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: GTE Operations Support Inc.
Facility Address: 228 Northeast Rd, Standish, ME.
Facility EPA ID #: MED058951047

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).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

✓ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

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

Rationale and Reference(s):

Releases of Tetrachloroethene and Freon 113 have been recorded from the former Surface Impoundment on site. Groundwater currently shows levels of up to 240 ppb PCE and 490 ppb Freon 113. There are also elevated levels of Aluminum and Fluoride on site (3.1 ppm + 3.8 ppm respectively).

The Surface Impoundment has since been closed, the contents removed, and the area capped. There is not believed to be any further releases at this site. However there remains levels of PCE, Al, Fluoride above drinking water STANDARDS. Freon 113 has no associated standard, but is present at relatively high levels.

MCL and MEGs →

There is currently a pump & Treat system installed + operating on site that is effectively stopping the migration of contaminants off site.

References: "2000 Report of Operations" EOS Research 2/01
"Certification of Closure" Geraghty & Miller Inc. 2/92

Footnotes:

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

✓ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

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

Rationale and Reference(s):

There is currently an onsite pump & Treat system that has been operating for several years. (Since Feb. of 1994).

Quarterly monitoring has been done every year and shows that the levels of contaminants have been decreasing over time as long as the system remains in operation.

There are monitoring wells downgradient of the plume that show non-detect levels of all contaminants of concern. The plume is effectively being captured and treated on site!

References: "2000 Report of Operations" - EOS Research 2/01.
"Summary of Quarterly Well Sampling Results for 2000." - EOS Research 2/01!

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

✓ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

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

Rationale and Reference(s):

Surface water at + near this site has been sampled and shows non-detect levels of contaminants since 1992.

See attached map for surface-water sampling locations.

SW-1 and SW-2 were the only locations to show contaminants - SW-2 showed a concentration of 73 ppb 1,1,1-TCA in December of 1990. However, since March of 1992, all locations show non-detects for chlorinated VOCs.

References: "Summary of 1993 Groundwater Results" - EOS Research 2/94.

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 key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[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.

Rationale and Reference(s):_____

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

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[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 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.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

✓ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Ongoing groundwater monitoring will occur onsite until levels of all contaminants have fallen to 1/2 of ~~Their~~ Their respective guideline levels (MEGs or MCLs) for a total of 8 monitoring events and remain at those levels when the system is no longer active.
Currently there are 16 monitoring wells which are sampled - both within the plume and at the outer borders of the plume. Quartely monitoring of these wells insures that any migration of contaminants will be detected and proper responses can be initiated.

At present a post closure license is being developed that will stipulate frequency and duration of groundwater monitoring on site.

References: "2000 Report of Operations" - EOS Research 2/01
"Summary of Quarterly Well Sampling Results for 2000" - EOS Research 2/01

2. 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 GTE Operations Support Inc. facility, EPA ID # MED058951047, located at Standish, ME. 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) Diana McKenzie Date 8/14/01
(print) DIANA McKENZIE
(title) ES III

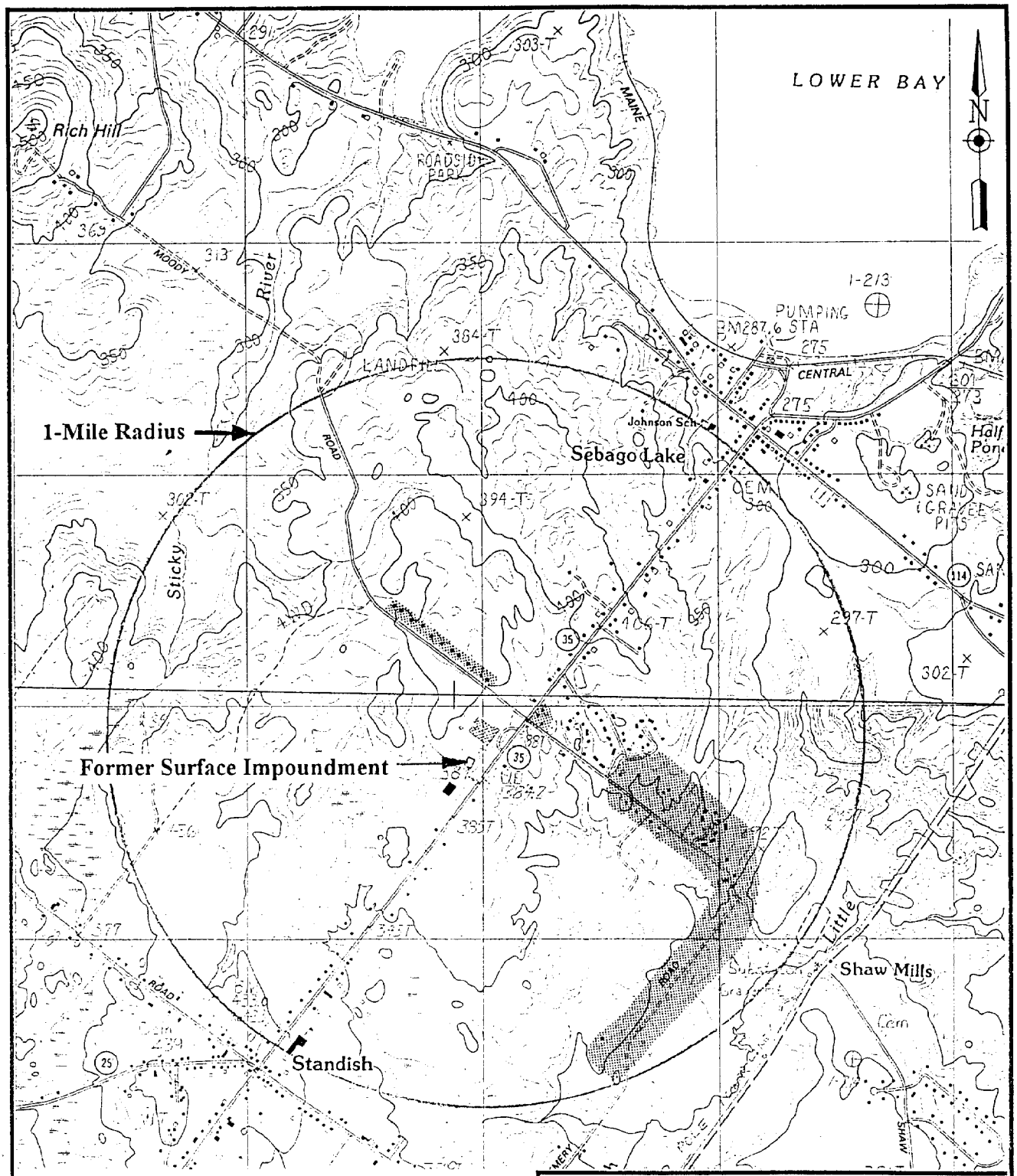
Supervisor (signature) Stacy A. Ladner Date 8/16/01
(print) Stacy A. Ladner
(title) ES III
(EPA Region or State) Maine DEP

Locations where References may be found:

Maine State Dep. of Env. Protection File Room.
Augusta, Maine.

Contact telephone and e-mail numbers

(name) DIANA McKENZIE
(phone #) 207 287-7880
(e-mail) DIANA.M.McKENZIE@State.ME.US



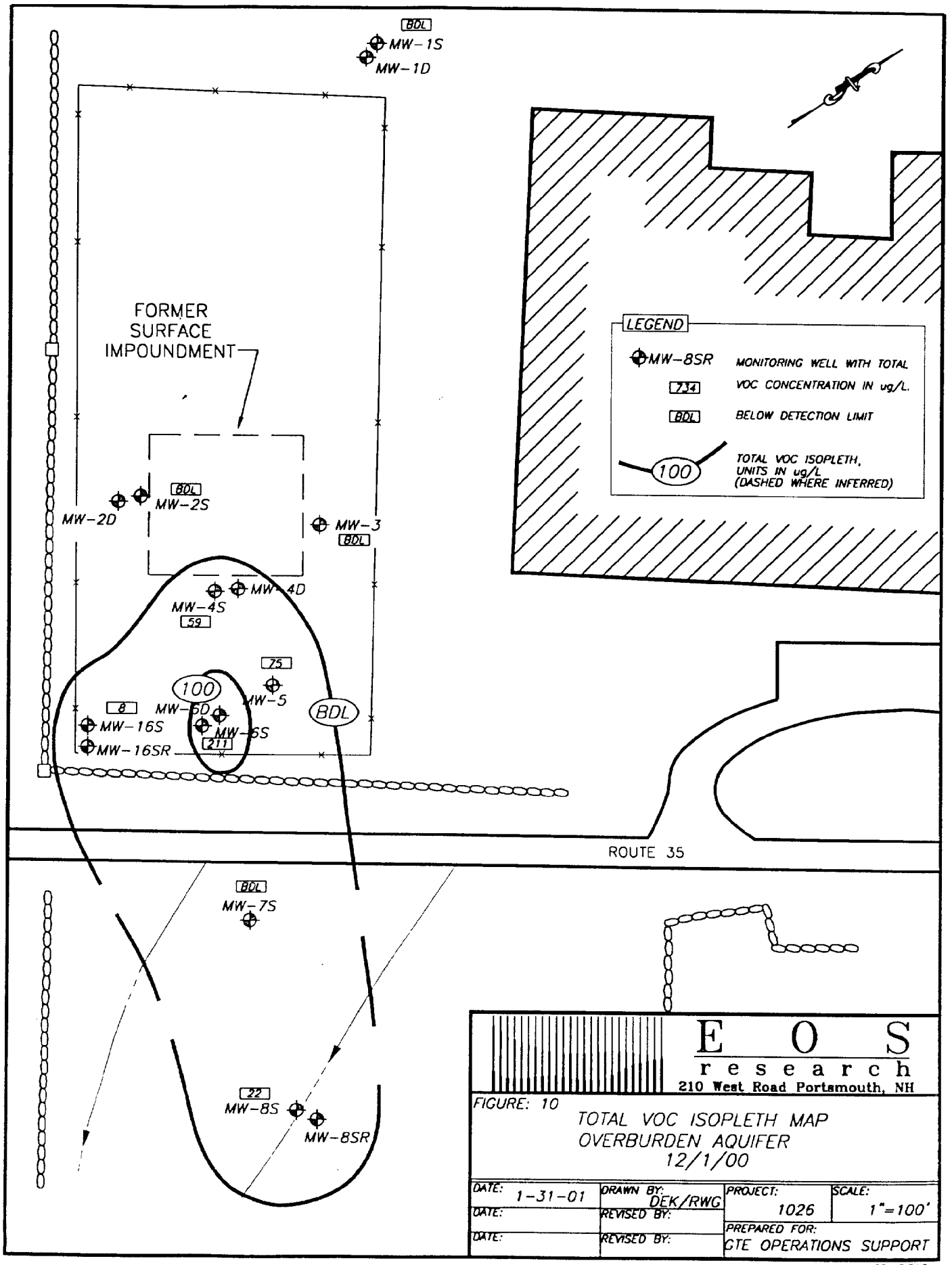
APPROXIMATE RESIDENTIAL WELL LOCATIONS

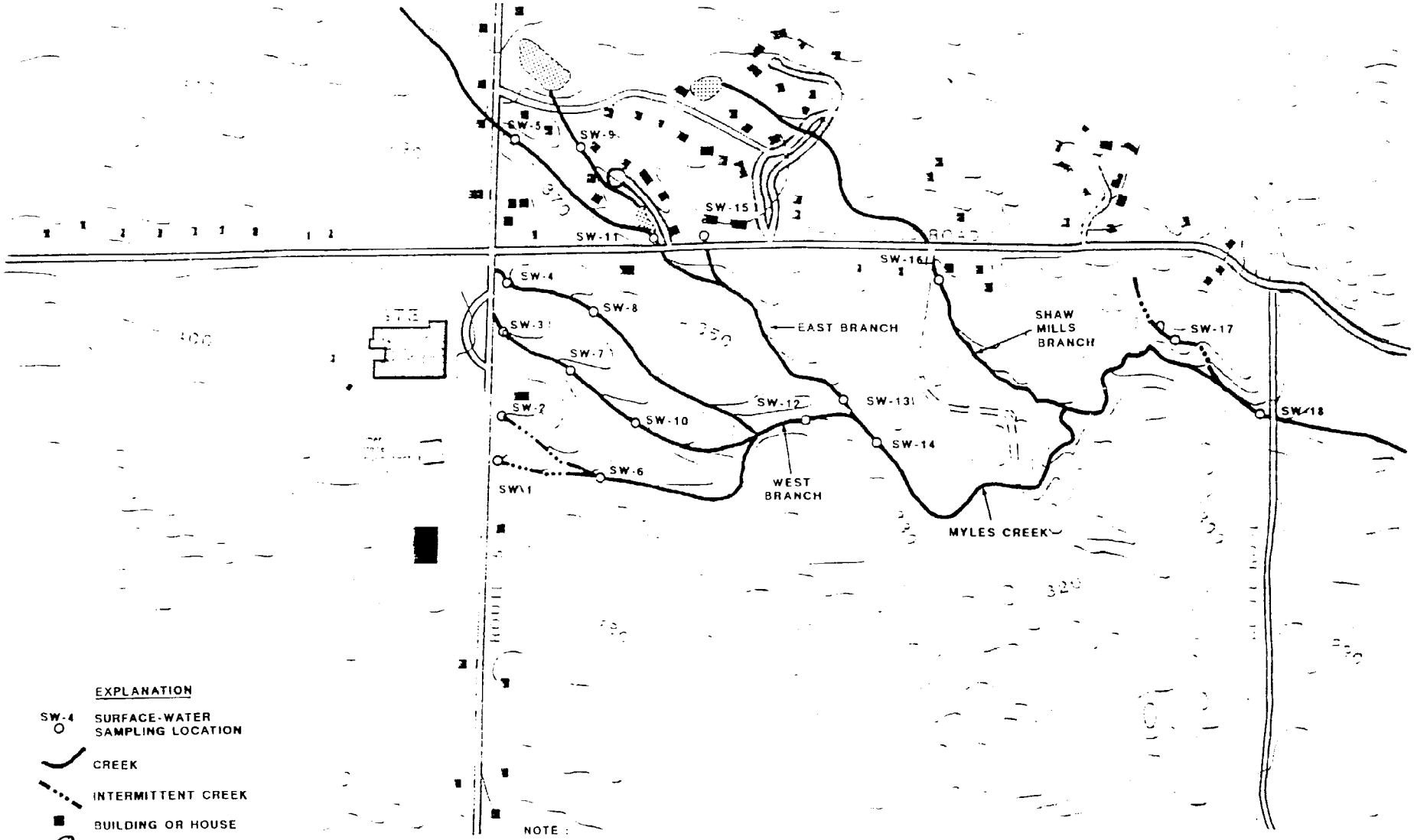
E O S research
6 Market Square Portsmouth, NH

FIGURE: III-3D SURFACE WATER, AND RESIDENTIAL WELLS WITHIN 1-MILE OF CONTROL DEVICES, INC. STANDISH, MAINE

DATE: 1-31-95	DRAWN BY: DEK	PROJECT: 1028	SCALE: 1"=2000'
DATE:	REVISED BY:	PREPARED FOR:	
DATE:	REVISED BY:	CONTROL DEVICES INC	

FIG1A.DWG


BDL
MW-1S
MW-1D
FORMER
SURFACE
IMPOUNDMENT
BDL
MW-2S
MW-2D
MW-3
BDL
MW-4D
MW-4S
59
75
100
MW-5
MW-5D
BDL
8
MW-16S
MW-6S
211
MW-16SR
LEGEND
MW-8SR
MONITORING WELL WITH TOTAL
734
VOC CONCENTRATION IN ug/L.
BDL
BELOW DETECTION LIMIT
100
TOTAL VOC ISOPLETH,
UNITS IN ug/L
(DASHED WHERE INFERRED)
ROUTE 35
BDL
MW-7S
22
MW-8S
MW-8SR
E O S
research
210 West Road Portsmouth, NH
FIGURE: 10
TOTAL VOC ISOPLETH MAP
OVERBURDEN AQUIFER
12/1/00
DATE: 1-31-01
DRAWN BY: DEK/RWG
PROJECT: 1026
SCALE: 1"=100'
DATE:
REVISED BY:
DATE:
REVISED BY:
PREPARED FOR:
GTE OPERATIONS SUPPORT
VOCMAP.DWG



NOTE :

1. Contour Interval is 10 ft.
2. This Map is Based on U.S.G.S. Topographic Maps; Sebago Lake and Standish, Maine quadrangles (1978 and 1983)

SCALE 0 1000 FT

GERAGHTY & MILLER, INC.
Environmental Services

PREPARED FOR
GTE
Standish, Maine

SUBJECT

SURFACE-WATER SAMPLING LOCATIONS ALONG MYLES CREEK

FIGURE
1