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MEMORANDUM

TO: Dilan Roe, ACEH

FROM: Morgan Johnson, ENGEO

DATE: October 9, 2012

SUBJECT: ACEH Comments on UST Removal Permit Application Package_10-5-12

Dear Dilan,

We prepared this memorandum to address comments received from ACEH in regards to the underground storage tank (UST) removal permit application package dated October 5, 2012. We address your comments as follows:

1) Contingency Plan for Rain Event and/or Encountering Saturated Soil/Groundwater.

The UST removal will be scheduled to commence at least 5 business days in advance of any forecasted rain event, which should provide adequate time for the backfill and concrete cap to be completed. In the event that the excavations have to remain open longer than five days due to unforeseen circumstances, the perimeter of the excavations will be lined with bermed plastic at least 24 hours prior to any forecasted rain to prevent surface water intrusion into the open excavations. In accordance with the permit, the overburden stockpile will be placed on bermed plastic and covered with plastic sheeting. During recent soil borings performed by AMEC, groundwater was encountered as shallow as 10 feet and was recently measured at 14.5 feet in the nearest monitoring well (MW-03). Based on the planned maximum excavation depth of 9 feet, we do not expect significant groundwater to be present in the excavation during the UST removal. In the event that groundwater is encountered, groundwater samples will be collected with a sampling pole and submitted for analysis as required in the permit application. Since confirmation soil samples will be collected two feet below the undisturbed base of the excavation in native soil immediately after the USTs are hoisted from the excavation, the soil sample integrity and moisture content in the soil samples would not be affected by free water residing in the pea gravel bed during the short duration that the excavation is open.

2) Comments on Table 1 – Concentrations for CAM 17 Metals, Class II Base Material, Vulcan Quarry

- Vulcan Materials provided a letter (attached) stating that the 2007 laboratory results pertain to the same alluvial deposit and are reflective of the material proposed for import to Crown Chevrolet.

- We acknowledge that the reporting limits for selenium and thallium are 2.0 mg/kg. This correction has been made in the attached Table 1. These reporting limits for selenium and thallium are less than the ESLs listed in RWQCB Table K-3 Direct Exposure Soil Screening Levels Construction/Trench Worker Exposure Scenario. Further explanation regarding the applicability of Table K-3 is provided at the end of this section.
- The laboratory has verified that the reported total chromium concentration covers all valence states, including potential Cr (VI). Cr (VI) typically results from anthropogenic sources and has only been found to be naturally occurring in some rare cases in Southern California. Since, the proposed Class II base is virgin material, Cr (VI) is not considered a constituent of concern.
- The attached Table A-2 provides a range of background arsenic concentrations derived from nine publically available studies performed on eight Bay Area sites, representing 850 background soil samples. The studies identified a background arsenic range of 1.2 to 31 mg/kg, which is considered representative of soil conditions in the eastern Bay Area. Table A-2 is from *ERM, Feasibility Study, Hookston Station, Pleasant Hill, CA, July 10, 2006*. The reported arsenic concentration of 2 mg/kg for the Class II base material falls within the lower end of the referenced background range and it is less than the Table K-3 ESL.
- We acknowledge that a hazard quotient of 0.2 should be used to evaluate vanadium concentrations given the potential for cumulative effects. The reported vanadium concentration for the Class II base material is less than the Table K-3 ESL of 770 mg/kg, which is based on the recommended hazard quotient of 0.2.
- Table K-3 ESLs are appropriate since the USTs are located beneath a planned building and parking lot (development plan attached). The planned development will be a condominium, and landscape maintenance performed under the direct oversight of a homeowner's association (HOA). Therefore, the general public will be prohibited from digging, and only construction workers would have access to the subsurface.

Attachments: Verification Letter from Vulcan Quarry

Revised Table 1 – Concentrations of CAM 17 Metals, Class II Base Material, Vulcan Quarry, 50 El Charro Road, Pleasanton, CA

Table A-2 – Comparison of Background Concentrations of Metals in Bay Area Soil

Conceptual Site Development Plan, Fairfield Residential/Kingsmill Group



October 8, 2012

Dear Morgan,

The Cam 17 test results from 2007 were done on our Class II Base and are reflective of the material you will be receiving. The material is from the same alluvial deposit here at Vulcan Materials located in Pleasanton Smara #91-01-0010.

David Ruedi
Technical Services Specialist

TABLE 1
 Concentrations of CAM 17 Metals
 Class II Base Material - Vulcan Quarry, 50 El Charro Road, Pleasanton

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (III)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
Class II Base	<1	2	85	<1	<1	27	6.5	17	3.6	<0.5	<1	42	<2	<1	<2	20	35
ESL Table A Residential	6.3	0.39	750	4	1.7	750	40	230	200	1.3	40	150	10	20	1.3	16	600
ESL Table K-3 Worker	310	15	2600	98	39	1.2E+6	94	3.10E+05	750	58	3900	260	3900	3900	62	770	2.30E+05
CHHSL Residential	30	0.07	5200	150	1.7	100,000	660	3000	80	18	380	1600	380	380	5	530	23000

Footnotes:

ESL values are based on HQ 0.2
 Concentrations are reported in milligrams per kilogram
 Samples were collected on March 16, 2007

Table A-2
Comparison of Background Concentrations of Metals in Bay Area Soils
Hookston Station
Pleasant Hill, California

Study	Number of Samples	Formation	Calculation	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
LBNL, 1995	498	--	95% UCL	5.5	19.1	323.6	1.0	2.7	99.6	22.2	69.4	16.1	0.4	7.4	119.8	5.6	1.8	27.1	74.3	106.1
	97	Colluvium & Fill	95% UCL	5.9	14	358.8	0.9	1.5	91.4	22	59.6	14.5	0.3	3.2	120.2	5.6	1.7	42.5	78.2	91.5
	97	Great Valley Group	95% UCL	6.3	31	248.5	1.0	3.2	59	25.5	99.7	21.5	0.6	3.8	69.7	4.8	2.2	8.7	69.3	135.9
	101	Moraga Formation	95% UCL	6.1	9.3	154.1	0.8	2.6	142.2	23.1	54.1	8.9	0.3	3.8	100.4	4.7	2.0	38.9	90.1	84.7
	184	Orinda Formation	95% UCL	5.2	17.8	411.2	1.1	3.3	95.2	20.6	66.9	14.8	0.3	11.4	144.3	7.0	1.9	19.8	69.3	98.3
13	San Pablo Group	95% UCL	7.1	15.7	280	0.8	2.9	78.6	22	40.9	10.3	0.4	3.7	125.9	4.9	1.5	10.9	36.2	97.7	
BMW, 1994	< 150	Fill	Geometric mean	1.98	4.32	40.6	0.29	0.43	16.32	6.45	5.44	4.79	0.07	0.76	42.85	1.36	0.35	--	22.19	32.90
		Fill	Geometric std. dev.	1.74	1.83	1.62	1.47	2.05	9.38	1.71	6.62	2.93	1.76	1.98	1.50	2.93	1.57	--	1.54	1.54
Scott, 1991	~150	Alluvium	Arithmetic mean	--	2.86	--	0.88	--	51.28	--	35.63	11.43	--	--	73.53	--	--	--	--	65.27
			Std. dev.	--	2.61	--	0.55	--	20.77	--	11.85	4.66	--	--	27.15	--	--	--	--	17.55
MLH, 1991	23	Off-Site Background (2 Rounds)	Arithmetic mean	--	8.3	--	--	1.0	10.0	--	22	32.4	0.14	--	16	--	--	--	--	65
			Std. dev.	--	<4.1	--	--	<0.9	16.4	--	7.2	61	<0.11	--	18	--	--	--	--	67.2
D&M, 1989a	4	Upgradient	Arithmetic mean	--	5.15	115	--	--	42.5	10	17.5	13.3	0.5	--	42.5	--	--	--	35	37.5
D&M, 1989b	26	Upgradient	Arithmetic mean	--	1.9	127.3	--	--	44.6	11.5	17.7	<10	0.2	--	45.4	--	--	--	36.2	41.9
SECD, 1992	5	Clay / Loam	Arithmetic mean	2.5	8.48	228	0.5	0.83	72.6	9.53	37	65	0.14	1.74	43	<0.25	<0.25	<0.25	46.9	281.6
PRC, 1996	20	Fill	95% UCL	1.5	8.4	145	0.72	0.27	95	16	72	59	0.6	0.33	96	--	0.2	--	70	152
			Arithmetic mean	--	1.2	125	0.35	--	33.4	8.8	22.7	7.4	--	--	22.5	--	--	--	27.8	39.9
Author Unknown	10	Background Soil	Std. dev.	--	1.8	145	0.17	--	6.5	3.1	16.7	2.1	--	15.7	--	--	--	6.3	16.4	
Background Concentration Ranges				1.5 - 7.1	1.2 - 31	41 - 411	0.29 - 1.1	0.27 - 3.3	10 - 142	6.5 - 25.5	5.4 - 100	4.8 - 65	0.07 - 0.6	0.33 - 11.4	16 - 144	<0.25 - 7	0.2 - 2.2	<0.25 - 42.5	22 - 90	33 - 282

References:

Author Unknown. *Results of Chemical Testing on Background Soil Samples, Area 2 Investigation Completion Report, Roberts Landing Development Site, San Leandro, California.* 1994.
 BMW = Burns and McDonnell Waste Consultants, Inc. *San Francisco International Airport Background Metals Concentrations in Soil.* December 1994.
 D&M = Dames and Moore, Inc. *Report - Phase II Remedial Investigation, 1455 Factor Avenue Site, San Leandro, California.* 3 August 1989.
 D&M = Dames and Moore, Inc. *Report - Phase II Remedial Investigation, 750 139th Avenue Site, San Leandro, California.* 13 October 1989.
 LBNL = Lawrence Berkeley National Laboratory, University of California, Environmental Restoration Program. *Protocol for Determining Background Concentrations of Metals in Soil at Lawrence Berkeley National Laboratory.* August 1995.
 MLH = McLaren-Hart. *Remedial Investigation Report - Hercules Properties, Inc., Hercules, California.* 15 March 1991.
 PRC = PRC Environmental Management. *Final Remedial Investigation Report - Fleet and Industrial Supply Center Oakland, Alameda Facility / Alameda Annex Site, Alameda California.* January 1996.
 Scott = Scott, Christina Marie. *Background Metals Concentrations in Northern Santa Clara County, California. Master's Thesis, University of San Francisco.* December 1991.
 SECD = SEC Donahue Environment and Infrastructure. *Site-wide Remedial Investigation, Pacific States Steel Corporation, Union City, California.* 3 December 1992.
 UCL = Upper confidence level

