

**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: **Proctor and Gamble**  
Facility Address: **3600 Elm Ave Portsmouth VA**  
Facility EPA ID #: **VAD003174810**

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
2. (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**

The former Proctor and Gamble facility (P&G) is a 21-acre site that utilized an 11,000 square foot, multi-story facility to manufacture and package peanut butter beginning in 1931. In 1994 the 21-acre site was sold to Fred R. Langley of Knoxville, TN (Virginia Pilot Newspaper 12/2/94).

The site maintained a hazardous waste storage area from November 19, 1980 to June 30, 1993. The storage area accepted wastes from an on-site Quality Assurance Lab. No indications of other Hazardous Waste storage areas were identified by the file review or during two site visits. The hazardous waste management unit (HWMU) container storage area had a capacity of 550 gallons. This HWMU was 10' x 10' curbed concrete mat enclosed in a locked cyclone fence with maximum storage of ten 55-gallon drums. The HWMU was used to store spent lab solvents. The volume of waste generated per year was listed as 1,500 pounds per year. Apparently, the same HWMU container storage area was operated under both a large quantity generator (LQG) and a small quantity generator (SQG) status under 40 CFR § 262.34, until the P&G facility closed. P&G deactivated the entire facility on May 22, 1995.

The site is currently occupied by ARREFF Terminals Inc., with a number of shipping containers present on the site. ARREFF Terminals provides transloading / warehousing for the Virginia Port Authority. The container storage area mat and fence were moved as one unit by ARREFF from its original location on the west side of the building to the southwest corner of the site and is not currently used by the facility.

**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)**

2. Is groundwater known or reasonably suspected to be "contaminated" 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): As noted above, the P&G facility operated a hazardous waste management unit (HWMU) container storage area with a capacity of 550 gallons from November 19, 1980 to June 30, 1993. This HWMU container storage area was identified by P&G in a RCRA Part A Permit Application, dated 11/17/80, and a 5/30/86 SWMU response letter.

P&G correspondence, dated July 7, 1988, documented that the facility intended to close the HWMU and did not intend to seek an operating Permit for the HWMU. A Closure Plan was submitted by P&G, dated July 19, 1988. On August 18, 1988, the public notice was published for the Closure Plan. On October 6, 1988, the VDWM provided P&G with comments on the initially submitted Closure Plan. P&G submitted the revised Closure Plan, dated October 14, 1988. The VDWM approved the revised Closure Plan on October 27, 1988. The VDWM received the closure certification according to the Closure Plan on March 28, 1989, and requested the closure verification inspection by the VDWM. The Closure verification inspection by the VDWM staff occurred on June 2, 1989.

The HWMU container storage area operated under Interim Status from November 19, 1980 to March 28, 1989, the date the facility requested a clean closure verification site visit by the Virginia Department of Waste Management (VDWM), predecessor to the VDEQ. Interim Status was officially terminated by the VDWM on June 19, 1989. Apparently, the same HWMU container storage area was operated under both a large quantity generator (LQG) and a small quantity generator (SQG) status under 40 CFR § 262.34, until the P&G facility closed. P&G deactivated the entire facility on May 22, 1995.

The site is currently occupied by ARREFF Terminals Inc., with a number of shipping containers present on the site. ARREFF Terminals provides transloading / warehousing for the Virginia Port Authority. The container storage area mat and fence were moved as one unit by ARREFF from its original location on the west side of the building to the southwest corner of the site and is not currently used by the facility.

A RCRA Corrective Action Facility Assessment including file reviews, interviews with property owners, and two site visits evaluated a number of SWMUs and AOCs. No evidence of releases was obtained during the investigative process either from historical documentation or from visual observations. Based on the information gathered it does not appear that groundwater would have been impacted by site activities and there does not appear to be any justification to install monitoring wells to assess groundwater conditions. No further action at this facility under the RCRA Corrective Action Program appears to be warranted at this time.

#### References

- 1) Final RCRA Site Report, Former Proctor and Gamble Site (Currently ARREFF Terminals), 3600 Elm Avenue, Portsmouth, Virginia, 23704, EPA ID No. VAD003174810, by U.S. Army Corps of Engineers, dated January 22, 2009

#### Footnotes:

"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)**

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within “existing area of contaminated groundwater”<sup>2</sup> 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”<sup>2</sup>.
  - If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the “existing area of groundwater contamination”<sup>2</sup>) – 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):

<sup>2</sup>“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)**

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):

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

5. Is the **discharge** of “contaminated” groundwater into surface water likely to be “insignificant” (i.e., the maximum concentration<sup>3</sup> 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 concentrations 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 concentrations 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<sup>3</sup> 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):

<sup>3</sup> 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)**

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<sup>4</sup>)?

- 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<sup>5</sup>, 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):

<sup>4</sup>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.

<sup>5</sup>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.

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

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):

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

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 **Former Proctor and Gamble** facility, EPA ID # **VAD003174810**, located at **3600 Elm Ave Portsmouth VA**. Specifically, this determination indicates that, based on the history of the site and the information gathered during the RCRA Corrective Action process, there is no indication this site has impacted 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 *Bill Wentworth* Date 5/4/09  
Bill Wentworth  
Remedial Project Manager

Supervisor *[Signature]* Date 5/6/09  
Luis Pizarro  
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