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Project No. 11-092-0  
2 May 2011

Mr. Farooq Azim  
Principal Civil Engineer  
City of Union City  
34009 Alvarado-Niles Road  
Union City, CA 94587

Project: Union City Transit Loop Road  
11<sup>th</sup> Street  
Union City, California  
**ENVIRONMENTAL SAMPLING AND TESTING RESULTS OF EXISTING  
STOCKPILES AND BORROW AREA**

Dear Mr. Azim:

At your request, and in accordance with our cost estimate proposal dated 10 February 2011, RMA Group is presenting herein our environmental sampling and testing results relating to two soil stockpiles and for the future excavation of the Transit Loop Road along the south and west sides of lot 7.

### **Scope of Work and Project Description**

The purpose of this work is to evaluate if the material in the two stockpiles and material within the proposed Transit Loop Road contain hazardous wastes and/or hazardous substances prior to being used as either engineered fill and/or disposal purposes.

Based on the information provided by you there is one stockpile on Lot 5 approximately 3,000 yards in volume, and another stockpile on Lot 7 approximately 1,000 yards in volume. It is understood that the two stockpiles were generated from recent on-site construction activities and are of the same material. Approximately 600 feet of the proposed Transit Loop Road along the south and west sides of Lot 7 will be excavated 2 to 3 feet and the material will be stockpiled for import use or disposal. The material excavated for the future trenching of utilities to about 5 feet depth will also be stockpiled for import use or disposal.

### **Sampling**

An RMA Group representative used a backhoe to collect samples within the proposed Transit Loop Road alignment and some of the deeper samples within the stockpile. The test pits within the proposed Transit Loop Road alignment encountered approximately 3 feet of fill over native soil. The California Department of Toxic Substances and Control (DTSC) provides a minimum sampling schedule for stockpiles and borrow areas. For stockpiles ranging in volume from 1,000 to 5,000 cubic yards, it is recommended to collect 4 (four) samples for the first 1,000 yards and 1 (one) sample per each additional 500 cubic yards. For borrow areas such as excavation of street areas, 2 acres or less in area a minimum of 4 samples per soil material is required. Therefore, a total of 10 (ten) discrete soil samples were collected from the two soil

stockpiles, and 4 (four) discrete soil samples were collected from the proposed street excavation area within the fill material and 4 (four) discrete soil samples within the native soil.

The soil samples were collected by using clean brass liners inserted at depths ranging from 2 feet to 6 feet into the soil stockpile. Samples within the proposed Transit Loop Road excavation area, were collected by advancing clean brass liners into the base of excavations at depths ranging from 1 to 3 feet within the fill and depths ranging from 3 to 5 feet within the native soil, created by a backhoe.

The samples were capped, labeled and placed into a pre-chilled ice chest for temporary storage. The soil samples were picked up by Sunstar Laboratories, a California State Certified hazardous waste testing laboratory (ELAP No. 2250), of Lake Forest, California, under chain-of-custody documentation for analysis. Prior to analysis, the laboratory composited eight of the ten discrete stockpile soil samples into two (2) four point composited soil samples and the remaining two discrete samples were composited into one sample for a total of 3 composited samples for the stockpiles. For the street area, the upper 4 discrete samples within the fill were be composited into 1 (one) four point composited sample and the lower 4 discrete samples within the native material were composited into 1 (one) four point composited sample. The total of five composited samples were analyzed for total petroleum hydrocarbons reported as gasoline (TPHg), gasoline constituents benzene, toluene, ethyl benzene and total xylenes (BTEX); MTBE, total extractable petroleum hydrocarbons reported as diesel and motor oil (TEPHd and TEPHmo) with silica gel cleanup; volatile organic compounds (VOCs), semi-volatile organics (SVOs), pesticides and PCBs and CAM 17 metals using Environmental Protection Agency (EPA) Methods 8021, 8015 (modified), 8260B, 8270, 8081, 8082, and 6010/7000 Title 22 metal series.

The soil samples were analyzed on a five-day turn-around time basis, and the laboratory analytical results along with a site plan showing the locations of the samples are attached

## **Conclusions**

We used the Bay Area RWQCB Environmental Screening Levels (ESL's), November 2007 (revised May 2008) to evaluate the test results.

Based on the test results, TPHg, BTEX, TEPHmo, TEPHd, VOCs, SVOs, pesticides and PCBs were either not detected or detected below guidance ESL levels. Metals were either not detected or detected below guidance ESLs, except arsenic and vanadium which were detected above the ESL guidance. In our opinion the concentrations of arsenic and vanadium as well as the other metals are interpreted as a natural occurrence from the regional geology by Shacklette and Boerngen, 1984; and based on a paper prepared by the University of California, 1996.

A summary of the relevant constituent detectable results are tabulated as follows;

### **TABLE 1**

### SUMMARY OF TEST RESULTS OF DETECTABLE CONSTITUENTS

Constituent	ESL (mg/kg)	Constituent Test Results (mg/kg)				
		Comp1	Comp2	Comp3	Comp4	Comp5
<b>Motor Oil</b>						
C-29-C40	370	30	ND	ND	ND	ND
<b>Metals</b>						
Arsenic	0.39	ND	ND	6.7	ND	5.3
Barium	750	270	160	170	170	160
Chromium	50 *	34	39	42	50	46
Cobalt	40	12	10	12	13	12
Copper	230	42	41	41	44	37
Lead	200	11	10	9.7	17	19
Nickel	150	37	38	42	44	45
Vanadium	16	42	45	51	55	50
Zinc	600	73	85	87	99	100
<b>Mercury</b>						
Mercury	1.3	0.15	ND	ND	ND	ND
<b>Pesticides</b>						
DDE	1.7	0.0055	0.0069	0.0053	0.014	0.023
DDT	1.7	ND	0.0051	ND	0.0053	0.006

Note: ND = Non-detected

\* = Not in the ESL tables, but this value is typically accepted by the local landfills.

Based on these analytical results, the stockpile material and the material that is to be excavated from the proposed Transit Loop Road, may be used as engineered fill for commercial or residential purposes or hauled to an appropriate disposal facility.

Should you have any questions relating to the contents of this letter report or require any additional information, please contact our office at your convenience.

We appreciate the opportunity to have performed this work and satisfying your environmental concerns. Should you have any questions or need further information, please do not hesitate to call upon us.

Sincerely,  
**RMA Group**



Simon Makdessi, P.E., G.E.  
Principal Engineer

Attachments: Site Plan  
Sunstar Laboratories Test Results

#### References

Shacklette, H. T. and Boerngen, J. G., 1984, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States: U. S. Geological Survey Professional Paper 1270, USGPO.

Background Concentrations of Trace and Major Elements in California Soils: Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996.

State of California, San Francisco Regional Water Quality Control Board, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater: Interim Final, November 2007 (Revised May 2008).