**DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION**

**RCRA Corrective Action**
**Environmental Indicator (EI) RCRAInfo code (CA750)**
**Migration of Contaminated Groundwater Under Control**

**Facility Name:** **Marlborough Press (formerly Three Dimensional Circuits)**
**Facility Address:** **31 Commercial Street, Plainview, NY 11803**
**Facility EPA ID #:** **NYD990774184**

## 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).

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 #8 and enter "IN" (more information needed) status code.

**Background:**
This site was operated as the Three Dimensional Circuits Site from 1970-1984. In 1980, the company submitted a Part A Application, and obtained an EPA ID number. In 1984 the company ceased operations. In October 1987, the permit request was withdrawn and the site was referred to State Superfund. Cleanup actions at this site are documented under the Three Dimensional Circuits name.

The Three Dimensional Circuits site is located in an industrial park in Plainview, Nassau County, New York. The company manufactured electronic circuit boards from 1970 until 1984. During its operation, the site discharged metal plating solutions into an on-site leaching pool system. Soil samples collected in May 1986 and a Phase II investigation conducted in 1987 revealed that soil and groundwater at the site had become contaminated with lead and copper. Soil samples showed a maximum lead concentration of 6820 ppm and a maximum copper concentration of 46000 ppm. During the 1987 investigation, 1,1,1 trichloroethane was found in an up-gradient well (MW-2) at 50 ppb.

A Consent Order was executed in April 1995 for a Remedial Investigation (RI). In 1998, an Interim Remedial Measure (IRM) was undertaken to address the soil contamination. During the IRM, the leaching pools and a storm drain were excavated and 204 tons of lead and copper contaminated soil removed from the site. The leaching pools and storm drain were backfilled with clean sand and the area was re-paved, effectively capping the area.

The Remedial Investigation was completed in April 1999. Groundwater monitoring was performed during the RI and perchloroethylene was found in MW-2 (upgradient) and MW-5 (downgradient) well. The levels of perchloroethylene ranged from 3.7 to 5.4 ppb and was unrelated to site activities. The groundwater standard is 5 ppb. Lead and copper levels in downgradient well MW-4 were greatly reduced from July 1997 (pre-source removal) to April 1999 (post-source removal). Copper levels decreased from 1480 ppb to 206 ppb; lead levels decreased from 483 ppb to 110 ppb. The groundwater standard for copper is 200 ppb; for lead the standard is 25 ppb.

A Record of Decision was issued in March 2000, which required groundwater monitoring for inorganics on a quarterly basis for two years. Over the duration of the groundwater monitoring program, the concentrations of copper and lead in groundwater downgradient of the former source area continued to decrease as a result of source remediation and met the remedial goal ( NYS Ambient Water Quality Standards for Class GA groundwater). The site was delisted in August

2004.

References:
NYS Department of Environmental Conservation, Division of Environmental Remediation. Record of Decision - Three Dimensional Circuits Site. 3/2000

Henderson & Bodwell LLP. Letter dated November 21, 2003. Re: 31 Commercial Street. Final Groundwater Sampling Results

NYSDOH Letter dated April 19, 2004. Concurrence to De-list Three Dimensional Circuits

NYS Department of Environmental Conservation Letter dated August 6, 2004. Deletion of Site from NYS Registry of Inactive Hazardous Waste Disposal Sites

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.

__X__ 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 & References:**

As described in the response to item 1, groundwater contamination at the site appears in the upgradient monitoring well and has not been attributed to releases from this site.

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

[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).

[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.

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.

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.

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 <u>key</u> 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 judgment/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 <u>each</u> contaminant discharged above its

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

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.

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 cannot 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,

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[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.

sediments, and/or eco-systems.

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

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.

8. Check the appropriate RCRAInfo 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).

__X__ 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 Marlborough Press (formerly Three Dimensional Circuits) facility, EPA ID # **NYD990774184**, located at 31 Commercial Street, Plainview, NY. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring has been 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.

Rationale:
Groundwater monitoring was performed after completion of the source removal. Groundwater in the downgradient wells was within applicable standards.

Completed by: Ruth Curley Date: 1/14/2010
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Locations where References may be found:

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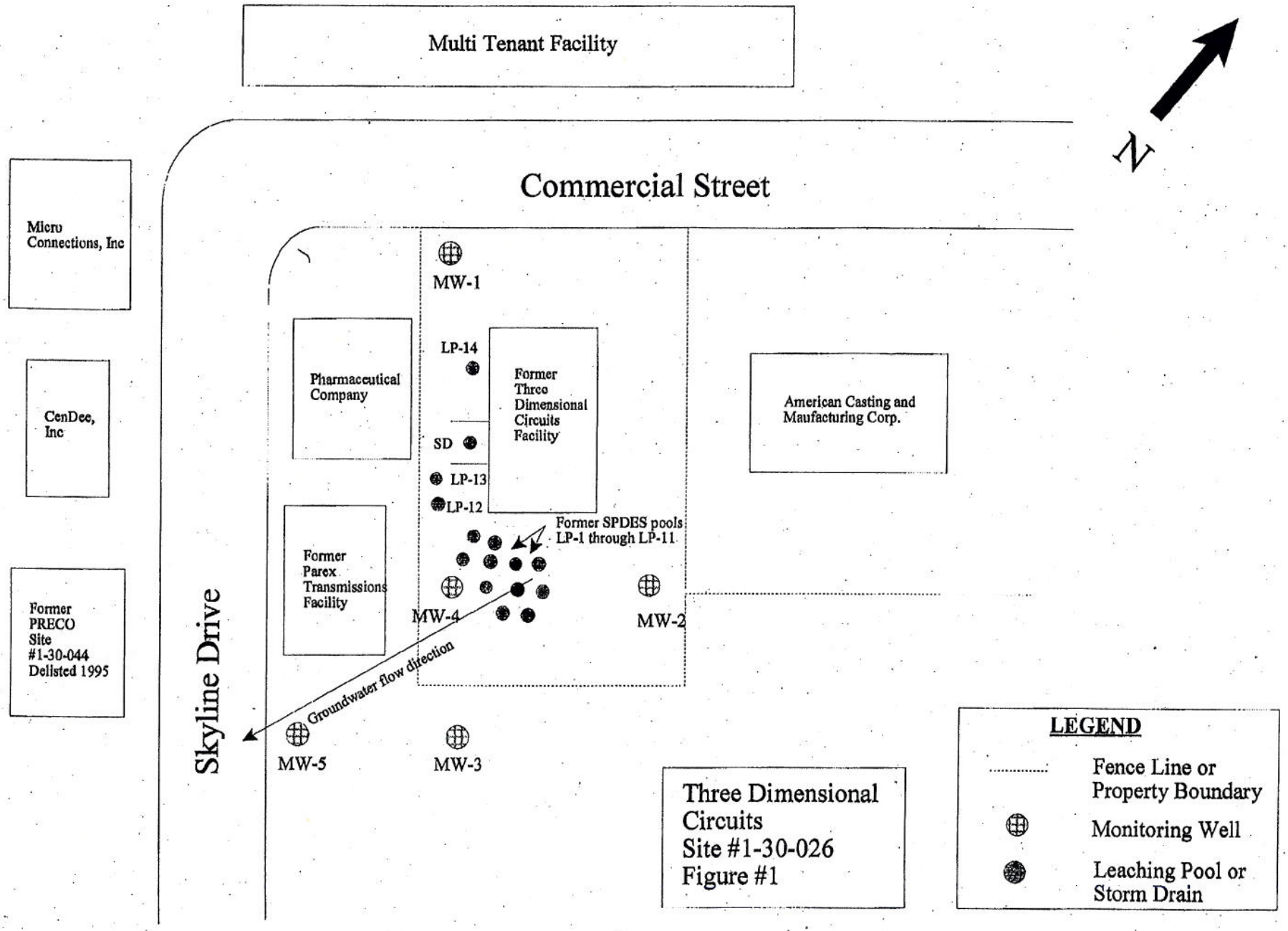
**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

# TABLES AND FIGURES

## THREE DIMENSIONAL CIRCUITS
## 31 COMMERCIAL STREET
## PLAINVIEW, NY 11803


**Three Dimensional Circuits**
**Site #1-30-026**
**Figure #1**


Multi Tenant Facility
N
Commercial Street
Micro Connections, Inc
CenDee, Inc
Former PRECO Site #1-30-044 Delisted 1995
Pharmaceutical Company
Former Three Dimensional Circuits Facility
American Casting and Maufacturing Corp.
Former Parex Transmissions Facility
MW-1
LP-14
SD
LP-13
LP-12
Former SPDES pools LP-1 through LP-11
MW-4
MW-2
MW-5
MW-3
Groundwater flow direction
Skyline Drive
Three Dimensional Circuits Site #1-30-026 Figure #1
LEGEND
Fence Line or Property Boundary
Monitoring Well
Leaching Pool or Storm Drain

# Three Dimensional Circuits
# Plainview, NY 11803
# NYD 990774184

- Groundwater monitoring conducted 2002-2003 as part of ROD
- Found copper in upgradient monitoring well. Summary of Results below:

**COPPER**

| | 8/87 | 7/96 | 6/97 | 4/99 | 1/02 | 4/02 | 7/02 | 10/02 | 1/03 | 4/03 | 7/03 | 10/03 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 142 | 234 | -- | 6 | 6.6 | 6.4 | 0.6 | 10 | 1.9 | 9.3 | 5.2 | 0.78 |
| MW-2 | 1115 | 867 | -- | 169 | 325 | 599 | 594 | 390 | 632 | 344 | 762 | 400 |
| MW-3 | -- | 3 | -- | 4 | 1.5 | 2.7 | 0.5 | 2 | 3 | 3.4 | 1.4 | 1.1 |
| MW-4 | -- | -- | 1480 | 206 | 29 | 13 | 42 | 6 | 8.6 | 8.2 | 4.5 | 7.9 |
| MW-5 | -- | -- | -- | 33 | 62 | 160 | 2 | 5 | 21.5 | 3.2 | 2 | 13 |

Standard for copper in groundwater is 200 ppb

**LEAD**

| | 8/87 | 7/96 | 6/97 | 4/99 | 1/02 | 4/02 | 7/02 | 10/02 | 1/03 | 4/03 | 7/03 | 10/03 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 60 | 240 | -- | 2.5 | 3 | 4 | 2 | 3 | 4 | 3 | 2 | 3 |
| MW-2 | 16 | 1 | -- | 1.7 | 3 | 4 | 2 | 4 | 4 | 5 | 2 | 0.5 |
| MW-3 | -- | 1 | -- | 1.4 | 3 | 4 | 2 | 5 | 4 | 3 | 3 | 4 |
| MW-4 | -- | -- | 483 | 110 | 17 | 6 | 30 | 6 | 5 | 4 | 5 | 3 |
| MW-5 | -- | -- | -- | 24.6 | 50 | 90 | 2 | 7 | 23 | 3 | 2 | 7 |

Standard for lead in groundwater is 25 ppb

MW-2 determined to be upgradient well
-- means no sample
ROD issued March 2000