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July 6, 2010

Mr. Frank Sowers, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
Region 8 – Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414-9519

Subject: **Periodic Review Report**
Former Taylor Instruments #V00144
Rochester, Monroe County, New York
MACTEC Project 3031052006

Dear Mr. Sowers:

On behalf of Combustion Engineering (CE), MACTEC is submitting the enclosed Periodic Review Report (PRR).

Introduction

The Site was the location of the former Taylor Instruments facility that was operated from 1904 to 1994 under a variety of owners. In 1993, Combustion Engineering (CE), the current owner, closed the facility. The Site is currently vacant. In 1997 a Voluntary Clean-up Agreement (VCA) between CE and New York State Department of Environmental Conservation (NYSDEC) (VCA Index #B8-0508-97-02) was signed.

Following extensive soil excavation, filling and capping, and other remedial activities, a groundwater remedy for chlorinated volatile organic compounds (VOCs) was implemented from January 2001 to May 2006. This included an on-site remedial treatment system which consisted of a dual-phase vacuum extraction (DPVE) and bedrock groundwater extraction and treatment system (System).

Upon reaching the conclusion that the System had reached asymptotic contaminant removal rates, in July 2006 MACTEC initiated a pilot-scale application of Hydrogen Release Compound (HRC) Advanced® near monitoring wells OB-08 in the North Trichloroethene (TCE) Source Area and

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OB-04 in the South TCE Source Area of the Site to evaluate the effectiveness of HRC Advanced® in accelerating the biodegradation of the site contaminants of concern (COCs) in lieu of further operation of the System. The System was shut down prior to the pilot test and has remained off to optimize reducing conditions after implementation of the pilot application. The HRC®-Advanced was effective in reducing TCE contamination in the overburden groundwater within the North and South TCE Source Areas. The results from ongoing post-pilot test monitoring also indicate that reducing conditions still exist and are conducive for continued accelerated bioremediation.

Twelve overburden monitoring wells and twelve bedrock monitoring wells located on the Site have been sampled regularly since 2001. The wells are shown on Figure 1. Analytical data from the October 2009 sampling event (most recent data reported to NYSDEC) indicates that COC concentrations remain above Class GA Standards in six source area overburden monitoring wells (OB-04, OB-06, and OB-07 in the South TCE Source Area and OB-05, OB-08, and OB-09 in the North TCE Source Area), as well as in four perimeter overburden monitoring wells (W-5, TW-09, TW-17, and TW-20). Similarly, analytical data from the October 2009 sampling event indicates that COC concentrations remain above Class GA Standards in eight source area bedrock monitoring wells (BR-04, BR-08, BR-09, BR-10, BR-11, and BR-17 in the South TCE Source Area and BR-05 and BR-15 in the North TCE Source Area), as well as in four perimeter bedrock monitoring wells (BR-01, BR-02, BR-03, and BR-07).

Data from the past annual reporting period indicates that reducing conditions still exist and are conducive for continued accelerated bioremediation in the source areas. Pending approval of MACTEC's *Revised Work Plan for Accelerated Bioremediation and Permanent Decommissioning of the Remediation Treatment System* (MACTEC 2010a), an expanded HRC®-Advanced application and post-closure monitoring of natural attenuation will be implemented until groundwater concentrations of the COCs are at or below NYSDEC Class GA Standards.

During the past reporting period, no areas of non-compliance were noted. Additionally, no changes to the Soil Management Plan or frequency of PRR submittals are recommended. The requirements for discontinuing the Site management have not been met.

Site Overview

The Site is located at 95 Ames Street in Rochester, New York. The approximately 14-acre Site is vacant, containing a shed for the System and a second storage shed. The Site is mostly paved and

is surrounded by a chain link fence. North of the Site is a railroad line and commercial/industrial development; to the east across Ames Street are a food processing facility, residences, and a community center; to the south across West Avenue are residences; and to the west across Hague Street is Rochester Gas and Electric. Figure 1 (attached) is a Site Map.

Prior to Site remediation, Site assessments identified the following contaminants:

Site Contamination

- Mercury and TCE were the principal site contaminants present in Site soils.
- VOCs were being released from the North and South TCE Source Areas to soil and bedrock groundwater at concentrations exceeding groundwater quality standards. TCE was the predominant site-related VOC in overburden and bedrock groundwater samples.
- Soil gas samples collected from downgradient site perimeter locations contained TCE along with tetrachloroethene (PCE) and dichloroethene (DCE) at less frequent detection and lower concentration.
- Mercury, while present at slightly elevated concentrations near shallow soil sources, did not appear to be migrating off site at levels above Class GA standards, either in the overburden or bedrock flow systems.
- TCE and its breakdown products were found at several locations in on-site sewers; they were the only VOCs detected. Mercury was detected at low levels in each of the water samples obtained from on-site sewer locations.

Off-Site Contamination

- VOCs observed in Hague and Ames Street sewers may have been attributable to the on-site sewer connections. There was also the possibility that other sources were contributing to the VOCs observed, such as other sewer connections unrelated to the Taylor property.

Complete details on the nature and extent of contamination prior to Site remediation were provided in the Final Investigative Report (Harding Lawson Associates 1999).

Remedial Program

- Remedial actions for Site soil exceeding the approved clean-up goals for mercury included excavation of soil with mercury concentrations exceeding 100 milligrams per kilogram (mg/kg).

- Remedial actions for the South TCE Source Area consisted of a DPVE within the source area and monitored natural attenuation (MNA) in downgradient areas.
- Remedial actions for the North TCE Source Area consisted of soil excavation of the upper 4 feet of material that exceeded 0.7 mg/kg TCE. DPVE was implemented within the source area following excavation.
- MNA has been utilized for areas of lesser contamination.
- Enhanced biodegradation was used as a follow up to DPVE in the North and South TCE Source Areas once DPVE reached asymptotic levels of contaminant removal. Additional, expanded enhanced bioremediation is planned for 2010.
- Following the expanded enhanced bioremediation planned for 2010, MNA will be utilized site-wide until VOC concentrations are below the NYSDEC Class GA drinking water standards.

Complete details of the remedial program were provided in the April 2000 Remedial Work Plan (Harding Lawson Associates 2000), the Final Engineering Report (MACTEC 2003), and the 2010 Revised Work Plan (MACTEC 2010a).

Evaluation of Remedy Performance, Effectiveness, and Protectiveness

The most current assessment of the effectiveness of the Site remedial actions was presented in MACTEC's 2009 Annual Report (MACTEC 2010b).

Institutional and Engineering Control (IC/EC) Plan Compliance Report (if applicable)

Specific details on IC/ECs for the Site were provided in the Remedial Work Plan (Harding Lawson Associates 2000) and the Soil Management Plan (MACTEC 2005). Certification of the IC/ECs is provided in the attached Department-approved certification form.

Monitoring Plan Compliance Report

Details of compliance monitoring were provided in the Remedial Work Plan (Harding Lawson Associates 2000) and the Dual-Phase Vacuum Remediation Extraction System Operations and Maintenance Manual (Harding ESE 2001). A summary of recent monitoring, comparisons with remedial objectives, and conclusions and recommendations were provided in the 2009 Annual Report (MACTEC 2010b). MACTEC has not identified deficiencies with the monitoring plan.

Operation and Maintenance (O&M) Plan Compliance Report

The Site O&M Manual (Harding ESE 2001) was approved by the Department in a September 2, 2005 letter (NYSDEC 2005). The components of the document included details of the DPVE System, including System maintenance; Site health and safety; Site environmental sampling; and reporting and notification requirements.

O&M activities completed during the 2009 reporting period included two semi-annual groundwater sampling events and submittal of an annual report to NYSDEC. These activities, along with an evaluation of the remedial System and conclusions and recommendations, were provided in MACTEC's 2009 Annual Report (MACTEC 2010b). The System remained off for 2009 to optimize conditions that are favorable for enhanced biodegradation. MACTEC has not identified deficiencies with the O&M Plan.

Overall PRR Conclusions and Recommendations

Compliance with the Site O&M Plan including performance and effectiveness of the Site remedy was detailed in the 2009 Annual Report (MACTEC 2010b). As indicated in that report, a comparison of analytical data from the 24 sampling events that occurred in 2001-2009 provides an evaluation of the site remedial progress. The following overall conclusions and recommendations have been reached in this remedial progress evaluation:

- While certain COCs remain above the NYSDEC Class GA drinking water standards, overall decreases in TCE concentrations have been observed in all but one of the site perimeter monitoring wells and in all site interior monitoring wells. The greatest decrease has been within the two source areas, where all monitoring wells have TCE declines of at least 98 percent.

- Despite an extended shutdown of the System since August 2006, overall contaminant levels in the Site monitoring wells have not demonstrated significant rebound effects, and overall declines remain evident.

- MACTEC provided NYSDEC with an Accelerated Bioremediation Pilot Test Final Report (MACTEC 2008) which summarized results from the pilot test and provided conclusions on the effectiveness of the HRC®-Advanced. HRC®-Advanced has been effective in reducing TCE contamination in the overburden groundwater within the North and South TCE Source Areas. The results from ongoing post-pilot test monitoring also indicate that reducing conditions still exist and are conducive for continued accelerated bioremediation.

- Contaminant conditions will continue to be monitored during future semi-annual site-wide groundwater monitoring events. Pending approval of MACTEC's *Revised Work Plan for Accelerated Bioremediation and Permanent Decommissioning of the Remediation Treatment System* (MACTEC 2010a), an expanded HRC®-Advanced application and post-closure monitoring of natural attenuation will be implemented until groundwater concentrations of the COCs are at or below NYSDEC Class GA Standards.

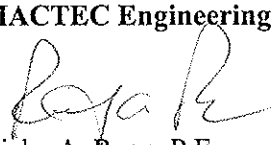
- As a precondition to approving MACTEC's above referenced Work Plan, NYSDEC required a soil vapor investigation (SVI) be performed. MACTEC performed the SVI on September 8 and 9, 2009. The SVI consisted of collecting two soil vapor samples on the Site near the southern boundary outside a chain link fence, adjacent to West Avenue, as well as three soil vapor samples beneath Ames Street, between the Site and the four residences that are immediately downgradient of the Site along Ames Street. The results of the SVI were presented in MACTEC's Report of Soil Vapor Investigation (MACTEC 2009). Based on the results of the SVI, NYSDEC required that sub-slab vapor and indoor air samples be collected from within residences near the 2009 soil vapor sample locations along Ames Street. MACTEC performed the sub-slab vapor and indoor air sampling at the residences during February through April 2010. The results of this investigation will be submitted to the NYSDEC in a separate report.

A summary of Site activities for 2010 will be provided in the next annual report and PRR.

Should you have any questions, please contact me at (865) 588-8544, or via email at RARyan@mactec.com.

Sincerely,

MACTEC Engineering and Consulting, Inc.



Ricky A. Ryan, P.E.
Senior Principal Project Manager

K. Joe Deatherage
Senior Environmental Engineer

[1001]
Enclosures

cc: Melody Christopher, ABB *(electronic)*
Nelson Walter, MACTEC *(electronic)*
Bart Putzig, NYSDEC
Katherine Comerford, NYSDOH
Jean McCreary, Nixon Peabody LLP
file

References

Harding ESE, 2001. *Dual-Phase Vacuum Extraction Remedial System Operations and Maintenance Manual, Former Taylor Instruments Site, 95 Ames Street, Rochester, New York.* Submitted to the New York State Department of Environmental Conservation. March.

Harding Lawson Associates, 1999. *Final Investigative Report, Taylor Instruments Site, Rochester, New York.* Prepared for to the New York State Department of Environmental Conservation. March.

Harding Lawson Associates, 2000. *Remedial Work Plan, Taylor Instruments Site, 95 Ames Street, Rochester, New York.* Prepared for Combustion Engineering. April.

MACTEC, 2003. *Final Engineering Report, Former Taylor Instruments Site, Rochester, New York.* Prepared for Combustion Engineering. September.

MACTEC, 2005. *Soil Management Plan, Former Taylor Instruments Facility, 95 Ames Street, Rochester, New York 14611.* Prepared for Combustion Engineering. April.

MACTEC, 2008. *Accelerated Bioremediation Pilot Test Final Report, Former Taylor Instruments Site, 95 Ames Street in Rochester, New York.* Prepared for the New York State Department of Environmental Conservation. January 4.

MACTEC, 2009. *Report of Soil Vapor Investigation, Former Taylor Instruments Site, Rochester, New York.* Prepared for the New York State Department of Environmental Conservation. November 5

MACTEC, 2010a. *Revised Work Plan for Accelerated Bioremediation and Permanent Decommissioning of the Remedial Treatment System, Former Taylor Instruments Site, 95 Ames Street in Rochester, New York.* Prepared for the New York State Department of Environmental Conservation. June 11.

MACTEC, 2010b. *2009 Annual Progress Report and Remedial Progress Evaluation, Former Taylor Instruments Site, Rochester, New York.* Prepared for ABB, Inc. March.

NYSDEC, 2005. Letter to Ms. Jean H. McCreary with Nixon Peabody LLC. September 2.

Acronym List

CE	Combustion Engineering
COC	contaminant of concern
DCE	dichloroethene
DPVE	dual-phase vacuum extraction
HRC	hydrogen release compound
IC/EC	institutional and engineering control
mg/kg	milligrams per kilogram
MNA	monitored natural attenuation
NYSDEC	New York State Department of Environmental Conservation
O&M	operation and maintenance
PCE	tetrachloroethene
PRR	Periodic Review Report
Site	location of the former Taylor Instruments facility
SVI	soil vapor investigation
System	DPVE and bedrock groundwater extraction and treatment system
TCE	trichloroethene
VCA	Voluntary Clean-up Agreement
VOC	volatile organic compound

Enclosure 1

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details Box 1

Site No. V00144

Site Name Former Taylor Instruments Facility

Site Address: 95 AMES STREET Zip Code: 14611
City/Town: .Rochester
County: Monroe
Allowable Use(s) (if applicable, does not address local zoning): Industrial
Site Acreage: 17.0
Owner: ABB, Inc. (Attn: R. Keith Knauerhase)
2000 Day Hill Road, CEP 880-1911, Windsor, CT 06095

Reporting Period: January 15, 2009 to February 14, 2010

Verification of Site Details Box 2

	YES	NO
1. Is the information in Box 1 correct?	☐	☒
If NO, are changes handwritten above or included on a separate sheet?	☒	
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	☐	☒
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	☐	☒
If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification?	☐	
4. If use of the site is restricted, is the current use of the site consistent with those restrictions?	☒	☐
If NO, is an explanation included with this certification?	☐	
5. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☐
If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☐	☐
If NO, are changes in the assessment included with this certification?	☐	

Corrected Owner Address:

ABB, Inc. (ATTN: R. Keith Knauerhase)
5 Waterside Crossing
Windsor, CT 06095

Corrected Acreage: 14

SITE NO. V00144

Box 3

Description of Institutional Controls

Parcel	Institutional Control
S_B_L Image: **120.410-1-2**	Ground Water Use Restriction Landuse Restriction Soil Management Plan

Box 4

Description of Engineering Controls

Parcel	Engineering Control
S_B_L Image: **120.410-1-2**	Cover System Pump & Treat Vapor Mitigation

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (See instructions)

Control Description for Site No. V00144

Parcel: 120.410-1-2

- Ground Water Use Restriction
- Landuse Restriction
- Soil Management Plan
- Cover System
- Vapor Mitigation (future buildings)
- Pump & Treat - discontinued pending further evaluations
- Annual certification

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☒	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES	NO
☒	☐

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

   I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

YES	NO
☒	☐

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

   I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES	NO
☒	☐

IC CERTIFICATIONS
SITE NO. V00144

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I R. Keith Knauerhase (print name) at 5 Waterside Crossing, Windsor, CT 06095 (print business address),

am certifying as Combustion Engineering, Inc. (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

R K Knauerhase — Signature of Owner or Remedial Party Rendering Certification

6/6/10 — Date

IC/EC CERTIFICATIONS

Box 7

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Ricky A. Ryan (print name) at MACTEC, 9725 Cogdill Road, Knoxville, TN 37932 (print business address)

am certifying as a Qualified Environmental Professional for the Combustion Engineering, Inc.

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

STATE OF NEW YORK
RICKY A. RYAN
069227
LICENSED PROFESSIONAL ENGINEER
(Stamp, if Required)

Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification

6/6/10 — Date