

Project No.  
**12165.000.002**

April 5, 2019

Mr. Tim Steele  
The Sobrato Organization  
10600 N. De Anza Boulevard, Suite 200  
Cupertino, CA 95014

Subject: Sobrato Property - Area 4  
7200 Stevenson Boulevard  
Newark, California

## SUMMARY OF EARTHWORK AND IMPORT FILL RECOMMENDATIONS

Dear Mr. Steele:

As requested, we prepared this letter to evaluate whether any changes to the project or the circumstances, or new information identified in the technical report listed below would result in a changed evaluation of impacts or mitigation measures discussed in the 2015 *Newark Areas 3 and 4 Specific Plan Project Recirculated EIR (2015 REIR)*, for the Sobrato Property Area 4 project. As discussed below, the conclusions and recommendations of the following report are consistent with the conclusions and recommendations in the REIR:

- ENGEO; Preliminary Earthwork and Import Fill Recommendations, Sobrato Property - Area 4, Newark, California; Project No. 12165.000.002; October 19, 2018.

We identified no new impacts and no new mitigation measures are required.

The Site is bounded by Union Pacific Railroad tracks on the northeast, an Alameda County Flood Control canal on the northwest and southeast, and Mowry Slough on the southwest. The Vesting Tentative Map (VTM) prepared by Carlson, Barbee, & Gibson, Inc. (CBG) dated September 17, 2018, shows that the property will be subdivided into 469 residential lots, three park parcels, and four boardwalk overlooks. Overall, the density of the development will be 2.6 dwelling units per acre. No development is planned within the existing wetlands areas. Four bridges are proposed as part of the street system, including a bridge extending Stevenson Boulevard over the existing Union Pacific Railroad on the north portion of the site. We understand that bridges will be designed to cross existing wetland areas and abutments for the bridges that will be located outside of the wetland areas, avoiding the need for wetland fill.

## EARTHWORK AND IMPORT FILL MITIGATION MEASURES

### Environmental Remediation

Previous investigations conducted at the site identified toxaphene impacts in the shallow soil and approximately 5,000 cubic yards of Class 1 hazardous material (DDD/DDE/DDT) exceeding 1 milligram per kilogram (mg/kg) in a small area in the northern portion of the site. Prior to grading, impacted soil identified in the Earthwork Report will be removed or treated, as required by Mitigation measure HAZ-3.1 identified in the 2015 REIR.

The toxaphene-impacted soil (Class II material) may be treated or encapsulated on site. Consistent with REIR Mitigation measure HAZ-3.1, Class I hazardous material located in the northern extent of the development site will be excavated and transported to an appropriate facility for disposal. We will then conduct confirmation sampling to verify removal of impacted soil.

The need for remediation and recommendations for how to remediate the property as identified in our Preliminary Earthwork and Import Fill Recommendations are consistent with the REIR identified impacts and mitigation measures. We have identified no new impacts and no new mitigation measures are required.

### Earthwork

Upon completion of environmental remediation, consistent with REIR mitigation measures HAZ-3.1, GEO-1.1, and GEO-2.1, our preliminary referenced report recommends that the development area should be cleared of vegetation and obstructions, including existing abandoned concrete structures and buried utilities. Existing underground utilities at the site should be properly abandoned or relocated. If loose and deleterious materials are present, the materials should be removed and the area should be backfilled with engineered fill, consistent with REIR mitigation measure HAZ-3.1 and the project description, which proposes to import fill to the residential areas to raise them out of the designated 100-year floodplains. Maximum fill depths will range from 14 to 16 feet, and fill will be sourced from local major construction projects.

Regarding encapsulation of in-situ toxaphene-impacted soil, our previously referenced report recommends that we meet with DTSC to discuss encapsulation pursuant to REIR mitigation measure HAZ-3.1. We anticipate approximately 35,000 cubic yards of the toxaphene-impacted soil can be placed outside of residential lots, such as bridge embankments, roadways, and perimeter fill.

The recommendations identified in our previously referenced report are intended to implement REIR mitigation measures HAZ-3.1, GEO-1.1, and GEO-2.1. The findings identified in our report are consistent with the findings of the REIR and will not result in any impacts or mitigation measures not identified in the REIR.

### CLOSING

If you have any questions or comments regarding this letter, please call.

Sincerely,

ENGEO Incorporated

  
Jonas Bauer, EIT

  
Jeff Fippin, GE

  
Yan Lap Janet Kan, GE, CEG



Project No.  
**12165.000.002**

October 19, 2018

Mr. Tim Steele  
The Sobrato Organization  
10600 N. De Anza Boulevard, Suite 200  
Cupertino, CA 95014

Subject: Sobrato Property - Area 4  
7200 Stevenson Boulevard  
Newark, California

## PRELIMINARY EARTHWORK AND IMPORT FILL RECOMMENDATIONS

- References:
1. ENGEO; Preliminary Geotechnical Exploration, Sobrato Property - Area 4, Newark, California; Project No. 12165.000.002; April 5, 2018.
  2. ENGEO; Phase II Environmental Site Assessment, Sobrato Property - Area 4, Newark, California; Project No. 12165.000.002; June 7, 2018.

Dear Mr. Steele:

As requested, we have prepared these preliminary earthwork and import fill recommendations for Area 4 in Newark, California. The project site measures approximately 450 acres in area and is bounded by Union Pacific Railroad tracks on the northeast, an Alameda County Flood Control (ACFC) canal on the northwest and southeast and Mowry slough on the southwest. The site is currently undeveloped and is vacant.

The Vesting Tentative Map (VTM) prepared by Carlson, Barbee, & Gibson, Inc. (CBG) dated September 17, 2018, shows that approximately half of the project site will be developed with residential structures, and the remaining areas will remain as seasonal wetlands. The residential area will provide approximately 469 single-family lots, as well as several parks, recreational trails, new streets and utilities. The residential development area is divided into Residential Areas B and C, as shown in Reference 1.

A bridge extending Stevenson Boulevard over the existing Union Pacific Railroad is planned in the north portion of the site. Additional smaller bridges are also planned within the project site.

As shown on the VTM, site elevations currently range from 0 to 6 feet (NGVD29). We understand that the ground surface elevations within Residential Area B will be raised by 12 to 18 feet (Elevations 13 to 18 feet), and Residential C will be raised by approximately 7 to 12 feet (Elevations 12 to 15 feet). The perimeter slopes of the project site are currently planned to be either at a 3:1 (horizontal:vertical) or 2:1 slope.

## ENVIRONMENTAL REMEDIATION RECOMMENDATIONS

Previous investigations conducted at the site have identified toxaphene impacts in the shallow soil at Area C. In addition, Class I hazardous material has been identified due to the presence of cumulative DDD/DDE/DDT exceeding 1 milligram per kilograms (mg/kg) in a small portion of the site. Prior to grading, impacted soil identified in Reference 2 should be removed or treated.

Assuming a depth of impact of 1 foot, the total volume of in-situ toxaphene-impacted soil is approximately 35,000 cubic yards (with a 30 percent contingency). The toxaphene-impacted soil may be treated or encapsulated on site, as discussed below.

The total of volume of Class I hazardous material is approximately 5,000 cubic yards (in-situ). The Class I soil should be excavated and transported to an appropriate facility for disposal. Confirmation sampling will then be conducted by ENGEO to verify removal of Class I hazardous material.

## **EARTHWORK RECOMMENDATIONS**

Upon completion of environmental remediation, the development area should be cleared of vegetation, obstructions, including existing abandoned concrete structures and buried utilities. Existing underground utilities at the site should be identified and either properly abandoned or relocated. If loose and deleterious materials are present, the materials should be removed and the area should be backfilled with engineered fill.

### **Wick Drain Installation**

To accelerate long-term settlement within the proposed civil fill footprint, wick drains may be installed, spaced 3 feet on center in Residential Area B and 5 feet on center in Residential Area C. Wick drains should be placed in a triangular grid pattern and extend to the sandy alluvial deposits, situated at a depth of approximately 30 feet.

### **Settlement Monitoring Instruments Installation**

We recommend installing approximately 40 settlement monitoring plates and 40 surface markers at locations that we will designate on a surcharge monitoring plan. We will prepare the plan once surcharge phasing is developed. The settlement monitoring plates and surface settlement markers should be protected from construction equipment and be periodically surveyed by the Civil Engineer to determine elevations. The monitoring results should be provided to us within three days of collection. When the target settlement amount is achieved, we will notify the project team to remove the surcharge. We anticipate surcharge can be removed in approximately three to six months after placement. As a minimum, settlement monitoring instruments should be surveyed every week during fill placement, every two weeks for the first two months after surcharge fill completion, and monthly thereafter. All readings of settlement monuments should be tied to benchmarks established well beyond the zone of surcharge influence.

### **Civil Fill Placement**

Upon installation of wick drains and settlement monuments, placement of civil fill to the planned finished grade elevation may commence. The civil fill should be compacted to 90 percent relative compaction and no less than 3 percentage points above optimum moisture content (per ASTM D-1557).

### **In-situ Toxaphene Impacted Soil Placement**

ENGEO will meet with DTSC to discuss encapsulation of in-situ toxaphene impacted soil. We anticipated approximately 35,000 cubic yards of the toxaphene-impacted soil can be placed

outside of residential lots, such as bridge embankments, roadways, and perimeter fill. We recommend providing at least a 3-foot cap of clean soil above the impacted soil.

### Surcharge Fill Placement

Additional surcharge fill will be placed over the civil fill to further accelerate settlement. Surcharge fill should be overbuilt a minimum of 5 feet beyond the proposed building pads and improvements. The surcharge heights presented in Table 1 below should be considered, and the surcharge fill thickness should be uniform over proposed future lots.

**TABLE 1: Preliminary Surcharge and Wick Drain Dimensions**

HEIGHT OF CIVIL FILL	TOTAL CONSOLIDATION SETTLEMENT WITHOUT SURCHARGE PROGRAM (INCHES)	SURCHARGE FILL HEIGHT* (FEET)	SURCHARGE INDUCED SETTLEMENT (INCHES)	TOTAL FILL HEIGHT, SURCHARGE + CIVIL (FEET)	WICK DRAIN SPACING (FEET ON CENTER)	SURCHARGE TIME (MONTHS)
4	2.5	4	2	8	5	3
6	3.5	2	3	8	5	6
8	4	4	3.5	12	5	3
10	5	5	4.5	15	5	6
12	5.5	4	5	16	3	5
14	6	2	5.5	16	3	6
16	6.5	2	6	18	3	6
18	7	2	6.5	20	3	6

\*Surcharge fill is the height of fill to be placed above the civil fill elevation.

The lower 12 inches of the surcharge fill should be compacted to at least 90 percent relative compaction. The remaining surcharge fill should be compacted to at least 85 percent relative compaction. The exact duration of the surcharge program for each area will depend on the results of the settlement monitoring, but we anticipate the duration to be approximately 3 to 6 months. To reduce the amount of export at the end of the surcharge program, the surcharge can be divided into phases and the surcharge fill can be moved from phase to phase. This approach will increase the amount of time required for surcharging, so the phasing should consider infrastructure construction and potential neighborhood phasing.

### Selection of Materials

Site soil is suitable for use as civil fill and surcharge fill. Import soil should have a PI less than 20, with more than 70 percent passing the No. 200 sieve, less than 5 percent larger than 4 inches, and be less corrosive than site soil. The target wet density of the import fill is 120 to 130 pounds per cubic foot (pcf) when compacted to 90 percent relative compaction. Soil placed as civil fill or surcharge fill should be free of construction debris (wood, brick, asphalt, concrete, metal, etc.), trees, and high organic content soil (soil that contains more than 3 percent organic content by weight).

Import fill will be tested in accordance with DTSC fill import guidelines, prior to acceptance. Imported fill materials should be approved by our staff prior to importing, so we should be provided at least 72 hours prior to site delivery to sample and test proposed imported fill materials.

### Graded Slope

Graded slopes (civil fill) along the perimeter of the site are currently planned with an inclination of either 3:1 (horizontal:vertical) or 2:1. For preliminary planning, the temporary slope of the surcharge fill placed up to 5 feet in height over the civil fill can be constructed at an inclination of 2:1. If the surcharge slopes are higher than 5 feet, we can evaluate the appropriate slope gradient.

### CLOSING

If you have any questions or comments regarding this letter, please call.

Sincerely,

ENGEO Incorporated

Jonas Bauer, EIT

Yan Lap Janet Kan, GE, CEG

Divya Bhargava, PE

Jeff Fippin, GE

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