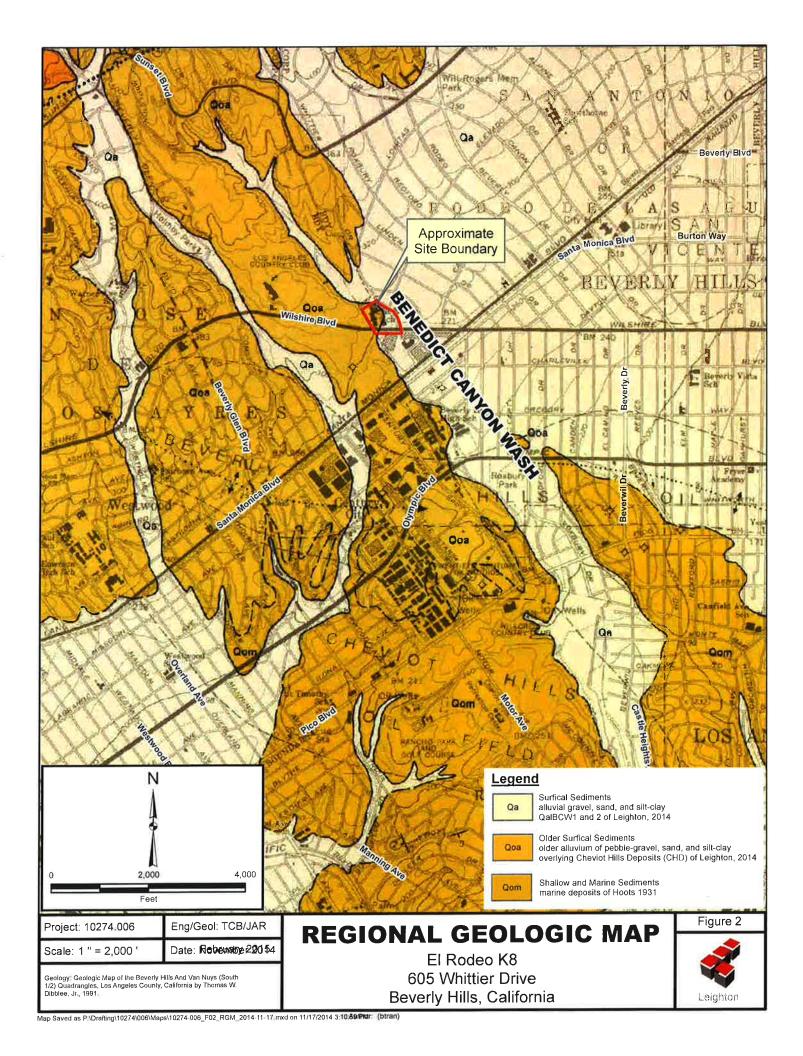
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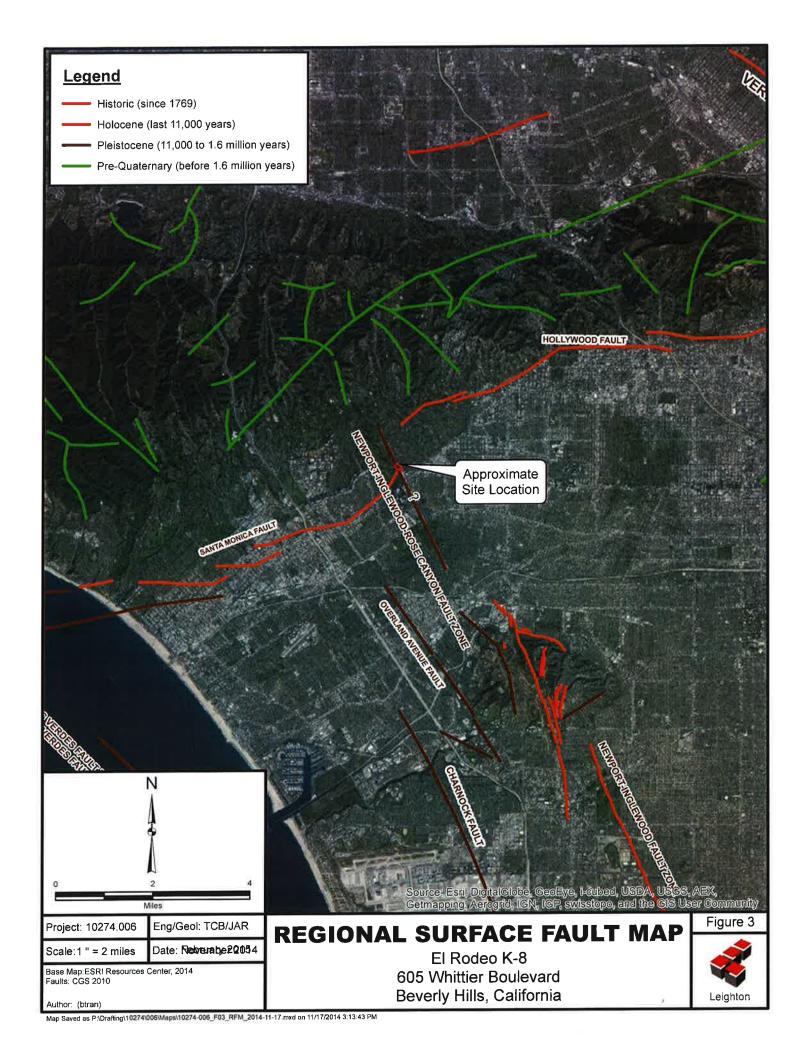


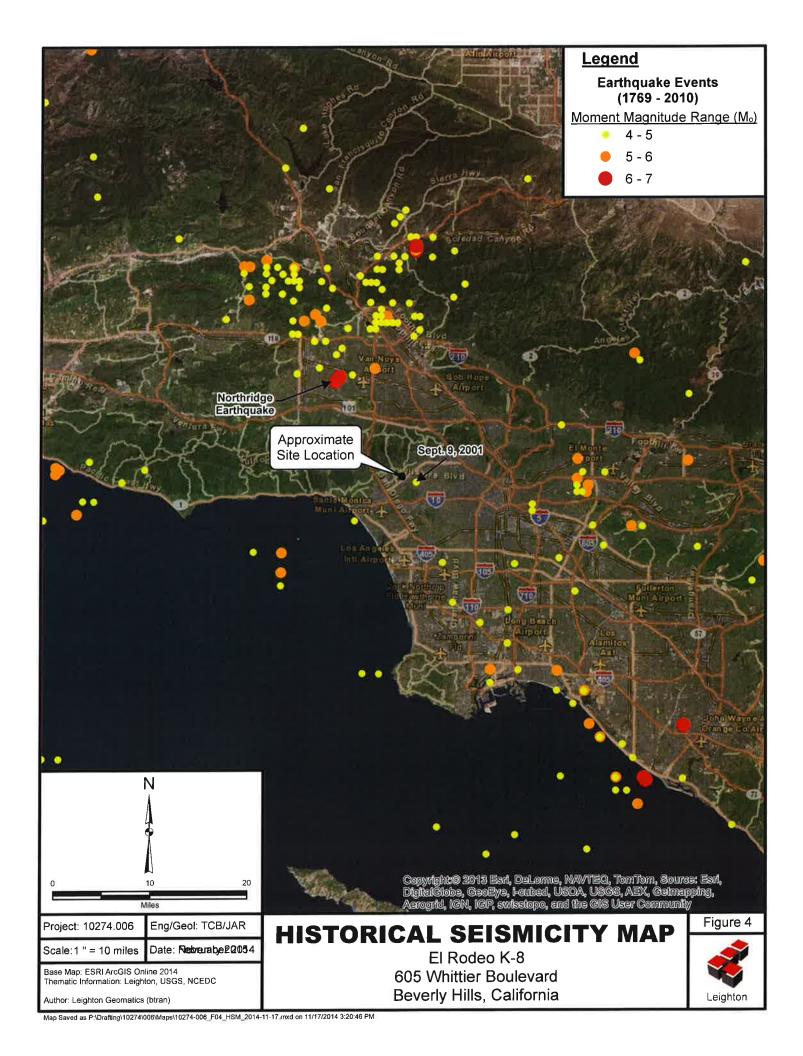
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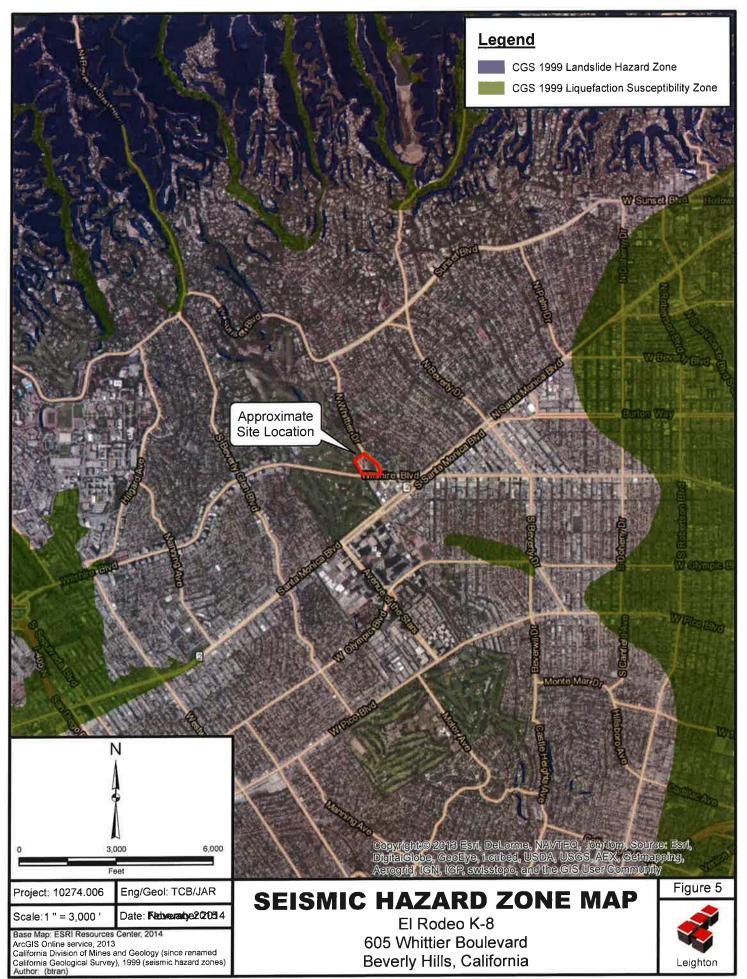


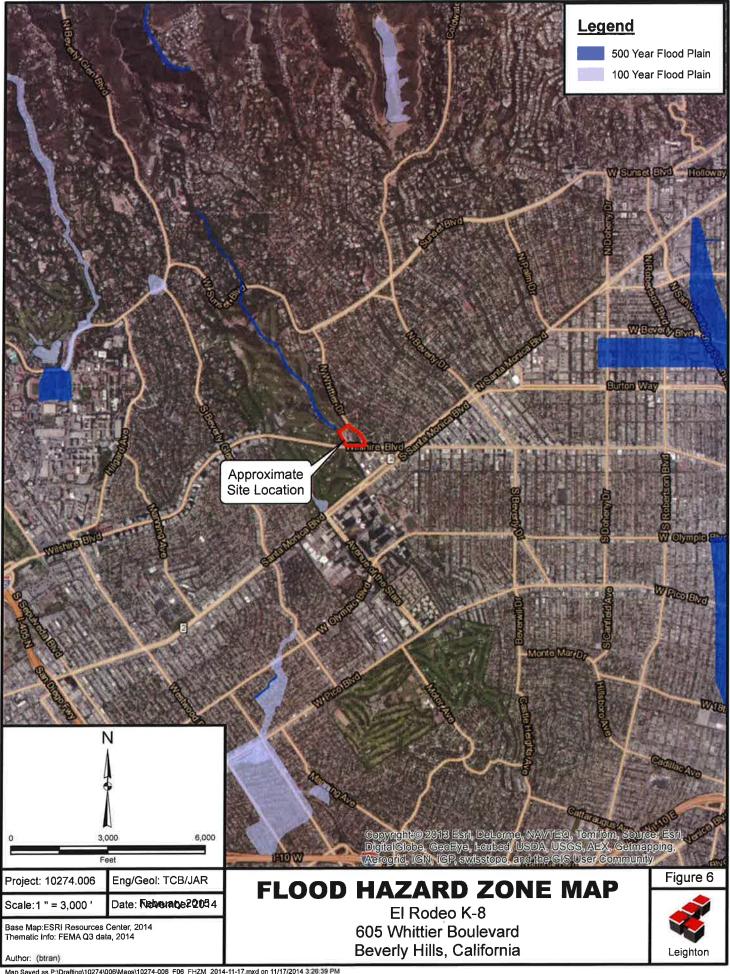


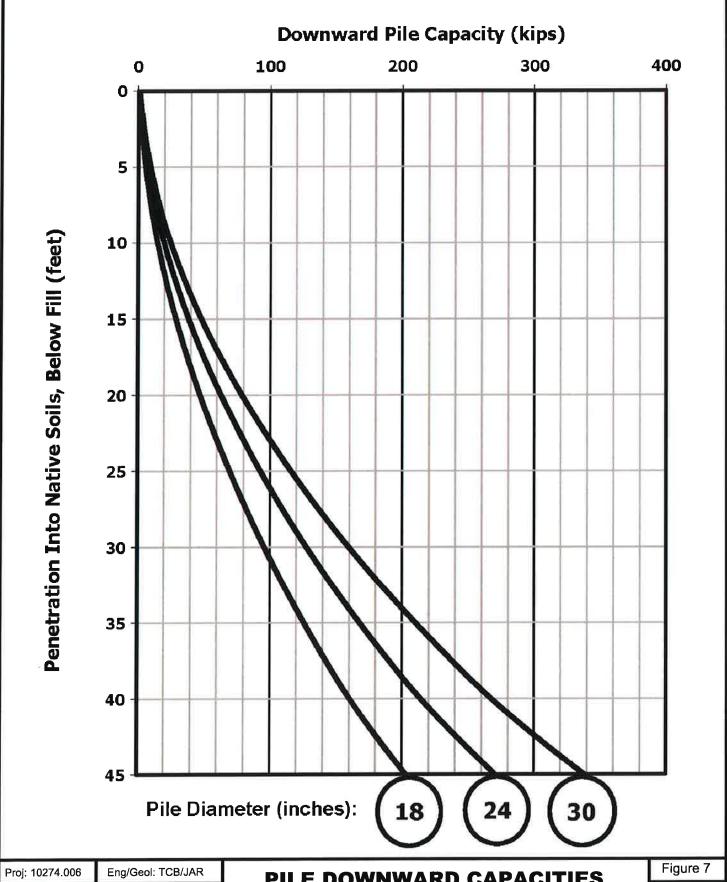












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PILE DOWNWARD CAPACITIES

El Rodeo K8 605 Whittier Drive Beverly Hills, California



RODECH 2014-07-39/10774-006_FIGURE F PSC 20165 (11-18-14 8:31.13494) Printed by Sessi

APPENDIX A

FIELD EXPLORATION

Our field exploration consisted of a surface reconnaissance and a subsurface exploration program including core borings and fault trenches. Prior to beginning fieldwork, we prepared a health and safety plan in compliance with 29 CFR 1910.120, and cleared utilities at proposed subsurface exploration locations. These subsurface exploration locations are plotted on Plate 1, *Geotechnical Map* (in pocket), and describe in more detail below:

Borings: From June 17 through July 17, 2014, ten continuous core sample borings were drilled, logged and sampled to depths ranging from 75 feet to 195 feet. Encountered soils were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D 2488). Soil samples were transported to our Irvine geotechnical laboratory (DSA LEA-63) for observation and testing. Most of our borings were backfilled immediately after drilling, logging and sampling (the same day); using drilling cuttings and bentonite grout as backfill. Boring logs are included as part of this appendix.

Fault Trench: Two fault trenches were excavated with a backhoe to depths of 10- to 15-feet at the locations depicted in orange on Plate 1 (in pocket). Cross-braced temporary shoring was required during detailed logging requiring several days to complete. All logging was by or supervised by a California licensed Certified Engineering Geologist (CEG). Two-dimensional fault trench logs are depicted on Plate A-1, Fault Trench Logs FT-1 and FT-2 (in pocket in Appendix A).

Subsurface Variations and Limitations: These attached subsurface exploration logs and related information depict subsurface conditions only at the approximate locations indicated and at the particular date designated on the logs. Subsurface conditions at other locations may differ from conditions occurring at these locations. Passage of time may result in altered subsurface conditions due to possible environmental changes. In addition, any stratification lines depicted on these logs represent an approximate boundary between soil types, but these transitions can be gradual.



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HARD ARD	- SCRATO				JM	12"-2	h	DAIR TO SEE	OLECT DIFFING (33-33')	MOD, CLOSE	12"-36"	SLIGHT I	
		CHES EASI S		MEDIL THIC V. THI	K	12"-3 36"-12 >120	20"	STEEP	OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	SLIGHT MODERATE MOD SEVERE	

				C	OR	E BC	DRII	NG LOG			PAGE 2 OF	CB-1
PROJECT:		odeo Sch									IOD NO	602267 004
CLIENT: I			Burrill, Drilling (ion						JOB NO : PAGE NO	603367-001 2 of 7
EQUIPMENT										-	ELEVATION:	302.5 Feet
GROUNE			DE	PTH TO (ORIENTATION		ORE BARREL	DATE START:	2/14/2012
DATE	HRS	AFT	WATER	BOT OF	- 1	OT OF HOLE	X	VERTICAL HORIZONTAL	TYPE	Split Sleeve	DATE FINISH: DRILLER:	2/14/2012 Martini
	- 00	MP		CASING		IULE	-	INCLINED	Bit (Feet)	2.510	PREPARED BY	
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
					1,		0	ANG. FROM VERT.	Total (Feet)			
CORE DE	РТН	CORE DEPTH RANGE	SAM	1 2	% QS	GRAPHIC LOG	The may	Soil Description applies o	nly to a location o	vith time. The description	time of drilling. Subston is a simplification of	
(Feet)	-	(Feet)		2		<u> </u>	cond	litions encountered. Tran	sitions between s	soil types may be gradu	al,	
283	20-							20' to 21.8': SAND		eddish to yellowis	sh brown, wet, fi	ne to med
_	-						34	ia, ion souttered i	gravois			
						5511	1		004175	(OD) 1-1 :	241	41
		20-25	Rur			800	sul	21.8' to 22.7': Sand pangular gravels				
-	3=		B0)					22.7' to 28.3': CLA bs of olive gray co			n orange oxidati	on, moist,
							@2	24.3': Color grades	to dark redo	dish brown		
**							@2 mo	25.6': Gravel layer, derately well-deve	pecomes da loped blocky	ark reddish brown / structure: minor	i to cnocolate bi alevina alona s	own, oil faces
070	0.5							se of paleosol @ 2			JJg 6.01.g 0	
—278 2	25						1					
7/1												
							1					
		25-30	Run	5			3					
		20-30	Box	2								
						644	1 @2	8.3' to 29': Gravel	v Sandy CL	AY (CL) dark red	ldish brown ver	v moist fir
						000	tor	nedium sand fine	gravels, ba	sal gravel, base of	of paleosol	, moist, iii
							@2	9' to 33.7': Sandy	CLAY to CL	AY (CL), dark red	dish to dark yel	lowish
—273 3	30-		_				bro	wn, few fine subro	unded to an	gular scattered gr	ravels sand	
2.0	150						وس ا	J.J. I EW SCALLETE	a Arakeis III	ami bed with line	Janu	
							1					
	5.03	30-35	Run									
		55 00	Box	2								
							1					
							@3	3.7' to 35', Chocol	ate brown, w	vell developed so	il	
							1					
-268 3	5				1	1///	1	FIL. 07 (1 C	01	VEL (CD) 1 1		
						000		5' to 37.4': Sandy . fine to coarse an				
	_					00	1461	, into to obarse arr	guidi bidok s	giarois, 5100	J. J. I. Gallado Di	
						000						
						800						
		35-40	Run			17/11	Pic	istocene Cheviot	dille Denoci	e (CHD).		
			Box	٥			@3	7.4' to 40.4'; CLAY	(CL), dark	yellow brown, mo	ist, some fine s	and, color
							gra	des to dark reddisl	brown, oxid	dation and reduct	ion banding with	ı clay
	-						lam	inations				
-263 40	0-					4////						
	D.1115	DAIFOC			The state of the s	<u></u>	A	ITLIDE AND ANOLE	IOINTS (SHEAD / EDACTURE	MEATHERING	
	.D HARI KNIFE CA	DNESS N'T SCRAT	сн	V. THIN		2"	-	ITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
RD - S	SCRATC	HES DIFFICI	ULT	THIN		12"	SHALLO	W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
			- 1	THICK		120"		OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
FT - 9	SROVES CARVES		1	V. THICK	>1			VERTICAL (85-90°)	V WIDE	>120"	MOD SEVERE	

						אכ	- D(וואל	NG LOG			PAGE 3 OF	7
PROJECT		Rodeo S	chool & Burrill,	LLP								JOB NO :	603367-001
CONTRA			i Drilling		ration							PAGE NO.:	3 of 7
	NT USE		IE-75, Cor						ORIENTATION		ORE BARREL	DATE START:	302.5 Feet 2/14/2012
GROU	JNDWAT	S AFT			TO (Fee		r OF	X	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/14/2012
DATE		OMP	WATER	CAS	SING	н	DLE		HORIZONTAL	SIZE	2.5 l.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	
	_					-		0	BEARING ANG. FROM VERT.	Barrel (Feet) Total (Feet)	5	LOCATION:	See Plate 1
		COR	E I	1	<u> </u>		0	T			TION, REMARKS, AND	LIMITATIONS	
CORE (Fe	DEPTH	DEP ⁻ RANG (Fee	TH SAN	IPLE IBER	RECOVERY	RQD	GRAPHIC	may	Soil Description applies or differ at other locations ar itions encountered Trans	nly to a location of	of the exploration at the t vith time. The description	ime of drilling. Subs	urface condition f the actual
— 263 - - - - 258	40	40-4	Bo	19				pal @4 sca gra @4	89.7': Color grades eosol 10.4' to 49': Sandy attered fine subang vel between 46.5' 15': Rounded grave 17': Brown clay 18': Poorly develop	CLAY with (ular gravels to 49', conta	Gravel (CL), dark y throughout, some ains pulses of grav	yellow brown, n	noist, crease in
-253	50 —							@5 @5	9': Gravelly SAND d, fine subangular 0' to 50.8': No Rec 0.8' to 52': Sandy	gravels overy GRAVEL (G			
							200	coa	rse angular gravel	S			
	-		_ Run	10			·		2' to 52.9': SAND	with Gravel	(SP), dark yellow	brown, moist, f	ne sand,
		50-5	5 Box				·		ne fine gravels				
	_						000		2.9' to 53.6': Sand rse angular gravel		(GP), dark yellow	brown, very mo	oist, fine to
									3.6' to 58': SAND		(SP), dark vellow l	prown, moist. fi	ne sand.
								son	ne fine gravels, "Sa	alt and Pepp	er" sands	.,	,
-248	55												
	-	55-60	Run Box	- 1									
							644		8' to 58.3': CLAY (
-243	60-						.00	coa	8.3' to 58.9': Sand rse sand, fine to co 8.9' to 60': No Rec	oarse grave		to gray brown,	moist, fine
240	00												
F	IELD HA	RDNESS			BEDE	DING		ATT	ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	4
HARD ARD OD, HARD OFT SOFT	- KNIFE	CAN'T SCF CHES DIFI CHES EAS	RATCH FIGULT	V. TI TH MED THI V. TH	HIN IN IUM CK	<2 2"-1 12"-3 36"-1 >12	2" 86" 20"	SHALLO MODER STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				CO	RE	BC	RII	NG LOG			PAGE 4 OF	CB-1
PROJECT		Rodeo Scho								=======================================	IOP NO	603267 004
			Burrill, LLP	4							JOB NO: PAGE NO::	603367-001 4 of 7
			rilling Corp 75, Continu		ρ.	_	_				ELEVATION:	302.5 Feet
	INDWAT			TO (Feet)				ORIENTATION	С	ORE BARREL	DATE START:	2/14/2012
DATE		SAFT		T OF		Γ OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/14/2012
DATE	C	OMP	CA	SING	НС	DLE		HORIZONTAL	SIZE	251D	DRILLER:	Martini
							_	INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY	See Plate 1
	-	_			_		0	ANG FROM VERT	Total (Feet)	3	ECOATION.	goo i idio i
	_	CORE		T > T		U	T			TION, REMARKS, AND	LIMITATIONS	
CORE (Fe	DEPTH	DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	mav	Soil Description applies or differ at other locations ar tions encountered Trans	d may change w	rith time. The description	n is a simplification of	urface condition the actual
—243	60-						@6	60' to 60.7': No Red	covery			
						11111	ര	0.7' to 62.4': CLA	(CL), dark	vellow brown, mo	ist	
5	-	1		1 1					(02), 00	,		
							4					
		00.05	Run 12					2: Thin gravel laye				
		60-65	Box 4			000	@6	2.4' to 65.9': Sand	y GRAVEL	(GP), dark yellow	to gray brown,	very moist,
5	-	1				200	fine	to medium sand, vels and weathere	Tine to coars	se suprounded to	subangular bla	JK SIBTE
						000	gra	veis and weathere	u pasait tid:	,		
5	=	1				1.0°						
						00]					
-238	65-					600	-					
						000	4					
-	-	1		1 1		22.13	@6	5.9' to 70,4': No R	ecovery			
-5	-	1	D 40									
		65-70	Run 13 Box 5									
-	-	-	D0x 3	1 1								
				1 1								
25	7=											
-233	70-											
_233	70					77777	-	0.414.70.01.01.4	Couldby Common	L(CL) ded reddie	h brown to obo	coleto
	V=						bro	0.4' to 72.8': CLAY wn, moist, few fine	gravels sca	i (CL), dark reddis	well-develope	d blocky
3	-							icture	9.4.0.0 000	attorou amougnout	,	
							1					
5	\ <u></u>		Run 14				1					
		70-75	Box 5			11111						
8	1					000	@7	2.8' to 75': Sandy ds with some clay	GRAVEL (G	P), dark yellow br	own, moist, fine	e to mediu
						200	şar	us with some clay	ine to coal	se plack state gra	14612	
8	===	i i				000	1					
						:0°	1					
-228	75-					20	A7	5' to 76.8': No Rec	OVER			
							/سا	5 to 10.0 . No Rec	Overy			
()	-											
						000	@7	6.8' to 77.6': Sand	GRAVEL (GP), dark vellow	brown, moist, fi	ne to
		75-80	Run 15			60°	me	dium sands with so	me clay, fin	e to coarse black	slate gravels	
		, 5-50	Box 5					7.6': CLAY (CL), d	ark yellow b	rown, moist, few s	cattered fine s	ubrounded
								vels	to doub	ich brown mad	ate blooky atm	cture
							@/	8.5': Color grades 0' to 81.8': Dark ye	llowish brov	nsii Diowii, Moder vn	ate blocky Strut	Juie
							ا س	C to o i.o. Dain ye				
-223	80-											
F	IELD HA	RDNESS		BEDDI	NG		АТТ	ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	4
HARD	- KNIFE	CAN'T SCRAT		THIN	<2' 2 " -1		SHALLO	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
ARD	- SCRAT	CHES EASILY	MEC	MUIC	12"-3 36"-1	36"	MODE	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
DD. HARD					.3D*-1		SICEP					THE RESERVE AND ADDRESS OF THE PARTY.
OD, HARD OFT SOFT	- GROVE - CARVE		V. TI	HICK	>12			VERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V SEVERE	

				C	UKI	= BC	ואו	NG LOG			BORING NO. PAGE 5 OF	CB-1
PROJECT: CLIENT:		Rodeo Scho Farrer, &		LLP							JOB NO.:	603367-001
CONTRAC	TOR:	Martini I	Orilling (Corporati							PAGE NO:	5 of 7
		CME-						001515151011	1 .	005 84005	ELEVATION:	302.5 Feet
GROUN			DE	PTH TO (T. 05	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START: DATE FINISH:	2/14/2012 2/14/2012
DATE		SAFT V	VATER	BOT, OF CASING		OT. OF	^	HORIZONTAL	SIZE	2.5 I D	DRILLER:	Martini
	-	OIVIE		CASINO		OLL		INCLINED	Bit (Feet)	2,0 1,0	PREPARED BY:	
	+							BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT	Total (Feet)			
ELEVATI CORE DI	EPTH	CORE DEPTH RANGE (Feet)	SAMI	>	% Rob	GRAPHIC	mav	FIE Soil Description applies o differ at other locations a itions encountered. Tran	nly to a location o	vith time. The description	time of drilling. Subsu	urface condition the actual
— 223 218	80	80-85 85-90	Run Box	17			©8	31.8' to 82.5': Sand nd, fine to coarse s 32.5' to 84.6': Sand 84.6' to 85': Gravel nd, fine angular gra 95' to 91.5': No Red	ubangular g ly CLAY (CL ly CLAY (CL ly CLAY (CL lyels	ravels), dark yellowish	brown, moist, fir	ne sand
8	90 —	90-95	Run Box				@9 fine	1.5' to 93': SAND d 3' to 93.9': Sandy to medium sand, 3.9' to 94.3': Claye 4.3': CLAY (CL), d	GRAVEL (G fine gravels y SAND wit	P), dark yellow b basal gravels, e h Gravel (SC), da	rown, very moist rosional contact ark yellow to red	t, oxidized below
		95-100	Run ² Box	7			@9	7': Color grades to	to grey marl		T MEASURE WA	
	I D LIAG	RDNESS		BE	DDING <			ITUDE AND ANGLE IORIZONTAL (0-5°)	JOINTS / S V. CLOSE	SHEAR / FRACTURE	WEATHERING	4
FIE	LU HAI											

				CC	RE	BO	DRII	NG LOG			BORING NO.	
ROJECT:	El R	odeo Schoo	ol								PAGE 6 OF	ſ
0.000	_		urrill, LLP								JOB NO :	603367-001
ONTRACTO			rilling Corp								PAGE NO :	6 of 7
QUIPMENT GROUND	47100-00		75, Continu	ous Cor			1	ORIENTATION		ORE BARREL	DATE START:	302.5 Feet 2/14/2012
		SAFT	I BC	T OF		OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	
DATE	CC	OMP VV	ATER CA	SING	HC	DLE		HORIZONTAL	SIZE	2,5 I,D	DRILLER:	Martini
								INCLINED	Bit (Feet)	-	PREPARED BY	
							0	BEARING ANG, FROM VERT	Barrel (Feet) Total (Feet)	5	LOCATION:	See Plate 1
		CORE		<u> </u>	T	U	1,			TION, REMARKS, AND	LIMITATIONS	
CORE DEP (Feet)		DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC LOG	The may	Soil Description applies o differ at other locations a itions encountered. Tran	nly to a location on nd may change w	of the exploration at the rith time. The description	time of drilling. Subs	surface conditions of the actual
-203 10	00-	(Fact)		LE.	\vdash					, , ,		
-203 10	-	100-105	Run 20 Box 7				@1	01.1': Color grade	es to olive bro	own		
-198 10	5 -	105-110	Run 21 Box 7				@1	04.5' to 106.9': So 05': Color grades 08': CaCO ₃ in mat	to brown	d fine graveis		
193 110	-						@1 sca	10': Grades to Silt ttered cemented C	y CLAY (CL) CaCO₃ nodul	, brown to dark y es	ellowish brown	, moist, few
	-	110-115	Run 22 Box 8				cen @1	12': Color grades on the color of the color	lules r grades fror	n green to grey m		
188 115 83 120		115-120	Run 23 Box 8				@1	18': Color grades t	o olive brow	n, abundant CaCt	O_3 deposits and	d nodules
FIELD	HAR	DNESS		BEDD	ING		АПІ	TUDE AND ANGLE	JOINTS / S	HEAR / FRACTURE	WEATHERING	
ARD - KI D - SC HARD - SC F - GI	NIFE CA	AN'T SCRATCH HES DIFFICUL' HES EASILY	T TH	HIN HIN DIUM ICK	<2" 2"-12 12"-36 36"-12 >120'	3" 0"	SHALLON MODER STEEP	ORIZONTAL (0-5°) N OR LOW ANGLE (5-35°) (ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) (ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			PAGE 7 OF	CB-1
PROJECT	El Rodeo										IOD NO	603367-001
CLIENT E		, & Burrill ini Drilling		ration							JOB NO.: PAGE NO.:	7 of 7
EQUIPMENT	USED: C	ME-75, Co	ontinuo	us Cor	e					-	ELEVATION:	302.5 Feet
GROUND			DEPTH	TO (Fee	t):			ORIENTATION		ORE BARREL	DATE START:	2/14/2012
DATE	HRS AFT	WATER		OF	ВОТ		Х	VERTICAL HORIZONTAL	TYPE SIZE	Split Sleeve	DATE FINISH: DRILLER:	2/14/2012 Martini
	COMP	-	CAS	SING	НО	LE		INCLINED	Bit (Feet)	2,51,0,	PREPARED BY:	
			-	_				BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT	Total (Feet)			
ELEVATIO CORE DEF (Feet)	TH RA		MPLE MBER	RECOVERY	Rod	GRAPHIC LOG	may.	FIEI Soil Description applies or differ at other locations ar itions encountered. Trans	ily to a location of d may change v	vith time. The description	time of drilling. Subsuon is a simplification of	rface condition the actual
- 178 12 - 178 12 173 13			in 24 ox 8				@1 bet	220.5' to 121.8': Grattered CaCO₃ deputered CaCO₃ deputered CaCO₃ to 122.1' to 122 24.4' to 125': SAN all depth of boring: ched groundwater 8'-82.5', 91.5'-93', cavation backfilled lings. soil cuttings diste.	D (SP), darius 125' bgs encountere 124.4'-125' with cuttings	ve brown, moist, c yellow brown, w d at approximatelogs s and patched wit	abundant CaCC et, fine sand by 20'-21.8', 35'-3 h asphalt upon o	37.4',
HARD - K	D HARDNES NIFE CAN'T SO CRATCHES D CRATCHES E	CRATCH FFICULT	V. TH THI MEDI	IN	ING <2" 2"-12 12"-36		F SHALLO	ITUDE AND ANGLE HORIZONTAL (0-57) W OR LOW ANGLE (5-35') KATELY DIPING (35-55')	JOINTS / S V. CLOSE CLOSE MOD. CLOSE	SHEAR / FRACTURE <2" 2'-12" 12"-36"	WEATHERING FRESH V. SLIGHT SLIGHT	Á
OFT - G	CRATCHES E ROVES ARVES	JE	THIC V. TH	CK	36"-12 >120	0"	STEEP	OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD, SEVERE V. SEVERE COMPLETE	N. C.

					CO	RE	ВС	RII	NG LOG			BORING NO. PAGE 1 OF	CB-2
ROJECT: LIENT: ONTRACT	Hill, F	todeo Scho arrer, & I Martini I	Burrill,		ation							JOB NO.: PAGE NO.:	603367-001 1 of 7
QUIPMEN	The second second		-75, Con			e						ELEVATION:	304.9 Feet
GROUN			D	EPTH TO	O (Feet):			ORIENTATION		ORE BARREL	DATE START:	2/13/2012
		SAFT	W.T.C.D.	BOT	OF	BOT	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/13/2012
DATE	CC	OMP V	VATER	CASI	NG	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG, FROM VERT.	Total (Feet)			
ELEVATIO	ON &	CORE			≿ I		2				TION, REMARKS, AND		
CORE DE	PTH	DEPTH RANGE (Feet)	NUM	PLE BER	RECOVERY %	RQD	GRAPHIC LOG	may	Soil Description applies or differ at other locations an itions encountered. Trans	id may change v	vith time. The description	on is a simplification o	urface conditions f the actual
305	0-								Surface: 4" Asphal				
	: -	1-3	SB	3-1				Sili	D.3': Artificial Fill, U ty SAND (SM), darl tvels	ndocument k yellowish l	t <u>ed (Afu):</u> brown, moist, son	ne angular black	k slate
								@4	1': Cobble				
300	5—						1 1.1.	@:	5' to 5.9': No Recov	ery			
-295	10-	5-10	Rur Box					Sa fine gra	5.9':Pleistocene All ndy GRAVEL (GP) e to coarse sand, fi vels, chaotic asser	, dark reddi: ne to coarse	sh brown to dark e subrounded to s	gravish brown, s	slightly mois k slate
		10-15	Rur	_					2.5' to 15': No Rec	overv			
200	15		Box										
290	15							sar	5' to 16.7': Sandy on the sandard fine sanda	d (SM) in sh	SP), moist, large on noe @ 20', driller	cobble @16.7' - indicated easier	clogged r drilling at 1
		15-20	Run Box					(1)	5.7 to 20 . NO NGC	ovo, y			
285 2	20												
FIE	LD HAI	RDNESS	1		BEDD	ING	T	ATI	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
D - HARD - T -	SCRAT		JLT	V. THIN THIN MEDIU THICK V. THICK	I JM K	<2" 2"-12 12"-36 36"-12 >120	2" 6" 20"	MODE: STEEP	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V, SLIGHT SLIGHT MODERATE MOD. SEVERE V, SEVERE COMPLETE	

					C	DRE	: BC)RII	NG LOG			PAGE 2 OF	
PROJECT		Rodeo S			_							IOR NO :	603367-001
CLIENT: CONTRAC		Farrer,				n						JOB NO.: PAGE NO.:	2 of 7
EQUIPME										W-10-		ELEVATION:	304.9 Feet
GROU	INDWAT				ГН ТО (Fe				ORIENTATION		ORE BARREL	DATE START:	
DATE		S AFT OMP	WATE	-R	OT. OF	1	T. OF OLE	X	VERTICAL HORIZONTAL	SIZE	Split Sleeve 2.5 l.D	DATE FINISH: DRILLER:	2/13/2012 Martini
		OIVIP		- '	JASING		OLL		INCLINED	Bit (Feet)	2,01,0	PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG, FROM VERT	Total (Feet)			
ELEVA [*]		COF		SAMPL	ERY	٩	일	The	FIE Soil Description applies o		TON, REMARKS, AND		urface condition
CORE (RAN(_	NUMBE	RECOVERY	Z G	GRAPHIC	may	differ at other locations are itions encountered. Tran-	nd may change v	vith time The description	on is a simplification of	of the actual
285 	20-						11.1	gra @2 mo	20' to 20.3': Silty Sovels 20.3' to 23': Gravel ist, fine to coarse sovels	v SAND (SI	P), dark vellowish	to dark reddish	brown,
	-	20-2	25	Run 4 Box 2			000		23' to 24.5': Sandy	GRAVEL (G	GP), dark gray bro	own to dark red	brown, moi
7 .0	9.00	-					000	N.	large cobbles				
-280	25-					-	-[]]	@2	4.5' to 26.1': Silty	SAND (SM)	, olive gray, moist	t, fine sand	
							.].[
-	± 75	1					P. (@2	6.1' to 27.2': Sand	y GRAVEL	(GP), dark olive b	orown, moist, ar	ngular fine t
	-						500	coa	rse black slate gra	vels			
		25-3	11 1	Run 5 Box 2			1111	sar	7.2' to 27.5'; SANI d, erosional conta	ct below			
-							64		7.5': Sandy CLAY	(CL), olive (gray, moist, fine s	and, oxidation-	reduction
	=						000	1@2	8.3' to 28.9': Sand rse subrounded gr		(GP), dark reddis	h brown, moist,	fine to
-275	30 —					_	11111	@2	8.9' to 30': No Rec	overy			
				Pup 6				gra min	0' to 32.5': CLAY (y mottling, moist, s or gleying on soil p stone fragments, 2	ome fine gr beds, moder	avels, paleosol, b rate clay lining pe	olocky to hackly ds, few highly v	structure,
		30-3	ח ו	Run 6 Box 2				∱ @3	2.5': base of peleo	sol			
	-							oliv @3	2.5' to 38.3': Grade e gray, moist, fine 3.3': CaCO ₃ horizo 4.4': Thinly bedded	sand, some n	CLAY (CL), dark fine gravels	yellow brown n	nottled with
—270	35 —	35-40	1 1	Run 7				@3	5.9': Thin gravel la 6.3': Saturated 6.2': White siltston				
-265	40-			3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3					9' to 42': Grades to ne fine gravels and		ilty CLAY (CL), d	ark chocolate b	rown, moist
							L						
		RDNESS				DING			TUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD ARD OD HARD OFT SOFT	- SCRAT		ICULT	M	THIN THIN EDIUM THICK THICK	<2 2"-1 12"-3 36"-1 >12	2* 36* 20"	MODER STEEP	IORIZONTAL (0-5") W OR LOW ANGLE (5-35") KATELY DIPPING (35-55") OR HIGH ANGLE (55-85") /ERTICAL (85-90")	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120" e Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD SEVERE V. SEVERE COMPLETE	

	101 50	-d. ^	aha - I				. DC	/1\11	NG LOG			PAGE 3 OF	7
PROJECT:		Rodeo S arrer,		ill, LL	P						*	JOB NO.:	603367-001
CONTRACTO	OR	Martin	i Drilli	ng Cor	poratio							PAGE NO :	3 of 7
	NT USED:									ODE BADDEI	ELEVATION: DATE START:	304.9 Feet 2/13/2012	
GROUNI							r OF	X			Split Sleeve	DATE FINISH:	
DATE			WATE	RI						SIZE	l '	DRILLER:	Martini
									INCLINED	Bit (Feet)		PREPARED BY:	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	1				Т.	_	-	0	ANG. FROM VERT.	Total (Feet)	TON DEMARKS AN	IO LUNITATIONIO	
ELEVATION CORE DE (Feet)	PTH	DEPT RANG	TH S	SAMPLE	∞ حيا	RQD	GRAPHIC LOG	may	FIEL Soil Description applies or differ at other locations an tions encountered. Trans	lly to a location of d may change v	ith time. The descrip	ne time of drilling, Subsu	urface condition the actual
—265 -	40 —	(Fee	t)		oc_			CONG	and a recommendation of the recommendation o		om typod m z y do grad		
									1.6' to 44.5': Sand				
		40-4	ים ו	Run 8 Box 3			000	fine cla	e to coarse subang y, erosional contac	ular to subre t below	ounded gravels,	fine to coarse sa	nd, some
						1	000						
	-		1				000	L_					
000	45							@4	4.5': Pleistocene C	heviot Hills	Deposits (CHD	<u>):</u>	man da A
-260	45						444	Sai	ndy silty CLAY (CL), dark redd e slaty san	sn prown mottle	ea with olive gray, subrounded gray	moist, els. alevini
								alo	ng pedfaces, mode	rate silica c	ement. Base of	paleosol @ 46.7	Alex Broying
	-							@4	5' to 45.3': Silty Cla	ayey SAND	(SC), dark yello	w brown, moist, f	fine sand
									5.3' to 48.4': CLAY	(CL), dark	yellow brown to	dark reddish brow	wn, moist,
	_		, ,	Run 9					fine gravels	- امدمد			
		45-5	11 1	Box 3		1	1/////	⊩ (a)4	6.8': Thinly bedded	· OLDANOIS			
	-	III				1	1/////		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	graveis			
	111	Ŷ							·				
								@4	8.4' to 48.9': Grave		CL), dark reddisl	n brown, moist, fir	ne angular
	-			2000				@4 gra	8.4' to 48.9': Grave	elly CLAY (C			
	-			200				@4 gra @4	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY	elly CLAY (C			
-255 5	50 —							@4 gra @4	8.4' to 48.9': Grave	elly CLAY (C			
-255 S	50 —						7777	@4 gra @4 few	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave	elly CLAY (C (CL), dark	yellow brown, m	noist, some silt an	nd fine sand
-255 5	50 —							@4 gra @4 few	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sand	elly CLAY (C (CL), dark	yellow brown, rr SP) layer), dark yellow br	noist, some silt an	nd fine sand
-255 §	50 —							@4 gra @4 few	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so	yellow brown, m SP) layer), dark yellow br il, upper part m	noist, some silt an	nd fine sand
-255 5	50 -							@4 gra @4 few	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sand	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so	yellow brown, m SP) layer), dark yellow br il, upper part m	noist, some silt an	nd fine sand
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-255 \$	50 —	50-5	5 I					@4 gra @4 few	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so	yellow brown, m SP) layer), dark yellow br il, upper part m	noist, some silt an	nd fine sand
-255 5	50 —	50-5	5 I	un 10				@4 gra @4 few	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so	yellow brown, m SP) layer), dark yellow br il, upper part m	noist, some silt an	nd fine sand
-255	50 —	50-5	5 I	un 10				@4 gra @4 few @5 fine @5	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi 1.5': Thin bed of fir	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so ne to coarse	yellow brown, m SP) layer), dark yellow br il, upper part m e sand	rown, moist, fine s	sand, few
-255	50	50-5	5 I	un 10				@4 gra @4 few 	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi 1.5': Thin bed of fin	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so ne to coarse	yellow brown, m SP) layer), dark yellow br il, upper part m sand	rown, moist, fine sissing	sand, few
	50	50-5	5 I	un 10				@4 gra @4 few @5 @5 fine @5	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi 1.5': Thin bed of fine 4': Sandy clayey Stone rock fragmen faces	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so ne to coarse	yellow brown, m SP) layer), dark yellow br il, upper part m sand o, light orange beveloped blocky	rown, moist, fine sissing	sand, few
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	-	50-5	5 I	un 10			000	@4 gra @4 few @5 @5 silted @5 @5 bed @5 coa	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi 1.5': Thin bed of fin 4': Sandy clayey S tone rock fragmen faces 4.5' to 55': Clean S 5' to 56.4': Sandy Grse angular black s	elly CLAY (C (CL), dark elly SAND (S y CLAY (CL ck brown so he to coarse ILT (ML-CL ts, poorly do GAND (SP),	yellow brown, m SP) layer), dark yellow broil, upper part me sand), light orange beveloped blocky fine to medium P), dark yellow	rown, moist, fine sissing rown, very moist, structure, minor grained sand ove to gray brown, we	trace of gleying alo
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-250 5	555	SDNESS CAN'T SCR CHES DIFICHES EAS	D R	un 10 3ox 4 un 11 3ox 4	THIN THIN	<2 2"-1	2"2"56"	@4 gra @4 few @5 siltet @5 siltet @5 coa @5 gran @5 gran @5 shallo Model & Steep & ATT	8.4' to 48.9': Grave vels 8.9' to 50.4': CLAY fine gravels 0.4' to 50.6': Grave 0.6' to 54.5': Sandy gravels, 6-inch thi 1.5': Thin bed of fine fine fine fine fine fine fine fin	elly CLAY (C (CL), dark elly SAND (Selly SAND (Selly SAND (SElly SAND (SEND)) EAND (SP), december (SEND (SP), december (SEND (SP)), december (SEND (SP)), december (SEND (SP)), december (SEND (SP)), december (SEND (SE	yellow brown, more series of the series of t	rown, moist, fine sissing rown, very moist, structure, minor grained sand ove to gray brown, we not obrown, very not ogray brown, we were gray brown, we were gray brown, we see the gray brown, we not obrown, very not ogray brown, we were gray br	trace of gleying alder gravel, the et, fine to

PROJECT: EI Rodeo School CLIENT: Hill, Farrer, & Burrill, LLP CONTRACTOR: Martini Drilling Corporation EQUIPMENT USED: CME-75, Continuous Core GROUNDWATER: DEPTH TO (Feet): ORIENTATION CORE BARREL DATE HRS AFT COMP WATER BOT OF BOT OF X VERTICAL TYPE Split Sleeve DATE FINISH: 2 COMP CASING HOLE HORIZONTAL SIZE 2.5 I.D. DRILLER: PREPARED BY:	CB-2	BORING NO. PAGE 4 OF 7			LOG	RIN	BC	RE	CC					
CORE DEPTH PARKED BY AND BE ELEVATION BY AND BE ELEVATION BY AND BE ELEVATION BY AND B		17.02 7 01 7						-			School	El Rodeo Sch	ECT.	ROJ
### COMPONENT USED CHE-75, Centineous Circ GROUNDWITT USED CHEST TO FEEL OF THE CORD CONTINUE COMPONENT CORD CONTINUE COMPONENT CORD CONTINUE COMPONENT COMP	603367-001	1									& Bur	ill, Farrer, &	NT. H	LIEN
GROUND/WATER DOT OF BOT OF BOT OF BOT OF BOT OF WATER BOT OF BOT OF WATER BOT OF BOT O	4 of 7 304.9 Feet									_~_				
DATE DATE DATE DATE COMP WATER CASING BOT OF A VERTICAL TYPE Spit Steves AND ATERINSH. COMP COMP COMP COMP COMP COMP COMP COMP	2/13/2012		ORE BARREL	С	ENTATION						ME-75,		-	
COMP CASING RULLED RELEVATING RECRIPCIO RECRIPCIO RECRIPCIO RECRIPCIO RANGE CORE COPPT (Feart) RANGE CORE COPPT RANGE CORE COPPT (Feart) RANGE CORE CORE COPPT (Feart) RANGE CORE CORE CORE CORE CORE CORE COPPT (Feart) RANGE CORE CORE CORE CORE CORE CORE CORE COR	2/13/2012						OF			BO	<u> </u>	HRS AFT		
ELEVATION & CORE DEPTH CIFECULATIONS NUMBER (Feet)	Martini	DRILLER: 1	2.5 l.D.	SIZE	IZONTAL	H	LE	но	SING	ER CA	WATI		ATE	DA
ELEVATION & CORE DEPTH (Feet) RORE DEPTH (NUMBER SAMPLE SAMPL	_	PREPARED BY: .												
ELEVATION 4 CORE DEPTH RANCE (Fieat) DEPTH RANCE (Fieat) SAMPLE RANCE (Fieat) SAMPLE RANCE (Fieat) BOTH RANCE (Fieat	See Plate 1	LOCATION: S	5											
-245 60 -246 60 -247 60 -248 60 -248 60 -249 65 -240 65 -24						0 /	_	1						
### Concrete Control of Part	face conditions						€ 6		Ě	SAMPLE		N& DEPTH		
240 65 Run 12 Box 4 261.7' to 62.3': Sandy GRAVEL (GP), dark gray brown, wet, angular coarse black slate gravels, white siltstone fragments, erosional continues of the state of the stat	he actual	n is a simplification of th	ith time. The description	d may change w	at other locations a	may di	GRAF	8	%		IGE	TH RANGE		
coarse black slate gravels, white slitstone fragments, erosional content (according to the coarse sand). Run 13 Box 5 Run 13 Box 5 Run 13 Box 5 Run 14 Box 5 Run 15 Box 5 Run 14 Box 5 Run 15 Box 5 Run 14 Box 5 Run 15 Box 5 Run 14 Box 5 Run 15 Box 6 Run 15 Box 75 Run 15 Box 75 Run 15 Box 8 Run 15 Box 9 Run 16 Run 17 Run 18				covery	61.7': No Re	@60							15 6	-24
## Page 15 ## Pag	tact below	s, erosional conta	siltstone fragments	vels, white so	black slate gra to 65.6': CLA	coar @62	.00				65	60-65		
70-75 Run 14 Box 5 Run 13 Box 5 Run 14 Box 5 Run 15 Box 5 Run 14 Box 5 Run 15 Box 5 Run 16 Box 5 Run 17 Box 68: CLAY (CL), dark yellow brown, moist coarse subrounded to subangular gravels, well graded Run 15 Box 5 Run 16 Box 5 Run 17 Box 70: To 70: Sandy GRAVEL (GP), dark yellow to gray brown, moist care and fine sand, fine to coarse subrounded to subangular gravels, well graded Run 16 Box 5 Run 17 Box 70: To 71: Sandy GRAVEL (GP), dark yellow to gray brown, well graded Run 16 Box 5 Run 17 Box 70: To 72: Sandy GRAVEL (GP), dark yellow to gray brown, well graded Run 16 Box 70: To 73: Sandy GRAVEL (GP), dark yellow to gray brown, well graded Run 17 Box 70: To 75: No Recovery				mie Sallū	ay, moist, verj	Olive						5	0 6	240
235 70 236 8.1' to 69.6': SAND to Gravelly SAND (SW), dark yellow brown, revery moist, fine to coarse sand, fine gravels, well graded 236 70 237 8.1		•	·		Gravel bed	mois @66								
very moist, fine to coarse sand, fine gravels, well graded @69.6' to 70': CLAY (CL), dark yellow brown, moist @70' to 70.5': Gravelly SAND (SW), dark yellow to gray brown, very wet, fine to coarse sand, fine to coarse subrounded to subangular graded @70.5' to 71.7': Sandy GRAVEL (GP), dark yellow to gray brown, very wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet,		k yellow brown, r	SAND (SW), dar	CO₃) to Gravelly	Gravel bed, Ca to 69.6': SANI	@68 @68					70	65-70		
230 75 Run 14 Box 5 Run 14 Box 5 Run 15 Box 75 Run 16 Run 17 Run 17 Run 17 Run 17 Run 18					·	,						-		
wet, fine to coarse subrounded to subangular graded @70.5' to 71.7': Sandy GRAVEL (GP), dark yellow to gray brown, vewet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse sand, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very moist to wet, fine to coarse subrounded to subangular gravels, very m	, maint to						11111		-		-)———	5 70	235
70-75 Run 14 Box 5 Run 14 Box 5 Run 14 Box 5 Run 15 Box 15 Bo	ravels, well	to subangular gr	arse subrounded	nd, fine to co	to coarse sa	wet,	000					-		
gravels, very moist to wet, fine to coarse sand, fine to coarse subrous subangular gravels, well graded, contact @73.5' becomes chocolate clay, thinly laminated, with trace gravels below laminations @73.9' to 75': No Recovery @75' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand @78' to 78.3': Sandy GRAVEL (GP), dark yellow to gray brown, mois assemblage of gravels and rock fragments, well graded @78.3' to 80': No Recovery	ravels	to subangular gr	arse subrounded	nd, fine to co	to coarse sa	\wet,						-		
230 75 Run 15 Box 5 Run 15 Box 5 @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78.3': Sandy GRAVEL (GP), dark yellow to gray brown, mois assemblage of gravels and rock fragments, well graded @78.3' to 80': No Recovery	unded to	to coarse subrou comes chocolate	coarse sand, fine to ontact @73.5' bed	wet, fine to d ell graded, c	very moist to ular gravels, w	grave suba						70-75		
75-80 Run 15 Box 5 Run 15 Box 5 @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "Salt and sand" @78' to 78': SAND (SP), gray brown, wet, clean fine sand, "San				overy	to 75': No Red	@73	- X							
Box 5 @78' to 78.3': Sandy GRAVEL (GP), dark yellow to gray brown, mois assemblage of gravels and rock fragments, well graded @78.3' to 80': No Recovery	I Pepper"	sand, "Salt and	vn, wet, clean fine), gray brov	78': SAND (S							-	75	230
assemblage of gravels and rock fragments, well graded @78.3' to 80': No Recovery	int charti		7) dad	DAVEL (C)	70.05.0	075						75-80		
225 80	St, Chautic			and rock fr	lage of gravels	asse	× - X					_		
													80	225
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING														_
ARD		V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	2"-12" 12"-36" 36"-120"	CLOSE MOD CLOSE WIDE	OW ANGLE (5-35°) OIPPING (35-55°) OH ANGLE (55-85°)	HALLOW MODERA STEEP OF	5" 0"	2"-12 12"-36 36"-12	IN IUM CK	TH MED THI	FICULT	CRATCHES DIFFIC CRATCHES EASILY ROVES	- \$0 RD - \$0 - GI	D HAF

					ORI	= B(KI	NG LOG			PAGE 5 OF 7
PROJECT	_	Rodeo Sc Farrer, &	hool & Burrill,	LLP							JOB NO.: 603367-00
CONTRAC		Martini	Drilling	Corpora							PAGE NO: 5 of 7
QUIPME			E-75, Con					ORIENTATION	1 (ORE BARREL	DATE START 2/13/2012
GROU	TAWDIN	S AFT	Di	BOT O		T OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 2/13/2012
DATE		OMP	WATER	CASING		OLE		HORIZONTAL	SIZE	251D	DRILLER: Martini
								INCLINED	Bit (Feet)		PREPARED BY: JMP
								BEARING	Barrel (Feet)	5	LOCATION: See Plate
						-, -	0	ANG. FROM VERT	Total (Feet)		
ELEVAT CORE D	EPTH	DEPTI RANG	H SAM	PLE SER	% RQD	GRAPHIC	may	Soil Description applies of differ at other locations a	only to a location and may change w	with time. The description	time of drilling, Subsurface condit on is a simplification of the actual
-225	80-	(Feet)	2	1			litions encountered. Tran			ward fining sequence
	_							2014 20 01 0	ODAVEL (C	200	int annulus fina
		80-8	5 Run			000		32' to 82.6": Sandy wels, chaotic asse			own, moist, angular fine vels
	=							32.6' to 85': No Re			
—220 -	85—						gra	35' to 88.3': Contin y brown, very moi			andy GRAVEL (GP), dark
ž.	_	85-90) Run Box			000	@8	88 3' to 90': No Re	covery drille	r indicated that th	ne material was hard base
1000							on	drilling difficulty	30 t 0 t y , a		
-215	90—					Δ. Δ	sar	d, fine subrounde	d gravels, up	oward fining sequ	
		90-95	Run Box				@9	11' to 94.6': Silty C 12' and 93.8': Thinl 12.3': Gravel bed, t	y bedded gra	(SC), yellow brov avels	wn, moist, fine sand
						111111	കാ	4.6' to 95': No Red	roverv		
-210	95 —	95-100	Run Box					5' to 100': Silty Cla		(SM-SC), thinly be	edded gravels @96.2' an
-205 1	00										
_		DD1:===						TUDE AND AND E	100.000	PUEAD (FDACTURE	MEATHERING
HARD RD DD HARD	- KNIFE (CULT	V. THIN THIN MEDIUM THICK V. THICK	<pre><2 2" 12"- 36"-1 >12</pre>	2" 36" 20"	SHALLO MODEF STEEP	ITUDE AND ANGLE IORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-65°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2"-12" 12"-36" 36"-120" >120"	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE

					CC	RE	BC	PRI	NG LOG			BORING NO. PAGE 6 OF	7 CB-2
ROJECT:	EIR	odeo Sch	ool									FAGE 6 OF	
LIENT: E	_			LLP								JOB NO	603367-001
ONTRACTO		Martini I										PAGE NO : ELEVATION:	6 of 7 304.9 Feet
GROUNE					TO (Fee				ORIENTATION	С	ORE BARREL	DATE START:	
	_	SAFT	VATER		OF	BOT	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	
DATE	CC	OMP V	VATER	CAS	SING	HC	LE		HORIZONTAL	SIZE	251D	DRILLER:	Martini
				_					INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY	See Plate 1
							_	0	ANG. FROM VERT	Total (Feet)			
ELEVATIO	AI 2	CORE	1		≿		<u>0</u>		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEF (Feet)		DEPTH RANGE (Feet)	NUM		RECOVERY	Rab	GRAPHIC	may	Soil Description applies or differ at other locations ar litions encountered. Trans	d may change w	ith time. The descripti	on is a simplification of	surface conditions of the actual
-205 10	00 —								100' to 100.7': Grav			n, wet, fine san	d, fine to
	_		1						100.7' to 103': CLA			own	
	_												
		100-10	Run	1				1					
			00	^′			11111	0	103' to 103.4': Grav	elly SAND (SP) dark vellow	brown moist f	ine sand fine
			1					to	medium subangula	r gravels			Januar mile
								1	103.4' to 105': No F				
-200 10	05-				-		11111	<u></u>	105' to 111': Gravel	bed underla	ain by CLAY (CL), dark reddish b	orown, moist
								iso	lated blebs of olive	gray			
	-								106.2': Thin bed of	fine to medi	um grained sand	I with MnO ₂ lam	inations
								00	107': gley banding 108.2' to 108.6': he:	avv MnO ₂ ba	anding		
	100	ŀ						1		, <u>-</u> 2 = 1	ū		
		105-110	Run					1					
	-		50/					3					
	-							1					
								3					
195 11	0-		+	-+				@1	10': becomes dark	chocolate t	orown, oxidation-	reduction bandi	ng, gleyed
	-							@1	11' to 114': Grades	s to Sandy C	CLAY (CL), dark	yellow brown, m	noist, some
								fine	e angular gravels b	etween 111'	to 112.8', speck	s of CaCO ₃ bet	ween 113' to
	-		D	22				114	¹', ⊦13.2': Rounded fin	e gravel			
		110-115	Run					2	13.2 . Nounded IIII	c graver			
	-							1					
								1					
	-							@1	14' to 115.6': Silty	Clayey SAN	ID (SM-SC), dar	k yellow brown t	o brown,
									ist, fine sand				
190 11	5			_				1					
								@1	15.6' to 116.3': Gra	des to CLA	Y (CL), dark vell	ow brown to oliv	ve brown.
	=							inc	rease in olive color	with depth.	moist, some oxid	dation between	115.6' to
								116	3.3', some specks of 16.7': Abundant Co	of CaCO ₃ be	tween 116.3' to	117.5', color cha	ange to gree
	=		Run	23				ma		acca as till	. Honzontar tayer	o, paleo nonzoi	., 1 0100301,
		115-120	Box					@1	17.8' to 120': Silty	CLAY (CL),	color grades to	grey brown, mo	ist, gleyed,
	_							sor	ne slight oxidation	and specks	or CaCO ₃ scatte	red gravels, pal	eosol, mari
								1					
185 120	0+												
FIEL	D HAF	RDNESS			BEDI	DING		_	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
		CAN'T SCRAT		V. TI		<2' 2"-1;		SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V SLIGHT	
HARD -		CHES EASILY		MED	IUM	12"-3 36"-12	6"	MODE	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD. CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	CARVE			V. TH		>120			VERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V, SEVERE	
												COMPLETE	

				C	OR	E BC	RII	NG LOG			BORING NO. PAGE 7 OF 7	CB-2
PROJECT	EIR	odeo Scho	ool									
CLIENT	Hill, F	arrer, &	Burrill, I	LLP								603367-001
CONTRAC	TOR:	Martini D	rilling (corporat	ion							7 of 7 304.9 Feet
	7.5	CME-						ODICHTATION		ORE BARREL		2/13/2012
GROU	INDWATE		DE	PTH TO (OT. OF	х	ORIENTATION VERTICAL	TYPE	Split Sleeve		2/13/2012
DATE		MP V	VATER	CASINO		HOLE	^	HORIZONTAL	SIZE	2.5 I.D.		Martini
	-	,,,,,						INCLINED	Bit (Feet)		PREPARED BY:	
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG FROM VERT	Total (Feet)			
ELEVATORE I	DEPTH	DEPTH RANGE	SAMI	SEE SEE	%	GRAPHIC	may	FIE Soil Description applies or differ at other locations ar itions encountered. Trans	nly to a location of ad may change v	vith time. The description	me of drilling. Subsur	face condition he actual
— 185	120-	(Feet)		<u>~</u>		000		120' to 120.6': grav		son types may be gradual		
-	-	120-125	Run			000	@ of	120.6' to 123': Blue CaCO ₃ scattered g 120.6' to 121.6': he	green CLA	pt contact	L), moist, grey r	marl, spec
-	*						@	123': Grades to Silt	y SAND (SI	M), blue green, mo	ist to very moist	, fine san
2	-							24' to 124.8': CLA	•			
180	125				_		-\@	24.8' to 125': Silty	SAND (SM), blue green, mois	t, fine sand	
—175 —170	130—						dril	cavation backfilled ling. cess soil cuttings d site.	_			
F HARD		AN'T SCRAT		V. THIN		<2"		TITUDE AND ANGLE HORIZONTAL (0-57) WWW DE JOUNG ANGLE (5-35°)	JOINTS / V. CLOSE CLOSE	SHEAR / FRACTURE	WEATHERING FRESH V. SLIGHT	
IARD MOD HARD OFT SOFT	- SCRATO	CHES DIFFICI CHES EASILY S	ULT	THIN MEDIUM THICK V. THICK	1: 36	2"-12" 2"-36" "-120" -120"	MODE	DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	MOD. CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	1

				C	OR	= B(וואכ	NG LOG			PAGE 1 OF	CB-3
PROJECT:		odeo Scl		170							JOB NO.:	603367-001
CLIENT: CONTRACT			Burrill,		ion						PAGE NO.:	1 of 7
EQUIPMEN											ELEVATION:	292.4 Feet
	IDWATE			EPTH TO (ORIENTATION	C	ORE BARREL	DATE START:	2/10/2012
DATE	HRS	AFT	WATER	BOT, OF		T. OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
DATE	CO	MP	VVAILIN	CASING	F	IOLE		HORIZONTAL	SIZE	2.5 (D	DRILLER:	Martini
						_		INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY LOCATION:	See Plate 1
	-				-		0	ANG. FROM VERT.	Total (Feet)	3	EUCATION.	See Flate 1
	1	CORE			+	0	1			TION, REMARKS, AND	LIMITATIONS	
CORE DE	EPTH	DEPTI	H SAM E NUM		% g	GRAPHIC	The may	Soil Description applies o differ at other locations a itions encountered. Tran	nly to a location	of the exploration at the vith time. The description	time of drilling. Subston is a simplification of	urface conditio f the actual
-292	0-	(Feet)		- 2	+			Surface: 3" Asphal		son types may be gradu	ai,	
							7,@0).33': 2" Aggregate	base			
	8	1-2	SB	1-1			@().4': Artificial Fill, U iyey SILT (ML), br	<u>Indocument</u> own, slightly	moist		
	_											
÷	_											
—287	5						l e	5.5' to 6.5': Sandy	GRAVEL (C	P) light brown d	rv	
ū	-					000	4					
								.5': Modern and H	olocene All	uvium in Historic	al Channel of N	loreno Cre
		5-10	Rur	11			(Qv	<u>v):</u> yey SILT (ML), da	rk brown eli	ahtly moist some	e coarse gravels	and asph
		5-10	Вох	(1				'.5' to 10': No Reco		J. A.J. I. IOIOL, SOITE	Julius gravois	
- 282	10-											
= 202	-						@1 ang	0' to 15': SILT to 0 jular to subangulai	Clayey SILT gravels thro	(ML), dark brown oughout, trace as	, slightly moist, phalt fragments	few fine
	2-	10-15	Run Box									
: 	15											
-277	-		Run	3			Silt	5': <u>Pleistocene Al</u> y Clayey SAND wi htly moist, fine sub	th Gravels (SP-SC), dark red	dish/yellowish bi	
	_	15-20	Box				@1	9.2' to 20.7': SANI) with some	Clay (SC) dark	eddish brown	lightly moi
-272 2	20-							9.2 to 20.7" SAND noist, fine sand	VIIII SOME	olay (SO), dark i	eddian blown, S	ingility IIIUI
	LD HARI				DDING			ITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
RD - D HARD - FT -	SCRATC	AN'T SCRA HES DIFFIO HES EASIL	CULT	V. THIN THIN MEDIUM THICK V. THICK	2"- 12"- 36"- >1:	12" :36" 120"	SHALLO MODER STEEP	IORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

					COF	₹E	BC	PRI	NG LOG			PAGE 2 OF	CB-3
PROJECT CLIENT: CONTRAC	Hill, I	Martin	& Burrill, ii Drilling	Corpo								JOB NO : PAGE NO :	603367-001 2 of 7 292.4 Feet
			1E-75, Co						ORIENTATION		ORE BARREL	DATE START:	
GROL	JNDWAT	SAFT		BOT	O (Feet)	BOT	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	
DATE		OMP	WATER	CAS		HOL		,,	HORIZONTAL	SIZE	251D	DRILLER:	Martini
_	-	Olvii		0,10	,,,,,		-		INCLINED	Bit (Feet)		PREPARED BY	': JMP
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
				-				0	ANG. FROM VERT.	Total (Feet)			
ELEVA"	TION &	COR			¥		₽		FIE		TION, REMARKS, AND	LIMITATIONS	
CORE I		RANC (Fee	GE NUM	MPLE MBER	RECOVERY	RQD	GRAPHIC	may	Soil Description applies or differ at other locations ar itions encountered Trans	nd may change v	with time. The description	n is a simplification of	
272	20 —												
-	4.5	20-2	, n	n 4				to	20.7' to 22.6': Grad moist with clay, pal	es to Sandy eosol, mode	r SILT (ML), dark i erate blocky struc	reddish brown, ture, well devel	slightly mo oped to 26
			Bo	x 2				@2	22.6' to 27': Grades	to CLAY (C	CL), olive brown to	dark yellowish	brown
								hla	ck slate and siltsto	ne, modera	angulai to angula te blocky structure	e, minor alevina	alona soil
_									es, paleosol	,	is sissify offactors	_,	,
		1						@2	27' to 27.5': Grades	to Silty CL	AY (CL)		
25525								@2	27.5' to 28.3': Grad	es to Sandy	CLAY (CL)		
—267	25—							3					
					1			7					
- 0.	-	-						1					
		L						1					
20	-					1		3					
	-] .	. Ru	n 5		l		1					
		25-3		x 2		İ		3					
-	-	-		-		1		1					
						Š	\$\$\\X	രാ	8.3' to 33.7': Claye	v Sandv GF	RAVEL (GC) dark	gravish brown	moist to
						ŀ	48X8)	ver	y moist, angular fin	e to coarse	black slate grave	ds	,
		1	1		1	-	4/8	1 .01	, ungului III		5.0.5 9.000	-	
		1				E	SS/X	1					
-262	30 —		_	-+	_	-	4XX9)						
					4	Ē	U/8)	1					
						Ę	SSX.						
	7	1				£	488						
		1			1	É	W/8	1					
	-	1				ŧ	788 K	1					
		30-3	₅ Rui			P	488						
		55-5	Box	(2		5	17/8	1					
	-	1				E	TO SO						
		1				ķ	11/4						
	-	-				E		Ple	istocene Alluvium	of Benedic	t Canyon Wash (E	SCVV ₂):	00000
						ſ			3.7' to 34.2': Silty (
-257	35						,,,,,,	faci		nate graves	s, raieusui, bluck	, structure, gie	ou on hea
201	OU.					E		1	4.2' to 35': No Rec	overv			
						E		1			\ hard dock valle	owieh brown w	anı moiet
		1				1			5' to 39': Silty sand e very fine sand, o				
									cky to hackly struct				
	_				1	E			aces, moderate ar			-, 5.0,000 at pa	3
		35-40	Rur			E		5411	,				
	, .	33-40	Box	3	- 1	E							
	-					E							
					- 1	8							
	2=					E		- A	01 to 431. Orador to	Candy Ol 4	1V (CI) dad =====	dieh brown wa-	v moiet ve
				Ť		E		@3	9' to 43': Grades to sand, few fine sub	oandy CLA	nt (UL), dark redu	usii biowii, ver	y moist, ve I q'
-252	40					_		iiie	sand, lew line Sub	angulai yia	veis, isolateu siits	stolle clast @4	1.3
EJZ	40												
		RDNESS	ATCH	V. TH	BEDDIN	G <2"			ITUDE AND ANGLE IORIZONTAL (0-5°)	JOINTS / S	SHEAR / FRACTURE	WEATHERING FRESH	
HARD ARD	- SCRAT	CAN'T SCR CHÉS DIFF	ICULT	THIN	1	2"-12"		SHALLO	W OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V, SLIGHT	
DD_HARD	- SCRAT	CHES EASI	ILY	MEDIL		12"-36' 16"-120			RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD, CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	- CPOVE	-26											
SOFT	- GROVE - CARVE			V. THE		>120"			/ERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V. SEVERE	

				(OR	EBC	JKI	NG LOG			PAGE 3 OF 7
PROJECT CLIENT: CONTRAC	Hill, F	odeo Sch arrer, & Martini l	Burrill, 1		tion						JOB NO.: 603367-001 PAGE NO.: 3 of 7
EQUIPME			-75, Con								ELEVATION: 292.4 Feet
GROU	NDWATE	R:	DE	PTH TO				ORIENTATION		ORE BARREL	DATE START: 2/10/2012
DATE	1	S AFT \	NATER	BOT C	- 1	OT OF	X	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 2/10/2012
	CC	OMP .		CASIN	G H	HOLE	-	HORIZONTAL	SIZE	2.5 I.D.	DRILLER: Martini
					_		-	INCLINED	Bit (Feet)	-	PREPARED BY: JMP
					_		-	BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
				Ex	ᅩ		0	ANG. FROM VERT.	Total (Feet)		I I I I I I I I I I I I I I I I I I I
CORE D	EPTH	CORE DEPTH RANGE (Feet)		PLE BER	% Sob	GRAPHIC	The may cond	Soil Description applies or	lly to a location of d may change v	vith time. The description	time of drilling. Subsurface condition is a simplification of the actual
252 	40	40-45	Rur Box			.].].	. sai	nd, fine sand-sized cky facture, minor	siltstone wit gleying alon	th subrounded sla g soil faces	n to reddish brown, fine aty pebbles, poorly develo
—247	45						· yel	14' to 45': Grades of lowish brown, wet, 15' to 45.8': No Rec	fine to coar	pward fining sequese sand	uence of SAND (SP), dark
							(U)	TO TO TO O . IND REC	overy		
_	_					* 3a)	@4	15.8' to 46.4': SANI	(SP), dark	yellowish brown,	wet, fine to coarse sand
	9					332	0	16 4' to 40 3': Grad	e to Sandy	Clavey GPAVEL	(GC), dark grayish brown
3 3	=	45-50	Run Box	-				k reddish brown, v vels	ery moist to	wet, fine to coars	se subangular black slate
242	50						@4	istocene Cheviot I 19.3' to 50.9': Grade fine gravels through	es to Sandy	CLAY (CL), dark	reddish brown, very mois nding, gleyed
_							1	0.01.01- 1- 0.5	ND (CC)		
							1	0.9': Grades to SA			
	-	50-55	Run Box			000	COS	erse angular to sub	angular grav	vels	rk reddish brown, wet, fine
			1			ivi		i3' to 53.3': Thin lay			P)
-237	55					000		3.3' to 55': Sandy		iP)	
305A	3500						@5	5' to 55.8': No Rec	overy		
s n	-	55-60	Run	- 1			@5	5.8' to 57.6': SANE) (SP), dark	yellow brown, we	t, fine to medium sand
S		55-50	Box	4		000	@5	7.6' to 58.1': Sand	GRAVEL ((GP), dark gray bi	rown, wet, fine to coarse
Name:	-					0000	@5 incr	d, fine subangular 8.1' to 60': Clayey ease in gravel with	Sandy GRA	VEL (GP), dark y '	ellow brown, very moist,
-232	60					T					
-7.5			L		1						
	ELD HAF	_			EDDING			ITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
. HARD ARD OD. HARD OFT SOFT	- SCRATO		ULT	V THIN THIN MEDIUM THICK V THICK	2"- 12 " 36"-	:2" -12" '-36" -120" 20"	MODE! STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<pre>2" 2"-12" 12"-36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE

PROJECT EI Rodeo School JOB NO: PAGE NO: ELEVATION: Martini Drilling Corporation COURPMENT USED DATE MS AFT COMP WATER BOT OF BOT OF BOT OF BOT OF BEARING. ACASING HOLE LEVATION A CORP BEARING CORP BEAR	
PAGE NO.	603367-001
APT	4 of 7
BOT OF BOT OF BOT OF HOLE SOT OF HOLE SOT OF HOLE SOT OF HOLE HORIZONTAL SIZE Spil Seeve Date Philish: Dirith (Feet) Sot OF	292.4 Feet
DATE COMP WATER CASING HOLE HORIZONTAL SIZE 2.5.1.D PIRLLER. SILE COMP COMP CASING HOLE NICLINED BIL (Feet) HORIZONTAL BILE SILE CASING Barnet (Feet) PREPARED BY LOCATION COATION COA	
REPARTED BY COATION	Martini
ELEVATION & CORE DEPTH RANGE (Feet) SAMPLE NUMBER (Feet) SAMPLE RANGE (Feet) SAMPLE NUMBER RANGE (Feet) SAMPLE RANGE RAN	
ELEVATION & CORE DEPTH RANGE (Feet) SAMPLE REPARATION & DEPTH REP	See Plate 1
ELEVATION & CORE DEPTH RANGE (Feet) RUMBER (Feet) BETH RANGE (Feet) CORE DEPTH RANGE (Feet) BUMBER (Feet) CORE DEPTH RANGE (Feet) CORE DEPTH	
860' to 60.7': No Recovery @60.7' to 64.3': SAND (SP), dark yellow brown, wet, fine sand @64.3' to 65': Sandy GRAVEL (GP), dark yellow brown to dark gr. moist, subangular black slate gravels @65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sa @66.9' to 67.3': Clayey Gravelly SAND (SC) @67.3' to 67.6': Sitty Clayey SAND (SM-SC) @67.6': CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ 70' ### Windows And Sand Sand Sand Sand Sand Sand Sand Sa	
@60' to 60.7': No Recovery @60.7' to 64.3': SAND (SP), dark yellow brown, wet, fine sand @64.3' to 65': Sandy GRAVEL (GP), dark yellow brown to dark grinoist, subangular black slate gravels @65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sa @66.9' to 67.3': Clayey Gravelly SAND (SC) @67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with shown, clayey, thin bed	urface conditio f the actual
60-65 Run 12 Box 4 65-70 Run 13 Box 5 Run 14 Box 5	
60-65 Run 12 Box 4 65-70 Run 13 Box 5 Run 14 Box 5	
Box 4	
Box 4	
Box 4	
Box 4 ———————————————————————————————————	
moist, subangular black slate gravels @65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sa @66.9' to 67.3': Clayey Gravelly SAND (SC) @67.3' to 67.6': Silty Clayey SAND (SM-SC) @67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ ### Windle Structure of the color	
moist, subangular black slate gravels @65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sa @66.9' to 67.3': Clayey Gravelly SAND (SC) @67.3' to 67.6': Silty Clayey SAND (SM-SC) @67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ ### Windle Structure of the color	
moist, subangular black slate gravels @65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sa @66.9' to 67.3': Clayey Gravelly SAND (SC) @67.3' to 67.6': Silty Clayey SAND (SM-SC) @67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ ### Windle Structure of the color	
moist, subangular black slate gravels @65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sa @66.9' to 67.3': Clayey Gravelly SAND (SC) @67.3' to 67.6': Silty Clayey SAND (SM-SC) @67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ ### Windle Structure of the color	nu beeree
@65' to 66.3': No Recovery @66.3' to 66.9': SAND (SP), reddish brown, wet, fine to coarse sate of the coars	ay prown,
Run 13 Box 5 Run 13 Box 5 Run 13 Box 5 Run 14 Box 5 Ru	
Run 13 Box 5 Run 14 Box 72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with a decelor banded, with a decelor banded ban	
Run 13 Box 5 Run 14 Box 72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with a decelor banded, with a decelor banded ban	
@67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone siltstone clasts, oxidation-reduction banded, with siltstone clasts oxidation-reduction ba	nd
@67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone siltstone clasts, oxidation-reduction banded, with siltstone clasts oxidation-reduction ba	
@67.6': CLAY to Sandy CLAY (CL), mottled olive brown and dark brown, well oxidized, oxidation-reduction banding, gleyed, few spe @68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone siltstone clasts, oxidation-reduction banded, with siltstone clasts oxidation-reduction ba	
Drown, well oxidized, oxidation-reduction banding, gleyed, few specified (a) 68' to 68.5': Zone of increased sand @68' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @70-75 Run 14 Box 5 @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone clasts, oxidation-reduction banded,	yellowish
@68' to 68.5': Zone of increased sand @68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ @70-75 Run 14 Box 5 @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone clasts increased sand, isolated siltstone clasts @ @72.8': paleosol, moderate soil development, blocky structure, daybrown, clayey, thin bed	cs of MnO
@68.6' to 69.1': Color grades to dark brown @70' to 72.4': Zone of increased sand, isolated siltstone clasts @ 70-75 Run 14 Box 5 @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone clasts of the siltstone clasts, oxidation-reduction banded, with siltstone clasts.	
@70' to 72.4': Zone of increased sand, isolated siltstone clasts @ 70-75 Run 14 Box 5 @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with siltstone clasts @72.8': paleosol, moderate soil development, blocky structure, daybrown, clayey, thin bed	
Run 14 Box 5 @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with silting minutes and silting clasts and silting clasts are clasts and silting clasts.	
Run 14 Box 5 @72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with silting minutes and silting clasts and silting clasts are clasts and silting clasts.	72 4'
@72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with a MnO ₂ laminations @72.8': paleosol, moderate soil development, blocky structure, day brown, clayey, thin bed	1
@72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with a MnO ₂ laminations @72.8': paleosol, moderate soil development, blocky structure, day brown, clayey, thin bed	
@72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with a MnO ₂ laminations @72.8': paleosol, moderate soil development, blocky structure, day brown, clayey, thin bed	
@72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with the MnO ₂ laminations @72.8': paleosol, moderate soil development, blocky structure, day brown, clayey, thin bed	
@72.4' to 72.6': siltstone clasts, oxidation-reduction banded, with the MnO ₂ laminations @72.8': paleosol, moderate soil development, blocky structure, day brown, clayey, thin bed	
MnO₂ laminations @72.8': paleosol, moderate soil development, blocky structure, da brown, clayey, thin bed	gley and
brown, clayey, thin bed	
	rk reddish
047 75 1 1/1///4	
-217 75	
@76.0' to 77.8': Grades to Gravelly CLAY (CL), dark reddish brow	n, moist.
scattered fine angular to subangular gravels, few siltstone clasts	107.
@76.7': coarse sized siltstone clasts	
75-80 Run 15	
Box 5 @77.8' to 87.5': Grades to Sandy CLAY (CL), dark yellowish to red	dish brow
moist, some angular fine gravels, scattered fine sand	
@81.1' to 83': Increase in gravel	
@83' to 90.3': paleosol, reddish brown to orange brown, sandy silt	y clay with
fine rounded gravel	
-212 80 /////	
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING	
HARD - KNIFE CAN'T SCRATCH V, THIN <2" HORIZONTAL (0-5") V, CLOSE <2" FRESH	4
DD HADD - SCRATCHES FASILY MEDIUM 12"-36" MODERATELY DIPPING (35-55") MOD CLOSE 12"-36" SLIGHT	
OFT - GROVES THICK 36"-120" STEEP OR HIGH ANGLE (55-85") WIDE 36"-120" MODERATE SOFT - CARVES V. THICK >120" VERTICAL (85-90") V. WIDE >120" MOD SEVERE	S
SOFT - CARVES V. TRICK 7120 VERTICAL (03-90) V. SEVERE V. SEVERE COMPLETE Fe = Iron Oxide Mn = Manganese Oxide COMPLETE	

PROJEC	r Ell	Rodeo Se	chool			יתנ	BU	וואל	NG LOG			PAGE 5 OF	7
CLIENT	Hill,	Farrer,	& Burrill,									JOB NO : PAGE NO :	603367-001 5 of 7
CONTRA			i Drilling IE-75, Cor								-	ELEVATION:	292.4 Feet
	UNDWAT			EPTH 1					ORIENTATION	C	ORE BARREL	DATE START:	2/10/2012
DATE	HE	RS AFT	WATER		OF		T, OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/10/2012
DATE	. c	OMP	VWATER	CAS	ING	Н	OLE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
	_	-		_					INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY	See Plate 1
	_			_	-	-		0	ANG. FROM VERT.	Total (Feet)	-	- Lookington	00011001
EL ELLA	TON	COR	E	-	≿	T	_ o			LD CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE	TION & DEPTH eet)	DEPT RANG (Fee	SE NUM	IPLE IBER	RECOVERY %	Rap	GRAPHIC	may	Soil Description applies o differ at other locations a tions encountered. Tran	nd may change v	vith time. The description	on is a simplification o	urface conditior f the actual
212	85—	80-8	Bu	x 6					7.5' to 89.5': CLA' derate blocky struc		reddish brown, m	ioist, few coarse	e sands,
							<i>WW.</i>	1 00	9.5' to 90.3': Grav	ally CLAV (C	1) dark reddish	brown very mo	ist angular
-202	90-		_			_	900		sk slate gravels	City OLAT (C	, dant reduisir	D.OMII, VOIY IIIO	or, angulai
		90-9	5 Run Box					@9 sub	0.3' to 92.8': Sand rounded to angula 2.8' to 93.6': Sand	y CLAY (CL	dium to coarse sa	and	
							WW	san	d, few fine gravels				
	200	1					1////	@9	3.6' to 95.2': CLA	(CL), dark	yellow brown, mo	ist, few fine gra	vels
							11111	1					
—197 -	95—	95-10	0 Run Box					con	5.2' to 99': Grades centrated gravels ttered fine gravels	between 95.	4' to 95.8' and 96	L), dark yellow bile.8' to 97', other	orown, moi wise
							BILL						
	<u></u>							@9 fine	9' to 101.1': Grade sand, few fine and	s to Clayey gular gravel	Sandy SILT (ML)	, dark yellow br	own, moist,
-192	100-						111.22						
				L			Ц,	L	THE AND AND	ION:TO:	CHEAD LEDACTURE	T 14/5 A T 11/5 C 11/5 C	
		RDNESS	PATCH	VT	BEDD	_			TUDE AND ANGLE IORIZONTAL (0-5°)	JOINTS /:	SHEAR / FRACTURE	WEATHERING FRESH	
HARD ARD OD HARD OFT SOFT	- SCRAT		FICULT	V THI MEDII THIC V THI	N UM CK	<2"-1 12"-3 36"-1 >12'	2" 36" 20"	MODER STEEP	IORIZON I AL (0-5") W OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	CLOSE CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD, SEVERE V. SEVERE	

					CC	RE	ВС	RII	NG LOG			BORING NO. PAGE 6 OF 7	CB-3
PROJECT	ELI	Rodeo S	choo									FAGE 0 OF /	
				rrill, LLP								1	603367-001
		Martin	ıi Dri	illing Corp	oration								6 of 7
QUIPMEN		7770	1E-75	5, Continue					ODIENTATION		ORE BARREL		292.4 Feet 2/10/2012
GROUN					TO (Fee	et): BOT	OE	Х	ORIENTATION VERTICAL	TYPE	Split Sleeve		2/10/2012
DATE		S AFT OMP	WA	TFR I	SING	НО		^	HORIZONTAL	SIZE	251D	-	Martini
	+	CIVIF		U/A	SiNO	110	, LL		INCLINED	Bit (Feet)		PREPARED BY:	JMP
	+								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT	Total (Feet)			
CI EVAT	ION 8	COI	₹E		≿		2		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DE	EPTH	DEP RAN (Fee	GE	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC LOG	may	Soil Description applies or differ at other locations an itions encountered. Trans	d may change v	vith time. The descriptio	n is a simplification of t	face conditions he actual
-192	100-	1 (10.	,				U1.22						
		1						9					
]					900	@1	101.1' to 102.1': Sa	ndy GRAVE	L (GP), dark yello	ow brown, wet, fi	ne to coarse
		1					100°	sar	nds, fine to coarse	gravels, abı	ındant black slaty	gravels	
	-	1		Run 20			nin	@1	102.1' to 103.8': CL	AY (CL), da	ırk vellow brown, ı	moist	
		100-	105	Box 7	1					, ,	,		
	-	+			1		V////	1					
		1						1					
	2	-	- 1				90	@1	103.8' to 104.3': Sa	ndy GRAVE	L (GP), dark gray	to yellow brown	, wet,
		1			1		778	COE	arse gravels	-			
107	105							@1	04.3' to 105': Sand	ly SILT (ML), weak soil devel	opment, dark ye	low brown,
-187 <i>*</i>	105 —							mo	ist, very fine sand				
		1						@1	05' to 106.1': No R	ecovery			
	-	4						0.4	100 41 to 407 01 Ca	adv CILT /N	II) with interlever	ad grovole, dark	vellow
							1111		06.1' to 107.8': Sa	nay Sili (iv	iL) with interlayer	eu graveis, uaik	yellow
	_	1						bro	WIL				
		105-1		Run 21									
		105-	וייי	Box 7				-	07.014.400.01.1-4		ODAVELC //	CD) and CLAVS	(CL) dark
	-	1					1000		07.8' to 109.3': Intellow brown, wet, fine				(CL), dark
							5 1	yeı	low prown, wet, line	e to coarse	subiounided grave	115	
	-	-					000						
							17/11	@1	09.3' to 110': CLA'	Y (CL), dark	yellow brown, mo	oist	
-182 1	110							1			<u> </u>		
102	100							@1	10' to 111.3': No R	ecovery			
		1											
									11.3' to 112': SAN	D to Gravell	ly SAND (SP), dai	rk yellow brown,	wet, fine
	-	-					XXXX		angular gravels		17271		
		110-1	15	Run 22			1		12' to 112.5': CLA			tell. Proprinted	
	_]	. •	Box 8			11/1/		12.5' to 112.7': GR				
							(1XII)		12.7' to 115': Claye	ey SAND to	Sandy CLAY (SC	C-CL), dark yellov	wish brown,
								mo	ist, fine sand				
	-	1					(/X//	1					
								1					
177 1	115	_	-		_		V/X//	0.1	AEL to AAC! No Do	201/05/			
								@1	15' to 116': No Red	Lovery			
	Æ												
									16' to 116.3': Claye				
							1/1/1/		16.3' to 120': CLA'			ellow brown, mo	oist
	-			Dun 22				@1	16.8' to 117.2': Gra	avelly SAND	(SP) layer		
		115-1	20	Run 23 Box 8			(/)	1					
	-			DOX 0			(/X//	1					
	-						(/X///	1					
								1					
172 1	20		_				11811						
	ELD UA	BONE C			BEDO	OING		ΔΤΤ	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	_
FIE		CAN'T SC		1 V.	THIN	VING <2"	-		HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
IAPD				т П	HIN	2"-12 12"-3	2"	SHALLO	OW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD. CLOSE	2"-12" 12"-36"	V SLIGHT SLIGHT	
	- SCRA		OH Y				io I	NODE	MALEET DIFFING (33-33)	THOU OLUGE			
RD D. HARD -T	- SCRAT	TCHES EA ES	SILY		HCK	36"-12	20"	STEEP	OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
D HARD T	- SCRAT	TCHES EA ES	SILY	T⊦			20"	STEEP	OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"		

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 7 OF	CB-3
PROJEC		odeo Schoo	_	T.D.							JOB NO.:	603367-001
CLIENT		arrer, & B Martini Dr			1						PAGE NO:	7 of 7
	ENT USED	777 - 1777		inuous Co							ELEVATION:	292.4 Feet
	UNDWATE		DEI	PTH TO (Fe				ORIENTATION		ORE BARREL	DATE START:	
DATE		AFT WA	ATER	BOT OF		OF	Х	VERTICAL HORIZONTAL	TYPE SIZE	Split Sleeve 2.5 l.D.	DATE FINISH: DRILLER:	2/10/2012 Martini
	- 00	MP T	-	CASING	но	,LE		INCLINED	Bit (Feet)	2,31,6,	PREPARED BY	
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT.	Total (Feet)			
ELEVA CORE		CORE DEPTH RANGE	SAMP NUMB	1 - 0	RQD	GRAPHIC LOG	may	FIE Soil Description applies o differ at other locations ar itions encountered. Tran	nly to a location of nd may change v	rith time. The description	time of drilling Subs	urface conditio f the actual
 172	120	(Feet)		œ				120' to 120.5': Grav				
-	-	120-125	Run : Box					120.5' to 125': No F		(a.)) a. (b.)		
— 167 —	125						Per 51. 107 Exc dril Exc	al depth of boring: ched groundwater 5'-53', 55.8'-58.1', 7.8'-109.3', 111.3'- cavation backfilled ling. cess soil cuttings d	encountere 60'-64,3', 66 12', 112.5'- with cuttings	:.3'-66.9', 90.3'-92 112.7' bgs s and patched wit	2.8', 103.8'-104. th asphalt upon	3', completior
— 157	135											
	- SCRATC	AN'T SCRATCH HES DIFFICUL HES EASILY	Т	V. THIN THIN MEDIUM THICK V. THICK	2"-12 2"-12 12"-33 36"-12 >120	3" 0"	HALLO MODEF STEEP	ITUDE AND ANGLE HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) KATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	JOINTS / S V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2"-12" 12"-36" 36"-120" >120"	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

	-	D • •			CC	DRE	BC	DRII	NG LOG			BORING NO. PAGE 1 OF	7 CB-4
PROJECT	- Annual Contract of the Contr	Rodeo Se Farrer	chool & Burrill,	LLP	-		_					JOB NO :	603367-001
CONTRA	CTOR:	Martin	Drilling	Corp								PAGE NO.:	1 of 7
			1E-75, Co									ELEVATION:	288.4 Feet
GRO	UNDWA.				TO (Fe		T. OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START: DATE FINISH:	2/9/2012 2/9/2012
DATE	- 1	RS AFT	WATER		SING	1	OLE	^	HORIZONTAL	SIZE	251D	DRILLER:	Martini
		ZOWN		1 3/1	01110	111	JLL		INCLINED	Bit (Feet)	2,0	PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG. FROM VERT.	Total (Feet)			
ELEVA CORE (Fe	DEPTH	COR DEPT RANG (Fee	TH SAM	APLE ABER	RECOVERY	RQD	GRAPHIC LOG	may	FIE Soil Description applies o differ at other locations an tions encountered. Tran	nly to a location on nd may change v	vith time. The description	time of drilling Subs	urface condition f the actual
-288	0-							ക	Surface: 4" Asphal	t concrete			
							200		0.33': 2" Aggregate				
= = = = = = = = = = = = = = = = = = = =								@Cla	0.5': Artificial Fill. yey SILT to Silty (to 2': some conc	Undocumen CLAY (ML-C	ted (Afu): L), brown, moist,	trace fine sand	
—283	5—							\Cla	.5'Holocene Alluv yey SILT to Silty C	LAY (ML-C	L), brown, moist		sand, few
8	14	-						fine	gravels				
		5-10	Ru					@7	to 10': Grades to	Silty CLAY	(CL), brown, mois	st, soft, scattere	d subangu
-278	-								black slate grave				
-276	-							sub	0' to 12.2': Grades rounded fine to co	arse black s	late gravels, fine	to medium san	d
		10-1	5 Rur Box					@1	2.2': Pleistocene / des to Silty CLAY	Alluvium of	Benedict Canyon	Wash (BCW ₁):	_
-273	15		B03					Gra	des to Silty CLAY	(CL), brown	, moist, few scatt	ered fine gravel	S,
		15-20) Rur Box						5.3': Thin GRAVEI thick	_ (GP) layer,	, angular fine to c	oarse black sla	te gravels,
-26P	20-												
-268	20												
-	IELD !!!	DDNESS	1-1		PEDO	DINC		A 7 T'	TUDE AND ANOLE	IOINTS / S	SHEAR / FRACTURE	MEATHERING	
HARD		RDNESS CAN'T SCR	ATCH	V. TI	BEDD	7ING <2'	-		TUDE AND ANGLE ORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING	
HARD RD DLHARD FT SOFT	- SCRAT	CHES DIFF CHES EASI ES	ICULT	V. TH MED THM V. TH	IN IUM CK	2"-1; 12"-3 36"-1; >120	2" 6" 20"	SHALLON MODER STEEP	ORIZONTAL (0-5-) W OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) DR HIGH ANGLE (55-85°) ERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V, SLIGHT SLIGHT SLIGHT MODERATE MOD. SEVERE V, SEVERE	*

				C	ORE	BC	RIN	NG LOG			BORING NO. PAGE 2 OF 7	CB-4
OJECT:	FIR	odeo Schoo	ol								I AGE 2 OF 1	
		arrer, & B		LP							1	367-001
NTRACT	ror	Martini Dı									PAGE NO: 2 of	
UIPMEN				inuous C	_			ODIENTATION		ORE BARREL		.4 Feet 2012
GROUN	DWATE		DEI	PTH TO (F BOT OF		r OF	х	ORIENTATION VERTICAL	TYPE	Split Sleeve		2012
DATE		MP W	ATER	CASING		DLE	^	HORIZONTAL	SIZE	2.5 I.D.	DRILLER: Man	
	+ 00	***		0,101110				INCLINED	Bit (Feet)		PREPARED BY: JMF	•
								BEARING	Barrel (Feet)	5	LOCATION: See	Plate 1
					1		0	ANG FROM VERT	Total (Feet)			
LEVATI	ON &	CORE		&		¥.,,				TION, REMARKS, AND		
CORE DE		DEPTH RANGE (Feet)	NUMB	1 < \	. G	GRAPHIC	l may o	Soil Description applies on differ at other locations an tions encountered. Trans	d may change v	ith time. The description	time of drilling. Subsurface n is a simplification of the a II.	conditions ctual
268	20-		Dun				@2 fine	subangular grave	ndy CLAY (; fine sand, few sca	
		20-25	Run Box				con	tinued fine gravels	scattered,	some clay	n, moist to very mois	
263	25							4.5' to 25.8'Sandy y fine sand	SILT to Silt	y SAND (SM-ML),	, brown, very moist	to wet,
	1					901	@2	5.8' to 27.5': Sand	gRAVEL	(GP), brownish gr	ay, slightly moist, fir	ne to
						100°	coa	rse subrounded to	subangular	gravels, coarse s	sand matrix	
						00]					
		25 20	Run	5		000	1					
		25-30	Вох	2			@2	7.5' to 30': No Rec	overy			
	:=											
258	30					000	@3 sub	0' to 31.5': Sandy (rounded black slat	GRAVEL (G e gravels, f	iP), moist, fine to ew siltstone clasts	coarse subangular t	to
						01111	@3	1.5'Pleistocene Al	luvium of B	enedict Canyon V	Wash (BCW ₂):	
	_		B	_		WAST.	Silty	CLAY (CL), brow	n to reddish	brown, moist, ho	mogeneous	
	=	30-35	Run Box				@3	2': Sandy CLAY (C	L), dark red	dieh brown fine s	SHIP SET COLORS IN THE SECURITION	
253	35						pale	cture, some fine se eosol	ubrounded :	ount of silica cem slaty gravel, gleye	sand with fine sand- lent, moderate block id along pedogenic moist, some fine gra	ky facies,
253	35	35-40	Run Box				pale @3 @3 sub	cture, some fine se eosol 5': Sandy CLAY (C	ubrounded : :L), brown to es to Gravel	ount of silica cem slaty gravel, gleye o reddish brown, r	sand with fine sand- lent, moderate block d along pedogenic	ky facies, avels
253	35	35-40	Run Box :				@3 @3 @3 sub @3	cture, some fine second 5': Sandy CLAY (C 5.5' to 38.1': Grade rounded fine grave	ubrounded s EL), brown to es to Gravel	ount of silica cem slaty gravel, gleye o reddish brown, r	sand with fine sand- lent, moderate block id along pedogenic moist, some fine gra	ky facies, avels
	35	35-40					@3 @3 @3 sub @3	cture, some fine sizesol 5': Sandy CLAY (C 5.5' to 38.1': Grade rounded fine grave 8': well graded	ubrounded s EL), brown to es to Gravel	ount of silica cem slaty gravel, gleye o reddish brown, r	sand with fine sand- lent, moderate block id along pedogenic moist, some fine gra	ky facies, avels
248	40	35-40 RDNESS		3	DDING <2		@3 @3 sub @3	cture, some fine sizesol 5': Sandy CLAY (C 5.5' to 38.1': Grade rounded fine grave 8': well graded	ubrounded sit.), brown to	ount of silica cem slaty gravel, gleye o reddish brown, r	sand with fine sand- lent, moderate block id along pedogenic moist, some fine gra	ky facies, avels

					CC	RE	BC	PAGE 3 OF 7
PROJECT		lodeo Sc		112				JOB NO.: 603367-001
			Burrill, Drilling		oration	i		PAGE NO. 3 of 7
			E-75, Con					ELEVATION: 288.4 Feet
GROU	NDWATE		DI		TO (Fee			ORIENTATION CORE BARREL DATE START: 2/9/2012 X VERTICAL TYPE Split Sleeve DATE FINISH: 2/9/2012
DATE		S AFT	WATER	ı	T, OF SING		OF OLE	X VERTICAL TYPE Split Sleeve DATE FINISH: 2/9/2012 HORIZONTAL SIZE 2.5 LD. DRILLER: Martini
	-	JIVIF		OAG	OII C		,,,,	INCLINED Bit (Feet) PREPARED BY JMP
	_							BEARING Barrel (Feet) 5 LOCATION: See Plate 1
								0 ANG, FROM VERT. Total (Feet)
ELEVAT	ION &	DEPT		PLE	ĘŖ	_	≌ೄ	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface condition
CORE D (Fee		RANG (Feet	E NUM		RECOVERY	RQD	GRAPHIC LOG	may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
—248	40 —						7777	@40' to 40.6': Gravelly SAND (SP), brown to reddish brown, very moist to well graded
7	+							@40.6' to 42.5': CLAY (CL), paleosol, brown to reddish brown, very moist, medium stiff, angular black slate gravels, well developed blocky fracture
-	S	40-4	5 Rui					C 40 St. 44 St. Ozeden to Conductible CLAY (CL) brown to raddish brown
	-		Box	к 3				@42.5' to 44.3': Grades to Sandy silty CLAY (CL), brown to reddish brown, moist to very moist, some angular black slate gravels @43.3' to 43.7': Very fine sand and clay laminations, trace siltstone sand-size
,	-							fragments, poorly developed soil, porous, 1-2 mm voids, minor gleying along sand laminations
243	45						11.	@44.3' to 44.9': Gravelly Clayey SAND (SC), brown, to grayish brown, very moist to moist, fine subrounded black slate gravels
	-							@44.9' to 45.8': Silty SAND (SM), brown to reddish brown, very moist, fine sand
								@45.8' to 46.2': Gradational zone of Clayey SILT (ML) @46.2' to 50': Grades to Silty fine sand (SM), moist, brown to reddish brown,
	_							2046.2' to 50': Grades to Sity fine sand (SM), moist, brown to reddish brown, zone of medium sand @47.8' to 48'
		45-50	Rur				111.1.	2010 01 1110414111 02.112
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		l						
	_							
-238	50 —	L .	1	m			1.1.1	The second secon
	-							'I @50' to 52.6': SAND with Gravel (SP), wet, brown, medium to coarse sand, ii
								subrounded gravels with few coarse gravels concentrated @52.6', upward
	_							@50' to 52.6': SAND with Gravel (SP), wet, brown, medium to coarse sand, in subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence
-	_							subrounded gravels with few coarse gravels concentrated @52.6', upward
<u>.</u>	_							subrounded gravels with few coarse gravels concentrated @52.6', upward
5	-	50-55	Run				m	subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence
<u>.</u>	-	50-58	Run					subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD):
	-	50-58						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence
5 5	-	50-55						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels
t s	-	50-55						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown
—233		50-55						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels
-233	-	50-55						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded
	-	50-55						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very mois
-233	-	50-55						subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded
-233	-	50-55	Вох	(4				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very mois to wet, fine sand, no gravels
-233	-	50-55 55-60	Run	11				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very mois to wet, fine sand, no gravels
-233	-		Box	11				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangu
-233	-		Run	11				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangua
-233	-		Run	11				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangu
-233	-		Run	11				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangu
-233 -228	-		Run	11				subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangua
-228	55	55-60	Run	11		DIAC		subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6':Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subanguing gravels @59.3' to 59.8'
— 228	55————————————————————————————————————	55-60 RDNESS	Run Box	111 (4	BEDI	<2		fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangu gravels @59.3' to 59.8' ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') V. CLOSE <2" FRESH
– 228 FI HARD ARD	55 — 60 — KNIFE SCREE	SECULO SECULO SECULO SECULO SECULO SECULO SECULO SECULO SECUE SECU	Run Box	111 (4 V.) Th			22"	Subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very mois to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangu gravels @59.3' to 59.8' ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') SHALLOW OR LOW ANGLE (6-35') MODE CLOSE 2''-12" SHALLOW OR LOW ANGLE (6-35') MODE CLOSE 2''-12" SLIGHT SLI
– 228 FI HARD ARD	55 — 60 — KNIFE SCREE	RDNESS CAN'T SOR CHES DIFF CHES EAS:	Run Box	V:1 (4	THIN HIN	<2 2"-1	2". "2". "36". 36".	subrounded gravels with few coarse gravels concentrated @52.6', upward fining sequence @52.6': Pleistocene Cheviot Hills Deposits (CHD): CLAY (CL), olive brown, moist, few scattered fine gravels @53.7': Color grades to dark reddish brown @54.5' to 55.8': Grades to Clayey Gravelly SAND (SP), reddish brown, wet, fine to coarse subrounded gravels, well graded @55.8' to 57': Grades to Silty SAND (SM), brown to reddish brown, very moist to wet, fine sand, no gravels @57' to 59.8': Grades to CLAY (CL), brown to reddish brown, moist, subangu gravels @59.3' to 59.8' ATTITUDE AND ANGLE HORIZONTAL (0-5') SHALLOW OR LOW ANGLE (6-35') V. CLOSE 2"-12" V. SLIGHT V. SLIGHT

						CC	RE	BC	PRII	NG LOG			BORING NO. PAGE 4 OF 7	CB-4		
ROJECT:	El R	Rodeo S	choo	ol .												
LIENT:	Hill, F	arrer,	& Bu	urrill, i									1	3367-001 of 7		
ONTRACT				illing (5, Con										8.4 Feet		
QUIPMEN' GROUN	1777	200	AE-7			TO (Fee				ORIENTATION	C	ORE BARREL		9/2012		
		SAFT	1444			T. OF	BOT OF HOLE		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 2/9/2012 DRILLER: Martini			
DATE	CC	OMP	VVA	ATER	CAS	SING				HORIZONTAL	SIZE	251D.				
										INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	PREPARED BY: JN LOCATION: Se	e Plate 1		
		_	_	_		-	_	_	0	ANG. FROM VERT	Total (Feet)		- LOCATION. GO	or late i		
		COI	RÉ	т '	-	<u> </u>	1	U	Ť			TION, REMARKS, AND I	LIMITATIONS			
CORE DEPTH (Feet)		DEP RAN (Fee	GE	SAM		RECOVERY	ag G	GRAPHIC LOG	mav	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.						
-228	60—	60-	65		un 12 ox 4				led soil	@59.8' to 60': Grades to Silty SAND to SAND (SP-SM), very moist, brown reddish brown, fine to medium sand @60' to 66.2': Clay to Sandy CLAY (CL), brown to reddish brown, moist to moist, some gravels @60' to 60.3' and @63.1' @61.6': thin olive gray clay laminations, gleyed along moderately develope soil facies @62.9': 2-3 inch thick gravel bed @64.6: Siltstone rock fragments, thin bed, 2-3 inches thick @66.2' to 67': Sandy CLAY (CL), brown, very moist, fine gravels, thin laye fine angular siltstone gravels @66.2'						
218	70	65-7	65-70		13 (5					@67' to 67.5': Grades to CLAY (CL), brown, very moist @67.5' to 70': Clay to Sandy CLAY (CL), brown, very moist, fine gravels scattered throughout @68.7' to 69,2': Dark red clay bed @70' to 73': Sandy GRAVELS to Gravelly SANDS (SP), grayish brown, wet,						
210		70-7	75	5 Run 14 5 Box 5					rou	inded fine to coarse	e black slate	e gravels				
	75								@7	@73' to 73.8': CLAY (CL), olive gray, moist, few fine angular black slate gravels						
213										73,8' to 76': Sandy (e subangular grave)	i': Sandy Gravelly CLAY (CL), olive gray to brown, moist, generally llar gravels					
								1								
208	-	75-80		Run 15 Box 5				@76' to 80': Sandy GRAVEL (GP), g gravels), grayish brown, s	subangular to subn	rounded		
200 (
	ELD UA	DDNICO			_	BEDI	ING		Δ	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING			
HARD - RD - D. HARD - FT -	SCRATCHES EASILY					2" 6" 20"	SHALLO MODE STEEP	HODE AND ANGLE HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE					

							. DC	<i>/</i> <i>/</i> <i> </i> <i> </i>	NG LOG			PAGE 5 OF	7	
PROJEC		Rodeo So		IIP								JOB NO :	603367-001	
CLIENT:			& Burrill, i Drilling		ration							PAGE NO:	5 of 7	
	The state of the s		E-75, Cor									ELEVATION:	288.4 Feet	
GRO	JNDWAT		D	ЕРТН Т					ORIENTATION		ORE BARREL	DATE START:		
DATE		RS AFT	WATER	ВОТ			r, OF	X	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012 Martini	
		OMP		CAS	ING	Н	DLE		HORIZONTAL INCLINED	SIZE Bit (Feet)	251D	DRILLER: PREPARED BY:		
	_			-	-				BEARING	Barrel (Feet)	5	LOCATION:		
								0	ANG. FROM VERT.	Total (Feet)				
FI FVA	TION &	COR			¥		≌	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS						
CORE DEPTH (Feet)		RANG (Fee	SE NUM	BER	RECOVERY	Rab	GRAPHIC	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface condition may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.						
— 208 -	80-								80' to 81.5': Upware arse to fine sand	d fining sequ	uence of SAND (S	SP), grayish brov	wn, wet, ve	
	-	80-8	S Rur Bo					@81.5' to 85': No Recovery						
—203 -	85—	85-9	0 Run Box					@8 sar	35' to 90': CLAY (C nds, homogeneous	L), paleosol , well develo	, reddish brown, r oped blocky struct	moist, few scatte ture, gleying alo	ered coars ng soil fac	
 198	90 —	90-98	0-95 Run Box				4 () 6 () 6 () 6 ()	mo	0' to 92.9': Sandy ist, thin gravel laye	r @91'		n to dark yellowi	ish brown,	
—193 -	95-							@9	@92.9' to 93.1': GRAVEL layer (GP) @93.1' to 95': Clayey SAND (SC), dark yellowish brown, moist, fine sand, few fine subrounded to subangular gravels					
		95-10		Run 19 Box 7				@95.5' to 97.5: Grades to CLAY (CL), dark reddish brown, moist, few scatter coarse sands, well developed blocky structure @97.5' to 100': Grades to Sandy CLAY (CL), dark yellowish brown, fine sand isolated 1/2" @97.8': siltstone rock fragments						
-188	100													
F	IELD HA	ARDNESS			BEDD	DING		АП	ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	4	
HARD						<2 2"-1 12"-3 36"-1	2" 36 " 20"	SHALLO MODE	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE		

					CC	RE	BC	DRII	NG LOG			BORING NO. PAGE 6 OF	CB-4
PROJECT:		Rodeo S										100.110	000007.004
TO THE REAL PROPERTY.				rill, LLP								JOB NO.: PAGE NO.:	603367-001 6 of 7
ONTRAC				ing Corpo			_					ELEVATION:	288.4 Feet
GROUN	TO-50000	25 - 111	112-7-05	DEPTH					ORIENTATION	0	ORE BARREL	DATE START:	2/9/2012
		SAFT	WATE	BO	T OF		OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
DATE	С	OMP	VVAIL	CA CA	SING	HC	DLE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER:	Martini
									INCLINED	Bit (Feet)	-	PREPARED BY	See Plate 1
						_			BEARING ANG. FROM VERT	Total (Feet)	5	LOCATION:	266 Mare 1
		1 005	- I				1	0			TION, REMARKS, AND	LIMITATIONS	
ELEVATI CORE DI (Fee	EPTH	DEP'	TH GE	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	The may	Soil Description applies or differ at other locations an itions encountered. Trans	ly to a location of d may change v	of the exploration at the t vith time. The description	ime of drilling. Subsi	urface conditions f the actual
-188	100-	(Fee	.,		ac .		001		2 24	101	VENEZII		
100	100						7/30		100' to 100.4': Sand 100.4' to 101.2': Sa			h brown moiet	
		4						g @	100.4 (0 101.2. Sa	ndy CLAT (CL), dark yellowis	ii biowii, iiioist	
							90	@	101.2' to 105': Sand	y GRAVEL	S (GP), grayish bi	rown, wet, fine	to coarse
	-						10°		nd, fine to coarse s	ubangular te	o subrounded grav	vels of various	origins,
	-	100	اا	Run 20			000	pri	marily black slate				
		100-1	105	Box 7			600						
	7/2	1					000						
							600	1					
	-	1					100°	7					
							000	1					
183	105-	-	+				00		05' to 107.1': No R	ecovery			
								@	100 (0 107.11.1401)				
	-	1											
	-	105 4	10 F	Run 21				@1	07.1' to 109.8': SA	ND (SP), d	ark gray brown, w	et, fine to coars	se sand,
		105-1	7/11	Box 7				up	ward fining sequen	ce, with silts	tone sand sized r	ock fragments	
	-	1					900						
							1 (4)						
	-	1											
							(S. 1)						
-178	110	-	-		-		ZVZX.	1100	09.8' to 110': Sand		RAVEL (GP), dari	c gray brown, s	lightly moist,
								ang	jular black slate gra	avels			
							WXII		10' to 110.8': No R				
							1/2/1	@1	10.8' to 111.5': Sa	ndy CLAY (CL), dark yellowis	h brown, moist,	, few fine
								sub	angular black slate	gravels			
	-	1	_ _	Run 22			1111	@1	11.5' to 113': Grad	es to Silty S	SAND (SM), very r	noist, dark yelk	owish brown,
		110-1		Box 8			1.	fine	sand				
	=	1		-			11111	@1	13' to 113.9': Grad	es to Sandy	/ CLAY (CL), mois	st, dark vellowis	sh brown
								a	13.9' to 115': Grad	es to CLAY	(CL), dark reddis	h brown, moist	
		-					11111	1					
					l l			1					
173 1	115—							1					
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								@1	15' to 117.2': No R	ecovery			
	-		-	OUR 33			77707	1	47 01 1, 447 01 01	A.V.,.:4E O	ad and Cantal (C)	المناد ممالات	brown ::as:
		115-1		Run 23 Box 8					17.2' to 117.8': CL ist, some fine sand), dark reddish	brown, very
	==						72X		17.8' to 118.7': Gra) dark gravish l	hrown verv
							8277		ist, subangular gra		Cy GIVAVEL (GC)	,, daik glayisii i	C.Ottii, VOIY
	-	Ē							18.7' to 120': CLA		and Gravel (CL)	dark reddish br	rown, moist.
								son	ne coarse sands ar	nd few fine	subangular gravel	S	,
160	120-							1					
168 1	120-												
		RDNESS	L		BEDD	DING		ATT	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
E	FID HA			_			N I		HORIZONTAL (0-5°)	V CLOSE	<2"	FRESH	
	_	CAN'T SCE	RATCH	V 1	THIN	<2"			ICINIZOITINE (C-C)				
ARD RD	- KNIFE	CAN'T SCE	FICULT	TH	HIN	2"-12	2"	SHALLO	W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
ARD D HARD T	- KNIFE - SCRAT - SCRAT - GROVI	TCHES DIF TCHES EAS ES	FICULT	TH MED TH	IICK DIUM HIN	2"-12 12"-3 36"-12	2" 36" 20"	MODE: STEEP	NW OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	CLOSE MOD CLOSE WIDE	2"-12" 12"-36" 36"-120"	V. SLIGHT SLIGHT MODERATE	
ARD D HARD	- KNIFE - SCRAT	TCHES DIF TCHES EAS ES	FICULT	TH MED TH	MUIC MUIC	2"-12 12"-3	2" 36" 20"	MODE: STEEP	W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD CLOSE	2"-12" 12"-36"	V SLIGHT SLIGHT	

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012 GDT 2/18/15

				CC	RE	BC	PII	NG LOG			PAGE 7 OF 7	CB-4
PROJECT: CLIENT: H		r, & Burr									JOB NO :	603367-001 7 of 7
CONTRACTO EQUIPMENT												288.4 Feet
GROUND	11 x 1 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x	1		TH TO (Fee				ORIENTATION	C	ORE BARREL	DATE START:	2/9/2012
	HRS AFT	WATE	р Е	OT OF	вот	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	2/9/2012
DATE	COMP	VVAIL	. (CASING	HC	LE		HORIZONTAL	SIZE	2.5 I.D.		Martini
								INCLINED	Bit (Feet)		PREPARED BY:	
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
		ODE		7	_	r	0	ANG. FROM VERT	Total (Feet)	TON DEMARKS AND	LIMITATIONS	
ELEVATION CORE DEP (Feet)	TH RA		SAMPLI	1 - 0	RQD	GRAPHIC	may	FIEL Soil Description applies on differ at other locations an titions encountered. Trans	ly to a location of	vith time. The descriptio	time of drilling. Subsurf n is a simplification of th	ace condition ne actual
—168 12		000					@1	20' to 120,9': No R	ecovery			
_	-					000	4 6	20.9' to 121.4': Sa subangular grave		EL (GP), yellowish	brown, very moi	st to wet,
<u>L</u> e								21.4' to 122': CLA'		and Gravel (CL)		
	100)-125 F	Run 24	4		۵۵		22' to 122.5': Grav			brown, very mois	st
-	-	-125	Box 8				@1	22.5' to 123.3': Cla	yey SILT (N	VIL), dark yellow b	rown, very moist	
								23.3' to 123.4': Sai				ery moist
-	-					4 1		23.4' to 124': CLA				
						۵. ۵	@1	24' to 125': Gravel	y SAND (S	vv), dark yellow bi	rown, very moist	
163 12	5						Per	al depth of boring: ched groundwater	encountere	d at approximatel	y 24.5'-25.8', 40'-	40.6',
- 5	s=						54. Exc	5'-55.8', 70'-73', 80 cavation backfilled	'-81.5', 101.	.2'-105', 107.1'-10 s and patched with	9.8', 120.9'-121.4 h asphalt upon c	l' bgs ompletion
•	-						drill	ling. Excess soil coosed of offsite.	uttings dispo	osed of in D.O.T.	approved drums	and
•)	_											
—158 13	0											
-	-											
	-											
	7											
—153 13	5—											
5												
E.												
c	-											
	_											
-148 140												
	D HARDNE			BEDI /, THIN	<2 ^H		+	ITUDE AND ANGLE HORIZONTAL (0-5°)	V, CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
ARD -S OD HARD -S OFT -G	CRATCHES I CRATCHES I ROVES ARVES	DIFFICULT	N	THIN IEDIUM THICK THICK	2"-12 12"-3 36"-12 >120	2" 6" 20"	MODER STEEP	W OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V SLIGHT SLIGHT MODERATE MOD SEVERE V SEVERE	
									Fe = Iron Oxid	e Mn = Manganese Oxide	V. SEVERE COMPLETE	4

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB-5
ROJECT	El Ro	odeo Scho	ool									FAGE 1 OF	10
		arrer, & l		LLP								JOB NO.:	603367-001
	_	Martini D										PAGE NO.:	1 of 10 294 Feet
QUIPMENT			75, Con						ORIENTATION	C	ORE BARREL	DATE START:	3/26/2012
GROUN	HRS	AFT			TO (Fee		OF	X	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
DATE	co	. I W	/ATER		SING	HC			HORIZONTAL	SIZE	2.5 I D	DRILLER:	Martini
		▽							INCLINED	Bit (Feel)		PREPARED BY	
									BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	L.,		_	L				0	ANG, FROM VERT	Total (Feet)			
ELEVATIO	B NC	CORE	SAM	PLE	E E	۵	₹ 5		FIEL Soil Description applies or		TION, REMARKS, AND		urface conditions
CORE DE (Feet)	- 1	RANGE (Feet)		BER	RECOVERY	RQD	GRAPHIC LOG	may	differ at other locations an itions encountered. Trans	id may change w	rith time. The description	on is a simplification o	f the actual
-294	0	(,,					200	_@5	Surface: 3" Asphalt	concrete			
							111		0.25': 3" Aggregate				
	-		1				11.1.	100	.5':Artificial Fill, U	ndocument	ed (Afu):		
								\Silt	y SAND (SM), dark	k yellow brow	wn, slightly moist		fine gravels
	-							@1	.0': Pleistocene A	lluvium of B	enedict Canyon	Wash (BCW ₁):	iolo trace
							1.		y SAND (SM), oran	nge prown, s	siigntiy moist, fine	sand, rew grav	reis, trace
	-		8				[:].	Pie	ces of aspirali				
							H: 1.						
	_			h									
							1.1.1						
289	5						1111						
200			1				111.						
							11.	ര	5.8' to 6.4': Silty SA	ND (SM) d	ark vellow brown	moist, fine san	d
	(7)						-67		•				
							000	@6	6.4' to 7.3': Sandy C Jular gravels, fine s	sKAVEL (GI), dark yellow br	own, moist, tine	e to coarse
	187	5-10	Rur	n 1			P						
	- 1	7-711	1 -					I ∕∞ 7		ell i thui i w	ark vellow brown	moist fine can	וח
	- 1	5 10	Box	<1				@7	1.3" to 8.0": Sandy 8	SILI (IVIL), a	ark yellow brown	, moist, fine san	ıa
	-	3 10	Box	(1			Ш		to 10': No Recove		ark yellow brown	, moist, fine san	
	-	3 10	Box	(1							ark yellow brown,	, moist, fine san	
	-	3 10	Box	(1							ark yellow brown,	, moist, fine san	10
	-	3 10	Box	c 1							ark yellow brown,	, moist, fine san	la .
284	10		Box	κ 1				@8	o' to 10': No Recove	ery (SP), orange			
284	10	3 10	Box	k 1				@8	t to 10': No Recove	ery (SP), orange			
284 -	10	3 10	Box	k 1				@8 @1 few	0' to 11.1': SAND (r fine black slate gr	(SP), orange avels	e brown, slightly r	noist, fine to me	edium sand,
284	10		Box	c1				@1 few	o' to 10': No Recove	(SP), orange avels	e brown, slightly r	noist, fine to me	edium sand,
284	10							@1 few @1 gra	0' to 10': No Recove o' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels	(SP), orange avels CLAY (CL-M	e brown, slightly r	moist, fine to me , moist, few fine	edium sand, s black slate
284	10	10-15	Rur	1 2				@1 few @1 gra	0' to 11.1': SAND (r fine black slate gr	(SP), orange avels CLAY (CL-M	e brown, slightly r	moist, fine to me , moist, few fine	edium sand, s black slate
284	10			1 2				@1 few @1 gra	0' to 10': No Recove o' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels	(SP), orange avels CLAY (CL-M	e brown, slightly r	moist, fine to me , moist, few fine	edium sand, s black slate
284	10		Rur	1 2				@1 few @1 gra	0' to 10': No Recove o' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels	(SP), orange avels CLAY (CL-M	e brown, slightly r IL), strong brown	moist, fine to me , moist, few fine	edium sand, s black slate
· 284	10		Rur	1 2				@1 few @1 gra	0' to 10': No Recove o' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels	(SP), orange avels CLAY (CL-M	e brown, slightly r IL), strong brown	moist, fine to me , moist, few fine	edium sand, s black slate
284	10		Rur	1 2				@1 few @1 gra	0' to 10': No Recove o' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels	(SP), orange avels CLAY (CL-M	e brown, slightly r IL), strong brown	moist, fine to me , moist, few fine	edium sand, s black slate
	10		Rur	1 2				@1 few @1 gra	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels)	(SP), orange avels CLAY (CL-M	e brown, slightly r IL), strong brown brown to gray bro	moist, fine to me , moist, few fine own, moist, few	edium sand, black slate fine gravels
			Rur	1 2				@1 few @1 gra	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels) 2.3' to 15': CLAY (ovels)	(SP), orange avels CLAY (CL-M CL), strong	e brown, slightly r IL), strong brown brown to gray bro	moist, fine to me, , moist, few fine own, moist, few gray brown, slig	edium sand, black slate fine gravels
			Rur	1 2				@1 few @1 gra	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels)	(SP), orange avels CLAY (CL-M CL), strong	e brown, slightly r IL), strong brown brown to gray bro	moist, fine to me, , moist, few fine own, moist, few gray brown, slig	edium sand, black slate fine gravels
			Rur	1 2			۵. ۵	@1 few @1 gra	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels) 2.3' to 15': CLAY (ovels)	(SP), orange avels CLAY (CL-M CL), strong	e brown, slightly r IL), strong brown brown to gray bro	moist, fine to me, , moist, few fine own, moist, few gray brown, slig	edium sand, black slate fine gravels
			Rur	1 2				@1 @1 @1 fine	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels) 2.3' to 15': CLAY (ovels) 5' to 17': Gravelly Sepand, fine to coarse	(SP), orange avels CLAY (CL-M CL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
		10-15	Rur	12 (1			۵. ۵	@1 @1 @1 fine	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels) 2.3' to 15': CLAY (ovels)	(SP), orange avels CLAY (CL-M CL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
			Rur	12 (1			۵. ۵	@1 @1 @1	0' to 10': No Recovery of the plack slate ground of the place ground of the pl	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
		10-15	Run	12 (1			۵. ۵	@1 @1 @1	0' to 10': No Recovery of the 11.1': SAND (or fine black slate grant 1.1' to 12.3': Silty (ovels) 2.3' to 15': CLAY (ovels) 5' to 17': Gravelly Sepand, fine to coarse	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
		10-15	Run	12 (1			۵. ۵	@1 @1 @1	0' to 10': No Recovery of the plack slate ground of the place ground of the pl	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
		10-15	Run	12 (1			۵. ۵	@1 @1 @1	0' to 10': No Recovery of the plack slate ground of the place ground of the pl	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
		10-15	Run	12 (1			۵. ۵	@1 @1 @1	0' to 10': No Recovery of the plack slate ground of the place ground of the pl	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
279 1		10-15	Run	12 (1			۵. ۵	@1 @1 @1	0' to 10': No Recovery of the plack slate ground of the place ground of the pl	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	e brown, slightly r IL), strong brown brown to gray brown strong brown to slack slate gravels	moist, fine to me , moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels
279 1	15	10-15	Run	12 (1			۵. ۵	@1 @1 @1 -	0' to 10': No Recovery 0' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels 2.3' to 15': CLAY (5' to 17': Gravelly (e sand, fine to coars 7': CLAY (CL), ora 7.7': Thin GRAVEL	(SP), orange avels CLAY (CL-MCL), strong SAND (SP), se angular b	strong brown to strong brown to gray brown to gravels	moist, fine to me, moist, few fine own, moist, few gray brown, sligs	edium sand, black slate fine gravels
279 1 274 2 FIEI	15	10-15 15-20	Run Box	13	BEDC		å å å	@1 @1 att	0' to 10': No Recovery 0' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels 2.3' to 15': CLAY (5' to 17': Gravelly \$ e sand, fine to coars 7': CLAY (CL), ora 7.7': Thin GRAVEL	(SP), orange avels CLAY (CL-M CL), strong SAND (SP), se angular b	strong brown to gray brown to gray brown to gray brown to gravels o gray brown, mo	moist, fine to me, moist, few fine own, moist, few gray brown, sligs	edium sand, black slate fine gravels
279 1 274 2 FIEI ARD -	115	10-15	Run Box	12 (1	HIN HIN	<2' 2"-1:	å å å	@1 @1 @1 ATT	0' to 10': No Recovery 0' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels 2.3' to 15': CLAY (5' to 17': Gravelly Se sand, fine to coars 7': CLAY (CL), ora 7.7': Thin GRAVEL	(SP), orange avels CLAY (CL-M CL), strong SAND (SP), se angular base angular bas	strong brown to gray brown to gray brown to gray brown to gravels o gray brown, mo	moist, fine to me, moist, few fine own, moist, few gray brown, sligs	edium sand, black slate fine gravels
279 1 274 2 FIEI ARD - D - D - D - D - D - D - D - D - D -	LD HAR	10-15 15-20 RDNESS ANT SCRAT- HES DIFFICI-	Run Box	1 2 (1 1 3 : 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	HIN HIN HIN HIN HIN HIN HIN HIN HIN HIN	<2' 2"-1: 12"-3 36"-1:	22" 6" 6" 220"	@1 @1 @1 SHALLO MODE	0' to 10': No Recovery 0' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels 2.3' to 15': CLAY (5' to 17': Gravelly Se sand, fine to coars 7': CLAY (CL), ora 7.7': Thin GRAVEL HORIZONTAL (0-5') WORLOW ANGLE (6-35') RATELY DIPPING (35-55') OR HIGH ANGLE (5-35')	(SP), orange avels CLAY (CL-M CL), strong CLAY (CL-M CL), strong SAND (SP), se angular b	strong brown, mo	moist, fine to me, moist, few fine own, moist, few gray brown, sligs s	edium sand, black slate fine gravels
274 2 FIEI ARD - O -	LD HAR KNIFE C/SCRATC	10-15 15-20 RDNESS ANT SCRATHES DIFFICITIES EASILY IS	Run Box	1 2 (1 1 3 (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	HIN HIN HIN HIN HIN HIN HIN HIN HIN HIN	<2' 2"-1: 12"-3	22" 6" 6" 220"	@1 @1 @1 SHALLO MODE	0' to 10': No Recovery 0' to 11.1': SAND (of fine black slate gr 1.1' to 12.3': Silty (vels 2.3' to 15': CLAY (5' to 17': Gravelly (e sand, fine to coars 7': CLAY (CL), ora 7.7': Thin GRAVEL HORIZONTAL (0-5') WOR LOW ANGLE (6-35') WOR LOW ANGLE (5-35')	(SP), orange avels CLAY (CL-M CL), strong SAND (SP), se angular base angular bas	e brown, slightly r brown to gray brown brown to gray brown to glack slate gravels o gray brown, mo	moist, fine to me, moist, few fine own, moist, few gray brown, slig s	edium sand, black slate fine gravels

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012 GDT 2/18/15

					CO	RE	BC	IIX	NG LOG			PAGE 2 OF 10
PROJECT		odeo S										JOB NO : 603367-001
				rrill, LLP lling Corpo	ration							PAGE NO: 2 of 10
				, Continou								ELEVATION: 294 Feet
	NDWATE				TO (Feet):			ORIENTATION		ORE BARREL	DATE START: 3/26/2012
DATE		AFT	WAT	rer I	T OF		OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 3/27/2012 DRILLER: Martini
	CC	MP		CA	SING	НС	DLE		HORIZONTAL INCLINED	SIZE Bit (Feet)	251D	DRILLER: Martini PREPARED BY: AWS
		_	⊽		-				BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
	-	_		_	_	_		0	ANG FROM VERT	Total (Feet)		
ELEVATI		DEP	тн	SAMPLE	RECOVERY	RQD	GRAPHIC	The	Soil Description applies on	v to a location of	TION, REMARKS, AND L	IMITATIONS ne of drilling. Subsurface conditio is a simplification of the actual
(Fee	t)	RAN (Fe	- 1	NUMBER	ME.		8 1	cond	itions encountered. Trans	itions between s	soil types may be gradual.	to a simplification of the deces.
—274 - -	20-	20-	25	Run 4 Box 2			111	@:	19.7': Some SAND 20' to 20.4': Clayey lined, blocky to colu 20.4' to 23.5': Silty (SILT (ML) v imnar struc	ture, minor gleying	low, moist, paleosol, fine along pedogenic facies to gray brown
5	9 25 Box 2								23.5' to 24.5': Sand	/ CLAY (CL), dark yellow brow	vn to gray brown, fine sar
269								@2 sul	24.7' to 25.4': Sand	/ SILT (ML) e gravels	, moderate brown,	moist, fine sand, few fine
-	-			Run 5				@2 cos	25.4' to 27.7': Sand arse sand, fine to co	y GRAVEL parse angul	(GP), gray brown, ar black slate grav	slightly moist, fine to els
e G	-	25-	30	Box 2				@2	istocene Alluvium 27.7' to 29.2': Sand gravels, fine sand	of Benedic CLAY (CL	t Canyon Wash (B), moderate brown	CW ₂): to gray brown, very mois
264	20								29.2' to 30': No Rec			
—264	30-							mo	ist to very moist, ba	se of deve	loped soil	
								sar	nd			
	@30' to 30.9': Silty CLAY (CL), ba moist to very moist, base of development of the moist to very moist, base of the moist to very moist, base of development of the moist to very moist, base of development of the moist to very moist, base of the moist to very moist, base of the moist to very moist, bask of the moist to very moist, base of the moist to very moist, b							RAVEL (GC), dark ck slate gravels	gray brown, moist, fine to			
—259 -	35											
	1							@3 mo	66.3' to 43.2': CLAY ist, coarse sand, pa	to Sandy C aleosol	CLAY (CL), dark ye	llow brown to gray browr
FI.	35-40 Run 7 Box 3 @37.2' to 37.8': Increased sand @38.6' to 39': Specks of MnO ₂ dep							anceite in clay rich	70108			
254	40							@3	oo.o tu sa . specks	OI WIIIO2 de	posits in diay-non	201103
FII	ELD HAI	RDNES	S		BEDD	ING		АТ	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
. HARD IARD IOD. HARD	- KNIFE (- SCRAT) - SCRAT - GROVE - CARVE	CAN'T SC CHES DI CHES EA	RATCH	TH	THIN DIUM IICK HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

PROJECT	FII	Rodeo Schoo	al .	<u>C(</u>	JKE	: BC)KII	NG LOG			PAGE 3 OF	CB-5
PROJECT CLIENT CONTRAC	Hill, I	Farrer, & B Martini Dr	urrill, L		n						JOB NO.: PAGE NO :	603367-001 3 of 10
		D. CME-7									ELEVATION:	294 Feet
	INDWAT	the state of the state of the state of		TH TO (Fe				ORIENTATION	C	ORE BARREL	DATE START:	3/26/2012
		SAFT	ATER	BOT, OF	ВО	r OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
DATE	C	OMP VV	AIER	CASING	H	DLE		HORIZONTAL	SIZE	2.5 l D	DRILLER:	Martini
		Ā						INCLINED	Bit (Feel)		PREPARED BY	: AWS
								BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
						.,	0	ANG, FROM VERT	Total (Feet)			
ELEVA CORE I	DEPTH	CORE DEPTH RANGE (Feet)	SAMPI	- 0	Rob	GRAPHIC	may	FIEI Soil Description applies or differ at other locations ar itions encountered. Trans	nly to a location of	vith time. The description	time of drilling. Subs	urface conditio f the actual
—249 -	45	40-45	Run S Box 3	9			@4 bro pool fine @4 lme	3.7' to 44.3': Sand 4.3 to 44.7': Sand wn, moist, trace of orly developed bloc 4.7' to 45.8': Sand a sand 5.8' to 46.2': CLAN 6.2' to 46.5': SANI 6.5' to 46.8': CLAN 6.6' to 47': Clayey dium sand, fine bland 7.8': Pleistocene (y Clayey SI y Silty CLAY fine sand a ky fracture, y SILT (ML) (CL), dark O (SP), oran (CL), gray Gravelly SA ck slate gra Cheviot Hills	yellow brown to g LT (ML), dark yellow (CL), Paleosol, on clay lamination gleying along peo, dark yellow brown to g ge brown, moist, brown, moist, few (ND (SP), dark or ovels B Deposits (CHD):	ow brown, moistark yellow browns, siltstone roctogenic facies on to reddish brown, moifine sand of fine gravels ange brown, moistange brown, m	st, trace firest, fine san with to gray sk fragmen own, moist st
-244	50-	50-55	Run 1 Box 4			-	49' oxid	AY (CL), dark oran moist, few fine bla dized, banded betw	ack slate gra veen 49' to 5	vels, oxidation-re 55'	duction bandin	veen 48.2' g, gleyed,
	_						@5	2.9' to 53.2': Sand	y CLAY (CL), with 2-inch slat	y graveis	
-239	55 —	55-60	Run 1 Box 4				59. @5	6.0' to 61.5': Sand d, few coarse whit B', and 60.4', well-c 8' to 59': 1-foot thic 9.5': Siltstone rock	e siltstone g leveloped b ck chocolate	ravels (light yellow locky structure brown clay	w brown to gray	to mediur () @ 59',
-234	60-	DONESS		250	DINC		٨٦٠	ITUDE AND ANGLE	IUNITS /	SHEAR / FRACTURE	WEATHERING	
		RDNESS	, +	A' THIN	DING <2'			HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
HARD ARD OD HARD OFT SOFT	- SCRAT		т	V. THIN THIN MEDIUM THICK V. THICK	<2"-1 2"-1 12"-3 36"-1. >12	2" 16" 20"	MODE! STEEP	HORIZONTAL (U-5") W OR LOW ANGLE (5-35") RATELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	CLOSE CLOSE MOD. CLOSE WIDE V. WIDE Fe = Iron Oxid	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	KE	BC	וואי	NG LOG			PAGE 4 OF	10
ROJECT:		odeo S		ill III D		_		_				JOB NO :	603367-001
ONTRAC	OR:	Martin	i Drilli	ng Corp	oration							PAGE NO.:	4 of 10
QUIPMEN												ELEVATION:	294 Feet
GROUN	IDWATE	R			TO (Fee				ORIENTATION		ORE BARREL	DATE START:	3/26/2012 3/27/2012
DATE		AFT	WATE	RI	T OF		OF	Х	VERTICAL HORIZONTAL	TYPE	Split Sleeve 2.5 I.D.	DATE FINISH: DRILLER:	Martini
	CC	MP	✓	CA	SING	н	DLE		INCLINED	Bit (Feet)	2,51.0.	PREPARED BY:	
_	+	-	<u>v</u> .						BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
								0	ANG FROM VERT.	Total (Feet)			
ELEVATI		COR		SAMPLE	VERY	Rab	GRAPHIC	The	Soil Description applies or	ly to a location o	TION, REMARKS, AND of the exploration at the t	ime of drilling. Subsu	rface conditio
CORE DI		RANG (Fee		NUMBER	RECOVERY	2	8 2 L	may	differ at other locations ar	d may change v	vith time. The description	n is a simplification of	the actual
—234 -	60		(Feet) © 1.5' to 62.1': Silty CLAY (CL), moderate brown to 2.1': Sandy Gravelly CLAY (CL), moderate brown to 2.1': Sandy Gravelly CLAY (CL), moderate brown to 2.1': Sandy Gravelly CLAY (CL), moder coarse subrounded to angular gravels, scattered @63.4': CaCO ₃ lining rock clasts										
t S	60-65 Run 12 Box 4 @62.1' to 64.3': Sandy Gravelly CLAY (CL), coarse subrounded to angular gravels, scatt @63.4': CaCO ₃ lining rock clasts @64.3' to 64.5': Clayey SAND (SC), brown, rounded coarse gravel										avels, scattered		
000	_						18/1//				C), brown, moist, t	tine sand, basa	well
-229	65								64.5' to 65': No Red				
									55' to 66.6': Silty CI		ark yellow brown,	moist, few very	fine grave
								0	66.6' to 68': Sandy	Gravelly CL	AY (CL) dark vell	ow brown mois	t.
	7 -	65-7	11 1	Run 13 Box 5					prounded to suban			J. 2, 5 mi, mole	-1
	2 -							@6	8' to 69.6': Becom	es more hea	avily gleyed and d	ark reddish bro	wn
004	70						7777	@6	9.6' to 70': No Red	overy			
-224 70								i, moist, fine sa	nd, few v€				
	430							@7 coa	4.1' to 75': Gravell rse gravels, fine s	Silty SANI and in CaC	O (SM), dark yello O₃ lined matrix	w brown, moist	fine to
-219	75 —							@7 coa	5' to 76.8': Silty Gi irse subangular bla	avelly CLA\ ck slate gra	f (CL), dark yellow vels	v brown, moist,	some fine
	75-80 Run 15 Box 5 @76.8' to 79': Clayey Gravelly SILT (ML), dark yellow subangular to subrounded black slate gravels @78': basal rounded small cobble @79' to 81.6': Silty CLAY (CL), brown, moist, few very												
-214	80							@7 line	9' to 81.6': Silty Cl d with CaCO₃	AY (CL), br	own, moist, few v	ery fine black sl	ate gravel
							L	L	THE AND AND E	IONETC:	OUEAD / EDAOTUSE	MEATHERING	
HARD ARD OD HARD OFT	- KNIFE C		RATCH FICULT	MEI TH	BEDD THIN HIN DIUM HICK HICK	2"-1 2"-1 12"-: 36"-1 >12	2" 36" 20"	SHALLO MODE STEEP	HORIZONTAL (0-5°) WOR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

				CC	RE	BC	RII	NG LOG			PAGE 5 OF 10
PROJECT:	EI R	odeo Schoo	ol .								
		arrer, & B									JOB NO.: 603367-001
CONTRACT	OR.	Martini Dr	illing Corp	oration							PAGE NO: 5 of 10 ELEVATION: 294 Feet
			5, Continou				_	ORIENTATION		ORE BARREL	DATE START: 3/26/2012
GROUN		SAFT	BO	T OF		OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: 3/27/2012
DATE		MP WA	ATER I	SING		DLE		HORIZONTAL	SIZE	2.5 l.D.	DRILLER: Martini
		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\						INCLINED	Bit (Feet)		PREPARED BY: AWS
								BEARING	Barrel (Feet)	5	LOCATION: See Plate 1
					Т		0	ANG. FROM VERT	Total (Feet)	TION, REMARKS, AND	LIMITATIONS
CORE DE	PTH	DEPTH RANGE	SAMPLE NUMBER	RECOVERY	2g GD	GRAPHIC LOG	l mav	Soil Description applies or	ly to a location of	of the exploration at the t with time. The description	ime of drilling. Subsurface conditi n is a simplification of the actual
		(Feet)		- C			1				
—214 -	80—										
						4 4	@8	31.6' to 85': Sandy	GRAVEL (C	SP), gray brown, v	ery moist, fine to coarse
=======================================		80-85	Run 16 Box 6			Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ Δ		nd matrix, fine to co nt brown siltstone g		gular to subround	eď black slate gravels, fe
—209	85										moist, trace fine sand
								36' to 87.3': Sandy nd, paleosol	CLAY (CL),	strong brown, mo	ist, scattered fine to med
		85-90	Run 17 Box 6				pla	stic, fine gravel wit	າ CaCO₃, b	ng brown, moist, vo locky structure, m	ery homogenoeus and inor laminations and
13								dation-reduction ba			
204	90						@8 ang	39.2' to 90.3': Grave gular to subangular	elly CLAY (0 gravels of v	CL), strong brown, various origin	moist, fine to coarse
-	:= :=		Run 18				@9 fine	00.3' to 92.5': Claye e coarse subangula	y Gravelly S r black slat	SILT (ML), dark ye e gravels @ 92.5'	ellow brown, moist, some
€7 £8) -	90-95	Box 6				fine	e subangular grave	s		wn, moist, fine sand, few
								94.2' to 95': Gravell stone and slaty gra			ry moist to wet with some
 199	95					11111		95' to 95.4': CLAY (wn, moist
						001		5.4' to 95.6': No R			
20	_					000	@9		y Gravel (G	P), gray brown, ve s, pulses of thin be	ery moist, fine to coarse eds of gravels
		95-100	Run 19 Box 7								n, moist, fine sand
	-					000	bla	ck slate gravels, ba	sal gravel		very moist, fine subangooist, very fine sand
—194 1	00-					(/////					
						L					
FIE	LD HA	RDNESS			DING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING
ARD IOD HARD OFT	 SCRAT 		LT TI	THIN HIN HICK HICK	<2" 12"- 36"-1 >12	2" 36" 20"	MODE STEEF	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) • OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 6 OF 10	CB-5
PROJECT:	EIR	odeo Sc	hool								100 110	0007.004
			Burrill, LI								1000 1100	3367-001 of 10
CONTRACT			Drilling Co								11.1.2	4 Feet
GROUN			E-75, Contin	H TO (Fee				ORIENTATION	C	ORE BARREL	_	26/2012
		AFT		OT OF		OF	Х	VERTICAL	TYPE	Split Sleeve		27/2012
DATE	co	MP	WATER	CASING	н	DLE		HORIZONTAL	SIZE	2.5 I.D.		artini
		Ž						INCLINED	Bit (Feet)	-	PREPARED BY: AV	vs e Plate 1
							0	BEARING ANG. FROM VERT	Barrel (Feet) Total (Feet)	5	- LOCATION. 39	e riate i
	<u> </u>	CORE		T	-		T			TION, REMARKS, AND I	IMITATIONS	
CORE DE	PTH	DEPTI RANG (Feet	H SAMPL E NUMBE	1 2 0	Rob	GRAPHIC LOG	may	Soil Description applies or differ at other locations an litions encountered. Trans	nly to a location o	of the exploration at the ti vilh time. The description	me of drilling. Subsurfac	e conditions actual
—194 ·	100					11111						
- ;c	_						0	100.9' to 101.7': Gr	avelly CLAY	(CL), dark yellow	brown, moist, fine	
							sul	bangular gravels 101.7' to 103.4': Sa				
£5.	=	100-1	05 Run 2 Box 7			000	co	arse subangular gr	avels, prima	rily slate	TOLY MOISE TO WELL	
							@	103.4' to 107': CLA	Y (CL), dark	yellow brown, mo	ist	
-	; 						@	104': Thin gravel la	yer			
—189 1	05						@	105': Thin gravel la	yer			
<u>.</u>	:											
-	100							106.5': Mildly bande 107' to 108.5': Clay		C) grow brown	any mojet fine to n	nedium
	_	105-1	10 Run 2 Box 7	1			sa	nd, fine black slate	gravels with	a few coarse gra	vels	ilealaiii
	-						@ vei	108.6' to 110': CLA ry fine gravels of va	Y (CL), dark arious origin	yellow brown, mo , mildly banded @	ist, some fine san 109'	ıd, few
—184 1	10—					000	@	110' to 111.3': Sand	dy GRAVEL	(GP), gray brown	, very moist to wet	
	_	110-11	Run 2					111.3' to 113': SILT very fine gravels	(ML), dark	yellow brown, very	moist, very fine s	sand, trad
:	-		Box 8			0.0	@	113' to 113.9': Grav	relly SAND	(SW), gray brown,	very moist to wet	, fine to
	_							arse sand, fine ang 113.9' to 115': No F		iate graveis		
—179 1	15—					Δ, Δ	@ sa	115' to 116.5': Grav nd, fine subangular	relly SAND	(SW), gray brown,	very moist, fine to	coarse
ē							@	116.5' to 117.5': Cla list, fine subangula	ayey GRAV	EL (GC), dark yello gravels	ow brown to gray I	brown,
ā		115-12	Run 2: Box 8	3		02/12	<u> </u>	117.5' to 120': No F				
	-											
-17 4 1	20			-		-						
					DIVIC	1		TITLIDE AND ANOLE	IOINTS /	SHEAR / FRACTURE	WEATHERING	
		RDNESS	ATOLL		DING	,	AT	TITUDE AND ANGLE HORIZONTAL (0-5°)	V CLOSE	SHEAR / FRACTURE	FRESH	
ARD IOD HARD OFT	- SCRAT		ICULT LY	V. THIN THIN MEDIUM THICK /. THICK	2"- 12"- 36"- >12	12" 36" 120"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CO	RE	BC	RII	NG LOG			PAGE 7 OF	CB-5
PROJECT		odeo Scho									IOD NO	E02207 001
ALDERT ALZELE			Burrill, LLP	0 mg 4!							JOB NO.: PAGE NO.:	603367-001 7 of 10
ONTRAC			rilling Corp 75, Contino			_					ELEVATION:	294 Feet
	NDWATE		Lawrence Company	TO (Feet):			ORIENTATION	С	ORE BARREL	DATE START:	3/26/2012
DATE		AFT	ATER BO	T OF	ВОТ	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
DATE	CC	MP	CA CA	SING	HC	DLE		HORIZONTAL	SIZE	2.5 l.D.	DRILLER:	Martini
		Ţ						INCLINED BEARING	Bit (Feet)	5	PREPARED BY	See Plate 1
	+			-	_	_	0	ANG. FROM VERT	Barrel (Feet) Total (Feet)	3	- LOCATION:	OCC FIGURE 1
		CORE		-		70	T			TION, REMARKS, AND	LIMITATIONS	
CORE D (Fee	EPTH	DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	may	Soil Description applies or differ at other locations artitions encountered. Trans	lly to a location of d may change w	of the exploration at the t	ime of drilling. Subsu	urface condition f the actual
—174 -	120-	(Feet)		α.			1	20' to 121.5'; SAN				
						· · ·	@1	21.5' to 125': No F	tecovery			
		120-125	Run 24 Box 8									
— 169	125							25' to 125.4': SAN	D (SP), gray	brown, wet, fine	to coarse (poss	sible heave
								terial) 25.4' to 128.3': CL	AV (CL) da	rk vellow brown to	strong brown	
	-						@1	26': Slightly varved	i (OL), ua I with grav.	few scattered very	fine gravel	
							"		g.~,,		3	
E.			Run 25									
		125-130	Box 9									
à	-											
						CH. 3/0,00	@1	28.3'-130': No Red	overy			
	4											
-164	130									0140		
.54						۵ ۵	@1	30' to 130'9': Gravel,	elly SAND (Svv), gray brown,	wet, tine to coa	irse sand,
	7/=					2						
							@1	30.9' to 135': No R	ecovery			
			Į.									
			Run 26									
		130-135	Box 9									
			-55									
	1											
-159 1	135					,,,,,,						
100	33						@1	35' to 136.7': CLA	r (CL), yello	w brown, moist, s	ome silt	
	=											
								26 71 to 127 01. C -	adu Cravalli	, CLAV (CL)	w brown moin	eomo fin
	-		Due 27				@1	36.7' to 137.9': Sa ular gravels, dark	nay Gravelly Prown 0 5" t	hick silty sand cla	w brown, moisi v bed @137'	i, some iille
		135-140	Run 27 Box 9				ang	aiai gravois, uaik	J. 54411 G.O L	on only odila ola	,	
	:		50,3			846	@1	37.9' to 139': Sand	y GRAVEL	(GP), gray brown.	wet, fine to co	arse angul
						60°		k slate gravels, fir				-
	_					00	0.1	0014- 4401 51- 5				
							@1	39' to 140': No Red	covery			
454 4	40											
139 1	40											
			\Box		110			TUDE AND ANOTE	IOINTO	CHEAD (EDACTION	MEATUEDING	
		RDNESS		BEDD				ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING FRESH	
ARD	- SCRATO	AN'T SCRATO CHES DIFFICU	LT T	HIN	<2 2"-1	2"	SHALLO	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°)	CLOSE	2"-12"	V. SLIGHT	
DFT	- GROVE		TH	DIUM ICK	12"-3 36"-1	20"	STEEP	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	- CARVES			HICK	>12	0"		/ERTICAL (85-90°)	V WIDE	>120"	MOD SEVERE	
											V SEVERE	

				CC	RE	: BC		NG LOG			PAGE 8 OF	10
PROJECT: CLIENT: CONTRAC	Hill, F		ol Burrill, LLP rilling Corp	oration							JOB NO : PAGE NO :	603367-001 8 of 10
EQUIPMEN			75, Continou								ELEVATION:	294 Feet
GROU	NDWATE			TO (Fee				ORIENTATION		ORE BARREL	DATE START: DATE FINISH:	3/26/2012 3/27/2012
DATE		S AFT W	ATER I	T_OF SING		r, of DLE	×	VERTICAL HORIZONTAL	TYPE	Split Sleeve 2.5 l.D.	DRILLER:	Martini
		JNIP	- CA	SING		/LL		INCLINED	Bit (Feet)	2,0 (,0)	PREPARED BY:	
		*						BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
							0	ANG. FROM VERT	Total (Feet)			
ELEVAT CORE D (Fee	EPTH	CORE DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	mav	FIEL Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	ith time. The description	me of drilling. Subsu	rface conditions the actual
 154	140-					8 .5		140' to 140.4': SAN	O(SP) brow	vn wet medium t	o coarse sand	
T.		140-145	Run 28 Box 10				@@ gra	140.4' to 140.55': Sit 40.5' to 141.2': Silt avel 41.2' to 142': Sand ining, fine subangul 42' to 142.7': Sand ining	ity SAND (S y SAND (Si y CLAY (Cl lar black sla y CLAY (Cl	SM) with clay, brow M), brown, wet, fin _), orangish olive, ate gravel _), orangish brown	wn, wet, fine sand e sand, fine sul wet, fine sand, , wet, fine sand	FeO ₃
- 149	_ 145—						Sut @ Mn Mn	142.7' to 143.5': Sal pangular pebbles 143.5' to 144.15': C O ₃ nodules, Fe stal O ₃ band @contact 144.15' to 144.6': C	ayey SAND ning, vertic with below	O(SC), brownish d al CaCO ₂ stringers	ark gray, wet, fi @143.75' to 1	ne sand, 43.85',
= :	:=		Du- 00				Fe @ @ sub	staining, few angul 144.6' to 145': No R 145' to 145.3': Claye pangular black slate	ar coarse s ecovery ey SAND (S pebbles	and C), orangish brow	n, wet, fine san	d,
5		145-150	Run 29 Box 10				fine (a) to v	145,3' to 146': Claye e sand, Fe staining, 146' to 148.5': Sand wet, fine sand, Fe s 148.5' to 149.1': CL	highly wea y CLAY (Cl taining, Mn AY (CL), mo	thered angular gra $_{-}$), mottled orange $_{0}$ banding, suban ottled orange to oli	avels and pebble brown to olive, agular to angula ive, wet, Fe stal	es very moist r fine grave ning
—144	150-					VIII	wit	49.1' to 149.4': Cla h few coarse sand 49.4' to 150': No R		(SC), mottled orar	ige brown to oli	ve, wet, fin
#S €¢	=	150-155	Run 30 Box 10				(Per Control of the C	$150'$ to $150.6'$: Claye O_3 staining, few coals $150.6'$ to $153.2'$: Saind, FeO ₃ staining, N_3 $151'$: gleyed, oxidati	nrse sand ndy CLAY (fin nodules,	CL), mottled orang	ge to olive, wet,	
—139	155-						Mn @1 Mn @1	153.2' to $153.7'$: CLO ₂ nodules $153.7'$ to $153.85'$: Cloes $155.8'$	_AY (CL), n lar pebbles _AY (CL), n	nottled orangish to	olive, wet, FeC) ₃ staining,
	_	155-160	Run 31 Box 11				sar @1	55.8' to 157.35': Sand, FeO ₃ staining	_AY (CL), n	nottled orangish gr	ray, wet, Fe sta	
— 134 1	60		DOX 11				@1 noo @1	CO ₃ stringer develo 58.1' to 158.6': CL dules, vertical CaCt 58.6' to 159.3': CL 59.3' to 159.6': CL	AY (CL), models AY (CL), brokers	ottled brown gray, own, wet, vertical (wet, Fe staining CaCO₃ stringers	3
						L						
FI	ELD HA	RDNESS		BEDI				TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
. HARD ARD OD, HARD OFT SOFT	 SCRAT 		JLT TH MEI TH	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"- 36"-1 >12	12" 36" 20"	MODE STEEF	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					1	CO	RE	BC	RII	NG LOG			BORING NO. PAGE 9 OF	CB-5
DO IFOT	FID	odeo S	o h ool		_								PAGE 9 OF	10
ROJECT: LIENT: H		arrer,			LP								JOB NO.:	603367-001
ONTRACTO						ration							PAGE NO:	9 of 10
UIPMENT				5, Cont									ELEVATION:	294 Feet
GROUND				DE		O (Feet)		05		ORIENTATION VERTICAL	TYPE	ORE BARREL Split Sleeve	DATE START: DATE FINISH:	3/26/2012 3/27/2012
DATE		MP	WA	TER	BOT		BOT HO		Х	HORIZONTAL	SIZE	25 LD	DRILLER:	Martini
	- 60		∇		OAGI	110	- 110			INCLINED	Bit (Feet)		PREPARED BY	C AWS
			_							BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
									0	ANG FROM VERT	Total (Feet)			
ELEVATIO	N &	COF				<u>₩</u>	_	¥.,,				TION, REMARKS, AND		
CORE DEF (Feet)	TH	DEP	GE	NUME	- 1	RECOVERY	ROD	GRAPHIC	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change v	vith time. The description	n is a simplification o	surface conditions of the actual
-134 16	30 —				\neg			14111	lver	tical CaCO ₃ stringe	ers and nod	ules		
					- 1					159.6' to 160.6': Cla			fine sand, ang	ular fine
	-								gra	ivel, CaCO ₃ nodule	S			
									@	160.6' to 160.75': A 160.75' to 162.6'. C	ngular grav	el layer within unit	live wet fine o	ngular
										obles, with some M			nve, wet, lille a	ingulal
		160-1	165	Run					1.0	162.2' to 162.3': Mn	O ₂ banding			
				DUX	' '					162.6' to 165': Sand	ly CLAY (C	L), brown, wet, ve	ry fine sand, at	oundant
									Ca	CO ₃ nodules				
									4					
									1					
129 16	₅₅								3					base de
-120 IC										165' to 165.7': Sand		L), brown, wet, fin	e sand, fine su	bangular
									gra	ivel, CaCO ₃ nodule 165.7' to 166': Sand	s Iv CLAY (CI	L), olive brown, we	et, very fine sar	nd, MnO ₂
	7.								4 noo	dules. CaCO₂ nodu	les			.,2
								11/1/1	Π @1	66' to 166.7"; CLA	Y (CL), olive	wet, MnO ₂ band	ing "	
	1			Run	33					66.2' to 166.4': Sa				
		165-1	70	Box						66.4' to 166.5': SA				
	9-								@1	66.5' to 166.9': Cla dules, CaCO₃ nodu	Iyey SAND	(SC), prown, wet,	very fine sand	, IVINO ₂
								444	Inoc	166.9' to 167': CLA	V (CI) brow	vn wet MnO nod	lules CaCO n	odules
	=								01	67' to 167.2': CLA	Y (CL), blov	e, wet, MnO ₂ nodu	les, CaCO ₃ no	dules
								11111		67.2' to 167.25': Sa				
-124 17	0-		-			-		77777		67.25' to 167.4': S				
									noc	dules				
	_							7/1/1	@1	67.4' to 168.15': C	LAY (CL), c	live, wet, CaCO ₃ i	nodules	
									@1	68.15' to 168.6': C	LAY (CL), n	nottled brown olive	e, wet, Mn nod	ules and
								1444	Ca	CO ₃ nodules preval 68.5' to 169.5': Sai	ody CLAV /	CL) dark gray we	at fine to media	um sand
		170-1	75	Run :					0	68.6' to 169.5'; Cla	WOY SAND	(SC) dark gray, we	et fine to med	lium sand
		170-1	' "	Box '	12			1.		69.5' to 170': SAN				
										70' to 170.75': Clay				
										rounded gravel	ydy OAND (CO/, glay blowil,	ime sand,	
										70.75' to 170.85': \$	Silty SAND	(SM), gray olive. v	vet, fine sand.	MnO ₂
									noc	lules				
119 17	5		\neg					11.1		70.85' to 171.9': C			live, wet, fine s	sand, MnO ₂
								<u>:[]].</u>		tules, few fine subr			t was E-	4
	1					1		11/1/	1001	71.9' to 172.8': Silt 72.8' to 173': Silty	y SAND (SI SAND (SM)	vi), dark olive gray L dark gray wet f	r, wet, πne sand ine sand FeΩ.	u staining
										73' to 175': No Red		, dain gray, wet, i	Julia, i Go	, January
	-			D 1	, [01	75' to 175.85': Silty	SAND (SA	f) dark grav wet	fine sand fine	subrounder
		175-1	80	Run 3 Box 1					gra		. O. 14D (OII	n,, dank gray, wet,	o sana, inte	Juli 9411400
	3			DUX	-					75.85' to 176.1': CI	LAY (CL), n	narl, dark gray, we	et, MnO ₂ nodule	es, CaCO ₃
										lules				
	-								@1	76.1' to 180': No R	ecovery			
					- 1									
114 180	\rightarrow		_		_									
, 17 100														
FIEL	D HAF	RDNESS	3			BEDDI	NG			TUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
		AN'T SCI			V. TH		<2" 2"-12			HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2 " -12"	FRESH V. SLIGHT	
HARD -S	CRATO	CHES EAS			MEDIL	JM	12"-3 36"-12	6"	MODE	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	CARVES				V. THIC		>120		SILLE	VERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V SEVERE	
												le Mn = Manganese Oxide	COMPLETE	

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012 GDT 2/18/15

				CC	RE	BC	PRII	NG LOG			PAGE 10 OF	CB-5
PROJECT.	El Rod	eo Schoo	1								1	
CLIENT:											JOB NO.:	603367-001
CONTRAC											PAGE NO : ELEVATION:	10 of 10 294 Feet
EQUIPMEN	T USED:	CME-7		TH TO (Fe				ORIENTATION	C	ORE BARREL	DATE START:	
	HRS A	FT		BOT OF		OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/27/2012
DATE	COM	> VVA	TER	CASING	НС	DLE		HORIZONTAL	SIZE	2,5 l.D.	DRILLER:	Martini
		∇						INCLINED	Bit (Feet)		PREPARED BY	See Plate 1
					_		0	BEARING ANG FROM VERT	Barrel (Feet) Total (Feet)	5	LOCATION:	See Plate I
	\perp	CORE		1 >	i -	10	1			TON, REMARKS, AND	LIMITATIONS	
CORE DI (Fee	PTH	DEPTH RANGE (Feet)	SAMPL NUMBE	- O	RQD	GRAPHIC	l mav	Soil Description applies or differ at other locations ar tions encountered. Trans	lly to a location of d may change v	of the exploration at the t vith time. The description	ime of drilling. Subst	urface condition f the actual
—114 -	180							80' to 181.5': Silty consolidated	SAND (SM), dark gray, wet, f	ine sand, mass	sive,
	1	80-185	Run 3 Box 1					81.5' to 183.8': CL rease with depth	AY (CL), da	irk gray, wet, with	CaCO ₃ nodules	s that
=6	1.0						1 1000	83.8' to 184': Silty	SAND (SM), brownish dark g	ray, wet, fine to	very fine
109	185—						101	84' to 185': CLAY lules, paleosol	(CL), mottle	d orange to olive,	wet, CaCO ₃ st	ringers and
->	7-						@1 Mn	84.4' to 184.65': S O ₂ nodules, micac	eous			e sand,
-0							@1 Tot	84.65' to 184.85': 84.85' to 185': CL/ al depth of boring:	AY (CL), dai 185' bgs	k gray, wet		
-	-						110	ched groundwater 0'-111.3', 113'-113. cavation backfilled	9'.125'-125.	4', 130'-130.9', 13'	7.9'-185' bgs	
	_						dril Exc	ing. ess soil cuttings d ite.				
—104	90											
	-											
	-											
	-											
	-											
- 99 1	95—											
e .	-											
	-											
-94 2	00-											
Cit	LD HARD	NESS		BED	DING		ATT	ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD IARD IOD HARD IOFT	- KNIFE CAN	T SCRATCH	т	V THIN THIN MEDIUM THICK V THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLO MODE STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD, SEVERE	

			CC	DRE	BC	RII	NG LOG			PAGE 1 OF	CB-6
ROJECT. I	l Rodeo Sch	iool									
	l, Farrer, &	Burrill, L								JOB NO.: PAGE NO.:	603367-001 1 of 9
ONTRACTOR		Drilling C								ELEVATION:	305 Feet
GROUNDW	SED CMI		TH TO (Fe				ORIENTATION	С	ORE BARREL	DATE START:	3/28/2012
	HRS AFT	WATER	BOT. OF	ВОТ	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
DATE	COMP	VVATER	CASING	HOI	_E		HORIZONTAL	SIZE	2.5 LD	DRILLER: PREPARED BY	Martini · AMB
							INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	LOCATION:	See Plate 1
						0	ANG, FROM VERT	Total (Feet)			
ELEVATION	CORE		à		2	T			TION, REMARKS, AND		
CORE DEPT (Feet)	DEPTE	NUMB	1 2 0	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	d may change w	rith time. The description	on is a simplification of	urface conditions of the actual
-305 O		+	10.								
						@C Silt	Surface: Asphalt co .4': Artificial Fill. U y SAND (SM), light	ndocumen : brown, mo	ist, fine to mediu		
-300 5						frac	to 5.8': Silty SAN gments, rebar debr 5.8': Pleistocene All	is			ciay, pipe - — — — — -
						Silt	y SAND (SM), gray pangular gravel	brown, mo	ist, fine to mediu	m sand, fine an	d coarse
	5-10	Run Box				L\coa	7.3' to 7.65': Clayey arse subrounded gr	avels			
						bla	7.65'- 8': Gravelly S ck slaty gravel 3' to 9': Sandy CLA'				
						gra	vel				
-295 10	-					@1 fine @1 Fe0	0' to 10': No Recove 0' to 11': Sandy Cl e subangular black 1' to 12': Sandy Cl O ₃ staining	AY (CL), o slate grave AY (CL), m	ottled orange oli	ve, moist, very	fine sand,
	10-15	Run Box				coa	2.1' to 14.1': Grave arse subrounded to	subangulai	black slate grav	el, well graded	
					31.13		4.1' to 14.4': Silty 5		orange brown, r	moist, fine sand	
290 15					111		4.4' to 15': No Rec		241 1		o oond with
<u>∠</u> 13	15-20	Run Box				inte	5' to 17.3': Silty SA erbedded layers of 7.3' to 17.6': Silty Sangular gravel, hyd 7.6' to 20': No Red	clay (~1/2" f SAND (SM) drocarbon c	hick), olive, mois , dark brown, mo	st	
·285 20·			-								
	HARDNESS			DDING			TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
RD SC D HARD SC T GF	IFE CAN'T SCR/ RATCHES DIFF RATCHES EASI OVES RVES	CULT	V. THIN THIN MEDIUM THICK V. THICK	<2"-12 2"-12 12"-3 36"-12 >120	2" 6" 20"	MODE STEEP	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012 GDT 2/18/15

					(CO	RE	BC	RII	NG LOG			BORING NO.	CB-6
DO IFOT	FI D.	odeo S	cheal				_						TAGE 2 OF	
ROJECT: LIENT: H					LP	_							JOB NO.:	603367-001
ONTRACTO	OR I	Martir	i Dril	lling C	orpor	ration							PAGE NO:	2 of 9
QUIPMENT													ELEVATION:	305 Feet
GROUND					PTH T (O (Feet	:):			ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE		AFT	WAT	TER	BOT.		ВОТ		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH: DRILLER:	3/29/2012 Martini
	ÇO	MP			CASI	NG	НО	LE		HORIZONTAL INCLINED	SIZE Bit (Feet)	2,5 I,D	PREPARED BY	
				_						BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	_			-	_	-			0	ANG. FROM VERT	Total (Feet)			
		COF	DE T	_	T	$\overline{}$		10	T			TION, REMARKS, AND	LIMITATIONS	
ELEVATIO		DEP		SAMP	LE	ĒŖ	8	¥ o	The	Soil Description applies or	ly to a location o	of the exploration at the	time of drilling. Subs	urface conditions
CORE DEF (Feet)	?TH	RAN	GE	NUMB	ER	RECOVERY %	8	GRAPHIC	may	differ at other locations an itions encountered. Trans	d may change v	vith time. The description	on is a simplification o	f the actual
(1661)		(Fee	et)		_	22		9	cond	itions encountered. Trans	sitions between	soli types may be gradue	ai,	
-285 2	20 —	20-2	25	Run Box					and ma	20' to 23': Gravelly dicoarse subangula terial 23' to 23.7': Gravelly and coarse subar 23.7' to 25': No Rec	ar to subrou y SAND (SF ngular to suc	nded gravel, hydr	ocarbon odor a	nd residue on
280 2	25	25.7	20	Run	5				hyo	25' to 27.5': Gravell nd, fine and coarse frocarbon odor, we	subangular II graded	to subrounded g	ravel, trace cob	medium bles,
	1	25-3	50	Box	2					27,5' to 29.3': CLAY		ge, olive, moist, F	eO₃ staining	
275 3	30							77777	-	01 1 00 01 01 AV /	OI \	d alice to real brown	un moiet Eco	staining few
273		30-3	35	Run Box					fine soi	80' to 32.6': CLAY (e subangular black I facies, paleosol 86.6' base of paleos	slate grave	d olive to red brov I, well developed	vn, moist, reO₃ blocky fracture,	gleying alon
	-			20%					@3 sar	32.6' to 34.5': Clayend, fine subangular	ey SAND to black slate	gravel, with olive	clay lamination	noist, fine s
270 3	35—							1////		34.5' to 35': Sandy				
	.0	35-4	0	Run Box					@3 sub hig	95' to 35.7': Silty SA 95.7' to 36.5': Sand pangular siltstone for 96.5' to 38': Clayey hily weathered angular 98' to 40': CLAY (Clay grave)	y CLAY (CL ragments SAND (SC ular gravels	.), orange brown,), orange brown, and fine subangu	very moist, fine very moist, fine ular black slate	sand with gravel
								L						
	LD HAF	RDNES	3			BEDD				TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
RD D HARD FT	SCRATO		FICULT		V. TH THII MEDIL THIC V. THI	N UM CK	<2" 2"-1: 12"-3 36"-1: >120	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012, GDT 2/18/15

						אכ	- D(וואי	NG LOG			PAGE 3 OF	9
PROJECT:		Rodeo Se		LIJP								JOB NO.:	603367-001
CONTRAC						1					_	PAGE NO.:	3 of 9
QUIPMEN												ELEVATION:	305 Feet
GROUN	NDWAT	ER:			TO (Fee				ORIENTATION		ORE BARREL	DATE START:	3/28/2012
DATE	- 1	SAFT	WATER	1 -	OT OF		r OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012 Martini
	CO	OMP		CA	ASING	H	DLE		HORIZONTAL INCLINED	SIZE Bit (Feet)	251D	DRILLER: PREPARED BY	
	+	-		+					BEARING	Barrel (Feet)	5	LOCATION:	See Plate 1
	_			+				0	ANG, FROM VERT	Total (Feet)			
	1011.0	COR	E		T≿		ပ	1	FIEL	D CLASSIFICA	TION, REMARKS, AN	D LIMITATIONS	
CORE D	EPTH	DEPT RANG (Fee	SE NI	MPLE JMBER	RECOVERY	Rg Gg	GRAPHIC	may	Soil Description applies or differ at other locations ar litions encountered. Trans	nd may change v	vith time. The descript	tion is a simplification o	urface condition of the actual
—265 -	40							@4	40' to 42.7': Gravell	y SAND (SI	P), grayish browr	n, wet, subangula	ar gravel
		40-4	5 1	un 8 ox 3			111	Pla	eistocene Cheviot	Hills Denos	ts (CHD):		
							1.1.1	10	42.7' to 43.3': Silty orounded gravel, or	SAND (SM)	with clay, brown	n, wet, very fine s	and,
	==							10	13.3' to 44.1': Grave	elly SAND (SP), gray brown,	, wet, fine suban	gular grave
-260	45						_		14.1' to 45': No Red	covery			
200	70								15' to 45.7': SAND		rown, wet, medi	um sand, poorly	sorted
						1		_	15.7' to 46.1': SANI				
								1@4	16.1' to 46.3': Grave	elly SAND (SP), gray brown,	, wet, coarse sar	id, poorly
								Sor	ted, fine and coars	e subangula	ar gravel, well gra	aded	
	_		0 B	ох 3						•			
- 255	50-		- B	ox 3									
-255	50—		- B	ox 3				-	50' to 50.9': SAND	(SP), gray b			
-255	50-		B	ox 3			· · · · · · · · · · · · · · · · · · ·	@s	50.9' to 51.2': Grave ted, subangular gra	(SP), gray b elly SAND (i avel, well gr	SP), gray brown, aded	, wet, coarse san	nd, poorly
-255	50-		В				· · · · · · · · · · · · · · · · · · ·	@sor	50.9' to 51.2': Grave ted, subangular gra 51.2' to 51.5': CLAY	(SP), gray b elly SAND (i avel, well gr	SP), gray brown, aded	, wet, coarse san	nd, poorly
-255	50 —	50-5	5 Ri	in 10			· · · · · · · · · · · · · · · · · · ·	©5 sor ©5	50.9' to 51.2': Grave ted, subangular gra	(SP), gray b elly SAND (: avel, well gr ((CL), oran	SP), gray brown, aded	, wet, coarse san	nd, poorly
-255	50-	50-5	5 Ri	ın 10			: : : : inin	©5 sor ©5	50.9' to 51.2': Grave ted, subangular gra 51.2' to 51.5': CLAY te gravel	(SP), gray b elly SAND (: avel, well gr ((CL), oran	SP), gray brown, aded	, wet, coarse san	nd, poorly
-255 -250	50 —	50-5	5 Ri	ın 10				@s son @s sla @s	50.9' to 51.2': Grave ted, subangular gra 51.2' to 51.5': CLAY te gravel 51.5' to 55': No Rec	(SP), gray belly SAND (Savel, well gr (CL), orange covery	SP), gray brown, aded ge brown, very n	wet, coarse san	nd, poorly ular black
		50-5	5 Ri	ın 10			· : : : : : : : : : : : : : : : : : : :	@s sia @s	50.9' to 51.2': Grave ted, subangular gra 51.2' to 51.5': CLAY te gravel 51.5' to 55': No Rec 55' to 55.7': Gravell id, subangular grav	(SP), gray belly SAND (Savel, well gr (CL), orange	SP), gray brown, aded ge brown, very n V), dark gray bro	wet, coarse san	nd, poorly ular black m to coarse
		50-5	5 Ri	ın 10			· : : : : : : : : : : : : : : : : : : :	@sia @sia @sia @sia @sia	50.9' to 51.2': Grave ted, subangular gra 51.2' to 51.5': CLAY te gravel 51.5' to 55': No Rec 55' to 55.7': Gravell ad, subangular grav 55.7' to 56.3': CLAY reloped blocky frac	(SP), gray belly SAND (Savel, well gr (CL), orange covery	SP), gray brown, aded ge brown, very n V), dark gray bro ge brown, wet, s	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave	nd, poorly ular black n to coarse ls, poorly
		50-5	5 Ri	ın 10			· : : : : : : : : : : : : : : : : : : :	@sia @sia @sia @sia @sia	50.9' to 51.2': Gravel ted, subangular gravel 51.2' to 51.5': CLAY te gravel 51.5' to 55': No Rec 55' to 55.7': Gravell id, subangular grav 65.7' to 56.3': CLAY veloped blocky frac 66.3' to 56.7': Silty \$	(SP), gray belly SAND (Savel, well gr (CL), orange covery	SP), gray brown, aded ge brown, very n V), dark gray bro ge brown, wet, s	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave	nd, poorly ular black n to coarse ls, poorly
			5 Ri B	n 10 ox 4			· : : : : : : : : : : : : : : : : : : :	@sia @sia @sia @sia @sia @sia @sia @sia	50.9' to 51.2': Gravell ted, subangular gravel 51.5' to 55.7': Gravell and, subangular gravel 55.7' to 56.3': CLAY reloped blocky frac 56.3' to 56.7': Silty 5 sangular gravel	(SP), gray belly SAND (Savel, well gr (CL), orange (CL), orange (SAND (SW))	SP), gray brown, aded ge brown, very n V), dark gray broge brown, wet, s red brown, wet,	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave , fine sand, FeO ₃	nd, poorly ular black n to coarse ls, poorly staining, f
		50-5	5 Ri B	nn 10 px 4			· : : : : : : : : : : : : : : : : : : :	est sar dev	50.9' to 51.2': Gravel ted, subangular gravel 51.2' to 51.5': CLAY te gravel 51.5' to 55': No Rec 55' to 55.7': Gravell id, subangular grav 65.7' to 56.3': CLAY veloped blocky frac 66.3' to 56.7': Silty \$	(SP), gray belly SAND (Savel, well gr (CL), orange y SAND (Swell) (CL), orange (CL), orange (CL), orange (CL), orange (SAND (SM))	SP), gray brown, aded ge brown, very n V), dark gray broge brown, wet, seried brown, wet, SP), dark grayish	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave , fine sand, FeO ₃	nd, poorly ular black n to coarse ls, poorly staining, f
			5 Ri B	n 10 ox 4			· : : : : : : : : : : : : : : : : : : :	@Son Manager Control of the contro	50.9' to 51.2': Gravel ted, subangular gravel 51.2' to 51.5': CLAY te gravel 51.5' to 55.7': No Rec 55' to 55.7': Gravell and, subangular gravel 55.7' to 56.3': CLAY reloped blocky frac 66.3' to 56.7': Silty S pangular gravel 66.7' to 58.8': Gravel	(SP), gray belly SAND (Savel, well gr (CL), orange (CL), orange (CL), orange (CL), orange (CL), orange (CL), orange (SAND (SM))	SP), gray brown, aded ge brown, very n V), dark gray broge brown, wet, seried brown, wet, SP), dark grayish	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave , fine sand, FeO ₃	nd, poorly ular black n to coarse ls, poorly staining, f
-250			5 Ri B	n 10 ox 4			· : : : : : : : : : : : : : : : : : : :	@Son Manager Control of the contro	50.9' to 51.2': Gravell ted, subangular gravel 51.5' to 55.7': No Record to 55.7': Gravell d, subangular gravel to 56.3': CLAY teloped blocky fractional to 56.7': Silty spangular gravel 56.7' to 58.8': Gravel to 57.7': To 58.8': To 57.7': To	(SP), gray belly SAND (Savel, well gr (CL), orange (CL), orange (CL), orange (CL), orange (CL), orange (CL), orange (SAND (SM))	SP), gray brown, aded ge brown, very n V), dark gray broge brown, wet, seried brown, wet, SP), dark grayish	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave , fine sand, FeO ₃	nd, poorly ular black n to coarse ls, poorly staining, f
-250 -245	55		5 Right	n 11		DING	* a	@Sono ATT	50.9' to 51.2': Gravell for 55.7': Gravell for 55.7': Gravell for 55.7': Gravell for 55.7': Gravell for 56.3': CLAY for 56.3': CLAY for 56.3': CLAY for 56.3': CLAY for 56.3': To 56.7': Silty for 56.3': Gravell for 58.8': Gravel	(SP), gray belly SAND (Savel, well grade (CL), orange (CL	SP), gray brown, aded ge brown, very n V), dark gray broge brown, wet, so red brown, wet, segravel	wet, coarse san noist to wet, ang own, wet, mediur ubangular grave fine sand, FeO ₃ norange, wet, fire weathering	nd, poorly ular black n to coarse ls, poorly staining, f
-250 -245 HARD RD	555 — 60 — ELD HA	RDNESS CAN'T SCF CHES DIFI	5 Rt B	n 10 ox 4	BEDI THIN HIN DIUM HICK	DING <22-1-11-12-138-1-1-12-138-1-1-12-12-12-138-1-12-12-138-1-12-12-138-1-12-12-12-12-12-12-12-12-12-12-12-12-1	200"	@Son Sala @Son S	50.9' to 51.2': Gravell for 55.7': Gravell for 55.7': Gravell for 55.7': Gravell for 56.3': CLAY reloped blocky fractionary gravel for 56.3': To 56.7': Silty spangular gravel for 56.7': To 58.8': Gravell for 58.8': Gravell	(SP), gray belly SAND (Savel, well grade) y SAND (Swelly or of CCL), orange of CCL), orange of CCL, orange of CCL, orange of ture SAND (SM) elly SAND (Signature) solution of the content of the cont	SP), gray brown, aded ge brown, very n V), dark gray bro ge brown, wet, so red brown, wet, SP), dark grayish	own, wet, mediur ubangular grave fine sand, FeO ₃	nd, poorly ular black n to coarse ls, poorly staining, f

DDC 1505	P1 1	Dodas S	ahaal			אילב	- BC	יאוו	NG LOG			PAGE 4 OF	9
CONTRAC	Hill, I	Martin	chool & Burrill ni Drilling 1E-75, Co	Corp								JOB NO : PAGE NO : ELEVATION:	603367-001 4 of 9 305 Feet
	NDWAT			-	TO (Fee				ORIENTATION	C	ORE BARREL	DATE START:	3/28/2012
		SAFT	WATER		T OF		r_OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
DATE	С	OMP	VVATER	CA	SING	Н	DLE		HORIZONTAL	SIZE	2.51D	ORILLER:	Martini
									INCLINED	Bit (Feet)	5	PREPARED BY	': AWS See Plate 1
	-			-				0	BEARING ANG. FROM VERT	Barrel (Feet) Total (Feet)	,	LOCATION:	OCC FIBILE I
		COF	RE	1	T > 1		U	T			TION, REMARKS, AND	LIMITATIONS	
CORE D	EPTH	DEP RAN	TH SAI	MPLE MBER	RECOVERY	Rod	GRAPHIC	may	Soil Description applies or differ at other locations ar tions encountered. Trans	nly to a location of nd may change v	of the exploration at the twith time. The description	ime of drilling. Subs n is a simplification o	urface condition of the actual
 245	60—							sut	60' to 60.5': SAND pangular black slate	gravel			
20	-	1						@6	0.5' to 61.4': CLA	(CL), dark	red brown, wet su	ıbangular black	slate grav
							4		1.4' to 61.8': Grave		SW), dark gray br	own, wet fine s	and,
	8=	1	_D	n 12			11.1.		angular black slate		N 1-1 1400gowe		
		60-6	ים ר	n 12			(1111		1.8' to 62.15': Silty				
-	02	-				1			2.15' to 62.3': SAN		rk gray brown, wel	t, fine to mediu	m sand,
							1		angular black slate 2.3' to 62.5': Sand		\ dark red brown	wet fine to vo	ry fine ean
	- 12	-							2.5' to 62.8': Grave				
									i2.5' to 62.8': Grave Jular to subangular		ovv), uark gray re	a biowii, wet, 11	nie sanu,
-240	65—						7,777		2.8' to 65': No Rec				
∠40	ŲŪ.								5' to 65.4': CLAY (rown, wet		
									5.4' to 65.8': Sand	CLAY (CL	.), olive, wet, very	fine sand	
	-						444		5.8' to 66': Silty SA				
									6' to 66.3': Sandy				
!	-	1		1 13					6.3' to 66.5': Silty				
		65-7		x 5				@6	6.5' to 67.3': Sand	y CLAY (CL), red olive, wet, v	ery fine sand	
	:	1	-	- 11				<u>@</u> 6	7.3' to 68.3': CLAY	(CL), choc	olate brown, wet,	FeO₃ staining,	MnO_2
							444	noc	lules 8.3' to 68.6': CLAY	(CI) brow	n wet subspanie	r claty arayol	
	-	-					din		8.6' to 69': Silty SA				
									9' to 69.7': CLAY (
-235	70 —				-		VIIII		9.7' to 70': No Rec		ACT ANTIL DIOMIL DSI	iunig	
100000000000000000000000000000000000000									0' to 70.9': Sandy		orange clive, wet	fine to very fin	e sand
	5	1					11111	1 -	0.9' t0 72': Gravell				
							۵. ۵	me	dium sand, subang	y oand (ov Jular black s	slate gravel and su	ibrounded arav	rel
							4 6						
	_	70-	_ Rur	14				4	2' to 72.55': CLAY				
		70-7	5 Bo				111	@7	2.55' to 73.15': Silt	y SAND (SI	M), orange brown,	wet, fine to ve	ry fine sand
		1					Vinn	@7	3.15' to 73.5': San	dy CLAY (C	L), dark brown we	et, very fine sai	nd,
							111	sub	angular black slate	gravel			
							ĿIJ.		3.5' to 74.3': Silty \$		orange brown, w	et, fine sand, s	ubangular
								blac	k slate gravel				
-230	75 —						11.10		4.3' to 74.4': Grave		SW), dark gray bro	own, wet, suba	ngular grav
							- - -		4.4' to 75'- No Rec				
	-							@7	5' to 76.7': Sity SA	ND (SM), da	ark gray brown, w	et, fine to medi	um sand, f
								sub	angular gravel, "Sa	alt and Pepp	per" sands		
	_							@7	6.7' to 80': No Rec	overy			
		75-8	Run					-					
		, 5-0	Bo:	x 5									
	saeso .												
-225	80-		_	-									
							L.,						
	_	RDNESS			BEDD				ITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD ARD		CAN'T SCE			HIN	<2' 2"-1	2"	SHALLO	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
		TCHES EAS		MED	DIUM ICK	12"-3 36"-1	36"	MODE	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	- CARVE		1		HICK	>12	0"		/ERTICAL (85-90°)	V. WIDE	>120"	MOD, SEVERE	
												V SEVERE	

COURTEMPT USES. CASE 75. CASE					C	ORE	B	DRII	NG LOG			BORING NO. PAGE 5 OF	CB-6
Comparison Markin Drilling Corporation PACK No. 5 of ELEVATION PACK No. 6 of ELEVATION PACK No. 6 of ELEVATION PACK No.												100 NO	603367-001
SUMMERN USED CMP-75 Continues Core CMOUNDIANTER DEPTH TO Finely OFFICE O						n							5 of 9
GROUNDWATER DEPTH TO (Feet) DATE HEADY WATER OF THE COMPT WATER CASING HOLE HORIZONTAL TYPE SIGN Slewer DATE FIRSH 320 DRILLER date of the COMPT WATER CASING HOLE HORIZONTAL SIZE 251D PREPARED BY AND CORRESPONDED TO PREPA													305 Feet
DATE COMP VATER CASING MOLE HORIZONTAL SIZE 25.1D PRILERR MAN PART CASING MOLE HORIZONTAL SIZE 25.1D PRILERR MAN PART CASING MOLE HORIZONTAL SIZE 25.1D PRILERR MAN PART CASING MOLE PART CASING SAMPLE SIZE 25.1D PRILERR MAN PART CASING MOLE PART CASING SAMPLE SIZE 25.1D PRILERR MAN PART CASING MOLE PART CASING SAMPLE SIZE 25.1D PRILERR MAN PART CASING MOLE PART CASING SAMPLE SIZE 25.1D PRILERR MAN PART CASING MOLE PART CASING SAMPLE SIZE 25.1D PRILERR MAN PART CASING SAMPLE SAMPLE SIZE 25.1D PRILERR MAN PART CASING SAMPLE		ALTO THE AVE							ORIENTATION	C	ORE BARREL	DATE START:	3/28/2012
COMP COMP COMP COMP COMP COMP COMP COMP	DATE	l	I W	ATER				Х	1		l '	1	3/29/2012
BEARNING Barret (Feet) 5 LOCATION: See BELAVATION CORPT	57112	COMP			CASING	HC	DLE				2.5 I.D.		Martini
ELEVATION & CORE DEPTH SAMPLE SET			_		_	-					5		See Plate 1
### Box 6 ### Bo				_				0					•
### Box 6	EL EL (A PRO)		CORE	Т "	≿		U	T	FIE	LD CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
### Box 6	CORE DEP	тн ¦	RANGE		RECOVER	RQD	GRAPHI	may	differ at other locations ar	nd may change v	vith time. The description	on is a simplification o	urface conditions f the actual
@85 to 85.6': CLAY (CL), red brown, moist, MnO₂ nodules @85.6 to 88': Sandy CLAY (CL), red brown, moist, fine sand, fine suba gravel @86.9' to 90.2': Clayey SAND (SC), orange brown, very moist, fine sand and coarse subangular gravels Run 18 Box 6 @90.9' to 90.6': Silty SAND (SM), olive brown, very moist, fine sand @90.9' to 91.6': Silty SAND (SM), olive brown, very moist, fine sand @90.9' to 92.1': Silty SAND (SM), olive brown, very moist, fine sand @91.6' to 92.1': Silty SAND (SM), olive brown, very moist, fine sand @92.1' to 92.4': Sandy CLAY (CL), olive brown, very moist, fine sand, staining, MnO₂, nodules @92.4' to 92.4': Sandy CLAY (CL), olive brown, very moist, fine sand, FoO₃ staining, fine and coarse subangular black slaty gravels @92.1' to 94.6': Clayey SAND (SC), orange olive, wet, fine sand, FoO₃ staining, subangular gravel @94.6' to 95': Clayey SAND (SC), orange olive, wet, fine sand, FoO₃ staining, subangular gravel @95.7' to 96.2': Clayey SAND (SC), orange olive, moist, fine sand, FoO₃ staining, subangular gravel @95.7' to 97.8': Silty SAND (SM), brown, wet, fine sand, FoO₃ staining, subangular gravel @95.7' to 97.8': Silty SAND (SM), olive brown, wet, fine sand, FoO₃ staining, subangular gravel @95.7' to 97.8': Silty SAND (SM), olive brown, wet, fine sand, FoO₃ staining, subangular black slaty gravel @95.7' to 97.8': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, fine sand	-225 8	-	30-85					sut @8 Mn	bangular gravel 80.7 ' to 81.9 ': Sand 100 00 nodules 100 1.9' to	ly CLAY (CL	.), chocolate brow	vn, very moist, fi	ne sand,
85-90 Run 17 Box 6 @85.6 to 88" Sandy CLAY (CL), red brown, moist, fine sand, fine suba gravel @88 to 88.9" Sandy CLAY (CL), red brown, wet, fine sand, subangular and coarse subangular gravels @88.9" to 90.2" Clayey SAND (SC), orange brown, very moist, fine sand and coarse subangular gravels ### 15		-						@8	33.7' to 85': CLAY	(CL), orange	brown, moist, ab	oundant MnO ₂ n	odules
90-95 Run 18 Box 6 Run 17 Box 6 @88' to 88.9': Sandy CLAY (CL), red brown, wet, fine sand, subangular @88.9' to 90.2': Clayey SAND (SC), orange brown, very moist, fine sand and coarse subangular gravels 90-95 Run 18 Box 6 Run 18 Box 6 Run 18 Box 6 Run 19 Box 7 Run 19 Box Run 18	220 8	35						@8	35' to 85.6': CLAY	(CL), red bro	wn, moist, MnO ₂	nodules	
Box 6 @88' to 88.9': Sandy CLAY (CL), red brown, wet, fine sand, subangular @88.9' to 90.2': Clayey SAND (SC), orange brown, very moist, fine sand and coarse subangular gravels 11. @90.2' to 90.6': Sility SAND (SM), olive brown, very moist, fine sand @90.6' to 90.9': CLAY (CL), olive brown, very moist, fine sand @90.9' to 91.6': Silty SAND (SM), red brown, wet, very fine sand @90.9' to 91.6': Silty SAND (SM), olive brown, very moist, fine sand, egg.2.1' to 92.1': Silty SAND (SM), olive brown, very moist, fine sand, staining, MnO ₂ nodules @92.4' to 92.6': CLAY (CL), olive brown, very moist, FeO ₃ staining, MnO ₂ nodules @92.6': to 41.1': Clayey SAND (SC), orange olive, wet, very fine sand, FeO ₃ staining, subangular gravel @94.6' to 95': Clayey SAND (SC), red brown, moist, fine sand, FeO ₃ staining, subangular gravel @94.6' to 95': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.7': olivey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, gegs are staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, gegs are staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, gegs are staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, gegs are staining, subangular gravel @95.2' to 96.7': Clayey SAND (SC), oranges olive, moist, fine sand, gegs are staini										CLAY (CL),	red brown, moist,	fine sand, fine	subangular
90-95 Run 18 Box 6 90-95 Run 19 Box 7 95-100 95-100 Run 19 Box 7 95-100 Run 19 Box 7 95-100 Run 19 Box 7 Po-100 Run 18 Box 100		- 8	5-90					@8	38.9' to 90.2': Claye	ey SAND (St			
90.95 Run 18 Box 6 Run 19 Box 7 Run 19 Box	215 9	0				_							
90-95 Run 18 Box 6 Run 19 Box 7 Run 19 Box 10 Box							1.						id
Run 18 Box 6 Run 19 Box 7 Run 19 Box 11 Box 12 Bo		-					11.1						
Po-95 Run 18 Box 6 Run 18 Box 6 Run 18 Box 6 Run 18 Box 6 Run 19 Box 6 Run 19 Box 7 Run 19 Box							1.						
Staining, MnO ₂ nodules @92.4' to 92.6': CLAY (CL), olive brown, very moist, FeO ₃ staining, Mn nodules @92.6' to 94.1': Clayey SAND (SC), orange olive, wet, fine sand, FeO ₃ staining, fine and coarse subangular black slaty gravels @94.1' to 94.6': Clayey SAND(SC), orange olive, wet, very fine sand, FeO ₃ staining, subangular gravel @94.6' to 95': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining @95' to 95.7': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining, subangular gravel @96.7' to 96.7': Clayey SAND (SC), orangish olive, moist, fine sand, FeO ₃ staining @96.7' to 97.8': Silty SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sard subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') V. CLOSE STEID HARDNESS FRESH		V=											
Staining, MinO ₂ nodules @92.6' to 92.6': CLAY (CL), olive brown, very moist, FeO ₃ staining, Min nodules @92.6' to 94.1': Clayey SAND (SC), orange olive, wet, fine sand, FeO ₃ staining, fine and coarse subangular black slaty gravels @94.1' to 94.6': Clayey SAND(SC), orange olive, wet, very fine sand, FeO ₃ staining, subangular gravel @94.6' to 95': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining, subangular gravel @95.7' to 96.2': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ staining, subangular gravel @96.7' to 95.7': Clayey SAND (SC), orangish olive, moist, fine sand, FeO ₃ staining @96.7' to 97.8': Silty SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sand subangular black slaty gravel PIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') V. CLOSE SE'S FRESH		۵	0-95), olive brown, ve	ry moist, fine sa	ınd, FeO₃
@94.1'to 94.6': Clayey SAND(SC), orange olive, wet, very fine sand, FeOstaining, subangular gravel @94.6' to 95': Clayey SAND (SC), red olive, moist, very fine sand, FeOstaining @95' to 95.7': Clayey SAND (SC), orange olive, moist, fine sand, FeOstaining @95.7' to 96.2': Clayey SAND (SC), red brown, moist, fine sand, FeOstaining, subangular gravel @96.2' to 96.7': Clayey SAND (SC), orangish olive, moist, fine sand, FeOstaining @96.2' to 97.8': Silty SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sand subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') V. CLOSE 2" FRESH				Box 6				@9 nod	2.4" to 92.6": CLAY lules	(CL), olive			
staining, subangular gravel @94.6' to 95': Clayey SAND (SC), red olive, moist, very fine sand, FeO staining @95' to 95.7': Clayey SAND (SC), orange olive, moist, fine sand, FeO gestioning @95'.7': Clayey SAND (SC), red brown, moist, fine sand, FeO staining, subangular gravel @96.2' to 96.7': Clayey SAND (SC), orangish olive, moist, fine sand, FeO staining @96.7': Clayey SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sard subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING WEATHERING WEATHERING WEATHERING WEATHERING FRESH													-1 5-0
@94.6' to 95': Clayey SAND (SC), red olive, moist, very fine sand, FeO staining @95' to 95.7': Clayey SAND (SC), orange olive, moist, fine sand, FeO @95.7' to 96.2': Clayey SAND (SC), red brown, moist, fine sand, FeO staining, subangular gravel @96.2' to 96.7': Clayey SAND (SC), orangish olive, moist, fine sand, FeO staining @96.7' to 97.8': Silty SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sand subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') V. CLOSE SILVE FRESH	240 01), orange olive, w	vet, very fine sa	na, reO ₃
staining @95' to 95.7': Clayey SAND (SC), orange olive, moist, fine sand, FeO ₃ @95.7' to 96.2': Clayey SAND (SC), red brown, moist, fine sand, FeO ₃ staining, subangular gravel @96.2' to 96.7': Clayey SAND (SC), orangish olive, moist, fine sand, Foundation of the staining and expenses and expenses and expenses exp	F10 80										, red olive, moist,	very fine sand,	FeO ₃
95-100 Run 19 Box 7 @96.2' to 96.7': Clayey SAND (SC), orangish olive, moist, fine sand, Fostaining @96.7' to 97.8': Silty SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sar subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING WEATHERING HORIZONTAL (0-5') V. CLOSE V. THIN THE WEATHERING FRESH		=						stai @9 @9 \stai	ining 5' to 95.7': Clayey 5.7' to 96.2': Claye ning, subangular g	SAND (SC) y SAND (SC) ravel	, orange olive, mo C), red brown, mo	oist, fine sand, F oist, fine sand, F	FeO ₃ stainin feO ₃
@96.7' to 97.8': Silty SAND (SM), brown, wet, fine sand, subangular to gravels @97.8' to 98.1': Silty SAND (SM), olive brown, wet, fine sand @98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sar subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING RD - KNIFE CAN'T SCRATCH V. THIN <2' HORIZONTAL (0-5') V. CLOSE <2'' FRESH		95	-100		10		$ \cdot \cdot $.	@9	6.2' to 96.7': Claye	y SAND (SC	C), orangish olive	, moist, fine sar	ıd, FeO₃
### PRINCE OF THE PRINCE OF TH		-		ROX /			1	@9	6.7' to 97.8': Silty \$	SAND (SM),	brown, wet, fine	sand, subangul	ar to angula
@98.1' to 98.6': Clayey SAND (SC), orangish olive, moist, very fine sar subangular black slaty gravel FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING RD - KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0-5") V. CLOSE <2" FRESH						8		grav 109	vels 7.8' to 98.1': Siltv S	SAND (SM).	olive brown, wet.	fine sand	
FIELD HARDNESS BEDDING ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING								@9	8.1' to 98.6': Claye	y SAND (SC			e sand,
RD KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0-5") V. CLOSE 😅 FRESH	205 100	-			+			_l-					
RD KNIFE CAN'T SCRATCH V. THIN <2" HORIZONTAL (0-5°) V. CLOSE <2" FRESH	FIELD	D HARDNI	ESS		BED	DING		ATT	ITUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	
I ASSERTIONES DEFICIED I TERM ZELZ I SHALLOW CRITCHY ANGLE (2-22 L. L. CLUSE ZELZ ZELZ ZELZ ZELZ ZELZ ZELZ ZELZ	RD -K	NIFE CAN'T	SCRATC		V. THIN	<2"		H	HORIZONTAL (0-5°)			FRESH	
HARD	D -S .HARD -S T -G	CRATCHES CRATCHES ROVES	DIFFICUL	т	THICK	12"-3 36"-12	16" 20"	MODER STEEP	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	WIDE V. WIDE	12"-36" 36"-120" >120"	MODERATE MOD SEVERE V. SEVERE	

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012 GDT 2/18/15

				COR	E BC	DRING LOG BORING NO. CB-6 PAGE 6 OF 9
PROJECT	El R	odeo Schoo	ol .			PAGE C OF C
CLIENT: I	Hill, Fa	arrer, & B	arrill, LLP			JOB NO.: 603367-001 PAGE NO 6 of 9
CONTRACTO	OR: I	Martini Dr	illing Corpo			ELEVATION: 305 Feet
GROUNE	Street Administra		5, Continou	TO (Feet):		ORIENTATION CORE BARREL DATE START: 3/28/2012
	HRS	AFT	BO		OT OF	X VERTICAL TYPE Split Sleeve DATE FINISH: 3/29/2012
DATE	co	MP VVA	ATER CAS	SING I	HOLE	HORIZONTAL SIZE 2.51.D. DRILLER: Martini
						INCLINED Bit (Feet) PREPARED BY: AWS
						BEARING Barrel (Feet) 5 LOCATION: See Plate 1 O ANG FROM VERT. Total (Feet)
	1	CORE			Lo	
CORE DE	PTH	DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY % ROD	GRAPHIC	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface condition may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
205 1	100				4 1.1	● 1098.6' to 98.8': CLAY (CL), olive brown, moist, MnO₂ nodules
	- 1					@98.8' to 99': Clayey SAND (SC), orange olive, moist, fine sand
S	-		,		11111	@99' to 100': CLAY (CL), mottled orange to olive, moist, FeO ₃ staining, few
					444	MnO ₂ nodules from 99' to 99.2'
4	-					@100' to 100.85': Silty SAND (SM), orange brown, wet, fine sand, angular
		100-105	Run 20			black slaty gravels, basal gravelly sand
=			Box 7		JAH.	@100.85' to 101.6': Sandy CLAY (CL), red brown, wet, fine sand, FeO ₃
					1	@101.6' to 103': Sandy CLAY (CL), olive brown, moist, fine sand, FeO ₃
2					974	staining, MnO ₂ banding, few fine angular gravel
						@103' to 103.9': Clayey Gravel (GC), mottled orange to olive, moist, FeO ₃
200 4	05				_\////	staining
—200 1	00					@103.9' to 105': CLAY (CL), mottled orange to brown, moist, FeO ₃ staining
						@105' to 105.7': CLAY (CL), olive, wet, FeO ₃ staining, MnO ₂ nodules @105.7' to 106.3': CLAY (CL), olive, wet, FeO ₃ staining, MnO ₂ nodules,
•	٦					subangular gravel
						@106.3' to 109.2': CLAY (CL), mottled orange to olive, wet, FeO ₃ staining,
5	-		Run 21			trace MnO₂ nodules
	- 1	105-110	Box 7			
=	-					
=	, _					<u> </u>
						@109.2' to 111': CLAY (CL), mottled red brown to dark gray, wet, FeO ₃
 195 1	10-				-\(///	staining, MnO ₂ nodules
,						
	7,1					CALLEY AND ON ON ANY (OL) assessed because your moint. FoO. staining
						@111' to 113.2': CLAY (CL), orange brown, very moist, FeO₃ staining, subangular black slaty gravel increasing with depth
				1 1		Subangular black slaty graver increasing with doptin
				1 2	1////	8
		440 445	Run 22		1////	21
		110-115	Run 22 Box 8			
.		110-115				@113.2' to 114.1': CLAY (CL) with sand, orangish olive, very moist, FeO ₃
a	2	110-115				@113.2' to 114.1': CLAY (CL) with sand, orangish olive, very moist, FeO ₃ staining, trace subangular gravel
es Si		110-115				staining, trace subangular gravel
a a		110-115				@113.2' to 114.1': CLAY (CL) with sand, orangish olive, very moist, FeO ₃ staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel,
- - —190 1	15	110-115				staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly
- 190 1	1	110-115				staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel,
- - —190 1	1	110-115				staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above
- 190 1	1	110-115				staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist to green, v
- 190 1	1	110-115	Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel
- 	15	110-115	Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand
- 	15		Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂
- 	15		Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂ nodules
—190 1 ⁻	15		Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, vermoist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂ nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO ₃ nodules, MnO ₂ banding, grey marl with clayey
—190 1 ⁻	15		Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂ nodules
	15		Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, vermoist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂ nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO ₃ nodules, MnO ₂ banding, grey marl with clayey
	15		Box 8			staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, vermoist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂ nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO ₃ nodules, MnO ₂ banding, grey marl with clayey
—185 12	15	115-120	Box 8	BEDDING		staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, vermoist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO ₂ nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO ₃ nodules, MnO ₂ banding, grey marl with clayey calcareous laminations, marl
—185 1; FIE	15	115-120 RDNESS	Run 23 Box 8	BEDDING	<2"	staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO2 nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO3 nodules, MnO2 banding, grey marl with clayey calcareous laminations, marl
—185 1/	15	115-120 RDNESS CAN'T SCRATC	Run 23 Box 8	THIN HIN 2		staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO2 nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO3 nodules, MnO2 banding, grey marl with clayey calcareous laminations, marl ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') CLOSE 2"-12" FRESH V. SLIGHT MODERATELY DIPPING (36-55') MOD. CLOSE 2"-12" V. SLIGHT SLIG
—185 1/ FIE / HARD IARD IARD IOD, HARD	15	RDNESS CAN'T SCRATC CHES DIFFICU CHES EASILY S	Run 23 Box 8	THIN HIN 2 DIUM 1 HICK 36	<2" 2"-12"	staining, trace subangular gravel @114.1' to 115.7': CLAY (CL), brown, very moist to wet with few highly weathered angular gravel, @115.7' to 116.1': CLAY (CL), olive brown, moist to very moist, micaceous, sharp contact with above @116.1' to 116.7': Sandy CLAY (CL), color change from brown to green, very moist, fine sand with few subangular gravel @116.7' to 117.4': Sandy CLAY (CL), dark green, moist, fine sand @117.4' to 118.2': Clayey SAND (SC), dark green, moist, fine sand, MnO2 nodules @118.2' to 120': CLAY (CL), color change brown to dark olive gray, moist, subrounded pebbles, CaCO3 nodules, MnO2 banding, grey marl with clayey calcareous laminations, marl ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0-5') V. CLOSE 2" FRESH V. SLIGHT V. SHLIGHT

					CC	RE	BC	RII	NG LOG			PAGE 7 OF S)
PROJECT		odeo S										IOR NO	603367-001
CLIENT: 1	HiU, F	arrer,	& Bu	rrill, LLP								JOB NO.: PAGE NO.:	7 of 9
				ling Corp , Contino								ELEVATION:	305 Feet
GROUN			IE-/3		TO (Fee				ORIENTATION	С	ORE BARREL	DATE START:	3/28/2012
		AFT	WAT	BO	T. OF		OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
DATE	co	MP	VVAI	CA CA	SING	HC	LE		HORIZONTAL	SIZE	2.5 I.D	DRILLER:	Martini
									INCLINED	Bit (Feet)	5	PREPARED BY:	See Plate 1
		_			-			0	BEARING ANG FROM VERT	Barrel (Feet) Total (Feet)	5	- LOCATION.	Jee Hate H
		COF	e T		1 -		10	T			TION, REMARKS, AND I	IMITATIONS	
ELEVATION CORE DE (Feet)	PTH	DEP RAN (Fee	TH GE	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC LOG	may o	Soil Description applies on differ at other locations an tions encountered. Trans	ly to a location of may change v	of the exploration at the ti vith time. The description	me of drilling. Subsu	rface condition the actual
—185 1	20-						////	Mn	20' to 120.5': CLA' O₂ laminations				
2.0	=							_	20.5' to 121.4': SA				J
								@1	21.4' to 122': CLA	(CL), dark	gray, wet, CaCO	nodules	
	: 	120-	125	Run 24 Box 8				ang	22' to 123.55': Gra $_{ m pular}$ gravel, MnO $_{ m 2}$	aminations			ıbangular t
							444	@1	23.55' to 123.7': C	LAY (CL), c	ark gray, wet, Cat	O ₃ nodules	
į.									23.7' to 123.8': SIL		k gray, moist		
46-									23.8' to 125': No R				
—180 1	25						1	@1	25' to 125.3': Silty	SAND (SM)	, gray olive, moist	, very fine sand	
	-	125-1	130	Run 25 Box 9				noc @1 mo	25.3' to 126.15 ': C lules, MnO ₂ nodule 26.15' to 126.8 ': C ist, CaCO ₃ nodules 26.8' to 128.7 ': CL	s LAY (CL), s and mediu	harp contact with	above, brown, r	noist to ve
—175 1	30-							@1 sha	28.7' to 129.1': CL 29.1' to 129.3': CL rp contact with bel 29.3' to 130': CLA'	AY (CL), lig ow, CaCO _{3:} ⁄ (CL), gray	ht brown, moist to , stringers , moist	very moist, Fe	O₂ staining
	-							@1 noc	30' to 131': Clayey ules 31' to 131.3': Silty	SAND (SC), light yellow brow), light yellow brow	n, wet, fine san	d
									31.3' to 132.1': CL		ht yellow brown, n	noist, fine sand,	FeO ₃
	-	130-1	135	Run 26 Box 9				@1 Silt	ning, MnO ₂ nodule 32.1': Quaternary y SAND (SM), light ular gravel	San Pedro yellow brow	Formation (Qsp): wn, wet, very fine	sand, FeO ₃ stai	 ning,
	-							@1	33.5' to 135': No R	ecovery			
—170 1i	35-							@1	35' to 140': No Re	covery			
		135-1	40	Run 27 Box 9									
165 14	10												
							L		TUDE AND AND E	IONITO (PHEAD / EDACTION	MEATHERING	
HARD - ARD - OD HARD - OFT -	KNIFE C		RATCH	· T ME Th	BEDI THIN HIN DIUM HICK THICK	OING <2 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLO MODEI STEEP	ITUDE AND ANGLE HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	JOINTS / V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2"-12" 12"-36" 36"-120" > 120"	FRESH V. SLIGHT SLIGHT MODERATE MOD SEVERE	

					CO	RE	BC	RII	NG LOG			PAGE 8 OF	CB-6
ROJECT:		deo Sc										JOB NO.:	603367-001
			& Burrill,								-	PAGE NO.:	8 of 9
ONTRACT	0.03/20		E-75, Co			Ú.						ELEVATION:	305 Feet
GROUN					TO (Feel				ORIENTATION	С	ORE BARREL	DATE START:	3/28/2012
	HRS		WATER		OF	ВОТ	OF	Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
DATE	CO	MP	VVAIER	CAS	SING	НО	LE		HORIZONTAL	SIZE	2.5 I.D.	DRILLER: PREPARED BY	Martini
									INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	LOCATION:	See Plate 1
					-		_	0	ANG FROM VERT	Total (Feet)	3	- LOCATION.	Occ Fide
_	_	COR	E				10	T			TION, REMARKS, AND	LIMITATIONS	
CORE DE (Feet)	РТН	DEPT RANG (Feet	TH SAN	IPLE IBER	RECOVERY	RQD	GRAPHIC LOG	l may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the to with time. The description	ime of drilling. Subs	urface conditions f the actual
—165 1	40—						Ш	@ sul	140' to 140,5': Sand prounded gravel an	ly SILT (ML d cobbles), yellowish olive,	wet, very fine s	sand,
e 6		140-1		1 28 (10				@	140.5' to 145': No R	ecovery			
-160 1	45							sta	145' to 145.5': Silty ining, subangular to 145.5' to 147.2': Sa	subroundendy SILT (N	ed gravel fL), yellowish olive		
								sta	ining, subangular to	suprounde	eu gravei		
		145-1	50 Rur Box	1 29				@	147.2' to 150': No R	ecovery			
—155 1	50	_						@1	50' to 151': Silty So 51' to 151.4': Silty ining, subrounded	SAND (SM)), orangish olive, v	vet, fine sand,	FeO₃
	-	150-1	55 Rur Box					\sta	51,4' to 152,1'; Silt ining, subrounded 52,1' to 155': No R	gravel	M), orangish olive	, wet, fine sand	1, FeO₃
- -150 1	55						4 1.1-	@1	155' to 155.5': Silty	SAND (SM), red orange, wet.	fine sand, Fe	O ₃ , prevalen
	:=	155-16	60 Rur Box					sta @1 ver @1 sar	ining 155.5' to 155.9': Silt y fine sand, FeO ₃ s 155.9' to 157.7': Silt nd, FeO ₃ staining, s	y SAND to taining y SAND to ubrounded	Sandy SILT (SM-I	ML), orangish o	olive, wet,
- -145 16	30—												
	10.22	DNESS			BEDI	NING	L	ΔT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	_
HARD -	KNIFE C.	AN'T SCE CHES DIFI CHES EAS S	RATCH FICULT	TH MED TH	BEDI HIN DIUM ICK HICK	2"-1: 2"-1: 12"-3 36"-1: >120	2" 6" 20"	SHALLO	HTODE AND ANGLE HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-65°) VERTICAL (85-90°)	V CLOSE CLOSE MOD. CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CO	RE	BC	RII	NG LOG			BORING NO.	CB-6
nno ico-	El Rode	no Sala		_								PAGE 9 OF	Э
PROJECT: CLIENT: I				LLP		_						JOB NO.:	603367-001
CONTRACTO		rtini Dr			ration							PAGE NO:	9 of 9
EQUIPMENT		CME-7										ELEVATION:	305 Feet
GROUNE	*******				O (Fee				ORIENTATION	-	ORE BARREL	DATE START:	3/28/2012
DATE	HRS AF	1 1/1/2	ATER		OF	BOT		Х	VERTICAL	TYPE	Split Sleeve	DATE FINISH:	3/29/2012
	COMP	' ' ' '	.,_,	CAS	ING	НО	LE		HORIZONTAL	SIZE	2,5 I.D.	DRILLER: PREPARED BY	Martini • AMS
		-							INCLINED BEARING	Bit (Feet) Barrel (Feet)	5	LOCATION:	See Plate 1
_		-			-		-	0	ANG FROM VERT	Total (Feet)			
		CORE	T		>		O	Ť		<u> </u>	TION, REMARKS, AND	LIMITATIONS	
CORE DEF	N &	DEPTH RANGE	SAMI		RECOVERY	Rob	GRAPHIC LOG	may	Soil Description applies on differ at other locations an itions encountered. Trans	nly to a location of id may change v	of the exploration at the t with time. The description	ime of drilling. Subs	urface conditions f the actual
	50	(Feet)		-	<u>~</u>		-	CONG	RIONS CHOOGINGING	MIONO BOUNGON	33. (ypaaa) aa g		
=	35 —							Per 90. 130 Exc dril Exc	tal depth of boring: rched groundwater 9'-92.1', 92.6'-98.1 D'-131.3', and 132.1 Cavation backfilled ling. Cess soil cuttings disite.	encountere ', 100'-101.6 I'-157.7' bgs with cutting	6', 105'-111', 114.′ s. s and patched witl	1'-115.7', 120'- h asphalt upon	123.7', completion of
	_												
	_												
	.48												
-130 17	5_												
100 17													
	1												
	-												
	-												
	-												
-125 18	o—l				1								
123 10													
=:=:	D.UADD:	IE 00			DEDE	INC	\neg	٨٠٠	ITUDE AND ANGLE	IOINTS /	SHEAR / FRACTURE	WEATHERING	_
	D HARDN		H -	V. Th	BEDD	ING <2"	-		HORIZONTAL (0-5°)	V CLOSE	<2"	FRESH	
RD - S D HARD - S FT - G	(NIFE CAN' SCRATCHE SCRATCHE SROVES CARVES	S DIFFICUL	Ī	V. THI MEDI THIC V. THI	N UM CK	2"-12 12"-36 36"-12 >120	6" !0"	SHALLO MODES STEEP	HORIZONI AL (U-5") W OR LOW ANGLE (5-35") RATELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	CLOSE MOD CLOSE WIDE V. WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT SLIGHT MODERATE MOD SEVERE V. SEVERE COMPLETE	
										Fe = Iron Oxid	e Mn = Manganese Oxide	COMPLETE	342

ROCKLOG2014 EL RODEO BORING LOGS 4-27-12 GPJ ROCKLOG2012 GDT 2/18/15

DDO 1503	תוקו	odes C	Geohazard			'_ D		NG LOG			PAGE 1 OF	10
PROJECT CLIENT:			Unified So								JOB NO.:	10274.006
CONTRAC	CTOR:	Martin	i Drilling								PAGE NO:	1 of 10
EQUIPME							_	ODIENTATION	1 0	ORE BARREL	DATE START:	293 Feet 6/17/2014
GROL	INDWATI		D	BOT.		OT, OF	X	ORIENTATION VERTICAL	TYPE	URE BARREL	DATE FINISH:	6/17/2014
DATE		S AFT OMP	WATER	CASIN		HOLE	^	HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14		_	∇ 40	G/ 1,G//				INCLINED	Bit (Feet)		PREPARED BY	: EH
06/17/14	_		V 135					BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
			T				0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	1
ELEVA CORE I	DEPTH	COR DEP RANG (Fee	TH SAM GE NUM	PLE BER	KECOVERY	RQD GRAPHIC	The may	FIE Soil Description applies o differ at other locations a ditions encountered Tran	nly to a location o	ith time. The description	time of drilling. Subsi	urface condition f the actual
—293	0-	(ree			L	23.7	. @	Surface: 3" Asphal	t			
= -	3						7 C	0.25': 21" Aggregat		Ι (Δξι.)-		
=		2-5	5 Box	c 1			Sil fin @Q	ty CLAY with sand e gravel sized slate 3': Modern and Ho w): ty SAND (SM), bro	(CL), brown fragments, locene Alluv	, moist, fine to me medium subround ium in Historical	ded slate and p Channel of Mo	ebbly grave reno Creek
—288 -	5						me	ty SAND (SM), pro edium to coarse gra	ained sand, t	race clay rich zon		
- 	10-	5-10	0 Box	(1			1 me	3.9' to 9.2': Silty SA dium grained sand te fragments @9.1	 few coarse 	arained sand and	d fine gravel, w	ith abundan
200							. @	gments 9.2' to 9.4': Lamina 9.4' to 10': No Reco		silt		
=	.=						@ sa	10' to 10.6': Silty Sond, few coarse san 10.6' to 10.8': Lami	AND (SM), red grains, few	aravel sized slat	ist, fine to med e fragments	ium grained
5	: -	10-1	5 Box	2		000	@ sul	10.8' to 11.3': Silty prounded clasts	SAND with C	GRAVEL zone (S\		
	9=					Sold	sai @	1.3' to 11.9': Silty nd, few fine gravels 1.9' to 16.4': fine t	o coarse GR	AVEL (GP-GC), s	subangular clas	sts with mat
278	15 —						of	clayey sand, reddis abular slate and b	sh brown, wit	h yellowish oxidat	tion staining, cl	asts consist
0	-	15-20	0 Box	2			Ple @'sia	6.4': Becomes Silt nd, with interbedde istocene Alluvium 7.2' to 18.4': Sand ty sand, abrupt cor	d medium to of Benedic y CLAY (CL ntact below	coarse grained s t Canyon Wash (E) bed, olive gray,	and, moist, red BCW ₁): moist, with som	ne coarse
- -273	20					11:	und	8.4' to 18.9': Silty consolidated, friable 8.9' to 20': No Red	e	with fine gravel, o	dark reddish br	own, moist,
210	20											
F	TELD HA	RDNESS			BEDDING	3	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	4
. HARD ARD OD. HARD OFT . SOFT	- KNIFE (CAN'T SCF CHES DIFI CHES EAS	RATCH FICULT	V THIN THIN MEDIUI THICK V THIC	л ·	<2" 2"-12" 12"-36" 6"-120" >120"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<pre><?" 2"-12" 12"-36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CC	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB- 7
PROJECT			Geohazai									IOP NO	10274.006
CLIENT.								_				JOB NO :	2 of 10
CONTRAC			ii Drillin	g Corp	oration							ELEVATION:	293 Feet
EQUIPME			1E-75	DEDTU	TO (Fee	FV-		_	ORIENTATION	C	ORE BARREL	DATE START:	6/17/2014
	INDWAT HR	SAFT		BO	T. OF	BOT	OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE		OMP	WATER	R CA	SING	но	LE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	1 A	ATD	☑ 40						INCLINED	Bit (Feet)		PREPARED BY:	
06/17/14	1 A	ATD	Y 135						BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
			<u>A</u>					0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVAT	TION &	CO		-	È.	_	≌				ΠΟΝ, REMARKS, AND L		
CORE D	DEPTH	RAN (Fe	GE N	AMPLE UMBER	RECOVERY	gg	GRAPHIC	may	Soil Description applies or differ at other locations ar itions encountered. Trans	nd may change v	rith time. The description	i is a simplification of	urface conditions the actual
	\5 8= 8=	20-	25 E	Зох З				lan alo	20: Sandy CLAY (0 ninations, few fine ng ~45° lamination 23.9' to 24.9'; Claye noisture, minor to nding	slaty gravels	gleyed zone fron al contact	ark reddish bro	occuring
—268	25—						-	0,2	4.9' to 25': SAND	(SP), orang	sh brown, fine gra	ined	
								@2	25' to 26': Fine GR	AVEL (GW)	subangular to sub	prounded tabul	ar slate
	-	1	- 1				11.	\cla	sts, reddish brown	with yellow	oxidation, clayey	sand matrix	
								@2	26' to 26.5': Silty SA	AND (SM), f	ne to medium gra	ined sand, grad	des to fine t
20	72	1	- 1				1111	COS	arse basal fine tabl	ılar slaty gra	vels, reddish brow	n, with yellow	oxidation,
		25-3	an E	30x 3				Llun	vardly fining seque	nce			
		25-	ין טכ	JOX 3			$\Pi\Pi\Pi$	@2	6.5' to 27': Silty S/	AND (SM), f	ne to medium gra	ined sand, grad	ies coarses
5	_	1					1111	bas	sal gravel bed, sub	rounded sia	y graveis, upward	ly lilling seque	nce,
								@2	7' to 28.9': Clayey	SILT (ML),	with sand laminati	ons, oxidation-	h brown
- 1	-	-	- 1				11111	bar	nding, gleying alon oradic fine gravels,	g sand lamii	nations, orangish t	prown to grayis	n brown,
			- 1					spo	oradic fine gravels, ow, oxidation-redu	very sandy	110m 27.6 to 26.3	, gradational co	ontact with
000	20							bei	ow, oxidation-redu	OLAY (OL)	annalarete blaskur	structure were	(cheared)
—263	30 —						<i>''''///</i>	H @2	28.9' to 30': Sandy es, internal randon	CLAY (CL),	moderate blocky s	structure, waxy	(Silealed)
		1						lac	es, internar fandon n fine gravel	il Sileais ilo	11 29.5 10 29.7 , 111	ie to mediam g	granica can
	1.00	1						With	10' to 30.2': Silty Cl	AV to Clave	SUT (CL-ML)	with some fine	sand brick
					H 9		HIM	red	, very moist, abrup	t contact he	low	WILLI SOITIO IIIIO	ouria, priore
	_						HHW	100	0.2': Sandy CLAY	(CL) very f	ne grained orange	e brown	
		30-3		30x 4					30.8' to 33.5': Silty	Clavov SAN	D (SC SM) incres	see in granular	nercentage
		30-	ם ו	OX 4			HIV	@3	ine grained sand,	ciayey SAN	ileved along lamin	ations spotty	alevina in
	-	1						ma		Joine Gay, S	,, along lanilin		, -,a
							71.		33.5' to 33.7': Silty	SAND (SM)	reddish brown to	vellow brown to	o orange re
	-	1	1					mo	ist, fine grained, u	nconsolidate	d, thin bed to 34.5	5'	
							min.		istocene Alluvium				
-258	35							A	4.5': Becomes Silt	v CLAY (CI), with very fine sa	ind, reddish bro	own to
	37							ora	nge brown	, (36	A STREET AND THE TO	-01 0	
							11/1//		4.8' to 35': Very sa	andy			
	_	1							5' to 35.7': Silty Sa		CL-ML)		
			1					100	5.7' to 36.1': Sand	V CLAY (CI) very dark reddis	h brown to cho	colate
								bro	wn, with fine grave	sized slate	fragments, base	of developed s	oil
1	-		ю в	Box 4					6.1': Silty Sandy C				
		35-4						frac	ments to 39.7', gl	eyed along I	aminations and in	matrix	•
	_	35-4			18 A			1					
	_	35-4			1		111111//						
£	-	35-4					111111111111111111111111111111111111111						
		35-4						1					
		35-4											
- -253 \	40	35-4											
- 253 ▽	40—	35-4											
	40 —		S		BEDI	DING		ATT	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
F . HARD	IELD HA	RDNES	RATCH		THIN	<2			HORIZONTAL (0-5°)	JOINTS / V CLOSE CLOSE	SHEAR / FRACTURE	WEATHERING FRESH V. SLIGHT	
F . HARD ARD IOD, HARD	IELD HA - KNIFE - SCRAT	ARDNES CAN'T SC TCHES DI TCHES EA	RATCH FFICULT	ME	THIN HIN DIUM	<2 2"-1 12"-	2" 36"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	V CLOSE CLOSE MOD CLOSE	<2" 2"-12" 12"-36"	FRESH V. SLIGHT SLIGHT	
F . HARD ARD	IELD HA	ARDNES CAN'T SC TCHES DI TCHES EA	RATCH FFICULT	ME Th	THIN HIN	<2 2"-1	2" 36" 20"	SHALLO MODE STEEF	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	

			CO	RE	BC	R	NG LOG			BORING NO. PAGE 3 OF	CB- 7
ROJECT: EIR	Roden Genh	azard Inves			_	_				TAGE 5 OF	
DECEMBER OF THE PARTY OF THE PA		fied School								JOB NO.:	10274.006
		rilling Corpo	ration							PAGE NO.:	3 of 10
QUIPMENT USED): CME-7	15				_		1 0	005 04005	ELEVATION:	293 Feet
GROUNDWATE			TO (Feet)				ORIENTATION	TYPE	ORE BARREL	DATE START: DATE FINISH:	6/17/2014 6/17/2014
DATE I	SAFT W	ATER I	F OF SING	BOT. HO		Х	VERTICAL HORIZONTAL	SIZE		DRILLER:	Martini
		40	SING	ПО			INCLINED	Bit (Feet)		PREPARED BY	
	TD V		-+				BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
30,17714	Y					0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	a
ELEVATION 8	CORE		≽		ပ		FIE	LD CLASSIFICAT	ΠΟΝ, REMARKS, AND I	LIMITATIONS	
ELEVATION & CORE DEPTH (Feet)	DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	l ma	e Soil Description applies o y differ at other locations a aditions encountered. Tran	nd may change w	ith time. The description	n is a simplification o	urface conditions f the actual
-253 40— -						\de	239.7' to 40': Silty C eveloped blocky stri 240' to 40.9': Clayey 240.9' to 41.8': Sand	SILT (ML), v	with fine sand, da	rk brown, wet	
	40-45	Box 5			Δ Δ	fir @ @ fr:	pe grained, minor gl 241.6': Appearance 241.8': Gravelly SAN agments to 43.7' 243.7': Basal sands	eying along I of fine to coa ND (SW), we	aminations arse slaty gravel, 3 t, fine to coarse sa	3%	
· ;-						- 0	243.7' to 45': No Re				
248 45—							245' to 47.1': gravels andstone cobble	s and sands,	slaty fine to coars	se weathered g	ıravel,
:- :-	45-50	Box 5				Al	47.1':Pleistocene (orupt contact to 47. rained 47.6': Becomes da	6', Sandy CL	AY (CL), orange t		
						000	48.1' to 48.3': Trac 48.3' to 50': Sandy 50' to 52': Silty Sar	e slaty coars CLAY (CL), idv CLAY (Cl	e gravel in sandy massive, increase L-ML), poor block	clay matrix, me in sand volun	ne otty MnO ₂ on
							ces, reddish brown) 30 165 789		
	50-55	Box 6				br	own				
						W	52.5' to 52.7': CLA' th yellow oxidation 52.7' to 52.9': Grav	staining			
-						fir	52.7' to 52.9': Grav e subangular to su 52.9' to 53.2': CLA	brounded sla	ty gavel		
38 55—					10	W	th minor gleying, ye	ellowish oxida	ation staining		
; 						gl he	53.2' to 54.8': Sand eyed, massive, spo eavily oxidized @54 55' to 55.5': Clayey	radic fine to .4' to 54.8' Silty SAND	coarse subangula	r slaty gravels, own to reddish	brown,
_	55-60	Box 6				1 9	eyed, fine grained s	and, trace m CLAY (CL-M	edium grained sa IL), reddish brown	nd, grades coa , gleyed, poor	arser
_					Δ	st @ m	ructure, some fine g 55.9' to 57.2': Sand assive, fine to coars ate	rained sand, lv CLAY (CL	gradational conta , with gravel, redo	act dish brown, gle	yed, oxidized
233 60							57.2' to 57.5': SAN	D (SP) bed, t	fine to coarse grai	ned, trace fine	gravel
FIELD HA	RDNESS		BEDDI	NG		A	TTITUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	
ARD - KNIFE (D - SCRAT HARD - SCRAT T - GROVE	CAN'T SCRATO CHES DIFFICU CHES EASILY	LT TH MED TH	HICK HICK	<2" 2"-12 12"-36 36"-12 >120	2" 6" 20"	MOE	HORIZONTAL (0-5°) LOW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V, SLIGHT SLIGHT MODERATE MOD, SEVERE V. SEVERE	
							VERTICAL (85-90°)		>120" e Mn = Manganese Oxide		***

ROCKLOG2014 10274.006 LOGS-RECOVER.GPJ ROCKLOG2012.GDT 2/18/15

								/ I XII	NG LOG			PAGE 4 OF	10
PROJECT			eohazar									JOB NO :	10274.006
CLIENT: CONTRAC			Unified :					_				PAGE NO:	4 of 10
EQUIPME				Corpe	or atton							ELEVATION:	293 Feet
	JNDWATE			DEPTH	TO (Fee	t):			ORIENTATION		ORE BARREL	DATE START:	6/17/2014
DATE		SAFT	WATER		T. OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
	CC	OMP		CAS	SING	НС	LE		HORIZONTAL	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini EH
06/17/14	_		✓ 40✓ 135	_				_	INCLINED BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
00/1//12	4 ^		Y	+				0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	
		COF			l à		U	T	FIEL	D CLASSIFICA	TION, REMARKS, AND L	IMITATIONS	
CORE I	DEPTH	DEP RANG (Fee	GE NU	MPLE IMBER	RECOVERY	RQD	GRAPHIC LOG	may	soil Description applies or differ at other locations ar tions encountered. Trans	d may change w	rith time. The description	is a simplification of	urface conditions the actual
—233 —	60 —							fine @5	7.5' to 58': Sandy to medium graine 8' to 58.3': Sandy ined sand, slightly	d sand SILT with C micaceous	lay (ML-CL), reddis	sh brown, gley	ed, fine
=======================================		60-6	65 B	ox 7			:111122	gra @5	8.3' to 59': Gravell ined sand, fine sub 9' to 59.5': Silty SA aceous	angular sla AND with Cla	te and quartz grave ay lamination (SP-	els	
-	-							@5 gra	9.5': Medium to co 9.6' to 59.8': Sand ned sand 9.8' to 60': Clayey	y SILT with	Clay (ML-CL), red		
228	65—							gle @6	/ed, trace fine slat 0' to 62': SAND wi to coarse grained	gravels th Silt and C	Clay (SC-SM), brov	vn, moist, norn	
-	_							@6	2' to 65': No Recor 5' to 66.8': SAND grading, white silts	very with Silt and	Clay (SC-SM), bro		arse graine
	<u>.</u>	65-7	70 В	ox 7				@6	gracing, write sits 6.8' to 70': Sandy rly developed soil lation-reduction ba	CLAY (CL), faces, trace	dark reddish brow fine subrounded s	slaty gravels,	∕lnO₂ on
-223	70—							gra	0' to 70.3': Clayey dational contact be 0.3' to 71.3': Sand	low			
: :		70-7	'5 B	эх 8				oxio @7	of the first said ation-reduction ba 1,3' to 73.7': Sand tly laminated, poor	nding, spot y CLAY (CL	ty MnO₂ on poorly), dark reddish bro	developed face	es
E	0.00							@7	3.7' to 75': No Red	overy			
— 2 18	75							me @7	5' to 75.6': Clayey dium grained, trace 5.5': Gravelly layer 5.6' to 76.6': Sand rse subangular to	coarse gra fine to coa CLAY (CL	lined sand and fine irse subrounded sl), with gravel, mine	e gravel ate fragments or gleying, mas	ssive, fine to
e P	75-80 Box 8							@7 and qua	6.6' to 78.9': Sand oxidation, sporadirtzite, carbonate gradic MnO ₂ ,	CLAY (CL c fine to coa), reddish brown, r arse subangular to	noist, hard, mi subrounded s	nor gleying late and
	80						Δ. Δ	_@7 _@7	8.9' to 79.1': GRA\ 9.1' to 79.8': Beco	/EL (GW) la nes sandiei	yer, slate , dark reddish bro	wn, fine to med	dium graine
-10	30												
-	IELD HA	RDNESS			BEDE	DING	-	ATT	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD IARD IOD. HARD OFT SOFT	- KNIFE (CAN'T SCI CHES DIF CHES EAS	RATCH FICULT	MED TH	HICK HIN JUM ICK HICK	2"-1 12"-3 36"-1 >12	2" 96" 20"	SHALLO MODER STEEP	IORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) KATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

PROJEC CLIENT:		Rodeo Geo ly Hills U		Investig							JOB NO.:	10274.006
		Martini I									PAGE NO:	5 of 10
		CME	-75	Coll to the					,	/ _/	ELEVATION:	293 Feet
GRO	UNDWAT		DE	PTH TO				ORIENTATION		ORE BARREL	DATE START:	
DATE		SAFT	WATER	BOT. C		OT OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
	C	OMP		CASIN	ا ق	HOLE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/1	_	ATD \(\sum_{\overline{\sigma}}\)	40		_			INCLINED BEARING	Bit (Feet)		PREPARED BY:	605 Whittier B
06/17/1	4 /	ATD T	135		-		0	ANG, FROM VERT	Barrel (Feet) Total (Feet)		Beverly Hills, Ca	
		CORE		Τ.		14:	<u> ۱</u>			TION, REMARKS, AND		
CORE	TTON & DEPTH eet)	DEPTH RANGE (Feet)	SAMI	PLE E	%	GRAPHIC	may	Goil Description applies or differ at other locations ar itions encountered Trans	nly to a location of id may change v	of the exploration at the twith time. The description	time of drilling. Subsun is a simplification of	urface condition the actual
—213	80 —	(i doty				77/	1 11	nd, trace coarse gr			- Contract	
	80-85 Box 9						@8 me	'9.8' to 80.2': Subabonate, basalt 80.2' to 83.9': Sand dium grained sand acture, fine to coar: 13.3', gradational of	y CLAY (CL , sporadic s se gravel lay	.), reddish brown, ubrounded fine sl	very sporadic g	leying, fine derate bloc
ā	5						@8	3.9': Becomes sar	ndier, fine to	coarse grained s	and, abundant f	ine
000	0.0					11111		4.7' to 86': Sandy				sand, trace
208	65-						me stru	els, moderate b	locky			
						000	₫ _	6': Becomes sand				
		85-90	Вох	9			with	7' to 87.9': Increas	ments, redd	ish brown		
=:	85-90 Box 9			77111	clas	7.9' to 89.6': GRA\ sts, abrupt contact						
-203	90 —			_	-	1111		9.6' to 90': Sandy on mer on faces, po				
8	2=	8					@9 coa	0' to 90.5': Gravell rse grained sand,	v SAND with	Clay (SW-SC), o	dark reddish bro	wn, fine to
o.	-	00.05	_	40			@9	tact 0.5' to 90.8': Sand r blocky structure,			n brown, fine gra	ained sand
Ē.	=	90-95	Box	10			san	0.8' to 91.1': Clayed, gradational conf	act			
2/	=						(no @9 @9	1.1' to 91.9': CLAY n-blocky), trace find 1.7': Becomes dan 1.7' to 96.3': Brown	e grained sa k chocolate n paleosol c	and brown lay with some san		uonai
— 198 -	95	95-100	Box '	10			@9 ass pred tow @9 @9	1.9' to 93.2': Dark 3.2' to 96.3': Sandy emblage of fine to dominantly slate, n ards 95' 5': 2-inch slaty cob 6.3' to 98.2': Sandy nmer on faces, spo	CLAY (CL coarse grav ninor amour bles CLAY (CL), with gravel, reduced (debris flow), gots of Tm, gravels), reddish brown, l	ravels consist of become more a hard, poor block	of abundant oxy structure
E	_						@9 no s	8.2' to 98.7': GRA\ 8.7' to 99.5': Sandy structure, sporadic	CLAY (CL)			
-193	100					_//////	@ 9	9.5': Becomes san	aier			
F	IELD HA	RDNESS		В	EDDING		ΑΠ	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	4
HARD ARD OD HARD OFT SOFT	- KNIFE (CAN'T SCRAT CHES DIFFICI CHES EASILY	ULT	V. THIN THIN MEDIUM THICK V. THICK	2' 12 36'	<2" '-12" "-36" '-120"	MODER STEEP	IORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) KATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	" 2"-12" 12"-36" 36"-120" 120"	FRESH V. SLIGHT SLIGHT MODERATE MOD SEVERE	

		C!	4 *					NG LOG			PAGE 6 OF 10)
		Geohazaro s Unified S									JOB NO.:	10274.006
CONTRACTOR												of 10
EQUIPMENT USE	D: Ci	_						OCIENTATION		OBC DADDE!		293 Feet 5/17/2014
GROUNDWAT			DEPTH	TO (Fee		r OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL		5/17/2014
DATE I	S AFT OMP	WATER		SING		DLE	^	HORIZONTAL	SIZE			Vlartini
	ATD	☑ 40	-					INCLINED	Bit (Feet)		PREPARED BY: I	EΗ
	ATD	Y 135						BEARING	Barrel (Feet)			305 Whittier B
	_	Ā				_	0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATION & CORE DEPTH (Feet)	DEF	- 1	MPLE	RECOVERY	RQD	GRAPHIC LOG	may	FIEL Soil Description applies or differ at other locations an tions encountered. Trans	ly to a location of d may change v	ith time. The description	me of drilling. Subsurf	ace conditions ne actual
— 193 _▼ 100 — — 188 [▼] 105 —			ox 11				struce (a) bloom (b) bloom (c) bloom	00' to 100.2': Sand acture, spotty MnO 00.2' to 100.6': Inc 00.6': Inc 00.6': Inc 00.6': Sand cky structure, mino 02' to 102.7': Grav, and basalt, clayer 02.7' to 104': Sand actional contact 04' to 105': Sandy ying, trace medium 05' to 108.1': Silty to medium graine accous, gradational contact 04' to 105': Sandy ying, trace medium 05' to 108.1': Silty to medium graine accous, gradations accous, gradations 08.1' to 108.4': Sained sand, trace co 08.4' to 109': Silty	g, staining or rease in saily CLAY (CI or gleying, treel and Cobbin y sand mater by CLAY to be medium to coarse grand contact, vondy CLAY (CL) to coarse grand contact, vondy CLAY (CL-Tree graine graine CLAY (CL-Tree graine CLAY (CL-Tree graine graine graine CLAY (CL-Tree graine gra	n faces, low sand nd, wet, perched z L), reddish brown, ace fine tabular slable zone, clasts up ix, gleyed Clayey SAND (SC to coarse grained strength of the coarse grained strength of the coarse grained white siltstone rock d sand, gradations ML), dark reddish but the coarse grained white siltstone rock	content one fine grained sandaty gravels, coated to 2-inches, tab -CL), reddish brosand, trace fine grained sand, dy lenses @104.	d, poor ed with cla ular slate, own, mostl gravel, minor 8' to 105' c, mostly rard, slight atrix
— 183 ¥ 110 — - - - - - - 178 115 —	- 105-110 Box 11 - 110-115 Box 12						@1 qua @1 @1 coa @1 to r @1 coa bas @1 fain	or spotty MnO ₂ , ab 09' to 109.6': Char rtz, and minor amo 09.6' to 110': No R 10' to 110.2': Grav- rse grained sand, in 10.2' to 110.5': San- redium grained sand, in 10.5' to 110.8': San- rse grained sand, in alt gravels, gradations, minous in 10.8' to 111.1': Sandaminations, minous in 11.1' to 111.9': Cla	nel Gravels bunts of slat ecovery elly SAND v fine subang ndy CLAY to d, trace co ndy GRAVE fine to coars onal contact ondy CLAY (or gleying, p vev SAND	r, fine to coarse gray, cobble-sized baseling with Clay (SW-SC) ular slaty gravels to Clayey SAND (Sarse grained sand (L (GW) bed, dark to subangular to sit to CL), reddish brown oor blocky structure (SC), with gravel, (SC), with gravel, (SC), with gravel, (SC), cobble sized brown to cobbooks to complete the complete to complete the complete	reddish brown, c-CL), reddish brown, vubrounded slate, n, moist, fine grate dark reddish browds.	wet, fine to rown, fine vet, fine to . Tm, and ined sand, wn, fine to
HARD - KNIFE	78 115 ———————————————————————————————————						1111 @1 @1 @1 san gley @1 @1	rse grained sand, 1.6' 11.9' to 112': Thin 12' to 112.2': Claye 12.2' to 115': No R 15' to 115.8': Sand d, laminated, mode ring, fine to mediur 15.8' to 115.9': Thi 15.9': Sandy CLAY 16' to 116.2': Thin ITUDE AND ANGLE RORIZONTAL (0-5') WOR LOW ANGLE (5-35') WOR LOW ANGLE (5-35') WOR LOW ANGLE (5-35')	Sandy CLA ey SAND (S ecovery y CLAY (Cl erate blocky n grained si n Silty CLA' (CL), reddi Silty CLAY	Y (CL) bed, moder C), reddish brown, r structure, thin Mn and lens @115.6' Y (CL-ML) laminat sh brown, fine to r	rate blocky struct, moist, fine grain fine to medium grain o ₂ blebs, brown ion, olive brown medium grained	ture ned sand grained , minor

			CO	RE B	ORII	NG LOG			BORING NO. PAGE 7 OF 1	CB- 7
	Rodeo Geoha								IOR NO :	10274.006
CLIENT: Bever										7 of 10
CONTRACTOR: EQUIPMENT USE			ration						22	293 Feet
GROUNDWAT			TO (Feet):			ORIENTATION		ORE BARREL		6/17/2014
	SAFT	TER I	OF	BOT, OF	Х	VERTICAL	TYPE			6/17/2014 Martini
Co	OMP	CAS	SING	HOLE	-	HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY:	
	-	40	_			BEARING	Barrel (Feet)		_	605 Whittier Bl
06/17/14 A	ATD ¥ 1	30			0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATION &	CORE DEPTH	SAMPLE	RECOVERY %	RQD	3 The	Soil Description applies or	v to a location o	TION, REMARKS, AND L	ne of drilling. Subsur	face conditions
(Feet)	RANGE (Feet)	NUMBER	RECO	8 83.	2000	differ at other locations and ditions encountered. Trans	i may change w	ith time. The description	is a simplification of t	ne actual
- 12- 	120-125	Box 13				116.1': Sandy GRA avels 116.2' to 116.7': Sa nO ₂ blebs, small bro 116.7' to 117.3': Ch arse grained sand.	ndy CLAY (wn blebs annel Depo clayey matr	CL), dark reddish b	orown, fine grain	ned sand,
					lar @ @ tra	ninations, entire un 117.3' to 120': No F 120' to 121.8': Silty ce coarse grained : 121.8' to 125': No F 125' to 125.2': Sand	t laminated ecovery SAND (SM) and, trace t ecovery	, brown, wet, fine tine subangular silt	to medium grair stone gravels	ned sand,
	125-130	Box 13			co sla @ sa gra @ gra @	125' to 125.2' Sand arse grained sand, hty gravels, clay coa 125.2' to 126.1': Sa nd, poor blocky stru avel @125.6', grada 126.1' to 126.5': Sil ained sand, fine gra 126.5' to 126.9': Grada dium grained sand 126.9' to 130': No F	fine to coars ted grains ndy CLAY (cture, MnO tional conta y CLAY (Cl vel, shimme avelly Sandy , fine slaty g	se predominantly s CL), reddish browr block block ct c-ML), reddish brower con facies CLAY (CL), dark	n, fine to mediun gravel, lens of s wn, trace fine to reddish brown,	m grained and and medium
— 163 ¥ 130 — - - - - 158 ¥ 135 —	130-135	Box 14				130' to 130.8': Clay arse grained sand, adational contact 130.8' to 133.1': Sabrounded gravels, gcomes less appare 132.7', gradational 133.1' to 133.6': Silassive, fine to medibrounded slaty grav 133.6': Sandy 133.6' to 135': No F	ine to coars ndy CLAY (leyed, poor nt gleyed, cla contact y CLAY (Cl um grained els	se subangular to si CL), reddish brown blocky structure, f y below oxidation-i	ubrounded slaty $_{\rm II}$ laminated, ha $_{\rm M}$ $_{\rm IO_2}$ spotting, $_{\rm II}$ reduction bands lark reddish bro	rd, few fine laminations ed wn, hard,
	135-140	Box 14			@ co @ wee grade find grade grade	135' to 135.5': Silty arse grained sand, 135.5' to 135.6': Grat, fine to coarse gravels 135.6' to 137.7': Sale to coarse grained adational contact 137.7' to 138.1': Bet, mostly fine to me brounded slate and 138.1': GRAVEL (G	Clayey SAN some fine g avelly CLAY ined sand, andy GRAVE sand, fine to comes Silty dium graine quartz grav	ravels at contact by (CL), with sand la fine to coarse subset (GW), with clay, o coarse subrounce SAND (SM), with d sand, trace coarsels	elow Imination, reddi Imination, reddi Imination, reddi Imination, reddi Imination, reddish b Imination Imination, reddish b Imination I	sh brown, bunded slat rown, wet, s,
—153 140 —										
	L DAVISO		DEDC!	NC.	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/ HARD - KNIFE		LT TH	BEDDI THIN JUM JICK HICK	<2" 2"-12" 12"-36" 36"-120" >120"	SHALL	HORIZONTAL (0-5°) HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) ERATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V, CLOSE CLOSE MOD, CLOSE WIDE V WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						. DC	/KII	NG LOG			PAGE 8 OF	10
PROJECT: CLIENT: I	El Rodeo Beverly Hi		zard Inve								JOB NO.:	10274.006
CONTRACTO			lling Corp								PAGE NO.:	8 of 10
EQUIPMENT		CME-75						ODIENTATION		ORE BARREL	DATE START:	293 Feet 6/17/2014
GROUNI	HRS AFT			TO (Fee		r. OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE FINISH:	6/17/2014
DATE	COMP	WA	TER I	ASING		DLE	_ ^	HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATD	∇ 4	0					INCLINED	Bit (Feet)		PREPARED BY:	
06/17/14	ATD	₹ 10	35					BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
		Ā		- 1		_	0	ANG. FROM VERT.	Total (Feet)	TON DEMARKS AND	Beverly Hills, Ca	
ELEVATION CORE DE (Feet)	PTH R	ORE EPTH ANGE Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	ith time. The description	me of drilling. Subsu	urface conditions the actual
-	45	0-1 4 5 5-150	Box 15				grade	138.2' to 139': Gravined sand, fine to or 139' to 139.2': 2-inclining 139.2' to 140': No R 40' to 140.9'; Finin 40': Silty SAND (S dium grained sand 40.5': Becomes m 40.7': Becomes m 40.9' to 141.2': Clasto coarse grained 41.2' to 141.3': 2+ d gleyed, waxy suff 41.3' to 145: No R 45' to 145.1': Very dish brown, wet, fir 45.1' to 145.3'; Sand, trace coarse grained 41.3' to 145.2': Wey dish 2': Wey 45.3' to 146.9': Vey 46.9' to 147.2': Inc	ecovery g upward se M), with cla trace coars yey GRAVE sand, fine t - inch slate ace on face ecovery thin layer or the to coarse andy CLAY (fined sand, idized lamin t, fine to co gravels, cla gravels, cla gravels, in treases in cl	agular to subround BBLE, with heavily equence y, grayish reddish se grained sand, fin to coarse graine grained sand and coarse subangul gravels, within clas f Clayey SAND (So grained sand, fine CL), reddish browr fine slaty gravels, lations, abrupt con arse grained sand yey matrix, gleyed ayer, mostly coars ayey matrix, heavi	brown, wet, mone slaty gravel de sand, wet fine wet slaty gravel de sand, wet fine wet slaty grayel, grayish reddilar platy slate gyey matrix, clate slaty gravel and fine to medium oderate block tact fine to coarse gravel by gleyed, yello	partz grave pe yellow postly fine to s gravels sh brown, pravels y is oxidized dark grayis m grained ky structure
	-)-155	Box 16				@1 coa frag @1 coa @1 gra @1 trad gle @1	47.2', gravels becomes the second of the sec	(CL), redd MnO ₂ spotting, abrupt of yey Sandy Fine subrour y Silty CLA CLAY (CL), and, fine grand moderate to y CLAY (Clined sand, blocky strustrus (CL), and, blocky strustrus (CL), and, fine grand fine to the sand, blocky strustrus (CL), and fine to the sand, and fine to the sa	ish brown, fine to ring, moderate bloccontact GRAVEL (GW-GC) inded slaty gravels, Y (CL-ML), reddish reddish brown, fir avel, MnO ₂ spottin blocky structure L), reddish brown, fine slaty gravels, cture, abundant M	medium graine ky structure, track), reddish brow abrupt contact to brown, MnO ₂ the to medium gig and minor based fine to medium gleyed on minor lnO ₂ spotting o	vn, fine to t banding, rrained sand ands, minor grained or sandy n faces
- - - - 133 16	155-160 Box 16 33 160 FIELD HARDNESS BEDDING RD - KNIFE CAN'T SCRATCH V. THIN <2"						e e e e e e e e e e e e e e e e e e e	51.4' to 151.6': Inc cky structure 51.6' to 152.4': Sai d, poor blocky stru 52.4': Sandier lami 52.5' to 152.7': Sai d, gleyed, moderal 52.7' to 152.8': Lar 52.8' to 153.3': Fin lark reddish brown, ined sand in middle derate blocky struc 53.3' to 153.8': Sai	rease in sar ady CLAY (conture, mode nation ady CLAY (conture) e blocky straination with ing upward gleyed, fine to, fine to cost ture, MnO ₂ ady CLAY (conture)	nd content, increase CL), reddish brown erately gleyed CL), reddish brown eucture in increase in coars sequence, Sandy e grained sand in userse grained at bas spotting, gleyed	se in gleying, m n, fine to mediu n, fine to mediu se grained san CLAY (CL), rec upper zone, fine se, trace fine s	m grained m grained d ddish brown e to mediun laty gravels
			V.		<2			HORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
IARD - MOD HARD - SOFT -		DIFFICUL'	T T			2" 36" 20"	MODE STEEP	W OR LOW ANGLE (5-35") RATELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

	EID- 1	Cooks					NG LOG			PAGE 9 OF 10
PROJECT: CLIENT: E	El Rodeo everly Hill	Geohazaro Is Unified S								JOB NO.: 10274.006
CONTRACTO	R Marti	ini Drilling								PAGE NO.: 9 of 10 ELEVATION: 293 Feet
EQUIPMENT			DEDTU TO	/F1):			ORIENTATION	l c	ORE BARREL	DATE START: 6/17/2014
GROUNE	HRS AFT		DEPTH TO BOT C		T_ OF	X	VERTICAL	TYPE		DATE FINISH: 6/17/2014
DATE	COMP	WATER	CASIN		OLE		HORIZONTAL	SIZE		DRILLER: Martini
06/17/14	ATD	☑ 40					INCLINED	Bit (Feet)		PREPARED BY: EH
06/17/14	ATD	▼ 135	-			_	BEARING	Barrel (Feet) Total (Feet)		LOCATION: 605 Whiltier B Beverly Hills, Ca
	1 00	ORE	1	_	10	0	ANG FROM VERT		TION, REMARKS, AND L	
CORE DEF	TH RAI	PTH SA	MPLE S	% ROD	GRAPHIC LOG	The may cond	Soil Description applies or	ly to a location of	of the exploration at the tile with time. The description	me of drilling. Subsurface condition is a simplification of the actual
133 10 	160	-165 Bo	ox 17			gra mo @a san blo san	153.8' to 154.4': Sa inned sand, trace of derate blocky struct 154.4' to 155': No Fi 155' to 155.4': Sand ind, laminated, mod 155.6' to 155.6': Fir oky structure 155.6' to 156.5': Sand ind, minor gleying, r 156.3': GRAVEL (G	ndy CLAY (parse graine ture, MnO ₂ ecovery by CLAY (Cl erate block) e to coarse andy CLAY (passive	CL), dark reddish I d sand, fine grave spotting L), reddish brown, v structure, trace fi GRAVEL (GW) zo CL), reddish browr	ure, faintly laminated brown, fine to medium II, laminated, gleyed, fine to medium grained ne gravel, gleyed one, matrix has moderate II, fine to medium grained gravels, gradational conta
— 128 16 - - - - - - 123 17	165-	-170 Bo	x 17			@ oxi traa @ oxi san oxi stro	dation-reduction bace coarse grained siles. Siles of to 158.8': Find 158.8': to 159.1': Cland, abrupt contact of to 160': Silty of faintly laminated for to 162.8': Silty dation-reduction bacture, gleyed, MnC 162.8': Inc.	nded, progrand, minor e slaty GRA yey SAND Sandy CLA t, gleyed, m Sandy CLA nded lamina o ₂ spotting, reasing san	ressively clayier, fil gleying, MnO ₂ spot NCL bed with Clay (SC), reddish brown Y (CL-ML), dark reduced blocky stry (CL-ML), dark reduced in the strength of	yey matrix (GC) In, fine to medium grained addish brown, fine grained ucture, MnO ₂ spotting addish brown, d sand, poor blocky tt medium grained sand, trace
	170-	-175 Bo	x 18			en stri	dation-reduction backy structure 64.3' to 165': Beccorert and abundar 65' to 166.5': Silty medium grained sa ngers, moderate bl 66.5': Becomes Sa 67.2' to 167.6': Sp bonate becomes le 67.6' to 169.3': Sa	y Sandy CL nded lamins mes very dat CLAY (CL-Ind, trace fin ocky structu andy CLAY oradic fine s ss abundar	AY (CL-ML), dark ations, fine grained ark reddish brown, ML), with sand, vere slaty gravels, abore (CL), carbonate strict (CL), reddish brown CL), reddish brown	reddish brown, faint d sand, poor to moderate laminations become less by dark reddish brown, fine undant vertical carbonate ringers continue andy Clay matrix (GC), a, fine to medium grained
—118 17 - - - - - - - - - - - - - - - - - - -	170-175 Box 18 175-180 Box 18						nd, with few coarse cky structure, sport 69.3' to 169.4': Sai 69.4' to 171.4': Sai fined sand, few coabonate stringers 71.4' to 172': Beco 72.2' to 174.7'; Siltined sand, trace monate stringers, rounder 174.7' to 175': Sand 74.7' to 175': Sand 74.7' to 175': Sand 74.7' to 175': Sand 17	grained sar adic carbon- ndy lamination of CLAY (rse grained mes sandie y Sandy CL edium to co oderate blo y CLAY (CI	nd, trace fine slaty ate stringers on CL), dark reddish tsand, trace fine sl r AY (CL-ML), very arse grained sand cky structure .), very dark reddis	and Tm gravels, poor prown, fine to medium aty gravels, sporadic dark reddish brown, fine , MnO ₂ nodules, sporadic sh brown, fine to medium d blebs, MnO ₂ blebs,
	n×		1							
FIFI	D HARDNES	SS	T -	EDDING	1	ATI	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING
HARD -1 IARD -1 IOD HARD -1	(NIFE CAN'T S SCRATCHES D SCRATCHES E GROVES CARVES	CRATCH	V. THIN THIN MEDIUM THICK V. THICK	2"- 12" 36"-	2" 12" -36" 120" 20"	MODE STEEP	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD, CLOSE WIDE V. WIDE	<2" 2"-[2" 12"-36" 36"-]20" >120" e Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD, SEVERE V. SEVERE COMPLETE

				CC	RE	ВС	DRI	NG LOG			BORING NO. PAGE 10 OF	CB- 7
ROJECT	El Roden	Genha	zard In	vestigatio							PAGE 10 OF	10
LIENT B											JOB NO.:	10274.006
ONTRACTO	R Mar	tini Dri	illing Co	rporation							PAGE NO.:	10 of 10
QUIPMENT		ME-7						ORIENTATION		ORE BARREL	ELEVATION: DATE START	293 Feet 6/17/2014
GROUND	WATER: HRS AFT	-		TH TO (Fee	et): BOT	OF	X	VERTICAL	TYPE	ORE BARREL	DATE FINISH:	6/17/2014
DATE	COMP	WA	TER I	CASING	HC			HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATD	V 4						INCLINED	Bit (Feet)		PREPARED BY	EH
06/17/14	ATD	▼ 1	35					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blvd
		Ā			,		0	ANG, FROM VERT	Total (Feet)		Bevery Hills, Ca	
ELEVATION	U.R. I	ORE EPTH	SAMPL	E X		일을				TION, REMARKS, AND		-fditions
CORE DEP (Feet)	TH RA	ANGE eet)	NUMBE	1 < 0	ROD	GRAPHIC	may	Soil Description applies or differ at other locations an ditions encountered. Trans	id may change v	rith time. The description	n is a simplification of	the actual
-113 18 -108 18	5 -)-185 i-190	Box 1				@ saa @ me str @ @ ca @ ca @ grazage	adational contact 175' to 175.3': Sanond, few medium grained sand 175.4': Latedium grained sand 175.4' to 175.6': Sanottling, poor blocky: 175.6' to 175.9': Latedium to coarse graingers, shell fragmed 177.9' to 178.9': Cladium grained sand 178.8': MnO ₂ 178.9' to 179.9': Sill rebonate stringers, shell fragmed 178.8': MnO ₂ 178.9' to 180': Lamind 180' to 180.4': Sanond 180' to 180.4': Sanond 180' to 180.4': Sanond 180' to 180.5': GRayels	mined sand, mination of trace coar ndy CLAY (structure, simination of ained sand, ndy CLAY (ined sand, poor blayey Silty Silty, well sorted to the sand of the san	soft, shimmer on to Sandy CLAY to Close grained sand CL), grayish brownightly micaceous Clayey SAND (SC slate fragments CL), grayish brownicace fine gravel, Tocky structure, graying the same contact about the same contact	aces, gradation ayey SAND (S n, slight reddish), fine to medium, fine grained m and slate, c adational conta y, fine grained rained sand, sp amination @17 ay, fine to med -CL), gray, ven estringers, calc	nal contact C-CL), fine to n brown Im grained sand, trace arbonate ct sand, trace oradic 9.2' ium grained y moist, fine ite crystals,
103 190	_	-195	Box 20	0			me @stri	180.5' to 180.9'; Sandium grained sand 180.9' to 182'; Sanducture, faintly lamin 182' to 185'; No Rec 185' to 185.4'; Interfix gray, clay is well 185.4' to 188.1'; Silt ad, minor carbonate 188.1' to 188.7'; Silt wan staining, fine gr 188.7' to 190'; No R 190' to 193.8'; Silty	, carbonate ly CLAY (Cl ated, carbo covery aminated S developed, y CLAY (Cl e blebs y CLAY (Cl ained sand, ecovery CLAY (CL-II	stringers and nod.), gray, fine grain- nate stringers ilty CLAY and Cla- with waxy finish of -ML), with sand, g- carbonate blebs, //L), dark gray, fair	ules, gradation ed sand, mode yey SAND (SM n faces, fine gr gray, massive, gray, with abun- minor carbona ntly laminated,	al contact rate blocky -SC), gray to ained sand fine grained dant reddish te stringers
93 200	-						@1 Tot Pe 100 145 Loo Bot Bot	bon concretions and 193.8' to 194.2': Saide medium flat rour 194.2' to 195': No Rival depth of coring: rched groundwater 10'-100.2', 105'-108.5'-145.1', and 145.3 and groundwater tabring backfilled with a press cuttings dispose	ndy SILT (Noted sand gecovery 195' bgs encountered, 11, 110'-110', 148.2' bgs le encounte are proximately	L), with clay, dark rains d @ 40'-40.9', 41.8', 120'-121.8', 13 red @135' bgs ad soil cuttings upoficinches of cold in	gray, fine grain 8'-43.7', 52'-52 5'-139', 140'-14 on completion patch mix asph	5', 40.7', of drilling. alt.
	D HARDNE			BEDI V. THIN	OING <2"			TITUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS /	SHEAR / FRACTURE	WEATHERING FRESH	
RD -S D HARD -S FT -G	NIFE CAN'T S CRATCHES I CRATCHES I ROVES ARVES	DIFFICUL	r '	THIN THIN MEDIUM THICK /_THICK	2"-12 12"-3 36"-12 >120	2" 6" 20"	MODE STEER	DW OR LOW ANGLE (5-35°) PATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V. SLIGHT SLIGHT MODERATE MOD, SEVERE V. SEVERE COMPLETE	

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB- 8
CONTRACT	Beverl	lodeo Geoh ly Hills Uni Martini Dr CME-7	fied Schoo illing Cor	ol Distric	t						JOB NO.: PAGE NO.: ELEVATION:	10274.006 1 of 8 299.5 Feet
GROUN				H TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START:	6/17/2014
DATE	-	RAFT	ATER I	OT OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
		OMP		CASING	НС	DLE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14		TD						INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY: LOCATION:	605 Whittier B
06/17/14	A	TD ▼ 12	28.4				0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATION CORE DE (Feet)	PTH	CORE DEPTH RANGE (Feet)	SAMPLE	129	RQD	GRAPHIC	The S		D CLASSIFICA	rith time. The descriptio	LIMITATIONS time of drilling. Subsu in is a simplification of	urface conditions
-300	0-	(i out)					@5	Surface: 5-inches A	sphalt			
						1	@0	.4': 8-inches Portla	and Cement			
	-							:Artificial Fill. Und to 5': Hand auger		I (Afu):		
295	5-					\bowtie		t to E 21: Apphalt of	ounke with e	day		
1000000	eř							to 5.2': Asphalt cl			Wash (RCW)	
-1						11111	\@5	.2": <u>Pleistocene Al</u> idy SILT (ML), with	clav. browi	n, moist, fine grain	ned sand, trace	medium to
							coa	rse grained sand	. J.L.J. J. 010441	.,		
				1			@5	.7' to 7': Sandy CL	AY (CL), wi	th silt, brown, fine	grained sand,	slightly
-							mic	aceous, zone with	fine to coar	se grained sand (@5.9' to 6.1'	
		5-10	Box 1			1	_	to 10': No Recove				
	-								,			
- - 290	10-							Ol to 141; Candy Cl	•	ldish brown mais	et fine grained s	cand trace
- 290	10-						@1 clay	0' to 11': Sandy SI v, gradational conta	LT (ML), red			
- 290	10			1			@1 clay	r, gradational conta 1' to 11.9': Silty SA dium grained sand	LT (ML), red act NDD (SM), re , abrupt con	eddish brown, fine tact	e grained sand,	trace
- 290 -	10 -						@1 clay @1 me:	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty \$	LT (ML), rec act ND (SM), re , abrupt con SAND with (eddish brown, fine tact Gravel (SW-SM),	e grained sand,	trace
- 290 	10	10-15	Box 1				@1 clay @1 mer	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine	LT (ML), rec act ND (SM), re , abrupt con SAND with (d sand, fine	eddish brown, fine tact Gravel (SW-SM), to coarse gravels	e grained sand, reddish brown r s, up to 2+ -inch	trace matrix, with
- 290 	10	10-15	Box 1			Δ	@1 clay @1 med	7, gradational contains of the second of	LT (ML), red act ND (SM), red abrupt con SAND with (d sand, fine Gravelly SA	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brow	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t	trace matrix, with les to medium
- 290 	10	10-15	Box 1				@1 clay @1 med @1 fine @1 grain	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty G ned sand, few coa	LT (ML), rec act ND (SM), rec abrupt con SAND with (d sand, fine Gravelly SAI rse grained	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brows sand, fine subang	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t gular slaty grave	trace matrix, with les to medium
290	10	10-15	Box 1				@1 clay @1 mer @1 fine @1 grai	7, gradational contains of the second of	LT (ML), recact ND (SM), recast AND with Constant, fine Gravelly SA rise grained by SILT (ML)	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), bro sand, fine subang, with clay, olive b	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t gular slaty grave	trace matrix, with les to medium
290	10	10-15	Box 1				@1 clay @1 mee @1 fine @1 grai	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty C ned sand, few coa 2.9' to 13.2': Sand ned sand, poor blo	LT (ML), red act ND (SM), red abrupt con SAND with 0 d sand, fine Gravelly SA rse grained y SILT (ML) ocky structure	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), bro sand, fine subang, with clay, olive b	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t gular slaty grave	trace matrix, with les to medium els
-	10	10-15	Box 1				@1 clay @1 fine @1 grai @1 @1	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty C ned sand, few coa 2.9' to 13.2': Sand	LT (ML), reconct ND (SM), reconct AND (SM), reconct AND with (d sand, fine Gravelly SAI rse grained by SILT (ML) covery ND (SM), o	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brown sand, fine suband, with clay, olive bree	e grained sand, reddish brown n s, up to 2+ -inch wn, moist, fine t gular slaty grave brown, moist, lar	trace matrix, with les to medium els minated, fin
-	-	10-15	Box 1				@1 clay @1 mer @1 fine grai @1 grai @1 grai @1 san	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty C ned sand, few coa 2.9' to 13.2': Sand ned sand, poor blown 3.2' to 15': No Rea 5' to 16.4': Silty SA d, trace medium g	LT (ML), recact NND (SM), recact SAND with 0 d sand, fine Gravelly SAI rse grained by SILT (ML) rocky structure covery NND (SM), or	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brows sand, fine subang with clay, olive bree live brown, lamina, trace clay, abrug	e grained sand, reddish brown n s, up to 2+ -inch wn, moist, fine t gular slaty grave prown, moist, lar ated, mostly fine ot contact	trace matrix, with les to medium les minated, fin
-	-	10-15	Box 1				@1 clay @1 mee @1 fine @1 grai @1 grai @1 san	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty C ned sand, few coa 2.9' to 13.2': Sand ned sand, poor blo 3.2' to 15': No Rec 5' to 16.4': Silty SA d, trace medium g	LT (ML), recact NDD (SM), ro, abrupt con SAND with 0 d sand, fine Gravelly SAI rse grained by SILT (ML) bocky structul covery NDD (SM), orained sand /EL (GW) b	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brows sand, fine subang with clay, olive bree live brown, lamina, trace clay, abrug	e grained sand, reddish brown n s, up to 2+ -inch wn, moist, fine t gular slaty grave prown, moist, lar ated, mostly fine ot contact	trace matrix, with les to medium les minated, fin
-	-	10-15	Box 1				@1 clay @1 mee @1 fine @1 grai @1 grai @1 ann @2 grai @3 grai @4 grai	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty C ned sand, few coa 2.9' to 13.2': Sand ned sand, poor blo 3.2' to 15': No Rec 5' to 16.4': Silty SA d, trace medium g 6.4' to 16.7': GRAN rels, with silty sand	LT (ML), recact ND (SM), recact AND (SM), recact SAND with Code sand, fine Gravelly SAI resegrained by SILT (ML) covery ND (SM), orained sand /EL (GW) be matrix	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), browned fine subang, with clay, olive breedlive brown, lamina, trace clay, abruged, gray, fine sub	e grained sand, reddish brown n s, up to 2+ -inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subre	trace matrix, with les to medium els minated, fin e grained ounded slat
-	-	10-15	Box 1				@1 clay @1 mee @1 fine @1 grai	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty S to medium graine 2.3' to 12.9': Silty Coned sand, few coa 2.9' to 13.2': Sand ned sand, poor blown 3.2' to 15': No Recommend sand, poor blown 5' to 16.4': Silty SA d, trace medium g 6.4' to 16.7': GRAN yels, with silty sand 6.7' to 17': Silty CL	LT (ML), recact ND (SM), recact AND (SM), recact SAND with Code sand, fine Gravelly SAI resegrained by SILT (ML) covery ND (SM), orained sand /EL (GW) be matrix	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), browned fine subang, with clay, olive breedlive brown, lamina, trace clay, abruged, gray, fine sub	e grained sand, reddish brown n s, up to 2+ -inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subre	trace matrix, with les to medium els minated, fine e grained ounded slat
-	-						@1 clay @1 mer @1 fine @1 grai	y, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty SA to medium graine 2.3' to 12.9': Silty Can ned sand, few coa 2.9' to 13.2': Sand ned sand, poor blo 3.2' to 15': No Rec 5' to 16.4': Silty SA d, trace medium g 6.4' to 16.7': GRAN yels, with silty sand 6.7' to 17': Silty CL grained sand, for	LT (ML), recact NDD (SM), recact SAND with Code sand, fine Gravelly SAI received by SILT (ML) booky structure covery NDD (SM), or rained sand /EL (GW) by matrix AY (CL-ML) NDD with Graine subang	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brown sand, fine suband, with clay, olive brown, lamina, trace clay, abruged, gray, fine suband, olive brown to gravel (SP-GM), recarded.	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subro greenish brown, ddish brown, mo	trace matrix, with les to medium les minated, fine e grained ounded slate moist, trace bist, fine to
—285	-						@1 clay @1 mer @1 fine @1 grai	y, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty SA to medium graine 2.3' to 12.9': Silty Can ned sand, few coa 2.9' to 13.2': Sand ned sand, poor blo 3.2' to 15': No Rec 5' to 16.4': Silty SA d, trace medium g 6.4' to 16.7': GRAN yels, with silty sand 6.7' to 17': Silty CL grained sand, to rise grained sand, to	LT (ML), recact NDD (SM), recact SAND with Code sand, fine Gravelly SAI received by SILT (ML) booky structure covery NDD (SM), or rained sand /EL (GW) by matrix AY (CL-ML) NDD with Graine subang	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brown sand, fine suband, with clay, olive brown, lamina, trace clay, abruged, gray, fine suband, olive brown to gravel (SP-GM), recarded.	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subro greenish brown, ddish brown, mo	trace matrix, with les to medium les minated, find e grained ounded slat moist, trace bist, fine to
—285 —286 —280 2	115	15-20		BEOL	DING		@1 clay @1 mee @1 grain	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty SA to medium graine 2.3' to 12.9': Silty Candon sand, few coal 2.9' to 13.2': Sandined sand, poor blown 3.2' to 15': No Recommendation of the sand d, trace medium grained sand, silty sand 6.4' to 16.7': GRAN cels, with silty sand 6.7' to 17': Silty CL grained sand 7' to 17.5': Silty SA rese grained sand, silty sand rels	LT (ML), recact NDD (SM), ro, abrupt con SAND with (d sand, fine Gravelly SAI rse grained by SILT (ML) bocky structule covery NDD (SM), oralined sand /EL (GW) bit matrix AY (CL-ML NDD with Griffine subang overy	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brown sand, fine suband, with clay, olive brown, lamina, trace clay, abrughed, gray, fine suband, olive brown to gravel (SP-GM), recular slate and base	e grained sand, reddish brown r s, up to 2+-inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subre greenish brown, ddish brown, mosalt gravels, trace	trace matrix, with les to medium les minated, find e grained ounded slat moist, trace bist, fine to
—285 —286 —280 2	115	15-20 RDNESS	Box 2	BEDD!	<2'		@1 clay @1 me @1 fine @1 grai @1 grai @1 grai @1 an @1 fine @1 coa grai @1 ATT	y, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty SA to medium graine 2.3' to 12.9': Silty Ca ned sand, few coa 2.9' to 13.2': Sandy ned sand, poor blo 3.2' to 15': No Rec 5' to 16.4': Silty SA d, trace medium g 6.4' to 16.7': GRAN yels, with silty sand 6.7' to 17': Silty CL grained sand, 1' rese grained sand, 1' yels 7.5' to 20': No Rec	LT (ML), recact ND (SM), recact ND (SM), recact SAND with (d sand, fine Gravelly SAI received y SILT (ML) ocky structured to sand VEL (GW) by d matrix AY (CL-ML) ND with Grained subang overy	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brown sand, fine subang, with clay, olive bre live brown, lamina, trace clay, abruged, gray, fine subang, olive brown to gravel (SP-GM), recular slate and bases	e grained sand, reddish brown r s, up to 2+ -inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subro greenish brown, ddish brown, mo salt gravels, trac	trace matrix, with les to medium les minated, find e grained ounded slat moist, trace bist, fine to
—285 —285 —280 2 FIE HARD —ARD —OD, HARD —OD,	115 LID HAR	RDNESS CAN'T SCRATCI CHES DIFFICUL CHES EASILY S	Box 2			2" 96 " 20"	@1 clay @1 mer @1 fine @1 grai @1 grai @1 grai @1 ann @1 sann @1 sann @1 sann @1 sann @1 sann @1 sann	r, gradational conta 1' to 11.9': Silty SA dium grained sand 1.9' to 12.3': Silty SA to medium graine 2.3' to 12.9': Silty Candon sand, few coal 2.9' to 13.2': Sandy ned sand, poor blows 3.2' to 15': No Recommend sand, poor blows 5' to 16.4': Silty SA d, trace medium gowels, with silty sand 6.4' to 16.7': GRAN vels, with silty sand 6.7' to 17': Silty SA grained sand, for see grained sand, for see grai	LT (ML), recact NDD (SM), recact NDD (SM), recact SAND with Code sand, fine Gravelly SAI rse grained by SILT (ML) booky structule covery NDD (SM), oralined sand /EL (GW) bit matrix AY (CL-ML NDD with Grained subang overy JOINTS /	eddish brown, fine tact Gravel (SW-SM), to coarse gravels ND (SP-GM), brown sand, fine suband, with clay, olive brown, lamina, trace clay, abrughed, gray, fine suband, olive brown to gravel (SP-GM), recular slate and base	e grained sand, reddish brown r s, up to 2+-inch wn, moist, fine t gular slaty grave brown, moist, lar ated, mostly fine ot contact angular to subre greenish brown, ddish brown, mo salt gravels, trace	matrix, with les to medium les minated, fin e grained ounded slat moist, trac bist, fine to

			CO	RE	BC	RII	NG LOG			PAGE 2 OF	CB- 8
OJECT: El	Rodeo Geoh	azard Inve				_				152 2 0,	
ENT: Beve										JOB NO.:	10274.006
NTRACTOR:	Martini Di	illing Corp	poration							PAGE NO.:	2 of 8
UIPMENT USE	D: CME-7	5							ODE DADDEL	ELEVATION:	299.5 Feet 6/17/2014
GROUNDWAT	-		TO (Fee		05	· ·	ORIENTATION	TYPE	ORÉ BARREL	DATE START: DATE FINISH:	6/17/2014
DATE I	RS AFT W	ATER	OT OF ASING	BOT, HOL		Х	VERTICAL HORIZONTAL	SIZE		DRILLER:	Martini
	OMP		ASING	HOL		_	INCLINED	Bit (Feet)		PREPARED BY	
	ATD I						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
	Ā					0	ANG, FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
LEVATION &	CORE		≽		Ö				TION, REMARKS, AND L		
ORE DEPTH	DEPTH RANGE	SAMPLE NUMBER		ROD	GRAPHIC LOG	The	Soil Description applies or differ at other locations an	ly to a location of	of the exploration at the tig	me of drilling. Subs	urface conditions f the actual
(Feet)	(Feet)	NOMBER	REC	_	8_	cond	litions encountered. Trans	sitions between s	soil types may be gradual	0	
280 20 —	20-25	Box 2			. 191	700	20' to 20.6': Silty Grarse grained sand, 20.6' to 25': No Rec	fine to coars	D (SP-GM), reddis se subangular slat	h brown, moisi e and basalt gi	t, fine to ravels
275 25— - -	25-30	Box 3		1000		gra gra poi fine gra	25' to 25.7': Silty Cl arse grained sand, 25.7' to 25.9': Interb ined sand, interbed 25.9' to 26.1': Sand or blocky structure 26.1' to 26.5': Sand e grained sand, lam idational contact 26.5' to 27.4': Grave	fine subrour bedded zone dded with or y CLAY (CL y Silty CLA) hinated, gley	nded slate and base, Sandy CLAY (Clange fine grained), brownish gray, red (CL-ML), reddish red, poor to moder (SW), reddish brow	ealt gravels _), reddish browned from the grain of the g	wn, fine ned sand, ay mottling, acture, o coarse
270 30— - -	30-35	Box 3				@3 gra gra	ined sand, fine to c 27.4' to 30': No Rec 30' to 31.7': Silty Gr ined sand, fine to c dational contact istocene of Bened 31.7' to 32.3': Silty of dium grained sand	covery cavelly SANI coarse slate ict Canyon Clavey SAN	O (SP-GM), reddis and basalt gravels Wash (BCW ₂): D (SM-SC), reddis	h brown, fine to s, normally gra	o coarse ded unit, — — — — - t, fine to
- - 65 35—	-					stri (0: (0: (0: (0:	ngers 32.3' to 32.7': Claye coarse grained san 32.7' to 33.9': Silty of ined sand, fine to co 33.9' to 35': No Rec	ey SAND (So d, poor to m Gravelly SA coarse grave	C), reddish brown noderate blocky str ND (SP-GM), redd	with yellowish ucture ish brown, fine	mottling, fine
- - - - -	35-40	Box 4		I		@3 bro @3 (gle @3 sar	s5' to 35.3': Sandy is wn, massive, fine to 35.3': Grave arse grained sand, 36.3': Sitty (39.7') mottling, fine to 37.1': Clayend, moderate block arse grained sand, dational contact	SILT (ML), vo coarse graph of the subang Clayey SAND (South of the subang structure of the structure of the subang structure o	ained sand SW), with clay, red ular to subrounded D (SM-SC), reddis ained sand, trace C), reddish brown, SAND (SW-SC), re	dish brown, m d slaty gravels th brown with g fine basal grav fine to mediur	oist, fine to grayish yels n grained moist, fine to
60 ⊈ 40—											
FIELD H	ARDNESS		BEDD		T		TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	_
SCRA		LT MI	THIN THIN EDIUM THICK THICK	<2" 2"-12' 12"-36 36"-120' >120'	5" '0"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) P OR HIGH ANGLE (55-65°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V SLIGHT SLIGHT MODERATE MOD SEVERE V SEVERE COMPLETE	

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

					CO	RE	BC	RI	NG LOG			BORING NO.	
ROJECT	El Rodeo	Genh	azard l					-				PAGE 3 OF	8
LIENT: B					_							JOB NO :	10274.006
ONTRACTO				Corpo	ration							PAGE NO.:	3 of 8
QUIPMENT		CME-7							ODIENTATION	1 0	ORE BADDEL	DATE START:	299.5 Feet 6/17/2014
GROUND	WATER: HRS AFT	-	DE	PTH T BOT	O (Feet		OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE FINISH:	
DATE	COMP	WA	ATER	CAS			DLE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATD	Д 3	8.5						INCLINED	Bit (Feet)		PREPARED BY	/: EH
06/17/14	ATD	₩ 12	28 4						BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
		Ā			_1		-	0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	a
ELEVATION	U.R. I	ORE EPTH	SAMI	DI E	ERY		일본				TION, REMARKS, AND		
CORE DEP (Feet)	TH R/	ANGE Feet)	NUMI		RECOVERY %	RQD	GRAPHIC	may	Soil Description applies or differ at other locations arditions encountered. Tran	nd may change v	with time. The description	n is a simplification o	of the actual
-260 4	10-							tra	37.4' to 37.9': Sand ace medium grained	sand, mod	erate blocky struct	ture	
								cli	37.9' to 38': Layer or ay matrix 38' to 38.5': Clayey				
	40)-45	Вох	4				gr	ained sand, trace of ructure, yellowish of	oarse grainé xidation stai	d sand, fine grave ning	l, poor to mod	erate blocky
								sa	38.5' to 39.4': Clayend, fine subangular	to subround		et, fine to coa	rse grained
	-				- 1				39.4' to 40': No Red		I) raddiah bassa	matrix wat	ndium to
255 4	5—						IIII	CC	40' to 42': Sandy G arse grained sand, all sorted, gradation	fine subrour	nded basalt and sl	ate gravels, cla	ayey matrix,
								@	42' to 42.7': Clayey arse grained sand,	SAND (SC) fine subrour	nded gravels		
								@ br	42.7' to 42.9': Laye own, fine to coarse	r of Sandy G grained san	RAVEL with Clay d, fine to coarse g	ravel, @42.9':	bottom of
$\bar{\Delta}$	45	5-50	Вох	5				10	avel, top of clay pal 42.9': Pleistocene	Cheviot Hills	Deposits (CHD):		
	1							tra	ayey SAND (SC), re ice coarse grained a pped with coarse g	sand, botton	n of gravel, top of	clay paleosol,	gleyed at to
250 50								@ ab	43.6' to 44.3': Silty undant reddish browying	CLAY (CL-N	L), olive brown, m	oist, trace fine	sand,
200 0	·							@	44.3' to 45': No Red	covery			
立								sa	45' to 45.9': Silty Sa nd, moderate block 45.9' to 47.2': Beco	v structure.	abundant reddish	wn, moist, fine brown staining	grained J
	50	-55	Вох	5				@ ab	47.2' to 48.8': Beco undant dark reddish	mes Clayey n brown stai	SAND (SC), redd ning, fine to mediu	ım grained sar	
	-						ЩИ	1	arse grained sand, 48.8' to 50': No Rec		idy day lamilatio	113	
									50' to 51.5': Silty SA		eddish brown cles	in sand very r	noist mostly
	-						LLILL	fin	e grained sand, sor	ne medium	grained sand, trac	e clay	
45 ₹ 55	,						111122	@ 00	51.5' to 52': Becom arse grained sand,	es Sandy G	RAVEL (GW-GC),	reddish brown	n, wet, fine to
.,5 - 00									adational contact			1.5	
									52' to 52.2': Lamina				Et 4
									52.2' to 52.6': Claye arse grained sand,				rown, fine to
								- 19	52.6': Clayey SAND				unded
	55	-60	Box	6					ivels	01410			
	33	-00	DUX	٦				@	52.7' to 53.1': Silty	Sandy CLAY	(CL-ML), reddish	brown, moist	
								gra	53.1' to 53.8': Claye ained sand, with wh oderate blocky struc	ite siltstone	clasts and basal c	apping gravels	e to coarse s, poor to
									53.8' to 55': No Rec		no day non lamina	anolis .	
40 60													
RD -K	D HARDNE	SCRATCI	н	V TH		<2"			TITUDE AND ANGLE HORIZONTAL (0-5°)	V. CLOSE	SHEAR / FRACTURE	WEATHERING FRESH	
SHARD -S	CRATCHES I CRATCHES I ROVES ARVES	DIFFICUL	.т	THIN MEDIL THIC V. THIC	JM K	2"-12 12"-3 36"-12 >120	6" 20 "	MODE	OW OR LOW ANGLE (5-35°) FRATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	
										Fe = Iron Oxid	e Mn = Manganese Oxide	COMPLETE	

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

					CC	RE	BC	KII	NG LOG			PAGE 4 OF	CB- 8
PROJECT CLIENT: CONTRAC	Bever	ly Hills Martin	ıi Drillin	School	Distric	t						JOB NO.: PAGE NO.: ELEVATION:	10274.006 4 of 8 299.5 Feet
EQUIPME			1E-75	DEDTU	TO (Fee				ORIENTATION	С	ORE BARREL	DATE START:	6/17/2014
	NDWATE HRS	AFT	_	BO	T. OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE	CC	OMP	WATER	CA	SING	HC	DLE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ı A	TD :	☑ 38.5						INCLINED	Bit (Feet)		PREPARED BY:	
06/17/14	A	TD :	T 128.4						BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
		!	Ā					0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
CORE D	EPTH	RANG	TH S GE N		RECOVERY	RQD	GRAPHIC	may	FIEL Soil Description applies or differ at other locations an tions encountered. Trans	ly to a location of	/ith time. The descriptio∩	me of drilling. Subsu	rface conditions the actual
—240 —235 —235	DEPTH RANGE (Feet) DEPTH RANGE (Feet) DEPTH RANGE (Feet) Box 6 60-65 Box 7							grade	ined sand is.8' to 55.8': Clayey ined sand is.8' to 55.9': Redd is.9' to 56.2': Silty is to coarse grained is.2' to 56.4': Silty is did is.4' to 57': Clayey irse grained sand, if' to 58': Sandy Cl inited, fine to mederate blocky struc interest of the sand, normall g' to 58.6': Becom it to 58.6': Becom it to 58.6': Becom it to 58.6': Recom it to 58.6': Silty is ined sand, normall g' to 60': No Recom it to 61.1': Silty SA ined sand, normall 1.1' to 64.8': Silty is ined sand, normall 3.7': MnO ₂ spotting is 4.1': becomes che in 70': Sandy Cl inated, oxidation-re	Silty SAND ish brown le Clayey SAN sand, fine s CLAY (CL-N SAND (SC) fine subang AY (CL), re dium grainee sture, slightly es interbede sand, thinly SAND (SC) y graded very, likely g ND (SM), r y graded, fe CLAY (CL-N d, oxidation g coolate brow AY (CL), re eduction ba	(SC-SM), reddish amination of Sandy D (SM-SC), with g subrounded slaty g ML), reddish brown to gradish brown to gradish brown to gradish brown, g mavels eddish brown, g gravels eddish brown, g gravels eddish brown, g gravels, s ML), with sand, reddish brown, g the basal gravels, s ML), with sand, reddish brown and g the ddish brown and g anded, occasional feddish brown and g anded, occasional feddish brown and gended, occasional feddish brown and gended.	brown, wet, fin CLAY (CL) Iravel, reddish by Javel, reddish by Javel, reddish by Javel, reddish by Javel, normal Jayish olive brows Jayish olive fine to fine fine fine fine fine fine fine fine	
**: **: **:	65-70 Box 7							wel @7 lam @7 bro 74.	cy finish on faces at developed paleos 0' to 70.9': Sandy ination, moderate 0.9' to 75': Becomwn, gleyed, gray maken asional carbonate	col CLAY (CL), blocky structures mostly mottling, spot grained san stringers	reddish brown and sture, fine to mediu lassive, occasiona radic fine gravel zo d, poor to moderal	d gray, with fair um grained san il MnO₂ laminat ones @72.9', 7: te blocky struct	nt MnO ₂ d ions, reddis 3.7', and ure, very
	- 70-75 Box 7							gra	5' to 81.4': Sandy ined sand, some no rounded gravels, poture @71.1' to 71	nedium graii oor blocky	ned sand, trace co structure, with mod	arse grained sa derate to strong	and, fine g blocky
F	IELD HA	RDNESS	3		BEDI	DING		АΠ	ITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	4
HARD IARD IOD HARD OFT SOFT	- KNIFE	CAN'T SCI CHES DIF CHES EA	RATCH FICULT	ME Th	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MODÉ STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre>2" 2"-12" [2"-36" 36"-120" >120"</pre>	FRESH V. SLIGHT SLIGHT MODERATE MOD SEVERE V. SEVERE COMPLETE	

						NG LOG			PAGE 5 OF 8	
PROJECT: B		Geohazard							JOB NO: 10274.00	6
CONTRACTO	R: Mart	ini Drilling							PAGE NO 5 of 8	
EQUIPMENT						ODIENTATION		ORE BARREL	ELEVATION: 299.5 Fee	
GROUND	NATER: HRS AFT	D	EPTH TO (Fee	et): BOT. OF	X	ORIENTATION VERTICAL	TYPE	ONE BARREL	DATE FINISH: 6/17/2014	
DATE	COMP	WATER	CASING	HOLE	, ,	HORIZONTAL	SIZE		DRILLER: Martini	
06/17/14	ATD	☑ 38.5				INCLINED	Bit (Feet)		PREPARED BY: EH	
06/17/14	ATD	¥ 128.4				BEARING	Barrel (Feet)		LOCATION: 605 Whitt	ier E
		Ā			0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	_
ELEVATION CORE DEP (Feet)	TH RAI	ORE PTH SAM NGE NUM eet)	- 0	RQD GBABHIC	. □ I may	Soil Description applies differ at other locations	only to a location of	TION, REMARKS, AND of the exploration at the to the time. The description is oil types may be graduated.	ime of drilling. Subsurface cond n is a simplification of the actual	lition
▽	80	-85 Box	x 8		graphic San Market	31.6' to 81.9': San ained sand, trace ocky structure 31.9' to 82.2': Intendy slate GRAVEI 32.2' to 82.9': San aist, fine grained s	dy CLAY (CL coarse grains rbedded zone L (GW) beds dy CLAY to C and, trace me	ed sand, trace sub e of fine to coarse and Sandy CLAY Clavey SAND (SC	very moist, fine to medi rounded slate gravels, p subangular to subround	dec ry
—215 8 - - - - - -210 90	85-	.90 Box	x 9		elle elle elle elle elle elle elle ell	ghtly micaceous 33.4' to 83.5': Thin 33.5' to 85': Becor e grained sand, who so to 86': Sandy Color of the same gravel, shimmer 36': Thinly laminat ys 87.3' to 88.3': Sligly, white siltstone a 88.3' to 91.7': San ying, fine to medicas.	dy CLAY (CL n sand rich len mes less sand hite brown we CLAY (CL), re d, trace coar- on facies ed brown cla th increase in and weathere dy CLAY (CL um grained s	ns, fine to medium dy, reddish brown, eld developed soil veddish brown, with se grained sand, p y, oxidation-reduct in fine gravel content dd slaty gravel), reddish brown, and, trace coarse	moderate blocky struct	ace nick
5 5 6	90-	95 Box	¢9		sla @9 mid @9 tra	ty gravel, poor blo 91.2': Sand rich la 91.7' to 91.9': Lame baceous 91.9' to 94.5': San	mination, fine mination of ora dy CLAY (CL rse grained s	grained sand angish brown fine on the contract of the contract	grained SAND (SP), moist, fine grained sand er laminations, moderate	
∇				6	@9	4.5' to 95': Sandy	GRAVEL wi	th Clay (GW-GC).	fine to coarse grained	
—205 95 - - - - -	95-1	00 Box	10		sar @9 sar gra @9 sar @9	nd, fine to coarse post to 95.1': Thin land post to 95.7': Sand trace medium dational contact vol.5.7' to 96.5': Graved, fine subangula post to 96.5': Clay htly micaceous	predominantly amination of 6 dy CLAY (CL grained sand with below welly SAND w or slaty gravel rey SAND (S6	y subangular slaty Clayey SAND (SC), reddish brown, , poor blocky struc- rith Clay (SW-SC) s, trace Tm clasts C), reddish brown,	y gravels, wet), fine to coarse grained very moist, fine grained cture, fining upward, , wet, fine to coarse gra	ine
—200 100				2		6.9' to 97.1': Slate 7.1' to 97.7': Inter			Clayey SAND (SC), fin	e t
FIELD	HARDNES	ss	BEDI			TTUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
IARD -S MODHARD -S OFT -G	NIFE CAN'T SI CRATCHES D CRATCHES E ROVES ARVES	IFFICULT	V. THIN THIN MEDIUM THICK V. THICK	<2" 2"-12" 12"-36" 36"-120" >120"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) · OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

			CORI	E BC	DRII	NG LOG			PAGE 6 OF	CB- 8
		azard Inves							JOB NO:	10274.006
CLIENT: Bever									PAGE NO	6 of 8
CONTRACTOR: EQUIPMENT USED			ation						ELEVATION:	299.5 Feet
GROUNDWAT			ΓΟ (Feet):			ORIENTATION	С	ORE BARREL	DATE START:	
DATE HR	S AFT WA	TFR I		T_ OF	X	VERTICAL	TYPE		DATE FINISH:	6/17/2014
CC	OMP	CAS	SING H	IOLE		HORIZONTAL	SIZE		DRILLER: PREPARED BY	Martini
	TD					INCLINED BEARING	Bit (Feet) Barrel (Feet)		LOCATION:	605 Whittier B
06/17/14 A	ATD ¥ 12	28.4			0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
	CORE		>	<u>o</u>				TION, REMARKS, AND L	IMITATIONS	
ELEVATION & CORE DEPTH (Feet)	DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY %		The S may c	Soil Description applies or differ at other locations ar tions encountered. Trans	nly to a location o	of the exploration at the till with time. The description	me of drilling. Subs	urface condition f the actual
—200 100 —					· Ime	dium grained sand				
				• • •	. @9	7.7' to 98.8': SAN	O with Silt (S	SP-SM), reddish br	own, wet, mos	tly fine
					gra	ined sand, some r	nedium grai	ned sand, laminati	on of sandy cla	ay @98.5'
				10.00		8.8' to 99.1': Fine				
- 2	-			11111	@9	9.1' to 99.3': Silty	SAND (SM)	, reddish brown, w	et, fine to coar	se grained
	100-105	Box 10		11/11	sar	id, trace gravel, gr	adational co	ntact	ا داداداد در ۱	
	4				4109	9.3' to 99.7': Sand ist, fine to medium	y ULAY to (Jayey SAND (SC- nd_moderate_block	CL), readish bi w structure	own, very
						9.7' to 100': Claye				rse grained
_					sar	id, fine subangular	slaty grave	s		
					@1	00' to 102': SAND	(SP), gravis	h brown to reddish	n brown, wet, f	ining upwar
—195 105 —				111127		00' to 101 2'. Fine	to medium	grained sand		
195 105					@1	01.2' to 102': Med iments, gradations	um to coars	se grained sand, si	ate, quartz, an	u siitstone
						ments, gradational or to 102.41: Sand		\ reddieh brown	wet fine arain	ed sand
-	1				Utrac	ce medium grained	sand. Mn∩	_, reduisii brown, ' - spottina	wet, me gram	ou sailu,
					01	02.4' to 103.1': Cla	vev SAND	(SC), mottled vello	wish brown to	brown, fine
a -	1			inin	to r	nedium grained sa	nd, carbona	te stringers, chaot	ic jumble	
	105-110	Box 11				03.1' to 105': No F				
= =					101	05' to 105.6': Silty	Sandy CLA	Y (CL-ML), reddish	n brown, moist	fine graine
					Isan	d				-
_ =					@1	05.6' to 106': Beco	mes less sa	andy, MnO ₂ spottin	ig	
				Ш	4 @1	06' to 106.5': Sand ined sand, poor blo	y CLAY (Cl	_), reddish brown,	moist, fine to r	nedium
—190 ▽ 110 —				. 1/2	gra @1	ned sand, poor bit 06.5' to 106.9': Be	comes less	sandy, MnO ₂ spot	tina	
100 110				۵.		06.9' to 107.2': Sa				
				1///	161	07.2' to 107.6': Sa	ndy CLAY	CL), reddish brown	n, fine grained	sand. some
-					silt	MnO _o spotting			. 3.2	,
				11111	@1	07.6' to 108.1': Be				
•		_ ,,		1	@1	08' to 109.5': Silty	CLAY (CL-N	VIL), with sand, oliv	e brown to rec	ldish gray
	110-115	Box 11		26	bro	wn, fine grained sa	ind, brown s	treaks, lamination	S	n fine to
€ 11				·		08.1' to 108.3': La	mination of (Clayey SAND (SC)), readish brow	ii, iine to
1				1		08.3' to 108.7': Sa	ndy CLAY /	CI) reddish brown	fine grained	sand trace
			1		me	dium grained sand	, MnO ₂ spot	ting, carbonate str	ingers	, auoc
1					@1	08.7": Dark brown	lamination	are x fu		
—185 ⊻ 115—				11.14	@1	09.5' to 110': No F	ecovery			
				$\cdot \cdot \cdot \cdot \cdot$	@1	10' to 110.7': Clay	ey Gravelly	SAND (SW-SC), re	eddish brown,	wet, fine to
				[.].[·]		rse grained sand,				
				[+]-	@1	10.7' to 111.2': Sa inated, fine graine	ndy CLAY (CL), reddish brown	ı, with minor gl	eying, fainti
				[1].	lam	11.2' to 111.6': Sa	ndy CDAVE	I (GM) had fine t	o coarse grain	ed sand fir
	115-120	Box 12		-]- -		y gravels, trace co		.c (Gvv) bed, fille t	o coarse grain	ou ounu, III
	1.13 120	-47 12		[.].[.]	@1	11.6' to 111.9': Sa	ndy CLAY	CL), reddish brown	, fine grained	sand, wet.
7				111.	Mno	O ₂ spotting, blebs,	grades coal	rser		
				111.1	@1	11.9' to 113.9': Ch	annel Depos	sits, Sandy Clayey	GRAVEL (GV	V-GC), fine
				: : -	coa	rse grained sand,	fine to coars	se subangular slate	e fragments an	d gravels
100				1.1.1	@1	13.9' to 115': No R	ecovery			
-180 120 										
				1				0.1545.455.05.55		
FIELD HA			BEDDING			ITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
	CAN'T SCRATCI CHES DIFFICUL	T TH	IN 2"	:2" -12"	SHALLO	ORIZONTAL (0-5°) W OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
	CHES EASILY	MED THI	IUM 12' CK 36"-	'-36" ·120"	MODE: STEEP	RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
SOFT - CARVE		V, TH		20"	,	VERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V SEVERE	
		1		- 1				e Mn = Manganese Oxide	COMPLETE	

					CO	RE	BC	RII	NG LOG			PAGE 7 OF 8	
			eohazard									IOR NO	10274.006
CO. C. CARLLING			Unified S								-	JOB NO : PAGE NO :	7 of 8
CONTRACTO	_		Drilling	Corpo	ration			_				ELEVATION:	299.5 Feet
QUIPMENT			E-75	DEDTU:	TO (Fee	1):			ORIENTATION	С	ORE BARREL	DATE START:	6/17/2014
GROUND	HRS				OF	BOT	OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE	COM	- 1	WATER	CAS	SING	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ΑП		Z 38.5						INCLINED	Bit (Feet)		PREPARED BY:	605 Whittier Blv
06/17/14	ATI		Z 128 4					_	BEARING ANG. FROM VERT	Barrel (Feet) Total (Feet)		Beverly Hills, Ca	OOO ANIMMEN DIV
	T		<u>, </u>	1				0	111111111111111111111111111111111111111		ΠΟΝ, REMARKS, AND LI		
ELEVATIO	- 1	COR		MPLE	£	۾	ĬĔº	The	Pail Description applies on	v to a location o	of the exploration at the time	ne of drilling. Subsu	rface conditions
CORE DEP (Feet)	TH	RANG	SE NU	MBER	RECOVERY	RQD	GRAPHIC LOG	may	differ at other locations an itions encountered. Trans	may change w	ith time. The description	is a simplification of	the actual
—180 12		(Feet)		x 12				gra @ gra Ca @	115' to 118.8': Silty lined sand, low silt 118.8' to 118.9': Thi 120' to 121.6': Silty nd, low silt content 121.6' to 124.1': Slig 124.1' to 125': No R 125' to 125.6': Sanc ly mottling, fine gra CO ₃ 125.6' to 126.1': Saittling, fine grained lyels	content, sor n layer of g SAND (SM) phtly coarse ecovery y CLAY (Cl ned sand, t andy CLAY (sand, some	ne clay ray shale fragment, medium brown, w r L), dark reddish bro race medium to co CL), with gravel, da medium to coarse	own to chocolar arse grained s ark reddish bro	te brown wit and, minor wn with gra fine slaty
▼ —170 13		125-1	30 Bo	x 13			à à	fine (mo) (mo) (mo) (mo) (mo) (mo) (mo) (mo)	leters 126.1' to 128.4': Gravittling, very moist, file quartz and slate goderate blocky structions. Classification of the coarse gravitonate blebs 128.4' to 130': Miss 130' to 130.5': Silty	ne to mediu ravels, with ture, high s elly SAND (ined sand, ng	im grained sand, s carbonate nodules and content, abrup (SW-SC), reddish b fine subangular sla	ome coarse gr s and concretion t contact brown and gray te, oxide stain	ained sand, ons, poor to r, gleyed, ing, minor
	7 <u>—</u> 7 —	130-1	35 Bo	x 13				grade de la constant	nined sand, some c 130.5' to 130.7': Ba coarse subangular 130.7' to 131.2': Sill dish brown to black e slaty gravels, fine 131.2' to 135': No R	parse graine sal Gravelly so subround y Clayey So c, orange ar to medium ecovery	ed sand SAND (SW), fine led slaty gravels AND (SM-SC), with led tan, MnO ₂ bandi grained sand	to coarse grain gravel, thinly ng, carbonate	led sand, fir
—165 13	-	135-1	40 Bo	x 14				@ab	135' to 136.9': Clayind, trace fine slaty with wind poor block 136.9' to 137.5': Clayind, trace medium grounde, gradationa 137.5' to 138': Claying to coarse grained rupt contact	gravels, car y structure, yey Sandy rained sand I contact ey SAND (S	silt (ML-CL), oral, trace fine gravel, oral, oxidaty gravels, oxida	d concretions, ng, gradationa ngish brown, fi MnO ₂ banding angish brown, fi tion staining, f	coarsens I contact ne grained I, minor very moist, aintly gleyed
—160 14	0							@	138.1' to 138.3': Sili	y SAND wit	th Clay (SM-SC), o	rangish tan bro	own, fine
FIE	LD HAR	DNESS	3		BED	DING		АТ	TITUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
HARD - ARD - OD HARD - OFT -	KNIFE CARVES	AN'T SCI HES DIF HES EA	RATCH FICULT	ME TH	THIN HIN DIUM HICK THICK	<2 2"-1 12"- 36"-1 >12	2" 36" 20"	MODE	HORIZONTAL (0-5°) OW OR LOW ANGLE (5-35°) PRATELY DIPPING (35-55°) P OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2"- 2"-12" 12"-36" 36"-120" >120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

			C	ORE	BC	RII	NG LOG			PAGE 8 OF	CB- 8
		Geohazard									
CLIENT Be	verly Hills	Unified Se	chool Distr	ict						JOB NO	10274.006
CONTRACTOR			Corporation	n						PAGE NO : ELEVATION:	8 of 8 299,5 Feet
EQUIPMENT L			EDTH TO (F	act)-		-	ORIENTATION	С	ORE BARREL	DATE START	6/17/2014
GROUNDY	HRS AFT		EPTH TO (Fe		r OF	Х	VERTICAL	TYPE		DATE FINISH:	6/17/2014
DATE	COMP	WATER	CASING		DLE		HORIZONTAL	SIZE		DRILLER:	Martini
06/17/14	ATD	☑ 38.5					INCLINED	Bit (Feet)		PREPARED BY	
06/17/14	ATD	▼ 128.4					BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
		Ā				0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATION CORE DEPT (Feet)	TH RAN	TH SAN	RECOVERY	RQD	GRAPHIC LOG	may	FIE Soil Description applies o differ at other locations a tions encountered, Tran	nly to a location o	ith time. The description	ime of drilling. Subs	urface condition f the actual
—160 140	(Fe	et)	- Z		- 141		ined sand, lamina				
					:		38.3' to 138.4': Be		to medium graine	d Silty SAND (SM)
=//	-						38.4' to 140': No F				
- 0	140-	145 Box	c 14				40' to 144.8': SAN dium grained sand				
-	7										
-155 14 5	<u> </u>					\@1	44.8' to 145': Lam	ination of Sa	andy CLAY (CL), v	vith fine gravel	slate
							iments, iaminated al depth of coring:		MICIEROLIS		
-	-					Per	ched groundwater	encountere	d @ 38.5'-39.4', 4	0'-43.6', 47.2'-4	18.8',
						51.	5'-52', 55-57', 58.6	-59', 60'-61.	1', 81.4'-81.6', 81.	9'-82.2',	
	-				ľ		5'-95',95.7'-99.3', 9 1.4' bas	99.7'-102.4',	110'-110.7', 111.6	r-111.9', 115'-1	∠4.1°, and
						Boi	ing backfilled with	bentonite ar	nd soil cuttinas up	on completion	of drilling.
	-					Bor	ing capped with a	proximately	6-inches of cold	oatch mix asph	alt.
						Exc	ess cuttings dispo	sed of in D.	O.T. approved dru	ms and dispos	ed offsite
	4										
—150 150											
,00											
9	97										
H											
			1	1							
=	7										
	-										
-145 155	-										
-140 160 ⁻											
EIEI D	HARDNES	<u> </u>	BEI	DING	4	АТТ	TUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	_
HARD - KN	NIFE CAN'T SC	RATCH	V. THIN	<2'	- +	ŀ	IORIZONTAL (0-5°)	V, CLOSE	<2"	FRESH	
ARD - SC IOD HARD - SC	CRATCHES DI CRATCHES EA ROVES	FFICULT	THIN MEDIUM THICK V.THICK	2"-1 12"-3 36"-1 >12	2" 96" 20"	MODER STEEP	W OR LOW ANGLÉ (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V SLIGHT SLIGHT MODERATE MOD SEVERE	

					CO	RE	BC	RI	NG LOG			BORING NO.	CB- 9
ROJECT	El E	Rođen G	eohazaro	Inves	tigation	F						TRAGE 1 OF	7
			Unified S									JOB NO.:	10274.006
ONTRAC	TOR	Martin	i Drilling	Corp	oration							PAGE NO.:	1 of 4
QUIPMEN	NT USE) CM	E-75									ELEVATION:	298 Feet
GROU	NDWAT				TO (Feet		. 0.5		ORIENTATION	TYPE	ORE BARREL	DATE START: DATE FINISH:	7/7/2014 7/8/2014
DATE		SAFT	WATER		T, OF SING		OF OLE	Х	VERTICAL HORIZONTAL	SIZE		DRILLER:	Martini
07/07/14	_	AMP STD	Z 34.7	LA	SING	пс	/LC		INCLINED	Bit (Feet)		PREPARED BY	
07/07/14	-		<u>V</u>	+-					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
			5-					0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	3
FLEWAT	TON 8	COR	E		ا خ		ပ		FIEL	D CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE D		DEP		MPLE	E E	Rab	1 4 8	The	Soil Description applies or	nly to a location of	of the exploration at the ti	ime of drilling. Subs	urface conditions
(Fee	et)	RANG (Fee		MBÉR	RECOVERY	OZ.	GRAPHIC LOG	may	differ at other locations and differ at other locations and differ at other locations.	id may change v sitions between :	vith time. The description soil types may be gradua	n is a simplification o	r trie actual
-298	0							<u>Ar</u> @	<u>tificial Fill, Undocu</u> 0'-5': Hand Auger	mented (A <u>f</u>	1):		
-293	5							Sa @	5': Pleistocene of Endy CLAY (CL), bro	own, moist, ND (SM), w	fine to medium gra	ained sand	
	,=	5-10) Во	ox 1				@	7.3' to 7.7': Clayey the slate fragments	SAND (SC),	brown, moist, fine	e to medium gr	ained sand,
	_							1	7.7' to 7.8': Layer of		gular gravel		
			1				VIXII		7.8' to 8.5': Silty SA	ND (SM), b	rown, moist, fine to	o medium graii	ned sand,
	_	1					W/X//	tra	ce fine gravel				
-288	10-	10-1	5 Bo	ox 1				gra @: gra silt	3.5' to 10': Sandy C sined sand, modera 9.2' to 9.4', minor ca 10': Sandy CLAY to sined sand, poor to stone fragments	te blocky st arbonate str Clayey SA moderate b	ructure in sand ric ingers ND (SC-CL), reddi locky structure, sh reddish brown, cl	th zones @8.8' ish brown, moi nimmer on facie	to 9' and st, fine es, trace
	-							sa	nd, trace clay, grade 13.2' to 13.5': Layer	es coarser,	fining upward		
								\qu	artz gravels, gradat	ional contac	t .		
	-							@	13.5' to 14.8': Claye	y SAND (S	C), with silt, mottle	d brown and re	eddish brown
	.								ist, fine to medium	grained sar	id, trace coarse gi	rained sand, fir	ne subangula
283	15 —							@ra	ty gravels 14.8' to 15': Layer of the sand, with trace of the sand, with the sand	ce coarse g	rained sand, fine s (SC-SM), with gra	subangular plat avel, reddish br	ey slate own, moist,
	_	15-2) Bo	x 2				gra @ gra coi	vels 16.1' to 16.8': Sandy vels, subangular to tact 16.8' to 17.7': Claye	y GRAVEL subrounde	(GW) layer, gleyed d, iron oxide stain	d, fine to coars ing, some clay	e slaty , gradational
278	20							mo	ist, fine grained sai	nd, MnO ₂ st	reaking, trace grav	vel @17.4', abr	upt contact
FI	IELD HA	RDNESS			BEDD	ING		AT	FITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD RD D. HARD TT SOFT	- KNIFE	CAN'T SCF CHES DIF CHES EAS	RATCH FICULT	TH MED TH	THIN JUM ICK HICK	<2" 2"-1: 12"-3 36"-1: >120	2" 16" 20"	SHALL	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) POR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	
												COMPLETE	

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

				COI	RE	BC	RII	NG LOG			BORING NO. PAGE 2 OF	CB- 9
CONTRACTO	Beverly Hi	tini Drillin	School	District							JOB NO.: PAGE NO.:	10274.006 2 of 4 298 Feet
EQUIPMENT	programmed to constitute	ME-75						ORIENTATION		ORE BARREL	DATE START:	7/7/2014
GROUNE	HRS AFT		BOT	TO (Feet):	BOT.	OF	X	VERTICAL	TYPE	OTTE BY WILLE	DATE FINISH:	7/8/2014
DATE	COMP	WATER	? ∣	SING	HOL			HORIZONTAL	SIZE		DRILLER:	Martini
07/07/14	ATD	☑ 347						INCLINED	Bit (Feet)		PREPARED BY:	
		Ā						BEARING	Barrel (Feet)		LOCATION:	605 Whiltier Bl
		075		r. J			0	ANG FROM VERT	Total (Feet)	TION, REMARKS, AND LI	Beverly Hills, Ca	
ELEVATIO CORE DEI (Feet)	PTH RA		AMPLE UMBER	RECOVERY	RQD	GRAPHIC LOG	l may	Soil Description applies on differ at other locations an itions encountered. Trans	ly to a location of	of the exploration at the time	ne of drilling. Subsu	urface conditions the actual
— 278 —	20 20)-25 E	Box 2				do rabi	7.7' to 17.9': SANE medium grained sa upt contact, basal (7.9' to 18.6': Clayer ying, sporadic slaty) (8.6' to 20.2': Sand or blocky structure, be fine gravels, more contact to 21.4': Silty Sid, trace coarse grash on red facies, more coarse grash on red facies, more coarse grash or red facies, mo	nd, siltstone gravel y SAND (S gravels y CLAY (CL sandy lami derate block Sandy CLA' tined sand, inor calcium	e clasts, heavily oxicological colors, olive grey to recolor, reddish brown, genation @18.9', with the graveture @19.6' (CL-ML), reddish fine gravet, poor blackers, carbonate	dised dark red dish grey, mo leyed, faintly layellow oxide s to 20' brown, gleyed ocky structure	dish brown, ist, minor aminated, staining, , fine graine , with waxy
—273 ; - -	25 25	5-30 E	Box 3			A .	pool (a)	or to moderate block of the work of the wo	ky structure CLAY (CL fine to co mittent grave clasts y SAND (Si medium gravels, minor se nes sandie f Sandy GR to subrounc ayey SAND ine to medi	e, clay on faces, ab), with gravel, dark arse subangular to rel beds C), dark brown, with ained sand, trace coulltstone gravels AVEL (GW), fine to red slaty gravels (SC-SM), with gravel am grained sand, s	rupt contact reddish browr subrounded s h very faint rec oarse grained o coarse grain vel, olive brow	n, moist, fine ddish hue, sand, fine ed sand, fin
. ↓	30	-35 E	3ox 3				@3 Sai mo str. @3 sar @3	2.1' to 34.4': Sand re massive than ab 3.3', 33.7', and 33.	elly SAND w coarse grai , abrupt err f Benedict idish brown n-reduction eloped soil y SAND (Si / CLAY (CL ove, model 9', abrupt c	rith Clay (SW-SC), ned sand, fine sub- sional contact Canyon Wash (BC), dark reddish brow banding, fine grain C) lamination, redd), reddish brown, mate blocky structure ontact	w ₂): n in matrix, glands sand, poolish brown, fine ninor gleying, e, sandy lamir	eyed, very r blocky e grained becomes lations
	_	-40 E	30x 4				gra @3 coa win	4.4' to 34.7': Claye ined sand, few fine 4.7' to 37.8': Grave irse grained sand, dblown silt laminat 47.8' to 39.6': Claye wn, fine to coarse s sts, becomes sand	gravels, gr elly SAND wine subang on @36.3' y GRAVEL subangular	adational contact rith Clay (SW-SC), ular slate and siltst with Sand (GW-GC	reddish brown cone gravels, the	, wet, fine to hin clay and o reddish
25R	10						@3	9.6' to 40': No Rec	overy			
—258 4	10											
		-00		DEDO:	VC			TITUDE AND ANGLE	IOINTS /	SHEAR / FRACTURE	WEATHERING	
/ HARD IARD MOD HARD SOFT	KNIFE CAN'T SCRATCHES SCRATCHES GROVES CARVES	SCRATCH DIFFICULT	TH MED TH	BEDDII THIN JUM JICK HICK	<2" 2"-12 12"-36 36"-12 >120	3" 0"	SHALLO MODE STEEP	HODE AND ANGLE HORIZONTAL (0-5") W OR LOW ANGLE (5-35") RATELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	V, CLOSE CLOSE MOD, CLOSE WIDE V, WIDE	2" 2":12" 12":36" 36":120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

DDO ICOT	_ pir	Podes 4	Geohaza	rd Inve			: R(וואל	NG LOG			PAGE 3 OF	4
PROJECT CLIENT:								_				JOB NO.:	10274.006
CONTRAC	TOR:	Marti	ni Drilli									PAGE NO:	3 of 4
EQUIPME			ME-75						ODIENTATION		ORE BARREL	DATE START:	298 Feet 7/7/2014
GROU	NDWAT				H TO (Fee		r. OF	X	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE FINISH:	
DATE	- 1	S AFT OMP	WATER	RI	ASING		DLE	^	HORIZONTAL	SIZE		DRILLER:	Martini
07/07/14	_	ATD .	☑ 34.7	-					INCLINED	Bit (Feet)		PREPARED BY	EH
			¥						BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
					-		_	0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVAT		DEF		SAMPLE	Ē		울	The	FIEL Soil Description applies on		TION, REMARKS, AND		urface condition:
CORE D		RAN (Fe	I	IUMBER	RECOVERY	RQD	GRAPHIC	mav	differ at other locations an itions encountered. Trans	d may change v	ith time. The description	n is a simplification of	f the actual
258 	45—	40-		Box 4				Sai Qua Sai Sai Qua Sai Mn	40' to 40.6': Gravelly and, fine subangular 40.6' to 41.8': Clayer arse grained sand, evels @40.7', grada 41.8': Pleistocene Condy CLAY (CL), record and, trace fine subrout 4.6' to 45': No Record 5' to 50': Sandy CLO ₂ spotting, sand rivel laminations	to subround by SAND (S) fine to coarse tional contact Cheviot Hills Idish brown andy CLAY (Cunded grave overy, sand AY to Clay	ded gravels, some C), with gravel, rec se slaty gravel, he ct, bedded sand, Deposits (CHD): , massive, fine gra CL), reddish brown el in sampler ev SAND (SC-CL)	e clay, gradation ddish brown, we avily weathered very fine, friable ained sand n, minor gleying	nal contact et, fine to d basalt e
—248 - - - - - -	50	50-	55 E	3ox 5			A	me blo	60' to 53.9': Sandy (dium grained sand, cky structure, waxy	MnO ₂ spot finish on fa	ting, minor sand r ces, abrupt conta	ich zones, with	moderate
€ 5	2						Δ.	coa	3.9' to 54.6': Claye rse grained sand, f	ine subang	ular slate gravels.	siltstone clasts	, base of
—243	55-				-		1////	cor	tact is sand with co	arse sand-	sized siltstone frag	gments, abrupt	erosional
		55-6	60 B	3ox 6				@5 gra \sub @5 gra @5 gra @5	tact below 4.6' to 55': Sandy Cdium grained sand, 5' to 57': Sandy CLined sand, few medirounded white slaty 7': Becomes slightl 7.5' to 58.5': Sandy ined sand, trace me 8.5' to 59': Become 9' to 60': Sandy CL	oxidation-r AY (CL), re flium to coal gravels, N y sandier, f CLAY (CL edium to co es sandier AY (CL), re	eduction banding, ddish brown, gley rse grained sand, InO ₂ spotting ine to coarse grain, reddish brown, garse grained sand	variegated bel ed and oxidized very sporadic f ned sand gleyed and oxid i, poor blocky s ed and oxidized	d, fine ine lized, fine tructure
— 238	60	_						me	dium grained sand,	uace coars	e granieu sanu, g	naucs inter and	i uaikti, Wil
F	IELD HA	RDNES	s		BEDI	DING		AΠ	TUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
/, HARD HARD	- KNIFE (- SCRAT - SCRAT - GROVE - CARVE	CAN'T SO CHES DI CHES EA	CRATCH FFICULT	ME	THIN THIN EDIUM HICK THICK	<2"-1 12"- 36"-1 >12	2" 36" 20"	SHALLO MODEI STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			PAGE 4 OF	CB- 9
PROJECT CLIENT: CONTRAC	Beverl	y Hills Un	nazard Inves ified School rilling Corp	Distric	t						JOB NO.: PAGE NO.:	10274.006 4 of 4
	AND THE REAL PROPERTY.	CME-	75					OBJENITATION		ORE BARREI	ELEVATION: DATE START:	298 Feet 7/7/2014
GROU	NDWATE			TO (Fee		OF	Х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE FINISH:	7/8/2014
DATE		MP W		SING	HC		^	HORIZONTAL	SIZE		DRILLER:	Martini
07/07/14		TD \sqrt{2}		0.110				INCLINED	Bit (Feet)		PREPARED BY:	EH
0		¥						BEARING	Barrel (Feet)		LOCATION:	605 Whittier BI
						, 1	0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
CORE D	DEPTH	DEPTH RANGE	SAMPLE NUMBER	RECOVERY	ROD	GRAPHIC LOG	may	FIEL Soil Description applies on differ at other locations an litions encountered. Trans	ly to a location of	ith time. The description	me of drilling. Subsuis a simplification of	rface conditions the actual
—238 -	60-	(Feet)		<u> </u>			min @:	nor faint carbonate 59.5': Chocolate bro 60' to 65': Sandy Cl dation-reduction ba	stringers, po wn clay AY (CL), re nding, gleye	oor blocky structure ddish brown and g ed, fine grained sa vily oxidized	e gray, laminated nd, trace medi	um to coars
-	_	60-65	Box 6				@	50.4' to 60.9': dark i 61.4': well develope	d soil struct	ure, paleosol		
—233 -	65 —						gra fini	65' to 66.7': Sandy of the sand, trace means on faces, trace to	edium to co ine gravel, g	arse grained sand gleyed	, MnO₂ spotting	leyed, fine g, waxy
Ē	-	65-70	Box 7				@	66.7': Gleyed above	CLAY (CL) with gravel, redo	lish brown, ale	ved, fine to
- 228	70—						me	edium grained sand stone gravels, mod	trace coars	se grained sand, fi	ne subrounded	slate and
•	2 -	70-75	Box 7				sar	70.4' to 75': Sandy on the few medium to distinct gravelly beds	coarse grain	ied sand, trace fine	ntly laminated, e gravel, MnO ₂	fine grained spotting,
es	;- ;-											
- 223 -	-75 -						Pe Bo Bo	tal depth of coring: rched groundwater ring backfilled with ring capped with ap	encountere centonite ar proximately	nd soil cuttings upo 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
25	-						Exc	cess cuttings dispo	sed of in D.	O.T. approved dru	ms and dispos	ed offsite
8	25											
-218	80—											
- 410												
-	IELD HAI	RDNESS		BEDI	L DING	<u> </u>	AT	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	
HARD IARD IOD HARD IOFT SOFT	- KNIFE (CAN'T SCRAT CHES DIFFICU CHES EASILY	JLT T ME TH	THIN HIN DIUM HICK HICK	<2 2*-1 12*-3 36*-1 >12	2" 36" 20"	SHALLO	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD. CLOSE WIDE V WIDE	<pre>2" 2"-12" 12"-36" 36"-120" >120"</pre> e Mn = Manganese Oxide	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	DRING LOG BORING NO, CB- 10 PAGE 1 OF 4
PROJECT			hazard Inves				100.10
			nified School				JOB NO.: 10274,006 PAGE NO: 1 of 4
CONTRACT EQUIPMEN			Orilling Corp	oration	_		ELEVATION: 296.5 Feet
	DWATE			TO (Fee	1):		ORIENTATION CORE BARREL DATE START: 7/8/2014
DATE	HRS	AFT		T OF		OF	X VERTICAL TYPE DATE FINISH: 7/9/2014
DATE	CO	MP	CA	SING	НС	LE	HORIZONTAL SIZE DRILLER: Martini INCLINED Bit (Feet) PREPARED BY: EH
07/08/14	AT		35.4				INCLINED Bit (Feet) PREPARED BY: EH BEARING Barrel (Feet) LOCATION: 605 Whittier BI
	-	Ā		_			0 ANG FROM VERT Total (Feet) Beverly Hills, Ca
		CORE		<u>}</u>		U	
CORE DI	EPTH	DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	GRAPHIC	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
— 297 —— 292 —— —— —— —— —— —— —— —— —— —— —— —— ——	5	5-10	Box 1				Artificial Fill. Undocumented (Afu): @0'-5': Hand Auger 2.5 ft Runs to 30' @5': Pleistocene Alluvium of Benedict Canyon Wash (BCW ₁): Sandy SILT with Clay (ML-CL), medium brown, moist, fine grained sand, occasional fine slaty gravel
	10-						@9.4' to 10': Clayey Silty SAND (SC-SM), with gravel, medium brown, moist, mostly fine to medium grained sand, some coarse grained sand, fine subangular slate and siltstone gravels @10' to 12.1': Silty Clayey SAND (SC-SM), with gravel, medium brown to slightly reddish brown, moist, fine to medium grained sand, some coarse grained sand, high fines content, fine subangular slate and siltstone gravels
-	_	10-15	Box 1				@12.1' to 14.1': Sandy CLAY (CL), reddish brown, moist, fine grained sand, high sand content, slightly micaceous, poor blocky structure, gradational contact @14.1' to 15': Clayey SAND (SC), with gravel, reddish brown, moist, mostly fine to medium grained sand, few coarse grained sand, fine subrounded slaty
282	15	15-20	Box 2				gravels @15' to 17': Grades to Silty Clayey SAND (SC-SM), with gravel, reddish brown moist, mostly fine to medium grained sand, some coarse grained sand, fine subangular slaty gravels @17' to 18': Increase in gravel content, gradational contact
—277	20						yellowish brown to orange, fine to coarse grained sand, fine to coarse slate and siltstone gravels, erosional contact @18.8' to 19.6': Sandy CLAY (CL), reddish brown, moist, fine grained sand, gradational contact
	ELD HAR			BEDI			ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING
ARD IOD HARD OFT	- SCRATO		CULT TI Y ME	THIN DIUM HICK HICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	HORIZONTAL (0-5") SHALLOW OR LOW ANGLE (5-35") MODERATELY DIPPING (35-55") STEEP OR HIGH ANGLE (55-85") VERTICAL (85-90") VERTICAL (85-90") V. VIDE V. VIDE V. VIDE Fe = Iron Oxide Mn = Manganese Oxide Fe = Iron Oxide Mn = Manganese Oxide

						: BC	KII	NG LOG			BORING NO. PAGE 2 OF	CB- 10
CONTRACTO	everly l	Hills Un artini D	hazard Inv ified Schoo rilling Cor	l Distric	et						JOB NO : PAGE NO	10274.006 2 of 4 296.5 Feet
EQUIPMENT				1.70 /5			_	ORIENTATION	l c	ORE BARREL	DATE START:	7/8/2014
GROUND DATE	HRS A	FT	ATER B	TO (Fee	вот	OF	Х	VERTICAL	TYPE	0112 07 11 01 12 0	DATE FINISH:	7/9/2014 Martini
07/08/14	COM	P	35,4 C	ASING	НС	DLE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY:	
07/00/14	AID	¥	50,4					BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
		Ā				T	0	ANG. FROM VERT	Total (Feet)	TION, REMARKS, AND L	Beverly Hills, Ca	
CORE DEF (Feet)	тн	CORE DEPTH RANGE (Feet)	SAMPLE	1 - 0	Rab	GRAPHIC LOG	may	Soil Description applies on differ at other locations an litions encountered. Trans	ly to a location of d may change w	of the exploration at the tir rith time. The description	ne of drilling. Subsuis a simplification of	urface conditions the actual
— 277 2	20—	20-25	Box 2				yer gra @a sar gra gra	19.4' to 20': Sandy blowish brown to oravels, oxidized clast 20' to 20.5': Sandy ond, with trace media acture, abundant brown to 20.5' to 20.6': Lamin adational contact 20.6' to 22.6': Sandond, faint gleying, ocated, poor to moder 22.6' to 24.6': Grave 22.6' to 24.6': Grave 22.6' to 24.6': Grave 20.6' to 24.6': Grave 22.6' to 24.6': Grave 20.6' to 24.6' to 24.6': Grave 20.6' to 24.6'	inge, fine to s CLAY (CL), im to coars ownish sponation of Clay y CLAY (CL casional finate blocky selly Sandy C	olive brown to rede e grained sand, fin titing ayey SAND (SC), fi), reddish brown, v e subrounded slaty structure, abrupt co	eand, fine suba dish brown, fin- e gravel, poor ine to coarse g very moist, fine or gravels, clast ontact reddish brown	e grained blocky rained sand grained s are clay
-	-	25-30	Box 3				COO	own to greenish broarse subangular to 24.6' to 25.1': Clayer stly fine to medium 25.1' to 25.8': GRAN h sandy clay matrix 25.8' to 27.5': Clayer wm, faintly gleyed, stone gravels, occas 27.5' to 28.3': Clayer to coarse grained dational contact 28.3' to 30.4': Sand	y SAND with grained sa /EL (GP) be, gradationary SAND to fine to coars sional yello y Sandy GF sand, fine so / Clavey GF	slaty gravels, grade h Gravel (SW-SC) nd, fine slate and c ed, fine to coarse of al contact Sandy CLAY (SC- se grained sand, fin wish oxidation stail RAVEL (GW-GC), subangular to subre RAVEL (GW-GC),	ational contact, reddish brow quartz gravels quartz and slate CL), with gravene subangular ning, abrupt codark reddish bounded slate grantled reddish reddish contents and slate grantled reddish prottled reddish	n, moist, e gravels, el, reddish slate and ontact rown, moist ravels, h brown to
— 2 67 3		30-35	Box 3				we we Sa str	lowish brown to red arse grained sand, athered and oxidize 80.3': Pleistocene Andy CLAY (CL), red eaking, with discret 31.5', 31.8', 32', and 33.3': siltstone rock	ine subang d clasts, fa alluvium of dish brown e clayey sau l 34.6', claye	ular slate, basalt, a int gleying, abrupt Benedict Canyon , moist, fine graine nd laminations, bas	and siltstone grerosional cont: Wash (BCW ₂): d sand, faint g se of develope	ravels, high act leying, MnC d soil
— 262 3 		35-40	Box 4				grafini @3 blo cor @3 fine few	35' to 35.4': Sandy 0 sined sand, faintly g sh and shimmer on 35.4' to 35.9': Claye cky structure, MnO 35.9' to 36.5': Grades tent 36.5': Grades finer v 36.8' to 39.6': Sandy 6 to coarse grained of quartz gravels	leyed, MnO facies y SAND (So streaking es much sai with increas or GRAVEL sand, fine to	2 spotting, poor blo C), reddish brown, ndier, reddish brow e in clay content, a with Clay (GW-GC	wet, faint gley n, wet, very lo brupt contact dark reddish	with waxy ing, poor w clay brown, wet
-257 4	0	_	-				@3	19.6' to 40': No Rec	overy			
						L.,						
/.HARD -! HARD -! MOD HARD -! OFT -!	D HARDI KNIFE CAN BCRATCHE BCRATCHE BROVES CARVES	I'T SCRAT	ULT M	BEDI THIN THIN EDIUM THICK THICK	2"-1 12"- 36"-1 >12	2" 36" 20"	SHALLO	FITUDE AND ANGLE HORIZONTAL (0-5") DW OR LOW ANGLE (5-35") POR HIGH ANGLE (55-85") VERTICAL (85-90")	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 2" 12" 12" 36" 36" 120" > 120" e Min = Manganese Oxide	FRESH V SLIGHT SLIGHT MODERATE MOD, SEVERE V SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			PAGE 3 OF	CB- 10
PROJECT:	everly Hil	ls Unif		Distric	t						JOB NO :	10274.006 3 of 4
CONTRACTO				oration							ELEVATION:	296.5 Feet
GROUND		WIE-/S		TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START:	7/8/2014
	HRS AFT		BO	T OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	7/9/2014
DATE	COMP	I WA	TER CA	SING	HC	DLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/08/14	ATD	☑ 35	5.4					INCLINED	Bit (Feet)		PREPARED BY	
		Ţ						BEARING	Barrel (Feet)		LOCATION:	605 Whittier E
		Ā		, ,	_	_	0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATION CORE DEP (Feet)	TH RA	ORE PTH NGE eet)	SAMPLE NUMBER	RECOVERY	Rab	GRAPHIC	may	FIEL Soil Description applies or differ at other locations an litions encountered, Trans	ly to a location of d may change w	ilh time. The description	me of drilling. Subsu	urface condition the actual
—257 4 - - -	40	-45	Box 4				- @4 Sa	40' to 43': slight inc 43': Pleistocene Che ndy CLAY (CL), red ntent, thin beds, verying, minor sand rice	eviot Hills C Idish brown y fine, friab	eposits (CHD): , wet, fine to mediu le, poor blocky stru		
 252 4	5						mic	45' to 45.6': Silty Claceous, low fines	content			
- - - - -	45	-50	Box 5				@4 \lan	15.6' to 46': Clayey 16': 1-foot thick bed 17' to 48.6': Sandy ninations, oxidation	of sand on CLAY (CL), reduction b	top of clay reddish brown, ve anded, MnO ₂ strea	ry moist, gleye aking	d, faint
:							sar	l8.6' to 50': Clayey nd, trace coarse gra	ined sand,	fine gravel, gleyed	l, pebble bed @	<u>0</u> 49.7'
247 51 	-	-55	Box 5				sar	50' to 53.3': Silty SA nd, trace coarse gra ntent, trace clay, gr	ined sand v	vith sand sized silt	st, fine to medi stone chips, ve	um grained ery low silt
- 	5		eme				@5	63.3' to 53.7': Claye reasingly clayier, m 63.7' to 55': Sandy (yish brown to yello irse slaty gravels, 3	oderate blo GRAVEL wi wish orange	cky structure, grac th Clay (GW-GC), brown, fine to coa	dational contac mottled reddis	h brown to
							@5 @5	55' to 56.2": wet, gra 55' to 56.5': basal g 66.5' to 57': Interlan wn. moist, gleved.	ides coarse ravel ninated San fine to medi	r, gradational cont dy CLAY and Clay um grained sand i	ey SAND (SC- n sandy clay, f	ine to coars
ž.	55-	60	Box 6				gra @5 @5 @5 bar	ined sand in clayey 6.2' to 56.8': minor 6.8': sandy clay, gl 7' to 57.7': Sandy (ding, gleyed, heav 7.7' to 60': No Rec	sand, abur sand bed wayed, oxidiz CLAY (CL), ily oxidized	ndant MnO ₂ , oxidat vith siltstone chips red reddish brown and	tion-reduction I	panding
—237 60												
FIEL	D HARDNE:	L 3S		BED	DING		АТТ	TITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING	-
HARD - K ARD - S IOD HARD - S OFT - G	(NIFE CAN'T S SCRATCHES E SCRATCHES E BROVES CARVES	CRATCH	T TI	THIN HIN DIUM HICK 'HICK	<2 2"-1 12"-: 36"-1 >12	2" 36" 20"	SHALLO MODE STEEP	HORIZONTAL (0-5°) DW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

					CC	RE	BC	RII	NG LOG			PAGE 4 OF	CB- 10
PROJECT				ard Inves								JOB NO.:	10274.006
				ling Corp								PAGE NO	4 of 4
	NT USED:											ELEVATION:	296.5 Feet
	NDWATE			DEPTH	TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/8/2014
DATE	HRS		WAT	FR I	T OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	7/9/2014 Martini
	COI	_	□ 05		SING	HC	DLE	_	HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY:	
07/08/14	1 AT		∑ 35 ·	4					BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
	_		<u>A</u>	_				0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
		CO			ΙŁ	T	U	T	FIEL	D CLASSIFICA	ΠΟΝ, REMARKS, AND I	LIMITATIONS	
CORE D	DEPTH	DEP RAN (Fee	GE	SAMPLE NUMBER	RECOVERY	ROD	GRAPHIC LOG	may	Soil Description applies on differ at other locations an tions encountered. Trans	d may change w	ith time. The description	ı is a simplification of	rface conditions the actual
— 237 - -	60 —	60-0	65	Box 6				bar ped @6	60' to 65': Sandy Cl ding, laminated wi I faces slightly mic 60' to 60.7': sandy c 10.7' to 61.3': dark i	th minor sar aceous, hea hocolate br	nd rich zones, Mno vily oxidized and o own clay	O₂ spotting, wax	reduction xy finish on
232 	65	65-7	70	Box 7				bar	5' to 68.8': Sandy (Iding, fine grained : es @65.8' and 67' 7.2' to 70': dark red vel	sand, abund exhibit mod	lant MnO₂ spotting derate blocky stru	g and streaking cture	, sandy
-227	70								8.8': thin gravel be 0' to 75': Sandy CL				occasional
e: e:	-	70-7	75	Box 7				fine	subrounded slaty	gravels, gra	vel bed @73'	mated, gloyed, v	33331
- 222	75 -							Per 48.0 Bor Bor dve	al depth of coring: ced groundwater e 6'-50'and 55'-56.5' ing backfilled with ing capped with ap ess cuttings dispos	ncountered ogs pentonite ar proximately	nd soil cuttings up 6-inches of Rapid	on completion of Set concrete a	of drilling. and black
-217	80—												
F	IELD HAR	DNESS	S		BED	DING		АТТ	ITUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	- 4
HARD ARD IOD HARD OFT SOFT	- KNIFE CA SCRATC - SCRATC - SCRATC - GROVES - CARVES	AN'T SC HES DIF HES EA	RATCH FICULT	MEI TH	THIN DIUM HICK HICK	<2"-1 2"-1 12"-3 36"-1 >12	2" 36" 20"	SHALLO MODER STEEP	IORIZONTAL (0-5") W OR LOW ANGLE (5-35") RATELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	V. CLOSE CLOSE MOD, CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	RE	BC	KII	NG LOG			PAGE 1 OF 4	
PROJECT:	El Rode										JOB NO.:	10274.006
CLIENT: E			ea Scnoo ling Cor _l								PAGE NO:	1 of 4
EQUIPMENT		CME-75									ELEVATION:	292.5 Feet
GROUNE	WATER:			1 TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/9/2014
DATE	HRS AFT	WAT	FR I	OT OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	7/10/2014 Martini
	COMP		C	ASING	HC	DLE		HORIZONTAL	SIZE		DRILLER: PREPARED BY:	
07/09/14	ATD	☑ 34						INCLINED BEARING	Bit (Feet) Barrel (Feet)		LOCATION:	605 Whittier B
		Ā					0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	OOD TITIKIOI D
		ORE				To	T			TION, REMARKS, AND I		
CORE DEF	D D	EPTH	SAMPLE	RECOVERY	8	GRAPHIC	The S	Soil Description applies or	ly to a location of	of the exploration at the ti	ime of drilling. Subsu	rface conditions
(Feet)		ANGE Feet)	NUMBER	AHC.		8 7	condi	differ at other locations an tions encountered. Trans	a may change w itions between s	soil types may be gradual	I s a simplification of	ine actual
293 	5 - 5	i-10	Box 1				@0 @5 Sau	ificial Fill, Undocu y-5': Hand Auger of to 5.2': Chunks o .2': Holocene Allundy CLAY (CL), da y occasional reddis	f asphalt vium of Ber rk olive brov	nedict Canyon Wa	e fine grained s	– – – – and, minor spotting
— 283 1 - -	10)-15	Box 1			Δ Δ	@1 @1 bro sub @1	0': Becomes slight dish brown FeO ₃ s 1.1' to 11.7': Increa 1.7' to 12.5': Claye wn to greenish browned gravels, v 2.5' to 12.8': Lamin 2.8' to 13.1': Claye	taining ase in fine g by SAND (So wn, fine to c ery gravelly nation of Sa	rained sand conte C), with gravel, mo coarse grained sar @12.2' ndy CLAY (CL)	ent ottled brown to r nd, fine subangu	eddish ular to
-	-					Δ		ined sand 3.1': Clayey Grave	lly SAND (S	W-SC), reddish b	rown, fine to co	arse graine
							san	d, fine subangular	slaty gravel	s, normally grade	d	_
- 278 1	15	5-20	Box 2				@1 mo @1 @1 clay @1 bro	4.2': Thin clayey la 4.3' to 15.8': Grade ist, fine to coarse of 5.8' to 16.5': Grade 6.5' to 16.8': GRA' matrix 6.8' to 18.6': Claye wn to yellowish bro	es into Silty grained sand es coarser w /EL (GP) la y Sandy GF	I, occasional fine of the control of	gravel e subangular sl ar slate gravels mottled reddish nd, fine to coars	aty gravels in sandy brown to se
FIEL	0 — LD HARDNI			BEDO			Sub Cha Ple @1	angular to subrour otic, minor notable istocene Alluvium 8.6' to 20': Grades	of Benedic to Clayey S	siltstone, and sand y, gradational con t Canvon Wash (E	dstone gravels, tact BCW,):	appears ————
IARD MOD HARD	KNIFE CAN'T SCRATCHES SCRATCHES GROVES CARVES	DIFFICULT	MI	THIN THIN EDIUM HICK THICK	<2 2"-1 12"-3 36"-1 >12	2" 36" 20"	MODE! STEEP	HORIZONTAL (0-5*) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CO	RE	BC	RII	NG LOG			PAGE 2 OF	4
			azard Inves								IOD NO	40074 000
			fied School								JOB NO.: PAGE NO.:	10274.006 2 of 4
			rilling Corpo	oration			_				ELEVATION:	292.5 Feet
EQUIPMENT GROUND				TO (Feet)·			ORIENTATION	С	ORE BARREL	DATE START:	7/9/2014
	HRS A	FT	BO.	T OF	BOT	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/10/2014
DATE	СОМ	- W	ATER CA	SING	НС	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/09/14	ATD	V	34					INCLINED	Bit (Feet)		PREPARED BY:	
		¥						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
				,			0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	N &	CORE	SAMPLE	E I	0	일 (5				ΠΟΝ, REMARKS, AND LI		rface conditions
CORE DEI (Feet)		DEPTH RANGE (Feet)	NUMBER	RECOVERY	RQD	GRAPHIC LOG	mav	Soil Description applies on differ at other locations an itions encountered. Trans	d may change w	ith time. The description	is a simplification of	the actual
	25	20-25 25-30	Box 2				pod gra gra abi gra abi gra pod blo de	20' to 20.7': Clayey or to moderate bloc 20.7' to 21.4': Clayey own, gleyed, fine to idational contact 21.4' to 22.3': Grave ist, fine to coarse or contact with be 22.3' to 22.9': Sand me medium grained or blocky structure 22.9' to 26.7': Sand cky structure, shim veloped blocky structure, shim veloped blocky structure 27.2' to 29': Sandy dation-reduction bapting	ky structure by SAND (Si coarse grainelly SAND we prained sand low y CLAY (CL sand, abund y CLAY (CL mer on face cture @26.5	e, shimmer on faces C), with gravel, red- ned sand, fine sub- vith Clay (SM-SC), d, normally graded,), reddish brown, g ndant brownish bled), reddish brown, s es, faintly laminated 5' to 26.7', with wax	s, abrupt conta dish brown an angular slaty g reddish gray b some fine gra leyed, fine gra bs, gleyed on lightly gleyed, d, MnO ₂ spottin by finish	act d grayish irravels, rown, very ivels at base lined sand, laminations moderate ng, well
- 263 :	30	30-35	Box 3			3.	occover fine poor about the control occording to the control occurs to the control occording toc	29' to 30': Grades to casional medium to carlying sandy clay 80' to 32': Sandy Cl carlined sand, with or to moderate block rupt contact 80' to 34.5': heavily 32': Lamination of co	AY (CL), go some med ky structure gleyed arbonate, co	ined sand and fine reenish brown to ol lium to coarse slaty, occasional fine si aliche, very hard barket (GW-GC), r	gravel, harder ive reddish bro y sand, mottle ubangular slat asalt clasts mottled reddis	than own, moist, d, gleyed, y gravels, h brown to
- - ⊻ 258 :	₹ -						gra sla rich @: 1 @:	y to yellowish brow te and siltstone gra a laminations 33.7' to 34': Grades 34' to 34.5': Sandy prounded slate frag 34.5': Pleistocene	n, gleyed, f vels, abund finer, less g GRAVEL (C ments, grad	ine to coarse graind ant yellowish oxide gravel BW), wet, medium t lational contact	ed sand, fine set staining, disc	subangular rete sand ned sand, fir
-	35-40 Box 4						Sa fine @3 tra @3 oxi coa	34.5: Pleistocene Andy CLAY (CL), red to medium grained 35' to 36.3': Clayey ce medium grained 36.3' to 38.7': Clayed dation-reduction barse grained sand, 38.7' to 40': Clayey nd, some medium to granitic gravels.	ddish brown d sand, few SAND (SC) sand, mod ey SAND (Sinding, fine gleyed SAND (SC) o coarse gr	to gray, oxidation- fine slaty gravels, , reddish brown, glerate to well develo C), reddish brown t grained sand, with , with gravel, dark ained sand, fine su	reduction band oxidized eyed, fine grai uped blocky st o grayish brov occasional me	ined sand, ructure vn, edium to
—253	+0 -						T					
					NIN/C	4		TITLIDE AND ANOLE	IOINTO /	SHEAR / FRACTURE	WEATHERING	_
/_HARD - HARD - MOD_HARD - SOFT -	SCRATCH	NESS N'T SCRATC ES DIFFICU ES EASILY	JLT T ME TH	BEDI THIN HIN DIUM HICK THICK	2"-1 12"-' 36"-1 212"-	2" 36 " 20"	SHALL	TITUDE AND ANGLE HORIZONTAL (0-5") DW OR LOW ANGLE (5-35") FRATELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<pre></pre>	FRESH V SLIGHT SLIGHT MODERATE MOD. SEVERE V SEVERE COMPLETE	

				CC	RE	BC	RII	NG LOG			BORING NO. PAGE 3 OF	CB- 11
PROJECT:			azard Inv								105.110	40074.000
			ified Schoo								JOB NO: PAGE NO:	10274.006 3 of 4
CONTRACTO	T. 10 C. 1			poration							ELEVATION:	292.5 Feet
QUIPMENT	TOTAL STATE			LI TO /For	av.	-		ORIENTATION	С	ORE BARREL	DATE START:	7/9/2014
GROUNE	HRS A	ET	В	OT. OF		, OF	Х	VERTICAL	TYPE		DATE FINISH:	7/10/2014
DATE	COM	1 W	ATER I	ASING		DLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/09/14	ATD	▽	34					INCLINED	Bit (Feet)		PREPARED BY	
		¥						BEARING	Barrel (Feet)		LOCATION:	605 Whillier B
		2055					0	ANG. FROM VERT	Total (Feet)	TION, REMARKS, AND I	Beverly Hills, Ca	
ELEVATIO	3 N(CORE	SAMPLE	. ½	۵ ا	¥ 5	Th. (FI⊑I Soil Description applies or				uface conditions
CORE DEF	1111	RANGE (Feet)	NUMBER	RECOVERY	g.	GRAPHIC LOG	may	liffer at other locations artions encountered. Trans	d may change w	ith time. The description	ı is a simplification of	the actual
—253	40-					UNI	\@3	9.6': siltstone clas	ts			
							@4	0' to 42': Sandy C	AY grading	to Clayey SAND	(SC-CL), reddis	sh brown,
-					1		de	ved mostly fine ar	ained sand.	some medium to	coarse grained	sand,
							000	asional fine slaty of es have poor to m	ravels, finin	g upward sequent	æ, ivinO ₂ spotti	ng, sandier
Δ	-						201	2' to 43.2': Clayey	Sandy GR4	VFL (GW-GC) re	ddish brown w	et, fine to
		40-45	Box 4				COS	rse grained sand,	fine subang	ular slaty gravels		,
2	-					0 3	3	•				
							@4	3.2' to 43.8': Claye	y SAND (S	C), reddish brown,	very moist, fin	e to mediur
2	-					•	gra	ned sand, low clay 3.8' to 49': Channe	Denocite	Clavey Sandy CD	AVEL (GW CC	() reddieh
						5 %	bro	wn, wet, fine to co	arse grained	I sand, fine suban	gular to subrou	nded slate
-248 <i>4</i>	45				-	8	and	siltstone gravels,	poorly strati	fied, abrupt contac	ot	
- service 1/3	11.077					13	-					
						01						
=							1					
						. 69						
	-					-						
		45-50	Box 5									
5	-					3						
						2/	1					
s	=						Ple	stocene Cheviot	tills Deposi	ts (CHD):		
							@4	9' to 53.8': Sandy	CLAY with S	Silt (CL-ML), reddis	sh brown, mois	t, minor
-243 5	50-			+		1111	gle	ring, fine grained s tting and streaking	and, occasi	onal medium to co	parse grained s	and, MnO ₂
								tting and streaking dational contact	, sand lens	woz.o, winO₂ bec	ornes prevaler	it aitel 52./
ē	-						gra	sadonai contact				
8	_											
		50-55	Box 5									
		00.00	50, 3									
						111///	-	3.8' to 55': Grades	to Sandy C	IAV (CL) with are	avel reddieh hr	OWN VEDV
							(U) 5	3.8" to 55": Grades st, fine to medium	grained sar	id, some coarse a	rained sand, fir	ne
							sub	angular slaty grave	els			
-238 5	55					V/X//	@5	5' to 58.2': Lamina	ted Sandy C	CLAY and Clayey	SAND (SC-CL)	, reddish
							bro	wn and grav, gleve	d. mostly fir	ne grained sand, s	ome medium t	o coarse
							grai	ned sand, occasion uphout, gravel bed	nai tine sub i @55 6' fin	rounded slaty grav	reis, ivi⊓O₂ spo ed sand lens @	ung 56.5
							1 1110	ugilout, graver bet	. woo.u, III	io to coarse granie		,
	- :	55-60	Box 6									
	-											
								8.2' to 59.7': Sand			gleyed, fine to o	coarse
							grai	ned sand, occasio	nai tine grav	vei, massive		
-233 6	.0					77X17						
200 0												
FIEL	LD HARD	NESS		BED	DING		АТТ	TUDE AND ANGLE		SHEAR / FRACTURE	WEATHERING	
	KNIEF CAN	N'T SCRATC		THIN	<2 2"-1			IORIZONTAL (0-5°) W OR LOW ANGLE (5-35°)	V CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
								ATELY DIPPING (35-55°)	MOD CLOSE	12"-36"	SLIGHT	C
ARD -:	SCRATCHI SCRATCHI	ES EASILY		EDIUM	12"-							
ARD -: OD HARD -: OFT -:	SCRATCH			EDIUM THICK THICK	36"-1 >12	20"	STEEP	OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120"	MODERATE MOD SEVERE V SEVERE	

						BC	PRII	NG LOG			BORING NO. PAGE 4 OF	
PROJECT	El Rodeo										100.415	4007:005
CLIENT: I											JOB NO.:	10274.006 4 of 4
CONTRACTO	D) 7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		g Corp	oration							PAGE NO.	
QUIPMENT		ME-75						ODIENTATION	1 0	ODE BADDEL	ELEVATION:	292.5 Feet 7/9/2014
GROUNE	-	-		TO (Fee		r OF	х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START:	
DATE	HRS AFT	WATER	2	T OF		20	^				DATE FINISH:	
07/00/::	COMP	D	- CA	SING	HC	DLE		HORIZONTAL	SIZE		DRILLER:	Martini /- EU
07/09/14	ATD	☑ 34			_			INCLINED BEARING	Bit (Feet)		PREPARED BY	
		Ā	_			_	- 0		Barrel (Feet)		_	605 Whittier
				_	_		0 T	ANG, FROM VERT.	Total (Feet)		Beverly Hills, Ca	3
ELEVATIO	NR I	DRE PTH SA	AMPLE	\ <u>k</u>		1 8 %				TION, REMARKS, AND		
CORE DEF	TH I		JMBER	8.6	8	GRAPHIC LOG	The S	Soil Description applies of differ at other locations a	nly to a location o	f the exploration at the t	ime of drilling. Subs	urface condition
(Feet)		eet)		RECOVERY	-	8		tions encountered. Tran				i trio actual
-233	60	-65 B	30x 6				bro Mn @6 bas @6 gra @6	19.7' to 64': Interla wn, gleyed, mostl O₂ nodules, sand :2.1' to 62.4': sand :al coarse siltston :2.4' to 62.8': sand :2.8' to 63': sand b vel :3': sandy clay :3' to 65': Sandy C dium grained sand	y fine grained lens bed with fine e rock fragme y clay ed with siltst	a sand, some med e to coarse sand ents at 62.4' one rock fragmen	dium to coarse and siltstone fro ts and subrour red, faintly lami	grained sa agments, nded slaty
	65-	-70 B	ox 7				ban occ strir	5' to 73.6': Sandy ding, fine grained assional fine subrongers begin, @70 D_2 , @72.3'-72.9' c	sand, with so unded slaty o 70.5' abunda	ome medium to c gravel, MnO ₂ strea ant carbonate strii	oarse grained s aks, @64.1' ca ngers, @70.5-7	sand, rbonate ⁷ 5' abundai
249. 77	70-	75 Bo	ox 7									
-213 80							Perd Bori Bori dye.	al depth of coring: thed groundwater ng backfilled with ng capped with ap ess cuttings dispo	encountered bentonite and proximately	d soil cuttings upo 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
FIELD	HARDNES	S		BEDD	ING		ATTI	FUDE AND ANGLE	JOINTS / S	HEAR / FRACTURE	WEATHERING	4
RD -SO DHARD -SO FT -G	NIFE CAN'T SO DRATCHES DI DRATCHES EA ROVES ARVES	FFICULT	V TI TH MED THK V TH	IN IUM CK	<2" 2"-12' 12"-36 36"-126 >120"	5" 0"	MODERA STEEP C	ORIZONTAL (0-5°) V OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD SEVERE V. SEVERE	3

				C	UKE	: BC	וואנ	NG LOG			PAGE 1 OF	4
PROJECT				nvestigati							IOD NO	40274.000
				hool Distr							JOB NO.: PAGE NO.:	10274.006 1 of 4
				Corporatio	on						ELEVATION:	290.5 Feet
EQUIPME				PTH TO (F	oot).			ORIENTATION	C	ORE BARREL	DATE START:	
GROU	NDWATE	AFT		BOT. OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	7/11/2014
DATE	10	MP	WATER	CASING	1	DLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	_	TD 🗸	32					INCLINED	Bit (Feet)		PREPARED BY	: EH
		V						BEARING	Barrel (Feet)		LOCATION:	605 Whittier Bl
		1					0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	1
ELEVAT	TON &	CORE		₩		≌		FIEL	D CLASSIFICA	TON, REMARKS, AND	LIMITATIONS	
CORE	DEPTH	DEPTH RANGE		1 2 3	, §	GRAPHIC	may	Soil Description applies or differ at other locations an	d may change w	ith time. The description	n is a simplification of	urface conditions f the actual
(Fee	et)	(Feet)		<u> </u>		Ū	cond	itions encountered. Trans	itions between s	oil lypes may be gradua	ř.	
— 291 —	0						a (0)	ificial Fill, Undocu 0'-5': Hand Auger ft Runs to 30'	mented (Afu	<u>ı):</u>		
— 286 -	5						@5 gra	' to 6.5': Sandy CL ined sand, trace fir	AY with Silt e gravel, so	(CL-ML), medium ft	brown, slightly	/ moist, fine
<u>-</u> 29	7-						@6	6.5' to 7.5': N o Rec	overy			
- -	? <u>-</u>	5-10	Box	1			Sar	7.5': Holocene Allumndy CLAY with Silt and, some oxidation, 19.4' to 10': No Reco	(CL-ML), mo trace fine s	edium brown, sligi	ntly moist, fine	grained
—281 - -	10 —	10-15	Вох	1			bro coa	0' to 14.6': Silty Sa wn to reddish brow arse grained silty sa	n, mostly fir	CL-ML), mottled r le grained sand, (nedium brown ⊉10.3' laminati	to olive on of fine to
— 276	15		-			THEOLOGY		4.6' to 15': No Rec			ulas O I - I II	
-	-	15-20	Вох	2			Ple @1 gra @1 gra	5' to 15.1': siltstone istocene of Bened 5.1' to 15.9': Sandy ined sand, trace fin 5.9' to 20.5': Silty (ined sand, trace ve icture, shimmer on	ct Canyon Silty CLAY e subangula CLAY (CL-M ry fine tabu	Wash (BCW ₁): (CL-ML), dark gr ar Tm and tabular L), with sand, red ar slate fragments	ayish brown, m slaty gravels dish brown, mo s, poorly develo	noist, fine
	20											
E	IELD HAF	RDNESS		BEI	DDING		ATT	ITUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	
AHARD HARD HOD HARD HOFT SOFT	- KNIFE C	AN'T SCRA CHES DIFFI CHES EASIL S	CULT	V. THIN THIN MEDIUM THICK V. THICK	<2 2"-1 12"-(36"-1 >12	2" 96" 20"	SHALLO MODER STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

				CC	ORE	B	DRII	NG LOG			BORING NO.	CB- 12
PROJECT: CLIENT: B CONTRACTO EQUIPMENT	R Mari	ls Unit	fied Sch illing Co		et						JOB NO.: PAGE NO.: ELEVATION:	10274.006 2 of 4 290.5 Feet
GROUND		NIE-7		TH TO (Fe	et):			ORIENTATION	С	ORE BARREL	DATE START:	7/10/2014
DATE	HRS AFT	10/0	TER	BOT OF		r. OF	Х	VERTICAL	TYPE		DATE FINISH:	7/11/2014
	COMP	_		CASING	HC	DLE	_	HORIZONTAL	SIZE		DRILLER:	Martini
07/10/14	ATD	_	32				ļ	INCLINED	Bit (Feet)		PREPARED BY	
		1.00 T			_		0	BEARING ANG FROM VERT	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier Blvd
	C	DRE		7.	<u> </u>	10				I TION, REMARKS, AND		
ELEVATION CORE DEP (Feet)	TH RA	PTH NGE eet)	SAMPI NUMBI	ە. ھرا	Rob	GRAPHIC	The may cond	Soil Description applies or differ at other locations ar itions encountered. Trans	nly to a location o	of the exploration at the rith time. The description	time of drilling. Subs	
—271 2 —266 2	5 -	-25	Вох				sair shii dev gra cor @2 mo	20.5' to 20.6': Thin caceous 21' to 25': Silty CLA od, occasional submer on faces, ve 23': Light reddish st 23.1': Waxy finish of 23.5' to 25': Light grained sand veloped blocky struck 4.7' to 24.8': Fine 925' to 25.6': Silty Sained sand, poorly ontact below 25.6' to 27.2': Sand stroughed slate and propuded slate and poorly of the country struck and sand propuded slate and propuded slate and control of the country of the c	rounded fine ry minor dar caining arour bserved on ray gleying relenses, occurrengravel layer, andy CLAY (developed bluy CLAY (CLand, occasion	with sand, reddis gravels, poorly of k gray gleying and sand and grav- clay faces nore prevalent, fil asional coarse gr subangular siltst CL-ML), reddish ocky structure, m	th brown, moist, developed block el lens ne subrounded rained sand, pottone fragments brown, slightly innor gleying, grant trace silt, reddid sand, fine sub	fine grained y structure, slaty gravels, orly moist, fine adational ish brown, pangular to
-261 30	25-	-30	Box 3	3			ez lam Ple @2 me	prounded slate and ucture 17.2': Silty CLAY (Chinated 15.1' to 30.4': Become of Bened dium brown, thin la	ict Canyon mes Sandy mination of	ish brown to med Wash (BCW ₂): Silty CLAY (CL-N MnO ₂	dium brown, mo	ist, thinly
Ā	30-	35	Box 3				mo Mn	0.4' to 32.7': Sandist, thinly laminated O ₂ staining	í, trace FeO	staining between	n pedogenic fac	es, spotty
	7							wn to medium brov			. 2, 0, 1140 (0	,,
-256 35	-		_				@3 fine trac poo blac	3.4' to 36.9': Grade grained sand, trac e mechanically brought try to moderately dock siltstone rock fra	es to Silty Sa ce coarse gra bken fine silt leveloped blagment, @3	andy CLAY (CL-Nained sand, fine s stone rock fragm ocky structure, @ 5.8' trace fine sub	subrounded slat ents, olive gray 34.8' 2-inch su	y gravels, mottling, bangular
▽ -251 40	35-	40	Box 4			black siltstone rock fragment, @35.8' trace fine subangular dark purplish red siltstone rock fragments, micaceous @36.9' to 38.4': Silty CLAY (CL-ML), reddish brown to olive brown, moist, trace fine grained sand, trace fine subangular slaty gravels, trace coarse grained sand @38.4' to 39.5': Sandy CLAY (CL), with gravel, medium brown to olive gray, wet, fine grained sand, trace coarse grained sand, trace fine slaty gravels, poorly developed blocky structure, abrupt contact @39.5' to 40.5': Gravelly SAND with Clay (SW-SC), olive brown to gray brown						
HARD - KN RD - SC D HARD - SC FT - GF	HARDNES WIFE CAN'T SO CRATCHES D CRATCHES E ROVES ARVES	CRATCH		BEDI V. THIN THIN MEDIUM THICK V. THICK	2"-12 12"-3 36"-12 >120	2" 6" 20"	SHALLO MODER STEEP	ITUDE AND ANGLE IORIZONTAL (0-5°) W OR LOW ANGLE (6-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) //ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	SHEAR / FRACTURE	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROCKLOG2014 10274.006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

					CC)KE	BU	וואי	NG LOG			PAGE 3 OF	4
PROJECT			Geohazaro									JOB NO.:	10274,006
CLIENT: CONTRAC			s Unified S ni Drilling									PAGE NO.:	3 of 4
EQUIPME			ME-75	Corp	OTALIOL						*	ELEVATION:	290.5 Feet
	NDWAT				TO (Fee				ORIENTATION		ORE BARREL	DATE START:	7/10/2014
DATE		SAFT	WATER		T OF		OF	Х	VERTICAL HORIZONTAL	TYPE		DATE FINISH: DRILLER:	7/11/2014 Martini
07/40/44	_	OMP	☑ 32	CA	SING	н	DLE		INCLINED	Bit (Feet)		PREPARED BY	
07/10/14	-	ATD	<u>V</u> 32	+-					BEARING	Barrel (Feet)		LOCATION:	605 Whittier E
			A					0	ANG FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVAT	JON &	co			¥		2				TION, REMARKS, AND L		
CORE D	EPTH	RAN		MPLE	RECOVERY	ag.	GRAPHIC	may	differ at other locations a	nd may change v	of the exploration at the ti with time. The description soil types may be gradual	i is a simplification of	urface condition the actual
 251	40 —						à 1/2	4	,		fine tabular slaty g		
								@4	0.5' to 41': Silty C	LAY (CL-ML), olive gray with o	range brown th	in
		1					Δ. Δ	lan	ninations, moist, tr	ace tine grai	ned sand, FeO _{>3} s N), with trace silt a	taining prevale	ne to coord
							۵۰,	@4	ined sand, fine su	iiy SAND (S\ bangular sla	w, with trace silt a tv gravel	ind clay, wet, II	ne to coals
	-	1	45 5	A		1		9,0			, g -		
		40-	45 B	ox 4			۵ ۵	1					
ā.	-	1					۵ ٔ ۵	1					
		1					111	@/	3 7' to 44 4" Silty	SAND with 6	Clay to Sandy SIL	r (SM-ML), red	dish brown
	- 5	1				1		gra	y, fine grained sai	nd	olay to carray on	(0.0.10.2), 100	
	yyae							104	4.4' to 44.7': Sand	y Silty CLA	Y (CL-ML), reddish	brown to gray	, moist, thir
-246	45-						11//	1\wel	I defined lamination	ons, oxidatio	n-reduction bande	d	
							11/2	@4	4.7' to 45': No Re	covery	(011.00)	h	a 4a
	-	1						@4	5' to 45.3': Silty C ined sand, grades	layey SAND	(SM-SC), reddish	prown, wet, fir	ie to mediu
					1), reddish brown to	o olive brown	ine grained
4	-	1						sar	id, trace medium	o coarse gra	ined sand, fine sla	aty gravel	5.2
		45-	50 B	ox 5				1 @4	5.5' to 47.6': Silty	Clavey SAN	D (SM-SC), with g	ravel, reddish	brown, mos
-	-	1						fine	to coarse grainer	d sand, fine s	subangular to subr	ounded slaty of	ravels, low
									es content, with dis ods @47.3' to 47.6		beds @46' and 46	o. / TO 46.9", hi	gniy oxialze
è	1	1									CLAY to Clayey S	SAND (SC-CL)	reddish
							2222	bro	wn and grav, glev	ed laminate	d. fine to medium	grained sand, 1	race coars
-241	50 —	-	_			-	11111	gra	ined sand, fine sla	ity gravels, p	oor blocky structu	re, gradational	contact
								@4	7.9' to 48.3': Clay	ey SAND (S	C), reddish brown, quence, basal fine	gleyed, fine to	coarse
	=	1							ined sand, normal upt contact	ny graded se	quence, pasar ime	, aubituilided g	iaveis,
								@4	8.3': CLAY with a	leved Sand (CL), olive brown to	greenish brov	vn, very
5		-						mo	ist, fine to medium	grained sai	nd, trace coarse gr	rained sand	
		50-	55 B	ox 5				@4	9.4' to 50': No Re	covery			
								@5	0': Pleistocene C	heviot Hills I	Deposits (CHD):	a partment so	al was a fire
								Sar	nay CLAY (CL), re	aaish brown	to gray, gleyed, fir gradational contact	ie grained san	u, waxy iin
	-										AY with Sand (CL-		rown to
								gre	enish gray, highly	gleyed, plas	tic, gradational co	ntact	
-236	55-							@5	0.4' to 51.5': heav	ily gleyed			
								@5	1' to 51.8': Grade y, gleyed, waxy fir	s to Sandy C	LAY (CL), with silt	, reddish brow	n to greenis
ė								@5	1.8' to 55': Sandy	CLAY (CL).	reddish brown, gle	eyed, mostly fir	ne grained
								san	d. with some med	lium to coars	se grained sand, or	ccasional fine	subrounded
Ē	_							slat	e and siltstone gr	avel, waxy fi	nish on poorly deve eddish brown, oxid	eloped faces	n handing
		55-6	60 Br	ox 6				@5	4.5': becomes oxi	dation-reduc	tion banded with t	hin laminations	•
	_	55.	-					@5	5' to 55.9': Sandy	CLAY (CL),	reddish brown, gle	eyed, moist, fin	e grained
								san	d, waxy finish on	well develop	ed faces reddish brown, gle	wed avidation	-reduction
								bar	ding, mostly fine	grained sand	f, with some medic	im to coarse a	rained sand
								occ	asional fine subar	ngular slaty o	ravel, faint MnO2 :	spotting	
–231 ∑	60 —							@5	8' to 60': Become	s more mass	sive, with increase	in tine gravels	, oxidized
3 37-57-1	(500)											<u> </u>	(%)
	IELD HA			1/	BED! THIN	DING <2	ри		TTUDE AND ANGLE HORIZONTAL (0-5°)	JOINTS /	SHEAR / FRACTURE	WEATHERING FRESH	
HARD ARD	- SCRA	TCHES D	CRATCH IFFICULT	T	HIN	2"-1	12"	SHALLO	ORIZONTAL (0-5) OW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
	CODA	CHESE	ASII Y	ı ME	DIUM	12"-		MODE	CALLELI DIPPING (33-35°)		36"-120"		
OD HARD OFT SOFT	GROV	ES		TH	HICK THICK	36"-1 >12			OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	WIDE V. WIDE	>120"	MODERATE MOD SEVERE	

			CO	RE BO	ORING LOG			BORING NO. PAGE 4 OF	CB- 12
	El Rodeo Geob								
Thought and the second	verly Hills Un							JOB NO.: PAGE NO.:	10274.006 4 of 4
NTRACTOR: UIPMENT U		rilling Corp 75	oration					ELEVATION:	290.5 Feet
GROUNDW			TO (Feet):	ORIENTATION	C	ORE BARREL	DATE START:	7/10/2014
	HRS AFT	ATER	T OF	BOT OF	X VERTICAL	TYPE		DATE FINISH:	7/11/2014
	COMP	CA	SING	HOLE	HORIZONTAL	SIZE Bit (Feet)		DRILLER: PREPARED BY:	Martini EH
7/10/14	ATD 🕎	32			BEARING	Barrel (Feet)		LOCATION:	605 Whittier Blv
	1				0 ANG, FROM VERT.	Total (Feet)		Beverly Hills, Ca	
LEVATION A	CORE		`	_ 2	FIEL		TON, REMARKS, AND I		
ORE DEPTI	I DEPTH	SAMPLE NUMBER	RECOVERY	RQD GRAPHIC LOG	The Soil Description applies on may differ at other locations an conditions encountered. Trans	d may change w	ith time. The description	n is a simplification of	urface conditions the actual
231 60				9	\zone @59.2', @59' to	60' increase	e in fine subangula	ar slaty gravels	
				7/1/	@60' to 60.5': Sandy	GRAVEL (G	W), reddish brown	n, wet, medium	to coarse
	-			7777	grained sand, fine sub				
					@60.5' to 60.8': Becombrown, highly oxidized	nes Clayey	SAND (SC), redd	lish brown to or 1. with some co	angisn Jarse grainer
			1		sand, fine subrounded	slaty grave	is	z, with some co	Live granice
	60-65	Box 6			@60.8' to 61.1': Grade	es to Sandy	CLAY (CL), reddis	sh brown to gra	y, gleyed,
	7				fine grained sand, son	ne medium	grained sand		
		1			@61.1' to 61.2': Lamir	nation of dar	k gray fine to med	dium grained S	AND (SP)
	-				@61.2' to 65.7': Sand heavily gleyed, fine to	CLAY (CL), with gravel, redo	dish brown to g	reenish gray Iravels
					faintly laminated, oxidi	zed orangis	h zones througho	ut, @62.6' and	65'
26 65	-				carbonate blebs in ma				
					005 711 00 51 5	. 01 437 701	Consulation In		, mostly fic-
	3. -				@65.7' to 66.6': Sandy grained sand, grades	/ CLAY (CL sandier dow), reaaisn brown to nward, aradations	o greenish gray al contact	, mostly tine
				444	@66.6' to 67.3': Claye				to greenish
				. 3	gray gleved fine to m	edium grain	ed sand, some co	parse grained s	and, fine
_	65-70	Box 7			subangular slaty grave	els, normally	graded, with fine	to coarse base	al slate and
∇	-			1	siltstone gravels	12 P. S.	04ND (00) ""		hanne
					@67.3' to 67.7': Becor gleyed, fine grained sa	nes Clayey	SAND (SC), with	gravel, reddish	prown, gravels
	12.				@67.7' to 67.9': Layer	of Clavey S	andy GRAVEL (C	GW-GC) fine or	rained sand
					fine subangular slaty of	ıravels			
21 70-					@67.9' to 74.6': Claye gray, gleyed, wet, fine	y Sandy GF	AVEL (GW-GC),	reddish brown	to greenish
				. 1	gray, gleyed, wet, fine and siltstone gravels	to coarse g	iailieu Saliu, IIIle I	to coarse subar	ngulai sialo
	-			2	and the same grant of				
					•				
	=								
	70-75	Box 7							
	-			1					
				2					
		1		(A) / a					
				0					
				3	07460 75 11 5				
16 75					@74.6' to 75': No Rec		-		
1 6 75				1%	Total depth of coring:	75' bas	1 @ 32.7'-33.4', 3	8.4'-40.5'. 41'-4	3.7',
16 7 5	_				Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and	75' bgs encountered I 67.9'-74.6'	bgs		
16 75					Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with	75' bgs encountered 1 67.9'-74.6' pentonite an	bgs d soil cuttings up	on completion	of drilling.
16 75	-				Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
16 75	-				Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
16 75					Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
16 75	-				Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
16 75	-				Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
1 16 75	-			3%	Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
				3%	Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
					Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dve	75' bgs encountered I 67.9'-74.6' bentonite ar proximately	bgs d soil cuttings up 6-inches of Rapid	on completion of Set Concrete	of drilling. and black
:11 80- FIELD	HARDNESS		BEDD		Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dye. Excess cuttings dispose	75' bgs encountered 167.9'-74.6' pentonite ar proximately sed of in D.0	bgs d soil cuttings up 6-inches of Rapic D.T. approved dru SHEAR / FRACTURE	on completion of Set Concrete ims and dispos	of drilling. and black
FIELD RD - KNI	IFE CAN'T SCRATO RATCHES DIFFICU	ILT T	THIN HIN	<2" 2"-12"	Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dye. Excess cuttings dispose ATTITUDE AND ANGLE HORIZONTAL (0-5') SHALLOW OR LOW ANGLE (5-35')	75' bgs encountered 167.9'-74.6' pentonite ar proximately sed of in D.0 JOINTS /: V. CLOSE CLOSE	bgs d soil cuttings up 6-inches of Rapic D.T. approved dru SHEAR / FRACTURE	on completion of Set Concrete sms and disposed wearhering weathering fresh v.sught	of drilling. and black
FIELD RD - KNI S - SCI HARD - SCI	IFE CAN'T SCRATO	ILT TI MEI TH	THIN	<2"	Total depth of coring: Perched groundwater 45'-45.3', 60'-60.5' and Boring backfilled with I Boring capped with ap dye. Excess cuttings dispose ATTITUDE AND ANGLE HORIZONTAL (0-5')	75' bgs encountered 167.9'-74.6' bentonite ar proximately sed of in D.0 JOINTS /:	bgs d soil cuttings up 6-inches of Rapic D.T. approved dru SHEAR / FRACTURE	on completion of Set Concrete ams and dispose	of drilling. and black

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

						BC	PRII	NG LOG			PAGE 1 OF	CB-13
PROJECT: CLIENT:				nvestigati							JOB NO.:	10274.006
CLIENT: CONTRACT											PAGE NO:	1 of 4
EQUIPMENT		CME-7		0. por							ELEVATION:	287.5 Feet
GROUN	DWATER:		DE	PTH TO (F				ORIENTATION		ORE BARREL	DATE START:	7/11/2014
DATE	HRS AF	I W	ATER	BOT, OF		T. OF	X	VERTICAL	TYPE		DATE FINISH:	7/12/2014
	COMF	·		CASING	H	OLE		HORIZONTAL	SIZE		DRILLER: PREPARED BY	Martini / EDD
07/11/14	ATD	Ā	37		-		_	INCLINED BEARING	Bit (Feet) Barrel (Feet)		LOCATION:	605 Whittier Bl
	-	¥			-		0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
		CORE			╁	0	Ť			TION, REMARKS, AND		
CORE DE	PTH	DEPTH RANGE (Feet)	SAMP NUMB		Rab	GRAPHIC LOG	may	Soil Description applies or differ at other locations are litions encountered. Trans	ly to a location of	of the exploration at the trith	ime of drilling. Subs	urface conditions of the actual
288	0-	(1 001)					@5	Surface: 6" Asphalt	Concrete			
_),5': 8" Portland Ce		ete		
							Art	ificial Fill, Undocu	mented (Afu	1): 		
-	-						8					
							\$					
							\$					
						$\otimes\!\!\!\otimes\!\!\!\otimes$	8					
				1		***	\$					
	5						L					
283	5						@5	Holocene Alluviu	m of Bened	lict Canyon Wash	(Qal):	doord tee-
							Sai	ndy SILT with Clay irse grained sand,	(ML-CL), ye	ellowish brown, m	oist, fine graine	ed sand, trac
20							1 coa	irse grained sand, 5.4' to 11.5': Becom	race line to es brown in	coarse subangui	ai graveis	
							1 6	.4 10 11.5. 000011	CS DIOWII III	00101		
-	-						1					
		5-10	Box	1			1					
-	=						1					
				1			1					
							1					
							1					
070	40					XXX	1					
— 278	10-					WW.	1					
						WW.	1					
-01	-					WW	1					
							@1	1.5': Pleistocene	Alluvium of	Benedict Canvor	Wash (BCW.)	
#);	-					WW.	Sar	dy CLAY with Silt	(ML-CL), da	rk brown, moist, f	ine grained sar	nd, trace
	1	10-15	Вох	1		WW.	coa	rse grained sand.	ew subangi	ular to subrounder	d fine to coarse	gravel
-0	:				1		@1	2.4' to 12.9': Sand	SILT with	Clay (ML-CL), bro	wn, moist, fine	grained san
						WW.	ean	2.9' to 15.1': Sand	ined sand	few subangular to	subrounded fi	ne to coarse
					1		gra		ou ourid,	Sabangulai (G		
							1					
070												
—273	15					THE	@1	5.1' to 16.7': Silty (LAY with S	and (ML-CL), dar	k yellowish bro	wn, moist.
								grained sand		- (//	•	, , ,
	220											
											en lygosacoma	
	-						1	6.7' to 16.9': Grada				
	1	5-20	Box 2	2		11//		6.9' to 19.1': Silty \$				grained,
	-				1	. 1//	trac	e coarse grained,	race inte gr	avei, subaliguidi	o angulai	
					1							
				J	1		@1	9.1' to 20': Become	s fine to co	arse grained sand	Ł	
-268 2	20-				-							
	101125	JESS.			DINC	L	^+-	ITLIDE AND ANCLE	IOINTS /	SHEAR / FRACTURE	WEATHERING	
	LD HARDN		-	V. THIN	DING <2	- +		TUDE AND ANGLE FORIZONTAL (0-5°)	V. CLOSE	⊘"	FRESH	
ARD -	SCRATCHE	S DIFFICUL		THIN	2"-1 12"-	2"	SHALLO	W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°)	CLOSE MOD: CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
OFT -	SCRATCHE GROVES	o easily		MEDIUM	36"-1	20"	STEEP	OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
SOFT -	CARVES			V THICK	>12	u	,	/ERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V SEVERE	
SUF1 -	CARVES			V I HICK	>12	·				e Mn = Manganese Oxide		

				CC	RE	BC	PRII	NG LOG				CB-13			
	El Dados	Casha	and Inc								PAGE 2 OF 4				
	El Rodeo everly Hill										JOB NO : 1027	4.006			
CONTRACTO											PAGE NO.: 2 of				
EQUIPMENT	USED: C	ME-7:	5							005 04005		5 Feet			
GROUND		1		TH TO (Fee		OF	х	ORIENTATION VERTICAL	TYPE	ORE BARREL	DATE START: 7/11/ DATE FINISH: 7/12/				
DATE	HRS AFT	WA	TER I	CASING		LE	^	HORIZONTAL	SIZE		DRILLER: Marti				
07/11/14	ATD	▼ 3		57.61110	- 110			INCLINED	Bit (Feet)		PREPARED BY: EBP				
		¥						BEARING	Barrel (Feet)		LOCATION: 605 \	Mhittier Blvd.,			
							0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca				
ELEVATION	NR I	RE	SAMPL	_		≌,,				TION, REMARKS, AND					
CORE DEP (Feet)	TH RA	PTH NGE eet)	NUMBE	1 20	Rab	GRAPHIC	may	Soil Description applies or differ at other locations an litions encountered. Trans	id may change v	vith time. The description	ime of drilling. Subsurface on its a simplification of the action of the	conditions			
— 268 2 —	20	-25	Box 2			٠	to	coarse grained, fine	e to coarse	subangular to ang	yellowish brown, mular gravel	oist, fine			
_							coa sha @2	arse grained, few fi arp contact with bel 24.2': Clay (CL), da	ne gravels, low rk reddish b	spotty gleying, bot	wish brown, moist, fi tom of channel depo	osit,			
— 263 2 — — — — — — 258 31	25-	-30	Box 3				@2 cos to s Mn @2 bro	arse grained sand, subrounded, minor O, root holes to 27 17.3": Pleistocene A 18.6" to 28.8": 1/2-in wn with large siltste 18.8" to 30.1": Increase.	with Sand trace fine graphing alor 3', sharp be alluvium of the to 1/4-in one rock frase in grave	avel, blocky structing laminations and isal contact Benedict Canyon th thick Silty SAN gments I and coarse grain	D (SM) bed, light ye	angular neavy Ilowish			
	30-	35	Box 3				gra @3 sub @3 fine	ined sand 10.5': Increase in sa cangular to subrour 11.3': 1/8-inch yellor 11.9' to 34.2': Sandy e grained sand, trace 14.2' to 34.9': Grade wn, very moist, fine	and to Clayended slaty g wish brown y SILT with the coarse gr es to Silty S. es grained	ey SILT with Sand ravels, spotty gley fine grained Silty S Clay (ML-CL), dar ained sand, homo	ing SAND (SM) lens k yellowish brown, n geneous M-SC), dark yellowis	noist,			
—253 38 - -	35-	40	Box 4		To the state of th		brown, very moist, fine grained @34.9' to 35.3': Silty CLAY (CL-ML), dark yellowish brown, very moist @35.3' to 35.7': Silty CLAY with Sand (CL-ML), dark yellowish brown, very moist, fine grained sand, few fine subangular to subrounded slaty gravels @35.7' to 37': Sandy CLAY (CL), dark yellowish brown, very moist, fine grained, trace fine subangular to subrounded slaty gravels, fining upwards from 37', @35.5' to 36.2' few fine to coarse subangular to subrounded slaty gravels @37' to 37.1': SAND with Clay (SP-SC) bed, dark yellowish brown, very moist to wet, medium to coarse grained, few subrounded fine gravels, minor CaCO ₃ @37.1' to 37.9': Sandy CLAY (CL), dark yellowish brown, very moist, fine grained, trace fine subangular to subrounded slaty gravels @37.9' to 39.1': Silty SAND (SM), dark yellowish brown, moist, fine grained, trace coarse grained sand, @38.4' to 38.5' Sandy CLAY, fine grained bed,								
			T	1	NING.		<u> </u>	THE AND AND F	IOINTO /	SUEAD / EDACTURE	MEATHERING				
/ HARD - K HARD - S MOD HARD - S SOFT - G	D HARDNES NIFE CAN'T SI CRATCHES D CRATCHES E ROVES ARVES	CRATCH IFFICUL	, v	BEDD THIN THIN MEDIUM THICK THICK	2"-12"-3 36"-12" >120	2" 6" 20"	SHALLO MODEI STEEP	ITUDE AND ANGLE HORIZONTAL (0-5*) WOR LOW ANGLE (5-35*) RATELY DIPPING (35-55*) OR HIGH ANGLE (55-85*) VERTICAL (85-90*)	V CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE 2" 12" 12" 12" 36" 120" > 120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE				

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

				CO	RE E	301	RING LOG			BORING NO. PAGE 3 OF	CB-13
	Beverl	y Hills Uni	azard Inve	District						JOB NO.: PAGE NO.:	10274.006 3 of 4
			rilling Corp	oration		_				ELEVATION:	287.5 Feet
GROUNE		CME-7		TO (Feet)	r		ORIENTATION	T 0	ORE BARREL	DATE START:	7/11/2014
	_	AFT	BC	T OF	BOT. OF		X VERTICAL	TYPE		DATE FINISH:	7/12/2014
DATE	co	MP V	ATER CA	SING	HOLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/11/14	Α٦		37				INCLINED	Bit (Feet)		PREPARED BY	
		¥				-	BEARING	Barrel (Feet)		LOCATION: Beverly Hills, Ca	605 Whitlier Blv
				T	-		0 ANG. FROM VERT.	Total (Feet)	I TION, REMARKS, AND I		
ELEVATIO CORE DEI (Feet)	PTH	CORE DEPTH RANGE (Feet)	SAMPLE NUMBER	RECOVERY	RQD	507	The Soil Description applies or may differ at other locations ar conditions encountered. Tran-	nly to a location o	of the exploration at the ti	me of drilling. Subs	urface conditions f the actual
-248	40—	(1000)				Ш	@38.8' 1/2-inch thick	gravel bed,	fine to coarse sub	angular slate g	gravels
	-						@39.1' to 39.6': Silty coarse grained, few fithick subangular slaty @39.6' to 40': No Rec	SAND with one subangurer of gravel layer	Clay (SM-SC), bro lar to angular slaty	wn, very moist	, fine to
	-	40-45	Box 4		۵		@40.1' to 41': Increase clay, fine to coarse su of slaty gravels	se in gravel to ubrounded to	angular gravel, m	nainly slate, so	me oxidation
	-				Δ	0	gravel, coarse graine @41.9' to 42.4': Silty	d sand, grad	es to Sandy CLA	7 @ 41.9'	
-243 4	45						fine to medium graine @42.4' to 43.7': Incre silt	ed, trace gra	vel		
	-					-]: -]:	@43.7' to 44.4': Grav clay, medium to coars subrounded FeO stail	se grained s ning, basalt	and, fine to coarse and slate gravels	gravel, subar	igular to
		45-50	Box 5		<u>.</u>	4	@44.4' to 44.5': Silty grained, trace gravel @44.5' to 45': No Rec	covery			
	_						@45.4' to 46.3': Silty sand, oxidation staini sand @46.2': 1-inch gravel sand matrix	ng and gleyi	ng along laminatio	ns, trace coars	se grained
-238 5	50						@46.3' to 46.9': Sand gleying along laminat	ions, trace o	oarse grained san	d	
							@46.9' to 47.6': Silty grained, lenses with t	race clay		moist, fine to r	nealum
	1	50-55	Box 5				@47.6' to 48.3': Grav @48.3' to 48.8': Sand @48.5': 1-inch lens o	y SILT (ML)	, brown, moist, fin-	e grained	
							@48.8' to 49.8': SANI grained, few fine grav	D with Silt (S	SP-SM), yellowish	brown, moist,	fine to coars
	12.00				ŀ		@49.8' to 50.3': Sand to coarse subangular	y SILT (ML) to subround	ed slaty gravels		
233 5	55-						@50.3' to 51.9': SANI grained, few fine grav	els			
	2						@51.9' to 52.8': Sand sand, trace coarse gr @52.8' to 52.9': Sand	ained sand,	gleying along lami	inations at top	of bed
	:						grained sand, few fine	gravels			
		55-60	Box 6				@52.9' to 53.9': SANI sand	D (SP), brov	n, fine grained sa		
228 6	-						@55' to 56.6': Sandy laminations, few fine staining, 1/8-inch to 1 sharp contact	subangular s	slate and basalt gr	avels @55.8' t	o 56.1', FeC
							ATTITUDE AND AND	IONITO :	QUEAD / FDACTURE	MEATHERING	_
		RDNESS		BEDD		-	ATTITUDE AND ANGLE	JOINTS /	SHEAR / FRACTURE	WEATHERING FRESH	
RD - D HARD -	SCRATO		LT T	THIN HICK THICK	<2" 2"-12" 12"-36" 36"-120" >120"	1.7	HORIZONTAL (0-5") HALLOW OR LOW ANGLE (5-35") MODERATELY DIPPING (35-55") TEEP OR HIGH ANGLE (55-85") VERTICAL (85-90")	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	"<br 2"-12" 12"-36" 36"-120" >120"	V SLIGHT SLIGHT MODERATE MOD SEVERE V SEVERE	
SOFT -	CARVES		V	THICK	>120"		VEKTICAL (35-90")		e Min = Manganese Oxide		7

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

				•		NL	D		NG LOG			PAGE 4 OF	4
ROJECT	T E	l Rodeo Ge	ohazard	Investig	ation								
LIENT	-	erly Hills (JOB NO	10274.006
ONTRAC QUIPME		Martini SED: CMI		Corpora	tion			-				PAGE NO.: ELEVATION:	4 of 4 287.5 Feet
-	UNDW			ЕРТН ТО	(Feet):				ORIENTATION	C	ORE BARREL	DATE START:	7/11/2014
DATE	TH	IRS AFT	WATER	вот с		вот	OF	Х	VERTICAL	TYPE		DATE FINISH:	7/12/2014
		COMP		CASIN	G	НО	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/11/14	4	ATD ∑	. 37	-	-				INCLINED BEARING	Bit (Feet) Barrel (Feet)		PREPARED BY LOCATION:	605 Whittier Blv
_	+			-	-			0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVA [*]	TION 8	CORE			: 1		ಲ	1	FIE	LD CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE (Fe	DEPTH	DEPTH	E NUN	IPLE E	%	Rab	GRAPHIC	may	Soil Description applies o differ at other locations a itions encountered. Tran	nd may change w	rith time. The description	n is a simplification o	urface conditions f the actual
-228	60-	60-65	i Во	x 6				lan @i sai @i	56.6' to 65': CLAY ninations 60' to 60.1': Sandy nd 60.1' to 63.9': Clay 63.9': few siltstone 61' to 61.1': Sandy	CLAY (CL), (CL), dark re	with fine siltstone	•	
223	65-	65-70	Box	< 7				roc	65' to 68.2': Sandy k fragments in ma	ss			te siltstone
-									8.4' to 68.8': Sand				inad cand
218	70-							@6 @6	8.8' grades to san 9.9': Sandy GRAV ined sand, fine to c	d bed EL with Clay	(GW-GC), brow	n, wet, medium	to coarse
	9							@7 trac	athered basalt and 0' to 70.6': Sandy ce coarse grained s 0.6' to 72.2': Grave	siltstone roo SILT (ML), d sand, fine gra elly SAND w	ck fragments ark yellowish bro- avel ith Silt (GW-GM),	wn, wet, fine gr	ained sand,
	3	70-75	Вох	7				@7	rse grained sand, angular gravel, tra 2.2': SILT (ML), wi gleying at contact	ce coarse gr th sand and	avel, various orig clay, brown, wet,	ins, trace clay fine grained sa	nd, oxidatio
	-	-						1 1	2.3' to 73.4': Silty to the sil	SAND (SM),	yellowish brown,	wet, fine to me	uium grained
		1						@7	3.4' to 75': Silty CL				
13	75						ШИИ	\gley SAI	/ed sand, tracé find ND (SM) lamination lation staining	e to coarse g	ravels, FeO ₃ stai	ning, @74.5' 1/	4-inch Silty
	8							Tota Per Bor	al depth of coring: ched groundwater ing backfilled with ing capped with ap	encountered bentonite an	d soil cuttings up	on completion of	
	-	-						dye					
	=												
808	80—												
FII		ARDNESS ECAN'T SCRAT	СН	B V THIN	EDDIN	IG <2"	1		TUDE AND ANGLE	JOINTS / S	HEAR / FRACTURE	WEATHERING FRESH	
)	- SCRA	ATCHES DIFFIC ATCHES EASIL' VES	ULT	THIN MEDIUM THICK V. THICK		2"-12" 12"-36' 36"-120 >120"	.	MODER STEEP	IORIZONTAL (0-5) W OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) /ERTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-[2" 12"-36" 36"-120" > 20"	V. SLIGHT SLIGHT MODERATE MOD. SEVERE	

ROCKLOG2014 10274 006 LOGS RECOVER GPJ ROCKLOG2012 GDT 2/18/15

					CC	RE	BC	DRII	NG LOG			BORING NO. PAGE 1 OF	CB-14
PROJECT	E E	Rodeo G	eohaza	rd Inve	estigatio							TAGE TOP	7
CLIENT:		ly Hills	Unified	l Schoo	l Distric	et						JOB NO.:	10274.006
CONTRAC				ng Cor	poration	1						PAGE NO: ELEVATION:	1 of 4 286.5 Feet
EQUIPME	INT USE		IE-75	DEPTI	H TO (Fee	at).			ORIENTATION	T 0	ORE BARREL	DATE START:	7/14/2014
		S AFT	VAVATE	В	OT OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	7/15/2014
DATE	С	ОМР	WATE	K C	ASING	HC	LE		HORIZONTAL	SIZE		DRILLER:	Martini
07/14/14	4 /		☑ 35						INCLINED	Bit (Feet)		PREPARED BY	605 Whittier Blvd.
	+		<u>v</u>	-				0	BEARING ANG. FROM VERT	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	
		COR			_ ≿	T	U	1	<u> </u>		TION, REMARKS, AND	-	
ELEVAT CORE I (Fe	DEPTH	DEPT RANG	TH S	SAMPLE NUMBER	- 0	Rob	GRAPHIC	may	Soil Description applies or differ at other locations ar litions encountered. Trans	nly to a location on nd may change v	of the exploration at the livith time. The description	time of drilling, Subson is a simplification of	urface conditions the actual
—287 –	0-							@:	Surface: Artificial F	ill, Undocur	nented (Afu):		
	5 5												
	-	5-10) I	Вох 1				wer @s gra gra	locene Alluvium of to 5.3': Silty SAN y fine subangular s 5.3' to 5.4': GRAVE 5.4': Silty SAND (Sined sand, fine tab 7.5': Becomes Gravy brown, dry, fine gsubangular slate, T	D (SM), with slaty gravels L (GP) laye M), with trac ular slaty gr relly SAND (grained sand	trace clay, media, fine grained sand, subrounded slate gravel, medium avels, trace rootle SP), with trace sid, trace coarse gra	um to olive brow d, trace rootlets te brown, slightly ets, minor clay It, reddish brow	moist, fine
—277 - -	10	10-1	5 E	3ox 1				@1 @1 @2 @1 @1 pini ver	eistocene Alluvium 0': Clayey SAND v ined sand, trace co 0.3': Sandy CLAY veloped blocky stru 0.7' to 10.8': Thin so 0.8' to 15': Sandy hole voids, very lig y fine subangular s 3.6' to 15': Increas	with Gravel (parse graine (CL), reddis cture, trace Silty SAND CLAY (CL), ht frosting o slaty gravels	SW-SC), reddish d sand, fine subar h brown, moist, fi subangular slaty (SM) lens, light tareddish brown, mf sand grains betw, poorly developed	to dark brown, ngular slate and ne grained sand gravels n, moist, fine graine veen pedogenicd blocky structu	d Tm gravels d, poorly ained sand d sand, facies, trace re
—272 -	15							blo con @1	5' to 16.8': Sandy (cky structure, some tact below 6.8' to 18.1': Claye	e fine subán y Silty SAN	gular slate and sil D (SC-SM), with g	ltstone gravels, gravel, reddish k	gradational
	S-0-	15-20	D E	Box 2				fine @1	grained sand, sub	angular to s to Clayey S	AND (SC), with g	gravels ravel, reddish b	rown, moist,
	-							@1	grained sand, sub 9' to 20.5': Sandy (grained sand, trac	CLAY to Cla	yey SAND (SC-C	L), reddish brov	vn, moist,
—267	20-						1/8//						
FI AHARD IARD IOD. HARD IOFT SOFT	- KNIFE - SCRAT		ATCH FICULT	ME T	BEDE THIN THIN EDIUM HICK THICK	2"-12 12"-3 36"-12 >120	2" 6" 20"	SHALLO MODER STEEP	ITUDE AND ANGLE HORIZONTAL (0-5") W OR LOW ANGLE (5-35") ARTELY DIPPING (35-55") OR HIGH ANGLE (55-85") VERTICAL (85-90")	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	SHEAR / FRACTURE	WEATHERING FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

ROCKLOG2014 10274.006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

PROJECT			Geohazard S Unified Sc	Invest	igation	RE	BC	DRII	NG LOG			BORING NO. PAGE 2 OF	CB-14 4
CLIENT: I			ni Drilling					_				PAGE NO.:	2 of 4
EQUIPMENT				ССТРС								ELEVATION:	286.5 Feet
GROUNE	OWATE	R	D	ЕРТН Т	O (Feet):				ORIENTATION		ORE BARREL	DATE START:	
DATE	HRS COI	- 1	WATER	BOT		BOT HO	OF OLE	Х	VERTICAL HORIZONTAL	TYPE SIZE		DATE FINISH: DRILLER:	7/15/2014 Martini
07/14/14	AT		☑ 35						INCLINED	Bit (Feet)		PREPARED BY	
		_	Ā	_	-	_		0	BEARING ANG. FROM VERT	Barrel (Feet) Total (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier
	1	COI			>		U	T			TION, REMARKS, AND		-
CORE DEF	РТН	DEP RAN (Fee	TH SAM	PLE BER	RECOVERY %	RQD	GRAPHIC	The s may cond	Soil Description applies o differ at other locations an itions encountered. Tran	nly to a location o	of the exploration at the vith time. The description	time of drilling Subs	urface conditio f the actual
267	20-25 Box 2							fine oxid	20.5' to 24': Become subangular slate dized and gleyed	and siltston	e gravel, very poo	or blocky structu	olive gray,
-		25-3	30 Box	κ3				sta peo @2 ligh lam 26. @2 Tra finis cha @2 ligh silts	ining between ped- dogenic faces, porce 15.6' to 26.8': Sand t olive gray, moist, inations, moderate 1' 6.8': Pleistocene ce fine slaty grave sh on pedogenic fa- inge below 7.7' to 28.4': Sand t olive gray, moist, stone gravel @28'	ogenic faces ous with room y CLAY (CL fine grained ely develope Alluvium of is, moderate ces, oxidation y CLAY (CL moderately to 28.4'	s, trace fine slaty tholes, clay films), reddish oranged sand, oxidationed blocky structure. Benedict Canyo by to well develop on-reduction band developed block	gravels, heavily brown to medium reduction bands, thin MnO ₂ bands of the medium of t	gleyed alc um brown t ed nd @26.0' :: ture, waxy tions, color um brown t ee fine
-252 ¥ 3	-	30-3	35 Box	change below @27.7' to 28.4': Sandy CLAY (CL), reddish orange light olive gray, moist, moderately developed block siltstone gravel @28' to 28.4' @28.4' to 29.3': Silty CLAY (CL), with sand and grallaminated oxidation-reduction banding @29.3': basal siltstone rock clast @30' to 32.2': Sandy CLAY (CL), with trace silt, regrained sand, trace slaty tabular to subrounded grablocky structure @32.2' to 32.9': Sandy CLAY (CL), reddish brown, moderately developed blocky structure, trace CaCopedogenic faces @32.9' to 34.8': Clayey GRAVEL (GC), reddish brown, subangular slate, siltstone, and basalt gravels, fine grained sand, @34.7' to 34.8' reddish staining and abrupt change below								ddish brown, movels, moderate moist, fine grain of dark olive grained sand, to coarse subang	oist, fine ly develope ned sand, between e gray, moi race coars ular gravels
-247 40		35-4	0 Вох	4				moi @3: olive sub @3: to w @3: moi: grav deve	4.8' to 35': Silty Sast, moderately dev 5' to 35.4': SAND vary, very moist rounded slaty grav 5.4' to 36.2': Sandy vet, fine grained sast to wet, fine grained sat to wet and sa	eloped bloc vith Gravel (to wet, medi els, gradation CLAY (CL) (CL) mes Sandy (ted sand, fir evelopment, cture	ky structure (SP), reddish brown ium to coarse gra onal contact below), reddish brown to tely developed structure CLAY (CL), with go the to medium sub FeO ₃ staining, p	wn to light brow ined, fine tabula w o medium brow ructure gravel, reddish k angular slate a oor to moderate	n to dark ar to n, very mo prown, very nd siltstone
FIEL	D HARI	ONESS			BEDDIN	IG		ATTI	TUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	
HARD - K ARD - S OD HARD - S OFT - G	(NIFE CA SCRATCH SCRATCH SROVES CARVES	N'T SCE HES DIF	RATCH FICULT	V. THIN MEDIU THICI V. THIC	N I IM K	<2" 2"-12' 12"-36 36"-120'	5" 0"	SHALLON MODER STEEP	ORIZONTAL (0-5°) N OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) ERTICAL (65-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

						= R(וואכ	NG LOG			BORING NO. CB-14 PAGE 3 OF 4
				Investigat hool Dist							JOB NO : 10274.006
CONTRACTO											PAGE NO: 3 of 4
EQUIPMENT		CME-		point							ELEVATION: 286.5 Feet
GROUND	WATER:		DE	PTH TO (F				ORIENTATION		ORE BARREL	DATE START: 7/14/2014
DATE	HRS AF	T w	ATER	BOT OF		OT OF	Х	VERTICAL	TYPE		DATE FINISH: 7/15/2014
	COMP			CASING	+	IOLE	_	HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: Martini PREPARED BY: JWJ
07/14/14	ATD	Ā	35		-		-	BEARING	Barrel (Feet)		LOCATION: 605 Whittier
		A					0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca
ELEVATION	N. P.	CORE		≥	Ť	ō	T	FIE		TION, REMARKS, AND	
CORE DEP (Feet)	TH F	EPTH ANGE (Feet)	NUM	1 2.	% ga	GRAPHIC	may	Soil Description applies o differ at other locations a itions encountered, Tran	nd may change w	ith time. The description	time of drilling. Subsurface condition is a simplification of the actual al.
—247 4 —	40 —						gra coa @:	ivels, light orange arse grained sand 39.7' to 40': No Re	FeO ₃ stainin	g, @39.3' to 39.7	ubangular slate and basalt becomes medium to
- 0	4	0-45	Вох	4			we gra	t, subrounded fine nitic cobble, @40.	slaty gravels 6' to 41' dark	s, with CaCO ₃ stri c red staining, abi	eddish brown to olive brow ingers, @40.5' to 40.6' rupt contact below
							bro		edium graine	ed sand, trace coa	M), medium brown to olive arse grained sand, avels
	_					2//	@4 sla	1.6' to 41.7': Thin ty gravels	coarse grain	ed Clayey SAND	(SC) lens, fine subangula
—242 4: -						A 4	mo fac	derately developed es, tabular slaty fir	d blocky stru ne gravels, s	cture, trace FeO₃ ubangular Tm gra	y moist, fine grained sand staining on pedogenic avels se grained, with fine
	/=					Δ Δ	sub @4	angular gravels, to 3.5' to 44.1': Beco	ace FeO sta mes Clayey	ining GRAVEL (GC), r	eddish brown, very moist,
	4	5-50	Box	5			sub @4	eangular siltstone r 4.1': trace coarse 4.6' to 45': No Rec	ock fragmen grained sand	ts	·
,	-						@4 bro	5' to 47.3': Clayey	SAND with		and trace silt, medium ce coarse grained sand,
—237 50	0				+-	A //	1 -	7.3' to 50': No Red		0 1/011-00	18.11
	_					4	ver	y moist, fine to coa quartz gravel	rse grained,	Gravel (SW-SC), fine subrounded	reddish brown to olive gra to subangular slate, basa
-							@5	1.5' to 52.2': No R	ecovery		
¥	50)-55	Вох	5			@5 \wet	, fine to coarse gra	with Gravel ined sand, t	(SW-SC), mediu race subangular	ım brown to dark olive gray slaty gravels, abrupt conta
	_						@5 Sar	2.4': Pleistocene (dish brown	to medium brown	
-232 55	5—						dev	ned sand, trace fir eloped blocky stru O ₂ nodules	cture, clay o	n pedogenic face	es, FeO ₃ staining prevalent
							grai gley dev	ned sand, FeO ₃ st ring, poorly to mod eloped pedogenic	aining preva erately deve faces	lent, MnO ₂ develo loped blocky stru	light olive gray, moist, fine opment, light olive gray icture, shimmer on well sh orange brown to mediu
	55	-60	Вох	6			brov frag stru	wn to light olive gra ments, dark reddis cture, oxidation-re	ay, wet @51 sh brown Fed duction band	.1' to 51.5', trace O₃ staining preva ling, well develop	fine subrounded slate lent, well developed blocky ed thin laminations
-227 ∑ 60	: A=						to lig	7.1' to 57.6': Silty (ght olive gray, mod ring prevalent, well 7.6' to 58.1': Grade	derately deve developed t	eloped blocky stru hin laminations	d and gravel, reddish brow ucture, FeO₃ staining, IL)
-227 ¥ 60											
FIELL) HARDNE	22:		RE	DDING	1	ΔΤΤ	TUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING
HARD - KN ARD - SC DD HARD - SC DFT - GF	NIFE CAN'T CRATCHES CRATCHES ROVES ARVES	SCRATC		V. THIN THIN MEDIUM THICK V. THICK	2"- 12"- 36"- >12	12" 36" 120"	SHALLO' MODER STEEP	ORIZONTAL (0-5°) NOR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) //ERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE

			C	ORE	BC	RII	NG LOG			PAGE 4 OF 4	•
		Geohazard								JOB NO.: 10274.006	
CLIENT: Beve									======	JOB NO.: 10274.006 PAGE NO.: 4 of 4	
CONTRACTOR:		ME-75	Corporat	lon						ELEVATION: 286.5 Feet	;
GROUNDWA"			EPTH TO	(Feet):		Ī.	ORIENTATION	C	ORE BARREL	DATE START: 7/14/2014	
HE	RS AFT	WATER	вот о		T. OF	Х	VERTICAL	TYPE		DATE FINISH: 7/15/2014	
DATE	OMP	WATER	CASING	3 H	OLE		HORIZONTAL	SIZE		DRILLER: Martini	
07/14/14	ATD	<u>⊽</u> 35					INCLINED	Bit (Feet)		PREPARED BY: JWJ LOCATION: 605 Whittie	DI
		<u>¥</u>		_		_	BEARING	Barrel (Feet) Total (Feet)		LOCATION: 605 Whittie Beverly Hills, Ca	я о
	1	1			T	0	ANG. FROM VERT		TON DEMARKS AND I		_
ELEVATION & CORE DEPTH (Feet)	DEF RAN (Fe	TH SAN	PLE X	% RQD	GRAPHIC	I may	Soil Description applies or	ly to a location o	ith time. The description	me of drilling. Subsurface condit is a simplification of the actual	ions
- ↓ - 222 65- - ↓	65-				A A A A A A A A A A A A A A A A A A A	G60 grad fragger fragg	O ₃ staining, shimm O' to 60.2': Sandy reloped blocky strugments O.2' to 64.4': Sandy moist, fine grain ments, gleying proture 4.4' to 64.5': Thin e gray, wet, fine to 4.5' to 65': Silty Cl. 4.5' to 67.7': Sandy valent, gleying pre 5' to 67.7': Sandy med sand, FeO ₃ stone gravel, mode 7.7' to 68.5': Clayer, wet, fine to coar stone gravel	er on facies. CLAY (CL), cture, waxy y CLAY (CL ed sand, tra evalent, FeC Clayey SAN coarse grai AY (CL-ML ments, well valent, thinly CLAY (CL), aining prevarately to we y SAND wit se grained s mes Silty SA	trace fine slaty gravel, reddisfinish on faces, trace fine subangula staining, moderate the sand, subround, light olive gray to developed blocky reddish brown to latent, gleying prevall developed block the Gravel (SW-SC) and, subrounded MND (SM), with fin	sh brown, wet, well ace fine slaty rock h orange brown to light or slate and siltstone rock ately developed blocky V-SC) lens, reddish brownded fine slaty gravels or medium brown, trace structure, FeO ₃ staining beds, trace MnO ₂ nodule ight olive gray, moist, fir alent, trace fine slate an	oliv k vn fine les ne
—217 70—	70-	75 Box	(7			grai @6 oliv @6 stai ped dev ped gray sub dev face	ned, wet, subroun 8.9' to 69.4': Silty e gray, wet, fine gr 9.4' to 69.7': Claye e gray, wet, subrou 9.7': Sandy CLAY ning, moist, mode ogenic faces, trac 1' to 72.3': Sandy st, gleying prevale elopment on pedo ogenic faces 2.3' to 75': Becomy with orange brow angular slate, Tm, eloped blocky stru	ded slate, si SAND (SM) ained sand, y SAND wit unded slaty (CL), with tre at fine graine CLAY (CL), nt, moderate genic faces, es Sandy Cl n staining, r and quartz cture, MnO2	with fine gravels, with fine gravels subrounded to sub Gravel (SW-SC) fine gravel acce gravels, light on the gravel substituted and grains better gravels to gravel blocky struction of the grain of the grain of the grain of the grain of gravels, FeO stair	lens, fine to coarse z rock fragments medium brown to light bangular slaty gravel medium brown to light bangular slaty gravel medium brown to light olive gray with orange reure, MnO ₂ development ween pedogenic faces h orange brown staining ky structure, MnO ₂ sand grains between wel, medium brown to o sand, fine subrounded ing prevalent, moderate fine sand on pedogenic	ed on J,
ARD SCRA	CAN'T SO TCHES DI TCHES EA /ES	CRATCH FFICULT	V. THIN THIN MEDIUM THICK V. THICK	2"- 12"- 36"-	36" 120"	Per 52.: Bor Bor dye Exc	ched groundwater 2'-52.4', 60'-60.2', o ing backfilled with ing capped with ap	encountered 64.4'-64.5' a bentonite ar proximately sed of in D.0	nd 67.7'-69.7' bgs nd soil cuttings up 6-inches of Rapid	on completion of drilling d Set Concrete and blace ms and disposed offsite weathering Fresh V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	k

				C	ORE	: BC	RII	NG LOG			BORING NO. PAGE 1 OF	CB-15
PROJECT				nvestigati							10-115	400=40=
CLIENT:											JOB NO : PAGE NO :	10274.006 1 of 5
CONTRACT EQUIPMEN				orporatio	-0						ELEVATION:	285.5 Feet
E 472 CL 4927 CO P.	DWATER			PTH TO (F	eet):			ORIENTATION	C	ORE BARREL	DATE START:	7/15/2014
DATE	HRS A	1 \	WATER	BOT. OF	1	T. OF	Х	VERTICAL	TYPE		DATE FINISH:	7/16/2014
07/15/14	COM	_	38.7	CASING	H	OLE	_	HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini · .w.
07/15/14	AID	¥	36.7					BEARING	Barrel (Feet)		LOCATION:	605 Whittier B
		Ā					0	ANG. FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVAT	ON &	CORE	SAMI	<u>`</u>		≗.,				TION, REMARKS, AND		
CORE DE	- 1	RANGE (Feet)		ي حيا	Rab	GRAPHIC LOG	may	Soil Description applies or differ at other locations ar itions encountered. Trans	nd may change w	ith time. The descriptio	n is a simplification o	urface conditions f the actual
— 286 — 281 — 281	5	5-10	Вох	1			© Sain Sain Sain Sain Sain Sain Sain Sain	Surface: Artificial F D'-5': Hand auger D'-5': Hand auger D'-5': Hand auger D'-5': Holocene Alluv De CLAY to Claye De CLAY to Claye De CLAY to S.9': Silty Clay De CLAY to 5.9': Sandy Clay De CLAY to Claye De CLAY to Claye D'-5': Holocene Alluv De CLAY to Claye De CLAY to 5.9': Silty Claye De CLAY to 5.9': Silt	ium of Bene y SAND (SO gravels yey SAND (, trace subro own, gradat CLAY (CL), v moist, fine g vels, poorly Clayey GRAV	C-CL), with silt, oli (SM-SC), olive brounded fine slaty gional contact with gravels, light rained sand, tracedeveloped blocky VEL (GC), reddisk noist, fine grained	own to light red gravels, clay lar reddish brown to fine tabular to restructure by brown to light I sand, subroun	dish brown, mination to medium subrounded orange
	10	10-15	Вох	1		CB. US.	0xid @1 Sar	dized 0': Pleistocene All dy CLAY (CL), with the control of the	uvium of Be h trace grav ky structure	enedict Canyon Wels, reddish brown	Vash (BCW ₁): n, moist, fine grace fine subance	ained sand,
-266 2	1	5-20	Box	2			trac belo @1 with	7.4' to 17.9': Claye e fine tabular and bw 7.9' to 21.5': Grade minor olive gray g cture, trace fine gr	subangular s es to Sandy leying, mois	slaty gravel, trace CLAY (CL), reddist, fine grained sai	silt, gradationa sh brown to me	dium brown
FIE	LD HARDI	NESS		BEC	DING	'T	ATTI	TUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	
HARD - ARD - OD HARD - OFT -	KNIFE CAN' SCRATCHE SCRATCHE GROVES CARVES	T SCRAT	ULT	V. THIN THIN MEDIUM THICK V. THICK	<2"-1: 2"-1: 12"-3 36"-1: >120	2" 6" 20"	SHALLO' MODER STEEP	ORIZONTAL (0-5°) N OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	3

PROJECT CLIENT:	Bever	ly Hills	Unifie	d Schoo	estigatio	n	BC)RII	NG LOG			BORING NO. PAGE 2 OF JOB NO.:	10274.006
CONTRAC EQUIPME				ng Cor	poration	1						PAGE NO.: ELEVATION:	2 of 5 285.5 Feet
and the second party and	NDWAT	-	HE-/5	DEPT	H TO (Fee	et):			ORIENTATION	C	ORE BARREL	DATE START:	
		SAFT	WATE	B	OT. OF		r, OF	х	VERTICAL	TYPE		DATE FINISH:	7/16/2014
DATE	CC	OMP	VVATE	C	ASING	НС	DLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	I A		☑ 38.7						INCLINED	Bit (Feet)		PREPARED BY	
	-		<u> </u>	_				0	BEARING ANG FROM VERT	Barrel (Feet)		LOCATION: Beverly Hills, Ca	605 Whittier B
		COF	3E ✓		T >-	T	To	1			ITION, REMARKS, AND		
ELEVAT CORE D	EPTH	DEP RAN (Fee	TH S	SAMPLE NUMBER		Rod	GRAPHIC	may	Soil Description applies of differ at other locations a litions encountered. Trans	only to a location of and may change w	of the exploration at the vith time. The description	time of drilling. Subson is a simplification of	
	25	20-2		Box 2			a . a . a . a . a	@2 bro sub	21.5' to 24.1': Becomest, fine grained saucture, @22' very ninations 24.1': Becomes Silon to medium brown to medium brown angular slate and complete slate graing, poorly developments of the same state of the same state and slate graing, poorly developments of the same state and slate graing.	and, trace fin faint thin ligh lity Gravelly Sown, moist, fi siltstone gra	e subangular grav t olive gray and o SAND (SW-SM), v ne to coarse grain vel Benedict Canyon ange brown to ligh titely developed bl	wel, poorly deve yrange reddish b with trace clay, I ned sand, subro with trace clay, I ned sand, subro with trace clay, I ned sand, subro locky structure,	ight reddish unded to
—256 -	30 —	20.2	.5	2 a.v. 2				mo slat	0' to 32.5': Sandy derately develope y gravel, trace Mr	d blocky stru iO₂ developn	cture, fine grained nent, gleyed	d sand, trace fir	ne subangula
251	35	30-3	oo l	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3				bro	2.5' to 35.9': Sand wn, moist, fine gra O_2 development	dy Silty CLAY nined sand, n	' (CL-ML), light re noderately develo	eddish brown to oped blocky stru	medium cture, trace
_ ▽	-	35-4	O E	Box 4			Δ Α	dev @3 yen sub	5.9' to 36.2': Sand subrounded slaty 6.2': Sandy CLAY ined sand, trace fi eloped dark purpli 8': Clayey SAND moist, fine to me rounded to suban 8' to 39.4': Becom	gravel (CL), mediu ne slaty grav ish red clay with Gravel (sedium grained gular slate, sees Sandy Cl	m brown to olive el, blocky structul SW-SC), medium d sand, trace coal iltstone, and basa AY (CL-ML), with	gray, very moising, with pods of a brown to redding see grained san alt gravels, redding gravels, redding san are gravels, redding gravels, re	t, fine well sh brown, d, with fine sh brown to
-246	40-		_				1000 E	_\med	dium brown, with o	zark purplish	rea stained nodu	ies, very moist,	iine to
_,,0	- 3 - 3 / 1												
FI	ELD HAF	RDNESS		1	BEDI	DING		ATT	ITUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	_
HARD	- KNIFE C - SCRATC - SCRATC - GROVE: - CARVES	AN'T SCE CHES DIF CHES EAS S	RATCH FICULT	ME	THIN THIN EDIUM HICK THICK	<2° 2"-1; 12"-3 36"-1; >120	2" 6" 20"	SHALLO MODEF STEEP	HORIZONTAL (0-5°) W OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V CLOSE CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	3

					C	JRE	= B(DRING LOG BORING NO. CB-15 PAGE 3 OF 5
PROJECT: CLIENT: CONTRACT	Beverl	y Hills	Geohazaro Unified S ni Drilling	choo	l Distr	ict		JOB NO.: 10274.006 PAGE NO.: 3 of 5
EQUIPMENT			AE-75					ELEVATION: 285.5 Feet
GROUN	-			-	TO (Fe			ORIENTATION CORE BARREL DATE START: 7/15/2014
DATE		MP	WATER		OT OF	1	T OF OLE	X VERTICAL TYPE DATE FINISH: 7/16/2014 HORIZONTAL SIZE DRILLER: Martini
07/15/14		$\overline{}$	∇ 38.7	+ 0,	101110		OLL	INCLINED Bit (Feet) PREPARED BY: JWJ
			¥					BEARING Barrel (Feet) LOCATION: 605 Whittier
			Ā			Ι,		0 ANG FROM VERT Total (Feet) Beverly Hills, Ca
ELEVATIO	S NC	DEP		MPLE	i E		9,,	FIELD CLASSIFICATION, REMARKS, AND LIMITATIONS
CORE DE (Feet)		RAN (Fee	GE NU	MBER	RECOVERY	Rab	GRAPHIC	The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface condition may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.
246	40-					ł		coarse grained sand, fine subrounded slate, siltstone, and basalt gravels
	-							@39.4' to 40': Silty Sandy CLAY (ML-CL), with gravel, medium brown to ligh
-20						1		olive gray, wet, gleyed @40' to 40.4': Sandy GRAVEL (GW) lens, medium brown to olive gray, wet,
	_							fine to coarse grained sand, subrounded slate, siltstone, basalt, and quartz
		40-4	15 P	x 4				gravel
		- -0-•	-5 60	, A 4				@40.4': Sandy CLAY (CL), light reddish to medium brown with minor light of
			1		1		STATE OF THE PARTY	gray gleying, fine grained sand, trace fine subangular slaty fragments, @40. to 40.7' sandstone cobble, trace CaCO ₃ stringers, @42' to 42.1' becomes
_							128X.6	sandier
_			- 1			1		@43.2' to 43.7': Clayey GRAVEL (GC), olive gray to medium brown, moist,
—241	45							subrounded to subangular slate, siltstone, and basalt gravels, @43.3' siltsto
-241	75						260	@43.7' to 45': No Recovery
2					1		30.0	@45' to 45.5': Gravelly CLAY (CL), with sand, reddish brown to olive gray, vi
3							100	moist, gleyed, moderately developed blocky structure, faint thinly laminated
								sand and clay laminations
7.		45.5						@45.5' to 48.8': Gravelly SAND (SP), reddish brown to olive gray, very mois
		45-5	o Bo	x 5		1		wet, fine grained, @45.8' to 46' becomes fine to coarse grained, with fine sla siltstone, and basalt gravels at basal contact
•	=							Siletono, and subuit gravois at subui contact
							·	@48.8' to 50': No Recovery
								WHO.O LO SO . NO NECOVERY
—236 £	50						A 1/8	@50' to 50.8': Clayey SAND with Gravel to Clayey Sandy GRAVEL (SW-SC
5					1		11/1/	reddish brown to medium brown to light yellow brown, moist, fine to coarse grained sand, fine subrounded to subangular slate, basalt, and siltstone
	٦							\gravels, sharp contact below
								@50.8': Pleistocene Cheviot Hills Deposits (CHD):
E			_ _					Silty CLAY (CL), dark olive gray, moist, well developed blocky structure, well
		50-5	a Ro	x 5				developed FeO ₃ staining and nodules, MnO ₂ development on pedogenic faces, laminated, oxidized, gleyed CLAY 1-foot below oxidation-reduction
								banding
								-
-231 5	55							
							V/X//	@55.4' to 55.5': Thin Silty Clayey SAND (SM-SC) lens, reddish brown to ligh
							(1)X//	olive gray, fine grained sand
								@55.5' to 65.3': Sandy CLAY (CL), reddish orange brown to dark olive gray, moist, varved, fine grained sand, scattered fine slate and Tm gravels, well
			. _					defined thin laminations, oxidation-reduction banded, @56' to 56.8' dark oliver
		55-60	0 Bo	(6				gray vertical gleying, FeO staining prevalent, well developed blocky structure clay developed pedogenic on faces, minor MnO₂ development, @64.1' to 64.
	-							heavy gleying and mineral leaching zone, @64.4' to 65' increase in gravels
								, , , ,
	-			- 11				
200								
-226 60	0							
FIEL	_D HAR	DNESS		\/ T		DING	.	ATTITUDE AND ANGLE JOINTS / SHEAR / FRACTURE WEATHERING HORIZONTAL (0.5°) V. CLOSE 😅 ERESH
FIEL HARD - H	D HAR	AN'T SCR HES DIFF	ATCH FICULT	Th	THIN HIN	<2 2"-1	2"	HORIZONTAL (0-5°)
FIEL HARD - H IRO - S DD. HARD - S DFT - C	D HAR	AN'T SCR HES DIFF HES EAS	ATCH FICULT	TH MEI TH	THIN	<2	2" 36" 20"	HORIZONTAL (0-5°) V CLOSE <2" FRESH

PROJECT:	El Rodeo	Geohaz	ard In			- 60		NG LOG			PAGE 4 OF	5
	Beverly Hi	lls Unifie	d Scho	ol Distri	ct						JOB NO.:	10274.006
CONTRACTO	200		ing Co	rporatio	1						PAGE NO.: ELEVATION:	4 of 5 285.5 Feet
EQUIPMENT	OWATER:	CME-75	DEP	TH TO (Fe	o!)	- 7		ORIENTATION	T 0	ORE BARREL	DATE START:	7/15/2014
	HRS AFT	LAVA TO		BOT, OF		r OF	х	VERTICAL	TYPE		DATE FINISH:	7/16/2014
DATE	COMP	WATE		CASING	НС	DLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	ATD	☑ 38.7	7					INCLINED	Bit (Feet)		PREPARED BY	
		¥	_				0	BEARING	Barrel (Feet)		LOCATION:	605 Whittier E
		ORE	_	T	1	Ta	T -	ANG. FROM VERT.	Total (Feet)	I TION, REMARKS, AND	Beverly Hills, Ca	
ELEVATIO CORE DEF (Feet)	PTH R	PTH	SAMPL NUMBE	- P - O	Rob	GRAPHIC	may	Soil Description applies or differ at other locations ar itions encountered. Trans	nly to a location o	of the exploration at the livith time. The description	time of drilling. Subs n is a simplification o	urface condition f the actual
- - 221 _▼ €	65	-70	Box 6				wet @6 gra stru @6 sub @6 darr sub	5.3' to 65.5': Silty s , fine grained, oxid 5.5' to 66.2': Sand y, gleyed, FeO sta icture 6.2' to 66.3': Sand rounded slaty grav 6.3' to 67.1': CLAY k olive gray, moist, rounded fine slaty	ized heavily y Silty CLA\ ining prevale y GRAVEL el with Silt (C gleyed, Fet gravel, mod	at contact below (CL-ML), reddishent, poorly to mod (GW) lens, fine to L-ML), and sand, O ₃ staining prevale	orange brown derately develop coarse grained reddish orange ent, fine graine	to dark olived blocky I sand, brown to
e e e	-	-75	Box 7				@6 san beld @6 brov @6 mod coa @7 grai @7	es, MnO ₂ developed 7.1' to 67.5': Sand d, subrounded to sow 7.5' to 68.8': Silty 5 wn to olive gray, m 8.8' to 70': Sandy 6 derately developed rese sand grains be 0' to 70.2': Thin Cland Sand, with sub 10.2' to 71.7': Sandy 6, moist, well developed acces	y Clayey GF subangular s Sandy CLAY oderately to CLAY (CL), blocky stru- tween pedo ayey SAND pangular slai y Gravelly C	clate and siltstone (CL-ML), with fin well developed b reddish orange br cture, FeO ₃ nodul genic faces with Gravel (SW- ty gravels LAY (CL), with silt	gravels, abrup e gravels, redd locky structure, own to olive graves, MnO ₂ devel SC) lens, wet, f t, reddish brow	ish orange very moist, ay, moist, lopment, ine to coars
HARD - K	75-	SS CRATCH		BEDD / THIN THIN	DING <2": 2"-12"		@7 gray gray gray @7 coa a coa suba med	1.7' to 71.9': Sandy 1.7' to 71.9': Salty S 7, very moist, well of rel lens 2.5' to 75': No Rec 5' to 76.1': Silty SA rsens downward, s 5.1' to 77': Become rse grained sand, p rangular fine gravel 7' to 807': Become lium brown, wet, g	Sandy CLAY developed b overy ND (SM), b iltstone rock as Gravelly s orimarily sub s, slaty s Clayey Sa adational co	(CL-ML), with grallocky structure, @lack and white, we fragments SAND (SW), black brounded grains, vendy GRAVEL (GV)	evel, reddish brown avel, reddish brown avel, reddish brown avel, fine to medic and white, we with subrounded W-GC), black a	um grained, t, medium t
HARD - K ARD - S OD HARD - S OFT - G		CRATCH IFFICULT	Ŋ	/- THIN	<2"	:" 5" '0"	H SHALLON MODER STEEP	ORIZONTAL (0-5°)	V CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2"		

				C	OR	E B	ORII	NG LOG			PAGE 5 OF	
PROJECT:				Investiga								
CLIENT: B											JOB NO.:	10274.006
CONTRACTO	_	CME-		Corpora	tion		_		_		PAGE NO.: ELEVATION:	5 of 5 285.5 Feet
GROUND		CIVIE-		EPTH TO	(Feet):		1	ORIENTATION	С	ORE BARREL	DATE START:	
	HRS AF	т ,,,		BOT O		OT OF	Х	VERTICAL	TYPE		DATE FINISH:	7/16/2014
DATE	COMP	, 00	ATER	CASIN	3	HOLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/15/14	ATD	_ \underset{\overline{\sigma}} :	38.7					INCLINED	Bit (Feet)		PREPARED B	Y: JWJ
		Ā						BEARING	Barrel (Feet)		LOCATION:	605 Whittier
		Ā	,				0	ANG, FROM VERT	Total (Feet)		Beverly Hills, C	a
ELEVATIO	NIR I	CORE	SAM	DIE å		GRAPHIC				ΠΟΝ, REMARKS, AND		
CORE DEP	тн і	RANGE	NUM	BER S	8 8		The	Soil Description applies of differ at other locations a	nly to a location o	f the exploration at the	time of drilling. Subs	surface conditio
(Feet)	- 11	(Feet)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	H.	% 0	8	cond	itions encountered. Tran	sitions between s	oil types may be gradu	al.	or trio dotadi
—206 E	30 —	30-85	Вох	¢8			. me	30' to 82': Silty SA dium grained, abu 32' to 82.3': Sandy nd, subrounded to	ndant gravel Clayey GRA rounded slat	VEL (GW-GC), v	vet, primarily co	
							Mn sta	32.3 ': 1-inch glayers 32.3 ' to 83.1 ': Silty O_2 bands, well defining 33.1 ' to 89.8 ': Sand	CLAY (CL-N reloped block by CLAY (CL	y structure, wax	y finish on face with dark olive	s, FeO ₃
— 201 8 - -	8	5-90	Box	9			trac		slate and sil	tstone gravels, w	ell developed b	locky
—196 90		0-95	Вох	9				9': Dark red claye ${\sf O}_2$ bands @90.9',		.9' to 93.9'		
-191 - 95	;						Per 70'- Bori	al depth of coring: ched groundwater 70.2', 71.7'-71.9', ing backfilled with ing capped with a	encountered and 75'-82.3' bentonite an	bgs d soil cuttings up	on completion	of drilling.
HARD - KI NRD - SC DD HARD - SC	HARDNI NIFE CAN'T CRATCHES CRATCHES	SCRATCH		V. THIN THIN MEDIUM	2" 12'	:2" -12" -36"	ATTI H SHALLON MODER	TUDE AND ANGLE ORIZONTAL (0-5*) N OR LOW ANGLE (5-35*) ATELY DIPING (35-55*)	JOINTS / S V. CLOSE CLOSE MOD. CLOSE	HEAR / FRACTURE	WEATHERING FRESH V. SLIGHT SLIGHT	ed offsite
FT - GI	ROVES ARVES			THICK V. THICK	36"	-120" 20"	STEEP 0	OR HIGH ANGLE (55-85") /ERTICAL (85-90°)	WIDE V. WIDE	36"-120" >120" Mn = Manganese Oxide	MODERATE MOD SEVERE V,SEVERE COMPLETE	

				C	UK	E B	JKII	NG LOG			PAGE 1 OF	
PROJECT	_		eohazard									
			Unified So								JOB NO.:	10274.006
			i Drilling IE-75	Corpora	1011						PAGE NO.: ELEVATION:	1 of 5 285 Feet
EQUIPMEN	NDWATE			ЕРТН ТО	Feet).		1	ORIENTATION		ORE BARREL	DATE START:	
		AFT		вот о		OT OF	X	VERTICAL	TYPE		DATE FINISH:	7/17/2014
DATE		OMP	WATER	CASING	9	HOLE		HORIZONTAL	SIZE		DRILLER:	Martini
07/16/14	A.	TD 5	☑ 35					INCLINED	Bit (Feet)		PREPARED BY	r: EBP
			Y.					BEARING	Barrel (Feet)		LOCATION:	605 Whittier I
			¥.				0	ANG, FROM VERT.	Total (Feet)		Beverly Hills, Ca	3
ELEVATI	ION &	COR DEPT		n		, I ≌				TION, REMARKS, AND		
CORE DE		RANG (Fee	SE NUM	BER S	% 6	GRAPHIC	The s may cond	Soil Description applies of differ at other locations a tions encountered. Trai	and may change v	vith time. The description	on is a simplification o	
285	0-						@9	Surface: 8-inches	Asphalt Con	crete		
-36	· -	Ų.			1		@0	.67': 7-inches Po	rtland Cemer	nt Concrete		
						XXX	Ø @ 1	.25': Artificial Fill,	Undocumer	nted (Afu):		
-0						***		.25 to 5': Hand a				
						***	8					
-1	,					***	8					
	Ī						8					
						***	8					
-						****	8					
							X					
280	5					- (XX)	— @5	: Holocene Alluv	ium of Bene	dict Canvon Was	h: (Qal):	
						1.	· \ Sar	dy SILT with Clay				ined sand,
	-					.].].		e gravel				
							@5	.5' to 6.5': Silty S/	AND (SM), da	ark yellowish brov	wn, moist, fine g	rained, trac
	-						/	few fine to coar	and the second second second second second			
		5-10	Box	1				.5' to 7.7': Silty CI ned sand, trace fi		n sand, dark brov	wn, moist, fine t	o coarse
		•				7777		.7' to 8.1': Clayey		dark vallowish h	rown moiet fine	a arained
						111	san	d, few coarse sar	onino (SC), id and gravel	gradational conf	tact	granieu
						11.		.1' to 10.2': Silty S				grained fee
5								rse grained sand,				granica, ici
20422						[1.]		<u> </u>			-	
-275	10						+=-				TOTAL SALES	
			1				@1 San	0.2': Pleistocene dy CLAY (CL), da	alluvium of	benedict Canyon	n vvasn (BCW ₁):	race coarse
0	-							ned sand	and you own on	Diowii to orange	Diowii, moist, ti	ass coarse
							3					
	1-4						4					
		10-15	5 Box	1			4					
	2	•	1 20%				4					
							4					
							1					
							4					
							1					
-270	15					1////	1					
						11/1/	@1	5.3' to 17.7': SAN	D with Clay (SC), yellowish bro	own to orange b	orown, mois
	-					1///	tine	grained sand, tra	ce coarse gr	ained sand		
						11/1/	1					
	-						1					
		15-20	Box	2		11/1/						
	_							7.7' to 18.4': Sand				
				010			sand	l, trace fine grave				
							4	gravels	04115 (5.5	N 1-1 P 1		
	200					11/1/1	@18	3.4' to 19.9': Claye	ey SAND (SC), dark yellowish	brown, moist, fi	ine to
								ium grained, few gravels	inie to coars	e graver, mainry s	subiounided to S	upangular
20001 ^				-#-		11177	(Sign)	BIMANIO				
-265 2	20-			100		1						
		DNESS		PE	DDING		ΔΤΤΙ'	TUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING	
FIE	LD HAR		ATCH ATCH		DDING	2"		TUDE AND ANGLE	JOINTS / S	SHEAR / FRACTURE	WEATHERING FRESH	
FIE HARD - IRD -	LD HARI	N'T SCRA	ICULT	V. THIN THIN	2"	2"	SHALLOV	ORIZONTAL (0-5°) V OR LOW ANGLE (5-35°)	V. CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
FIE HARD - RD - DD HARD -	LD HAR	AN'T SCRA HES DIFFI HES EASI	ICULT	V. THIN	2" 12' 36"-		SHALLOV MODER: STEEP C	ORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	

					CC	RE	BC	RI	NG LOG			BORING NO. PAGE 2 OF	CB-16
ROJECT		Rodeo Geo											
		ly Hills U										JOB NO.:	10274.006 2 of 5
DUIPMEN		Martini I D: CME		Corpo	oration	1					-	PAGE NO : ELEVATION:	2 01 5 285 Feet
	NDWAT			EPTH	TO (Fee	et):			ORIENTATION	С	ORE BARREL	DATE START:	7/16/2014
DATE		SAFT	NATER	1	T. OF		OF	Х	VERTICAL	TYPE		DATE FINISH:	7/17/2014
		OMP		CAS	SING	HC	DLE		HORIZONTAL	SIZE		DRILLER: PREPARED BY	Martini / EDD
07/16/14	<i>F</i>	ATD \(\sum_{\mathbb{Y}}\)	35	-					INCLINED BEARING	Bit (Feet) Barrel (Feet)		LOCATION:	605 Whittier Blv
		T						0	ANG, FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVAT	ION &	CORE		•	`≿		ပ		FIE	LD CLASSIFICA	ΠΟΝ, REMARKS, AND	LIMITATIONS	
CORE D (Fee	EPTH	DEPTH RANGE (Feet)		IPLE IBER	RECOVERY	Rap	GRAPHIC LOG	may	Soil Description applies o differ at other locations a litions encountered. Tran	nd may change w	ith time. The description	n is a simplification o	urface conditions of the actual
-265	-	20-25	Во	x 2				find sul @: gra	19.9' to 20.9': Silty e to medium grains bangular slaty grav 20.9' to 23.6': Sandained sand, trace of 24.3' to 25': Silty Stained sand, few fined sand, few fi	ed sand, few rel dy CLAY (CL oarse graine	fine to coarse gray, dark yellowish d sand	brown to brown	, moist, fine
260	25 —	25-30	Box	x 3				@2 sar @2 fine @2 cos bas	25' to 25.2': Sandy nd, few fine gravels 25.2' to 26.2': Silty e to medium graine 25.7': Becomes yel 26.2' to 26.4': Sandarse grained sand, salt, and granitic graft to 27.3': Silty 26.4' to 27.3': Silty	CLAY (CL), SAND with 0 ed sand, trace low brown, fi ly GRAVEL (fine to coarse ravels, FeO ₃ SAND (SM),	dark brown, mois Clay (SM-SC), da e fine gravel, finir ne to coarse grai GW), dark yellow e subrouned to s stained	t, medium to co rk yellowish bro ng upwards fron ned sand, no cl vish brown, moi ubangular slate	wn, moist, n 26.4' lay st, fine to e, siltstone,
255	30-							@2 Sai gra @2	ined, trace fine gra 27.3' to 27.7': basa 27.7': Pleistocene andy CLAY (CL), revels 28.9' to 30': No Rec	GRAVEL (C Alluvium of I ddish-brown, covery	Benedict Canyon moist, trace coa	Wash (BCW ₂): rse grained sar	id, few slaty
			1						0' to 30.6': Sandy gravel	CLAY (CL),	reaaisn brown, m	oist, fine graine	ed sand, trace
	-								0.6' to 31.3': SAN	D and Grave	beds (SP)		
	-	30-35	Box	(3		The second secon		@3 gra @3	11.3' to 33.6': Sand ined sand 3.6' to 34.4': Claye	y CLAY (CL)	, dark yellow bro		
								gra	ined, trace fine gra	ıvel			
50 ∑	35				'			@3	4.4' to 35': Silty Sanedium grained sa	AND with Cla	y (SM-SC), dark	yellowish browl	n, moist, fine
JU +	30	35-40	Вох	4				@3 coa @3 @3	55' to 38.2': Clayey trse grained sand, 5.6': Fine grained 6.9' to 37.1': Few 18.2' to 39.5': Silty 18.2' to 39.5' to	SAND (SC) trace clay sand fine subangu	with Silt, dark ye lar slaty gravels		
	-							@3	9.5' to 42.1': CLA	′ (CL). olive l	orown, verv mois	t, gleying and o	xidation
245 ∑	40		1	+	-		(11111)	_ 🐷 ∪	,. ,. ,	(==/) 5/100	, 10.3	.,,	
			<u></u>										
	_	RDNESS			BEDD				ITUDE AND ANGLE		HEAR / FRACTURE	WEATHERING	
HARD	- SCRAT		ULT	V. TI TH MED THIC V. TH	IN IUM CK	<2"-12 2"-12 12"-36 36"-12 >120	2" 6" 20"	MODE! STEEP	HORIZONTAL (0-5°) IW OR LOW ANGLE (5-35°) RATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°) VERTICAL (85-90°)	V. CLOSE CLOSE MOD. CLOSE WIDE V. WIDE	<2" 2"-12" 12"-36" 36"-120" >120"	FRESH V. SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE	

ROCKLOG2014 10274 006 LOGS-RECOVER GPJ ROCKLOG2012 GDT 2/18/15

				C	ORI	E BO	DRI	NG LOG			PAGE 3 OF	
PROJECT: CLIENT: B CONTRACTO		ls Unifi	ied Scl	hool Distr	ict						JOB NO.: PAGE NO.:	10274.006 3 of 5
EQUIPMENT	-	ME-75					,				ELEVATION:	285 Feet
GROUND			DE	PTH TO (F				ORIENTATION		ORE BARREL	DATE START:	
DATE	HRS AFT	WAT	TER	BOT, OF CASING		OT OF	X	VERTICAL HORIZONTAL	TYPE		DATE FINISH:	7/17/2014
07/16/14	ATD	☑ 3:	5	CASING		IOLE		INCLINED	Bit (Feet)		DRILLER: PREPARED BY	Martini ∕- ERP
07710714	AID	¥ 5.	_					BEARING	Barrel (Feet)		LOCATION:	605 Whittier
		Ā					0	ANG. FROM VERT	Total (Feet)		Beverly Hills, C	a
ELEVATION	N.S. CC	DRE		\$		2		FIE	LD CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEP	TH RA	PTH NGE eet)	SAMF NUME	-	. GS	GRAPHII	The may cond	Soil Description applies of differ at other locations a itions encountered. Tran	nd may change v	vith time. The description	on is a simplification o	surface condition of the actual
—245 4 -	10-						@	ining along lamina 11.5': rounded 1+1 10' to 42.1': SAND	/2-inch size		h brown to olive	brown, we
-	-		_				fine	e to medium grain	ed, trace fine	gravel		
E	40.	-45	Box	4			sar \@4	nd, few fine to coa	rse subangu SAND (SM)	lar slaty gravels, , yellowish brown	slight FeO ₃ stai , moist, fine to r	ning
-	4					11.		ined, sharp contact				
								3.3' to 43.7': Sandined sand	IY CLAY (CL	.), dark yellowish	prown, moist, tr	ace coarse
—240 45	5					@4 trac	3.7' to 44': Silty S ce fine gravel					
e -						444		4' to 44.8': Sandy			own, moist, fine	grained
						1111	173	d, trace fine grave		CUNIACI		
27	-						1	4.8' to 45': No Re		tark vallouish b	num maint fine	arained ac-
	45-	50	Вох	5				5' to 45.7': Sandy				grained sa
5	-							5.7' to 46': CLAY				araine d
	-					HH		6' to 46.5': Silty S				
								6.5' to 49.1': SILT rse grained sand,				, rine to
15	-							9.1' to 50': No Red		Jasai Well Celliell	icu graveis	
aa- 🗸 🚟							""	5.1 to 50. No Net	20 VOI y			
—235 ∑ 50	,				1	1111	Ple	istocene Cheviot	Hills Deposi	ts (CHD):		=====
					1		05	0' to 50.5': Sandy	SILT (ML), d	lark yellowish bro	wn, wet, fine gr	ained sand
	-				1	WAR.		kets of gleyed cla			ali =	
					1	1942		0': 1-inch Clay, gle				
	-							0.5' to 51.6': Claye	y SILT (ML-	CL), brown, very	moist, gleying a	along
	50-	55	Box s	5			-	inations	no to Condi-	CLAV (CL)	ioh brown ====	t aloui
፟፟፟፟	-		20%				and	1.6' to 53.6': Grad oxidation staining	along lamin	ations		it, gieying
	+							3.6' to 54.4': Sand				
-230 55	-					VIII		l' to 55.3': Grades				
								5.3' to 55.9': Silty (ned sand	JLAY (CL), I	with sand, olive b	rown, very mois	st, tine
	7							5.6': Trace coarse	sand			
				1				5.9' to 56.4': Sand		, fine to medium	grained sand, t	race fine
	7		_				grav	rel				
∇	55-6	00	Box 6	5				5.4' to 62.8': Sand lium grained sand			oist, vertical gley	ying, fine to
	7						med	num grameu sanu	, nace inte g	19401		
	=											
-225 60				_		11111						
EIEID	HARDNES		T	BED	DING	4	ΔΤΤΙ	TUDE AND ANGLE	IOINITS / S	SHEAR / FRACTURE	WEATHERING	
	NIFE CAN'T SC		+	V. THIN	VIING <2	. +	н	ORIZONTAL (0-5°)	V. CLOSE	<2"	FRESH	
RD - SC	RATCHES DIF	FICULT		THIN MEDIUM	2"-1 12"-3	2"	SHALLOV	V OR LOW ANGLE (5-35°) ATELY DIPPING (35-55°)	CLOSE MOD CLOSE	2"-12" 12"-36"	V. SLIGHT SLIGHT	
FT - GR	ROVES			THICK	36"-1	20"	STEEP (OR HIGH ANGLE (55-85°)	WIDE	36"-120"	MODERATE	
- CA	U.VLO			Noning	>12	_	V	ENTIONE (00-80)	A SAIDE	~120	V SEVERE	
	ARVES			V THICK	>12			ERTICAL (85-90°)	V WIDE	>120" Mn = Manganese Oxide	MOD SEVERE	4

CONTRACT EQUIPMEN	Bever		ohazard	Investigat	C 5/2/10						PAGE 4 OF	•
CLIENT: CONTRACT EQUIPMEN	Bever			investigat	on							
CONTRACT EQUIPMEN			Unified Sc	hool Distr	ict					N	JOB NO.:	10274.006
	TOR.			Corporatio							PAGE NO.:	4 of 5
GROUN	NT USE	CM	E-75						Us'		ELEVATION:	285 Feet
	NDWAT		Di	PTH TO (F				ORIENTATION		ORE BARREL	DATE START:	
DATE	11	SAFT	WATER	BOT, OF		T. OF	X	VERTICAL	TYPE		DATE FINISH:	
07/16/14	_	OMP \(\sigma\)	2 35	CASING	Н	OLE		HORIZONTAL INCLINED	SIZE Bit (Feet)		DRILLER:	Martini /- EBB
0//10/14	+-	ען עוו				-		BEARING	Barrel (Feet)		LOCATION:	605 Whittier
	_	7			_		0	ANG. FROM VERT.	Total (Feet)		Beverly Hills, Ca	
ELEVATI	ION P	CORE		≿	1	ō	T			TION, REMARKS, AND		
CORE DI	EPTH	DEPTI	1 1		Z G	RAPHIC	may	Soil Description applies o	nd may change w	vith time. The description	n is a simplification of	
(Feet		(Feet		- E		5	cond	itions encountered, Trar	sitions between s	soil types may be gradua	al,	
225	60 —				1	11111	1					
							1					
i		1	-				1					
							1					
-0	-	1					1					
		60-68	Box	6			1					
-	3					11/1/	1 @6	2.8' to 62.9': Clay	ey GRAVEL	(GC) bed, brown.	wet, fine to co	arse
				1			sub	angular slaty grav	els			
=						11/1/		2.9' to 63.7': Sand), brown, wet, me	dium to coarse	grained
								d, trace fine grave		1.00		
220	65-					2		3.5' to 63.8': Grav			wn, wet, coarse	grained
220	00					78X		d, fine subangula 8' to 64.6': Sandy			race fine arous	l alevina
						1/2		2-5 P- 2-9/1/C124-08-1	100000	155127131273110	1.0	
-			1)			28%		4.6' to 65': Sandy irse grained sand	GRAVEL WI	ui Ciay (GVV-GC).	, brown, wet, m	ealuM (0
								4.9': Fine slate an	d basalt grav	vels, trace coarse	gravels, minor	FeO ₃
E	-					2/8	stai	ning				
		65-70	Box	7		SS/X	@6	5' to 69': Clayey G	RAVEL (GC	;), fine to coarse o	ravels, poor re	covery
-						900 m			·	_	-	
						4/8						
∇												
							@6 san	9' to 69.5': Clayey d, few fine to coar	GRAVEL (G se subround	GC), brown, wet, n led to subangular	nedium to coar gravels, well ce	se grained emented
-215	70					4///	∖@6	9.5' to 70': Sandy	CLAY (CL),	dark gray and oliv		
								dium grained sand			odium ereined	traca coca
E	2					200		0' to 74.2': SAND ned sand, trace si		SII DIOWII, WEI, M	edium grained,	trace coars
						36.	grai	salia, tiace si	••			
8:	-											
		70-75	Box	7								
	=											
					1							
			1		1							
						22222	7@7	4.2' to 74.3': Grave	elly CLAY (C	L) bed, dark grav	and brown, fin	e gravel.
_210	75							e coarse grained		,, g. -		
-210 ·	75					· .	@74	4.3' to 75': No Rec	overy			
								5' to 76.5': SAND		sh brown, wet, me	edium grained,	trace coars
							grai	ned sand, trace si	t			
						00.0	@76	5.5' to 77': Sandy	GRAVEL (G)	W), yellowish brov	wn, wet, coarse	grained
	-					399		d, fine subrounded				
		75-80	Box	8		200		7' to 77.8': Gravell				vish brown
	-		- 18				olive	brown, moist, fin	e to coarse s			
							@77	7.8' to 80': No Rec	overy			
	_											
-205 8	80-	_										
									N.			
	LD HAR		TOH		DING			TUDE AND ANGLE	-	HEAR / FRACTURE	WEATHERING	
ARD -	SCRATO	AN'T SCRA' HES DIFFIC	ULT	V. THIN THIN	<2" 2"-1;	2" 5	SHALLOV	ORIZONTAL (0-5°) V OR LOW ANGLE (5-35°)	V_CLOSE CLOSE	<2" 2"-12"	FRESH V. SLIGHT	
FT -	GROVES		Y	MEDIUM THICK	12"-3 36"-1	20"	STEEP C	ATELY DIPPING (35-55°) OR HIGH ANGLE (55-85°)	MOD CLOSE WIDE	12"-36" 36"-120"	SLIGHT MODERATE	
	CARVES			V. THICK	>120			ERTICAL (85-90°)	V. WIDE	>120"	MOD SEVERE V. SEVERE	

LEIGHTON

				C	ORE	BC	DRIN	IG LOG			PAGE 5 OF	CB-16
PROJECT:	El Rodeo										JOB NO.:	10274.006
CLIENT: E	Beverly Hi										PAGE NO:	5 of 5
EQUIPMENT		CME-75									ELEVATION:	285 Feet
GROUND			DEF	PTH TO (Fe			_	ORIENTATION		ORE BARREL	DATE START:	7/16/2014
DATE	HRS AFT	WAT	ER	BOT, OF		T OF		/ERTICAL	TYPE		DATE FINISH:	7/17/2014
07/16/14	COMP	☑ 35	-	CASING	H	OLE	_	HORIZONTAL NCLINED	SIZE Bit (Feet)		DRILLER: PREPARED BY	Martini /- EBD
0//10/14	AID	₩ 33	-+		-		-	BEARING	Barrel (Feet)		LOCATION:	605 Whittier
		V	_					NG, FROM VERT	Total (Feet)		Beverly Hills, Ca	
ELEVATIO	NK I	ORE		_ ≽		_ 0		FIE	LD CLASSIFICA	TION, REMARKS, AND	LIMITATIONS	
CORE DEF	TH DE	EPTH NGE	SAMPI	ᄩᅟᅵᇂ	8	GRAPHIC	The So	oil Description applies of	nly to a location of	f the exploration at the	time of drilling, Subs	urface condition
(Feet)		eet)	14011112	B m RECOVERY	-	8 _	conditi	ffer at other locations a ons encountered. Tran	sitions between s	oil types may be gradu	ial	i the actual
—205 { -	-						@80 trace	o' to 80.7': Silty C d, oxidation stain 0.7' to 85': CLAY e fine gravel, slig ation-reduction b	ng, gleyed z (CL), reddish nt gleying, fa	one, top of thick : brown, moist, tr int lamination, 1-	soil developmer ace coarse grai	nt ned sand,
		0-85	Box	8								
—200 8 -	5-						coar	to 87.1': Sandy se grained sand,	trace fine to	coarse gravel		
2)			_					.7': GRAVEL (G\ se subangular to				atrix, fine to
	85	-90	Box 9	#			1	.1' to 87.3': GRA				y clay matri
							fine t	o coarse subang	ular to subro	unded silty and s	slaty gravels	
							@87	.3' to 90': Sandy	CLAY (CL),	dark yellowish br	own, moist, fine	to coarse
							grain	ed sand, fine sľa	y gravel			
	. 1											
—195 90	0-					11111	@90	to 90.1': GRAVE	L (GW) bed	s within yellowish	h brown sandy o	lay matrix,
1000 0000	90-	.95	Box 9				@90 coars @90	o coarse subang .1' to 95': Sandy se grained sand, 5': CLAY (CL), ru gravel, minor gley	ular to angul CLAY with G fine gravels, eddish browr	ar siltstone and s ravel (CL), reddi gleyed, develope	slaty gravels sh brown, moist ed paleosol	t, trace
190 95						LILLI.		depth of coring:				
							Perch 62.8'- Borin Borin dye.	ned groundwater 65', 69'-69.5', 70 g backfilled with g capped with ap ss cuttings dispo	encountered '-74.2', and 7 pentonite an proximately	'6.5'-77' bgs d soil cuttings up 6-inches of Rapi	oon completion of d Set Concrete	of drilling. and black
-185 100) HARDNES			BEDO	UNG		ΔΤΤΙΤΙ	JDE AND ANGLE	IOINTS / 9	HEAR / FRACTURE	WEATHERING	
HARD - KN	NIFE CAN'T SO	CRATCH	-	V. THIN	<2"		HOF	RIZONTAL (0-5°)	V. CLOSE	<2™	WEATHERING FRESH	
RD -SC D HARD -SC FT -GF	CRATCHES DI CRATCHES E ROVES ARVES	IFFICULT	, a	THIN MEDIUM THICK THICK	2"-12 12"-36 36"-12 >120	?"	MODERAT STEEP OR	DR LOW ANGLE (5-35°) ELY DIPPING (35-55°) HIGH ANGLE (55-85°) RTICAL (85-90°)	CLOSE MOD CLOSE WIDE V WIDE	2"-12" 12"-36" 36"-120" >120"	V SLIGHT SLIGHT MODERATE MOD. SEVERE V. SEVERE COMPLETE	

APPENDIX B

GEOTECHNICAL LABORATORY TESTING

Our geotechnical laboratory testing program was directed toward a quantitative and qualitative evaluation of physical and mechanical properties of soils underlying this campus at proposed improvements, and to aid in verifying soil classification. This geotechnical testing was performed at our Irvine laboratory (DSA LEA 63).

Modified Proctor Compaction Curve: Laboratory modified Proctor compaction curves (ASTM D 1557) were established for bulk soil-samples to determine sample-specific modified Proctor laboratory maximum dry density and optimum moisture content. Results of these tests are presented on the following "Modified Proctor Compaction Test" sheets in this appendix.

Expansion Index (EI): Expansion Index (EI) tests were performed in accordance with the ASTM D 4829 Standard Test Method, for a shallow bulk soil samples from this site. EI results are included in this appendix on the "*Expansion Index of Soils*" sheets.

Direct Shear Tests: Direct shear tests were performed, in general accordance with ASTM Test Method D 3080, on remolded soil samples remolded to 90% of the ASTM D 1557 laboratory maximum density. Remolded specimens were soaked for a minimum of 24 hours under a surcharge equal to the applied normal force during testing. After transfer of the sample to the shear box, and reloading the sample, pore pressures set up in the sample due to the transfer were allowed to dissipate for a period of approximately 1 hour prior to application of shearing force. These specimens were tested under various normal loads with a motor-driven, strain-controlled, direct-shear testing apparatus at a strain rate of 0.05 inches per minute (depending upon the soil type). Test results are presented on the *Direct Shear Test Results* sheets which follow in this appendix.





MODIFIED PROCTOR COMPACTION TEST **ASTM D 1557**

Scalp Fraction (%)

Project Name:

BHUSD/El Rodeo School/Geo

Tested By: O. Figueroa

Date: 07/21/14

Project No.:

10274.006

Input By: J. Ward Date: 07/23/14

Location:

Trench Backfill

Depth (ft.): N/A

Sample No.:

S-1

Soil Identification:

Olive brown clayey sand with gravel (SC)g

Preparation	X
Method:	
Compaction	X
Method	

Moist

Dry

#3/4 #3/8 12.5 Mechanical Ram #4 Manual Ram

Rammer Weight (lb.) = 10.0 Height of Drop (in.) =18.0

Mold Volume (ft3)

0.03320

TEST NO.		1	2	3	4	5	6
Wt. Compacted Soil +	Mold (g)	3770.0	3918.0	3965.0	3890.0		
Weight of Mold	(g)	1843.0	1843.0	1843.0	1843.0		
Net Weight of Soil	(g)	1927.0	2075.0	2122.0	2047.0		
Wet Weight of Soil +	Cont. (g)	458.60	466.30	434.80	471.80		
Dry Weight of Soil + 0	Cont. (g)	436.60	434.10	396.70	420.70		
Weight of Container	(g)	37.70	38.20	36.80	37.80		
Moisture Content	(%)	5.52	8.13	10.59	13.35		
Wet Density	(pcf)	128.0	137.8	140.9	135.9		
Dry Density	(pcf)	121.3	127.4	127.4	119.9		

Maximum Dry Density (pcf)

Corrected Dry Density (pcf)

128.0 132.0 **Optimum Moisture Content (%)**

Corrected Moisture Content (%)

9.5 8.5

Procedure A

Soil Passing No. 4 (4.75 mm) Sieve Mold: 4 in. (101.6 mm) diameter Layers: 5 (Five)

Blows per layer: 25 (twenty-five) May be used if +#4 is 20% or less

Procedure B

Soil Passing 3/8 in. (9.5 mm) Sieve Mold: 4 in. (101.6 mm) diameter Layers: 5 (Five)

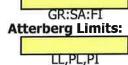
Blows per layer: 25 (twenty-five) Use if +#4 is >20% and +3/8 in. is 20% or less

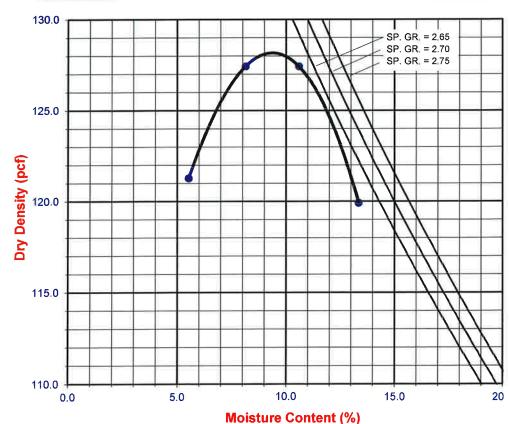
Procedure C

Soil Passing 3/4 in. (19.0 mm) Sieve Mold: 6 in. (152.4 mm) diameter Layers: 5 (Five)

Blows per layer: 56 (fifty-six) Use if +3/8 in. is >20% and +3% in. is <30%

Particle-Size Distribution:







MODIFIED PROCTOR COMPACTION TEST **ASTM D 1557**

Project Name:

BHUSD/El Rodeo School/Geo

Mechanical Ram

Manual Ram

Tested By: O. Figueroa

07/21/14 Date:

Project No.:

10274.006

Input By: J. Ward

Location:

Trench Backfill

Depth (ft.): N/A

Date: 07/23/14

Sample No.:

S-2

Soil Identification:

Dark olive brown clayey sand with gravel (SC)g

Preparation Method:	X
Compaction	X
Method	

Moist

Dry

Scalp Fraction (%) #3/4 #3/8 11.3 #4

Rammer Weight (lb.) = 10.0 Height of Drop (in.) = 18.0

Mold Volume (ft³)

0.03320

TEST NO.		1	2	3	4	5	6
Wt. Compacted Soil +	Mold (g)	3736.0	3912.0	3964.0	3898.0		
Weight of Mold	(g)	1843.0	1843.0	1843.0	1843.0		
Net Weight of Soil	(g)	1893.0	2069.0	2121.0	2055.0		
Wet Weight of Soil +	Cont. (g)	422.80	403.80	439.90	427.10		
Dry Weight of Soil + 0	Cont. (g)	405.90	379.70	405.40	384.90		
Weight of Container	(g)	39.00	37.80	51.00	38.10		
Moisture Content	(%)	4.61	7.05	9.73	12.17		
Wet Density	(pcf)	125.7	137.4	140.8	136.5		
Dry Density	(pcf)	120.2	128.3	128.3	121.7		

Maximum	Dry	Density	(pcf)

Corrected Dry Density (pcf)

129.5 133.0 **Optimum Moisture Content (%) Corrected Moisture Content (%)**

8.5 7.5

Procedure A

Soil Passing No. 4 (4.75 mm) Sieve Mold: 4 in. (101.6 mm) diameter Layers: 5 (Five)

Blows per layer: 25 (twenty-five) May be used if +#4 is 20% or less

Procedure B

Soil Passing 3/8 in. (9.5 mm) Sieve Mold: 4 in. (101.6 mm) diameter

Layers: 5 (Five)

Blows per layer: 25 (twenty-five) Use if +#4 is >20% and +3/8 in. is

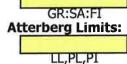
20% or less

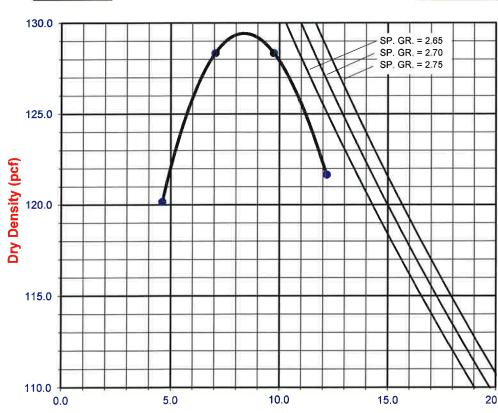
Procedure C

Soil Passing 3/4 in. (19.0 mm) Sieve Mold: 6 in. (152.4 mm) diameter Layers: 5 (Five)

Blows per layer: 56 (fifty-six) Use if +3/8 in. is >20% and +3% in. is <30%

Particle-Size Distribution:





Moisture Content (%)

EXPANSION INDEX of SOILS ASTM D 4829



Project Name:

BHUSD/El Rodeo School/Geo

Tested By: S. Felter

Checked By: J. Ward Date: 07/24/14

Date:

Project No.:

Trench Backfill

10274.006

Depth (ft.): N/A 07/28/14

Location: Sample No.:

S-1

Soil Identification:

Olive brown clayey sand with gravel (SC)g

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #4	Sieve	0.00
Percent Passing # 4		100.00

MOLDED SPECI	MEN	Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.0225
Wt. Comp. Soil + Mold	(g)	573.80	437.93
Wt. of Mold	(g)	163.50	0.00
Specific Gravity (Assume	d)	2.70	2.70
Container No.		0	0
Wet Wt. of Soil + Cont.	(g)	819.60	601.43
Dry Wt. of Soil + Cont.	(g)	751.90	539.92
Wt. of Container	(g)	0.00	163.50
Moisture Content	(%)	9.00	16.34
Wet Density	(pcf)	123.8	129.2
Dry Density	(pcf)	113.5	111.0
Void Ratio		0.485	0.518
Total Porosity		0.326	0.341
Pore Volume	(cc)	67.6	72.2
Degree of Saturation (%) [S meas]	50.1	85.2

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/24/14	12:12	1.0	0	0.1230
07/24/14	12:22	1.0	10	0.1230
		Add Distilled Water to the	Specimen	
07/24/14	13:09	1.0	47	0.1450
07/25/14	7:10	1.0	1128	0.1455
07/25/14	8:17	1.0	1195	0.1455

Expansion Index (EI meas) = ((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	23
---	----

Leighton

EXPANSION INDEX of SOILS ASTM D 4829

Project Name:

BHUSD/El Rodeo School/Geo

Tested By: S. Felter Date: 07/24/14

Project No.:

10274.006

Checked By: J. Ward Date: 07/28/14

Location:

Trench Backfill

Depth (ft.): N/A

Sample No.:

S-2

Soil Identification:

Dark olive brown clayey sand with gravel (SC)g

Dry Wt. of Soil + Cont.	(g)	1000.00
Wt. of Container No.	(g)	0.00
Dry Wt. of Soil	(g)	1000.00
Weight Soil Retained on #	4 Sieve	0.00
Percent Passing # 4		100.00

MOLDED SPECI	MEN	Before Test	After Test
Specimen Diameter	(in.)	4.01	4.01
Specimen Height	(in.)	1.0000	1.0205
Wt. Comp. Soil + Mold	(g)	601.10	438.82
Wt. of Mold	(g)	190.50	0.00
Specific Gravity (Assume		2.70	2.70
Container No.		0	0
Wet Wt. of Soil + Cont.	(g)	828.60	629.32
Dry Wt. of Soil + Cont.	(g)	763.00	568.57
Wt. of Container	(g)	0.00	190.50
Moisture Content	(%)	8.60	16.07
Wet Density	(pcf)	123.9	129.7
Dry Density	(pcf)	114.0	111.8
Void Ratio		0.478	0.509
Total Porosity		0.323	0.337
Pore Volume	(cc)	67.0	71.2
Degree of Saturation (%) [S meas]	48.5	85.3

SPECIMEN INUNDATION in distilled water for the period of 24 h or expansion rate < 0.0002 in./h

Date	Time	Pressure (psi)	Elapsed Time (min.)	Dial Readings (in.)
07/24/14	11:53	1.0	0	0.1940
07/24/14	12:03	1.0	10	0.1930
	A	add Distilled Water to the	e Specimen	
07/24/14	13:12	1.0	69	0.2135
07/25/14	7:16	1.0	1153	0.2145
07/25/14	8:29	1.0	1226	0.2145

Expansion Index (EI meas)	=	((Final Rdg - Initial Rdg) / Initial Thick.) x 1000	22



DIRECT SHEAR TEST

Consolidated Undrained

Project Name: BHUSD/El Rodeo School/Geo

Tested By:

Date:

07/24/14

Project No.:

Checked By:

G. Bathala J. Ward

Location:

10274.006 Trench Backfill

Sample Type: 90% Remold

Sample No.:

<u>S-1</u>

Depth (ft.):

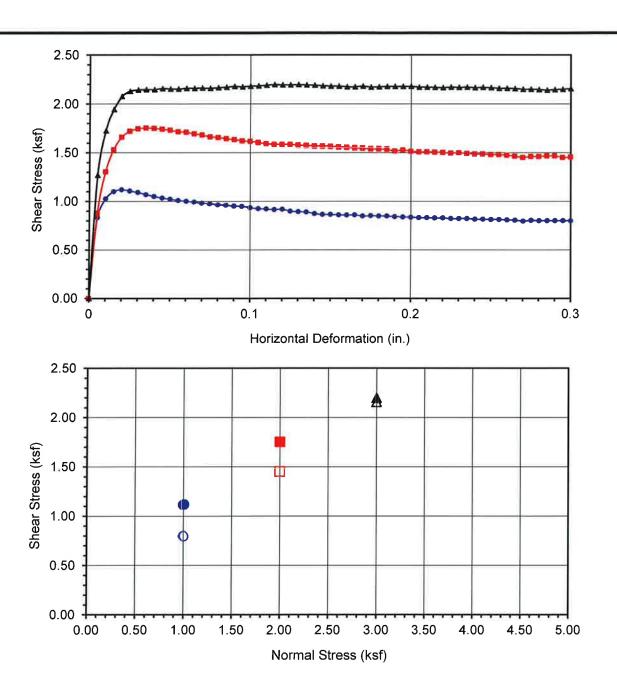
N/A

Soil Identification:

Olive brown clayey sand with gravel (SC)g

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	194.47	194.26	194.03
Weight of Ring(gm):	42.81	42.68	42.48
Before Shearing			
Weight of Wet Sample+Cont.(gm):	266.86	266.86	266.86
Weight of Dry Sample+Cont.(gm):	247.03	247.03	247.03
Weight of Container(gm):	37.96	37.96	37.96
Vertical Rdg.(in): Initial	0.0000	0.2430	0.2489
Vertical Rdg.(in): Final	-0.0019	0.2508	0.2629
After Shearing			
Weight of Wet Sample+Cont.(gm):	198.84	194.98	196.76
Weight of Dry Sample+Cont.(gm):	176.64	174.59	176.20
Weight of Container(gm):	39.22	37.61	39.07
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43

Note: Tests were performed on material passing sieve #4. Test samples were prepared to 90% relative compaction of the maximum dry density at optimum moisture content determined according to ASTM D1557 Procedure B, which includes material passing the 3/8-in sieve and retained on sieve #4.



Trench Backfill			
S-1			
Sample Type:			
90% Remold			
Soil Identification: Olive brown clayey sand with gravel (SC)g			

Normal Stress (kip/ft²)	1.000	2.000	3.000
Peak Shear Stress (kip/ft²)	• 1.119	1.754	▲ 2.197
Shear Stress @ End of Test (ksf)	0 0.799	□ 1.456	Δ 2.157
Deformation Rate (in./min.)	0.0500	0.0500	0.0500
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	9.48	9.48	9.48
Dry Density (pcf)	115.2	115.1	115.1
Saturation (%)	55.3	55.2	55.2
Soil Height Before Shearing (in.)	0.9981	0.9922	0.9860
Final Moisture Content (%)	16.2	14.9	15.0

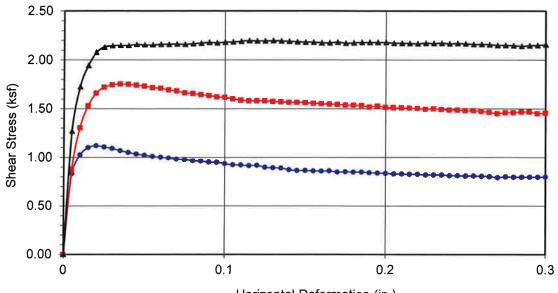
Project No.:



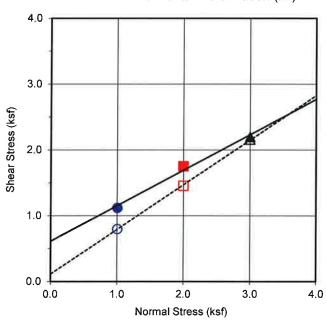
DIRECT SHEAR TEST RESULTS

Consolidated Undrained

10274.006







Location			ench ckfill
Sample No.		S -:	1
Sample Type: 90% Remold			
Soil Identification:			
Olive brown clayey sand with			
gravel (SC)g			
Strength Parameters			
	C (osf)	φ (°)
Peak	612	2.0	28.3

112.7

34.2

Normal Stress (kip/ft²)	1,000	2.000	3.000
Peak Shear Stress (kip/ft²)	• 1.119	1.754	▲ 2.197
Shear Stress @ End of Test (ksf)	O 0.799	□ 1.456	△ 2.157
Deformation Rate (in./min.)	0.0500	0.0500	0.0500
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	9.48	9.48	9.48
Dry Density (pcf)	115.2	115.1	115.1
Saturation (%)	55.3	55.2	55.2
Soil Height Before Shearing (in.)	0.9981	0.9922	0.9860
Final Moisture Content (%)	16.2	14.9	15.0



Ultimate

DIRECT SHEAR TEST RESULTS
Consolidated Undrained

Project No.:

10274.006

BHUSD/El Rodeo School/Geo



DIRECT SHEAR TEST

Consolidated Undrained

Project Name: BHUSD/El Rodeo School/Geo

Tested By: G. Bathala

Date:

07/24/14

Project No.:

10274.006

Checked By: J. Ward

Location:

Trench Backfill

Sample Type: 90% Remold Depth (ft.): N/A

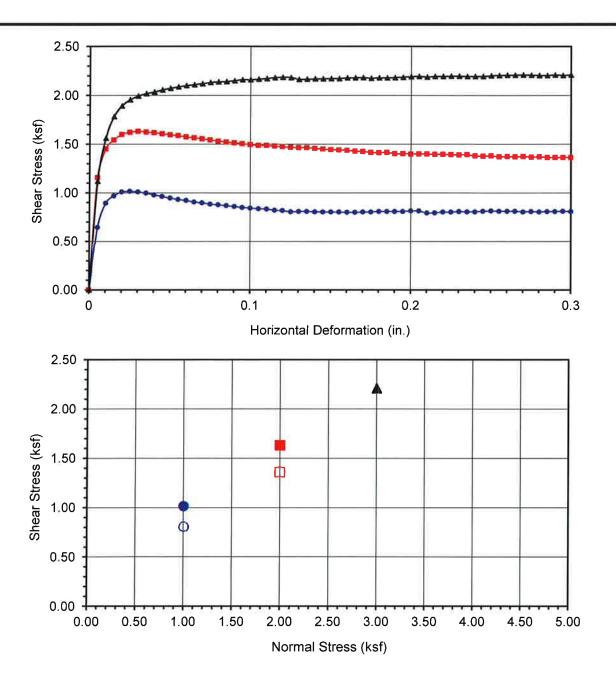
Sample No.: Soil Identification:

<u>S-2</u>

Dark olive brown clayey sand with gravel (SC)g

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	192.03	193.90	194.96
Weight of Ring(gm):	42.68	42.48	42.81
Before Shearing	V		
Weight of Wet Sample+Cont.(gm):	272.42	272.42	272.42
Weight of Dry Sample+Cont.(gm):	254.49	254.49	254.49
Weight of Container(gm):	37.63	37.63	37.63
Vertical Rdg.(in): Initial	0.0000	0.2530	0.2642
Vertical Rdg.(in): Final	-0.0007	0.2587	0.2796
After Shearing			
Weight of Wet Sample+Cont.(gm):	195.21	198.37	196.40
Weight of Dry Sample+Cont.(gm):	174.17	177.87	176.67
Weight of Container(gm):	37.97	39.22	37.98
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43

Note: Tests were performed on material passing sieve #4. Test samples were prepared to 90% relative compaction of the maximum dry density at optimum moisture content determined according to ASTM D1557 Procedure B, which includes material passing the 3/8-in sieve and retained on sieve #4.



Location	Trench Backfill		
Sample No.	S-2		
Sample Type:			
90% Remold			
Soil Identification: Dark olive brown clayey sand with gravel (SC)g			

Normal Stress (kip/ft²)	1.000	2.000	3.000
Peak Shear Stress (kip/ft²)	• 1.015	1.632	▲ 2.210
Shear Stress @ End of Test (ksf)	0.808	1.364	△ 2.210
Deformation Rate (in./min.)	0.0500	0.0500	0.0500
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	8.27	8.27	8.27
Dry Density (pcf)	114.7	116.3	116.9
Saturation (%)	47.6	49.7	50.5
Soil Height Before Shearing (in.)	0.9993	0.9943	0.9846
Final Moisture Content (%)	15.4	14.8	14.2

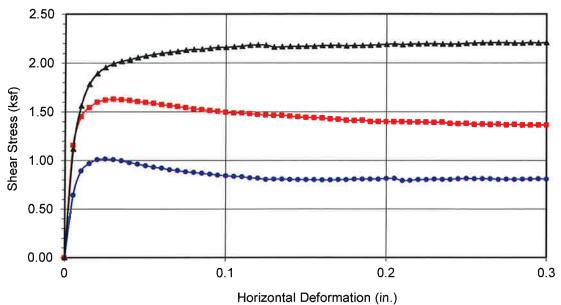
Project No.:

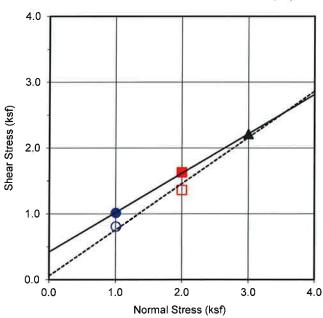


DIRECT SHEAR TEST RESULTS

Consolidated Undrained

10274.006





Location			ench ckfill	
Sample No.		S-	2	
Sample 1	90%	6 Remold		
Soil Identification: Dark olive brown clayey sand with gravel (SC)g				
Strength	Para	mete	ers ers	
	C (psf) φ (°)			
Peak	424	30.9		
Ultimate	58	.7	35.0	

Normal Stress (kip/ft²)	1.000	2.000	3.000
Peak Shear Stress (kip/ft²)	• 1.015	1.632	▲ 2.210
Shear Stress @ End of Test (ksf)	0.808	□ 1.364	△ 2.210
Deformation Rate (in./min.)	0.0500	0.0500	0.0500
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	8.27	8.27	8.27
Dry Density (pcf)	114.7	116.3	116.9
Saturation (%)	47.6	49.7	50.5
Soil Height Before Shearing (in.)	0.9993	0.9943	0.9846
Final Moisture Content (%)	15.4	14.8	14.2

Project No.:



DIRECT SHEAR TEST RESULTS

Consolidated Undrained

10274.006

APPENDIX C ANALYTICAL LABORATORY TEST RESULTS







28 July 2014

Cindy Johnson Belshire Environmental 25971 Towne Centre Dr Foothill Ranch, CA 92610

RE: BHUSD - El Rodeo Elementary

Enclosed are the results of analyses for samples received by the laboratory on 07/24/14 14:13. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kotherine Running Crame

Katherine RunningCrane Project Manager



Belshire Environmental

25971 Towne Centre Dr

Foothill Ranch CA, 92610

Project: BHUSD - El Rodeo Elementary

Project Number: 242138

Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
COMP: DRUM 1,2,3	T141443-07	Soil	07/24/14 10:35	07/24/14 14:13
COMP: DRUM 4,5,6	T141443-08	Soil	07/24/14 10:35	07/24/14 14:13

DETECTIONS SUMMARY

Sample ID: COMP: DRUM 1,2,3	Labor	atory ID:	T141443-07		
		Reporting			
Analyte	Result	Limit	Units	Method	Notes
C29-C40 (MORO)	42	10	mg/kg	EPA 8015C	
Barium	69	1.0	mg/kg	EPA 6010B	
Chromium	21	2.0	mg/kg	EPA 6010B	
Cobalt	7.4	2.0	mg/kg	EPA 6010B	
Copper	14	1.0	mg/kg	EPA 6010B	
Lead	4.6	3.0	mg/kg	EPA 6010B	
Nickel	16	2.0	mg/kg	EPA 6010B	
Vanadium	35	5.0	mg/kg	EPA 6010B	
Zinc	42	1.0	mg/kg	EPA 6010B	
Zinc Sample ID: COMP: DRUM 4,5,6		atory ID:	mg/kg T141443 -08	EPA 6010B	
				EPA 6010B	
		atory ID:		EPA 6010B Method	Notes
Sample ID: COMP: DRUM 4,5,6	Labor	atory ID:	T141443-08		Notes
Sample ID: COMP: DRUM 4,5,6 Analyte	Labor Result	atory ID: Reporting Limit	T141443-08 Units	Method	Notes
Sample ID: COMP: DRUM 4,5,6 Analyte C29-C40 (MORO)	Labor Result 51	atory ID: Reporting Limit	T141443-08 Units mg/kg	Method EPA 8015C	Notes
Sample ID: COMP: DRUM 4,5,6 Analyte C29-C40 (MORO) Barium	Labor Result 51 83	atory ID: Reporting Limit 10 1.0	T141443-08 Units mg/kg mg/kg	Method EPA 8015C EPA 6010B	Notes
Sample ID: COMP: DRUM 4,5,6 Analyte C29-C40 (MORO) Barium Chromium	Labor Result 51 83 23	Reporting Limit 10 1.0 2.0	T141443-08 Units mg/kg mg/kg mg/kg	Method EPA 8015C EPA 6010B EPA 6010B	Notes
Sample ID: COMP: DRUM 4,5,6 Analyte C29-C40 (MORO) Barium Chromium Cobalt	Labor Result 51 83 23 8.4	Reporting Limit 10 1.0 2.0 2.0	T141443-08 Units mg/kg mg/kg mg/kg mg/kg	Method EPA 8015C EPA 6010B EPA 6010B EPA 6010B	Notes
Sample ID: COMP: DRUM 4,5,6 Analyte C29-C40 (MORO) Barium Chromium Cobalt Copper	Result 51 83 23 8.4 16	Reporting Limit 10 1.0 2.0 2.0 1.0	Units mg/kg mg/kg mg/kg mg/kg mg/kg	Method EPA 8015C EPA 6010B EPA 6010B EPA 6010B	Notes

1.0

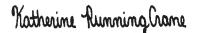
mg/kg

SunStar Laboratories, Inc.

Zinc

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

EPA 6010B





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project Number: 242138

Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Katherine Running Crame



Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138

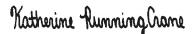
Project Manager: Cindy Johnson

Reported: 07/28/14 17:20

COMP: DRUM 1,2,3 T141443-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
		SunStar L	aborator	ies, Inc.					
Extractable Petroleum Hydroc	arbons by 8015C	_							
C6-C12 (GRO)	ND	10	mg/kg	1	4072410	07/24/14	07/28/14	EPA 8015C	
C13-C28 (DRO)	ND	10	11		**			*	
C29-C40 (MORO)	42	10	U		#		•	*	
Surrogate: p-Terphenyl		96.1 %	65-	135	w	: 10	"	w :	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	4072419	07/24/14	07/25/14	EPA 6010B	
Silver	ND	2.0	**	**	ë		•	**	
Arsenic	ND	5.0	0	12.007		0.000	397		
Barium	69	1.0		500	m.	0.00		**	
Beryllium	ND	1.0	(0)	100	*	2003		**	
Cadmium	ND	2.0	.00		*	10	•	n	
Chromium	21	2.0			*		*		
Cobalt	7.4	2.0	•						
Copper	14	1.0	•		w	790	"	**	
Lead	4.6	3.0	300	(10)	**	0,000	39	w	
Molybdenum	ND	5.0	W	9000	115	(10)	39	TE.	
Nickel	16	2.0	(10)	100	W.	7 6 6	**	W.	
Selenium	ND	5.0	OF.		**	*	**	•	
Thallium	ND	2.0	.11		*	(0))	**	
Vanadium	35	5.0	**	•		•	*	W.	
Zinc	42	1.0			"	30	**	"	
Cold Vapor Extraction EPA 74	70/7471								
Mercury	ND	0.10	mg/kg	1	4072420	07/24/14	07/25/14	EPA 7471A Soil	

SunStar Laboratories, Inc.





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project Number: 242138
Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

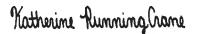
COMP: DRUM 1,2,3 T141443-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		CunCton I o	horotor	ios Ino					

SunStar Laboratories, Inc.

Bromobenzene	ND	5.0	ug/kg	1	4072414	07/24/14	07/25/14	EPA 8260B
Bromochloromethane	ND	5.0	**	€	(*)	Ü		•
Bromodichloromethane	ND	5.0	,	10		m.		•
Bromoform	ND	5.0	30	œ	(00)	m.	3.000	3000
Bromomethane	ND	5.0	**	66		**	5.00	(61)
-Butylbenzene	ND	5.0	99	•	•	**	11	
ec-Butylbenzene	ND	5.0	9			•		
ert-Butylbenzene	ND	5.0	,"	2.000	3000	**	2.000	3000
Carbon tetrachloride	ND	5.0	"	940	2001	w	400	3000
Chlorobenzene	ND	5.0	**		**	•		*
Chloroethane	ND	5.0		/#	0	*	*	
Chloroform	ND	5.0	**	2.00	39.0	10	(997)	
Chloromethane	ND	5.0	11	300	5000	n:	500	300
-Chlorotoluene	ND	5.0	7			<u>ii</u>		•
-Chlorotoluene	ND	5.0			**	•	(*)	
Dibromochloromethane	ND	5.0	11	11997		"		•
,2-Dibromo-3-chloropropane	ND	10	"	000	:0 :	m.	()(()	300
,2-Dibromoethane (EDB)	ND	5.0	"		10	W	0.000	300
Dibromomethane	ND	5.0		(0)))	*	*	
,2-Dichlorobenzene	ND	5.0	"		n .	9	W	
,3-Dichlorobenzene	ND	5.0	"	((9))	30	115	50.00	
,4-Dichlorobenzene	ND	5.0	**	(186)	70	W.	(****)	.01
Dichlorodifluoromethane	ND	5.0	2			*		
,1-Dichloroethane	ND	5.0		•		*	(+)	,,
,2-Dichloroethane	ND	5.0	W.	0.00		W.	w	
,1-Dichloroethene	ND	5.0	".	DMC	:11	100	(,00)	30
is-1,2-Dichloroethene	ND	5.0	"	· er	*	W.	/i+1	: n
ans-1,2-Dichloroethene	ND	5.0		•	*		38	*
,2-Dichloropropane	ND	5.0	**		"			•
,3-Dichloropropane	ND	5.0	"	:000		1.16	7.41	:!!
2-Dichloropropane	ND	5.0	11		***	0.00	ene:	in .
,1-Dichloropropene	ND	5.0	**		**	**		ji.

SunStar Laboratories, Inc.





Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138

Project Manager: Cindy Johnson

Reported: 07/28/14 17:20

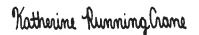
COMP: DRUM 1,2,3 T141443-07 (Soil)

		Reporting							- 1
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

SunStar Laboratories, Inc.

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	4072414	07/24/14	07/25/14	EPA 8260B
trans-1,3-Dichloropropene	ND	5.0	.00	H			*	7.00
Hexachlorobutadiene	ND	5.0	•	99.7	79,	(0):	ж.	
Isopropylbenzene	ND	5.0	11	30	0.00	300	**	
p-Isopropyltoluene	ND	5.0		*	H		·	·
Methylene chloride	ND	5.0	(0)	**			**	
Naphthalene	ND	5.0			197	10	12	*
n-Propylbenzene	ND	5.0	()(()	311	((0)	(m;	**	((#)
Styrene	ND	5.0	900	*	1986	100	W	(146)
1,1,2,2-Tetrachloroethane	ND	5.0			(4)	(0)	#	(1)
1,1,1,2-Tetrachloroethane	ND	5.0	19(1)	**	•	•	X	w
Tetrachloroethene	ND	5.0		29	(1990)	(0)		800
1,2,3-Trichlorobenzene	ND	5.0	31	***	(566)	/ 6 15	*	1960
1,2,4-Trichlorobenzene	ND	5.0	(0	9	(10)	**	**	(48)
1,1,2-Trichloroethane	ND	5.0	11	20				•
1,1,1-Trichloroethane	ND	5.0		**	((#)	39.0	"	11967
Trichloroethene	ND	5.0		91	300	3000		:100
Trichlorofluoromethane	ND	5.0	**			3		
1,2,3-Trichloropropane	ND	5.0				**	*	
1,3,5-Trimethylbenzene	ND	5.0		"				
1,2,4-Trimethylbenzene	ND	5.0	380	"	3.003	30	115	202
Vinyl chloride	ND	5.0	m	w		н	æ	
Benzene	ND	5.0		•		*	•	
Γoluene	ND	5.0	•		•	•	*	(m)
Ethylbenzene	ND	5.0	17		(1990)	71		9 % 2
m,p-Xylene	ND	10	30.	16	2000	:11	100	0000
o-Xylene	ND	5.0	100	ũ		*	ú.	
Surrogate: 4-Bromofluorobenzene		95.6 %	81.2-1	23		***	"	
Surrogate: Dibromofluoromethane		106 %	95.7-1	35	"	**	"	(m)
Surrogate: Toluene-d8		90.6 %	85.5-1	16			"	"

SunStar Laboratories, Inc.





Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138

Reported: 07/28/14 17:20

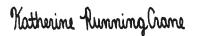
COMP: DRUM 4,5,6 T141443-08 (Soil)

Project Manager: Cindy Johnson

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
		SunStar L	aborator	ies, Inc.					
Extractable Petroleum Hydrocarbons by	8015C								
C6-C12 (GRO)	ND	10	mg/kg	1	4072410	07/24/14	07/28/14	EPA 8015C	
C13-C28 (DRO)	ND	10	11	**	**		Î.	100	
C29-C40 (MORO)	51	10	10		110	3#01	**	((# 5	
Surrogate: p-Terphenyl		94.4 %	65-1	35	#	•	"	*	
Metals by EPA 6010B									
Antimony	ND	3.0	mg/kg	1	4072419	07/24/14	07/25/14	EPA 6010B	
Silver	ND	2.0	11	39	0.00	3000	ж.	(140)	
Arsenic	ND	5.0	H	**	200	167	**	(346)	
Barium	83	1.0	51	*		*	11	•	
Beryllium	ND	1.0	11	*	. •		**		
Cadmium	ND	2.0	17		**		**		
Chromium	23	2.0	11	**	1000	301	**	300	
Cobalt	8.4	2.0	11	**	0.00	201	**	DMC	
Copper	16	1.0	n	и	702	30	W	Sec.	
Lead	4.7	3.0	U	ï		n	H.	200	
Molybdenum	ND	5.0	**	"			16		
Nickel	18	2.0	11	**		*	•	(**)	
Selenium	ND	5.0	11	**	(**)	*	•	((*))	
Гhallium	ND	2.0	Ħ	W			•		
Vanadium	41	5.0	Ħ	**	((**))	"	100	(100)	
Zinc	45	1.0	11	#C	((***)	**	. 00	(900)	
Cold Vapor Extraction EPA 7470/7471									
Mercury	ND	0.10	mg/kg	1	4072420	07/24/14	07/25/14	EPA 7471A	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Soil



Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138
Project Manager: Cindy Johnson

Reported: 07/28/14 17:20

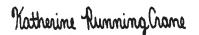
COMP: DRUM 4,5,6 T141443-08 (Soil)

1		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

SunStar Laboratories, Inc.

Bromobenzene	ND	5.0	ug/kg	1	4072414	07/24/14	07/25/14	EPA 8260B
Bromochloromethane	ND	5.0			9).			**
Bromodichloromethane	ND	5.0			"	77.	**	Ħ
Bromoform	ND	5.0	286	:03		2000	**	II .
Bromomethane	ND	5.0	in:	30.7		(44-)	**	11
n-Butylbenzene	ND	5.0		•	60		9	11
sec-Butylbenzene	ND	5.0		**	Ÿ.		W	11
ert-Butylbenzene	ND	5.0		2000	.00	5000	"	"
Carbon tetrachloride	ND	5.0	:n:	300	· · · · ·	(991)	**	u u
Chlorobenzene	ND	5.0	**			**		"
Chloroethane	ND	5.0	1)		. 0	**		и
Chloroform	ND	5.0	•	20		(97)	**	u
Chloromethane	ND	5.0	(100	'n	0.00	900	n	II .
2-Chlorotoluene	ND	5.0	(in				iii.	**
-Chlorotoluene	ND	5.0	11	*			•	11
Dibromochloromethane	ND	5.0	4		399	MB	**	11
,2-Dibromo-3-chloropropane	ND	10	200	31	(00)	(0)	**	H
,2-Dibromoethane (EDB)	ND	5.0	100	**	200	(60)	**	ŧŧ
Dibromomethane	ND	5.0	•	**				11
,2-Dichlorobenzene	ND	5.0	(*)	**		•	W	11
,3-Dichlorobenzene	ND	5.0	19)/	**	(W .	3000	**	11
,4-Dichlorobenzene	ND	5.0	(11)	**	(**)	3000	w	11
Dichlorodifluoromethane	ND	5.0		*	**	9 1	•	11
,1-Dichloroethane	ND	5.0	••			•		"
,2-Dichloroethane	ND	5.0		**	(10)		**	ti
,1-Dichloroethene	ND	5.0	X W .0	ж	200	30	"	н
is-1,2-Dichloroethene	ND	5.0	"				**	II
rans-1,2-Dichloroethene	ND	5.0	***	*		•	€	11
,2-Dichloropropane	ND	5.0	•	*		**	W	11
,3-Dichloropropane	ND	5.0	11	**	3199.7	31		**
,2-Dichloropropane	ND	5.0	310	W	10000	11	0.0	н
,1-Dichloropropene	ND	5.0		**		*	*	l _u

SunStar Laboratories, Inc.





Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138

Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

COMP: DRUM 4,5,6 T141443-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		SunStar La	aborator	ies, Inc.					
Volatile Organic Compounds by I	EPA Method 8260	В							
cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	4072414	07/24/14	07/25/14	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0		H	(4)	**	**	(**	
Hexachlorobutadiene	ND	5.0		397	100	(80)	М.	1.40	
Isopropylbenzene	ND	5.0	000		(00:	(10)	**	300	
p-Isopropyltoluene	ND	5.0	.11				<u>iii</u>	•	
Methylene chloride	ND	5.0	**				**	•	
Naphthalene	ND	5.0	11					•	
n-Propylbenzene	ND	5.0	2002	30	(0)	3100	*	50003	
Styrene	ND	5.0	500			360	*	37003	
1,1,2,2-Tetrachloroethane	ND	5.0		*			#		
1,1,1,2-Tetrachloroethane	ND	5.0		,			**		
Tetrachloroethene	ND	5.0	0.00	31	0.00	4000	"	6.00.6	
1,2,3-Trichlorobenzene	ND	5.0		**	2300	100	#	2002	
1,2,4-Trichlorobenzene	ND	5.0	18						
1,1,2-Trichloroethane	ND	5.0		39			**		
1,1,1-Trichloroethane	ND	5.0			(300)	2007)		3.003	
Trichloroethene	ND	5.0	981	**	000	9000	u	(10)	
Trichlorofluoromethane	ND	5.0	(ir					100	
1,2,3-Trichloropropane	ND	5.0	**				*	*	
1,3,5-Trimethylbenzene	ND	5.0							
1,2,4-Trimethylbenzene	ND	5.0		**	((40)	9000	m.	5.00	
Vinyl chloride	ND	5.0		ň	2000	**	H.	200	
Benzene	ND	5.0	•		11) **	•		
Toluene	ND	5.0	•	*		**	*		
Ethylbenzene	ND	5.0		**	50003	90	и:	2002	
m,p-Xylene	ND	10	(00):	и	200	30			
o-Xylene	ND	5.0	ar .	ä		30	or.	200	
Surrogate: 4-Bromofluorobenzene		97.1 %	81.2-	123	(0)	in o	"	0.00	
Surrogate: Dibromofluoromethane		107 %	95.7-		5005	**	"	· ·	
Surrogate: Toluene-d8		92.4 %	85.5-		"	"	,,	n	

SunStar Laboratories, Inc.





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr Foothill Ranch CA, 92610

Project Number: 242138
Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

Extractable Petroleum Hydrocarbons by 8015C - Quality Control SunStar Laboratories, Inc.

	I	Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4072410 - EPA 3550B GC										
Blank (4072410-BLK1)				Prepared:	07/24/14	Analyzed	1: 07/28/14			
C6-C12 (GRO)	ND	10	mg/kg							
C13-C28 (DRO)	ND	10	11							
C29-C40 (MORO)	ND	10	11							
Surrogate: p-Terphenyl	81.6		"	100		81.6	65-135			
LCS (4072410-BS1)				Prepared:	07/24/14	Analyzed	: 07/28/14			
C13-C28 (DRO)	430	10	mg/kg	500		86.5	75-125			
Surrogate: p-Terphenyl	70.2		n	100		70.2	65-135			
Matrix Spike (4072410-MS1)	Source	e: T14143	7-01	Prepared:	07/24/14	Analyzed	: 07/28/14			
C13-C28 (DRO)	440	10	mg/kg	500	ND	87.1	75-125			
Surrogate: p-Terphenyl	103		"	100		103	65-135			
Matrix Spike Dup (4072410-MSD1)	Source	e: T14143	7-01	Prepared:	07/24/14	Analyzed	: 07/28/14			
C13-C28 (DRO)	460	10	mg/kg	500	ND	91.6	75-125	4.98	20	
Surrogate: p-Terphenyl	98.1		"	100		98.1	65-135			

SunStar Laboratories, Inc.





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr

Project Number: 242138

Reported:

Foothill Ranch CA, 92610

Project Manager: Cindy Johnson

07/28/14 17:20

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4072419 - EPA 3050B										
Blank (4072419-BLK1)				Prepared:	07/24/14	Analyzed	: 07/25/14			
Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	30.5							
Arsenic	ND	5.0	.01							
Barium	ND	1.0	**							
Beryllium	ND	1.0								
Cadmium	ND	2.0								
Chromium	ND	2.0	**							
Cobalt	ND	2.0	**							
Соррег	ND	1.0	**							
Lead	ND	3.0								
Molybdenum	ND	5.0	5000							
Nickel	ND	2.0	.0							
Selenium	ND	5.0	.0							
Thallium	ND	2.0	90							
Vanadium	ND	5.0								
Zinc	ND	1.0								
LCS (4072419-BS1)				Prepared:	07/24/14	Analyzed	: 07/25/14			
Arsenic	106	5.0	mg/kg	100		106	75-125			
Barium	108	1.0	•	100		108	75-125			
Cadmium	106	2.0	**	100		106	75-125			
Chromium	113	2.0		100		113	75-125			
Lead	109	3.0	*	100		109	75-125			
Matrix Spike (4072419-MS1)	So	urce: T14144	3-07	Prepared:	07/24/14	Analyzed	: 07/25/14			
Arsenic	102	5.0	mg/kg	100	2.99	98.6	75-125			
Barium	196	1.0	77	100	68.9	127	75-125			QM-0
Cadmium	102	2.0	**	100	0.764	101	75-125			
Chromium	133	2.0	,,	100	20.5	112	75-125			
Lead	105	3.0	**	100	4,61	100	75-125			

SunStar Laboratories, Inc.





Belshire Environmental

Analyte

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Spike

Level

Source

Result

%REC

Project Number: 242138

Reporting

Result

Limit

Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

RPD

Limit

Notes

%REC

Limits

RPD

Metals by EPA 6010B - Quality Control

SunStar Laboratories, Inc.

Units

Matrix Spike Dup (4072419-MSD1)	Sour	ce: T14144	13-07	Prepared: 07/24/14 Analyzed: 07/25/14							
Arsenic	106	5.0	mg/kg	100	2.99	103	75-125	4.36	20		
Barium	196	1.0	11	100	68.9	127	75-125	0.257	20	QM-05	
Cadmium	102	2.0	" .	100	0.764	101	75-125	0.654	20		
Chromium	134	2.0	11	100	20.5	113	75-125	0.892	20		
Lead	109	3.0	19	100	4.61	104	75-125	3.99	20		

SunStar Laboratories, Inc.





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr

Project Number: 242138

Reported:

Foothill Ranch CA, 92610

Project Manager: Cindy Johnson

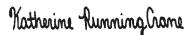
07/28/14 17:20

Cold Vapor Extraction EPA 7470/7471 - Quality Control

SunStar Laboratories, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4072420 - EPA 7471A Soil										
Blank (4072420-BLK1)				Prepared:	07/24/14	Analyzed	: 07/25/14			
Mercury	ND	0.10	mg/kg							
LCS (4072420-BS1)				Prepared:	07/24/14	Analyzed	: 07/25/14			
Mercury	0.395	0.10	mg/kg	0.417		94.8	80-120			
Matrix Spike (4072420-MS1)	Soi	игсе: Т14144	13-07	Prepared:						
Mercury	0.387	0.10	mg/kg	0.417	ND	92.8	75-125			
Matrix Spike Dup (4072420-MSD1)	Sou	Source: T141443-07			Prepared: 07/24/14 Analyzed: 07/25/14					
Mercury	0.382	0.10	mg/kg	0.417	ND	91.6	75-125	1.26	20	

SunStar Laboratories, Inc.





Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138

Project Manager: Cindy Johnson

Reported:

07/28/14 17:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control SunStar Laboratories, Inc.

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch	40724	114 -	EPA	5030	GCMS
-------	-------	--------------	------------	------	-------------

Batch 4072414 - EPA 5030 GCM	5			
Blank (4072414-BLK1)				Prepared & Analyzed: 07/24/14
Bromobenzene	ND	5.0	ug/kg	
Bromochloromethane	ND	5.0		
Bromodichloromethane	ND	5.0	**	
Bromoform	ND	5.0	**	
Bromomethane	ND	5.0		
n-Butylbenzene	ND	5.0	•	
sec-Butylbenzene	ND	5.0		
tert-Butylbenzene	ND	5.0		
Carbon tetrachloride	ND	5.0		
Chlorobenzene	ND	5.0		
Chloroethane	ND	5.0	(0)}	
Chloroform	ND	5.0	30071	
Chloromethane	ND	5.0		
2-Chlorotoluene	ND	5.0		
4-Chlorotoluene	ND	5.0	*	
Dibromochloromethane	ND	5.0		
1,2-Dibromo-3-chloropropane	ND	10		
1,2-Dibromoethane (EDB)	ND	5.0		
Dibromomethane	ND	5.0		
1,2-Dichlorobenzene	ND	5.0	.0	
1,3-Dichlorobenzene	ND	5.0	11	
1,4-Dichlorobenzene	ND	5.0	311	
Dichlorodifluoromethane	ND	5.0	311	
1,1-Dichloroethane	ND	5.0	39	
1,2-Dichloroethane	ND	5.0		
1,1-Dichloroethene	ND	5.0		
cis-1,2-Dichloroethene	ND	5.0	**	
rans-1,2-Dichloroethene	ND	5.0) ((
1,2-Dichloropropane	ND	5.0	*	
1,3-Dichloropropane	ND	5.0	#	
2,2-Dichloropropane	ND	5.0	×	
,1-Dichloropropene	ND	5.0	**	
cis-1,3-Dichloropropene	ND	5.0	**	
rans-1,3-Dichloropropene	ND	5.0	300	
Hexachlorobutadiene	ND	5.0	.00	
Sopropylbenzene	ND	5.0	**	

SunStar Laboratories, Inc.





Belshire Environmental

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project: BHUSD - El Rodeo Elementary

Project Number: 242138

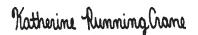
Reported: Project Manager: Cindy Johnson 07/28/14 17:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4072414 - EPA 5030 GCMS										
Blank (4072414-BLK1)				Prepared	& Analyze	ed: 07/24/	14			
p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0								
Naphthalene	ND	5.0								
n-Propylbenzene	ND	5.0								
Styrene	ND	5.0	•							
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,1,2-Tetrachloroethane	ND	5.0								
Tetrachloroethene	ND	5.0	30							
1,2,3-Trichlorobenzene	ND	5.0	A015							
1,2,4-Trichlorobenzene	ND	5.0	9000							
1,1,2-Trichloroethane	ND	5.0	(11))							
1,1,1-Trichloroethane	ND	5.0	(0)							
l'richloroethene	ND	5.0	200.0							
Trichlorofluoromethane	ND	5.0								
1,2,3-Trichloropropane	ND	5.0								
1,3,5-Trimethylbenzene	ND	5.0	H							
1,2,4-Trimethylbenzene	ND	5.0	***							
Vinyl chloride	ND	5.0	**							
Benzene	ND	5.0	**							
l'oluene	ND	5.0	**							
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10	30							
-Xylene	ND	5.0	39							
Surrogate: 4-Bromofluorobenzene	38.2		"	40.0		95.4	81.2-123			
Surrogate: Dibromofluoromethane	41.4		**	40.0		104	95.7-135			
Surrogate: Toluene-d8	39.0		**	40.0		97.5	85.5-116			
LCS (4072414-BS1)				Prepared:	07/24/14	Analyzed	: 07/25/14			
Chlorobenzene	88.6	5.0	ug/kg	100		88.6	75-125			
,1-Dichloroethene	92.5	5.0	**	100		92.5	75-125			
Trichloroethene	92.0	5.0	39	100		92.0	75-125			
Benzene	81.3	5.0		100		81.3	75-125			
Toluene	90.1	5.0	"	100		90.1	75-125			
Surrogate: 4-Bromofluorobenzene	37.4		n	40.0		93.5	81.2-123			
Surrogate: Dibromofluoromethane	46.6		**	40.0		116	95.7-135			
Surrogate: Toluene-d8	36.4		**	40.0		90.9	85.5-116			

SunStar Laboratories, Inc.





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr Foothill Ranch CA, 92610 Project Number: 242138

Reported:

Project Manager: Cindy Johnson

07/28/14 17:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

		Reporting		Spike	Source		%REC			
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 4072414 - EPA 5030 GCMS										
Matrix Spike (4072414-MS1)	Sour	ce: T14143	37-01	Prepared:						
Chlorobenzene	87.2	5.0	ug/kg	100	ND	87.2	75-125			
1,1-Dichloroethene	90.8	5.0	*	100	ND	90.8	75-125			
Trichloroethene	89.5	5.0		100	ND	89.5	75-125			
Benzene	86.4	5.0		100	ND	86.4	75-125			
Toluene	83.5	5.0	(46)	100	ND	83.5	75-125			
Surrogate: 4-Bromofluorobenzene	39.0		1000	40.0		97.5	81.2-123			
Surrogate: Dibromofluoromethane	47.4		**	40.0		119	95.7-135			
Surrogate: Toluene-d8	36.0		"	40.0		89.9	85.5-116			
Matrix Spike Dup (4072414-MSD1)	Sour	ce: T14143	7-01	Prepared: 07/24/14 Analyzed: 07/25/14						
Chlorobenzene	97.2	5.0	ug/kg	100	ND	97.2	75-125	10.7	20	
1,1-Dichloroethene	107	5.0		100	ND	107	75-125	16.4	20	
Trichloroethene	101	5.0	000	100	ND	101	75-125	11.7	20	
Benzene	82.6	5.0	300	100	ND	82.6	75-125	4.56	20	
Toluene	94.7	5.0	3007	100	ND	94.7	75-125	12.6	20	
Surrogate: 4-Bromofluorobenzene	37.6			40.0		94.0	81.2-123			
Surrogate: Dibromofluoromethane	50.6		"	40.0		126	95.7-135			
Surrogate: Toluene-d8	35.9		"	40.0		89.8	85.5-116			

SunStar Laboratories, Inc.





Belshire Environmental

Project: BHUSD - El Rodeo Elementary

25971 Towne Centre Dr

Project Number: 242138

Reported:

Foothill Ranch CA, 92610

Project Manager: Cindy Johnson

07/28/14 17:20

Notes and Definitions

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to possible matrix interference. The LCS was within

acceptance criteria. The data is acceptable as no negative impact on data is expected.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

SunStar Laboratories, Inc.



Chain of Custody Record

	Relinquished by: (signature)	Relinquished by: (signature)	Prillen 6	Shand	Phillips	Phumis	2 ming /	ALER-	Sample ID	Client: BELSHILE EN Address: 25971 760 Phone: 949 - 460- Project Manager:
Disposal @ \$2.00 each	Date / Time	Date / Time	41. WL	41-M2-6	7-24-14	41-N2L	h1-42-6	41-42-L	Date Samplec	ENVIRONMENTAL SOLVICES JOHNE CONTER DRIVE 6 2- 5200 Fax: 949-460
iàch l	ne 	ne	\$018	\$201	5101	1035	1036	1035	Time	Fax: 90
Return	Received b	Received by:	710	SOIL	7105	188	7.88	nas	Sample Type	DRIVE FOOT
Return to client	Received by: (signature)	Y. (signature)	JAR	142	SIME	JAR	JARC	JAR	Container Type	5, INC 6-5210
Pickup	Date	Date - 7/24/14	X	X	X	X	X		8260 8260 + OXY 8260 BTEX, OXY only	Invet
Date / Time	Date / Time	e/Time							8270 8021 BTEX 8015M (gasoline)	Date: Project Name: Collector: Batch #: 7
Turn around time:	Seals Received good	Total	X	XX	< <	XX	XX	X	8015M (diesel) 8015M Ext./Carbon Chain 6010/7000 Title 22 Metals	Thomas Buck
time:	Seals intact? Y/N/NA MAR	Total # of containers 4		/	#				77	
	*	∑	00	8	2	03	02	3 F	aboratory ID #	Page:_ Zeo E Client F EDF #;
5.20	2 DAY TAT	Notes	Chund Calle	O SALISON OF THE T		A 50 (100)	1 alisames		Comments/Preservative	roject#: 0f /
			 - -	Ŧ	1	-	-[-	- 7	otal # of containers	88

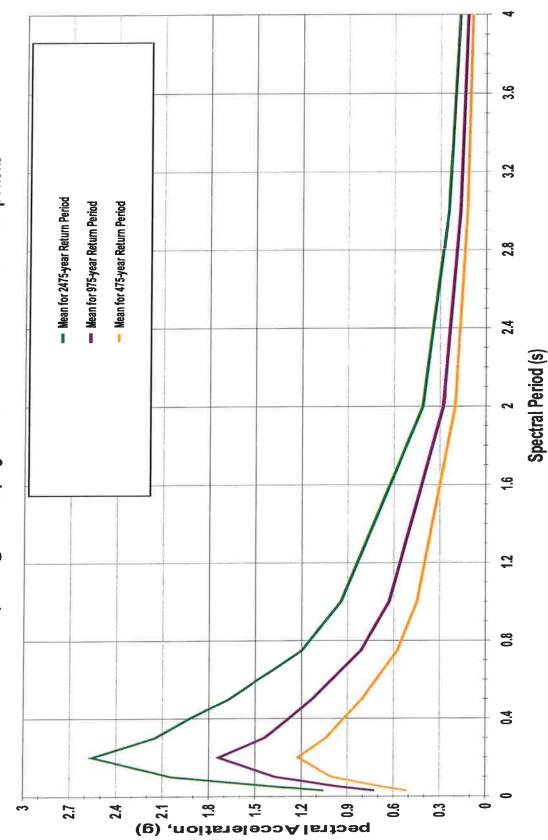


SAMPLE RECEIVING REVIEW SHEET

BATCH#				
Client Name: BELSHIRE Project: BHU	15D - EL	RODEO	ELEMEATERY	_
Received by: Date/Time Re	ceived:	7.24.14	14:13	
Delivered by: Client SunStar Courier GSO FedEx	Other			
Total number of coolers received $\underline{\sigma}$ Temp criteria = 6°C	> 0°C (no	<u>frozen</u> coi	ntainers)	
Temperature: cooler #1 $\underline{5.4}$ °C +/- the CF (-0.2°C) = $\underline{5.2}$ °C corrections	ted temperat	ure		
cooler #2°C +/- the CF (- 0.2°C) =°C correct	ted temperat	ure		
cooler #3°C +/- the CF (- 0.2°C) =°C correct	ted temperat	ure		8
Samples outside temp. but received on ice, w/in 6 hours of final sampling.	⊠Yes	□No*	□N/A	
Custody Seals Intact on Cooler/Sample	Yes	□No*	⊠ N/A	
Sample Containers Intact	Yes	□No*	24	
Sample labels match COC ID's	ĭ⊠Yes	□No*		
Total number of containers received match COC	∑Yes	□No*	T	
Proper containers received for analyses requested on COC	⊠Yes	□No*		
Proper preservative indicated on COC/containers for analyses requested	☐Yes	□No*	⊠N/A	
Complete shipment received in good condition with correct temperatures, co preservatives and within method specified holding times. Xes \square No	ntainers, la	abels, volu	mes	
* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Re	view - Initia	als and date	SL 7.24.14	<u></u>
Comments:				*

File: V:\INFOCUS PROJECTS\10000-10500\10274 BHUSD\006 El Rodeo Geo\Analyses\EZFRISK\~_El Rodeo - El Rodeo.OUT Date Modified: 07/28/2014 11:00:22 AM

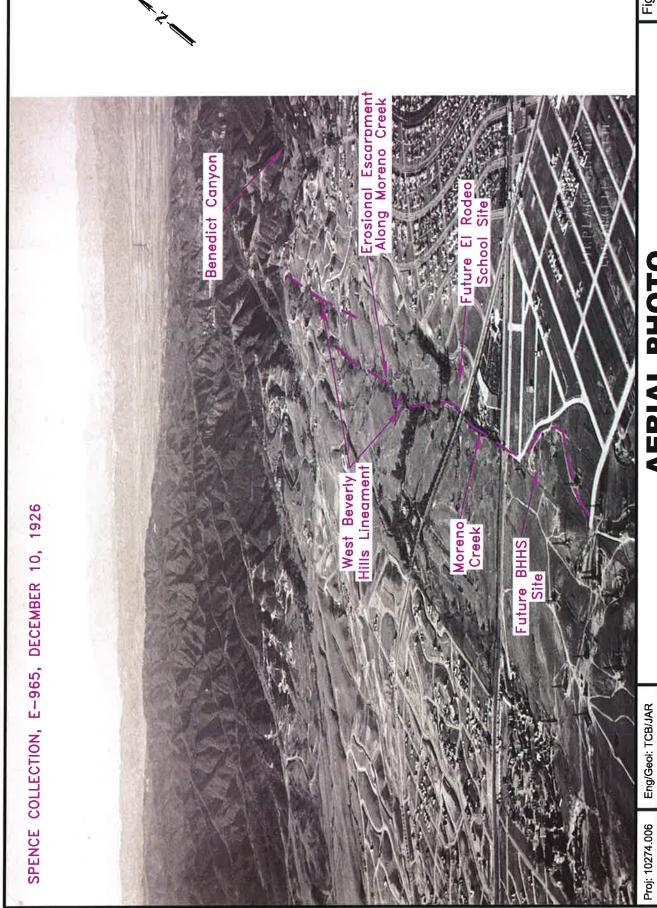
Spectral Response @ 5% Damping - Maximum Rotated Horizontal Component Uniform Hazard Spectra





APPENDIX E HISTORICAL AERIAL PHOTOGRAPHS





AERIAL PHOTO

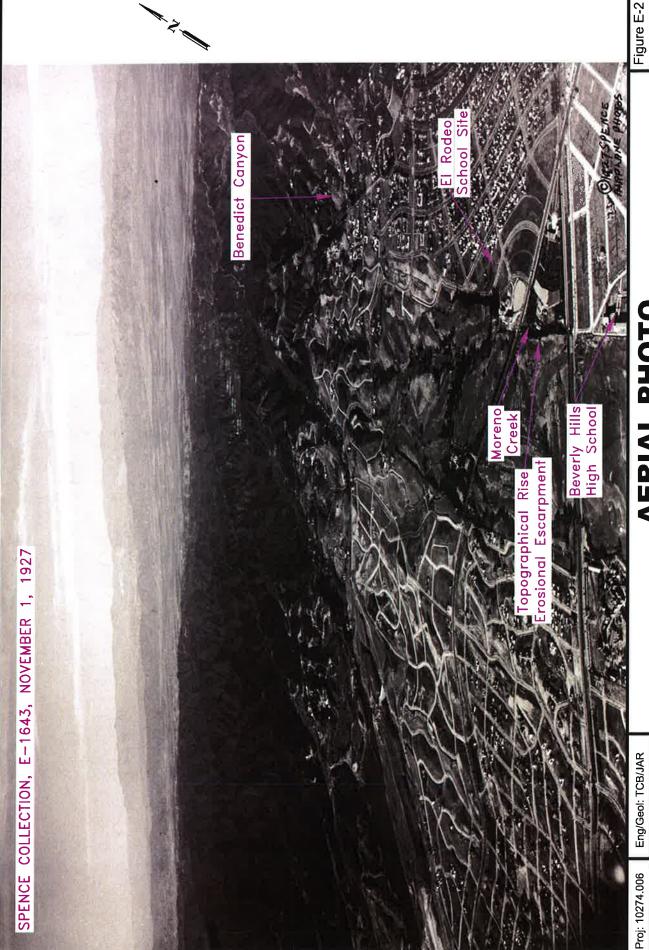
Beverly Hills, California

Figure E-1

El Rodeo K8 605 Whittier Drive

Date: February 2015

Scale: NTS Reference:



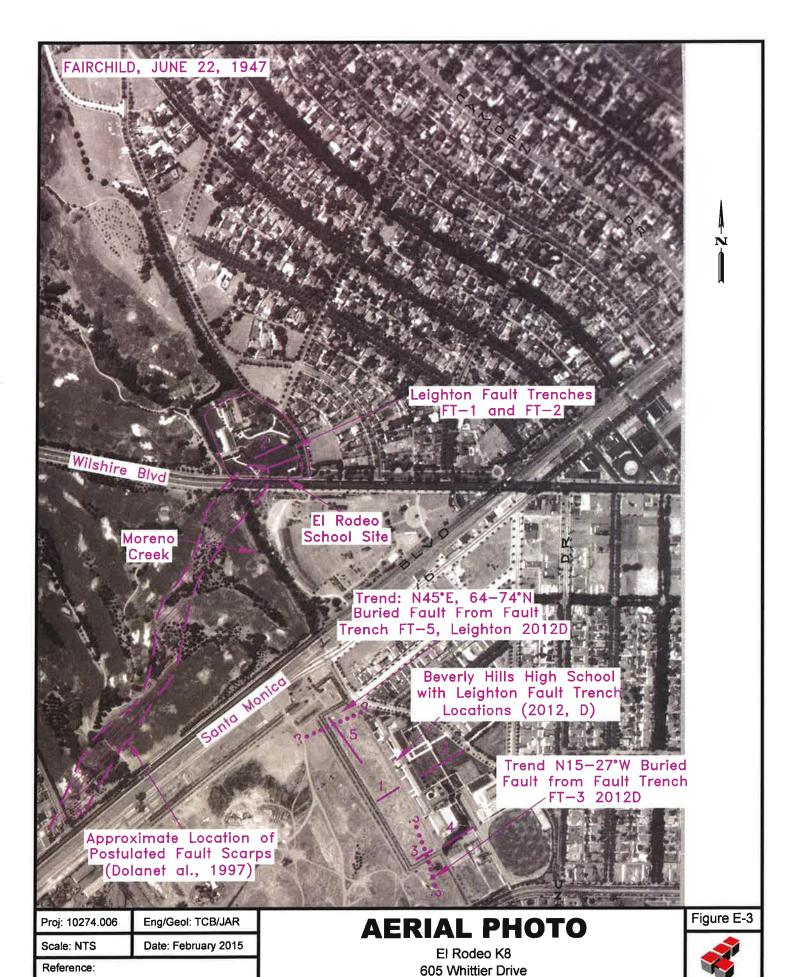
AERIAL PHOTO

Beverly Hills, California El Rodeo K8 605 Whittier Drive



Date: February 2015

Scale: NTS Reference:



Beverly Hills, California

Leighton

Important Information about Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you —* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

the function of the proposed structure, as when it's changed from a
parking garage to an office building, or from a light industrial plant
to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure.
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenviron-mental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures*. If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else*.

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the express purpose of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.

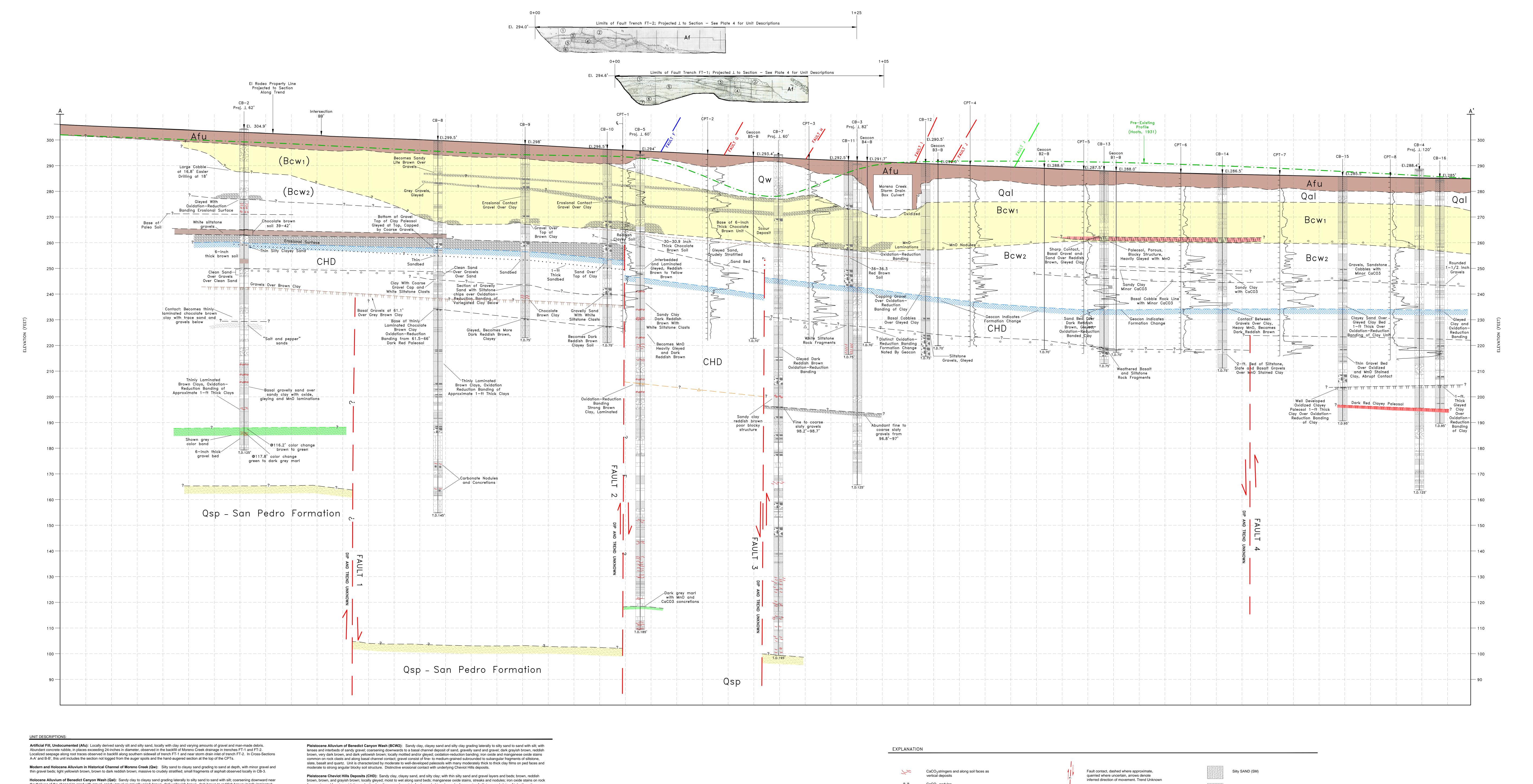
Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910 Telephone: 301/565-2733 Facsimile: 301/589-2017 e-mail: info@asfe.org www.asfe.org

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the thalweg of the channel to sand with gravel, sandy gravel or gravelly sand; brown, dark yellowish brown, dark brown to reddish brown; locally laminated; gravel consist of fine- to coarse-grained subangular to subrounded fragments of siltstone and slate; few to common manganese oxide and iron oxide stains;

Pleistocene Alluvium of Benedict Canyon Wash (BCW1): Sandy clay, clayey sand, sand with clay, and silty sand with clay, grading laterally to silty sand and sand with silt; near the channel centerline, deposit coarsens downward to gravelly sand to clayey sand with gravel; dark yellowish brown, brown, dark brown to reddish brown; mottled; locally gleyed; slightly moist to moist; massive to thinly laminated; few to many scattered gravel that consist of subangular to subrounded and tabular fragments of siltstone, slate and weathered basalt. Terrestrial deposit consisting of fluvial, alluvial fan, and mudflow sediments emanating from the Santa Monica Mountains via Benedict Canyon Wash and its tributaries.

fragments, and forming oxidation-reduction banding; gravel consist of subrounded to subangular fragments of siltstone and slate. At depth, unit includes abundant calcium carbonate in the form of specks, filaments, horizontal layers, and coatings on ped faces; color changes to grayish brown, gray, and blue green reminiscent of the Lomita Marl; iron oxide staining along layers and locally on ped faces. Unit has been modified by soil-forming processes, with pedogenic characteristics, including clay films on ped faces and moderate to strong angular blocky soil structure, observed at several intervals, including directly at or below its contact with the overlying Benedict Canyon Wash deposits. Terrestrial deposit consisting of fluvial and alluvial sediments derived from the San Pedro Formation deposited over a long period of time, with depositional hiatuses that allowed for soil development.

Quaternary San Pedro Formation (Qsp): Sand with scattered gravel; few silty to clayey laminations; yellow, olive brown to reddish orange brown; loose to hard; dry near upper contact, becoming moist to wet at depth; sand fraction consists of fine to coarse, well-rounded quartz grains; scattered bi-valve shell fragments. Transitional terrestrial to marine unit deposited in a wave-dominated (beach) environment.

This unit was exposed at the surface for thousands of years before it was buried by the Pleistocene alluvium of Benedict Canyon Wash.

— TT TT TT TT Denotes poor to well developed soil structure ——?—— Geologic contact, dashed where approximate, querried where uncertain

Rock Clasts

SILT with proportional amounts of clay

and sand (ML, ML-CL)

CLAY with proportional amounts of silt and/or sand (CL, CL-ML) Clayey SAND (SC)

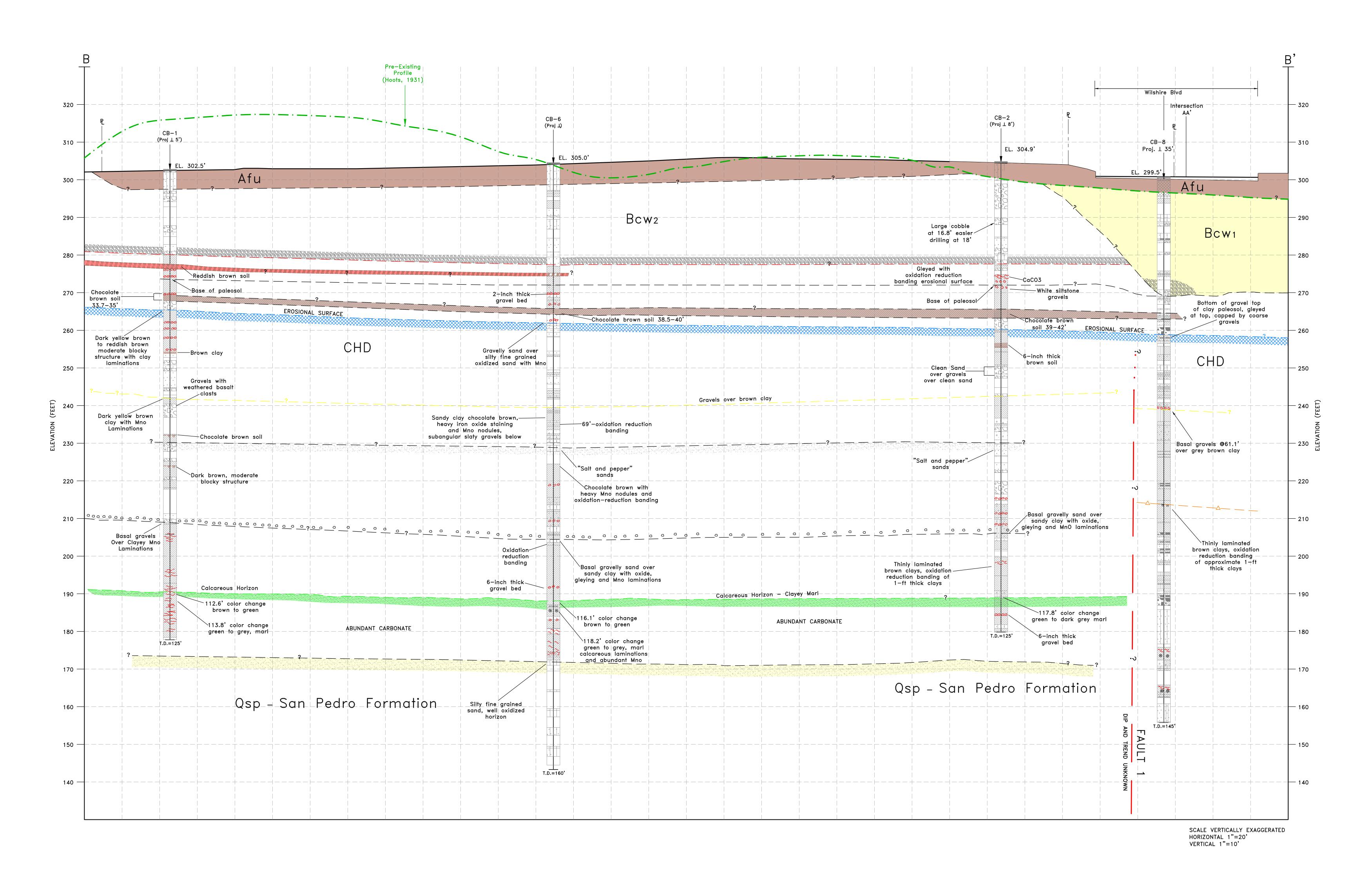
SAND (SP) GRAVEL with varying proportions of silt and sand (GP-GM)

GRAVEL with CLAY (GC) NO RECOVERY

PLATE 2 GEOLOGIC CROSS SECTION A-A' EL RODEO 605 WHITTIER DRIVE BEVERLY HILLS, CALIFORNIA Eng/Geol: TCB/JAR

Date: 02/2015

Scale: 1"=10'



EXPLANATION CaCO₃ stringers and along soil faces as vertical deposits — TT TT TT TT Denotes poor to well developed soil structure —?— Geologic contact, dashed where approximate, querried where uncertain Fault contact, dashed where approximate, querried where uncertain, arrows denote inferred direction of movement CLAY with proportional amounts of silt and/or sand (CL, CL-ML) CLAYEY SAND (SC) SILT with proportional amounts of clay and sand (ML, ML-CL) Silty SAND (SM) GRAVEL with varying proportions of silt and sand

GRAVEL with CLAY (GC)

No Recovery (N/R)

UNIT DESCRIPTIONS:

Artificial Fill, Undocumented (Afu): Locally derived sandy silt and silty sand, locally with clay and varying amounts of gravel and man-made debris. Abundant concrete rubble, in places exceeding 24-inches in diameter, observed in the backfill of Moreno Creek drainage in trenches FT-1 and FT-2. Localized seepage along root traces observed in backfill along southern sidewall of trench FT-1 and near storm drain inlet of trench FT-2. In Cross-Sections A-A' and B-B', this unit includes the section not logged from the auger spoils and the hand-augered section at the top of the CPTs.

Modern and Holocene Alluvium in Historical Channel of Moreno Creek (Qw): Silty sand to clayey sand grading to sand at depth, with minor gravel and thin gravel beds; light yellowish brown, brown to dark reddish brown; massive to crudely stratified; small fragments of asphalt observed locally in

Holocene Alluvium of Benedict Canyon Wash (Qal): Sandy clay to clayey sand grading laterally to silty sand to sand with silt; coarsening downward near the thalweg of the channel to sand with gravel, sandy gravel or gravelly sand; brown, dark yellowish brown, dark brown to reddish brown; locally laminated; gravel consist of fine- to coarse-grained subangular to subrounded fragments of siltstone and slate; few to common manganese oxide and iron oxide stains; few roots.

Pleistocene Alluvium of Benedict Canyon Wash (BCW1): Sandy clay, clayey sand, sand with clay, and silty sand with clay, grading laterally to silty sand and sand with silt; near the channel centerline, deposit coarsens downward to gravelly sand to clayey sand with gravel; dark yellowish brown, brown, dark brown to reddish brown; mottled; locally gleyed; slightly moist to moist; massive to thinly laminated; few to many scattered gravel that consist of subangular to subrounded and tabular fragments of siltstone, slate and weathered basalt. Terrestrial deposit consisting of fluvial, alluvial fan, and mudflow sediments emanating from the Santa Monica Mountains via Benedict Canyon Wash and its tributaries.

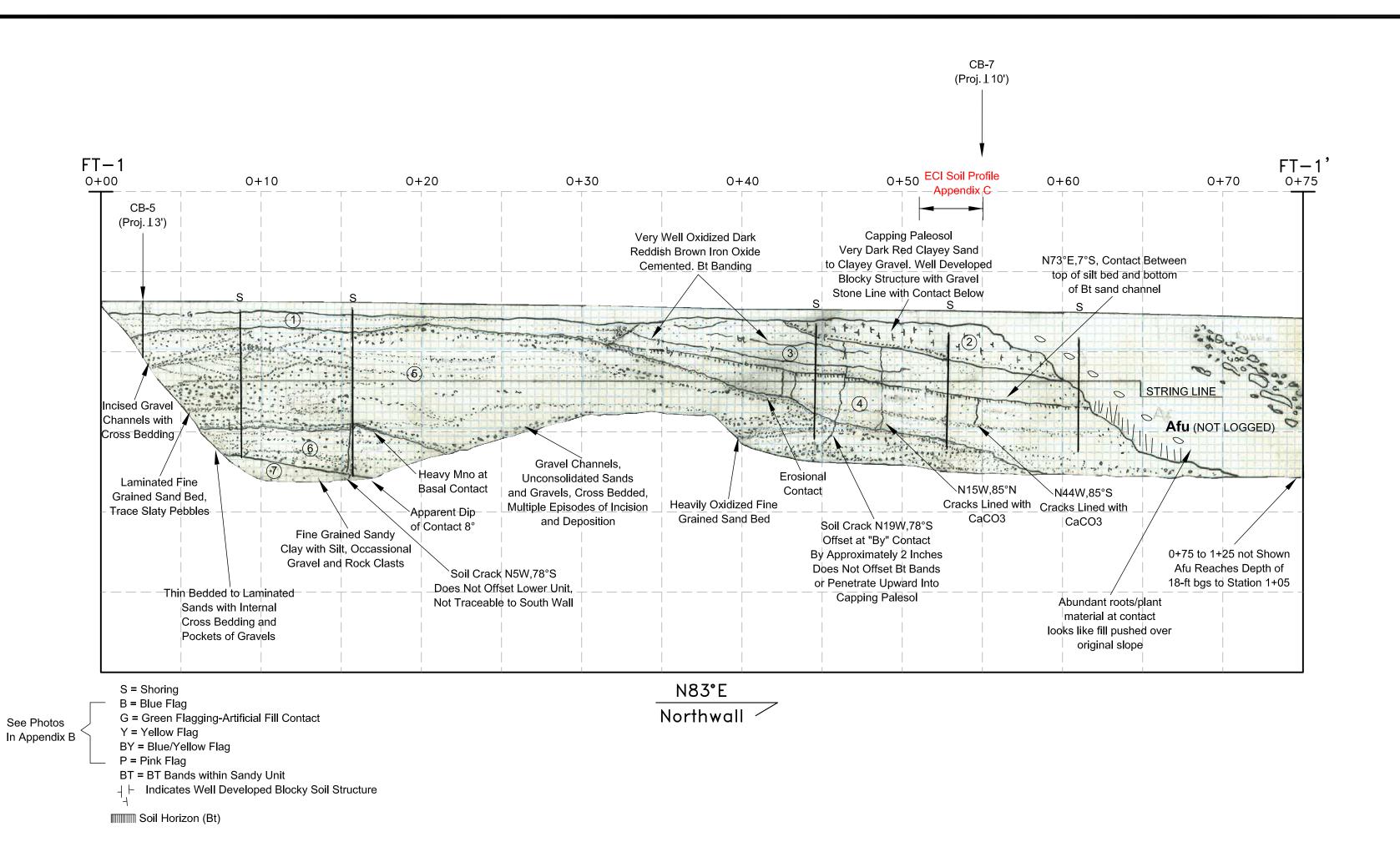
Pleistocene Alluvium of Benedict Canyon Wash (BCW2): Sandy clay, clayey sand and silty clay grading laterally to silty sand to sand with silt; with lenses and interbeds of sandy gravel; coarsening downwards to a basal channel deposit of sand, gravelly sand and gravel; dark grayish brown, reddish brown, very dark brown, and dark yellowish brown; locally mottled and/or gleyed; oxidation-reduction banding; iron oxide and manganese oxide stains common on rock clasts and along basal channel contact; gravel consist of fine- to medium-grained subrounded to subangular fragments of siltstone, slate, basalt and quartz. Unit is characterized by moderate to well-developed paleosols with many moderately thick to thick clay films on ped faces and moderate to strong angular blocky soil structure. Distinctive erosional contact with underlying Cheviot Hills deposits.

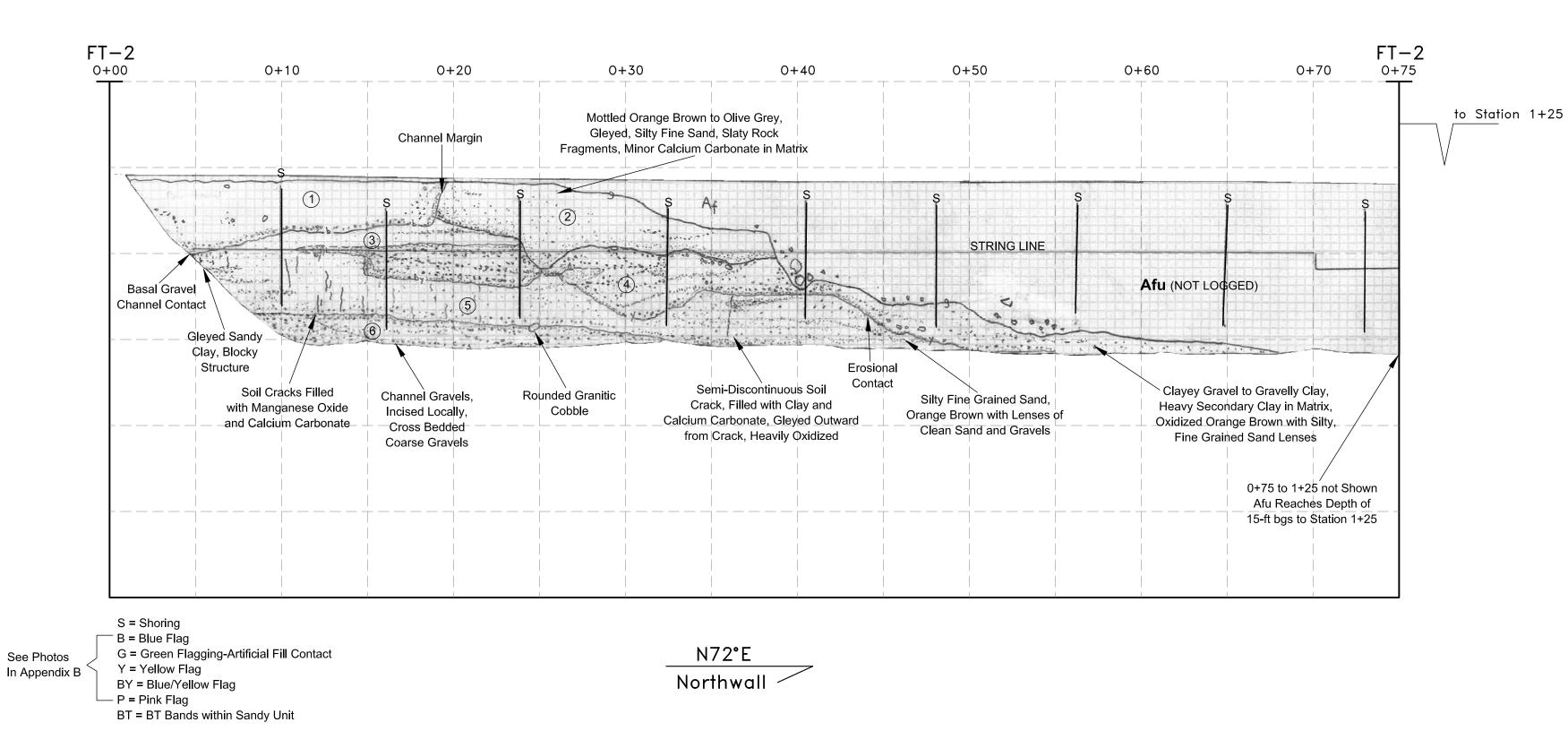
Pleistocene Cheviot Hills Deposits (CHD): Sandy clay, clayey sand, and silty clay; with thin silty sand and gravel layers and beds; brown, reddish brown, brown, and grayish brown; locally gleyed; moist to wet along sand beds; manganese oxide stains, streaks and nodules; iron oxide stains on rock fragments, and forming oxidation-reduction banding; gravel consist of subrounded to subangular fragments of siltstone and slate. At depth, unit includes abundant calcium carbonate in the form of specks, filaments, horizontal layers, and coatings on ped faces; color changes to grayish brown, gray, and blue green reminiscent of the Lomita Marl; iron oxide staining along layers and locally on ped faces. Unit has been modified by soil-forming processes, with pedogenic characteristics, including clay films on ped faces and moderate to strong angular blocky soil structure, observed at several intervals, including directly at or below its contact with the overlying Benedict Canyon Wash deposits. Terrestrial deposit consisting of fluvial and alluvial sediments derived from the San Pedro Formation deposited over a long period of time, with depositional hiatuses that allowed for soil development. This unit was exposed at the surface for thousands of years before it was buried by the Pleistocene alluvium of Benedict Canyon Wash.

Quaternary San Pedro Formation (Qsp): Sand with scattered gravel; few silty to clayey laminations; yellow, olive brown to reddish orange brown; loose to hard; dry near upper contact, becoming moist to wet at depth; sand fraction consists of fine to coarse, well-rounded quartz grains; scattered bi-valve shell fragments. Transitional terrestrial to marine unit deposited in a wave-dominated (beach) environment.



GEOLOGIC CROSS-SECTION B-B' 605 WHITTIER DRIVE BEVERLY HILLS, CALIFORNIA Eng/Geol: TCB/JAR Proj: 10274.006 Scale: Vertical: 1"=10'
Horizontal: 1"=20'





Earth Units-FT-1: Pleistocene Alluvium of Benedict Canyon Wash (BCW₁)

1-Silty SAND (SM) with clay, 10YR 4/4, dark yellowish brown, thinly bedded fine gravel to massive sandy matrix, predominately fine grained subangular frosted quartz sand grains, slaty fine pebbly gravel with oxidation rimming of flattened, tabular slate fragments.

2-Sandy CLAY to Clayey SAND (CL-SC), 7.5YR 4/3 to 10YR 3/4, brown to dark brown, very fine grained sand with slaty rock fragments, well developed ped faces, blocky structure, oxidized quartz sand grains and clay development along ped faces and in pores. Basal fine gravel line in sandy clay matrix. Calculated minimum age of 34k (ECI Appendix C), but estimated to be >100ka.

3-Silty SAND to SAND (SM-SP), 10YR 4/6, dark yellowish brown, fine grained subangular to subrounded quartz and slaty sand grains.

Contains interbedded and oxidized sandy laminations cemented with iron oxide. Most quartz grains display frosted or oxidized surface, minor clear quartz sand size grains included.

4-Sandy SILT to Silty SAND with Clay (ML-SM),10YR 5/4, yellowish brown to brown, windblown silt in upper portion, very fine grained

massive subangular sand with secondary clay to fine gravely interbeds, iron oxide coating of quartz and grains and pores, lower portion becomes Gravelly SAND to Sandy GRAVEL (SP-GP), 10YR 3/4 to 10YR 5/4, dark yellowish brown to brown, fine to coarse grained,

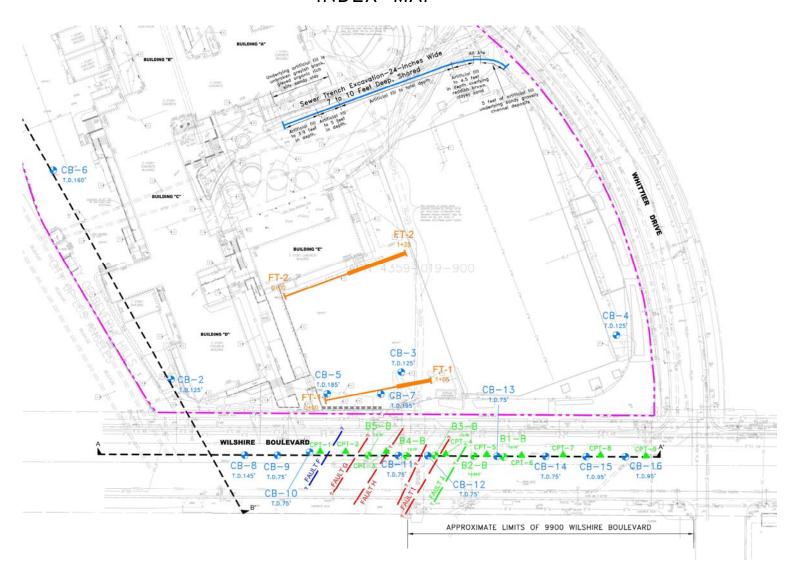
frosted to clear, subangular to subrounded quartz sand grains, fine to coarse weathered, flattened and tabular slaty gravels with highly weathered manganese oxide stained siltstone rock clasts.

5-Silty GRAVEL to Sandy GRAVEL (GM-GP), 10YR 5/3 to 5/4, brown to yellowish brown, main channel deposit, interbedded gravel and sand, cross bedded to very fine laminations, fine to coarse grained clear to frosted quartz sand grains, fine to coarse flattened, tabular slaty and siltstone gravels, severely weathered basalt fragments, patchy manganese oxide rimming of siltstone rock fragments. Heavy manganese oxide development at basal contact with lower unit No. 6.

6-Silty SAND (SM) with clay, 10YR 4/3 to 7.5YR 4/3, brown to dark brown, very fine grained subangular to subrounded quartz sand grains and occasional slaty gravel, gleyed.

7-Sandy CLAY with Silt (CL-ML), 10YR 5/2, dark greyish brown to brown, fine grained subrounded to subangular quartz sand grains, occasional gravel and severely weathered slaty and siltstone rock clasts.

INDEX MAP



Earth Units-FT-2: Pleistocene Alluvium of Benedict Canyon Wash (BCW₂)

1-Sandy Silty GRAVEL (GP-GM), 10YR 4/1 to 10YR 4/5, grey to dark grey, fine to coarse grained, subrounded to subangular, heavily oxidized quartz sand grains, weathered slaty rock fragments, dull grey on weathered surface to dark greyish black on fresh, severely weathered siltstone displaying oxidation along interior laminations with oxide rimming of outer clast surfaces. Abundant secondary clay, gleying in matrix.

2-Sandy SILT with Clay (ML-CL), 2.5YR 5/3, olive brown, upper unit, very fine grained subangular to subrounded sand grains, gleying of matrix, lower unit becomes Silty SAND (SM), 10YR 5/6, dark yellowish brown, fine grained subrounded quartz sand, flattened and weathered siltstone and slaty sand grains, iron oxide coating of fine gravel sized siltstone clasts, trace of severely weathered and oxidized sand size basalt fragments.

3-Silty CLAY (CL), 10YR 5/3, brown, very fine grained sand, porous, 1-2mm voids with CaCO3 lined pores, gleyed along ped faces.

4- Sandy GRAVEL (GP-GM), 10YR 5/6 to 10YR 3/3, yellowish brown to dark brown, fine to coarse subrounded to subangular sandy matrix supporting subangular to subrounded fine to coarse gravels, severely weathered equigranular granitic clasts, oxidized and decomposing basalt fragments with silica veined slaty rock fragments in well defined channel. Contains small cobbles. Becomes clayey gravel to gravelly clay with increasing distance from main channel.

5-Sandy SILT with Clay (ML) to Sandy CLAY (CL), 10YR 3/3 to 5YR 3/4, dark brown sandy silt to dark reddish brown sandy clay, very fine grained, gleyed with subangular clear and oxidized quartz sand grains. Porous with manganese oxide lining of 1 to 3 mm pores and 80:1 Cracks.

6-Sandy GRAVEL with Clay (GC), 10YR 4/4, dark brown to dark yellowish brown, fine to medium grained subrounded siltstone and oxidized quartz sand grains, fine to coarse slaty, tabular gravels. Locally incised with cross bedded coarse gravels

FAULT TRENCH LOGS FT-1 AND FT-2

EL RODEO GEOHAZARDS

 Scale: 1"=50'
 Date: 02/2015

 Drafted By: BQT
 Checked By: BQT
 P:DRAFTING/10274/006/0F_2015-02-04/10274-006-PLATE-4 FT.DWG (03-02-15 1:16:32PM) Plotted by: btran



PLATE A-1