



July 2, 2012

Ms. Carolyn J. Casey
United States Environmental Protection Agency
5 Post Office Square, Suite 100, OSRR 07-3
Boston, MA 02109-3912

Re: Stewardship Permit Submittal – DEP/HWM/CS-034-006
Off-Property Investigation Work Plan Addendum
Former Risdon Facility - 15 Old Newtown Road, Danbury, CT USEPA ID CTD001168558

Dear Ms. Casey:

On behalf of CR USA, Woodard & Curran (W&C) has prepared this *Off-Property Work Plan Addendum* (Addendum) to propose supplementary off-property investigation activities downgradient of the former Risdon Facility, located at 15 Old Newtown Road (Site) in Danbury, Connecticut. Specifically, this Addendum is being submitted in response to EPA's *Technical Review of the Off-Property Investigation Report* and the subsequent comment-response document prepared by W&C and submitted to EPA on May 3, 2012.

Consistent with the initial *Off-Property Investigation Work Plan* submitted in February 2010 and the comment-response thereafter, a phased investigation approach will be used to evaluate off-property subsurface conditions in the vicinity of the Site. The results summarized in the September 2011 *Off-Property Investigation Report* increased the level of understanding associated with off-property nature and extent of the groundwater plume, potential receptors, and migration pathways. The selected approach outlined in this Addendum will expand upon the conclusions derived thus far by further evaluating downgradient groundwater and the Still River.

This Addendum addresses four specific investigation "tasks", as follows:

- 1) Still River Sediment Assessment, including a river walk and reconnaissance (phase 1) and potential collection of sediment samples from suitable depositional areas in the Still River (phase 2);
- 2) Still River Groundwater Discharge Survey, including a river walk and reconnaissance (phase 1) and subsequent groundwater discharge survey within the Still River (phase 2);
- 3) The installation of an overburden monitoring well couplet in the vicinity of 28 Finance Drive to evaluate groundwater quality beyond the MW-701 well cluster; and
- 4) Quarterly off-property groundwater elevation monitoring in the vicinity of the wetlands north of 4 Old Newtown Road over a one-year period in 2012.

The implementation details associated with these tasks are summarized below. Additionally, the proposed activities will be implemented in accordance with the methods and procedures described in the *Off-Property Investigation Work Plan* and *Revised Draft Quality Assurance Project Plan* submitted in February 2010 and the comment-responses to these documents submitted thereafter.



Task 1: Still River Sediment Assessment

As part of initial off-property investigation activities involving the drain line from the former lagoon area, a series of co-located sediment and surface water samples were collected in proximity to the storm drain outfall, and also at upstream and downstream locations. EPA comments to this work indicated that sediments collected during the initial sediment investigation may have been too coarse and may not represent depositional conditions. As part of their review, EPA recommended a walk-through of the Still River between the Site and the Eagle Road Bridge during low-flow conditions to evaluate potential depositional areas.

This river walk-through reconnaissance approach will be used during the first phase of this assessment. Local precipitation data and provisional gauge height and discharge information from a USGS station (#01201487) located along the Still River in Brookfield, CT will be monitored to identify a period of low flow conditions. The following general indicators will be assessed: 1) the lack of measureable precipitation, 2) a gauge height less than 7.0 feet, and 3) an extended period of discharge less than 100 cubic feet per second (cfs). Reviewing 2011 data for this station indicates that the July-August timeframe would be a target time to conduct the walk-through.

Once a date is selected, W&C will walk the approximately 2,000 linear foot section of the river from Old Newtown Road to the Eagle Road Bridge (Figure 1). Depositional areas will be identified based on the lack of coarse gravel deposits and the prevalence of softer sediments identified while walking. In addition to noting river bottom conditions, the location of storm drains, outfalls, and any noticeable dumping or filling in along the edge of the river will be noted during this assessment.

A hand-held global positioning system (GPS) unit will be used to horizontally locate potential areas as numbered stations and marker flagging will be affixed along the shoreline for future reference. Photographs will also be taken to document field conditions. The GPS data will be posted onto an orthophotograph and the station data will be tabulated with notes regarding field observations and sampling rationale. This information and proposed plan for subsequent sediment sampling and analysis (if appropriate) will be provided to EPA for review prior to the collection of sediment samples as part of the second phase of work.

Task 2: Still River Groundwater Discharge Survey

In July 2011, two replacement piezometers were installed in the Still River across from the 2 Broad Street and 2 Old Newtown Road properties. These piezometers, referred to as PZ-1 and PZ-2 were initially installed in 2006 with considerable difficulty due to the density of coarse channel gravels and blast rock along the riverbed. The replacement piezometers were manually driven into the substrate in 2011 using a pneumatic hammer to a depth of 5-feet below the riverbed-grade and constructed with a 1-foot screen section. Following a horizontal location and vertical elevation survey, water surface elevation measurements were obtained from within and outside each piezometer. These piezometers were subsequently destroyed in late August 2011 in the aftermath of Hurricane Irene.

To evaluate the potential for groundwater migration from the Site to discharge into the Still River, EPA has commented that additional piezometers should be installed and used for sample collection and groundwater elevation gauging. Due to the coarseness of the riverbed, the first phase of this task will include a river walk-through reconnaissance approach, similar to that described above in Task 1 above. This reconnaissance of potential new piezometer locations will be conducted at the same time as the walk through described in Task 1 above.



Depositional areas will be targeted to support piezometer installation within softer, less rocky areas. Potential locations will be positioned using a GPS and transferred to a site plan. The information obtained during the river walk and the proposed plan for the second phase of work (piezometer installation and subsequent monitoring) will be provided to EPA for review.

Following EPA approval of the piezometer locations, it is planned that the piezometers will be installed following the same procedures and construction details used during the 2011 piezometer installation, including surveying. Water levels (inside and outside) will be measured and groundwater and surface water samples collected for volatile organic compound (VOC) analyses. The resulting data will be submitted to EPA for review and used to determine next phase of work, as needed.

Based on the objectives of the groundwater discharge survey, piezometers may be installed during two phases. The groundwater and surface water data from the proposed initial piezometer installation will be reviewed to determine if additional piezometers are needed to better understand potential discharge zones.

Task 3: Off-Property Well Installation – 28 Finance Drive

The recent off-property investigation work included the installation of a well cluster in Augusta Drive, approximately 450 feet north of the Risdon facility. This well cluster, identified as MW-701, was used to evaluate groundwater flow patterns, potential contaminant migration, and hydrogeological features associated with a bedrock valley in the area. The screened intervals of these wells were selected based on the results from field screening of soils and bedrock groundwater using a portable gas chromatograph (GC). Subsequent groundwater samples from the monitoring wells detected concentrations of select VOCs above applicable Connecticut Department of Energy and Environmental Protection (CTDEEP) Surface Water Protection Criteria (SWPC).

To evaluate the potential for these VOCs to impact the Still River, EPA's BioChlor screening model was used to evaluate VOC attenuation downgradient of the MW-701 well cluster. Although the model output suggested that concentrations of VOCs would degrade prior to reaching the Still River, a monitoring well couplet is planned to be installed further downgradient in order to collect groundwater samples from this area.

To evaluate groundwater migration beyond MW-701, an overburden well couplet, designated as MW-703, is proposed for installation at a further downgradient location along the groundwater flow path / conceptual plume migration pathway (as identified in the Conceptual Site Model presented in the *Off-Property Investigation Report*). Potential drilling locations in these areas are limited / restricted due to the presence of underground and overhead utilities along Finance Drive.

Preliminary discussions with the property owner at the 28 Finance Drive property indicated they may be amenable to the installation of the well couplet on their property. This property is zoned industrial and owned by Jostela Enterprises Inc. (Danbury Plumbing and HVAC operate within the building – same owner). Figure 1 illustrates the preferred location for the well couplet; however, the final location will be contingent on the property owner's concurrence and access agreement execution.

According to the property owner, there are also five existing monitoring wells on-site. The location and depth of these wells is unknown at this time. The first stage of this work, assuming access is granted, will be to locate and gauge the depth to bottom and depth to groundwater at accessible wells on the property. Should a shallow water table well be present in the vicinity of the new deep overburden well (to be installed), then a water table well may not be required.



The new well(s) will be installed using similar methodologies employed during the installation of the MW-701 well cluster. Based on a review of the subsurface information included in historic cross-sections by ERM-Northeast for the Toppan/Dupont Photomask Corporation (located east of 28 Finance Drive), the overburden thickness may be approximately 100-feet below the existing ground surface in this vicinity. To obtain subsurface information to this depth, a truck-mounted drill rig will be used to advance the borehole by “drive and wash” drilling methods. A split-spoon sampler will be driven below the casing in 2-foot intervals to obtain undisturbed soil samples for geologic logging and field screening with a photoionization detector (PID). An aliquot of soils will also be subsampled and preserved for field screening with the portable GC. The boring will be advanced until refusal or until two successive soil sample results exhibit decreasing readings, whichever is shallower.

Using the same overburden well installation criteria for the MW-701A/B wells, the overburden interval demonstrating the highest VOC results will be selected for the installation of the deeper overburden well (assuming VOC measurements are observed). A second overburden well will be installed (if there is not an existing well in the vicinity) and screened across the water table surface and designated as MW-703A.

New well(s) will be constructed with a sand filter pack installed two-foot above the top of the well screen followed by a two-foot bentonite chip seal placed above the sandpack. The remainder of the borehole will be filled with a high-solids bentonite grout. The surface of the well will be completed with a flush-mounted roadbox.

Groundwater samples will be collected from the two new wells no earlier than 7-days after well development. Groundwater samples will be collected using low flow methodologies in accordance with the SOPs included in the project QAPP. Samples will be submitted to the laboratory for analysis of 13 priority pollutant metals, cyanide and VOCs in accordance with the project QAPP. The new and any existing wells will be surveyed for incorporation into the existing monitoring network.

To evaluate groundwater flow direction, this newly installed well and accessible off-property wells will be monitored in conjunction with the site-wide annual groundwater monitoring event, typically conducted in September. Should the schedule or access prevent well installation prior to this time, the site-wide groundwater sampling activities will occur as planned (in September); however, the full gauging event at all accessible wells may be postponed to accommodate inclusion of the new MW-703 wells.

All water generated during drilling operations and well development will be transferred back to the Site and processed through the groundwater treatment system. Any resulting soil drill cuttings will be drummed and brought to the Site for waste characterization and subsequent off-site disposal.

Task 4: 4 Old Newtown Road Quarterly Off-Property Groundwater Elevation Monitoring

Groundwater elevation monitoring conducted in August 2011 and March 2012 of the newer off-property wells (MW-701A/B/C and MW-702A/B) demonstrated that the majority of groundwater in this area flows to the north towards the adjacent industrial/commercial properties along Augusta Drive. To demonstrate that this condition remains seasonally over the course of the year, a round of quarterly water elevation measurements will be obtained from 10 monitoring wells located in the vicinity of the wetland area on the 4 Old Newtown Road property throughout 2012. These wells include MS-MW-1A, MS-MW-2 through MS-MW-7, MW-15M and MW-702A and B. In addition, the timing of these gauging events will coincide with the monthly Operation and Monitoring (O&M) event for the Site’s groundwater treatment system (which includes up to 28 monitoring wells) and will incorporate gauging of the MW-701A/B/C well cluster in Augusta Drive.



Several of these monitoring locations are located on private property which will require notification and coordination in advance of the three remaining quarterly events for 2012. The second gauging event was conducted on June 28, 2012 to maintain the quarterly schedule beginning in March 2012. All elevation measurements will be reviewed and consolidated into an off-property water level summary table.

Schedule

The proposed off-property investigation activities described in this Addendum would commence following EPA approval. The initial objective of the river walk-through for Tasks 1 and 2 will require an extended period of reduced precipitation to assess low flow conditions in the Still River. It is anticipated that this will occur in July or August 2012. The proposed drilling activities summarized in Task 3 will occur on private property and necessitate access by the current owner (Jostela Enterprises Inc.). EPA and CTDEEP will be kept apprised on the status of achieving access so that should access be delayed or not attainable, an alternative approach can be pursued. Groundwater elevation gauging will continue in September 2012 to maintain the quarterly frequency established during the March 2012 event.

If you have any questions or require additional information, please contact me or Kenny Gullede (CR USA, Inc) at 843-320-1171.

Sincerely,

WOODARD & CURRAN, INC.

A handwritten signature in blue ink that reads "Jeffrey A Hamel".

Jeffrey Hamel, LSP, LEP
Senior Project Manager

Enclosure: Off-Property Investigation Report

cc: Sandra Brunelli, CTDEEP
Stephanie Carr, USEPA
Kenny Gullede, CR USA, Inc.

Submittal Certification

This document submittal has been prepared for the property located at 15 Old Newtown Road in Danbury, Connecticut (Site) in accordance with Condition II.B.2 of the Stewardship Permit for CR USA, Inc. (Permit) dated September 29, 2009 and the approved Schedule for Scope of Work – Revision 2 (updated July 2011). In accordance with Section I.E.15 of the Permit and 40 CFR 270.11(d)(1), the following certification is provided:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signed: _____



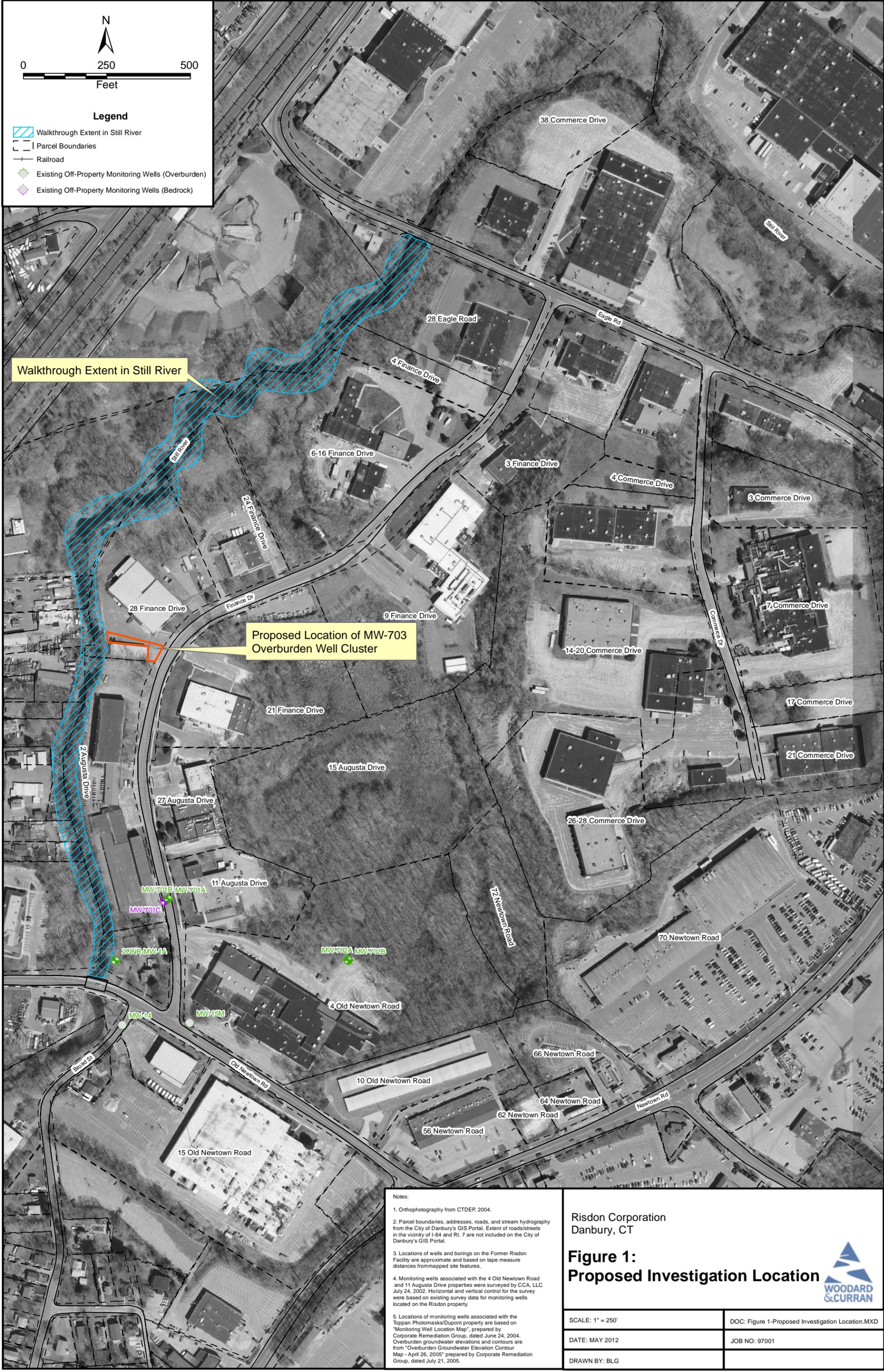
Michael Antry, Corporate Director of EH&S, CR USA, Inc.



0 250 500
Feet

Legend

-  Walkthrough Extent in Still River
-  Parcel Boundaries
-  Railroad
-  Existing Off-Property Monitoring Wells (Overburden)
-  Existing Off-Property Monitoring Wells (Bedrock)



- Notes:
1. Orthophotography from CTDEP, 2004.
 2. Parcel boundaries, addresses, roads, and stream hydrography from the City of Danbury's GIS Portal. Extent of roads/streets in the vicinity of I-84 and Rt. 7 are not included on the City of Danbury's GIS Portal.
 3. Locations of wells and borings on the Former Risdon Facility are approximate and based on tape measure distances from mapped site features.
 4. Monitoring wells associated with the 4 Old Newtown Road and 11 Augusta Drive properties were surveyed by CCA, LLC July 24, 2002. Horizontal and vertical control for the survey were based on existing survey data for monitoring wells located on the Risdon property.
 5. Locations of monitoring wells associated with the Toppan Photomasks/Dupont property are based on "Monitoring Well Location Map", prepared by Corporate Remediation Group, dated June 24, 2004. Overburden groundwater elevations and contours are from "Overburden Groundwater Elevation Contour Map - April 26, 2005" prepared by Corporate Remediation Group, dated July 21, 2005.

Risdon Corporation
Danbury, CT

**Figure 1:
Proposed Investigation Location**



SCALE: 1" = 250'	DOC: Figure 1-Proposed Investigation Location.MXD
DATE: MAY 2012	JOB NO: 97001
DRAWN BY: BLG	