

# Georgia Department of Natural Resources

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## Reply To:

Response and Remediation Program  
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Mark Williams, Commissioner  
Environmental Protection Division  
F. Allen Barnes, Director  
Land Protection Branch  
Mark Smith, Branch Chief

July 5, 2011

## VIA E-MAIL AND REGULAR MAIL

CBS Corporation  
c/o Richard K. Smith, Vice President, Environmental Remediation  
PNC Center  
20 Stanwix Street, 10<sup>th</sup> Floor  
Pittsburgh, PA 15222

Re: Voluntary Remediation Plan and Application, October 29, 2010: Incomplete Application  
1610 Southland Circle (f/k/a Indcon Site; HSI #10077) (Tax Parcel No. 17-0192-LL-051-6)  
1610 Southland Circle, NW, Atlanta, Fulton County, Georgia

Dear Mr. Smith:

The Georgia Environmental Protection Division (EPD) has reviewed the October 29, 2010 Voluntary Investigation and Remediation Plan (VIRP) submitted for the subject property pursuant to the Georgia Voluntary Remediation Program Act (the Act) O.C.G.A. 12-8-100, *et seq.* and has determined the application is incomplete based on the following items:

### Application/Checklist

- 1) **Qualifying Property/Contact Information:** The current telephone number for the property owner was not provided on the VRP Application Form as required. Please revise the application accordingly.

### Conceptual Site Model (CSM)

- 2) **Regulated Substances Released:** *All regulated* substances historically detected in soil, sediment (including in the onsite sediment trap), groundwater, and/or surface water at the qualifying property as well as known breakdown products must be evaluated as constituents of concern (COCs) in the conceptual site model (CSM). Section 3.1 (*Existing Site Conditions*) of the VIRP indicates only polychlorinated biphenyls (PCBs) and various chlorobenzenes were released to the environment at the qualifying property. Also, it appears that analytical results for several historical environmental samples (soil, sediment, groundwater and surface water) were not summarized on tables and/or figures provided in the VIRP.
  - a) **Chlorinated Volatile Organic Compounds (VOCs):** Although EPD recognizes there may be potential upgradient sources for some of the chlorinated volatile organic compounds (VOCs; *i.e.*, PCE, TCE, *etc.*) detected in one or more of the various environmental media at the site, EPD cannot concur that the qualifying property was not (or is not) a potential source of said substances due to:
    - The common usage of chlorinated solvents as degreasers, and
    - The detection of PCE in groundwater near known source areas for PCBs and chlorobenzenes (monitoring wells MW-3, MW-12 and MW-12D) at the qualifying property which are consistently greater than the PCE concentrations detected in monitoring wells MW-1 and MW-5.

- Therefore, it must be assumed that detected chlorinated VOCs have likely been released to the environment at the qualifying property sometime in the past and are subject to the Act.
- b) **Non-Chlorinated VOCs and Semi-Volatile Organic Compounds (SVOCs):** Several additional regulated substances, including non-chlorinated VOCs (*i.e.*, benzene, toluene, ethylbenzene, xylenes, naphthalene, *etc.*) and semi-volatile organic compounds (SVOCs) commonly associated with fuel oils (a source of PCBs detected at the qualifying property), have also been detected in historical environmental samples collected at the site, but are not included as released substances at the qualifying property. Said substances are also subject to the Act.
- 3) The VIRP must be revised to include: 1) tables summarizing all regulated substances released to all environmental media impacted and 2) figures showing the locations of all sample locations in relation to current and historical site features and source locations. Other figures, including cross sections, and tables must be revised to include all historical and current analytical results for pre- and post-excavation samples and the most recent analytical results for groundwater and surface water samples collected at the qualifying property. The CSM for the qualifying property is not complete without the requested tables and figures. References within the VIRP to tables and/or figures in previous submittals (which are not up-to-date or complete) in lieu of providing the referenced tables and figures are not an acceptable response to this comment even when electronic copies of the past submittals (Appendix C of the current VIRP) are provided within the VIRP.
- 4) Since they are not subject to delineation and/or cleanup requirements, please remove all references to substances not regulated by the Rules [*i.e.*, methylcyclohexane, total petroleum hydrocarbons (TPH), total recoverable petroleum hydrocarbons (TRPH), *etc.*] in the VIRP. Please note that although the presence of TPH or TRPH may be indicative of the potential presence of oil/petroleum released at the site, their presence or absence cannot be used to confirm the presence or absence of PCBs.
- 5) **Contaminant Source(s):**
- a) EPD cannot concur there is an upstream source for PCBs observed in the sediment trap located in the onsite surface water body on the qualifying property as suggested by Section 3.3 of the VIRP. Upstream potential sources are not supported by the sediment analytical data summarized on Table 3.2 of the VIRP nor indicated by the figures summarizing soil/sediment analytical results. Please remove the reference to an upstream source of PCBs in sediment or provide information/documentation (*i.e.*, sediment and/or surface water analytical data, *etc.*) to support said reference.
- b) EPD cannot concur that upgradient sources are the sole source of VOCs (other than chlorobenzenes) detected in environmental media at the qualifying property based on documentation provided to date (see Comment 2).
- c) All sources of regulated substances released to the environment at the qualifying property must be clearly identified with labels on figures depicting site conditions, including cross sections. Several sources at the qualifying property referenced in Section 2.0 of the VIRP were not shown or labeled on the figures. Those sources not marked or shown on figures include: locations of former underground storage tanks (UST), the "50-ft slab" reportedly formerly used as a temporary storage location for electrical apparatus, the "48-inch" drainage trench, the location of the former oil/water separator, *etc.*
- 6) **Release, Response, and Remedial Action History:** Section 2.0 of the VIRP does not include specific references to release response activities, including environmental sampling and analyses, conducted by EPA in July 1993 and February 1994 in response to the discovery of PCB-containing oil in a former UST at the site. Please revise the site history narrative to include said activities. EPA environmental sample locations should also be indicated on a site figure and associated sample results should be summarized in tabular format in a revised VIRP.
- 7) **Site Map:** Please provide a figure showing, with labels, all historical and/or recent: 1) contaminant source areas/features, 2) excavation areas, 3) environmental media sampling locations (including release discovery, due diligence investigation, and EPA sampling locations), and 4) onsite surface water bodies at the qualifying property. None of the figures provided in the VIRP appear to include all of the referenced information.

- 8) **Site Stratigraphy:** The CSM must include a description of site stratigraphy (soil types and lithologies, if rock was encountered during investigative and/or remedial actions) and how it relates to the water table and contaminants released to the environment. Please clearly identify and depict observed soil and rock *types* (i.e., silt, clay, schist, etc.) and contacts on all cross sections provided using standard descriptive terms [i.e., the Unified Soil Classification System (USCS), etc.] based on visual observations and/or geotechnical test results. Note that terms such as "Fill" and "Native", which indicate origin, not soil or rock type, as shown on Figure 3.4 of the VIRP are not sufficient to describe site stratigraphy. The VIRP should also include a description of the relationship between site stratigraphy and detected contamination.
- 9) **Soil/Sediment Conditions:** Please revise the VIRP to include:
- a) A table or tables summarizing all historical and recent soil/sediment analytical results (including all analytical parameters with the exception of substances not regulated by the Rules) from the time of the initial release discovery forward, including pre- and post-excavation/remedial action samples and samples collected by initial responders (private and public, including EPA personnel). Analytical results for sediment samples collected from the sediment trap located in the northern onsite surface water bodies must also be summarized on a table within the revised VIRP.
  - b) The site map requested in Comment 7 above. Effectiveness of past remedial actions and current site conditions cannot be evaluated without the requested table and figure.
  - c) Site maps summarizing analytical results for all regulated substances detected in soil/sediment samples collected at the site since release discovery. Please include sample depths, collection dates, contaminant concentrations, and contaminant isoconcentration contours showing the extent of each regulated substance (or group of regulated substances) greater than the proposed delineation standards and cleanup standards. EPD must be able to distinguish between the contour lines denoting delineation and cleanup standards. Multiple figures rather than a single figure may be required to address this comment. Figure 3.6 (*Areas of Impacted Soil*) and Figure 3.7 (*2003 Excavation Locations*) of the VIRP as presented are not sufficient to address this comment since much of the information required above is missing.
  - d) Sample locations representing excavated material and samples collected below the water table should be clearly identified on all of the above requested tables and figures. If an analyte/parameter was not analyzed in a particular sample, it must be clearly indicated as such in the associated table and figures or a separate table summarizing sample analytical parameters at each location during each sampling event should be submitted. Absence of summarized data on tables or figures cannot be assumed to indicate absence of analysis.
- 10) **Groundwater Conditions:**
- a) **Groundwater Depths and Potentiometric Surface Map:**
    - i. A table summarizing historical and recent depths to groundwater measurements and groundwater elevations relative to mean sea level must be provided. A similar table was provided in the March 31, 2011 progress report; however, EPD is unsure that all historical measurements were included.
    - ii. A recent potentiometric surface map must be provided to document groundwater flow paths. Groundwater elevations measured in shallow (at or near the water table) and deeper-screened (10 or more feet below the water table) monitoring wells should not be combined for use in constructing isopotential contours.
  - b) **Groundwater Analytical Results:**
    - i. Groundwater samples were collected and analyzed for select parameters/analytes in August 2010 and during the February 2011 monitoring event documented in the March 31, 2011 progress report. However, it does not appear that all groundwater samples collected were analyzed for all COCs detected in environmental media at the site. A *comprehensive* groundwater sampling event must be conducted and all COCs (see Comment 2 above) must be analyzed to establish current site conditions.
    - ii. Table 3.3, which summarizes analytical results for groundwater samples must include all historical sample results acquired from the date of release discovery through the most recent sampling/monitoring event. In addition, the most recent groundwater sampling results (at the time of submittal of the revised VIRP) must be summarized on a site figure in tabular format adjacent to the appropriate sampling locations. Analytical results must be clearly identified according to aquifer zone monitored either by notations on a single figure

or by depiction of the data from each zone on separate figures. Note that Figure 3.8 in the current VIRP does not include actual groundwater analytical results, nor does it indicate the aquifer zones represented by the data.

**11) Surface Water Conditions:**

- a) The onsite stream/drainage channel paralleling the northern boundary of the qualifying property is known to have been impacted by the release of regulated substances, including light non-aqueous phase liquids and surface water samples have been collected during various investigations/monitoring events. Therefore, all historical surface water sampling locations and associated analytical data must be summarized in tabular format with the most recent analytical results summarized on a figure. Said results may be summarized on a figure with the recent groundwater analytical results to assist in assessing the impact of the groundwater contaminant plume on the surface water body.
- b) Surface water samples have historically been collected from the onsite stream/storm water channel flowing parallel to the northern boundary of the qualifying property for analysis near the discharge point of the concrete culvert on the western edge of the property, immediately north of the main onsite building, and near the downstream property boundary during recent semi-annual groundwater monitoring events. At a minimum, a sampling location located immediately north of recovery well RW-1 must be added to the surface water monitoring network to monitor conditions immediately adjacent to the main onsite contaminant source area in addition to the current sampling locations. Said additional monitoring location is necessary to assist in evaluating potential current and ongoing impact of the release at the qualifying property on the referenced surface water body.
- c) In addition to collection of surface water samples, surface water elevations have been measured at gauging stations located along the stream/storm water channel. Please summarize historical stream elevation measurements in tabular format and include the most recent measurements on the required potentiometric surface map and revised cross sections since it is assumed that waters within the surface water body are in communication with groundwater at the site. Surface water elevation data may be included on the required table of groundwater elevation measurements.

**12) Cross Sections:** A total of five cross sections were submitted as Figures 3.2a through 3.5 with Figure 3.1 a site map showing the locations of the cross sections provided within the VIRP. The following comments are specific to said cross sections:

- i. Past remedial activities at the site included excavation of soil/sediment impacted by the release of regulated substances in several locations at the site including the onsite streambed. Two of the excavated areas, the door pit area, and the trench drain area near monitoring well MW-4 adjacent to the southern wall of the main onsite building, are not included on any of the cross sections. Please revise the VIRP to include two additional cross sections roughly parallel to Cross Sections B-B' (Figure 3.3) and C-C' (Figure 3.4) and extending from the southern boundary to the northern boundary of the qualifying property. Figure 3.1 should also be revised to show the limits of all past excavations conducted in response to the release of regulated substances at the site.
- ii. The locations of all historical soil sampling locations associated with the release at the qualifying property that lie within or immediately adjacent to the plane of a line of cross section must be shown on the appropriate cross section along with associated analytical results. For instance, apparent soil sampling locations B-6, PT-4, B-9, PT-3, etc. were not included on Cross Section D-D' although they appear to be located within the plane of the cross section, or immediately adjacent to it. Please note that both pre- and post-excavation soil sample locations (and associated analytical results) should be included to assist EPD in evaluating the effectiveness of past remedial actions. Samples representing excavated material should be clearly identified as such on the cross sections.
- iii. Observed soil and/or rock types must be shown on the referenced cross sections. Please see Comment 8 above for further explanation.
- iv. To expedite EPD review and reduce potential confusion, please indicate the sample media for which analytical results are reported on the cross sections with the summarized results. Sample collection dates should also be included with the soil sample depths (shown on the current figures) and analytical results.

- v. Please indicate the extent of impacts to soil/sediment, groundwater and surface water above applicable delineation standards and cleanup standards on the cross sections using contour lines. Contour lines used to indicate the extent of each COC (or group of COCs) in the various media must be distinguishable from each other.
- vi. EPD noted several apparent errors and/or discrepancies on the referenced cross sections and/or the figure showing the locations of the lines of cross section (Figure 3.1). For example:
  - The construction (total depth and screened intervals) for monitoring well MW-8 is shown to be different on Cross Sections C-C' (Figure 3.4) and D-D' (Figure 3.5).
  - Cross Section A-A' (Figure 3.2) depicts monitoring well MW-1; however, Figure 3.1 does not indicate monitoring well MW-1 is included on the referenced cross section.
  - The "Door Pit" is shown on Cross Section A-A'; however, the corresponding line of cross section on Figure 3.1 is not shown to intersect the Door Pit area.
  - Typically, arrows at the end of cross sections point toward the location of the viewer. The arrows at the end of the lines of cross sections on Figure 3.1 appear to point away from the viewer based on review of the corresponding cross sections in Figures 3.2a through 3.5.
  - Several projected soil sampling locations/borings shown on the cross sections are not indicated as projected points on the lines of cross sections shown on Figure 3.1. For instance, soil sampling points B-25, B-26, or B-38 are depicted on Cross Section A-A'; however, they are not shown on the associated line of cross section, neither are said locations shown as projections onto the line of cross section on Figure 3.1.
  - Soil sampling locations TPN2-12, TPNW-1, B-54 or B-53 (labeled as both), B-50, B-48, and three soil/sediment sampling locations (apparently identified by surveyed locations) beneath the northern base of the northern onsite stream/drainage channel shown on Cross Section B-B' (Figure 3-3) do not appear to be shown on Figure 3.1.
  - It appears that monitoring well locations MW-12 and MW-12D appear to have been reversed on Cross Section D-D' (Figure 3.4) based on Figure 3.1.
  - Figure 4.1B, referenced on Figure 3.1 as a partial plan depicting a "close-up view" of the area surrounding recovery well RW-1, was not provided in the VIRP or was possibly incorrectly referenced on Figure 3.1.

13) **Contaminant Delineation:**

- a) **Soil/Sediment:** EPD will defer an evaluation of soil/sediment contamination delineation efforts until comments regarding: 1) site-specific COCs, 2) proposed delineation standards/criteria and cleanup standards, 3) sample location/depth selection, and 4) revised figures (including cross sections) and tables have been adequately addressed.
- b) **Groundwater:** EPD cannot fully evaluate groundwater delineation efforts until: 1) site-specific COCs, 2) proposed delineation standards/criteria and cleanup standards and 3) revised figures (including cross sections) and tables have been adequately addressed. However, based on a preliminary review of the VIRP and March 31, 2011 progress report:
  - i. It appears there may be up to three aquifer zones monitored by currently existing monitoring/recovery wells at the site based on monitoring well *screen intervals*: 1) a zone at or immediately below the water table within shallow soil (monitoring wells MW-1, MW-2, MW-3, MW-4, MW-8, MW-9, MW-11, MW-13, and RW-1), 2) a deeper zone within residual/saprolitic soils more than 10 ft below the water table (MW-5 through MW-7, and MW-12), and 3) bedrock (monitoring well MW-12D). Groundwater in all of the zones appears to have been impacted by the release of regulated substances at the qualifying property. Contamination within *each* zone must be horizontally delineated using groundwater samples collected from appropriately screened monitoring wells. For instance, groundwater analytical results acquired from monitoring well MW-7 (with the top of screen more than 10 ft below the water table) cannot be used to horizontally delineate contamination detected in groundwater at monitoring well MW-10, which is screened across or immediately below the water table. Therefore, groundwater contamination does not appear to have been horizontally delineated to Type 1 RRS in any direction at the site in any of the referenced aquifer zones.
  - ii. It cannot be assumed that the surface water body located parallel to the northern property boundary provides a hydraulic barrier for migration of contaminants to the north based on data acquired to date. In

fact, ditch bottom and/or stream elevations (symbols not clearly defined) indicated on several of the cross sections would indicate the stream is not a barrier. Therefore, delineation efforts must be extended to the north of the stream/drainage channel. Since surface topography may prohibit the installation of groundwater monitoring wells on that area of the qualifying property, monitoring wells may need to be installed further to the north.

- iii. It is EPD's understanding that access for groundwater contamination investigation activities on the potentially impacted adjacent properties to the east and south has been denied to CBS in the past. EPD encourages CBS to continue their attempts to gain access to said properties and other properties necessary to complete delineation activities in a timely manner. Note that horizontal delineation of the release and associated constituents of concern on property where access is unavailable at the time of enrollment must be achieved within the first 24 months of enrollment into the VRP. Horizontal contaminant delineation will not be considered complete without analytical results for groundwater samples collected from appropriately screened monitoring wells on the referenced properties. Furthermore, it is also EPD's understanding that CBS (or their representative) contacted Certex Superior Rope and Sling (Certex), lessors of the property to the south, for access to conduct contaminant delineation activities and was denied access by Certex. In the future, all access inquiries should be directed to the owners of the properties for which access is required.
  - iv. Vertical delineation of the groundwater plume has not been achieved based on the analytical results for the groundwater samples collected in August 2010 and February 2011 from monitoring well MW-12D, which is screened within bedrock.
- c) **Surface Water:** EPD will defer a full evaluation of surface water delineation efforts until comments regarding site-specific COCs and proposed delineation standards/criteria and cleanup standards have been adequately addressed and surface water analytical tables and figures have been provided. Please note that although EPD concurs that the surface water body has been impacted by VOCs from upstream sources, onsite sources for detected VOCs in surface water cannot be eliminated based on the surface water sampling locations included in the current monitoring network (see Comment 20.c.).

#### 14) Potential Receptors/Exposure Pathways:

- a) As part of the documentation defining potential human or environmental receptors please provide a figure or figures depicting:
  - i. Groundwater and surface water usage, including drinking, irrigation, recreational, and fishing, etc., within the area of release at the qualifying property and 1,000 ft downgradient, as measured from the downgradient edge of the groundwater contaminant plume or surface water/sediment contamination. Groundwater wells and surface water bodies, including the onsite surface water body and immediately downgradient surface water bodies, within the above-defined area of concern must be clearly identified with labels or symbols defined in the legends on the figure(s). In the absence of currently active drinking water wells within the area of concern, a hypothetical drinking water supply well must be shown as a potential receptor 1,000 ft downgradient of the edge of the groundwater contaminant plume. If groundwater wells are not located within the specified distance, the location of a hypothetical drinking water well must be shown and labeled on the figure as a potential POE for groundwater contamination.
  - ii. Onsite and adjacent property usage. The locations of occupied structures potentially located adjacent to or underlain by environmental media impacted by the release must be clearly identified on the required figure(s). EPD notes that there are occupied single-family residences and/or commercial buildings located on most of the properties surrounding the qualifying property in addition to the onsite commercial building.
- b) Several potential exposure pathways at the site cannot currently be eliminated from consideration until comments regarding: 1) contaminant delineation, 2) groundwater contaminant fate and transport modeling/and vapor intrusion assessment, and 3) nearby surface water body locations have been adequately addressed. The following potential points of exposure (POEs) and receptors must be considered at a minimum (other POEs or receptors may exist) in addition to those discussed in Section 3.3 of the VIRP:
  - i. **Human Receptors:**
    - **Ingestion of Groundwater:** Pursuant to §12-8-102(11) of the Act, if cleanup standards for soil or groundwater are based on Type 2, 4, or 5 RRS, a hypothetical drinking water supply well located

1,000 ft hydraulically downgradient of the delineated site contamination must be considered as a potential point of exposure.

- **Vapor Intrusion:** EPD has noted an occupied commercial building located onsite, one commercial building located immediately downgradient of the qualifying property which must be considered as current and/or future human exposure points for indoor vapors unless eliminated based on the results of groundwater contaminant fate & transport modeling results combined with vapor intrusion modeling results that have been properly calibrated and validated. Other occupied buildings must also be considered as potential human exposure points for indoor vapors if the VOC contaminant plume is found to be located beneath them or projected to migrate beneath in the future.
- **Direct Contact/Ingestion of Soil/Sediment:** EPD does not concur that current or planned engineering/institutional controls will eliminate potential exposure of onsite workers, which include future construction workers; and/or trespassers due to the proximity of residential properties. Note that lack of visual evidence of trespassers in the past is not sufficient evidence that trespassers are not potential receptors.
- ii. **Surface Water/Ecological:** Several surface water bodies are known to be located within 1,000 ft downgradient of the onsite groundwater contaminant plume and its source, including an onsite water body that has been impacted in the past the release the qualifying property. The referenced surface water bodies cannot be eliminated as potential receptors until comments regarding: 1) groundwater contaminant delineation, 2) contaminant fate and transport modeling 3) surface water cleanup standards, and 4) and an ecological risk assessment are adequately addressed.<sup>1</sup>

**15) Contaminant Fate and Transport Modeling:**

- a) **Groundwater:** Since it appears that the applicant is proposing to remediate impacted soil/sediment and groundwater contamination to Type 5 RRS, groundwater fate and transport modeling of the contaminant plume is required to determine if the groundwater contaminant plume poses an unreasonable risk to receptors and POEs. Said model(s) must be properly calibrated *and* validated using site specific analytical results and hydraulic/aquifer properties. Results of groundwater contaminant fate and transport modeling must also be used to determine appropriate locations *and* maximum acceptable groundwater contaminant levels for point of determination (POD) monitoring wells that will be protective of human and ecological receptors, including the hypothetical drinking water supply well. Note that a POD well must be proposed/selected for each complete exposure pathway and impacted aquifer zone and must be clearly identified (labeled) on figures depicting the extent of groundwater contamination.
- b) **Source Material:** It must be demonstrated that source material (*i.e.*, soil, sediment, LNAPL, *etc.*) remaining *in-situ* will not result in unacceptable groundwater contaminant levels at POEs and receptors.

- 16) **Vapor Intrusion Assessment:** A vapor intrusion assessment must be conducted for those occupied buildings currently, or predicted by fate and transport modeling, located above or immediately adjacent to soil or groundwater impacted at concentrations greater than Type 1 RRS. Corrective action must include vapor mitigation as necessary to protect potential receptors. The VIRP must include plans to conduct the required vapor intrusion assessment.

**Investigation and Remediation Plan:**

- 17) **Site-Specific Contaminant Delineation Criteria:** The VIRP does not clearly identify proposed site-specific *delineation criteria* for each environmental media impacted by the release of regulated substances at the qualifying property pursuant to §12-8-108(1)(A) through (E) of the Act. Neither was a table submitted summarizing proposed site-specific *delineation standards* provided as required by Item #5 of the Application Checklist. Note that although Table 3.1 appears to summarize proposed 1) Type 1/3, and 4 RRS for groundwater, 2) Type 4 RRS for soil/sediment, and 3) Georgia In-Stream Water Quality Standards (ISWQS) (labeled as surface water RRS on the

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<sup>1</sup> Technical guidance for ecological risk assessments is available online at: <http://www.gaepd.org/Documents/hsraguideCSRRRS.html>.

table), it (or other tables within the VIRP) does not clearly identify the specific delineation criteria, or specific standards to be applied to the various impacted environmental media at the site since contamination concentrations at the site are consistently compared to both Type 1/3 and Type 4 RRS. Note that pursuant to §12-8-108(1)(A) through (E) of the Act; Type 2, 3, or 4 RRS are not acceptable delineation criteria.

18) **Cleanup Criteria and Standards:** Please specify the criteria and specific cleanup standards to which the applicant intends to certify impacted environmental media at the qualifying property [*i.e.*, approved Type 1, 2, 3, or 4 RRS or other Risk-Based standard (Type 5 RRS) pursuant to §12-8-108(5) and (6) of the Act] and summarize in tabular format according to impacted environmental media.

- a) The remediation plan in the VIRP relies on engineering and/or institutional controls to limit receptor exposure to environmental media impacted by regulated substances at concentrations greater than Type 1 RRS. Therefore, alternate risk-based cleanup standards (Type 5 RRS) must be specified and summarized in the VIRP based on the results of: 1) a revised risk assessment, 2) associated results from vapor intrusion assessment/modeling (if necessary), and 3) a properly calibrated (and later validated) groundwater contaminant fate and transport model.
- b) In addition to the Type 5 cleanup standards referenced above, maximum acceptable concentrations of COCs in groundwater at each approved POD well that will "trigger" additional corrective measures to prevent unacceptable exposure for receptors must also be summarized in tabular format.
- c) **Risk Reduction Standards (RRS):** Since the VIRP compares soil/sediment and groundwater contaminant concentrations with multiple proposed RRS types, EPD has reviewed: 1) the proposed RRS summarized on Table 3.1 and 2) the associated table and calculations provided in Appendix D and has the following comments specific to them:
  - i. **Type 1 Soil/Sediment RRS:** Please see Comment 17 above.
  - ii. **Toxicity Factors and Chemical-specific Parameters:** The toxicity and chemical specific parameter values provided in Appendix D, Table 2 and Tables 3A-3C of the VIRP appear to have been obtained from a version of the Regional Screening Levels Table (RSLT, December 2009) that has been superseded. Prior to submittal of the October 2010 VIRP, EPA released an updated version of the RSLT and has more recently released another version in November 2010<sup>2</sup>. EPD previously informed the applicant of EPA's proposed semi-annual updates to the RSLT in Comment Nos.13a and 13c of EPD's Response to Comments letter dated April 30, 2010; which: "*Please note that EPA updates the RSLT periodically (with intended updates about every six months) and it is the responsibility of the facility to ensure that the most current toxicity factors [and chemical specific parameter] are used in the RRS calculations at the time the report is written and submitted to EPD.*" Therefore, all toxicity factors and chemical specific parameter values used in the RRS calculations must be reviewed to determine if they are consistent with those listed in the most recent version of the RSLT (at the time of submittal to EPD) and calculations and resultant proposed RRS values revised accordingly.
  - iii. **Soil Leachability Calculations (Criterion d.1):** It appears that column headers on Table 3A of Appendix D in the VIRP reference Type 2 groundwater RRS as the groundwater standards used to calculate soil leachability values (Criterion d.1) rather than the higher of the proposed Type 3 or Type 4 groundwater RRS that should have been used and appear to be listed on the table. Please revise the referenced column header so that it references the actual groundwater criteria (proposed Type 3 or 4 RRS) apparently used in the soil leachability calculations for proposed Type 4 soil RRS.
  - iv. **1,2,3-Trichlorobenzene:** The Type 3 and 4 soil RRS provided in Appendix D of the VIRP for 1,2,3-trichlorobenzene are incorrect. Since 1,2,3-trichlorobenzene is regulated as *Chlorinated Benzenes Not Otherwise Specified* (N.O.S.) in the Rules, the Type 3 and 4 soil RRS for this substance should be based on the Appendix I notification concentration (NC) for *Chlorinated Benzenes N.O.S* and *not* 1,2,4-trichlorobenzene. Therefore, the correct soil Type 3 and 4 RRS for this substance is 25 mg/kg.

<sup>2</sup>U.S. EPA (November 2010). Regional Screening Level Summary Table (RSLT). Available online at: [http://www.epa.gov/reg3hwm/risk/human/rb-concentration\\_table/Generic\\_Tables/index.htm](http://www.epa.gov/reg3hwm/risk/human/rb-concentration_table/Generic_Tables/index.htm).



d) **Surface Water:** A number of the "RRS" for surface water listed in Table 3.1 are incorrect. Although the footnote to the table references the February 2009 version of the Georgia Water Quality Control Rules, the values appear to be based on the November 2005 version. All Georgia In-Stream Water Quality Standards (ISWQS) must be updated in accordance with Section 391-3-6-.03(5)(e)(iv) of the Georgia Water Quality Control Rules (amended January 2009, effective February 18, 2009). This comment has been previously relayed to CBS. EPD will defer further comments regarding cleanup standards until deficiencies regarding: 1) contaminant delineation, 2) vapor intrusion modeling, 3) exposure pathways/receptors (*including* potential ecological receptors), 4) groundwater contaminant fate and transport modeling and 5) proposed RRS and associated calculations have been adequately addressed.

19) The VIRP has proposed remedial actions at the qualifying property to address potential exposure to subsurface soils and/or groundwater impacted by PCBs and chlorobenzenes through the use of institutional and/or engineering controls. EPD offers the following preliminary comments regarding proposed corrective actions as follows:

- a) The potential for migration of the groundwater contaminant plume onto adjacent non-qualifying properties from the qualifying property exists based on a review of analytical results for groundwater samples collected during the March 2011 monitoring event at concentrations exceeding Type 1 RRS at or near the eastern and southern boundaries of the qualifying property. Remedial and/or control measures (which could include the use of an environmental covenant) must be included in the revised VIRP if confirmed by required delineation investigations. *Please note that based on CBS's inability to access adjacent non-qualifying properties for investigative activities in the past, EPD has concerns regarding the ability to obtain property owner agreement to environmental covenants on said properties in the future should they become necessary as institutional controls to limit exposure to environmental receptors.*
- b) Please clearly identify (label) those monitoring wells to be used as POD wells on figures summarizing the extent of groundwater contamination. Section 3.3.4 of the VIRP references certain monitoring wells as plume delineation wells, but does not specify them as POD wells for future monitoring events. Note that POD wells are to be monitored specifically for the *protection of potential receptors* and not necessarily to monitor/delineate the contaminant plume. POD well location/and screen interval should be based on: 1) contaminants of concern, 2) cleanup standards, 3) extent of groundwater contamination, 4) complete exposure pathways/receptors (*including* potential ecological receptors), 5) vapor intrusion assessment/modeling results, and 6) groundwater contaminant fate and transport modeling results at a minimum.
- c) Please note that calculation of the flux of groundwater to the storm water channel and the associated mass flux of Site-related COCs to the northern onsite stream/storm water channel as described in Section 4.2 of the VIRP is not sufficient to demonstrate that groundwater discharge from the site will not impact the stream above Georgia ISWQS (or other applicable cleanup standards; see Comment 18.d.). Said conclusion must be confirmed through the use of analytical results for surface water samples collected immediately north of recovery well RW-1 (and other likely locations of impact such as LNAPL seep areas, *etc.*).
- d) Evaluation of P&T system effectiveness should be consistent with those methods described in EPA Superfund Publications – *Methods for Monitoring Pump-and-Treat Performance (Parts 1 and 2)*<sup>3</sup>. Please note that documentation of the removal of large volumes of groundwater and visual observation of seepage areas is not sufficient in and of itself to demonstrate the effectiveness of a P&T system as a control measure for migration of groundwater contamination (specifically LNAPL seepage to surface water). At a minimum, the following items must be included in a revised VIRP when evaluating the effectiveness of the P&T system as a control measure limiting migration of contaminants in groundwater:
  - Calculation of mass contaminant removed from the subsurface by the existing P&T system to date and during recent operation of the P&T system as has been requested by EPD in the past. Said calculations must be conducted to determine if the system is recovering contaminated groundwater effectively. Since effluent sampling and analysis is assumed to be required in order to discharge recovered groundwater to the onsite sewer connection and CBS has been reporting recovered groundwater volumes, EPD assumes that CBS has sufficient data available to conduct said calculations. Please note that without effluent

<sup>3</sup>The referenced document may be accessed online at:

[http://cfpub.epa.gov/superapps/index.cfm/fuseaction/pubs.viewPub/pub\\_id/530/viewPub.cfm](http://cfpub.epa.gov/superapps/index.cfm/fuseaction/pubs.viewPub/pub_id/530/viewPub.cfm).

analytical data and/or the above calculations, there is no supporting documentation that the P&T system is recovering contaminated groundwater.

- An evaluation of zone of influence/capture zone for the P&T extraction wells. Please note that although potentiometric surface maps previously submitted in past progress reports and the March 2011 progress report indicate potential "cones of depression" around operating extraction wells, said "cones of depression" are solely based on groundwater elevations measured in the extraction wells. Note that groundwater elevations measured within extraction wells are typically lower than those measured in the adjacent aquifer due to well inefficiency and well losses and actual extents of capture zones cannot be confirmed without groundwater elevations measured within the estimated capture zones (*i.e.*, nested piezometers).
- e) Please ensure that the proposed environmental covenant restricting the future uses of the qualifying (and impacted non-qualifying properties, if applicable) that conforms to O.C.G.A. §44-16-1, *et. seq.*, the Georgia Uniform Environmental Covenants Act. A model environmental covenant that conforms to the above standard may be accessed online at: [http://www.gaepd.org/Files\\_DOC/forms/hwb/modelcovenant.doc](http://www.gaepd.org/Files_DOC/forms/hwb/modelcovenant.doc).
- Pursuant to §391-3-19-.07(10) of the Georgia Hazardous Site Response Rules and Condition 8 of the model covenant referenced above, EPD will require the installation and maintenance of a permanent marker on each side of the site, which delineates the area to be restricted by the proposed environmental covenant. Disturbance or removal of the required markers after installation and enactment of the covenant is prohibited. The VIRP must be revised to include the installation of the required markers, which should include signage indicating their purpose.
  - A draft copy of the proposed covenant must be submitted to EPD for review no less than 60 days prior to submittal of the required compliance status report to allow sufficient review time and revisions as necessary.

EPD will defer further comments regarding proposed corrective actions until deficiencies regarding: 1) contaminants of concern, 2) cleanup standards, 3) contaminant delineation, 4) exposure pathways/receptors (*including* potential ecological receptors), 5) vapor intrusion assessment/modeling, 6) contaminant fate and transport modeling, *etc.* have been adequately addressed.

### Miscellaneous Comments

- 20) Figures, tables, and other documentation used to support the CSM presented in a VIRP must be comprehensive in nature and submitted as part of the VIRP itself. Reliance solely on references to data in past submittals, which may be incomplete or not comprehensive, is not acceptable as support for the CSM presented in the VIRP. Note that figures may require a larger format (greater than 11 inches by 14 inches) to maintain legibility.
- 21) All symbols and abbreviations/acronyms used on each figure and/or table provided in future reports/plans must be defined within the legend or notes of each applicable figure or table. For instance, the symbol "■" (in red), used to denote the location of soil sampling location RW-1 on Figure 3.6, is not defined in the legend of same figure. In addition, please remove symbols, abbreviations, *etc.* from figure legends that are not used in the associated figures. For instance, EPD cannot locate the symbol defined as "IRM confirmation samples" shown in the legend for Figure 4.1.
- 22) Based upon information in the VIRP, and other reports, EPD cannot determine if groundwater samples are representative or if previous groundwater sampling events were performed in accordance with US EPA Region 4 Field Branches Quality System and Technical Procedures (FBQSTP) Groundwater Sampling Operating Procedure document (SESDPROC-301-R1, dated November 1, 2007).<sup>4</sup> Field logs and a detailed description must be provided of the sampling procedures used during the most recent groundwater sampling events conducted in

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<sup>4</sup> The referenced guidance document and other EPA Region 4 SEDS field guidance/standard operating procedure documents may be accessed at: <http://www.epa.gov/region04/sesd/fbqstp/>.

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August 2010 and February 2011 along with calibration procedures used to measure stabilization parameters during purging. Please refer to Comment #24 of the April 30, 2010 EPD letter addressed to Mr. Leo Brausch of the Environmental Remediation Department of CBS for additional details regarding applicable groundwater purging/sampling procedures and required associated documentation.

- 23) In future submittals, a well construction table must be provided for all existing and abandoned monitoring wells at the site. All historical wells that have been abandoned or destroyed (including temporary wells) should be included with applicable notations. This is necessary for reviewing potentiometric surface maps and/or adequacy of groundwater contaminant delineation efforts and should be provided within the revised VIRP and in *all* submittals documenting groundwater conditions at the qualifying property.

Based on the above comments, EPD has determined the VIRP to be incomplete. In order to be considered for the voluntary remediation program, please submit a revised VIRP no later than August 31, 2011. Please submit the following items:

- Completed application form (see Comment 1)
- Revised CSM to include all reasonably available current information (see Comments #2, 3, 6, 7, 9, 11, and 20) and that illustrates the site's surface and subsurface setting (see Comments #8, and 12), the known or suspected source(s) of contamination (see Comments #5, and 7), how contamination might move within the environment (Comments #10, 11, and 13), the potential human health and ecological receptors (Comments #14, and 16), and the complete or incomplete exposure pathways that may exist at the site (Comments #14, and 16)
- Revised preliminary investigation and remediation plan that addresses Comments #15, 16, and 20
- Table of delineation standards that addresses Comment #17

Please include responses to the above comments in a response-to-comment format with the revised VIRP. If you have any questions, please contact Carolyn L. Daniels, P.G. of the Response and Remediation Program at (404) 657-8600.

Sincerely,



Alexandra Y. Cleary

Program Manager  
Response and Remediation Program

c: Terefe Mazengia, PG., Conestoga-Rovers & Associates

Russell McLean, US EPA Region 4

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