

ENVIRONMENTAL INDICATOR (EI) RCRIS CODE (CA725)

Current Human Exposures Under Control

Facility Name: PERMAPOST
Facility Address: 25600 SW. Tualatin Valley Highway, Hillsboro, OR 97123
Facility EPA ID #: ORD 009041187

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 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 "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).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)
Page 2

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **“contaminated”**¹ 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)?

“Contaminated” Media Yes No ? Rationale / Key Contaminants

Groundwater	✓			Pentachlorophenol, tetrachlorophenol, As,Cr, diesel
Air (indoors)		✓		Pentachlorophenol, tetrachlorophenol, As, Cr & diesel are not volatile and high concentrations of these constituents are > 10 to 15 feet deep
Soil (surface, e.g., <2 ft)	✓			Pentachlorophenol, tetrachlorophenol, As, diesel
Surface Water		✓		Sampling and modeling show no surface water contamination
Sediment		✓		Pentachlorophenol, tetrachlorophenol, As,Cr, diesel
Soil (subsurface e.g., >2 ft)	✓			Pentachlorophenol, tetrachlorophenol, As,Cr, diesel
Air (outdoors)		✓		Pentachlorophenol, tetrachlorophenol, As, Cr, & diesel are not volatile and high concentrations of these constituents are > 10 to 15 feet deep

- 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.
- 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):

Permapost is a wood treating facility that has operated since 1961. The facility has a Post closure RCRA Part B Permit for the care and maintenance of a surface impoundment area that was not able to clean close and for all corrective action work. Pesticide formulations used in the pressure-treating include: ammoniacal copper-zinc arsenate (ACZA), pentachlorophenol (in a petroleum naphtha carrier), copper naphthenate, copper-8-quinolinolate, and zinc naphthenate. Miscellaneous maintenance and fabrication operations associated with the pressure treating process are also conducted at the facility. The site had three unlined lagoons. From 1961 to 1984, all process wastewater, sludge, fuel oil, excess treating solution, cleaning solutions, and rainfall were collected in a 150,000-gallon lagoon in the northwest corner of the site. The liquid waste in the lagoon was treated by recycling and by evaporation using overhead sprayers. A second, 100,000-gallon lagoon was constructed in 1976, to contain excess water from the primary lagoon and store runoff; it was referred to as the recirculation impoundment. The third lagoon was constructed in 1980 to handle excess waste from the recirculation impoundment. On 6/10/80, Ecology and Environment performed a hazardous waste site evaluation; the primary disposal lagoon was close to overflowing and its evaporation rate was insufficient to prevent such overflows. On 8/31/82, DEQ sampled soil from the northern boundary drainage ditch and from a point halfway between the site and Rock Creek; arsenic levels were 1,540 and 437 mg/kg, respectively. In 10/82, Permapost installed an upgradient and four downgradient monitoring wells along the west property line. On 6/12/83, arsenic and pentachlorophenol were detected in downgradient wells. On 5/6/84, Sweet, Edwards and Associates conducted extensive groundwater, surface water and soil sampling; additional monitoring wells were installed. Pentachlorophenol, tetrachlorophenol isomers, and arsenic were detected in groundwater. Greater than 75 mg/kg total metals were found in shallow soil samples adjacent to the sludge impoundment. On 9/10/84, an off-site monitoring well was installed. Pentachlorophenol and 2,3,4,6-tetrachlorophenol were detected. Contaminated soil was removed after 1984. The lagoons were filled

and paved, and are now regulated as closed RCRA landfills. The contaminant plume can be measured in hundreds of feet. Results from September 2004 groundwater sampling at P-21, which is the most contaminated well, showed maximum concentrations of tetrachlorophenol at 5.6 mg/L and pentachlorophenol at 140 mg/L. Arsenic was detected in P-11c at 0.08 mg/L.

References:

RCRA Part B Post Closure Permit (draft renewal 2006)
Letter Agreement for the Investigation and Cleanup of Contamination from Wood Treating and Fabricating Operations at Permapost Products Company signed April 18, 2002
RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
Contaminant Fate and Transport – Final (March 2001)
Additional Assessment Results (November 2001)
Fate and Transport and Locality Status, Permapost Southwest Corner Investigation (July 2002)
Workplan for Expanded Human Health Risk Assessment (August 2002)
September 2004 Semiannual Sampling (December 2004)

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.*

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

“Contaminated” Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food 3
Groundwater	✓	✓		✓			
Air (indoors)		✓					
Soil (surface, e.g., <2 ft)		✓		✓			
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)		✓					

Instructions for Summary Exposure Pathway Evaluation Table:

- Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated”) as identified in #2 above.
- 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).
- 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): Additional information obtained in 2002 indicated pentachlorophenol contamination located offsite and southwest of the facility. The conceptual site model was revised to incorporate potential exposure of off-site residents in this area. A report entitled “Fate and Transport and Locality Status” was submitted on July 17, 2002. This report identified 6 potential residential wells in the area and follow-up information indicated potentially complete exposure pathways for only two of the wells. In response to a survey on use, the well owners indicated the wells were not used for drinking and may occasionally be used for irrigation. On August 23, 2002, a “Workplan for Expanded Human Health Risk Assessment” was submitted. The Workplan preliminarily identified potential exposure pathways. The final risk assessment, in conjunction with data collected for the RI/FS will establish which exposure pathways are complete and whether these pathways present an unacceptable risk.

*The most plausible exposure settings to present an unacceptable human health risk include the following:

- Incidental ingestion and dermal contact with soils and groundwater by recreational users, excavation workers, and residents.

Pathways that are either incomplete or are not expected to reasonably likely result in unacceptable human-health risk include the following:

- Drinking water
- Inhalation of vapors generated during showering or household activities by hypothetical future offsite residents.
- Inhalation of vapors emanating from offsite groundwater to indoor air by current and future occupational workers.
- Incidental ingestion and dermal contact with surface water and sediment in Rock Creek or Cemetery Pond.

The human health risk assessment focuses on the potential risks posed by direct exposure (ingestion, dermal, contact, and inhalation via showering) to chemicals of potential concern in groundwater at each well point. This provides a conservative indication of the potential for risk. Incidental ingestion and dermal contact with soils and groundwater by recreational users, excavation workers, and residents have been identified as reasonably expected to present an "unacceptable" risk. *However, controls are established and are in place at the facility which prevent these and any other potential exposures; Permapost has operated a pump and treat extraction system since 1991 to minimize the spread of contamination and remove contaminated groundwater. Contaminated soils have been covered with a RCRA cap, in order to prevent the infiltration of groundwater through contaminated soils and to prevent contact with contaminated soils. Both of these interim remedial measures are anticipated to continue, indefinitely. The post closure permit dictates standards to maintain the corrective action requirements, including groundwater controls, and care and maintenance of the cap. The Permit is undergoing renewal and is expected to be issued by winter 2006 or early 2007.

References:

RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
Contaminant Fate and Transport – Final (March 2001)
Additional Assessment Results (November 2001)
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Footnotes:

³ *Indirect 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)**

Page 4

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: (1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or (2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?
- If no** (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- If yes** (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
- If unknown** (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

Footnotes:

⁴ *If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.*

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)
Page 5

5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?
- If yes** (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
 - If no** (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.
 - If unknown** (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS Code (CA725)
Page 6

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 (and 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 **PERMAPOST** facility, EPA ID #**ORD 009041187**, located at **25600 SW. Tualatin Valley Highway, Hillsboro, OR 97123** 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)

(Date)

Barb Puchy
(Print Name)

Hazardous Waste Specialist
(Title)

Supervisor:

(Signature)

(Date)

Brett McKnight
(Print Name)

Manager, Hazardous Waste Program
(Title)

Oregon Department of Environmental Quality
(EPA Region or State)

Locations where References may be found:

DEQ - Northwest Region, 2020 SW.4th Avenue, PtlD.97201

Contact telephone and E-mail numbers:

Henning Larsen, NWR
(Name)

(503) 229-5527
(Phone Number)

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(E-Mail)

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.

ENVIRONMENTAL INDICATOR (EI) RCRIS CODE (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: PERMAPOST
Facility Address: 25600 SW. Tualatin Valley Highway, Hillsboro, OR 97123
Facility EPA ID #: ORD 009041187

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 not 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 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

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).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 2

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):

This site has a significant plume of groundwater contamination that requires continuous treatment to prevent off-site impacts to local groundwater resources and to surface water in nearby Rock Creek. Results from the January 28, 2000, semi-annual groundwater sampling show excesses of pentachlorophenol (ranging from non-detect (ND) to 24 mg/L), tetrachlorophenol (ranging from ND to 1.6 mg/L), and arsenic (ranging ND to 0.07 mg/L). Known or suspected hazardous substances which have been detected in soil and groundwater are presented in sections 1.3.6 and 1.4.1 of the "Level I Scoping Ecological Risk Assessment Permapost Products Company, Inc.," dated May 14, 1999. Groundwater samples from the only nearby offsite domestic wells, located SW of the facility, did not detect constituents of concern.

References:

RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
Contaminant Fate and Transport – Final (March 2001)
Additional Assessment Results (November 2001)
Fate and Transport and Locality Status, Permapost Southwest Corner Investigation (July 2002)
Workplan for Expanded Human Health Risk Assessment (August 2002)
September 2004 Semiannual Sampling (December 2004)

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).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 3

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)?
- 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):

Groundwater is moving in a northwesterly direction and has the potential to discharge to the offsite marshy area. Migration of groundwater also has the potential to discharge to the Valley Memorial Park Cemetery Lake. The extent and magnitude of the groundwater contamination has been assessed using a fate and transport model as part of a human health risk assessment. Additional sampling and computer modeling from 2003 and 2004 shows that the contaminated groundwater plume is stable. Modeling indicates that contamination will not reach the marshy area and contaminated groundwater does not cause significant contamination in Cemetery Lake. A groundwater extraction system has been operating at the facility since 1991 and a RCRA cap covers areas of contaminated soils. Both of these interim remedies are expected to continue as part of the final remedy for addressing contaminated soils and groundwater.

References:

RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
Contaminant Fate and Transport – Final (March 2001)
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September 2004 Semiannual Sampling (December 2004)

Footnotes:

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.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 4

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

- If yes** - continue after identifying potentially affected surface water bodies.
- 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):

Groundwater samples indicate low concentrations of contaminants in proximity to Cemetery Lake. However, surface water samples from the Lake and modeling of groundwater discharge to surface water do not indicate any surface water contamination above risk-based concentrations.

References:

RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
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September 2004 Semiannual Sampling (December 2004)

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 5

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 ecosystems 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 ecosystem.

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):

Groundwater samples indicate low concentrations of contaminants in proximity to Cemetery Lake. However, surface water samples from the Lake and modeling of groundwater discharge to surface water do not indicate any surface water contamination above risk-based concentrations.

References:

RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
Contaminant Fate and Transport – Final (March 2001)
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September 2004 Semiannual Sampling (December 2004)

Footnotes:

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

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 6**

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 ecosystems 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 ecosystems), 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 ecosystems, 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 ecosystems.
- If unknown** - skip to 8 and enter “IN” status code.

Rationale and Reference(s):**Footnotes:**

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 ecosystems.*

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 7

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?”
- 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):

The groundwater pump and treatment system has been operating since March 1991. Quarterly and semiannual sampling occurs at many wells screened over multiple intervals within the single aquifer in order to monitor both the vertical and lateral extent of the plume. The wells include the following: GW-1 through 6, GW-8 through 12, PZ-1A, PZ-2, PZ-1C, and PZ-D; MW-4, GW-5A through GW-6A. GW-8A through GW-10A, GW-12A and GW-1A; GW-5C, GW-7C, GW-12C, GW-13C, GW-15C, GW, GW-13D, GW-14D, GW 16D, GW-17, GW-18 and GW-29; DW-1 through DW-4; and TW-1. A decision on which wells will be retained in the future will be made when the final remedy is selected. Groundwater monitoring will continue as required by the Post-Closure permit and Letter Agreement between DEQ and Permapost.

References:

Letter Agreement for the Investigation and Cleanup of Contamination from Wood Treating and Fabricating Operations at Permapost Products Company signed April 18, 2002
RCRA Part B Permit effective September 1, 1989
RCRA Part B Post-Closure Permit Renewal Draft Level I Ecological Risk Assessment (May 1999)
RCRA Part B Post-Closure Permit Renewal Final Work Plan (including the Human Health Risk Assessment Workplan (May 1999)
Contaminant Fate and Transport – Final (March 2001)
Additional Assessment Results (November 2001)
Fate and Transport and Locality Status, Permapost Southwest Corner Investigation (July 2002)
Workplan for Expanded Human Health Risk Assessment (August 2002)
September 2004 Semiannual Sampling (December 2004)

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS Code (CA750)
Page 8**

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 **PERMAPOST** facility, EPA ID #**ORD 009041187**, located at **25600 SW. Tualatin Valley Highway, Hillsboro, OR 97123** under current and reasonably expected conditions. 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)

Barb Puchy
(Print Name)

(Date)

Hazardous Waste Specialist
(Title)

Supervisor:

(Signature)

Brett McKnight

(Date)

Manager, Hazardous Waste Program

Oregon Department of Environmental Quality
(EPA Region or State)

Locations where References may be found:

DEQ - Northwest Region, 2020 SW.4th Avenue, PtlD.97201

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