

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)**

Migration of Contaminated Groundwater Under Control

Facility Name: Microtech, Inc.
Facility Address: 1425 Milldale Road, Cheshire, CT
Facility EPA ID #: CTD054476973

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g. from Solid Waste Management Units (SWMU). Regulated Units (RU), and Areas of Concern (AOC), been considered in this EI determination?
- If yes – check here and continue with #2 below.
- If no –re-evaluate existing data, or
- If data are no available, skip to #8 and enter “IN” (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Migration of Contaminated Groundwater Under Control” EI

A positive “Migration of Contaminated Groundwater Under Control” EI determination (“YE” status code) indicates that the migration of “contaminated” groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original “area of contaminated groundwater” (for all groundwater “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA. The “Migration of Contaminated Groundwater Under Control” EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations

EI determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Is groundwater known or reasonably suspected to be "contaminated"¹ above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

If yes – continue after identifying key contaminants, citing appropriate "levels" and referencing supporting documentation.

If no – skip to #8 and enter "YE" status code, after citing appropriate "levels" and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s): A listing of attached data summary tables and figures is presented below. Tables should be referenced for contaminant concentrations and figures should be referenced for sample location and ground water flow isopleths, bedrock elevations and soil gas contaminant distribution.

Historical Data Summary tables are attached as follows

Tab 1 – Historical Soil Sampling Analytical Results

Tab 2 – Concrete Chip Sample Results

Tab 3 – Historical Indoor Air Quality Sample Results

Tab 4 – Soil Gas Results Summary

Tab 5 – Historical On-Site Ground Water Sampling Results

Tab 6 – Historical Off-Site Ground Water Sampling Results

A compilation of historical site figures is attached as follows:

Tab 7 – Solvent Distribution in 2001

Tab 8 – Solvent Distribution in 1998

Tab 9 – Ground Water Flow in 2001

Tab 10 – Ground Water Flow in 1998

Tab 11 – Bedrock Elevation Isopleths

Tab 12 – Soil Contaminant Distribution

Tab 13 – PCE Distribution in Soil Gas

The facility is located in a GB ground water area. GB ground water areas are historically impacted and/or urbanized areas that are not subject the CT Remedial Standard Regulations (RSR) ground water protection criteria. However, the CT RSR surface water protection criteria (SWPC) are applied in GB ground water areas, at the point ground water discharges to a surface water body. Although exceedences of the SWPC have been detected in site ground water, no surface water bodies are present on-site. Contaminants have also been detected in the down-gradient Ten Mile River, approximately ½ mile away. However, down-gradient properties adjacent to the west and south of Microtech (Bozzuto's and Richard's Chevrolet) are known to be contaminated due to their historical activities, and are located between Microtech and the Ten Mile River.

(continued next page)

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Multiple chlorinated solvents have been historically detected at concentrations, which exceeded the SWPC on the site. The most recent synoptic ground water sampling event was conducted in April 2001. SWPC for tetrachloroethylene (PCE) were exceeded. The SWPC for PCE is 88 parts per billion (ppb). The highest concentration of PCE detected during the April 2001 sampling event was 832 ppb (MW-2D). Previous sampling events also detected levels of trichloroethylene (TCE) and 1,1-dichloroethylene (1,1-DCE) that exceeded the SWPC. The SWPC for TCE is 2340 ppb, and was exceeded in a sump pit sample designated as S-1 (20,132 ppb), the last time it was sampled (c.1994). Historical exceedances of the SWPC for TCE and 1,1-DCE have been detected in MW-11, MW-12, and MW-30.

Footnotes:

¹“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

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3. Has the migration of contaminated ground water stabilized (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"² as defined by the monitoring locations designated at the time of this determination)?

_____ If yes – continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of ground water contamination"².

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"² – skip to #8 and enter "NO" status code, after providing an explanation.

 X If unknown – skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Based upon historical ground water monitoring data and the results of the 2001 synoptic ground water sampling, contamination appears to be located in three aquifers: the upper aquifer (overburden), the weathered bedrock aquifer, and the upper competent aquifer. The "Synoptic Ground Water Sampling Event for the Microtech, Inc. Site, 1425 Milldale Road, Cheshire, Connecticut (HRP#MIC-0032.HG)" report should be referenced for detailed descriptions of each aquifer.

Ground water flow direction in the upper aquifer appears to be to the south/southwest. The highest PCE concentrations in the upper aquifer was most recently detected in MW-11 (1993 ppb), an area down-gradient from the north door source area. Based upon historical data, contamination appears to be migrating laterally to the south and west, as well as migrating down to the deeper aquifers. However, an updated receptor survey conducted in December 2001 did not identify any directly down-gradient potable supply wells within one-quarter mile of the facility.

Ground water flow direction in the weathered bedrock aquifer appears to be nearly radial in the northern portion of the site, southerly in the eastern and southeastern portions of the site, and southwesterly in the southwestern portion of the site. This is relatively consistent with the weathered bedrock surface, as it is currently understood (See figure "Weathered Bedrock Surface Contour Map", attached). The highest PCE concentrations in the weathered bedrock aquifer were most recently detected in MW-10 (1895 ppb) and MW-21 (1430 ppb). There appears to be several historical hot spots/probable sources on the site. The predominant migration trend appears to be downward, into the upper bedrock aquifer.

Ground water flow direction in the upper competent bedrock aquifer is to the west/southwest. The highest PCE concentrations detected in April 2001 were found in "MW-4 (UB)/MW-4D (1266 ppb) and "MW-3 (UB)/MW-3D (1475 ppb). There appear to be several historical hot spots/probable sources on the site. The lower PCE concentrations found in wells "MW-6 (UB)/MW-6D and "MW-2 (UB)/MW-2D reinforces the supposition that the predominant contaminant migration trend is vertical, not lateral.

² "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

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5. Is the discharge of "contaminated" groundwater into surface water likely to be "insignificant" (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level" and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes – skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no – (the discharge of "contaminated" groundwater into surface water is potentially significant) – continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown – enter "IN" status code in #8.

Rationale and Reference(s): _____

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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6. Can the discharge of “contaminated” groundwater into surface water be shown to be “currently acceptable” (i.e., not cause impact to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes – continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater, OR 2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no – (the discharge of “contaminated” groundwater cannot be shown to be “currently acceptable”) –skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown – skip to 8 and enter “IN” status code.

Rationale and Reference(s): _____

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

YE – Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at Microtech, Inc. facility, EPA ID # CTD054476973, located at 1425 Milldale Road, Cheshire, CT. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

NO – Unacceptable migration of contaminated groundwater is observed or expected.

IN – More information is needed to make a determination.

Completed by

(signature) Melody Bova

(print) Melody Bova

(title) Senior Project Geologist

Date

2/11/02

J. O. Pina
3/19/02
JUAN A. PEREZ
Environmental Scientist

Supervisor

(signature) Daniel D. Titus

(print) Daniel D. Titus

(title) Project Manager

Facility Consultant

Date

2/11/02

Matthew R. Hayward
Section Chief
Matthew R. Hayward
8/26/02

Locations where References may be found:

Attached Tables and Figures
Additional Copies of Referenced Reports available upon request

Contact telephone and e-mail numbers

(name) Daniel D. Titus
(phone #) (860) 793-6899
(e-mail) dan.titus@hrpassociates.com

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)**

Current Human Exposures Under Control

Facility Name: Microtech, Inc.
Facility Address: 1425 Milldale Road, Cheshire, CT
Facility EPA ID #: CTD054476973

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g. from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC), been considered in this EI determination?

If yes – check here and continue with #2 below.

If no –re-evaluate existing data, or

If data are no available skip to #6 and enter “IN” (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Current Human Exposures Under Control” EI

A positive “Current Human Exposures Under Control” EI determination (“YE” status code) indicates that there are no “unacceptable” human exposures to “contamination” (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA. The “Current Human Exposures Under Control” EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration/Applicability of EI Determinations

EI determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated" above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	_____	_____	<u>PCE exceeded SWPC</u>
Air (indoors) ²	<u>X</u>	_____	_____	<u>Soil Gas Surveys detected elevated PCE > I/C VC</u>
Surface Soil (e.g., <2 ft)	<u>X</u>	_____	_____	<u>PCE exceeded GA PMC, I/C DEC; TCE exceeded GA PMC, Metals > I/C DEC and GA PMC</u>
Surface Water	_____	<u>X</u>	_____	<u>No surface water on-site.</u>
Sediment	_____	<u>X</u>	_____	<u>No surface water bodies or associated sediments on site.</u>
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	_____	_____	<u>PCE exceeded GA PMC</u>
Air (outdoors)	<u>X</u>	_____	_____	<u>Soil Gas Surveys detected levels of PCE > I/C VC</u>

_____ If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) – continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) skip to #6 and enter "IN" status code.

Rationale and Reference(s): A listing of attached data summary tables and figures is presented below. Tables should be referenced for contaminant concentrations and figures should be referenced for sample location and ground water flow isopleths, bedrock elevations and soil gas contaminant distribution.

Historical Data Summary tables are attached as follows

- Tab 1 – Historical Soil Sampling Analytical Results
- Tab 2 – Concrete Chip Sample Results
- Tab 3 – Historical Indoor Air Quality Sample Results
- Tab 4 – Soil Gas Results Summary
- Tab 5 – Historical On-Site Ground Water Sampling Results
- Tab 6 – Historical Off-Site Ground Water Sampling Results

A compilation of historical site figures is attached as follows:

- Tab 7 – Solvent Distribution in 2001
- Tab 8 – Solvent Distribution in 1998
- Tab 9 – Ground Water Flow in 2001
- Tab 10 – Ground Water Flow in 1998
- Tab 11 – Bedrock Elevation Isopleths
- Tab 12 – Soil Contaminant Distribution
- Tab 13 – PCE Distribution in Soil Gas

Subsurface Soils (> 2 feet)–

RSR Pollutant Mobility Criteria for Soils - Although the site is located in a GB ground water classification area, the water table drops below the bedrock surface during dry periods of the year. Therefore, the CT RSR requires that the PMC for a GA ground water area must be applied. The PMC were designed to address leachate contamination emanating from contact with contaminated soils and subsequent migration to ground water resources, and do not address direct human exposure issues. Nevertheless, PCE was

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detected in site soils at concentrations that exceed the CT RSR GA Pollutant Mobility Criteria (GA PMC) for PCE (0.1 ppm) at B-6 and B-25 (former leaching fields), as well as MW-15 (exterior of the north door, remediated 1998)) and B-23/MW-10 (south of the building). The GA PMC for PCE was also exceeded in TP-3, TP-8, CS-12, and a sediment sample from a septic distribution box. Both the GA PMC for PCE and TCE were exceeded in samples from TP-9, TP10, and TP-11. The GA PMC for copper was exceeded in a sample from B-2 (former lagoon). Exceedences of GA PMC for metals, including cadmium, total chromium, lead, nickel, and zinc were detected in test pits TP-9, TP-10, TP-11, TP-12, and the distribution box.

Industrial/Commercial Direct Exposure Criteria for Soils - The CT RSR Industrial/Commercial Direct Exposure Criteria (I/C DEC) are designed as benchmark standards for human exposures to contamination in soil at industrial/commercial sites. TP-3 (below septic tank), TP-9, TP-10, TP-11 (leaching field pipe contents), TP-12 (4 feet below grade), and a grab sample from the Septic Distribution Box all exceeded the I/C DEC for metals. TP-9 and TP-10 exceeded the I/C DEC for lead (1000 ppb). No I/C DEC has been established for total chromium. However, to be conservative, the I/C DEC for hexavalent chromium (100 ppm) was used for comparison with total chromium values. Samples collected from TP-3, TP-9, TP-10, TP-11, TP-12, and the distribution box potentially exceed the I/C DEC for hexavalent chromium. However, all these soils are located at depths greater than 2 feet below the surface, and common worker/trespasser exposure is not expected.

Surface Soils (0-2 feet)-

RSR Pollutant Mobility Criteria for Soil - Exceedences of the GA PMC for PCE were detected at multiple locations: B-9, B-11, B-12, S-1, B-43/MW-21, B-44, MW-11, MW-15, MW-16, and TP-12. The GA PMC for trichloroethylene (TCE) was exceeded in several samples collected from S-05 (below slab of former F006 storage tank), S-1, and MW-15. TP-12 also exceeded the GA PMC for cadmium, total chromium, lead, and nickel.

RSR Industrial/Commercial Direct Exposure Criteria for Soil - The I/C DEC for PCE was exceeded in B-11 and MW-15 but was remediated during the "north door remediation" in 1998. The only other surficial soil samples exceeding I/C DEC were collected from 2 feet below grade in TP-12 (elevated levels of total chromium and lead). TP-12 is located in the disused leaching field. Worker/trespasser exposure to soils collected from 2 feet below grade is not expected.

Concrete - Concrete Chip samples were collected from several areas during RCRA closure activities pertaining to the container storage area (interior) and Former F006 Tank Storage area (exterior). The former storage tank and container storage areas were closed clean in February 1995 in accordance with a CT DEP approved closure plan. The closure plan, approved in 1994, called for the comparison of concrete and/or soil samples to the EPA Region III risk based criteria for direct ingestion of concrete/soil. There are currently no specific CT RSR numerical criteria for concrete chip samples. However, the results were also compared to the soil standards (I/C DEC and GA PMC) since the exposure routes could be similar via ingestion, dermal contact, and/or inhalation of dust/particles or emitted gasses. It should be noted that levels of contaminants were detected in both areas that exceed the current CT RSR numerical criteria. However, the CT RSRs were designed to evaluate potential exposure from the ingestion of soil and/or the potential generation of contaminated leachate, and as such, do not contemplate concrete.

Air (Indoors) -

RSR Industrial/Commercial Volatilization Criteria (I/C VC (ground water)) - The I/C VC (ground water) was designed to address exposures from off-gassing VOCs in groundwater within 15 feet of a building. The following wells historically had exceedences of the I/C VC (ground water) for TCE: MW-11 (1993 ppb), MW-21 (1430 ppb), and MW-23 (596 ppb). All of which are located within/beneath the site building.

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RSR Industrial/Commercial Volatilization Criteria (I/C VC (Soil)) – The I/C VC (soil) was designed to address exposures from contaminant vapors present in soil beneath buildings. Soil gas surveys conducted within the building did indicate several areas in which PCE concentrations exceeded the CT RSR I/C VC (soil) for PCE in soil vapor (27,000 ppb). B-3 (near the machining well) and B-4 (near the machine vault), both located beneath the northern portion of the building slab, were found to significantly exceed the I/C VC (soil). B-3 contained 42,710 ppb of PCE. B-4 was found to contain 60,000 ppb of PCE. These elevated levels of PCE are consistent with elevated levels of chlorinated volatile organic compounds detected in soil and ground water samples historically collected from MW-11, MW-21, and MW-23. However, during normal operation, human occupational exposure is expected to be minimal.

Indoor Air Measurements - Historical indoor air screening revealed no elevated phenols, bis (2-ethylhexyl) phthalates, or select other volatile organic compounds including PCE (see “Historical Air Sampling Results” table, attached). Although no measurements of the various PCE breakdown products were made in the site building, the extremely low concentrations of PCE detected in the building indicate the RSR exceedances noted in the ground water and soil are not migrating through the slab into the building interior.

Air (Outdoors) –

RSR Industrial/Commercial Volatilization Criteria (I/C VC (ground water)) - Historical ground water sample results from the exterior portions of the site exceed the I/C VC (ground water) for TCE and/or 1,1-DCE in wells MW-3D, MW-4D, MW-6D, and MW-10. Historically (1994), MW-6D was found to contain levels of vinyl chloride that exceeded the I/C VC (2 ppb). During the 1997 and 2001 sampling events, vinyl chloride was detected at 2 ppb in MW-6D, equal to but not exceeding the I/C VC. However, the RSR standard for industrial/commercial sites does not contemplate exposures from ground water off-gassing in exterior areas since atmospheric dilution is effectively infinite.

RSR Industrial/Commercial Volatilization Criteria (I/C VC (Soil)) - Historical soil gas sample results from the exterior portions of the site exceed the volatilization criteria for and PCE in B-81. However, the RSR standard for industrial/commercial sites does not contemplate exposures from soil vapors in exterior areas since atmospheric dilution is effectively infinite. In addition, B-81 was located within the vicinity of MW-15, and was excavated during remedial efforts in 1998.

Ground Water – As discussed on Form CA750 Migration of Contaminated Ground Water Under Control, multiple chlorinated solvents have been historically detected at concentrations that exceed the applicable CT DEP RSR Standards. Please refer to CA 750 for additional detail.

Surface Water – There are no surface water bodies on the site. The closest surface water bodies are Ten Mile River and an unnamed tributary located to the north and west respectively. Both water bodies are located more than ½ mile from the site.

Sediment – There are no surface water bodies/sediments on the site.

Footnotes:

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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3. Are there complete pathways between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Ground water	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>Yes</u>			<u>No</u>
Air (indoors)	<u>No</u>	<u>Yes</u>	<u>No</u>				
Soil (surface, e.g., <2 ft)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
Surface Water	<u>No</u>	<u>No</u>			<u>No</u>	<u>No</u>	<u>No</u>
Sediment	<u>No</u>	<u>No</u>			<u>No</u>	<u>No</u>	<u>No</u>
Soil (subsurface e.g., >2 ft)				<u>Yes</u>			
	<u>No</u>						
Air (outdoors)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors³ spaces for Media which are not "contaminated") as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media – Human Receptor combinations (Pathways) do not have check spaces (" "). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- _____ If no (pathways are not complete for any contaminated media-receptor combination) skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- X If yes (pathways are complete for any "Contaminated" Media – Human Receptor combination) – continue after providing supporting explanation.
- _____ If unknown (for any "Contaminated" Media – Human Receptor combination) – skip to #6 and enter "IN" status code.

Rationale and Reference(s): _____

(See Following Page) _____

³Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

3. (continued) Rationale and Reference(s):

Incomplete pathways:

Soil (surface < 2 ft): All known onsite exceedences of I/C DEC within the upper two feet of soil (B-11 and MW-15) were removed during remedial activities in 1998. One area of soil potentially exceeding the I/C DEC is located at 2 feet below grade in TP-12. Due to the depth of the material, common human exposure is not expected.

Surface Water: There are no onsite surface water bodies or evidence that contaminated ground water from the site is discharging to a near by surface water body.

Sediment: There are no on-site sediments.

Air (indoors): A total of seven (7) monitoring wells have been installed underneath the existing building. Exceedences of the I/C VC (ground water) have been detected for TCE and 1,1-DCE. In addition, a total of eighty-nine (89) soil gas points were sampled site-wide. Of these 89 points, only two points located within the building were found to exceed the I/C VC soil gas for PCE. However, select indoor air quality measurements did not detect PCE in the building at levels in excess of the applicable standards. The decreasing trend of exceedences (i.e. fewer exceedences in soil than ground water and fewer exceedences in indoor air than in soil) indicate that VOCs are significantly attenuated in the site soil and/or by the building slab. Collectively, migration of contaminants above acceptable levels into the site building is prevented.

Air (outdoors): -Historical ground water sample results from the exterior portions of the site exceed the I/C VC (ground water) for TCE and 1,1-DCE. Additionally, a single historical soil gas sample from the exterior of the site exceeded I/C VC (soil) at B-81. However, the RSR does not contemplate exterior vapor exposure from soil or ground water off-gassing at commercial/industrial sites given the nearly infinite atmospheric dilution capacity.

Complete Pathways:

Ground Water: Although site ground water is contaminated above applicable GA (i.e. potable) and GB RSR criteria, no receptors can reasonably be anticipated within one-quarter mile down gradient of the site. HRP's December 2001 Receptor Survey Update indicates that area is supplied with public water. Construction workers could potentially be exposed to contaminated ground water if the site was involved in a construction project that required dewatering. However, at this time, no construction is proposed. Appropriate personal protective measures can be taken to avoid exposure should such activities be proposed/conducted in the future.

Soil (subsurface >2 ft): Exposure of soils located at depths greater than 2 feet below grade would be limited to site construction activities. However, at this time, no construction is proposed. Appropriate personal protective measures can be taken to avoid exposure should such activities be proposed/conducted in the future.

*this was Facility's Consultant
was approached regarding
this statement several
times between April and
July 2002. Facility
was finally contacted
on August 2002 and
a clarification acceptable
was submitted via facsimile
on August 16, 2002
EPH New England
document follows
TAD
August 20, 2002*

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Page 9

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Microtech, Inc. facility, EPA ID # CTD054476973, located at 1425 Milldale Road, Cheshire, CT, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

NO - "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

Completed by (signature) Melody Bova
(print) Melody Bova
(title) Senior Project Geologist

Date 2/11/02

Supervisor (signature) Daniel D. Titus
(print) Daniel D. Titus
(title) Project Manager
Facility Consultant

Date 2/14/02

Locations where References may be found:

Attached Tables and Figures
Additional copies of referenced reports available upon request

Contact telephone and e-mail numbers

(name) Daniel D. Titus
(phone #) (860) 793-6899
(e-mail) dan.titus@hrpassociates.com

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Juan A. PeDE
Environmental
Scientist
Date 8/20/02
Matthew R. Hagland
Matthew R. Hagland
Section Chief
RCRA Corrective Action
Section
Date 8/26/02



1425 Highland Avenue (Rt. 10), P.O. Box 728
Cheshire, CT 06410-1216 U.S.A.

Phone = 203-272-5234 FAX = 203-271-0352

E Mail: jim@microtech-inc.com

Visit our Web Site at

<http://www.microtech-inc.com>

FAX TRANSMITTAL

Date: 16 August 2002
To: U.S. Department of Environmental Protection (EPA)
Attention: Mr. Juan A. Perez
From: James A. McGregor, Vice President and General Manager
Number of Pages (Including This Page): 2
Subject: Your request of 15 August 2002
Reference: HRP Associates "Submission of the U.S. E.P.A. Environmental Indicator Forms for the Microtech, Inc. Facility, 1425 Highland Avenue, Cheshire, Connecticut (HRP # MIC0034.CA) dated 28 December 2001.

Dear Mr. Perez,

I must apologize to you for the difficulty that you indicated you encountered in your efforts to have some questions answered. Microtech, Inc. was closed from 12 July through 28 July 2002 for vacation and apparently, our environmental consulting company, HRP, is experiencing the same phenomenon. I do apologize.

With regards to your questions with the Referenced Report, Section "Current Human Exposures Under Control Environmental Indicator (EI) RCRIS code (CA725), Page 6, Complete Pathways: Ground Water: Construction workers could potentially be exposed to contaminated ground water if the site was involved in a construction project." The following is offered in clarification:

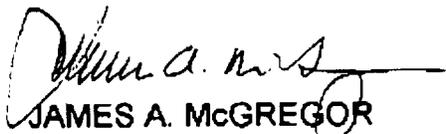
1. Microtech, Inc. does conform to all OSHA safety laws to the best of my knowledge. As stated in the report "However, at this time, no construction is proposed." That is other than any ongoing environmental investigation/remediation that might be ongoing.
2. Any environmental investigation/remediation is done by a licensed environmental consulting concern, like HRP Associates, that employs licensed environmental engineers. These professionals are well trained

and versed with regards to hazardous materials and precautions to be taken.

3. Microtech, Inc. is a defense manufacturer. As such it is our policy that one would be allowed on company property with out explicit permission and validation. No one would be digging with out company cognizance and proper precautionary measures such as, but not limited to, proper insurance and safety practices.

I hope these facts adequately address your questions and concerns. If you have any questions or if I can be of any further assistance to you I can be reached at Phone No. 203-272-3234 X104 or E Mail "jim@microtech-inc.com.

Sincerely,



JAMES A. MCGREGOR
Vice President and
General Manager

C/C: Ken Girardin
James A. McGregor (Sr.)
HRP Assoc. (Dan Titus)