DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION  
Interim Final 2/5/99 
RCRA Corrective Action  
Environmental Indicator (EI) RCRAInfo code (CA750)  
Migration of Contaminated Groundwater Under Control  

Facility Name: Mercury Waste Solutions (MWSNY)  
Facility Address: 26 Railroad Avenue, Albany, NY  
Facility EPA ID #: NYD048148175  

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 #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  

EI Determinations status codes should remain in RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo 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?

- ✔️ 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):** Mercury was detected on the Mercury Refining property in monitoring well MW 5. MW5 was installed in an area of highly contaminated soil. Analysis of groundwater from the well indicated a mercury concentration of 22.5 ppb. The federal MCL for mercury is 2 ppb and the New York State MCL is 0.7 ppb. Groundwater samples collected from nine other monitoring wells which are located up gradient and down gradient of MW5 do not exceed the MCL of 2 ppb. Arsenic was also detected in the groundwater at levels which are above the element’s MCL of 10 ppb. Arsenic however was not associated with Mercury Refining’s operations. See Remedial Investigation Report, dated February 28, 2003.

**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).

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 samples collected immediately off the Mercury Refining Property confirmed that the plume of mercury contaminated groundwater is confined primarily to the Mercury Refining property. See EPA Technical Memorandum for Delineation of Groundwater Contamination, dated September 18, 2003.

\(^2\) “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.

   ❌ 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):** A groundwater-surface water interaction study was performed as part of EPA’s Superfund Remedial Investigation of the Site. The study indicated that groundwater from Mercury Refining is flowing into an unnamed tributary of the Patroons Creek. The tributary flows along the southern portion of the Mercury Refining property. See Remedial Investigation Report, dated February 28, 2003.

5. Is the discharge of “contaminated” groundwater into surface water likely to be “insignificant” (i.e., the maximum concentration 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 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 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 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):** Surface water samples from the Patroons Creek Tributary and Partroon Creek

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

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)?

   ✓ 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, 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/habits 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.

   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):** Samples of the Patroon Creek tributary, which were collected for the Superfund Remedial Investigation, did not reveal the presence of mercury in the surface water. See Remedial Investigation Report, dated February 28, 2003.

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
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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?”

✔ 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 Superfund program is nearing completion of a remedial investigation and feasibility study of the Site. A Record of Decision (ROD) will be issued in fiscal year 2005. The ROD will specify a remedy which will require the collection of soil and groundwater samples to determine the effectiveness of the remedy.

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 Mercury Refining, EPA ID # NYD048148175, located at 26 Railroad Avenue in Colonie, NY. 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: ______________________ Date: ____________
(signature) (print) (title)
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Locations where References may be found: Superfund Records Center, 18th floor, 290 Broadway, New York, NY 10007

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