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Georgia Department of Natural Resources
Environmental Protection Division
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Environmental Protection Division
Judson H. Turner, Director
Land Protection Branch
Keith M. Bentley, Branch Chief

November 2, 2012

COPY

VIA E-MAIL AND REGULAR MAIL

AXA Equitable Life Insurance Company
c/o Mr. Robert Poole, Executive Director
Morgan Stanley Real Estate, Inc.
3424 Peachtree Road, NE
Suite 800
Atlanta, Georgia 30326

RE: First, Second, and Third VIRP Semi-Annual Progress Reports
Former Vogue Cleaners, HSI Site No. 10394
Martinez, Columbia County, Georgia 30907

Dear Mr. Poole:

The Georgia Environmental Protection Division (EPD) has completed its review of the Voluntary Investigation and Remediation Plan (VIRP) Semi-Annual Progress Reports dated September 2011, March 2012 and September 28, 2012. Our comments are provided below:

1. Vogue has petitioned EPD to make a determination that there are two separate releases (Columbia Car Care Center and former Vogue Cleaners) based on the current data submitted to EPD. The data shows that the groundwater monitoring wells that are located to the east (MW-4, MW-22 and MW-5) were below detection limits in the last two sampling events. The deeper monitoring well, MW-5D, that is located northeast and on the adjoining property has shown non-detect for VOCs since 2007. EPD has evaluated the above information and concurs that there appears to be two separate releases.

2. There are discrepancies in the soil sampling reported in Table 1 of the Genesis Project, Inc. February 28, 2011 response to EPD's Columbia Car Care Center Property compliance status report (CSR) call-in letter. Genesis compiled a summary of soil analytical results including select detections from the Williams April 29, 1999 CSR. However, the depth of soil samples WESB-21 and WESB-40 were between 3-4 feet and not 0-2 feet as shown in the Genesis report (Table 1). Additionally, the tetrachloroethylene (PCE) concentration of WESB-21 should be 670 ug/kg. Please confirm all data and correct these discrepancies if included in future reports.

3. Section 3.3 of the March 2012 report states that slug tests were performed on September 1, 2011 to evaluate site-specific hydrogeologic characteristics. EPD was unable to validate the slug test calculations due to the observation data not being provided with the slug tests in Appendix VI of the report. The following inconsistencies with the slug tests were also noted and should be corrected in the next report:

   a. The anisotropic ratio (Kz/Kr) should be conservatively set at 0.1 rather than 1 as indicated in the data sheets for wells POD-1 and MW-22. A value of 1 infers the vertical and horizontal hydraulic

conductivities are equivalent resulting from an isotropic aquifer. Typically Kr (radial) is greater than Kz (vertical), resulting in an anisotropy ratio value of 0.1.

b. A well screen length of 5 feet was used for both slug tests while Table 3 indicates that the screened interval for both wells is 10 feet.

c. A Gravel Pack Correction factor was used in the calculation of the slug tests that used an effective porosity of zero. This value is incorrect.

In order to determine an appropriate hydraulic conductivity for the site, slug tests should be reevaluated using corrected values. Please provide the corrected slug tests, well construction diagrams for POD-1 and MW-22, and the observation data from the slug tests with the next report. Please provide justification for8u8 all input parameters used.

4. EPD was unable to determine how the hydraulic gradient was calculated. Please provide hydraulic gradient calculations in the next report. Please note, horizontal hydraulic gradients should be calculated in the direction of groundwater flow perpendicular to the potentiometric surface contours. According to the potentiometric surface map shown on Figure 2, only one potentiometric contour (358) is provided, while the other potentiometric contour (357) is inferred. This is not appropriate for use in determining the horizontal hydraulic gradient. Please collect additional water levels from surrounding wells screened in the same aquifer or add additional potentiometric contour surface lines to the figure. Please recalculate horizontal hydraulic gradient perpendicular to potentiometric surface lines in the direction(s) of groundwater flow.

5. EPD does not concur with the conclusions from the Fate and Transport modeling presented in Section 3.5 of the September 2012 Progress Report and the model presented in Appendix V for the following reasons:

   a. Figure 3 shows the PCE plume migrating from the source area (MW-2) to a point of demonstration well (POD-1) yet the potentiometric surface map indicates that this flow direction may be more side gradient of the source. Please provide an explanation for plume direction vs. potentiometric surface flow discrepancy and your conclusion on the plume migration direction beyond POD-1.

   b. A source concentration for PCE of 2.0 mg/L was used to model the 20-year simulation. Table 2 indicates historical concentrations as high as 7.8 mg/L have previously been detected in the source area well (MW-2). Using 7.8 mg/L as the conservative value, and the parameter values provided in the submitted model, it would take over 400 years to reduce concentrations to below Type 1 RRS, and the plume would travel approximately two miles from the source zone.

6. The following model parameters should be modified or justification should be provided for their use:

   a. The hydraulic conductivity should be corrected, pending the reevaluation of the slug tests requested in Comment 3.

   b. The hydraulic gradient should be reevaluated in accordance with Comment 4 above.

   c. EPD cannot determine how a value of 40 was determined for longitudinal dispersivity. Using the recommended equation from the Biochlor manual, *alpha x = 0.1*(Lp)*, where *Lp* is the length of the

plume, a value of 40 generates a plume length of 400 feet. According to Figure 3A, the plume only extends approximately 105 feet. Using the above equation, the longitudinal dispersivity would be closer to 10.5.

d. A value of 0.4 was used for the transverse dispersivity component of dispersion. The Biochlor manual states that a general approximation that is typically used for transverse dispersivity is that it equals 1/10 of the longitudinal dispersivity.

e. The koc values used are incorrect. Please use the koc values from EPA's Regional Screening Levels table found at http://www.epa.gov/reg3hscd/risk/human/rb-concentration_table /Generic_Tables/index.htm.

f. No biotransformation data was used in the model. Biochlor runs the model with both, no degradation, and biotransformation. Enough data is available from MW-2 to develop a first-order decay rate for PCE, TCE, and DCE. EPD recommends evaluating the plume using biotransformation.

g. EPD cannot determine how the field data for comparison was derived. Data from 1998 is not provided in the Reports. Also a value of 320 mg/L has never been detected in the source area well MW-2. Additionally, there is no comparison well 70 feet downgradient of the source area well MW-2. MW-8 is the next well in the centerline of the plume and is approximately 27 feet from MW-2. POD-1 should also be added to the field comparison data and is approximately 83 feet from MW-2.

7. If the revised model continues to demonstrate that impacted groundwater will migrate off-property, above cleanup standards, ongoing monitoring or corrective action, such as filing of a uniform environmental covenant, may be required for those properties to comply with the Voluntary Remediation Program Act (Act).

8. In Section 2.2 of the September 2012 Semi-annual Progress Report, Vogue indicates that MW-2 was replaced due to "diminished response". In order to distinguish between older wells and replacement wells, typically a new well identification number is assigned to differentiate the data. Therefore, please rename the replacement well MW-2R and any other wells that are replaced in the future similarly. Additionally, please provide a boring log and a well construction diagram for any well that is replaced or installed at the site.

9. In Section 3.6.3, Vogue states that the depth of groundwater is greater than 6 feet below grade, which is deeper than the utility structures in the local area. However, Table 1 indicates that shallow water levels at the site historically have ranged from 4.21 feet in MW-3 to 7.58 feet in MW-15. Please re-evaluate this statement.

10. Soil sample points SB-15 and SB-13W each have one sample event showing concentrations above cleanup standards and one sample event demonstrating concentrations below. Given the elevated concentrations seen in recent sampling in the vicinity, EPD recommends those areas be re-sampled to definitively show whether they exceed cleanup standards.

11. Section 4.3 of the September 2012 report proposes to use the Johnson & Ettinger (J&E) Model to evaluate soil PCE concentrations for vapor intrusion potential. However, the Environmental Protection Agency no longer recommends the J&E model for that purpose. Please review the OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), November 2002, EPA530-D-02-004. Sub-slab vapor sampling appears to be more appropriate and should be conducted where the source originated.

12. Section 2.1 of the September 2011 Semi-annual Progress Report states that wells MW-17 and MW-17D could not be located due to the presence of recently installed asphalt. According to the Official Code of Georgia [O.C.G.A. 12-15-134(1)(K)], "any existing abandoned well or borehole shall be filled, sealed, and plugged by the present owner." Please locate these former wells and properly abandon them in accordance with the "Water Well Standards Act, O.C.G.A. 12-5-120, and provide documentation in the next report.

13. Figure 3B, 6A, and 6B of the September 2012 report do not accurately reflect the vertical extent of PCE contamination as detected in MW-8, MW-8D, and/or MW-12D. In addition Figure 3B should include MW-12D in the cross-section. Future cross-sectional views should include a plan view with cross-section line (either on the same figure or another figure), that shows the cross-sectional area depicted in the figures.

An updated financial assurance instrument was due by September 20, 2012. Please submit the document immediately to remain in compliance with the Voluntary Remediation Program Act. EPD anticipates receipt of the next semi-annual Progress Report by March 21, 2013. Please address the above comments and update the Conceptual Site Model with all data acquired in the preceding period(s). All future progress reports should contain the certification included in Item 6 of the VIRP Application Checklist. If you have any questions, please contact Montague M^{c}Pherson of the Response and Remediation Program at (404) 657-8600.

Sincerely,

Charles D. Williams

Charles D. Williams
Program Manager
Response and Remediation Program

c: ✓Dr. Harindorjit Singh
✓Scott Klosinski, Columbia Square Investors, LLC
✓ Mark Mitchell, Genesis Project, Inc.

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