Original

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: **Clean Harbors of Natick, Inc.**
Facility Address: **10 Mercer Road, Natick, MA**
Facility EPA ID #: **MAD980523203**

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?

   __X__ 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.

REFERENCES

References used for this determination include the reports listed below:
Remedial Investigation Report, Phase I: Hydrogeologic Evaluation (June 9, 1989)
Remedial Investigation Report, Phase II: On-site Contaminant Evaluation (June 19, 1989)
GC/MS Analysis of Extractable Organics in Aqueous Samples, EPA (January 24, 1991)
Several memos from EPA ESD to Alison Simcox regarding results of Split Samples, from December 1990 through March, 1991.
Public Health and Environmental Risk Evaluation Interim Deliverable I (September 4, 1991)
Remedial Investigation Report Phase III-Off-site Contaminant Evaluation (December 30, 1992)
Data Validation Summary Report (August 19, 1997)
RCRA Corrective Action Environmental Indicator Determination (June 29, 1999)
Response to USEPA Letter dated September 23, 1999 "Comments on June 29, 1999 EI Determination" (9/29/99)

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).

FACILITY INFORMATION

Site History/Background

The Clean Harbors Natick (CHN) facility is a currently inactive hazardous waste storage facility located in an industrial park off Route 9 in Natick, MA. The site consists of an approximately 10,000 square foot single story building with a concrete slab foundation on an approximately 1 acre lot. The majority of the site is paved, with a grass lawn in front of the building, a small strip of grass on the east side of the building, and a wooded area bordering the southern property boundary. The building and portions of the parking lot are surrounded by a chain link fence. A small building which houses the groundwater pump and treat and SVE system is located at the southeastern portion of the property The facility had been used to receive and store hazardous wastes until they were shipped off for treatment or disposal. All hazardous wastes were removed from the building in 1999, and the facility was placed on inactive status by MADEP.

The building was constructed in 1960 and initially used as a repair and distribution center for copying equipment. During the course of equipment repair, it is likely that waste streams, including VOC solvents used for degreasing and de-inking of equipment, were generated. Since municipal sewer was available at the time of building construction, it is likely that waste streams were discharged to the municipal sewer. Between 1976 and the present, property ownership transferred several times, but the site was consistently used as a hazardous waste storage and transfer facility. Clean Harbors began operations on the site in 1985. In July 1986, MADEP issued a RCRA permit, and EPA issued a HSWA Corrective Action permit. Currently the facility is empty, although CHN retains its permit to store hazardous waste. The facility will eventually be required to undergo RCRA closure as well as complete Corrective Action requirements. EPA is currently reviewing a CHN proposal to perform additional subsurface investigations at site.

Site Geology and Hydrogeology

The site is located in an area of fill overlying mixed sand and gravel deposited in glacial lake Charles. The site stratigraphy consists of 9-24 feet of fine sand underlain by 8-22 feet of silt and clay which acts as an aquitard to vertical groundwater flow. Underlying the silt and clay is 12 to 28 feet or more of medium to coarse sand. Bedrock, mapped as part of the Cherry Brook Formation which includes volcanic and metamorphic rocks, is located at least 60 feet below grade.

Surface water within one mile of the facility includes a drainage swale located approximately 180 feet north of the site on the opposite side of Mercer Road, a wetland area about 1,000 yards north of the site, and Lake Cochituate, located about one mile to the east-northeast. The nearest residence is approximately 1,000 feet away. Drinking water for the town of Natick is from four municipal well fields, two of which are located about one mile away on the eastern banks of Lake Cochituate.

The water table is located approximately 6 to 8 feet below grade. Groundwater flow across the site is to the northeast. Groundwater flow is slightly downward near the southern property boundary. As groundwater moves across the site, vertical gradients are negligible or slightly upward. The hydraulic conductivity in the upper and lower sand layers are orders of magnitude higher than in the silt/clay layer. Flow through the sand layers is horizontal, to the northeast, with little vertical component. Groundwater in the upper aquifer intersects the sewer line in Mercer Road, and only intermittently intersects the drainage swale to the north of the site. Groundwater in the lower aquifer flows in the direction of Lake Cochituate.

Two utility lines (water and sewer) are buried under Mercer Rd. The water line is at a depth of 6 feet; the sewer line extends to at least 12 feet below grade. The sewer line, which slopes to the east down Mercer Road, is encased in gravel bedding material which fully penetrates the upper fine sand unit and likely impacts the flow of groundwater. It is believed that the sewer line acts as a preferential pathway, with groundwater flowing into the more highly transmissive bedding material in the sewer line and moving down the sewer line to the east.

SWMUs

Four SWMUs were identified in Attachment A of the 1986 HSWA Permit: the container storage area; a former 5,000 gallon UST located south of the building; the loading dock area that services the containerized storage area; and a former above ground fiberglass storage tank which was removed in 1984.

The container storage area is permitted to hold up to 92,400 gallons of containerized hazardous waste. The floor is underlain by a six-inch thick reinforced concrete slab. The slab was overlain by 3 to 12 additional inches of concrete to create secondary containment bays. It is considered unlikely that a release from this SWMU would have migrated to the underlying soils. However, CHN is planning to conduct soil and soil gas sampling beneath the concrete slab to determine conditions in this area. All hazardous waste has been removed from the building.

The former 5,000 gallon UST was installed in 1976 and removed in 1985. The UST was used for storage of liquid hazardous wastes. A Petro-Tite tank test was performed on the UST in 1983. Test results did not indicate that the tank was leaking. Based on these and other results, CHN concluded that the UST did not leak, but that the contaminated soils were the result of prior waste management activities. The contaminated soils area is approximately 40 by 60 feet in area, and approximately 10 to 12 feet deep. In 1993, CHN constructed a groundwater pump and treat and Soil Vapor Extraction (SVE) system to remediate soils and groundwater in this area.

The loading dock services the containerized storage area on the western side of the building. The driveway leading to the loading dock is depressed below grade so that the back end of a truck is level with the floor of the building at the loading dock. On April 24, 1982, a hazardous waste spill occurred which resulted in the discharge of hazardous waste to the loading dock. The waste and associated rinse water was then discharged to the low area of the parking lot. DEQE collected water and soil samples from the general area of the loading dock in May 1982. Methylene chloride was detected in a surface water sample at a concentration of 351 ppm. CHN followed up by collecting soil samples from a boring through the loading dock. Sample analysis did not detect significant concentrations of VOCs, SVOCs, metals, or PCBs. Subsequent soil and groundwater sampling in this area has not detected significant contamination.

The former above ground fiberglass storage tank was located above the concrete storage facility floor in a cradle rack from 1976 through 1984. The tank was used to contain corrosive liquids. It is considered unlikely that releases occurred from the tank through the concrete slab to any subsurface soils. Any spills would likely have been contained by the concrete floor and cleaned up. CHN is planning to collect subslab soil samples to determine whether any releases could have impacted subslab soils in this area.

Site Investigations and Interim Measures

Numerous phases of investigation and remedial actions have been conducted at the site. Some of the major

activities and reports are summarized below.

Initial site investigations were conducted in 1984, 1985, and 1986. In 1985, the 5,000 gallon UST was removed. Contaminated soils excavated from around the tank were later placed back in the excavation and covered with plastic sheeting followed by 2 to 3 feet of clean fill. Crushed stone was placed to grade above the fill. Soil and groundwater samples were collected in the area.

On July 31, 1986 the HSWA Permit became effective.

In the fall of 1988, CHN's consultant Balsam performed the first phase of RFI field work. On June 9, 1989, CHN submitted the revised Remedial Investigation Report (RIR) Phase I: Hydrogeologic Evaluation. On June 19, 1989, CHN submitted the RIR Phase II: On-Site Contamination Evaluation. An addendum to the Phase II Report was submitted on June 19, 1991. Results of the Phase I and Phase II reports indicated that groundwater contaminated with dissolved VOCs was migrating from a contaminated soil source area in the vicinity of the former UST. A groundwater plume appeared to extend from the source area, under the building, to the northeast corner of the property. The extent of the plume off-site was unknown. Contaminated groundwater was confined to the uppermost fine sand layer by the underlying, less permeable silt/clay layer. The VOC contaminated soil source area was located under the paved parking lot, and was estimated to encompass a 40 by 60 foot area extending from approximately 3 to 12 feet in depth. The soils were contaminated primarily with PCE, ethylbenzene, benzene, toluene, xylenes, TCE, and 1,1,1-TCA. Groundwater was contaminated with the same compounds and 1,2-dichloroethylene. The Phase II report concluded that the magnitude of groundwater and soil contamination warranted remediation.

On December 12, 1990, EPA collected split groundwater samples from wells OW16S, OW16D, OW6, OW4, and OW2. Samples were analyzed for total metals, filtered metals, PCB/pesticides, extractable organics, and VOCs. Elevated concentrations of VOCs were detected in the wells. Metals results included detections of chromium, cadmium, and lead at concentrations slightly above MCLs in several wells. Relatively low levels of extractable organics, including 1,2-dichlorobenzene, 1,4-dichlorobenzene, Bis (2-ethylhexyl)phthalate, naphthalene, and numerous Tentatively Identified Compounds were detected in several wells. No significant concentrations of PCBs were detected.

On May 28, 1992, CHN submitted the Final Design Report, Interim Corrective Measure, and in 1993, CHN constructed a remediation system to remediate soils and groundwater in the area of the former UST. The system consisted of a groundwater extraction system (started up in August 1993) to provide hydraulic control of the migration of VOCs and to lower the water table in the source area, combined with a Soil Vapor Extraction system (SVE), which started up in January 1994. Monthly, and then quarterly compliance reports were submitted to EPA until the systems were shut down in June 1996.

On December 30, 1992, CHN submitted the RIR Phase III: Off-Site Contaminant Evaluation. Three shallow wells and one deep well were installed off-site, north of Mercer Road. Groundwater sampling results picked up low levels of methylene chloride and 2-Butanone, which were believed to be a laboratory artifact. No other VOCs were detected in the off-site wells. Groundwater north of the site was determined to be flowing to the southeast. Therefore, groundwater from both on-site and off-site converges at the sewer line which acts as a groundwater sink. The report concluded that the sewer line, which slopes to the east, was acting as a preferential pathway, and that groundwater entering the utility line bedding material was likely flowing down Mercer Road in an easterly direction.

On November 26, 1996, CHN submitted a revised Scope of Work for Additional Site Activities. Pursuant to this SOW, CHN performed the following:

1) Soil borings were performed in the former UST area to evaluate the effectiveness of the SVE system in remediating soils. Soils were sampled for VOCs.

2) Two wells were installed upgradient of OW-13 along the southwest property line of 12 Mercer Road. Prior to 1995, groundwater samples from OW-13 had not detected the presence of VOCs. Groundwater samples collected between January 1995 and February 1996 detected total VOCs of 1 ppm to 1.5 ppm. The purpose of the two new wells was to evaluate whether an upgradient source may be the cause of contamination found in OW-13, which is screened in the lower sand layer from 18 to 23 feet below grade.

3) Three wells were installed within the sewer line backfill in Mercer Road; CHI-3 was installed west of the impacted area, CHI-4 was installed in the center of the assumed plume, and CHI-5 was installed east of the VOC plume, in the downgradient direction of the presumed preferential pathway. The wells were sampled for VOCs.

4) All existing on-site monitoring wells were sampled and analyzed for VOCs.

The soil and groundwater sampling results from these activities were submitted to EPA in the Data Validation Summary Report, dated August 19, 1997. The data include ground water samples collected in 1995, 1996, and 1997, and soil samples collected in 1997. The results are summarized below.

1) Soils from the source area: Low levels of 1,1,1-TCA (up to 3.2 ppm) and methylene chloride (up to 1.6 ppm) were detected in a few samples at various depths from 7 to 13 feet below grade.

2) Groundwater: A). Groundwater samples collected from wells upgradient of the former UST area were non-detect in 1995, 1996, and 1997. B). Samples collected from the groundwater pump and treat system recovery wells varied. In 1996, 1,900 ppb of chloroform was detected in recovery well RW-1. The 1997 results were non detect for all three recovery wells. C). Samples collected from the eastern side of the building, near the eastern property boundary had consistently low levels of 1,1-DCA (highest was 17 ppb). D). On the northern side of the building, OW-12 consistently showed low levels of 1,1-DCA (11 ppb). In addition, 10 ppb of vinyl chloride was detected in OW-12 in the 1997 sampling round. OW-13 contained consistently high levels of trans 1,2-DCE (up to 680 ppb), and moderate levels of BTEX (850 ppb). Vinyl chloride was detected at 51 ppb inn OW-13 in 1997. E). Of the three wells installed in the sewer line backfill in Mercer Road, CHI-3 (upgradient) and CHI-5 (downgradient) were non-detect. The groundwater sample from well CHI-4, which is located in the sewer backfill directly downgradient from the groundwater plume, detected 73 ppb acetone and 17 ppb MTBE.

Current Site Conditions

The site is currently inactive and the building is empty. A chain link fence surrounds the building and part of the parking lot. Other than security requirements and periodic maintenance of the property, employees are not present on a daily basis. Under an agreement with the owners of the neighboring 12 Mercer Road property, the rear parking area at 10 Mercer Road is used as a parking lot. All known contaminated soils are located beneath pavement. VOCs are the only known significant contaminants in groundwater and soils at the site. Groundwater and soil samples analyzed for SVOCs, PCBs/pesticides, and metals have detected only relatively minor concentrations of these classes of compounds.

The groundwater pump and treat/SVE system operated at the site for 2.5 to 3 years until it shutdown in 1996. The total mass of VOCs removed from groundwater and soils is not known, but results of groundwater and soil sample analysis conducted after the system began operation indicates lower levels of VOCs in both groundwater and soils. This Environmental Indicator Determination is primarily based on data collected in 1995, 1996, and 1997, summaries of which are provided in the attached tables. Additional groundwater, soil, and soil gas sampling is planned to support the RFI and risk assessment for the site.

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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	_X_	___	___	MADEP GW-2 Standards exceeded.
Air (indoors)[2]	_X_	___	___	MADEP GW-2 Standards exceeded.
Surface Soil (e.g.<2 ft)	___	_X_	___	Not suspected based on field screening results.
Surface Water	___	X_	___	The stormwater swale is not downgradient.
Sediment	___	_X_	___	Not applicable.
Subsurf.Soil (e.g.>2 ft)	_X_	___	___	PID Field data indicates contamination, but VOCs not detected above S-1/GW-2 standards in lab samples.
Air (outdoors)	___	_X__	___	Not suspected.

_____ 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.

__X__ 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):

The appropriately protective risk-based "levels" (applicable promulgated standards) used in this EI are the Massachusetts Contingency Plan (MCP) 310 CMR 40.0000 Method 1 risk characterization standards. If concentrations detected in soil and groundwater at the site are less than the applicable Method 1 standards, then media are not considered to be contaminated. For this EI determination, the applicable soil and groundwater categories were assumed to be S-1/GW-2 for soil within 30 feet of a building (which is conservative because it represents concentrations which are protective of residential exposures to soil and indoor air over contaminated groundwater), and S-1/GW-3 for areas further than 30 feet from a building which are protective of residential exposures to soil and groundwater discharge to surface water. Data used for comparison to the standards is the 1995, 1996, and 1997 groundwater data and 1997 soil data, which were collected during and after remediation efforts. Data summary tables are attached.

Groundwater:

Vinyl chloride (detected in groundwater up to 51 ppb) which has a GW-2 standard of 2 ppb, and chloroform (detected once in groundwater up to 1,900 ppb) which has a GW-2 standard of 400 ppb. CHN is planning to conduct additional groundwater sampling. See Table 2.

Indoor Air:

Vinyl chloride (detected in groundwater up to 51 ppb) which has a GW-2 standard of 2 ppb, and chloroform (detected once in groundwater up to 1,900 ppb) which has a GW-2 standard of 400 ppb. CHN is planning to conduct subslab soil and soil gas sampling in the future. See Table 2 attached.

Subsurface Soils:

Headspace PID readings of samples collected in 1997 indicated the presence of VOCs. However, laboratory samples did not indicate significant contamination. CHN is planning to conduct additional soil sampling in this area. See the attached Table 1.

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.

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	NO	NO	NO	NO	NO	NO	NO
Air (indoors)	NO	NO	NO	YES	NO	NO	NO
~~Soil (surface, e.g., <2 ft)~~	___	___	___	___	___	___	___
~~Surface Water~~	___	___			___	___	___
~~Sediment~~	___	___			___	___	___
Soil (subsurface e.g., >2 ft)	NO	NO	NO	YES	NO	NO	NO
~~Air (outdoors)~~	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. 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).

__Y__ 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):

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

The site is located within an industrial park, so residential exposures do not occur. Although groundwater concentrations indicate the possibility that indoor air is contaminated with vinyl chloride and/or chloroform, the site is currently inactive, and no employees currently work at the facility. CHN is planning to gather additional data to help determine whether indoor air is an actual threat to future workers. The building and portions of the parking lot are surrounded by a chain link fence, so trespassers are unlikely. The groundwater plume apparently does not extend beyond the sewer line in the middle of Mercer Road, so workers in buildings off-site are not exposed. Although the sewer line appears to be a preferential pathway for groundwater contamination, wells installed within the backfill did not detect significant site related contaminants, and, based on available data, utility workers would not be exposed to site contamination

Currently, the only completed pathway is the potential for construction workers to be exposed to possibly contaminated subsurface soils while performing excavation work in the former UST area, and to possibly contaminated indoor air (vinyl chloride and chloroform) based on groundwater concentrations. CHN is reportedly interested in selling the property, and it is possible that construction workers could begin making modifications to the building/property. Elevated PID readings were detected in subsurface soil samples (but not detected in laboratory samples). Since the data is contradictory, it is not known whether these subsurface soils are contaminated with VOCs. .

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)?

__X__ 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):

The possible exposure of construction workers to potentially contaminated indoor air is not reasonably expected to be significant. First, construction workers would not be expected to have a long term exposure to indoor air. Second, although a few wells contained concentrations of vinyl chloride and chloroform above the MCP method 1 GW-2 standards (which are protective of residential exposures), the highest vinyl chloride concentrations were detected in OW-13, which is located approximately 30 feet from the building. The chloroform detected in the

recovery wells were only detected at elevated concentrations in one sample on one occasion. Subsequent sampling did not detect chloroform.

The possible exposure of construction workers to potentially contaminated subsurface soils is not reasonably expected to be significant for at least two reasons. First, although PID data indicate VOC concentrations as high as 300 ppm in headspace samples, only very low concentrations were detected in the laboratory samples. Second, the construction workers would not be expected to have long term exposures to any potentially contaminated soils.

[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.

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):

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_ 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 Clean Harbors of Natick facility, EPA ID # **MAD980523203**, located at 10 Mercer Road in Natick, MA, 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.

CHN is expected to undertake additional testing, including subslab soil gas, soil, and groundwater sampling in the near future which should resolve the data gaps regarding indoor air quality and subsurface soil contamination.

Completed by (signature) Robert W. Brackett Date 9/25/00
(print) Robert W. Brackett
(title) RCRA Facility Manager

Supervisor (signature) Matthew R. Hoagland Date 9/26/00
(print) Matthew R. Hoagland

(title) Chief, RCRA Corrective Action Section
(EPA Region or State) EPA New England - Region 1

Locations where References may be found: The references can be found in the CHN file in the Records Center at 1 Congress Street.

Contact telephone and e-mail numbers

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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.

Table 1
Soil Analytical Result Summary [1]
Clean Harbors of Natick, Inc.
Natick, Massachusetts

				Boring I.D. Numbers											
	MCP METHOD 1 STANDARDS			CH-1	CH-2	CHB-1	CHB-2	CHB-3	CHB-4	CHB-4	CHB-5	CHB-5	CHI-3	CHI-4	CHI-5
Sample Depth (feet)				15-17	15-17	7-9	9-11	7-9	7-9	11-13	9-11	11-13	7-9	5-7	5-7
VOC's (EPA 8260)	S-1/GW-1[2]	S-1/GW-2[3]	S-1/GW-3												
Acetone	3	60	90	0.85 U	0.85 U	0.85 U	0.96 U	3.4 U	19 U	3.6 U	10 U	3.90 U	0.95 U	0.93 U	0.96 U
Benzene	10	40	40	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Bromodichloromethane	0.1	20	20	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Bromoform	0.1	20	100	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Bromomethane	10	3	50	0.42 U	0.42 U	0.42 U	0.48 U	1.7 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
2-Butanone (MEK)	0.3	40	40	0.85 U	0.85 U	0.85 U	0.96 U	0.85 U	19 U	3.6 U	10 U	3.90 U	0.95 U	0.93 U	0.96 U
Carbon disulfide	*350*	*1200*		0.42 U	0.42 U	0.42 U	0.48 U	0.85 U	9.5 U	1.8 U	5.0 U	3.90 U	0.48 U	0.46 U	0.48 U
Carbon tetrachloride	1	4	7	0.21 U	0.21 U	0.21 U	0.24 U	1.7 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Chlorobenzene	8	80	40	0.21 U	0.21 U	0.21 U	0.24 U	1.7 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Chloroethane	*1600*	*1600*		0.42 U	0.42 U	0.42 U	0.48 U	0.85 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
2-Chloroethyl vinyl ether	*NI*	*NI*	*NI*	0.42 U	0.42 U	0.42 U	0.48 U	1.7 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
Chloroform	0.1	10	200	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Chloromethane	*1.2*	*2.6*		0.42 U	0.42 U	0.42 U	0.48 U	0.85 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
Dibromochloromethane	0.09	10	10	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
dibromoethane (EDB)	*0.0049*	*0.029*		0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
1,1-Dichloroethane	3	100	100	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
1,2-Dichloroethane	0.05	0.2	10	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
1,1-Dichloroethene	0.7	0.1	2	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
trans-1,2-Dichloroethene	4	500	500	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
1,2-Dichloropropane	0.1	0.02	8	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
cis-1,3-Dichloropropene[4]	*0.081*	*0.18*		0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Ethylbenzene	80	500	500	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
2-Hexanone	*NI*	*NI*	*NI*	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Methylene chloride	0.1	100	100	0.85 U	0.85 U	0.85 U	**1.60**	3.4 U	19 U	3.6 U	10 U	3.90 U	**1.60**	0.93 U	0.96 U
4-Methyl-2-pentanone	*750*	*2800*		0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Methyl-t-butylether (MTBE)	0.3	100	100	0.42 U	0.42 U	0.42 U	0.48 U	1.7 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
Styrene	2	20	20	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
1,1,2,2-Tetrachloroethane	0.02	0.2	0.5	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Tetrachloroethene*	0.5	20	20	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Toluene*	90	500	500	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
1,1,1-Trichloroethane	30	100	100	0.21 U	0.21 U	**1.30**	**2.7**	0.85 U	4.7 U	0.90 U	2.5 U	**1.70 A**	**3.20**	0.23 U	0.24 U
1,1,2-Trichloroethane	0.3	2	2	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Trichloroethene	0.4	20	70	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Trichlorofluoromethane	*380*	*1300*		0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U
Vinyl acetate	*420*	*1400*		0.42 U	0.42 U	0.42 U	0.48 U	1.7 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
Vinyl chloride	0.3	0.3	0.3	0.42 U	0.42 U	0.42 U	0.48 U	1.7 U	9.5 U	1.8 U	5.0 U	1.90 U	0.48 U	0.46 U	0.48 U
Total xylenes	500	500	500	0.21 U	0.21 U	0.21 U	0.24 U	0.85 U	4.7 U	0.90 U	2.5 U	0.96 U	0.24 U	0.23 U	0.24 U

NOTES:

1. All reported concentrations are in micrograms per kilogram (mg/kg) or ppm and all samples collected on 2/4/97.
2. USEPA Preliminary Remedial Goals (PRGs) for residential soil are shown in italics where Method 1 Standards do not exist.
3. USEPA PRGs for industrial soil are shown in italics where Method 1 Standards do not exist.
4. USEPA PRGs for total (cis and trans) 1,3-dichloropropene shown.
5. NI = indicates Method 1 Standard or USEPA PRG not identified.

* Constituents of Concern

Table 2
Ground Water Analytical Result Summary 1
Clean Harbors of Natick, Inc.
Natick, Massachusetts

THOD 1 STANDARDS		Well I.D. Numbers														
		02/24/97	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96
		OW-6	OW-8	OW-8	OW-8	OW-9	OW-9	OW-9	OW-10	OW-10	OW-10	OW-11	OW-11	OW-11	OW-12	OW-12
GW-2[2]	GW-3	(Dup)														
50,000	50,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,000	7,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
400	10,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
9,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
30,000	4,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
50,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
3,000	5,000	5 U	5 U	5 U	5 U	11	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
6,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
300	20,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2	40,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
6,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

THOD 1 STANDARDS		Well I.D. Numbers															
		01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95
		OW-12	OW-13	OW-13	OW-13	OW-13	OW-14	OW-14	OW-14	OW-15	OW-15	OW-15	OW-16S	OW-16S	OW-16S	OW-16D	OW-16D	OW-16D
GW-2[3]	GW-3					(Dup)												
50,000	50,000	20 U	20 U	100 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,000	7,000	5	20	25 U	11	20	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
400	10,000	5 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
9,000	50,000	9	7	25 U	6	7	17	11	11	5 U	5 U	5.0 U	5 U	5 U	5.0 U	5 U	5 U	5.0 U
20,000	50,000	5 U	490	680	500	460	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
30,000	4,000	5 U	130	170	110	130	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
		5 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	7
50,000	50,000	10 U	10 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,000	5,000	5 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
6,000	50,000	5 U	9	390	180	9	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
300	20,000	5 U	5 U	25 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2	40,000	10 U	51	50 U	10 U	47	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
6,000	50,000	5 U	110	300	190	96	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

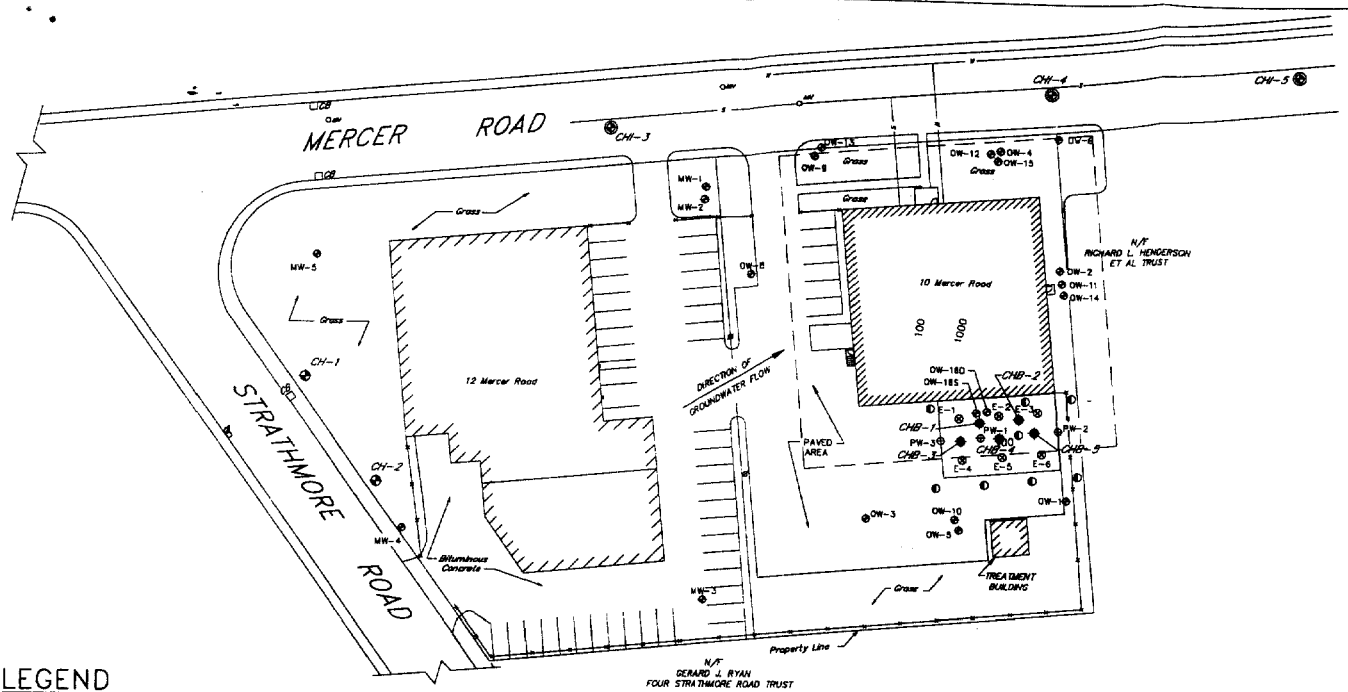
liter (ug/l) or ppb.
ıp water are shown in italics where Method 1 Standards do not exist.

Table 2
Ground Water Analytical Result Summary 1
Clean Harbors of Natick, Inc.
Natick, Massachusetts

HOD 1 STANDARDS		Well I.D. Numbers																
		02/24/97	02/29/96	01/26/95	02/24/97	02/29/96	01/26/95	02/24/97	02/29/96	01/26/95	02/24/97	02/24/97	02/24/97	02/24/97	02/24/97	02/24/97	02/29/96	01/20/95
GW-2[3]	GW-3	RW-1	RW-1	RW-1	RW-2	RW-2	RW-2	RW-3	RW-3	RW-3	CH-1	CH-2	CHI-3	CHI-4	CHI-5	OW-1	OW-1	OW-1
50,000	50,000	20 U	500 U	20 U	20 U	20 U	140	20 U	20 U	20 U	20 U	20 U	20 U	73	20 U	20 U	20 U	20 U
2,000	7,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
400	10,000	5 U	1,900	5 U	5 U	17	5 U	5 U	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
9,000	50,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20,000	50,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
30,000	4,000	5 U	130 U	6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
		5 U	130 U	5 U	5 U	5 U	320	5 U	5 U	5 U	20 U	20 U	5 U	5 U	5 U	5 U	5 U	5 U
50,000	50,000	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	10 U	17	10 U	10 U	10 U	10 U
3,000	5,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
6,000	50,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
300	20,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2	40,000	10 U	250 U	10 U	10 U	10 U	10 U	10 U	10 U	6	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
6,000	50,000	5 U	130 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

HOD 1 STANDARDS		Well I.D. Numbers															
		02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95	02/24/97	02/29/96	01/20/95
GW-2[3]	GW-3	OW-2	OW-2	OW-2	OW-3	OW-3	OW-3	OW-4	OW-4	OW-4	OW-5	OW-5	OW-5	OW-6	OW-6	OW-6
50,000	50,000	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
2,000	7,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	22	5 U	5 U	5 U	5 U	5 U	5 U	5 U
400	10,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
9,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
20,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
30,000	4,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
50,000	50,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U	5 U
3,000	5,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	10 U	10 U
6,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
300	20,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2	40,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
6,000	50,000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

er (ug/l) or ppb.
water are shown in italics where Method 1 Standards do not exist.



LEGEND

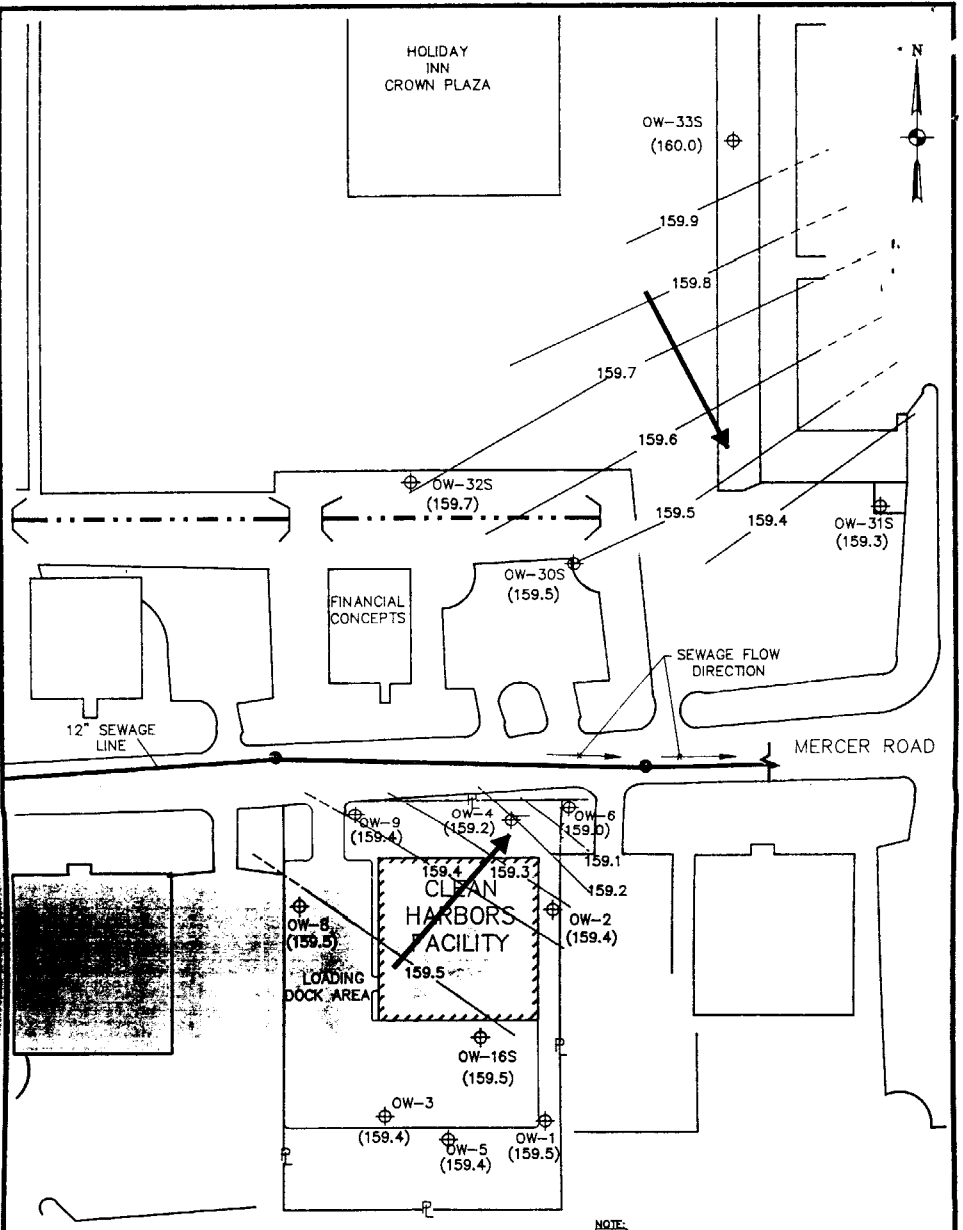
- GW-2 / GW-3 BOUNDARY DELINEATION
- S — SEWER LINE
- W — WATER LINE
- CB □ CATCH BASIN
- OW-12 EXISTING MONITORING WELL (SEE NOTE 1)
- ×——× CHAIN LINK FENCE
- CH-3 SMALL DIAMETER MONITORING WELL
- PW-3 EXISTING GROUNDWATER EXTRACTION WELL
- E-1 EXISTING VAPOR EXTRACTION WELL
- EXISTING INDUCTION/VACUUM MONITORING WELL
- CHB-1 BORING LOCATION

0 50 100
APPROX. SCALE IN FEET

NOTES:

1. ALL OBSERVATION WELLS ARE SHALLOW EXCEPT FOR OW-16D & MW-2 WHICH ARE DEEP WELLS.

GEO Insight	CLIENT: CLEAN HARBORS			
	PROJECT: 10 MERCER ROAD NATICK, MASSACHUSETTS			
TITLE: SITE PLAN				
DESIGNED: WFS	DRAWN: WFS	CHECKED: MFD	APPROVED: RJW	FIGURE NO.: 1
SCALE: 1" = 50'	DATE: 6/24/99	FILE NO.: 278300D01	PROJECT NO.: 2783-00	



LEGEND:

- ⊕ = SHALLOW MONITORING WELL LOCATION AND WATER ELEVATION IN THE WELL MEASURED ON 9/4/91
- P/L = PROPERTY LINE
- — · — = INTERMITTENT BROOK
- ➡ = GROUND WATER FLOW DIRECTION
- ——— = GROUND WATER CONTOUR
- ● = MANHOLE TO SEWER LINE

NOTE:

1. SOURCE FOR BASE MAP IS ENTITLED "TOPOGRAPHICAL MAP" PREPARED BY JRB ASSOCIATES 8400 WEST PARK DRIVE, McLEAN, VIRGINIA 221202. ORIGINAL SCALE: 1" =100'; FEBRUARY 1984.
2. LOCATION OF WELLS WERE ESTIMATED USING TAPE MEASUREMENTS FROM EXISTING STRUCTURES. THESE MEASUREMENTS ARE ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

0 30 60 120

APPROXIMATE SCALE (FEET)

BALSAM
ENVIRONMENTAL CONSULTANTS, INC.
5 INDUSTRIAL WAY, SALEM, NH 03079

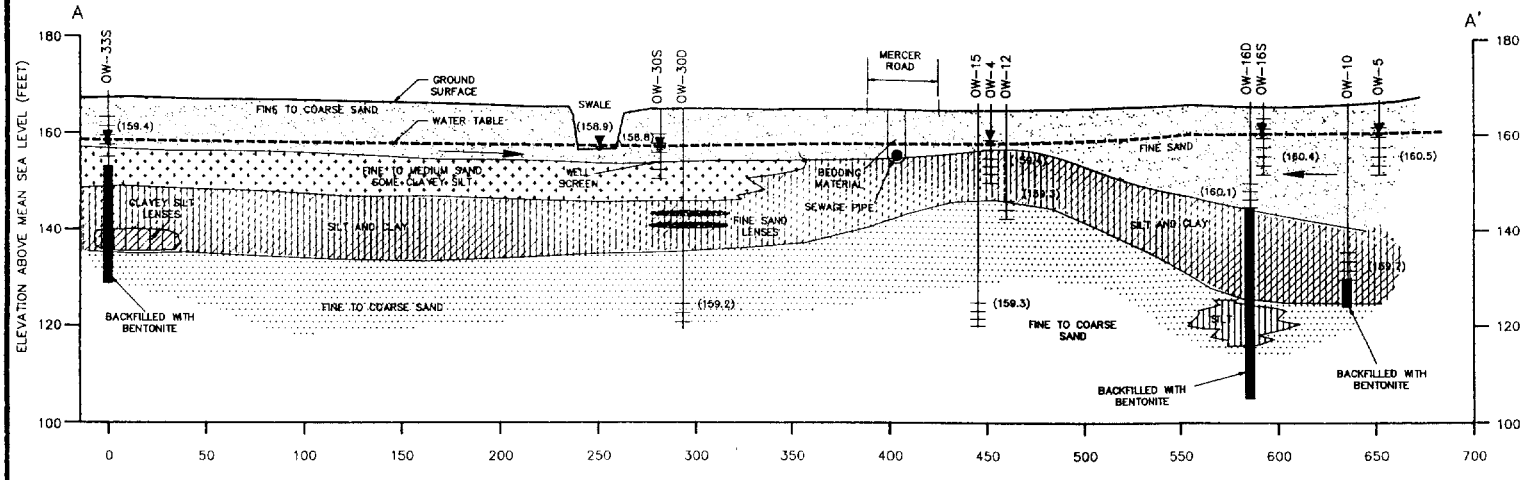
CLIENT: CLEAN HARBORS OF NATICK, INC.

PROJECT: CHNI OFF-SITE EVALUATION

TITLE: GROUND WATER CONTOURS – 9/4/91

DESIGNED	DRAWN	CHECKED	APPROVED	FIGURE NO.
D.I.S.	D.J.H.	R.J.W.	L.C.S.	6

SCALE	DATE	FILE NO.	PROJECT NO.
1"=60'	12/21/92	605646 D	6056



NOTES

1. ELEVATION OF WATER IN WELLS MEASURED ON 2/21/92
2. WIDTH OF SWALE ESTIMATED USING TAPE MEASUREMENT. THESE MEASUREMENTS ARE ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.
3. DEPTH OF SWALE ESTIMATED USING LEVEL ELEVATION SURVEY.
4. DEPTH AND LOCATION OF UTILITY CONDUIT OBTAINED FROM CITY OF NATICK MAP FOR MERCER ROAD. ORIGINAL SCALE: HORIZONTAL: 1"=40', VERTICAL SCALE: 1"=4'.

LEGEND

(160.1) = ELEVATION OF WATER IN SHALLOW WATER TABLE WELLS ABOVE MEAN SEA LEVEL

= WATER LEVEL IN WELLS

= GROUND WATER FLOW DIRECTION

BALSAM ENVIRONMENTAL CONSULTANTS, INC.
5 INDUSTRIAL WAY, SALEM, NH 03079

CLIENT: CLEAN HARBOR OF NATICK, INC
PROJECT: CHNI OFF-SITE EVALUATION

TITLE: GEOLOGIC CROSS SECTION A-A'

DESIGNED:	DRAWN:	CHECKED:	APPROVED:	FIGURE NO.
D.I.S.	D.J.H.	R.J.W.	L.C.S.	4
SCALE:	DATE:	FILE NO:	PROJECT NO:	
AS SHOWN	12/21/92	605643	6056	