APPENDIX H ASBESTOS SAMPLING REPORT

Project No. E15056.001
27 February 2018

R.A. Home Investments, LLC.
1101 Fulton Avenue, Suite 204
Sacramento, California 95825

Attention: Mr. John Kinne

Subject: **PILGRIM ROCK QUARRY – NOA ASSESSMENT**
Results of Assessment of Naturally Occurring Asbestos

References: Attached as Section 9.0

Dear Mr. Kinne:

With your authorization, Youngdahl Consulting Group, Inc. (YCG) completed an assessment for naturally occurring asbestos (NOA) for the Pilgrim Rock Quarry located off Moriah Heights Road in Plymouth, California. Six (6) half split rock core samples were collected from the site and analyzed for asbestos by the California Air Resources Board Test Method 435 (ARB TM 435). The rock core samples were collected from the Gopher Ridge Volcanics Formation. The test results for all six (6) samples reported non-detect (ND) for NOA.

A California professional geologist (PG), performed an evaluation on 24 January 2018 and identified that the project area is underlain by Gopher Ridge Volcanics, Ione Formation, and Salt Springs Slate . The Gopher Ridge Volcanics has been known to contain NOA faulted areas of Folsom area. YCG did not identify any visible structural geologic or faulting features that might be indicative of a high likelihood of NOA at the proposed Pilgrim Rock Quarry.

If you have any questions regarding this assessment, please do not hesitate to contact us at (916) 933-0633.

Very truly yours,
Youngdahl Consulting Group, Inc.

Kenneth A. Williams, P.G., QSD
Project Geologist

Distribution: 1 Copies to client

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Pilgrim Rock Quarry NOA Assessment
Plymouth, Amador County, California
Assessment for Naturally Occurring Asbestos

1.0 INTRODUCTION

At the request of John Kinne and as part of a response to comments from Amador County's review of a reclamation plan for the subject project, Youngdahl Consulting Group, Inc. (YCG) completed an assessment for naturally occurring asbestos (NOA) for Pilgrim Rock Quarry. The purpose and scope of work was to evaluate if NOA is present in the soil in a manner which could potentially result in a health risk during and after site improvements. The scope of work included the collection of representative soil samples from surface materials at the project site. Six (6) soil samples were collected and submitted to an accredited laboratory. All of the samples were tested for asbestos by California Air Resources Board Test Method 435 (ARB TM 435). No asbestos was detected in any of these samples.

1.1 Regulatory Issues

Asbestos is classified by the USEPA as a known human carcinogen and has been identified as a potential health hazard. Western El Dorado County has, in recent years, been closely scrutinized regarding areas that potentially contain NOA. The California Geological Survey published a map in 2000 (Open File Report 2000-02) that qualitatively indicates the likelihood for NOA in Western El Dorado County. This map was used as a basis for a recently published map by the El Dorado County Environmental Management District which identifies areas for NOA investigation. The map outlines rock types and geologic features more likely to contain asbestos and includes a quarter-mile buffer around these areas (http://www.co.el-dorado.ca.us/emd/apcd/PDF/Map.pdf). The subject site is included within an area for NOA review.

The nearest known potential sources of amphibole asbestos were located approximately 4½ miles east of the site within the Copper Hill Volcanics Formation. Low levels of amphibole asbestos have been identified in the City of Folsom within the Copper Hill Volcanics and Gopher Ridge Volcanics Formations south of Folsom. It is YCG's opinion that these low levels of amphibole asbestos are associated with hydrothermal alteration of the metavolcanic rocks. Our main goal was to determine whether the Gopher Ridge Volcanics Formation contains asbestos detectable by ARB TM 435.

The USEPA regulates two basic types of asbestiform minerals, chrysotile and amphibole. Chrysotile asbestos is most commonly associated with serpentinites. Amphibole asbestos is commonly found to be associated with faults and shear zones. It can be found in association with serpentinites, talc (soapstone), and as a hydrothermal fracture filling associated with shear zones.

When NOA is present, additional regulatory requirements may be triggered. The purpose of this evaluation was to determine if NOA is present in a form that would trigger these additional regulatory requirements. These requirements include the California Air Resources Board ATCM, Title 17, Section 93105.

1.2 Environmental Setting

The primary exposure pathway for asbestos is through inhalation of dust containing asbestos fibers. The direct ingestion of soil containing asbestos is not considered to be a significant exposure pathway for asbestos.

There are numerous ways in which dust can be generated. In general, dust suppression methods outlined by the California Environmental Protection Agency (EPA) have varying degrees of effectiveness in reducing the risks from exposure to dust containing asbestos. At

this time, it is very difficult to directly quantify health risks based on asbestos concentrations in soil and rock because asbestos must become airborne to become a hazard and the potential amount of airborne dust cannot easily be estimated from a given soil concentration.

2.0 REGIONAL GEOLOGIC SETTING

The site is located at the foot of the Sierra Foothills region of the Sierra Nevada Mountain Range. According to the 1:250,000 scale Sacramento Quadrangle of the California State Geology map and the 1:24,000 scale Sutter Creek Quadrangle of Amador and Calaveras Counties, the project site is underlain by metavolcanic rocks of the Jurassic Gopher Ridge Volcanics (Jgo), Jurassic Salt Springs Slate (Jss) the Tertiary Ione (Ti) (Wagner and others, 1981). Weathering of these bedrock materials and sedimentary deposits has contributed largely to the overburden soils on the subject site.

According to the Fault Activity Map of California and Adjacent Areas (Jennings, 2010) and the Peak Acceleration from Maximum Credible Earthquakes in California (CDMG, 1992), no active faults or Earthquake Fault Zones (Special Studies Zones) are located within the project site. No evidence of recent or active faulting was observed during our field study. The nearest mapped faults to the site are related to the Bear Mountains and Melones Fault Zones located 14 and 6.5 kilometers east of the site respectively. The nearest mapped active fault to the site is the Dunnigan Hills fault located about 80 kilometers to the northwest.

The Soil Survey of Amador County (1965) indicates that the subject property consists of
The United States Department of Agriculture Soil Conservation Service/Natural Resources Conservation Service (USDA/NRCS) conducted soils mapping in the project area in 1992. Figure 3 presents a satellite photo overlain with the USDA/NRCS soil map of the area including the Pilgrim Rock Quarry site and near vicinity. The five soil units identified within the Pilgrim Rock Quarry phase area are described in the following as per USDA/NRCS: None of the soil types below are listed as prime farmland.

Auburn Very Rocky Silt Loam, 3-31 percent slopes (AsD): The Auburn series consists of shallow, well drained soils that formed in material weathered from amphibolite schist, greenstone schist, and diabase. These soils are typically located on sideslope or backslopes of hills ranging from 3 to 31 percent. The soil is well drained; slow to rapid runoff; and has very low storage capacity. Typically, the surface layer and the upper part of the subsoil are an approximate 14-inches thick, strong brown to yellowish red silt loam. The lower part of the subsoil to a depth of 24 inches is typically pale brown. Permeability of the soil is moderately high and runoff is very high, therefore the hazard for erosion is severe.

Mine Tailings and Riverwash (Mn): The Mine Tailings and Riverwash series consists of gravelly coarse sand to extremely gravelly coarse sand and gravelly sand. The parent material is usually alluvium devoid of any significant amount of fines. Typically, this unit is found in drainageways and runoff is very rapid. With little to no storage capability, this soil unit has high to very high transmissivity.

Mokelumne Sandy Loam, 2-5 percent slopes (MrB): The Mokelumne series consists of moderately deep and well or moderately well drained soils formed in hillslope alluvium underlain by material weathered from sandstone and weakly consolidated clayey marine sediments. Mokelumne soils are on dissected terraces, hills, sideslopes of terrace remnants and in swales. In general, the soil is profile is approximately 5 feet thick above weathered bedrock. This soil being primarily clayey in nature, has a low to moderately low transmissivity and could store up to 6.5 inches of water within the profile. Runoff potential is very high.

Red Bluff-Mokelumne Complex, 5-16 percent slope (RbD): The Red Bluff-Mokelumne complex consists of 60% Red Bluff, 25% Mokelumne, and 15 % various soil types from the surrounding vicinity. The complex consists of soil derived from metamorphic and sedimentary rock. Generally, soil tends to be a gravelly loam/clay to a gravelly sandy loam or clay. The natural drainage features are well drained to moderately well drained with the runoff class being high to very high. At approximately 5 feet below ground surface a cemented horizon or bedrock may be encountered. Water storage ranges from very low to low. Water capacity is moderately high to very low. The water table is typically greater than 7 feet.

Red Bluff-Mokelumne-Mine Pits Complex (RmD): Same as above with the exception of mine pits as follows. Mine pits have a highly variable profile to 5 feet below ground surface and are typically depressions.

Sedimentary Rock Land, (Sa): This series is entirely unweathered sedimentary bedrock from ground surface to 5 feet below ground surface. It is excessively drained, very high runoff class, and very low to moderately high capacity, but no water storage observed in the profile.

3.0 METHOD OF INVESTIGATION

The methods for our investigation included site observations for NOA and visible geologic or faulting features that would be indicative of a higher likelihood for NOA. The following describes the tasks completed during our investigation of the subject property:

A California Professional Geologist (PG) reviewed all published works pertaining to the geology of the subject property. The published works reviewed were:

- 1:250,000 scale Map Sacramento Quadrangle (Wagner and others, 1981);
- Mineral Land Classification of the Sutter Creek 15 Minute Quadrangle, Amador and Calaveras Counties, California (CDMG: R.C. Loyd, et. al., 1983, OFR 83-36); and
- YCG representatives completed a draft geologic map of the subject property by performing geologic mapping of the site, compiling data from published geologic maps and correlating that information onto a base topographic map provided by Toma and Associates, Inc;
- Sampling locations and depths were selected to provide representative samples of the geologic cross section of proposed mining. The number of samples to be collected based on the information provided from the geologic mapping; and

3.1 Sampling Activities

On 27 January 2018, a project geologist sampled 6 borings at varying depths to secure rock samples and assess for conditions indicative of NOA. The cores were completed during the prior two years during our subsurface exploration program. One (1) rock samples were collected from of each of the six borings to test for NOA by the California Air Resources Board Test Method 435 (ARB TM 435) to a quantification limit of 0.25%. A split of the rock cores were kept in an archive as a duplicate of the tested samples for future testing as necessary. The samples analyzed were representative of the materials that would be encountered during construction activities at the proposed project site.

Subsurface conditions observed in rock cores are presented graphically on the Exploratory Boring Logs, Figures A-3 through A-18, and Exploratory Boring Log Explanation, Figure 19. These logs show a graphic interpretation of the subsurface profile and the location and depths at which samples were collected. No obviously visible indications of NOA were observed during the field investigation.

4.0 SITE DESCRIPTION AND CONDITIONS

The Pilgrim Rock Quarry site encompasses approximately 369 +/- acres comprised of two parcels; the largest being located at 200 South Highway 16, and the smallest being located in the 1700 block of Long Gate Road, Plymouth, California. Generally, it is approximately 5.5 miles southeast of the community of Rancho Murieta, Sacramento County and approximately 8.5 miles northwest of Ione, in Amador County, California. Figure 1 shows the site location and near vicinity.

Site topography is characterized by gently rolling terrain throughout the central, southern, eastern, and northern portions of the property. The western portion of the property is characterized by several drainages which moderately drain to the northwest while the eastern portion of the project generally drains to the south west. A major ridge trending in a northwest direction borders the eastern property line is the high point of the project site. Various small northwest trending ridges generally slope down toward the drainages described above. The total vertical relief across the site varies from 240 to 472
feet.
Presently, both parcels of the site are relatively undeveloped except for several unimproved ranch roads traversing the property and gated to prevent uncontrolled use. In total, the project proponents propose developing 120 of the 369 acres. Ingress and egress to the site will be clearly marked and documented for pre-mining and post-mining uses.

Nearly the entire site is undeveloped and densely by covered brush and isolated areas of oak and pine trees. Portions of which were previously mined; previously disturbed areas, including old mine shafts and mine tailings, are primarily concentrated in the southern and southwestern portions of the site, and not within the proposed phases of development. A few temporary structures and outbuildings are present in the northwestern portion of the site. Areas surrounding the study area are mainly relatively undeveloped densely vegetated rural residential properties intermittently used for cattle grazing or bee keeping. An existing quarry operation is contiguous to the northern boundary of the eastern 40 acres parcel and is owned and operated by Teichert Aggregates, Inc.

4.1 Geologic Mapping

Following is a discussion of the main geologic formations present in the project area. In general, the underlying geology can be described as:

- Ione Formation;
- Gopher Ridge Volcanics,
- Salt Springs Slate

Ione Formation

The Ione Formation is generally described as a highly variable Tertiary age unit consisting of medium-grained quartz sandstone with thick beds of white to red clay and blue to gray clay with lignite (Ford, 1974). Within the project area, the Ione Formation consists of brownish red silty SAND with some gravel and traces of clay. The gravels are composed chiefly of rounded milky quartz and rounded metavolcanic clasts (0.5-5 inches). Pockets of quartz boulders were observed in isolated areas. The unit typically occurs as a thin veneer of weathered soil and gravel on the flanks of slopes and in flat areas with bedrock outcrops of Gopher Ridge Volcanics exposed through erosional windows.

Gopher Ridge Volcanics

This Jurassic-age unit is a medium gray, tan to pale green METAVOLCANIC rock, closely to very closely fractured, fresh to slightly weathered, and well indurated. Generally, the Gopher Ridge Volcanics observed at the project site contains a well-developed joint set that strikes 20 –

30 degrees west of north and dips 75 – 90 degrees northeast and southwest, roughly parallel to the orientation of the ridges in the area. This unit forms blocky, resistant outcrops and is often found on hilltops and ridges; being a major ridge-forming unit.

Salt Springs Slate

Black Sericite slate is the dominant lithology but greywacke and tuff are widespread, and thin conglomerate layers occur locally (Clark, 1964). Late Oxfordian to early Kimmeridgian in age based on invertebrate fossils collected along Consumnes River. Plesiosaur fossil reported from Salt Spring Slate at Lake McClure south of the Quadrangle (Clark, 1964).

5.0 RESULTS OF INVESTIGATION

5.1 Results of Laboratory Analysis

The sampling information is provided in Table 1. The samples were sent by overnight delivery under chain of custody rules to Forensic Analytical of Hayward, California (ELAP No. 1202). The six (6) samples were analyzed for asbestos using the ARB TM 435 method. The California Air Resources Board reports a detection limit of 0.25% for ARB TM 435. Asbestos was not detected in any of the samples.

5.2 Results of QA/QC Procedures

An archive duplicate of each soil sample was obtained. The archive duplicate samples will be retained for further additional analysis if necessary and will be stored for a period of 1 year.

Table 1 - Sample Collection Information

Sample Identification	Asbestos CARB TM 435	Description
B-1	Non Detected	~85'6" - 86'; Gopher Ridge Volcanics
B-2	Non Detected	~19'2" – 20'0"; Gopher Ridge Volcanics
B-3	Non Detected	~96'0" – 96'8"; Gopher Ridge Volcanics
B-4	Non Detected	~24'6" – 25'0"; Gopher Ridge Volcanics
B-7	Non Detected	~17'0" -17'8"; Gopher Ridge Volcanics
B-8	Non Detected	~92'6" – 93; Gopher Ridge Volcanics

ND = None Detected
ARB TM 435, Limit of Quantification = 0.25%

6.0 RECOMMENDATIONS

Asbestos was not identified in any of the samples using the ARB TM 435; therefore, a site specific Asbestos Dust Hazard Mitigation Plan (ADMP) or (ADHMP) will not be required by the Amador Air District for site excavation activities. However, YCG recommends that the excavation contractors working on the Pilgrim Rock Quarry site observe for rocks or soil with visible fibrous minerals during construction. If fibrous minerals are observed, work should stop in that area and YCG should be contacted immediately to perform a geologic evaluation. Earthwork contractors should be made aware of OSHA rules regarding work in soils with asbestos. If you would like a copy of the OSHA rules, ASTM requirements, ARM TM 435 Guidelines, or any other guidance document mentioned in our report, we will be happy to provide those upon request.

7.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. This report has been prepared for the exclusive use of R. A. Home Investments, LLC and their consultants, for specific application to the Pilgrim Rock Quarry project. Youngdahl Consulting Group, Inc. has endeavored to comply with generally accepted environmental geology practice common to the local area. Youngdahl Consulting Group, Inc. makes no other warranty, express or implied.

2. As of the present date, the findings of this report are valid for the property studied. With the passage of time, changes in the conditions of a property can occur whether they are due to natural processes or to the works of man on this or adjacent properties. Legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may cause this report to be invalid, wholly or partially. Therefore, this report should not be relied upon after a period of three years without our review nor should it be used or is it applicable for any properties other than those studied.

3. The analyses and recommendations contained in this report are based on limited windows into the subsurface conditions and data obtained from subsurface exploration. The methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. Should any variations or undesirable conditions be encountered during the development of the site, Youngdahl Consulting Group, Inc. will provide supplemental recommendations as dictated by the field conditions.

8.0 REFERENCES

1. Loyd, R.C., et. al., (1983) Mineral Land Classification of the Sutter Creek 15-minute Quadrangle Amador and Calaveras Counties, California Department of Conservation, Division of Mines and Geology, (Open File Report 83-36).

2. Churchill, R.K. and others, (2000): "Areas More Likely To Contain Natural Occurrences of Asbestos in Western El Dorado County, California", California Department of Conservation, Division of Mines and Geology, Open File Report 2000-002.

3. Jennings, C.W., (2010), Fault Activity Map of California and Adjacent Areas, Geologic Data Map No. 6, California Division of Mines and Geology.

4. Loyd, R.C., et. al., (1983) Generalized Geology Map of the Sutter Creek 15-minute Quadrangle Amador and Calaveras Counties, California Department of Conservation, Division of Mines and Geology, 1:48,000 scale (Open File Report 83-36).

5. Mualchin, L., and Jones, A.L. (1992): "Peak Acceleration from Maximum Credible Earthquakes in California (Rock and Stiff-Soil Sites)", DMG Open-File Report 92-1, (Prepared for Internal Use by Caltrans), California Department of Conservation, Division of Mines and Geology.

6. U.S. Department of Agriculture (USDA) Soil Conservation Service: "Soil Survey of Amador County, California", (1963).

7. Wagner, D.L., and others, (1981): "Geologic Map of the Sacramento Quadrangle - Map No. 1A (Geology), Regional Geologic Map Series, 4 Sheets, California Department of Conservation, Division of Mines and Geology, Scale 1:250,000.