

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:** Fisher Scientific  
**Facility Address:** 755 State Highway Route 202, Bridgewater Township, NJ 08876  
**Facility EPA ID #:** NJD052207982

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?

  X   If yes - check here and continue with #2 below.

       If no - re-evaluate existing data, or

       if data are not available skip to #6 and enter "IN" (more information needed) status code.

       Justification:

**SWMUs / AOCs**

1. Backfilled Area (NFA)
2. West and East Detention Ponds / Drainage Ditches (NFA)
3. Hazardous Waste Storage Tank (clean closed RCRA Regulated Unit)
4. Hazardous Waste Drum Storage Pad (clean closed RCRA Regulated Unit)
5. Tank Farm
6. Railroad Siding
7. Interceptor Trench
8. Interceptor Tank
9. Railroad Cut

There was groundwater contamination at almost every SWMU/AOC, except the backfilled area, the West and East Detention Ponds and their associated drainage ditches, and the two clean closed RCRA regulated units. This contamination, which was the result of poor housekeeping practices in the railroad siding and tank farm, has been addressed and continues to be addressed through a variety of corrective measures performed by Fisher. Contaminated soil existed in the areas of the hazardous waste storage tank, the tank farm and the railroad siding; while the soils in all of the other SWMUs/AOCs were sampled and found to be below NJDEP residential cleanup standards. Contaminated soil in the area of the hazardous waste storage tank was removed as part of an excavation project to upgrade the tank, and later the hazardous waste storage tank itself was removed and clean closed under state supervision. The hazardous waste drum storage pad was also clean closed under state supervision. The closure reports and approvals are available upon request from NJDEP or EPA. During installation of the concrete floor in the tank farm and prior to lining the railroad siding with concrete, contaminated soils were removed from both of those areas. The backfilled area and the West and East detention ponds with their associated drainage ditches have been given no further action determinations since there is no soil or groundwater contamination in those areas.

**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 ground water. 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)).

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#### **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).

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#### **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”<sup>1</sup> 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>	No	?	<u>Rationale / Key Contaminants</u>
Groundwater	<u>X</u>	---	---	<u>See below and Fourth Quarter 1999 Progress Report Fisher Scientific Company (ISRA Case # 85824).</u>
Air (indoors) <sup>2</sup>	---	<u>X</u>	---	<u>Indoor air is not contaminated.</u>
Surface Soil (e.g., <2 ft)	---	<u>X</u>	---	<u>Some excavations were done, no wall soil samples are below NJDEP's residential cleanup standards.</u>
Surface Water	---	<u>X</u>	---	<u>There are no surface water bodies in the area.</u>
Sediment	---	<u>X</u>	---	<u>There is no sediment in the area.</u>
Subsurf. Soil (e.g., >2 ft)	---	<u>X</u>	---	<u>See surface soil rationale.</u>
Air (outdoors)	---	<u>X</u>	---	<u>Outdoor air is not contaminated.</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):** Solvent contaminated groundwater was first discovered seeping from bedrock at the base of a railroad cut in 1976, just downgradient of the Fisher Scientific property; and it was later discovered in several potable wells off-site in 1983. The contamination was the result of Fisher's poor housekeeping practices. Fisher started monitoring the groundwater in 1982 as part of a site-wide investigation. Groundwater remediation began in 1991 upon completion and approval of the remedial investigation and the remedial action plan. The groundwater is contaminated both on and off-site above applicable standards. Originally, the cleanup objective for the remediation of the groundwater was the NJDEP Corrective Action Criteria, but this was replaced with NJDEP's Groundwater Quality Standards in 1993. The primary constituents exceeding standards are carbon tetrachloride, chloroform, methylene chloride and trichloroethene. Total VOC concentrations have been as high as 906 ppm on-site and 3.94 ppm off-site. Due to the ditches installed by Fisher as passive remedial measures to collect contaminated groundwater from the upper aquifer, and due to the downward migration of contaminants in the groundwater, the contamination off-site is limited to the deep aquifer. The soils were below NJDEP's residential cleanup standards at all of the SWMUs/AOCs, except for in the areas of the hazardous waste storage tank, the tank farm and the railroad siding. However, the contaminated soils in the area of the hazardous waste storage tank were excavated and the tank was clean closed; and the contaminated soils in the areas of the tank farm and the railroad siding were excavated during upgrading efforts. Based on the Johnson-Ettinger model, there are no unacceptable indoor air risks from the contaminant concentrations found off-site. The indoor air risks from the contaminant concentrations being found on-site can not be quantified, since there are no basements in the buildings on-site and the Johnson-Ettinger model calculates risk based on the assumptions that the buildings have basements. Approximately two-thirds of the site is paved or occupied by buildings, and many of the homes off-site also do not have basements.

Footnotes:

<sup>1</sup> “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).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggests 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

Potential **Human Receptors** (Under Current Conditions)

<b><u>“Contaminated” Media</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	<u>no</u>	<u>no</u>	<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 Receptors’ 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.

- X   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).
- 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):** In 1976, Fisher installed an interceptor trench and sump pits just south of the railroad unloading station and the tank farm to intercept contaminated water from the perched groundwater aquifer to prevent further migration of the contaminated groundwater. Also at this time, regular pumping of one monitoring well was initiated. In 1982 Fisher constructed containment areas around its various storage and unloading stations in order to be in compliance with RCRA requirements and in order to prevent further groundwater contamination as the result of poor housekeeping practices. In 1983 when Fisher sampled several potable wells off-site and found them to be contaminated with the same constituents as on-site, Fisher paid for 469 affected homes in the neighborhood to be hooked up to the municipal water system. Therefore, there are no human exposure risks from the contaminated groundwater, since it is no longer utilized as a potable water supply in the affected area. In 1991, Fisher initiated the groundwater recovery system to remediate the regional groundwater aquifer. The pump and treat system has achieved and maintained hydraulic control over the contaminated plume and is continuing to remove volatile organic compounds from the groundwater. EPA has determined that the Environmental Indicator, Migration of

Contaminated Groundwater Under Control has been achieved.

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

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA 725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

  X     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 Fisher Scientific facility, EPA ID # NJD052207982, located at 755 State Highway Route 202, Bridgewater Township, NJ 08876 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: \_\_\_\_\_  
original signed by \_\_\_\_\_  
Elizabeth Butler, Project Manager  
RCRA Programs Branch  
EPA Region 2

Date:   03/29/00  

\_\_\_\_\_ original signed by \_\_\_\_\_  
Barry Tornick, Section Chief  
RCRA Programs Branch  
EPA Region 2

Date:   03/29/00  

Approved by: \_\_\_\_\_  
original signed by \_\_\_\_\_  
Raymond Basso, Chief  
RCRA Programs Branch  
EPA Region 2

Date:   03/29/00  

Locations where References may be found:

The references may be found at NJDEP in Trenton or at EPA Region 2 in New York.

Contact telephone and e-mail numbers

(name) Elizabeth Butler  
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**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.**

**References Used To Make This Determination**

- 1) Fourth Quarter 1999 Progress Report - Fisher Scientific Company ISRA Case # 85824, dated January 18, 2000
- 2) Remedial Action Plan for the Bridgewater Packaging Facility, dated June 6, 1988
- 3) NJDEP clean closure verification letters, dated January 13, 1993 and September 28, 1995. The closure reports themselves are available upon request by NJDEP.

Attachments truncated, see facility file (MSS, 06/13/02)