

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: Windsor-Bloomfield Sanitary Landfill
Facility Address: Huckleberry Road, Windsor, CT
Facility EPA ID #: CTD991289133

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).

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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): Municipal solid waste landfill leachate parameters including total dissolved solids, specific conductance, alkalinity, ammonia, hardness, sodium, barium, iron and manganese have all been measured at elevated levels in groundwater monitoring wells downgradient of the landfill. In addition, trichloroethylene and vinyl chloride slightly exceed the groundwater protection criteria in one monitoring well located in the landfill and adjacent to the RCRA closed metal hydroxide cell. Also "Several leachate-impacted groundwater seeps are present west and northwest (downgradient) of the landfill. The leachate seeps occur where the groundwater elevation equals the topographic elevation" (from Zone of Influence Investigation Report, Windsor-Bloomfield Sanitary Landfill, Windsor, CT, dated May 1996). Some leachate seeps containing iron-oxide precipitate (orange-stained soil) discharge directly into the Farmington River.

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).

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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): The document **Zone of Influence Investigation Report, Windsor-Bloomfield Sanitary Landfill, Windsor, CT, dated May 1996** demonstrates through borings, geophysical studies, groundwater monitoring, leachate seep investigation/sampling and water table elevations that the landfill leachate plume is bounded both vertically and laterally. The vertical boundary is defined by the "confining characteristics of the glacial till layer and the upward vertical gradient of groundwater flow between the till and the upper aquifer. ...the till layer at the site is continuous throughout the site, with a thickness ranging from 10 to 85 feet." (Ref. the above report). The western boundary is defined by the Farmington River and the northern boundary by the local wetlands and an unnamed pond and an unnamed stream that discharges to the Farmington River. The eastern boundary is defined by a groundwater divide and the southern boundary by the groundwater flow patterns causing the landfill to be downgradient of the property to the south (see Plate 5 for the landfill zone of influence).

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.

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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 eco-systems at these concentrations)?

 X 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 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 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): Although landfill indicator parameters (e.g. specific conductance, total dissolved solids, ammonia), inorganics (e.g. arsenic) and volatile organic compounds (e.g. 1,1-dichloroethane, 1,4-dichlorobenzene) are detected in the groundwater downgradient of the landfill, only arsenic at a maximum of .035 mg/l exceeds the surface water protection criteria of .004 mg/l as reported in a May 2001 landfill groundwater monitoring report. This level, from Connecticut's Remediation Standard Regulations, was not exceeded by more than 10 times so it can be safely concluded that this is not anticipated to have an unacceptable impact to the Farmington River, its sediments, or eco-system. Monitoring conducted in 1995 and 1996 shows similar levels for the above constituents with the maximum concentration of arsenic as the only exceedance of the surface water protection criteria, at 0.4 mg/l and 1.48 mg/l. The toxicity of the groundwater and stream water downgradient of the landfill was determined in 1992 by exposing live organisms to these water samples. This study concluded that water is non-toxic. Nevertheless, the CTDEP is requiring the Town of Windsor, through an administrative order, to implement controls on the landfill leachate and the leachate seeps for aesthetic (odor and visual) reasons.

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

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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 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 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.

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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 **Windsor-Bloomfield Sanitary Landfill** facility, EPA ID # **CTD991289133**, located at **Huckleberry Road, Windsor, CT**. 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) David Ringquist
David Ringquist
(title) Sanitary Engineer 3

Date 9-4-02

Reviewed by
David Lim
David Lim 9/20/02

Supervisor (signature) John England
John England
(title) Supervising Sanitary Engineer

Date 9/5/02

EPA-Reg I
Approved by
Matthew England
Matthew England

Connecticut

Locations where References may be found:

Connecticut Department of Environmental Protection, 79 Elm Street, Hartford, CT.

Section Chief
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9/23/02

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References

Windsor-Bloomfield Municipal Landfill
Migration of Contaminated Groundwater under Control (CA 750)

1. *Zone of Influence Investigation Report, Windsor-Bloomfield Sanitary Landfill, Windsor, Connecticut, Volume I: Technical Report*, prepared by Fuss & O'Neill Inc., May 1996.
2. Groundwater Monitoring: *Second Quarter 2001 Monitoring Results, Groundwater Monitoring Program, Windsor-Bloomfield Sanitary Landfill and RCRA Metal Hydroxide Cell, Windsor, Connecticut*, prepared by Fuss & O'Neill Inc., May 2001.
3. Correspondence: Letter from Fuss & O'Neill, Inc. to CTDEP dated June 29, 2001.

Table A-1
 Summary Table of Leachate Indicator Parameters
 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	MW-15S 45695112701 11/27/1995	MW-15S 22296011115 01/11/1996	MW-15S 156971209-01 12/09/1997	MW-15S 156980917-10 09/17/1998
pH	(SU)	8.50	7.98	8.13	7.89
Specific conductance	(uMhos)	361	372	360	300
Temperature	(C deg)	9.4	6.3	8.5	12.5
Turbidity	(ntu)	—	—	—	—
Dissolved Oxygen	(mg/l)	—	—	—	—
Alkalinity(as CaCO3)	(mg/l)	120	130	120	150
Ammonia (as N)	(mg/l)	0.09	<0.07	0.29	0.72
Chloride	(mg/l)	26.	28.	—	31
Hardness (as CaCO3)	(mg/l)	240	320	178	280
Iron	(mg/l)	—	—	3.98	20.6
Iron (Dissolved)	(mg/l)	0.02	<0.01	—	—
Manganese	(mg/l)	—	—	<0.002	0.516
Manganese (Dissolved)	(mg/l)	<0.01	<0.01	—	—
Total Dissolved Solids	(mg/l)	210	210	<10	220

< = Not detected at indicated reporting limit

—=Not analyzed

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 Windsor-Bloomfield Landfill
 Windsor, Connecticut
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PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	MW-23 156980917-04 09/17/1998	MW-24 156980917-05 09/17/1998	MW-25 156980917-01 09/17/1998	MW-26 156980917-02 09/17/1998
pH	(SU)	7.35	7.56	7.26	7.70
Specific conductance	(uMhos)	310	350	88	330
Temperature	(C deg)	11.3	12.8	11.2	11.1
Turbidity	(ntu)	---	---	---	---
Dissolved Oxygen	(mg/l)	---	---	---	---
Alkalinity(as CaCO3)	(mg/l)	260	300	64	210
Ammonia (as N)	(mg/l)	0.12	0.44	0.04	0.06
Chloride	(mg/l)	33	32	4.7	32
Hardness (as CaCO3)	(mg/l)	270	500	90	320
Iron	(mg/l)	35.0	72.9	17.3	41.9
Iron (Dissolved)	(mg/l)	---	---	---	---
Manganese	(mg/l)	5.34	13.8	0.897	1.68
Manganese (Dissolved)	(mg/l)	---	---	---	---
Total Dissolved Solids	(mg/l)	210	230	77	220

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 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
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SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	MW-27 156980917-03 09/17/1998	MW20S 156980109-01 01/09/1998	MW20S 156980917-11 09/17/1998	MW22S 156980917-06 09/17/1998
pH	(SU)	7.75	7.29	8.19	6.56
Specific conductance	(uMhos)	320	300	78	300
Temperature	(C deg)	12.9	10.1	11.5	11.8
Turbidity	(ntu)	—	—	—	—
Dissolved Oxygen	(mg/l)	—	—	—	—
Alkalinity(as CaCO3)	(mg/l)	280	250	56	130
Ammonia (as N)	(mg/l)	0.04	0.11	0.04	0.20
Chloride	(mg/l)	34	—	5.3	47
Hardness (as CaCO3)	(mg/l)	660	1300	94	180
Iron	(mg/l)	64.7	321	20.6	21.3
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	6.29	10.8	0.536	0.656
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	200	190	53	200

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 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-13 156980122-02 01/22/1998	PZ95-13 286980423-15 04/23/1998	PZ95-13 156980728-12 07/28/1998	PZ95-13 156980917-09 09/17/1998
pH	(SU)	6.51	6.78	6.45	7.54
Specific conductance	(uMhos)	55	64	51	89
Temperature	(C deg)	8.1	8.9	9.3	10.2
Turbidity	(ntu)	0.66	0.63	1.39	—
Dissolved Oxygen	(mg/l)	—	—	—	—
Alkalinity(as CaCO3)	(mg/l)	<20	<20	<20	68
Ammonia (as N)	(mg/l)	<0.02	<0.10	0.40	0.07
Chloride	(mg/l)	3.5	5.5	5.2	4.9
Hardness (as CaCO3)	(mg/l)	18.6	21	17	92
Iron	(mg/l)	0.016	0.016	0.013	20.7
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	<0.002	<0.002	<0.001	0.888
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	33	44	38	54

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 Summary Table of Leachate Indicator Parameters
 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-13 156981020-11 10/20/1998	PZ95-13 211990128-01 01/28/1999	PZ95-13 211990429-12 04/29/1999	PZ95-13 211990726-04 07/26/1999
pH	(SU)	6.41	6.41	6.25	6.59
Specific conductance	(uMhos)	58	60	62	55
Temperature	(C deg)	9.5	8.1	9.1	11.6
Turbidity	(ntu)	53.00	15.30	8.00	1.05
Dissolved Oxygen	(mg/l)	—	—	—	4.2
Alkalinity(as CaCO3)	(mg/l)	22	<20	<20	22
Ammonia (as N)	(mg/l)	0.03	0.04	0.03	0.16
Chloride	(mg/l)	4.7	5.2	4.7	4.9
Hardness (as CaCO3)	(mg/l)	19	18	22	16
Iron	(mg/l)	1.47	0.438	0.355	0.038
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	0.095	0.028	0.020	0.003
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	38	48	48	39

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 Summary Table of Leachate Indicator Parameters
 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-13 131991026-14 10/26/1999	PZ95-13 131000128-10 01/28/2000	PZ95-13 131000427-14 04/27/2000	PZ95-13 609000802-15 08/02/2000
pH	(SU)	6.13	7.81	6.33	6.28
Specific conductance	(uMhos)	52	65	55	51
Temperature	(C deg)	9.3	6.9	8.6	12.2
Turbidity	(ntu)	4.10	32.90	4.96	7.31
Dissolved Oxygen	(mg/l)	6.2	--	11.7	13.5
Alkalinity(as CaCO3)	(mg/l)	22	<20	<20	<20
Ammonia (as N)	(mg/l)	0.06	0.06	0.04	0.10
Chloride	(mg/l)	3.3	6.6	4.4	5.3
Hardness (as CaCO3)	(mg/l)	16	20	16	16
Iron	(mg/l)	0.079	0.521	0.318	0.267
Iron (Dissolved)	(mg/l)	--	--	--	--
Manganese	(mg/l)	0.004	0.035	0.026	0.019
Manganese (Dissolved)	(mg/l)	--	--	--	--
Total Dissolved Solids	(mg/l)	29	42	58	35

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Table A-1
 Summary Table of Leachate Indicator Parameters
 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive
 SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-13 295001018-09 10/18/2000	PZ95-13 131010201-15 02/01/2001	PZ95-13 446010430-15 04/30/2001	PZ95-14 156980122-03 01/22/1998
pH	(SU)	6.41	6.55	5.73	7.99
Specific conductance	(uMhos)	71	55	60	278
Temperature	(C deg)	9.6	8.2	10.4	8.6
Turbidity	(ntu)	5.40	0.66	0.18	6.94
Dissolved Oxygen	(mg/l)	10.8	8.9	9.4	—
Alkalinity(as CaCO3)	(mg/l)	25	<20	<20	140
Ammonia (as N)	(mg/l)	0.05	0.03	0.03	<0.02
Chloride	(mg/l)	4.5	<3.0	<3.0	6.2
Hardness (as CaCO3)	(mg/l)	30	17.6	18.2	143
Iron	(mg/l)	0.180	<0.002	0.018	0.170
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	0.016	0.002	<0.001	0.003
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	37	30	42	150

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PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-14 286980423-16 04/23/1998	PZ95-14 156980728-11 07/28/1998	PZ95-14 156980917-12 09/17/1998	PZ95-14 156981020-10 10/20/1998
pH	(SU)	7.50	7.23	6.90	7.96
Specific conductance	(uMhos)	155	88	47	263
Temperature	(C deg)	8.5	10.5	10.7	9.6
Turbidity	(ntu)	0.91	2.03	—	17.30
Dissolved Oxygen	(mg/l)	—	—	—	—
Alkalinity(as CaCO3)	(mg/l)	62	28	240	32
Ammonia (as N)	(mg/l)	<0.10	<0.02	0.07	0.04
Chloride	(mg/l)	5.1	5.5	5.0	5.9
Hardness (as CaCO3)	(mg/l)	68	35	110	160
Iron	(mg/l)	0.012	0.115	51.8	0.608
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	0.016	0.010	3.60	0.029
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	75	52	40	130

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 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-14 211990128-02 01/28/1999	PZ95-14 211990429-11 04/29/1999	PZ95-14 211990726-03 07/26/1999	PZ95-14 131991026-15 10/26/1999
pH	(SU)	7.99	6.92	6.96	6.53
Specific conductance	(uMhos)	321	136	102	121
Temperature	(C deg)	8.4	9.1	16.0	10.3
Turbidity	(ntu)	5.27	4.00	3.09	2.20
Dissolved Oxygen	(mg/l)	—	—	3.9	5.1
Alkalinity(as CaCO3)	(mg/l)	152	56	36	56
Ammonia (as N)	(mg/l)	0.05	0.04	0.03	0.04
Chloride	(mg/l)	14	5.9	3.3	3.1
Hardness (as CaCO3)	(mg/l)	150	60	39	50
Iron	(mg/l)	0.193	0.115	0.038	0.024
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	0.007	0.025	0.016	0.002
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	170	84	54	61

< = Not detected at indicated reporting limit

—=Not analyzed

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 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive
 SAMPLE TYPE: Water

CONSTITUENT	SITE SAMPLE ID DATE	PZ95-14 131000128-11 01/28/2000	PZ95-14 131000428-15 04/28/2000	PZ95-14 609000802-14 08/02/2000	PZ95-14 295001018-07 10/18/2000
pH	(SU)	8.11	6.68	6.70	6.11
Specific conductance	(uMhos)	115	96	88	54
Temperature	(C deg)	11.1	8.5	11.2	10.0
Turbidity	(ntu)	2.82	1.50	2.81	4.12
Dissolved Oxygen	(mg/l)	—	8.9	13.6	10.8
Alkalinity(as CaCO3)	(mg/l)	40	34	23	<20
Ammonia (as N)	(mg/l)	0.04	0.03	0.06	0.04
Chloride	(mg/l)	6.6	4.4	3.6	5.4
Hardness (as CaCO3)	(mg/l)	47	39	28	18
Iron	(mg/l)	0.053	0.120	0.036	0.135
Iron (Dissolved)	(mg/l)	—	—	—	—
Manganese	(mg/l)	0.014	0.014	0.013	0.009
Manganese (Dissolved)	(mg/l)	—	—	—	—
Total Dissolved Solids	(mg/l)	66	66	41	78

< = Not detected at indicated reporting limit

—=Not analyzed

Table A-1
 Summary Table of Leachate Indicator Parameters
 Historical Groundwater Monitoring
 Windsor-Bloomfield Landfill
 Windsor, Connecticut
 June 2001

PERIOD: From 11/27/1995 thru 04/30/2001 - Inclusive

SAMPLE TYPE: Water

CONSTITUENT	SITE	PZ95-14	PZ95-14
	SAMPLE ID	131010201-16	446010430-16
	DATE	02/01/2001	04/30/2001
pH	(SU)	7.40	6.19
Specific conductance	(uMhos)	202	102
Temperature	(C deg)	8.7	14.8
Turbidity	(ntu)	0.60	0.41
Dissolved Oxygen	(mg/l)	9.6	10.0
Alkalinity(as CaCO3)	(mg/l)	90	32
Ammonia (as N)	(mg/l)	0.03	<0.02
Chloride	(mg/l)	<3.0	<3.0
Hardness (as CaCO3)	(mg/l)	97.8	34.6
Iron	(mg/l)	0.051	0.017
Iron (Dissolved)	(mg/l)	---	---
Manganese	(mg/l)	0.003	0.008
Manganese (Dissolved)	(mg/l)	---	---
Total Dissolved Solids	(mg/l)	84	55

< = Not detected at indicated reporting limit

---=Not analyzed

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RDMS Document ID# 1027

<p>Facility Name: <u>Windsor Bloomfield San Landfill</u></p> <p>Phase Classification: <u>R-13</u></p> <p>Document Title: <u>Environmental Indicator (EI) Determination, Migration of Contaminated Groundwater Under Control (CA750YE) - Windsor Bloomfield San Landfill</u></p> <p>Date of Document: <u>09-23-2002</u></p> <p>Document Type: <u>EI Determination</u></p> <p>Purpose of Target Sheet:</p> <p><input checked="" type="checkbox"/> Oversized <input type="checkbox"/> Privileged</p> <p><input type="checkbox"/> Page(s) Missing <input type="checkbox"/> Other (Please Provide Purpose Below)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Comments: <u>Plate 5: Specific Conductance Isopleth Map, November 1995 - Monitoring Event Zone of Influence Investigation Report</u></p>
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Comments: <u>Figure 1: Groundwater Contour Map - Second Quarter Monitoring Event, April 2001</u>	

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