SWR 30112

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final

2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS [redacted]

Migration of Contaminated Groundwater Under Control

Facility Name: Temple-Inland Forest Products Corporation
Facility Address: 600 A Street, Diboll, TX 75941
Facility EPA ID #: TXD000821199

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?

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.

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 ground water 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

Note - checklist was prepared by T-1 August 2002. Additional comments/evaluation completed September 2002 — [illegible]

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).

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?

__X__ 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):

Key contaminants are creosote constituents and creosote DNAPL. Compliance monitoring of phenol, pentachlorophenol, acenaphthene, and naphthalene. Predominant groundwater contaminant is pentachlorophenol. One (1) well contaminated with acenaphthene, and one (1) well contaminated with pentachlorophenol, acenaphthene and naphthalene.

Origin of contamination was three (3) surface impoundments SWMU (#8, #9, and #11) which received creosote plant wastewater and sludge. Normal flow was to Pond 9, then overflow to Pond 8 and finally to Pond 11(evaporation pond). Most DNAPL contamination was below Pond 9. Four (4) geologic zones down to 130 feet are impacted. Lowest levels of constituents were in the bottom of Pond 11.

In 1989, Pond 8 was converted to three (#) bioreactors. Sludges and wastewaters from Pond 9 and Pond 11 were transferred to the bioreactors. Bioreactors were closed in place in August 1992 by stabilizing remaining sludges with lime and soil and capping with clay and HDPE cover.

Compliance Plan requires active pumping of the DNAPL and groundwater plumes. Determination of the horizontal and vertical extent of impacted groundwater completed in 1994. Active groundwater and DNAPL recovery ongoing in accordance with Compliance Plan.

yes 9/10/02

The Old Creosote Plant (SWMU 7) is the only RFI unit with "contamination" in groundwater greater than RRS 2 levels. COC's are similar to those found at the regulated units.

References: Part A&B Application
Application for Hazardous Waste Permit January 2, 1992.
Annual and Semiannual Groudwater Monitoring Reports
Compliance Plan CP-50113
Hazardous Waste Permit HW-50113
Semi-annual Groundwater Monitoring Report July 21, 1999 (copy enclosed with this questionnaire).
BLRA 4/2002

Foot notes:

[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).

3. Has the **migration** of contaminated groundwater **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)?

X 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 groundwater 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.

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

Rationale and Reference(s):

Horizontal and vertical extent of groundwater contamination and DNAPL determined in accordance with Compliance Plan CP50113 requirements. Active recovery and monitoring of groundwater and DNAPL ongoing.

Reference: Semiannual and Annual Groundwater Reports submitted to TNRCC and EPA which include sampling data, findings, and calculations.

Results of the RFI submitted in 2002 defined the vertical and horizontal extent and the contaminating constituents at all RFI units. All RFI units except the "Former Creosote Plant" had no releases and/or releases which met RRS2. The source at the "Former Creosote Plant" has been removed and the extent of groundwater contamination determined. Potential for movement of contaminated groundwater is minimal.

[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.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_X_ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

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

Rationale and Reference(s):

There are no known surface seeps nor springs within the defined area of impacted groundwater which would allow direct discharge to surface water. Recovered groundwater is treated by settling followed by activated carbon filtration before discharge to facility NPDES permitted outfall. Discharge is monitored for pentachlorophenol concentration with permit limits of daily maximum 11.9 ug/L and monthly average of 5.4 ug/L.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] 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 concentration[3] 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 concentration[3] 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 concentrations[3] 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):

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

____ 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 can not 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.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

Ye If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

____ If no - enter "NO" status code in #8.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Active groundwater and DNAPL removal and semiannual sampling of wells to continue in accordance with Compliance Plan requirements.

Wells to be sampled semiannually at the (TIFPC) facility.

- Shallow geologic zone
  - POC/Recovery Wells-D5, D7, D8, D17, D19, D44, D58, D59
    - Recovery Wells-D23
    - Corrective Action Wells-D26, D34, D35, D62, D63, D64
    - Background Well-D28
- Intermediate geologic zone
  - POC/REcovery Wells-D40, D43, D60
    - Corrective Action Wells-D15, D30, D32, D41, D55, D65, D66
    - Background Well-D9
- Deep geologic zone
  - POC/Recovery Wells-D45, D47, D61, D18
    - Corrective Action Wells-D10, D16, D22, D33, D54, D67
    - Background Well-D31
- Very Deep geologic zone
  - POC/Recovery Wells-D2R2, D49, D50
    - Background Well-D48

Temple Inland's Permit + Compliance Plan are subject to renewal in 2003. The Baseline Risk Assessment for the Old Creosote Plant (SWMU 7) is currently in review. We plan on finalizing the risk assessment and CMS this year, so that this swmu can be incorporated into the compliance plan upon renewal. Monitoring at this swmu to date has been in the context of RFI/BLRA/CMS; after the renewal is issued, there will be a formal list of wells for monitoring at this unit in addition to those specified for the regulated units

– [illegible] 9/9/02

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 the Temple-Inland facility, EPA ID # TXD000821199, located at Diboll. 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) Lila Beckley Date 9/18/2002
Lila Beckley
CA Program Manager

Supervisor (signature) Ata-ur-Rahman Date 9/18/02.
Ata-ur-Rahman
Manager, Corrective Action Section
TCEQ

Locations where References may be found:

Attach a copy of this facility's database printout. Highlight the reports which support the "YE" determination._____

Contact telephone and e-mail numbers

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updated f/1
9/23/02