

APPENDIX A



CEDAR LAKE

CEDAR CREEK

GRAND TRAVERSE BAY

FORMER GTOS BUILDING

NORRIS ELEMENTARY SCHOOL

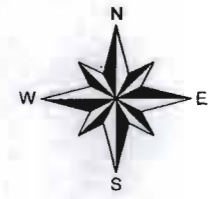
CHERRY BEND ROAD

HARBOR WEST CONDOMINIUMS

HARBOR WEST MARINA

M-22

M-22



0 150 300 Feet



GRAND TRAVERSE SUPPLY LOCATION

REFERENCE MAP

SOURCE: US AIRPHOTO 2005

GRAND TRAVERSE OVERALL SUPPLY SITE
10725 E. CHERRY BEND ROAD
TRAVERSE CITY, MICHIGAN 49684

Figure 1
Site Location Map



5/20/2012 10:27:00 AM - 49684.CHITM - 49684.CHITM - 49684.CHITM



LEGEND:

- ⊕ Monitoring Well Locations
- △ Piezometer Locations
- Surface Water Locations

NOTES:

Base Map Source:
USGS Digital Orthophoto
Traverse City SW Quad
SE Quadrant
April 28, 1998



0 200 Feet



Grand Traverse Overall Supply Site
Greilickville, MI

Weston Solutions, Inc.
2501 Jolly Road, Suite 100
Okemos, Michigan 48864-3515
<http://www.westonsolutions.com>

Figure 2
Monitoring Well Location Map

WORK ORDER No: 12634.001.001.0530.00	PROJECT MANAGER: DMC
DRAWN BY: NJK	CHECKED BY: JBC
DRAWING NAME:	DIRECTORY FOLDER: D:\GTOS_GIS\ap08_24_05_dapr
CONTRACT No:	DELIVERY ORDER No:
SCALE:	REPORT DATE:
DATE: July 2005	REVISION No:
	FIGURE No:



LEGEND:

- Groundwater Sampling Locations
- Contours
 - ▲ 1 ppb
 - ▲ 100 ppb
 - ▲ 500 ppb
 - ▲ 1,000 ppb

NOTES:

Base Map Source:
 USGS Digital Orthophoto
 Traverse City SW Quad
 SE Quadrant
 April 28, 1998

N

0 200 Feet



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 Okemos, Michigan 48864-3515
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Figure 3
 Lateral Extent of the VOC Groundwater Plume

WORK ORDER No.: 12534.001.001.0530	PROJECT MANAGER: DMC
DRAWN BY: NJK	CHECKED BY: JBC
DRAWING NAME:	DIRECTORY FOLDER: D:\STOS_GIS\ap108_24_05_d.spr
CONTRACT No.:	DELIVERY ORDER No.:
SCALE:	REPORT DATE:
DATE: April 2006	REVISION No.:
	FIGURE No.:

Figure 4

Grand Traverse Overall Supply
 Greilickville, Leelanau County, Michigan
 Decision Matrix for Norris Elementary School Air Sampling
 ATSDR and MDCH Recommendations
 3/24/05

Indoor Air Samples ^a		
	Screening Value (ppb)	Immediate Action Value (ppb) ^b
PCE	6.2	40 ^c
TCE	2.6	100
1,1-DCE	0.12	20
1,2-DCE (cis)	9.1	200
1,2-DCE (trans)	18.4	200
VC	2.2	30

Sub-Slab Samples ^d	
	Screening Value (ppb)
PCE	62
TCE	26
1,1-DCE	1.2
1,2-DCE (cis)	91
1,2-DCE (trans)	184
VC	22

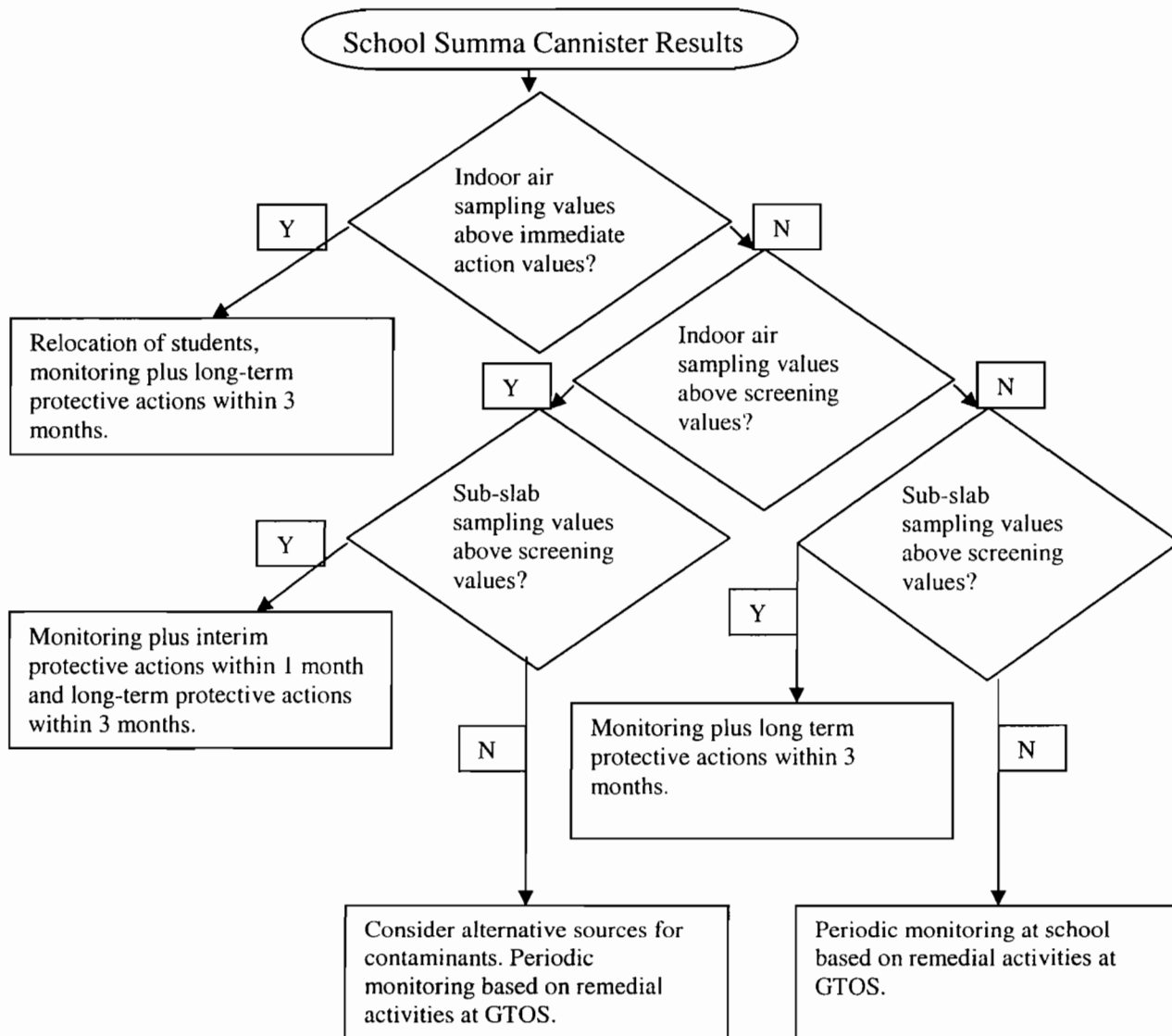
a) The immediate action values are based on ATSDR intermediate MRLs, while the screening values are based on MDEQ chronic risk guidelines.

b) Consideration will be made for immediate action decisions based on concentrations of mixtures when several of the chemicals of concern approach but do not exceed any individual immediate action value.

c) ATSDR has no intermediate MRL value for PCE; ATSDR's chronic MRL for PCE that is based on a non-cancer endpoint is used instead.








d) Sub-slab monitoring values are derived by incorporating a ten-fold factor to the indoor air screening values to reflect attenuation from sub-slab to indoor air (reference: EPA-OSWER, 2002: Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), Appendix F).

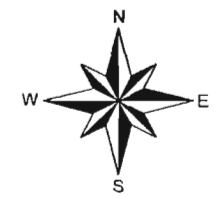
Grand Traverse Overall Supply
 Greilickville, Leelanau County, Michigan
 Decision Tree for Norris Elementary School Air Sampling
 ATSDR and MDCH Recommendations
 3/24/05



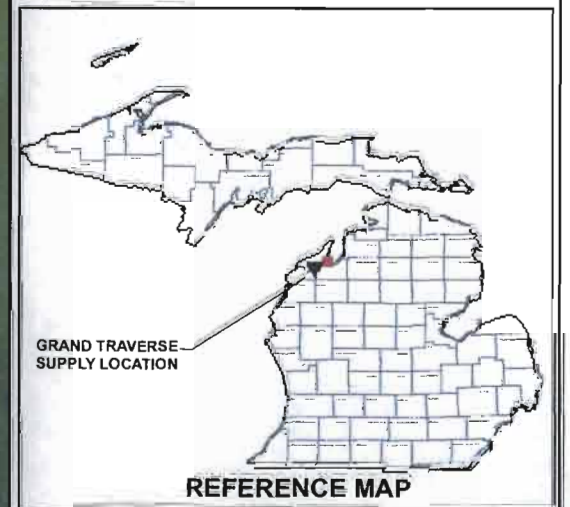


LEGEND

-  EXTRACTION WELL LOCATION
-  NEW MONITORING WELL LOCATION
-  GROUNDWATER FORCE MAIN
-  TREATED EFFLUENT
-  MONITORING WELL SAMPLING LOCATION
-  APPROXIMATE EXTENT OF GROUNDWATER PLUME
-  AIR STRIPPER LOCATION



0 150 300 Feet



SOURCE: US AIRPHOTO 2005

GRAND TRAVERSE OVERALL SUPPLY SITE
10725 E. CHERRY BEND ROAD
TRAVERSE CITY, MICHIGAN 49684

Figure 5
Conceptual Layout for Groundwater Alternative 3

