STS Consultants, Ltd.

Transmittal Letter

GREEN BAY	SCHOFIELD	MILWAUKEE	OSHKOSH
Phone (920) 468-1978	Phone (715) 355-4304	Phone (414) 359-3030	Phone (920) 235-0270
Fax (920) 468-3312	Fax (715) 355-4513	Fax (414) 359-0822	Fax (920) 235-0321

Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, WI 54307-0448

Date: April 22, 1999
STS Job No.: 23379XA
Project: Carver Boat Corporation
Location: Resin & Acetone Tanks (#6/7)
Pulaski, WI

Attention: Ms. Kristin Nell

We are sending:

☒ attached ☐ under separate cover via: _____

the following item(s):

☐ Prints	☐ Copy of Letter	☐ Samples
☐ Shop Drawings	☐ Change Order	☐ Test Results
☐ Specifications	☐ Boring Logs	☐ Draft Report # _____
☒ Other See Below	☐ Concrete Report # _____	

They are transmitted as indicated:

☐ For Approval	☒ As Requested
☒ For Your Use	☐ For Review and Comment

Remarks:

Temporary monitoring well abandonment forms for Carver Boat Corporation Borings B-6-1 through B-6-5 are attached to this transmittal. Documentation of the abandonment of these temporary monitoring well was requested in your letter dated March 16, 1999. We understand that this submittal will result in the WDNR's removing project 02-05-178568 from the "active" list.

Copy:
Mr. Ted Maloney
Carver Boat Corporation
P.O. Box 1010
Pulaski, WI 54162

William F. Noel

STS Representative: William F. Noel

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B Rev. 3-94

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION 23379XA

Well/Drillhole/Borehole Location: B-6-1
County: Brown
___ 1/4 of NE 1/4 of Sec. 6 ; T. 25 N; R. 19 ☒ E ☐ W (If Applicable)
Gov't Lot ___ Grid Number ___
Grid Location ___ ft. ☐ N. ☐ S., ___ ft. ☐ E. ☐ W.
Civil Town Name: Pulaski
Street Address of Well: 790 Markham Drive
City, Village: Pulaski

(2) FACILITY NAME Carver Boat Corporation Plant 4

Original Well Owner (If Known): Carver Boat Corp.
Present Well Owner: Same
Street or Route: 790 Markham Drive
City, State, Zip Code: Pulaski, Wisconsin 54162
Facility Well No. and/or Name (If Applicable): B-6-1
Unique Well No.:
Reason For Abandonment: Site Closure
Date of Abandonment: 04/01/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 07/17/98

☒ Temporary Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) ___

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Depth (ft.) (From groundsurface): 9.6
Casing Diameter (in.): 2.00
Casing Depth (ft.): ___
Lower Drillhole Diameter (in.): ___

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? ___ Feet

(4) Depth to Water (Feet): 7.2

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain ___

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

(7)

Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite	Surface	9.6	1 bag	

(8) Comments ___

(9) Name of Person or Firm Doing Sealing Work: STS Consultants Ltd.
Signature of Person Doing Work: [signature]
Date Signed: 4-12-99
Street or Route: 1035 Kepler Drive
Telephone Number: 920-468-1978
City, State, Zip Code: Green Bay, WI 54311
dip23379

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B Rev. 3-94

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION 23379XA

Well/Drillhole/Borehole Location: B-6-2
County: Brown
____ 1/4 of NE 1/4 of Sec. 6 ; T. 25 N; R. 19 ☒ E ☐ W
(If Applicable)
_____ Gov't Lot _____ Grid Number
Grid Location
_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Civil Town Name: Pulaski
Street Address of Well: 790 Markham Drive
City, Village: Pulaski

(2) FACILITY NAME Carver Boat Corporation Plant 4

Original Well Owner (If Known): Carver Boat Corp.
Present Well Owner: Same
Street or Route: 790 Markham Drive
City, State, Zip Code: Pulaski, Wisconsin 54162
Facility Well No. and/or Name (If Applicable): B-6-2
Unique Well No.:
Reason For Abandonment: Site Closure
Date of Abandonment: 04/01/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 07/17/98

☒ Temporary Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Depth (ft.) (From groundsurface): 9.9
Casing Diameter (in.): 2.00
Casing Depth (ft.): _____
Lower Drillhole Diameter (in.): _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet): 7.2

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

(7) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite	Surface	9.9	1 bag	

(8) Comments _____

(9) Name of Person or Firm Doing Sealing Work: STS Consultants Ltd.
Signature of Person Doing Work: James J. Balsley
Date Signed: 4-12-99
Street or Route: 1035 Kepler Drive
Telephone Number: 920-468-1978
City, State, Zip Code: Green Bay, WI 54311
djp23379

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B Rev. 3-94

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION 23379XA

Well/Drillhole/Borehole Location: B-6-3
County: Brown
___ 1/4 of NE 1/4 of Sec. 6 ; T. 25 N; R. 19 ☒ E ☐ W
(If Applicable)
_____ Gov't Lot _____ Grid Number
Grid Location
_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Civil Town Name: Pulaski
Street Address of Well: 790 Markham Drive
City, Village: Pulaski

(2) FACILITY NAME Carver Boat Corporation Plant 4

Original Well Owner (If Known): Carver Boat Corp.
Present Well Owner: Same
Street or Route: 790 Markham Drive
City, State, Zip Code: Pulaski, Wisconsin 54162
Facility Well No. and/or Name (If Applicable): B-6-3
Unique Well No.:
Reason For Abandonment: Site Closure
Date of Abandonment: 04/01/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 07/17/98

☒ Temporary Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Depth (ft.) (From groundsurface): 10.6
Casing Diameter (in.): 2.00
Casing Depth (ft.): _____

Lower Drillhole Diameter (in.): _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet): 7.0

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

(7) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite	Surface	10.6	1 bag	

(8) Comments _____

(9) Name of Person or Firm Doing Sealing Work: STS Consultants Ltd.
Signature of Person Doing Work: James J. Evans
Date Signed: 4-12-99
Street or Route: 1035 Kepler Drive
Telephone Number: 920-468-1978
City, State, Zip Code: Green Bay, WI 54311
djp23379

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B Rev. 3-94

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION 23379XA

Well/Drillhole/Borehole Location: B-6-4
County: Brown
___ 1/4 of NE 1/4 of Sec. 6 ; T. 25 N; R. 19 ☒ E ☐ W
(If Applicable)
_____ Gov't Lot _____ Grid Number
Grid Location
_____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Civil Town Name: Pulaski
Street Address of Well: 790 Markham Drive
City, Village: Pulaski

(2) FACILITY NAME Carver Boat Corporation Plant 4

Original Well Owner (If Known): Carver Boat Corp.
Present Well Owner: Same
Street or Route: 790 Markham Drive
City, State, Zip Code: Pulaski, Wisconsin 54162
Facility Well No. and/or Name (If Applicable): B-6-4
Unique Well No.:
Reason For Abandonment: Site Closure
Date of Abandonment: 04/01/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date) 07/17/98

☒ Temporary Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Depth (ft.) (From groundsurface) 9.7
Casing Diameter (in.) 2.00
Casing Depth (ft.) _____

Lower Drillhole Diameter (in.) _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet) 6.8

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

(7) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite	Surface	9.7	1 bag	

(8) Comments _____

(9) Name of Person or Firm Doing Sealing Work
STS Consultants Ltd.
Signature of Person Doing Work: Tom L. Calay
Date Signed: 4-12-99
Street or Route: 1035 Kepler Drive
Telephone Number: 920-468-1978
City, State, Zip Code: Green Bay, WI 54311

djp23379

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

State of Wisconsin
Department of Natural Resources

WELL/DRILLHOLE/BOREHOLE ABANDONMENT
Form 3300-5B Rev. 3-94

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION 23379XA

Well/Drillhole/Borehole Location: B-6-5
County: Brown
____ 1/4 of NE 1/4 of Sec. 6 ; T. 25 N; R. 19 ☒ E ☐ W
(If Applicable) _____ Gov't Lot _____ Grid Number
Grid Location _____ ft. ☐ N. ☐ S., _____ ft. ☐ E. ☐ W.
Civil Town Name: Pulaski
Street Address of Well: 790 Markham Drive
City, Village: Pulaski

(2) FACILITY NAME Carver Boat Corporation Plant 4

Original Well Owner (If Known): Carver Boat Corp.
Present Well Owner: Same
Street or Route: 790 Markham Drive
City, State, Zip Code: Pulaski, Wisconsin 54162
Facility Well No. and/or Name (If Applicable): B-6-5
Unique Well No.:
Reason For Abandonment: Site Closure
Date of Abandonment: 04/01/99

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed On (Date): 07/17/98

☒ Temporary Monitoring Well
☐ Water Well
☐ Drillhole
☐ Borehole

Construction Report Available? ☒ Yes ☐ No

Construction Type:
☒ Drilled ☐ Driven (Sandpoint) ☐ Dug
☐ Other (Specify) _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Depth (ft.) (From groundsurface): 10.0
Casing Diameter (in.): 2.00
Casing Depth (ft.): _____
Lower Drillhole Diameter (in.): _____

Was Well Annular Space Grouted? ☐ Yes ☐ No ☐ Unknown
If Yes, To What Depth? _____ Feet

(4) Depth to Water (Feet): 7.1

Pump & Piping Removed?	☐ Yes	☐ No	☒ Not Applicable
Liner(s) Removed?	☐ Yes	☐ No	☒ Not Applicable
Screen Removed?	☐ Yes	☒ No	☐ Not Applicable
Casing Left in Place?	☐ Yes	☐ No	

If No, Explain _____

Was Casing Cut Off Below Surface?	☒ Yes	☐ No
Did Sealing Material Rise to Surface?	☒ Yes	☐ No
Did Material Settle After 24 Hours?	☐ Yes	☒ No
If Yes, Was Hole Retopped?	☐ Yes	☐ No

(5) Required Method of Placing Sealing Material
☐ Conductor Pipe - Gravity ☐ Conductor Pipe - Pumped
☐ Dump Bailer ☒ Other (Explain) Gravity

(6) Sealing Materials
☐ Neat Cement Grout
☐ Sand-Cement (Concrete) Grout
☐ Concrete
☐ Clay-Sand Slurry
☐ Bentonite-Sand Slurry
☒ Chipped Bentonite

For monitoring wells and monitoring well boreholes only
☐ Bentonite Pellets
☐ Granular Bentonite
☐ Bentonite-Cement Grout

(7) Material Used To Fill Well/Drillhole	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume (Circle One)	Mix Ratio or Mud Weight
Bentonite	Surface	10.0	1 bag	

(8) Comments _____

(9) Name of Person or Firm Doing Sealing Work: STS Consultants Ltd.
Signature of Person Doing Work: [signature]
Date Signed: 4-12-99
Street or Route: 1035 Kepler Drive
Telephone Number: 920-468-1978
City, State, Zip Code: Green Bay, WI 54311
djp23379

(10) FOR DNR OR COUNTY USE ONLY

Date Received/Inspected	District/County
Reviewer/Inspector	☐ Complying Work ☐ Noncomplying Work
Follow-up Necessary	

DNR/COUNTY

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William R. Selbig, Regional Director

Remediation and Redevelopment
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-492-5916
FAX 920-492-5859
TDD 920-492-5812

March 16, 1999

Carver Boat Corporation
Attn: Ted Maloney
P.O. Box 1010
Pulaski, WI 54162

SUBJECT: Closure Pending MW Abandonment
Carver Boats – Resin & Acetone, 790 Markham Pulaski, WI
WDNR ERP Case #: 02-05-178568

Dear Mr. Maloney:

On December 23, 1997, the Wisconsin Department of Natural Resources provided notice to you that the degree and extent of resin and acetone contamination at the above-named site was required to be investigated and remediated

On March 9, 1999, the Northeast Region Closeout Committee completed a review of the above referenced resin and acetone contamination case. The committee reviews environmental remediation cases for compliance with state laws, standards and guidelines to maintain consistency in the closeout of cases.

Based on the investigative and remedial documentation provided to the Department, it appears that the resin and acetone contamination at the above mentioned site has been remediated to the extent practicable. The Department considers the above referenced case "closed," having determined that no further action is necessary at the site at this time. As a condition of this closure, the Department is requiring you to properly abandon all groundwater monitoring wells and provide the Department with the proper documentation of such abandonment. **This case will be listed as "active" on the Department's tracking system until the above mentioned condition is met.**

This case may be reopened pursuant to s. NR 726.09, Wis. Adm. Code, if additional information regarding site conditions indicates that contamination on or from the site poses a threat to public health, safety or welfare to the environment.

If you have any questions regarding the content of this letter, please contact me in Green Bay at (920) 492-5943.

Sincerely,

Kristin Nell
Hydrogeologist
Remediation & Redevelopment Program

cc: Bill Noel, STS Consultants Ltd.
1035 Kepler Drive, Green Bay, WI 54311

Draft 3.1.99

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CASE SUMMARY AND CLOSE OUT FORM

Form ____ - ___
Rev. 11/97

FOR DEPARTMENT USE ONLY

Type of Case: LUST Spill (ER) Act 453 Other_____ DNR Reviewer: Nell

WDNR Site Name: Carver Boat Corporation Resin and Acetone (Former Carver UST #6 / #7)

Complete Site Address: 790 Markham Drive, Pulaski, Wisconsin 54162

WDNR BRRTS Case #: 0 2 - 0 5 - 1 7 8 5 6 8 PECFA Claim #: _____ - _____ -

Responsible Party Name: Carver Boat Corporation

Complete Responsible Party Address: 790 Markham Drive, Pulaski, Wisconsin 54162

Site Legal Description: ____ 1/4, _____ 1/4, NE 1/4, Sec 6, T 25 N, R 19 (E/W) Town: Pulaski

County: Brown Latitude: 44 ° 40 ' ___ ___ . ___ " Longitude: 88 ° 13 ' 30 "

Type Of Closure Requested:

Soil	Groundwater
_____ < NR 720.09/720.11 Generic RCLs	_____ < NR 140.10 Table 1 & Table 2 Values
_____ NR 720.19(2) Soil Performance Stds.	X NR 140.28(2) PAL Exemption
X NR 720.19(3) Site Specific Stds.	_____ NR 726.05(2)(b) Natural Attenuation

Contaminant Type(s): VOCs (Resins + Acetone) Quantity Released: Unknown

Date of Incident/Discovery: October 3, 1997 Date Closure Submitted to DNR: 01-22-99

Enforcement Actions Closed Out? ____ Yes ____ No X NA Permits Closed Out? ____ Yes ____ No X NA

Form 4 Pending? ____ Yes X No ____ NA

I certify that, to the best of my knowledge, the information presented on and attached to this form are true and accurate. This recommendation for case closure is based upon all available data as of 1/21/99 (date). I have read the Case Summary and Close Out Form Instructions and all required information has been included.

Form completed by: William F. Noel 1/21/99

(Signature) (Date)

Printed Name: William F. Noel Firm Name: STS Consultants, Ltd.

Relationship to Site Owner: Consultant

Address: 1035 Kepler Drive, Green Bay, Wisconsin 54311

Telephone Number: 920-468-1978 FAX Number: 920-468-3312

Environmental Consultant (if different then above): _____

Address: _____

Telephone Number: _____ FAX Number: _____

WDNR BRRTS Case #: 02-05-178568 WDNR Site Name: Carver Boat Corp. Resin & Acetone (Carver UST #6 / #7)

1. CASE HISTORY AND JUSTIFICATION FOR CLOSURE ATTACHED? X Yes _____ No

2. SOIL PRE-REMEDIATION OR INVESTIGATION ANALYTICAL RESULTS

Extent Defined? X Yes ____ No Soil Type(s): Silty sand, silty clay Depth to Bedrock: Not encountered.

Potential Receptors for Direct Contact (i.e. vapor migration, contaminated soil left in place): No identified exceedances of direct contact RCLs.

Attached:
Tables of Pre-remedial Analytical Results? X Yes ____ No Maps of Pre-remedial Sample Locations? X Yes ____No

3. SOIL POST REMEDIATION ANALYTICAL RESULTS

Remedial Action Completed? ____ Yes X No 720.19 Analysis? X Yes ____ No (If yes, attach supporting documentation)

Were Soils Excavated? _____ Yes X No Quantity: _____ Disposal Method: _____

Final Confirmation Sampling Methods: _____

Soil Disposal Form Attached? ____ Yes _No X NA Final Disposal Location: _____

Estimated volume of insitu soils exceeding NR 720 RCLs: None
Attached:
Tables of Post-Remedial Analytical Results? _Yes/No X NA Maps of Post-Remedial Sample Locations? _Yes/No X NA

Brief Description of Remedial Action Taken:
NR 720.19 Analysis

4. GROUNDWATER ANALYTICAL RESULTS

Potential Receptors for Groundwater Migration Pathway: No identified exceedances of NR 140 ESs.

Extent of Contamination Defined? X Yes ____ No____ NA Remedial Action Completed? ____ Yes _____ No X NA

# of Sample Rounds: 1 Depth(s) to Groundwater/Flow Direction(s): 4' BGS/flow likely to north.

Field Analyses? X Yes ____ No Lab Analyses? X Yes ____No # of Sampling Points: 5

NR 141 Monitoring Wells Sampled: 0 # Temporary Groundwater Sampling Points Sampled: 5

Recovery Sumps Sampled: 0 # Municipal Wells Sampled: 0 # Private Wells Sampled: 0

Has DNR Been Notified of Substances in Groundwater w/o Standard? _____Yes _____No X NA

Any Potable Wells Within 1,200 Feet of Site? ____ Yes X No If Yes, How Many? _____

Have They Been Sampled? ____ Yes ____No Have Well Owners/Occupants Been Notified of Results? ____Yes ____No

Preventive Action Limit Exceeded? ~~No~~ Yes X No (If Yes, identify location(s): Second round no Detect B-6-1, B-6-2, B-6-3

Enforcement Standard Exceeded? ____ Yes X No (If Yes, identify location(s): _____

Attached:
Tables of Analytical Results? X Yes ____ No Map of Groundwater Sample Location Map? X Yes ____ No

Brief Description of Remedial Action Taken:
Compared data to NR 140 Standards.

Carver Boat Corp.,
WDNR BRRTS Case #: 02-05-178568 WDNR Site Name: Resin and Acetone (Carver UST #6 / #7)

FOR DEPARTMENT USE ONLY

FIRST REVIEW DATE: 3-9-99 **[X] Approved [ ] Denied**

R-C-[signature] (Signature) [signature] (Signature) [signature] (Signature) ____ (Signature)

SECOND REVIEW DATE: ____ **[ ] Approved [ ] Denied**

____ (Signature) ____ (Signature) ____ (Signature) ____ (Signature)

COMMITTEE RECOMMENDATION:

X **Closure Approved Per:**
- X No Restrictions
- ____ Groundwater Use Restriction
- ____ Zoning Verification
- ____ Deed Restriction
- ____ Deed Affidavit
- ____ Site Specific Close Out Letter Necessary
- ____ Well Abandonment Documentation
- ____ Soil Disposal Documentation
- ____ Public Notice Needed
- ____ NR 140 Exemption For: ____
- ____ Specific Comments: G.W. detects are below NR 140 PALS and soil residuals are below calculated SSRCC's for G.W. path and ingestion/inhalation path.

____ **Closure Denied, Needs More:**
- ____ Investigation
- ____ Groundwater Monitoring
- ____ Soil Remediation
- ____ Groundwater Remediation
- ____ Documentation Of Soil Landspreading Or Biopile Destiny
- ____ Specific Comments: ____

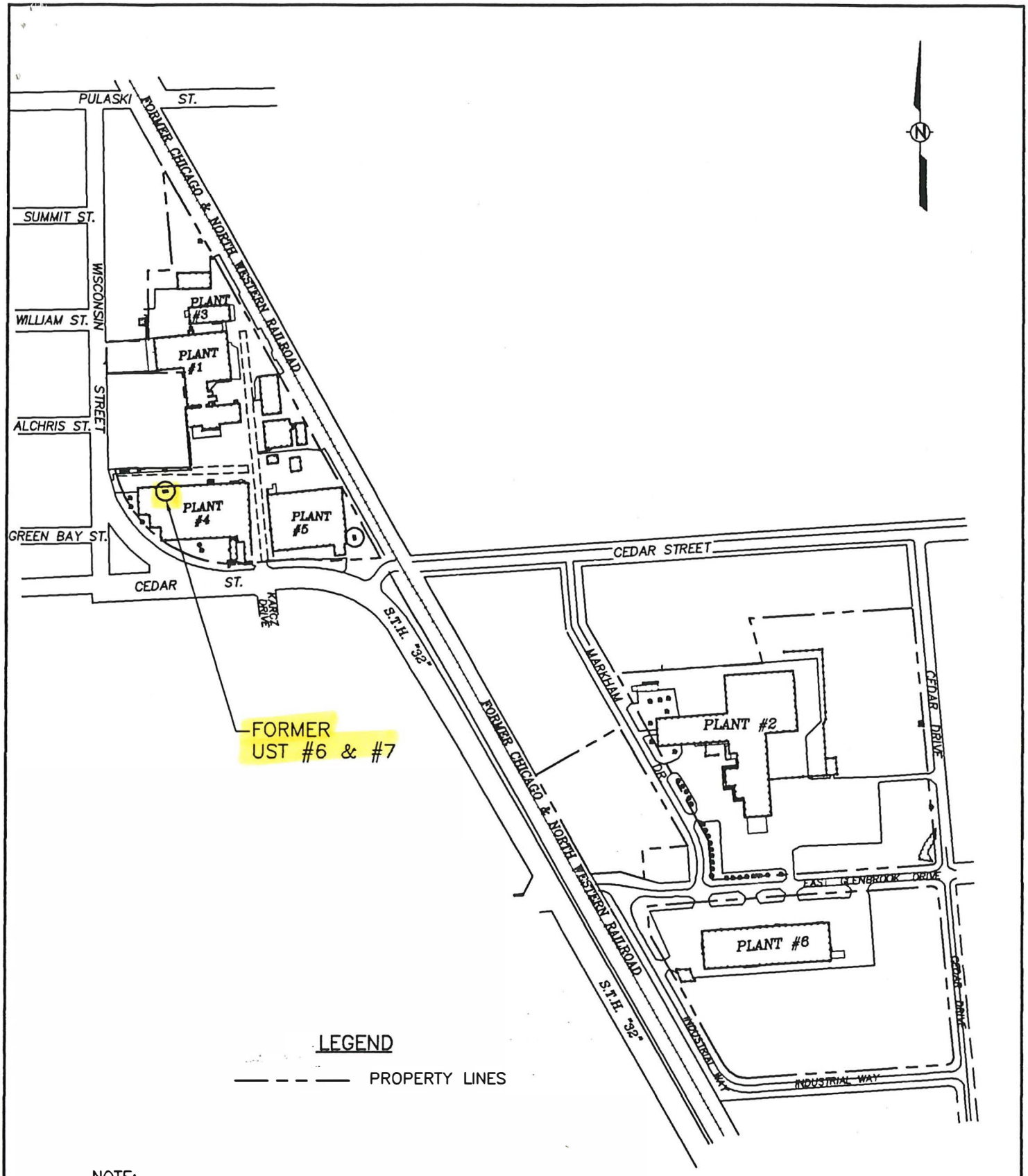
CASE HISTORY AND JUSTIFICATION FOR CLOSURE
CARVER BOAT CORPORATION
RESIN AND ACETONE USTs
(FORMER CARVER USTs #6 / #7)
PULASKI, WISCONSIN
BRRTS #02-05-178568

Two adjacent underground storage tanks (Carver USTs #6 / #7) were removed by Phenco, Inc. of Neenah, Wisconsin on October 3, 1997. STS Consultants, Ltd., (STS) performed site assessments during removal of the USTs. UST #6 was a 6,000-gallon tank which formerly contained resin, of which, styrene was a primary constituent. UST #7 was a 2,000-gallon tank which formerly contained acetone. The removal of these USTs and the site assessments are documented in a report by STS dated February 26, 1998.

No groundwater samples were collected while the USTs were being removed, nor was there evidence of groundwater impacts. STS field observations of soil conditions provided some indication of volatile organic compounds (VOCs). Laboratory soil test results indicated low-level concentrations of styrene, acetone, tetrachloroethane, and methyl tert-butyl ether (MTBE) in one or more of the soil samples (refer to Table 1).

The laboratory soil data were found to be below site-specific residual containment levels (SSRCLs) for the groundwater pathway and direct contact at non-industrial sites. Groundwater pathway SSRCLs are considered to be conservative because the average TOC concentration for Carver former UST #3 location was used instead of the substantially higher TOC measured in soil from the former USTs #6 / #7 location (USTs #3 and #6 / #7 are located in the northern portion of Carver's property).

Additionally, groundwater did not exceed NR 140 enforcement standards in any of the temporary wells (refer to Table 2). Based on the collected data and observations, STS recommends that this site be closed by the WDNR with PAL exemptions for styrene and benzene per s. NR 140.28, Wisconsin Administrative Code.



NOTE:
MAP MODIFIED FROM DRAWINGS FROM ROBERT E. LEE AND ASSOC.

STS Consultants Ltd.
Consulting Engineers

FACILITY LOCATIONS
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F04	SCALE 1"=500'	
STS PROJECT NO. 23379XF	FIGURE NO. 2	

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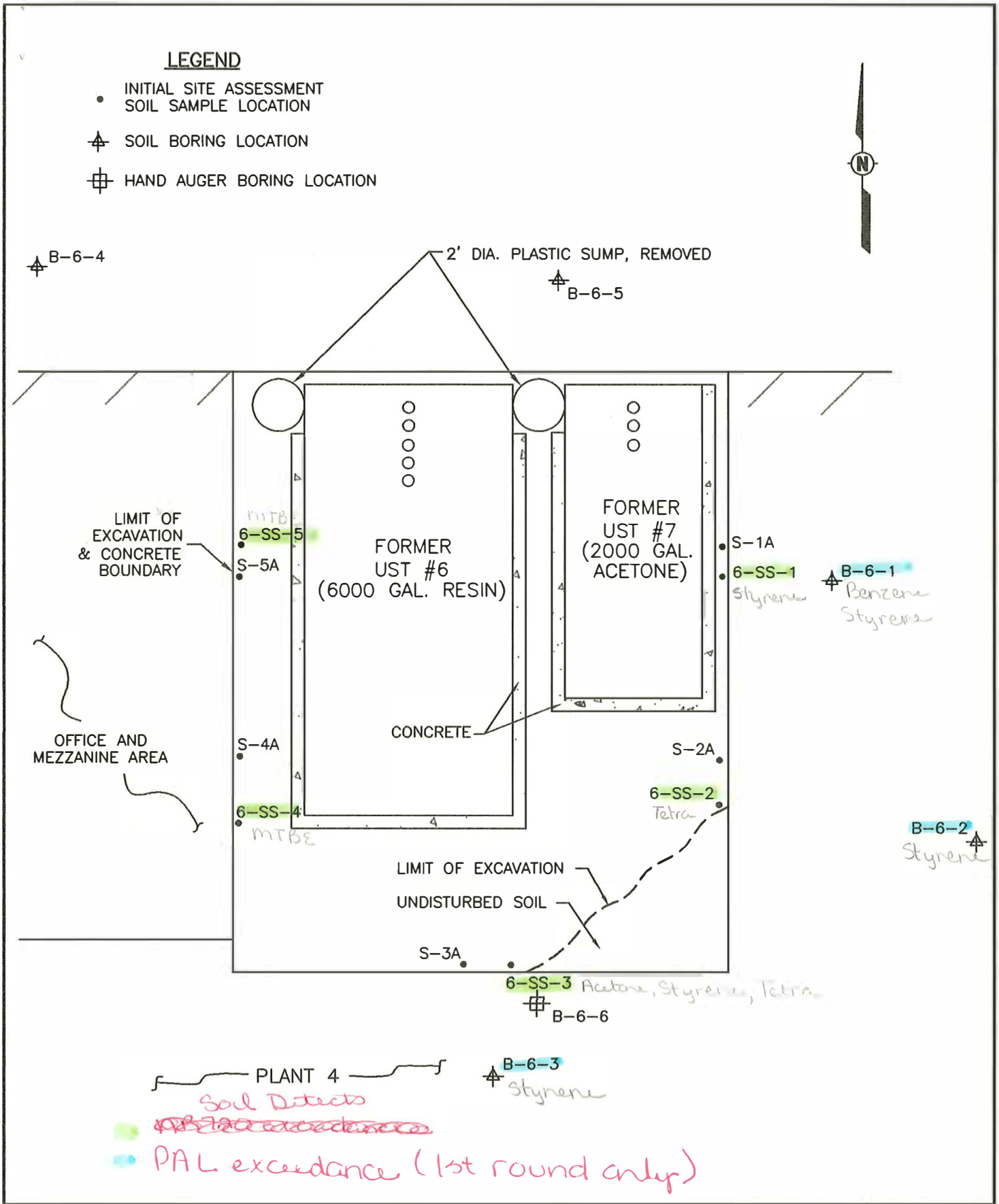

STS Consultants Ltd. Consulting Engineers	UST #6/#7 SOIL BORING LOCATION DIAGRAM CARVER BOAT CORPORATION PULASKI, WISCONSIN	
	DRAWN BY: R.A.B. 12-18-98	
	CHECKED BY: W.F.N. 12-18-98	
	APPROVED BY:	
	CADFILE:	SCALE: 1"=5'
	STS PROJECT NO.: 23379XA	FIGURE NO.: 3

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TABLE 1
SOIL FIELD OBSERVATIONS AND LABORATORY RESULTS
CARVER BOAT CORPORATION USTs #6 AND #7
PULASKI, WISCONSIN

Sample Location	Depth (feet)	FID (units)	Soil Description	Odor	Acetone (µg/kg)	Styrene (µg/kg)	MTBE (µg/kg)	Tetrachloroethene (µg/kg)	Total Organic Carbon (mg/kg)
Tank Closure Site Assessment Samples (10/97)									
6-SS-1	3	52	Dark Brown Fine to Medium Silty Sand	Slight	<100	36	<25	<25	-
6-SS-2	3	10	Dark Brown Fine to Medium Silty Sand	Possible	<100	<25	<25	26	-
6-SS-3	3	6	Dark Brown Fine to Medium Silty Sand	No	120	31	<25	51	-
6-SS-4	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	28	<25	-
6-SS-5	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	36	<25	-
S-1A	4	65	Brown Red Silty Clay	Slight	-	-	-	-	-
S-2A	4	25	Brown Red Silty Clay	Possible	-	-	-	-	-
S-3A	4	50	Brown Red Silty Clay	Slight	-	-	-	-	-
S-4A	4	7	Brown Red Silty Clay	No	-	-	-	-	-
S-5A	4	7	Brown Red Silty Clay	No	-	-	-	-	-
Site Assessment Sample (11/98)									
B-6-6	1.0-1.5	-	Dark Brown Fine to Medium Silty Sand	No	-	-	-	<27	34,700
Non-Industrial SSRCLs									
GW					1,800	41,000	160	130	
ING					7,800,000	16,000,000	390,000	12,000	
INH					4,600,000	14,000,000	14,000,000	11,000	

Notes:
VOCs not listed were not detected in any sample
- = Not Analyzed
MTBE = Methyl tert Butyl Ether
FID = Flame Ionization Detector
SSRCL = Site-Specific Residual Contaminant Level
GW = Groundwater Pathway
ING = Soil Ingestion Pathway
INH = Soil Inhalation Pathway

GROUNDWATER DATA
CARVER BOAT CORPORATION UST #6 / #7
PULASKI, WISCONSIN

Field Parameters

Well ID	Date	Depth to Water (Ft from TPVC)	Dissolved Oxygen (mg/L)	Ferrous Iron (mg/L)	pH (units)	Specific Conductance (µmhos/cm)	Temperature (°F)	Color	Odor Noted
B-6-1	8/13/98	7.16	2	0.2	6.26	1034	72.0	Clear	None Noted
	2/4/99	8.20	NR	NR	NR	NR	NR	Clear	None Noted
B-6-2	8/13/98	7.05	3	0.2	6.77	1253	72.9	Clear	None Noted
	2/4/99	8.06	NR	NR	NR	NR	NR	Clear	None Noted
B-6-3	8/13/98	7.02	2	0.4	6.39	1101	73.5	Clear	None Noted
	2/4/99	7.98	NR	NR	NR	NR	NR	Clear	None Noted
B-6-4	8/13/98	6.79	2	0.2	6.09	776	71.8	Clear	None Noted
	2/4/99	7.80	NR	NR	NR	NR	NR	Clear	None Noted
B-6-5	8/13/98	6.95	3	1.0	6.13	1250	70.8	Clear	None Noted
	2/4/99	8.01	NR	NR	NR	NR	NR	Clear	None Noted

Analytical Results

Well ID	Date	VOCs[1] (µg/L)					Nitrate/Nitrite (mg/L)	Sulfate (mg/L)
		Acetone	Benzene	Styrene	Toluene	Xylenes		
B-6-1	8/13/98	11	0.53[2]	60	0.6[2]	<1.23[3]	<0.014	18
	2/4/99	<5.0	<0.5	1.24	<1.0	<2.0	NA	NA
B-6-2	8/13/98	1.1	<0.25	20	<0.38	<1.04	<0.014	19
	2/4/99	<5.0	<0.5	1.64	<1.0	<2.0	NA	NA
B-6-3	8/13/98	15	<0.25	98	0.39[2]	<1.44[3]	<0.014	10
	2/4/99	<5.0	<0.5	<1.0	<1.0	<2.0	NA	NA
B-6-4	8/13/98	0.92[2]	<0.25	<0.74	<0.38	<1.04	<0.014	10
	2/4/99	<5.0	<0.5	<1.0	<1.0	<2.0	NA	NA
B-6-5	8/13/98	<0.28	<0.25	0.91[2]	<0.38	<1.04	0.47	84
	2/4/99	<5.0	<0.5	<1.0	<1.0	<2.0	NA	NA
NR 140 ES		1000	5.0	100	343	620		
NR 140 PAL		200	0.5	10	68.6	124		

[1]VOCs not listed were not detected

[2]Analyte detected, but below limit of quantitation

[3]o-xylene detected, but below limit of quantitation; m&p-xylene not detected

NA: Not analyzed

NR: Not recorded

NE: Not established

Tetrachloroethene ND in water

Site-Specific Residual Contaminant Level (SSRCL) Calculation Input Parameters

Carver Boat Corporation USTs #6 and #7

Pulaski, Wisconsin

STS Project No. 23379XA

Parameter	SFo $(mg/kg\text{-}day)^{-1}$	Source	SFi $(mg/kg\text{-}day)^{-1}$	Source	RfD (mg/kg-day)	Source	RfC (mg/m^3)	Source	K_{oc} (L/kg)	Source	H' (unitless)	Source	Da (cm^2/s)	Source	Dw (cm^2/s)	Source
PVOCs																
Acetone					1.0E-01	1	3.5E-01	6	0.575	5	1.59E-03	5	1.24E-01	5	1.14E-05	5
Methyl tert-butyl ether					5.0E-03	4	3.0E+00	1	12.0	9	2.28E-02	7	1.24E-01	7	1.05E-05	7
Styrene					2.0E-01	1	1.0E+00	1	776	5	1.13E-01	5	7.10E-02	5	8.00E-06	5
Tetrachloroethene	5.2E-02	3	2.0E-03	3	1.0E-02	1	3.85E-01	6	155	5	7.54E-01	5	7.20E-02	5	8.20E-06	5

NOTES:

1) Abbreviations for RCL chemical fate parameters and health criteria are defined on the calculation sheets.

2) For Xylene, chemical fate parameters are those published for "p-xylene".

SOURCES:

1) EPA (U.S. Environmental Protection Agency). 1998. Integrated Risk Information System (IRIS). Office of Solid Waste and Emergency Response, Washington, D.C. On-line database available through TOXNET, National Library of Medicine, Bethesda, Maryland.

2) EPA (U.S. Environmental Protection Agency). 1997a. Health Effects Assessment Summary Tables (HEAST). FY-1997 Annual Update. (and Update to Annual) Office of Emerg. and Remedial Response, Washington, D.C.

3) EPA (U.S. Environmental Protection Agency). 1997b. Provisional Toxicity Values Under Development (personal communication). National Center for Environmental Assessment (NCEA). Superfund Technical Support Center (phone: 513-569-7300). Cincinnati, Ohio.

4) EPA (U.S. Environmental Protection Agency). 1997c. Region III (EPA-III) Risk-Based Concentration (RBC) Table for April 1997. [includes documentation of human health criteria that are provisional and/or withdrawn from IRIS or HEAST.] Roy L. Smith, PhD. Office of RCRA. Technical and Program Support Branch. 841 Chestnut Street, Philadelphia, PA 19107.

5) EPA (U.S. Environmental Protection Agency). 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response, Washington, D.C.

6) EPA (U.S. Environmental Protection Agency). 1998. Region 9 Preliminary Remediation Goals (PRGs). Stanford J. Smucker, Ph. D. Regional Toxicologist. 75 Hawthorne Street, San Francisco, CA

7) EPA (U.S. Environmental Protection Agency). 1998. CHEMDAT8 air model chemicals properties database (file: DATATWO.WK1) obtained from EPA's web site.

8) HSDB (Hazardous Substance Data Bank). 1998. On-Line toxicological database available through the National Library of Medicine.

9) ASTM. 1995. Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites (E 1739-95$^{\varepsilon 1}$). West Conshohocken, Pennsylvania.

Cumulative Risk Calculation
Carver Boat Corporation
Pulaski, Wisconsin
STS Project No. 23379XA

Compound	Highest Soil Conc. (mg/kg)	Carcinogens						Non-Carcinogens			
		Ingestion (SFo)			Inhalation (SFi)			Ingestion (RfD)		Inhalation (RfC)	
		RCL (10^{-6}) (mg/kg)	RCL (10^{-5}) (mg/kg)	Soil Conc. / RCL (10^{-5})	RCL (10^{-6}) (mg/kg)	RCL (10^{-5}) (mg/kg)	Soil Conc. / RCL (10^{-5})	RCL (mg/kg)	Soil Conc. / RCL	RCL (mg/kg)	Soil Conc. / RCL
VOCs											
Acetone	0.12							7800	1.54E-05	4600	2.61E-05
Methyl tert butyl ether	0.036							390	9.23E-05	14000	2.57E-06
Styrene	0.031							16000	1.94E-06	14000	2.21E-06
Tetrachloroethene	0.051	12	120	0.00043	11	110	0.00046	780	6.54E-05	1000	5.10E-05
Cumulative Risk or Cumulative Hazard*				**0.0004**			**0.0005**		**0.0002**		**0.0001**

Calculated by: Roger Miller 12/21/98

Checked by: Jon Rotney 1-12-99

Notes:

1)*Summation of chemical-specific ratios (i.e., soil conc./RCL).

2) For carcinogens, the highest soil concentration was divided by the adjusted RCL (adjusted to a target risk of 1×10^{-5}). The sum of these ratios is below 1 for the ingestion and inhalation pathways. Accordingly, the cumulative risk does not exceed 1×10^{-5}.

3) For non-carcinogens, the highest soil concentration was divided by the RCL. The sum of these ratios is below 1 for the ingestion and inhalation pathways. Accordingly, the cumulative hazard does not exceed a hazard quotient of 1.

4) Risks for carcinogens and noncarcinogens are conservatively presumed to be additive within each exposure pathway.

5) All RCLs for Volatile Organic Compounds (VOCs) were derived from site-specific calculations.

Acetone

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-01	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{7800}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-01	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{100000}$$

Calculated by: Roger Miller 12/21/98

Checked by: Jay Rathsey 1-12-99

Note:
See list of references for numbered source citations.

Acetone

Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.5E-01	6
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.26E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **4600**

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.5E-01	6
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.26E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times IRc \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **5400**

Volatilization Factor (m^3/kg) = $\frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A}$ = **1.26E+04**

D_A (cm^2/sec) = $\frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'}$ = **9.91E-05**

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source (g/m^2-sec)/(kg/m^3)	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	9.91E-05	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	1.24E-01	5
H' - Henry's Law Constant (unitless)	1.59E-03	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	1.14E-05	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.00345	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	0.575	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: Tom Gathy 1-13-99

Note:
See list of references for numbered source citations.

Methyl tert-butyl ether

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	5.0E-03	4
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{390}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	5.0E-03	4
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{5100}$$

Calculated by: Roger Miller 12/21/98

Checked by: Tom Bradley 1-12-99

Note:
See list of references for numbered source citations.

Methyl tert-butyl ether
Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.0E+00	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	4.35E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x AT x 365 day/year}}{\text{1/RfC x EF x ED x [(1/VF) + (Cp x } 10^{-9} \text{ kg/μg)]}} = \boxed{14000}$$

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.0E+00	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	4.35E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x AT x 365 day/year}}{\text{1/RfC x EF x ED x IRc x [(1/VF) + (Cp x } 10^{-9} \text{ kg/μg)]}} = \boxed{16000}$$

$$\text{Volatilization Factor } (m^3/kg) = \frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A} = \boxed{4.35E+03}$$

$$D_A \ (cm^2/sec) = \frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'} = \boxed{8.31E-04}$$

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source $(g/m^2\text{-sec})/(kg/m^3)$	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	8.31E-04	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	1.24E-01	7
H' - Henry's Law Constant (unitless)	2.28E-02	7
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	1.05E-05	7
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.07	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	12	9
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: [signature] 1-13-99

Note:
See list of references for numbered source citations.

Styrene

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	2.0E-01	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{16000}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	2.0E-01	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{200000}$$

Calculated by: Roger Miller 12/21/98

Checked by: Tom Gittinger 1-12-99

Note:
See list of references for numbered source citations.

Styrene

Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	1.0E+00	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.34E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x AT x 365 day/year}}{\text{1/RfC x EF x ED x [(1/VF) + (Cp x } 10^{-9} \text{ kg/μg)]}} = \boxed{14000}$$

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	1.0E+00	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.34E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x AT x 365 day/year}}{\text{1/RfC x EF x ED x IRc x [(1/VF) + (Cp x } 10^{-9} \text{ kg/μg)]}} = \boxed{16000}$$

$$\text{Volatilization Factor } (m^3/kg) = \frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A} = \boxed{1.34E+04}$$

$$D_A \ (cm^2/sec) = \frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'} = \boxed{8.70E-05}$$

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source $(g/m^2\text{-sec})/(kg/m^3)$	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	8.70E-05	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	7.10E-02	5
H' - Henry's Law Constant (unitless)	1.13E-01	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	8.00E-06	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	4.66	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	776	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: 1-13-98

Note:
See list of references for numbered source citations.

Tetrachloroethene

Soil Ingestion Pathway (SFo)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Carcinogenic Contaminants in Non-Industrial Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFo - Slope Factor Oral $(mg/kg\text{-}day)^{-1}$	5.2E-02	3
EF - Exposure Frequency (day/year)	350	WDNR Default Value
IFs - Age Adjusted Soil Ingestion Factor (mg-year/kg-day)	114	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
BWc - Average Body Weight From Ages 1-6 (kg)	15	WDNR Default Value
IRa - Ingestion Rate of Soil Age 7-31 (mg/day)	100	WDNR Default Value
EDa - Exposure Duration During Ages 7-31 (year)	24	WDNR Default Value
BWa - Average Body Weight From Ages 7-31 (kg)	70	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\dfrac{TR \times AT \times 365\ day/year}{SFo \times 10^{-6}\ kg/mg \times EF \times IFs}$ = **12**

$IFs = \dfrac{IRc \times EDc}{BWc} + \dfrac{IRa \times EDa}{BWa}$ = 114

Algorithm for Ingestion of Carcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFo - Slope Factor Oral $(mg/kg\text{-}day)^{-1}$	5.2E-02	3
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\dfrac{TR \times BWa \times AT \times 365\ day/year}{SFo \times 10^{-6}\ kg/mg \times EF \times ED \times IRa}$ = **55**

Calculated by: Roger Miller 12/21/98

Checked by: Jon Rothey 1-12-99

Note:

See list of references for numbered source citations.

Tetrachloroethene

Soil Inhalation Pathway (SFi)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Carcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFi - Slope Factor Inhalation $(mg/kg\text{-}day)^{-1}$	2.0E-03	3
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
IR - Inhalation Rate (m^3/day)	20	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{TR \times BWa \times AT \times 365\ day/year}{SFi \times EF \times ED \times IR \times [(1/VF) + Cp \times 10^{-9}\ kg/\mu g)]} = \boxed{11}$$

Algorithm for Inhalation of Carcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFi - Slope Factor Inhalation $(mg/kg\text{-}day)^{-1}$	2.0E-03	3
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRw - Inhalation Rate for Adult Laborer (m^3/day)	24	WDNR Default Value
VF - Volatilization Factor (kg/m^3)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{TR \times BWa \times AT \times 365\ day/year}{SFi \times EF \times ED \times IRw \times [(1/VF) + Cp \times 10^{-9}\ kg/\mu g)]} = \boxed{15}$$

$$\text{Volatilization Factor } (m^3/kg) = \frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A} = \boxed{2.56E+03}$$

$$D_A\ (cm^2/sec) = \frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'} = \boxed{2.40E-03}$$

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source $(g/m^2\text{-}sec)/(kg/m^3)$	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	2.40E-03	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	7.20E-02	5
H' - Henry's Law Constant (unitless)	7.54E-01	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	8.20E-06	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.93	K_{oc} x f_{oc}
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	155	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: Tom Cretney

Note:
See list of references for numbered source citations.

Tetrachloroethene

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-02	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{\textbf{780}}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-02	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{\textbf{10000}}$$

Calculated by: Roger Miller 12/21/98

Checked by: [signature] 1-12-99

Note:
See list of references for numbered source citations.

Tetrachloroethene
Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.9E-01	6
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **1000**

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.9E-01	6
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times IRc \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **1200**

Volatilization Factor (m^3/kg) = $\frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A}$ = **2.56E+03**

D_A (cm^2/sec) = $\frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'}$ = **2.40E-03**

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source (g/m^2-sec)/(kg/m^3)	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	2.40E-03	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	7.20E-02	5
H' - Henry's Law Constant (unitless)	7.54E-01	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	8.20E-06	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.93	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	155	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: Jim Gretney

Note:
See list of references for numbered source citations.

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Acetone--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**0.575**	L/kg	Organic Carbon Partition Coefficient	EPA Soil Screening Guidance[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	0.0021	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_20/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	1000	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 13.0 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **1.8** mg/kg **Acetone** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: LFN 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]USEPA, 1996, Soil Screening Guidance: Technical Background Document: Publication EPA/540/R-95/128, Washington, D. C.

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Methyl tert-butyl ether--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**12**	L/kg	Organic Carbon Partition Coefficient	ASTM RBCA[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	0.0432	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_20/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	60	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 14.8 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **0.16** mg/kg **MTBE** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: WEN 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]ASTM, 1995, Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites. (E1739-95$^{\varepsilon 1}$).

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Tetrachloroethene--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**155**	L/kg	Organic Carbon Partition Coefficient	EPA Soil Screening Guidance[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	0.5580	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_20/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	5	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 38.0 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **0.13** mg/kg **Tetrachloroethene** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: MFN 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]USEPA, 1996, Soil Screening Guidance: Technical Background Document: Publication EPA/540/R-95/128, Washington, D. C.

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Styrene--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**776**	L/kg	Organic Carbon Partition Coefficient	EPA Soil Screening Guidance[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	2.7936	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_20/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	100	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 138.6 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **41** mg/kg **Styrene** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: WFN 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]USEPA, 1996, Soil Screening Guidance: Technical Background Document: Publication EPA/540/R-95/128, Washington, D. C.

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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February 25, 1999

Carver Boat Corporation
Attn: Ted Maloney
P.O. Box 1010
Pulaski, WI 54162

SUBJECT: Acknowledgment of Receipt/Request for Closure Review
Carver Boats – Resin & Acetone, 790 Markham, Pulaski
WDNR BRRTS ID #: 02-05-178568

Dear Mr. Maloney:

The Department received your request for closeout review on February 25, 1999. Due to staffing levels and the backlog of non-emergency cases, requests for closure are logged and reviewed in the order they are received. However, we hope to be able to review your request within 90 days. After Department review of the case, a letter will notify you either that closure is approved or that additional work is required.

If you have any questions, please contact me at (920) 492-5943.

Sincerely,

Kristin Nell
Hydrogeologist
Remediation & Redevelopment Program

cc: Bill Noel, STS Consultants Ltd.
1035 Kepler Drive, Green Bay, WI 54311

STS Consultants, Ltd.
Solutions through Science & Engineering

February 24, 1999

Ms. Kristin Nell
Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

Subject: Additional Data to Supplement Request for Closure, VOC Impacts in the Vicinity of Former Underground Storage Tanks #6 and #7, Carver Boat Corporation, 790 Markham Drive, Pulaski, Wisconsin – BRRTS Case #02-05-178568 – STS Project No. 23379XA

Dear Ms. Nell:

On behalf of Carver Boat Corporation, STS Consultants, Ltd., (STS) is pleased to submit additional data to supplement a request for closure submitted for the above-referenced site on January 21, 1999.

As you requested during our telephone discussion on January 29, 1999, samples were collected from the five temporary wells in the vicinity of former Carver underground storage tanks #6 and #7 on February 4, 1999. The samples were analyzed for petroleum volatile organic compounds, acetone, styrene, and tetrachloroethene (volatile organic compounds which had previously been detected in this vicinity), in accordance with our telephone discussion on February 2, 1999.

A data table is attached to this letter, as is the analytical test report.

No exceedances of Wisconsin Administrative Code Chapter NR 140 preventive action limits or enforcement standards were reported in any of the samples collected February 4, 1999. These data support those collected previously, which showed no NR 140 enforcement standard exceedances. On the basis of these data, we request that you forward the site closure request to the closure committee. A $750 check was included with the original submittal.

Please contact us at 920-468-1978 with any questions regarding this project.

Sincerely,

STS CONSULTANTS, LTD.

William F. Noel

William F. Noel, P.E.
Senior Project Engineer

Mark A. Bergeon

Mark A. Bergeon, P.G.
Principal Geologist

WFN/ddd.wd

Enclosures:
Groundwater Data Table
Analytical Test Report

Copy: Mr. Ted Maloney
Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, Wisconsin 54162

Mr. Jeffery Melby, P.E.
Genmar Holdings, Inc.
100 South 5th Street, Suite 2400
Minneapolis, Minnesota 55402

"I, Mark A. Bergeon, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Mark A. Bergeon

Mark A. Bergeon, P.G. 2/24/99
Principal Geologist

"I, William F. Noel, P.E., hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

William F. Noel

William F. Noel, P.E., #28909 PE. stamp
Senior Project Engineer

GROUNDWATER DATA
CARVER BOAT CORPORATION UST #6 / #7
PULASKI, WISCONSIN

Field Parameters

Well ID	Date	Depth to Water (Ft from TPVC)	Dissolved Oxygen (mg/L)	Ferrous Iron (mg/L)	pH (units)	Specific Conductance (µmhos/cm)	Temperature (°F)	Color	Odor Noted
B-6-1	8/13/98	7.16	2	0.2	6.26	1034	72.0	Clear	None Noted
	2/4/99	8.20	NR	NR	NR	NR	NR	Clear	None Noted
B-6-2	8/13/98	7.05	3	0.2	6.77	1253	72.9	Clear	None Noted
	2/4/99	8.06	NR	NR	NR	NR	NR	Clear	None Noted
B-6-3	8/13/98	7.02	2	0.4	6.39	1101	73.5	Clear	None Noted
	2/4/99	7.98	NR	NR	NR	NR	NR	Clear	None Noted
B-6-4	8/13/98	6.79	2	0.2	6.09	776	71.8	Clear	None Noted
	2/4/99	7.80	NR	NR	NR	NR	NR	Clear	None Noted
B-6-5	8/13/98	6.95	3	1.0	6.13	1250	70.8	Clear	None Noted
	2/4/99	8.01	NR	NR	NR	NR	NR	Clear	None Noted

Analytical Results

Well ID	Date	VOCs[1] (µg/L)					Nitrate/Nitrite (mg/L)	Sulfate (mg/L)
		Acetone	Benzene	Styrene	Toluene	Xylenes		
B-6-1	8/13/98	11	0.53[2]	60	0.6[2]	<1.23[3]	<0.014	18
	2/4/99	<5.0	<0.5	1.24	<1.0	<2.0	NA	NA
B-6-2	8/13/98	1.1	<0.25	20	<0.38	<1.04	<0.014	19
	2/4/99	<5.0	<0.5	1.64	<1.0	<2.0	NA	NA
B-6-3	8/13/98	15	<0.25	98	0.39[2]	<1.44[3]	<0.014	10
	2/4/99	<5.0	<0.5	<1.0	<1.0	<2.0	NA	NA
B-6-4	8/13/98	0.92[2]	<0.25	<0.74	<0.38	<1.04	<0.014	10
	2/4/99	<5.0	<0.5	<1.0	<1.0	<2.0	NA	NA
B-6-5	8/13/98	<0.28	<0.25	0.91[2]	<0.38	<1.04	0.47	84
	2/4/99	<5.0	<0.5	<1.0	<1.0	<2.0	NA	NA
NR 140 ES		1000	5.0	100	343	620		
NR 140 PAL		200	0.5	10	68.6	124		

[1]VOCs not listed were not detected

[2]Analyte detected, but below limit of quantitation

[3]o-xylene detected, but below limit of quantitation; m&p-xylene not detected

NA: Not analyzed

NR: Not recorded

NE: Not established

Tetrachloroethene ND in wate

U.S.FILTER

UNITED STATES FILTER CORPORATION

February 19, 1999

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

Attn: Bill Noel

Re: 23379XA

Please find enclosed the analytical results for the sample(s) received February 6, 1999.

The chain of custody document is enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

James R. Salkowski

James R. Salkowski
General Manager

USFilter

UNITED STATES FILTER CORPORATION

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

CUST NUMBER: 23379XA
SAMPLED BY: Client
DATE REC'D: 02/06/99
REPORT DATE: 02/19/99
PREPARED BY: JRS
REVIEWED BY:

Attn: Bill Noel

	Units	Reporting Limit	B-3-1 02/04/99	Qualifiers	Date Analyzed	By
EPA 8021A						
Acetone	µg/l	5.0	8.97		02/11/99	LMP
Benzene	µg/l	0.5	ND		02/11/99	LMP
Chloroethane	µg/l	1.0	ND		02/11/99	LMP
Chloromethane	µg/l	2.0	ND		02/11/99	LMP
1,1-Dichloroethane	µg/l	1.0	ND		02/11/99	LMP
Ethylbenzene	µg/l	1.0	ND		02/11/99	LMP
Isopropylbenzene	µg/l	1.0	ND		02/11/99	LMP
Methyl tert Butyl Ether	µg/l	1.0	ND		02/11/99	LMP
Styrene	µg/l	1.0	9.87		02/11/99	LMP
Toluene	µg/l	1.0	ND		02/11/99	LMP
1,2,4-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
1,3,5-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
m- & p-Xylene	µg/l	1.0	ND		02/11/99	LMP
o-Xylene & Styrene	µg/l	1.0	ND		02/11/99	LMP
Analytical No.:			62540			

	Units	Reporting Limit	B-6-1 02/04/99	Qualifiers	Date Analyzed	By
EPA 8021A						
Acetone	µg/l	5.0	ND		02/11/99	LMP
Benzene	µg/l	0.5	ND		02/11/99	LMP
Ethylbenzene	µg/l	1.0	ND		02/11/99	LMP
Methyl tert Butyl Ether	µg/l	1.0	ND		02/11/99	LMP
Styrene	µg/l	1.0	1.24		02/11/99	LMP
Tetrachloroethylene	µg/l	1.0	ND		02/11/99	LMP
Toluene	µg/l	1.0	ND		02/11/99	LMP
1,2,4-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
1,3,5-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
m- & p-Xylene	µg/l	1.0	ND		02/11/99	LMP
o-Xylene & Styrene	µg/l	1.0	ND		02/11/99	LMP
Analytical No.:			62541			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

CUST NUMBER: 23379XA
SAMPLED BY: Client
DATE REC'D: 02/06/99
REPORT DATE: 02/19/99
PREPARED BY: JRS
REVIEWED BY:

Attn: Bill Noel

	Units	Reporting Limit	B-6-2 02/04/99	Qualifiers	Date Analyzed	By
EPA 8021A						
Acetone	µg/l	5.0	ND		02/10/99	LMP
Benzene	µg/l	0.5	ND		02/10/99	LMP
Ethylbenzene	µg/l	1.0	ND		02/10/99	LMP
Methyl tert Butyl Ether	µg/l	1.0	ND		02/10/99	LMP
Styrene	µg/l	1.0	1.64	SPL	02/10/99	LMP
Tetrachloroethylene	µg/l	1.0	ND		02/10/99	LMP
Toluene	µg/l	1.0	ND		02/10/99	LMP
1,2,4-Trimethylbenzene	µg/l	1.0	ND		02/10/99	LMP
1,3,5-Trimethylbenzene	µg/l	1.0	ND	SPL	02/10/99	LMP
m- & p-Xylene	µg/l	1.0	ND		02/10/99	LMP
o-Xylene & Styrene	µg/l	1.0	ND		02/10/99	LMP
Analytical No.:			62542			

	Units	Reporting Limit	B-6-3 02/04/99	Qualifiers	Date Analyzed	By
EPA 8021A						
Acetone	µg/l	5.0	ND		02/10/99	LMP
Benzene	µg/l	0.5	ND		02/10/99	LMP
Ethylbenzene	µg/l	1.0	ND		02/10/99	LMP
Methyl tert Butyl Ether	µg/l	1.0	ND		02/10/99	LMP
Styrene	µg/l	1.0	ND		02/10/99	LMP
Tetrachloroethylene	µg/l	1.0	ND		02/10/99	LMP
Toluene	µg/l	1.0	ND		02/10/99	LMP
1,2,4-Trimethylbenzene	µg/l	1.0	ND		02/10/99	LMP
1,3,5-Trimethylbenzene	µg/l	1.0	ND		02/10/99	LMP
m- & p-Xylene	µg/l	1.0	ND		02/10/99	LMP
o-Xylene & Styrene	µg/l	1.0	ND		02/10/99	LMP
Analytical No.:			62543			

ND = Analyzed but not detected.

USFilter

UNITED STATES FILTER CORPORATION

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

CUST NUMBER: 23379XA
SAMPLED BY: Client
DATE REC'D: 02/06/99
REPORT DATE: 02/19/99
PREPARED BY: JRS
REVIEWED BY:

Attn: Bill Noel

	Units	Reporting Limit	B-6-4 02/04/99	Qualifiers	Date Analyzed	By
EPA 8021A						
Acetone	µg/l	5.0	ND		02/11/99	LMP
Benzene	µg/l	0.5	ND		02/11/99	LMP
Ethylbenzene	µg/l	1.0	ND		02/11/99	LMP
Methyl tert Butyl Ether	µg/l	1.0	ND		02/11/99	LMP
Styrene	µg/l	1.0	ND		02/11/99	LMP
Tetrachloroethylene	µg/l	1.0	ND		02/11/99	LMP
Toluene	µg/l	1.0	ND		02/11/99	LMP
1,2,4-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
1,3,5-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
m- & p-Xylene	µg/l	1.0	ND		02/11/99	LMP
o-Xylene & Styrene	µg/l	1.0	ND		02/11/99	LMP
Analytical No.:			62544			

	Units	Reporting Limit	B-6-5 02/04/99	Qualifiers	Date Analyzed	By
EPA 8021A						
Acetone	µg/l	5.0	ND		02/11/99	LMP
Benzene	µg/l	0.5	ND		02/11/99	LMP
Ethylbenzene	µg/l	1.0	ND		02/11/99	LMP
Methyl tert Butyl Ether	µg/l	1.0	ND		02/11/99	LMP
Styrene	µg/l	1.0	ND		02/11/99	LMP
Tetrachloroethylene	µg/l	1.0	ND		02/11/99	LMP
Toluene	µg/l	1.0	ND		02/11/99	LMP
1,2,4-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
1,3,5-Trimethylbenzene	µg/l	1.0	ND		02/11/99	LMP
m- & p-Xylene	µg/l	1.0	ND		02/11/99	LMP
o-Xylene & Styrene	µg/l	1.0	ND		02/11/99	LMP
Analytical No.:			62545			

ND = Analyzed but not detected.

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

CUST NUMBER: 23379XA
SAMPLED BY: Client
DATE REC'D: 02/06/99
REPORT DATE: 02/19/99
PREPARED BY: JRS
REVIEWED BY:

Attn: Bill Noel

Qualifier Descriptions

SPL	Matrix spike recovery within analytical batch was low. Sample matrix appears similar to your sample; result may be biased low.

CHAIN OF CUSTODY RECORD

№ 24529

Contact Person BILL NOEL
Phone No. 920-468-1978 Office G.B.
Project No. Z3379XA PO No.
Project Name CARVER BOAT CORP UST #3 & UST #6&7

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

RECORD NUMBER 1 THROUGH 1
Laboratory ENVIROSCAN
Contact Person SHARON MALTBEY
Phone No.
Results Due

Sample I.D.	Date 1999	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
B-3-1	2/4		X		2	WATER	X			60062540			PARTIAL VOC's (8021) (PVOC's + ACETONE + CHLOROETHANE, CHLOROMETHANE, 1,1-DICHLOROETHANE, ISOPROPYLBENZENE STYRENE) Cl methane 11 Dichloethane ISOPR Benzene	Cl Ethane
B-6-1	2/4		X		2	WATER	X			60062541			PARTIAL VOC's (8021) (PVOC's + ACETONE + STYRENE + TETRACHLOROETHENE) perc	
B-6-2										60062542				
B-6-3										60062543				
B-6-4										60062544				
B-6-5										60062545				

Collected by:		Date 2.4.99	Time 3:00P	Delivery by:	Date / Time
Received by:		Date	Time	Relinquished by:	Date / Time
Received by:		Date	Time	Relinquished by:	Date / Time
Received by:		Date	Time	Relinquished by:	Date / Time
Received for lab by:		Date 2/6/99	Time 8:20AM	Relinquished by:	Date / Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☒ Yes ☐ No ☐ N/A Cold on Ice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

9/94cp10k

STS Consultants Ltd.
Consulting Engineers

TELEPHONE LOG

SITE NAME: Carver Boats - Resin & Acetone **DATE:** 02-02-99

TRACKING NUMBER: 02-05-178568 **TIME:** ~8:30

CONTACT NAME: Bill Nord **PHONE:**

COMPANY AGENCY: STS

INITIATED BY: Bill

Calling to see if gw sampling parameters could be reduced to only those parameters detected in soil + gw. WDNR agreed.

SIGNATURE: Trish Nunn

TELEPHONE LOG

SITE NAME: Carver Boats - Ream + Acton **DATE:** 01-29-99

TRACKING NUMBER: 02-05-178568 **TIME:** ~ 9:45

CONTACT NAME: Bill Noel **PHONE:** 920-468-1978

COMPANY AGENCY: STS

INITIATED BY: KN

Received closure request and rule requires one additional round of samplings from the temporary wells to confirm previous results. If gw results are consistents with the previous round resubmit the case for closure. If an increase is observed, additional monitoring may be required.

SIGNATURE:

STS Consultants, Ltd.
Solutions through Science & Engineering

January 21, 1999

Ms. Kristin Nell
Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

Subject: Request for Closure, VOC Impacts in the Vicinity of Former Underground Storage Tanks #6 and #7, Carver Boat Corporation, 790 Markham Drive, Pulaski, Wisconsin - BRRTS Case #02-05-178568 – STS Project No. 23379XA

Dear Ms. Nell:

STS Consultants, Ltd., (STS) is pleased to submit this report which describes the methods used and the results of a subsurface investigation at the above-referenced site and requests site closure.

An unbound Wisconsin Department of Natural Resources (WDNR) Case Summary and Close Out Form (with attachments) accompanies your copy of this report, as does a $750 check as required by Wisconsin Administrative Code Chapter NR 749. A copy of the closure documents is also included in Appendix A of this report.

Sincerely,

STS CONSULTANTS, LTD.

William F. Noel

William F. Noel, P.E.
Senior Project Engineer

Paula Leier-Engelhardt

Paula Leier-Engelhardt, P.G.
Senior Project Geologist

Mark A. Bergeon

Mark A. Bergeon, P.G.
Principal Geologist

WFN/ljs.wd

"I, Roger A. Miller, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Roger A. Miller

Roger A. Miller 1/21/99
Project Hydrogeologist

"I, William F. Noel, P.E., hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

William F. Noel

William F. Noel, P.E., #28909 PE. stamp
Senior Project Engineer

1035 Kepler Drive • Green Bay, WI 54311-8320 • (920) 468-1978 • (920) 468-3312 Fax

Enclosures:

WDNR Case Summary and Close Out Form
Check for $750

Copy: Mr. Ted Maloney
Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, Wisconsin 54162

Mr. Jeffery Melby, P.E.
Genmar Holdings, Inc.
100 South 5th Street, Suite 2400
Minneapolis, Minnesota 55402

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 Site Name and Location

The site is owned by Carver Boat Corporation (Carver), Pulaski, Wisconsin. Underground storage tanks (USTs) #6 and #7 were located within the north end of Carver's Plant 4, west of the former railroad bed which bisects Carver's property. The site is in the NE 1/4 of Section 6, T25N, R19E, Brown County, Wisconsin. The location of the Carver property is depicted on Figure 1, while Figure 2 shows the location of former USTs #6 / #7, and Figure 3 shows the area immediately around USTs #6 / #7. These figures are in Appendix A.

1.2 Background

Two adjacent USTs (Carver USTs #6 / #7) were removed by Phenco, Inc., of Neenah, Wisconsin on October 3, 1997. STS Consultants, Ltd., (STS) performed site assessments during removal of the USTs. UST #6 was a 6,000-gallon tank which formerly contained resin, of which, styrene was a primary constituent. UST #7 was a 2,000-gallon tank which formerly contained acetone. The removal of these USTs and the site assessments are documented in a report by STS dated February 26, 1998.

No groundwater samples were collected while the USTs were being removed, nor was there evidence of groundwater impacts. STS field observations of soil conditions provided some indication of the presence of volatile organic compounds (VOCs). Laboratory soil test results indicated low-level concentrations of styrene, acetone, tetrachloroethene (PCE), and methyl tert-butyl ether (MTBE) in one or more of the soil samples. These data are provided on Table 1 in Appendix A. Based on this information, Carver reported a release to the Wisconsin Department of Natural Resources (WDNR). The WDNR assigned BRRTS Case #02-05-178568 to this project.

STS then prepared a Work Plan dated February 26, 1998, on Carver's behalf to investigate conditions in the vicinity of the former USTs. Subsequent sections of this report present the methods and results of a subsurface investigation conducted in substantial accordance with this Work Plan.

2.0 METHODS OF INVESTIGATION

2.1 Soil Borings

STS advanced five soil borings (B-6-1 through B-6-5) with solid-stem augers on July 17, 1998, to a depth of 10 feet below ground surface (bgs). Soil Boring Log Information forms for these borings are included in Appendix B.

2.2 Hand Auger Boring

A hand auger boring (B-6-6) was advanced to a depth of 1.5 feet bgs on November 12, 1998. A soil sample was collected from between 1.0 and 1.5 feet bgs. This sample was submitted to U.S. Filter/Enviroscan Corporation (U.S. Filter) of Rothschild, Wisconsin, and tested for PCE and total organic carbon (TOC).

2.3 Temporary Monitoring Wells

2.3.1 Temporary Monitoring Well Installation

Temporary monitoring wells were installed in Soil Borings B-6-1 through B-6-5. Two-inch diameter Schedule 40 polyvinyl chloride (PVC) screens were installed and protected with 4-inch diameter flush-mount protector pipes. The temporary wells will be abandoned upon determining that there is no further reason to collect groundwater samples from these locations.

The temporary monitoring wells were purged on August 13, 1998, by bailing dry two times. Groundwater samples were then collected on that date and submitted to U.S. Oil Analytical Laboratory (U.S. Oil), Kimberly, Wisconsin, for testing of VOCs (including styrene and acetone), nitrate/nitrite, and sulfate in accordance with the Work Plan. Groundwater samples were also collected on that date and tested in the field. Parameters tested or noted were dissolved oxygen (DO), ferrous iron, pH, specific conductance, temperature, color, and odor.

3.0 RESULTS

3.1 Soil Test Results

3.1.1 Soil Analytical Results

As indicated previously, soil tests results from the UST closure assessment are summarized on Table 1 in Appendix A. Soil test results were below applicable residual contaminant levels (RCLs) for direct contact and the groundwater pathway, as explained herein.

In accordance with the Work Plan, soil samples were not collected from Soil Borings B-6-1 through B-6-5 due to the information gathered during the tank closure assessments. These borings were used to investigate groundwater quality.

To further evaluate the PCE detections, STS advanced Hand Auger Boring B-6-6. A soil sample was collected between 1.0 and 1.5 feet bgs, a depth thought to be consistently above the groundwater table. The PCE detections were reported in samples 6-SS-2 and 6-SS-3 from 3 feet bgs, typically above the apparent water table (observed at 4 feet bgs) during the UST removals, but potentially a depth which was saturated at certain times throughout prior years. No PCE was reported in the sample from Hand Auger Boring B-6-6. The test report is in Appendix C.

TOC was reported at 34,700 milligrams per kilogram (mg/kg) in the sample from Hand Auger Boring B-6-6. This concentration is 9.7 times greater than the representative site average value used in the RCL calculations (refer to Section 3.1.2.3). Use of this greater TOC value in the RCL calculations would result in groundwater pathway RCLs which are dramatically greater than those calculated with the representative site average TOC value.

3.1.2 Site-Specific Residual Contaminant Levels

While industrial use of this site is the most likely scenario to occur in the future, site-specific residual contaminant levels (SSRCLs) calculated for detected VOCs were found to be protective for non-industrial sites (i.e., unrestricted land use scenarios). Based on site conditions, we reviewed the following exposure pathways: 1) direct contact (soil ingestion or inhalation); and 2) leaching to groundwater.

SSRCLs were calculated for direct contact and the groundwater pathway using the algorithms presented in the WDNR's "Soil Cleanup for Polycyclic Armomatic Hydrocarbons (PAHs) - Interim Guidance" (WDNR Publication RR-519-97, dated April 1997 [corrected]). As summarized on the attached calculation sheets, default values from the WDNR guidance were used in the calculations, if available. Chemical fate parameters and health criteria for VOCs were obtained from EPA sources (e.g., Integrated Risk Information System [IRIS]). References for chemical fate input parameters and health criteria are listed with the SSRCL calculations.

3.1.2.1 Direct Contact SSRCLs

For direct contact SSRCLs were calculated for acetone, methyl tert-butyl ether (MTBE), styrene, and PCE for both the soil ingestion and inhalation pathways. As allowed in s.NR 720.19(5)1, Wisconsin Administrative Code, the excess cancer risk was adjusted to 1×10^{-6} and the hazard quotient was adjusted to 1 for the non-industrial SSRCL calculations. Even though subsurface soils are frozen for approximately four months out of the year, the default exposure frequency of 350 days per year was used in the calculations and found to be protective for direct contact exposure. While SSRCL pathways for industrial sites are also included for comparison, we selected the SSRCLs for non-industrial sites as the SSRCLs for this property. The direct contact SSRCLs are considered to be conservative because non-industrial SSRCLs have been compared to the highest organic compound concentrations detected in the soil.

As summarized on Table 1, the direct contact SSRCLs are several orders of magnitude greater than the highest residual VOC concentrations. Therefore, individual VOC concentrations do not exceed an excess cancer risk of 1×10^{-6} for carcinogens or a hazard quotient of 1 for non-carcinogens in accordance with s.NR 720.19(5)1, Wisconsin Administrative Code. SSRCLs were rounded to two significant figures. SSRCLs for PCE were calculated for carcinogenic and non-carcinogenic endpoints based on health criteria obtained from EPA sources.

3.1.2.2 Cumulative Risk

Cumulative risks were estimated for carcinogens and non-carcinogens for both ingestion and inhalation pathways. As shown in the attached calculations and in accordance with s.NR 720.19(5)2, Wisconsin Administrative Code, the cumulative excess cancer risk does not exceed 1×10^{-5} for carcinogens, nor does the hazard quotient exceed 1 for non-carcinogens.

Risks for carcinogens and non-carcinogens are conservatively presumed to be additive for each category.

3.1.2.3 Groundwater Pathway SSRCLs

SSRCLs for the groundwater pathway were calculated for acetone, MTBE, styrene, and PCE. The SSRCL equation combines a soil:water partitioning expression with a dilution attenuation factor for the groundwater mixing zone. The average soil TOC concentration for UST # 3 (3,587 mg/kg) was used in the groundwater pathway SSRCL calculation for PCE. This average TOC concentration is considered to be representative for soils at the Carver property north of Cedar Street (including both UST #3 and USTs #6 / #7 locations). Although a substantially higher TOC concentration was detected at the location of USTs #6 / #7 (34,700 mg/kg), this concentration was not used in the groundwater pathway SSRCL calculations. As summarized on the attached calculation sheets, default values from the WDNR guidance were used in the calculations where site-specific values were unavailable. Results were rounded to two significant figures. As summarized on Table 1, all soil VOC concentrations were below SSRCLs based on protection against a Wisconsin Administrative Code NR 140 enforcement standard (ES) exceedance.

Groundwater monitoring results are consistent with soil analytical data and SSRCLs for the groundwater pathway. Residual adsorbed VOCs are not partitioning into groundwater above NR 140 ESs.

3.2 Groundwater Results

3.2.1 Groundwater Analytical Data

Groundwater analytical data from the temporary wells are presented on Table 2 (Appendix A). The reported concentrations of styrene exceeded the Wisconsin Administrative Code NR 140 preventive action limit (PAL) in Borings B-6-1, B-6-2, and B-6-3. The benzene concentration in B-6-1 slightly exceeded the NR 140 PAL, though the benzene detection was below the laboratory limit of quantitation. No other PAL exceedances were reported. No exceedances of NR 140 ESs were reported. The analytical test report is in Appendix C.

3.2.2 Groundwater Field Data

Groundwater field data are also presented on Table 2. A minimum DO concentration of 2 milligrams per liter indicates that sufficient oxygen is present for aerobic degradation of the low level VOCs to proceed.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Soil test results indicate residual acetone, styrene, MTBE, and PCE concentrations below SSRCLs for the groundwater pathway and direct contact at non-industrial sites. Groundwater pathway SSRCLs are considered to be conservative because the average TOC concentration for Carver former UST #3 location was used instead of the substantially higher TOC measured in soil from the former USTs #6 / #7 location (USTs #3 and #6 / #7 are located in the northern portion of Carver's property).

Additionally, groundwater did not exceed NR 140 enforcement standards in any of the temporary wells. Based on the collected data and observations, STS recommends that this site be closed by the WDNR with PAL exemptions for styrene and benzene per s. NR 140.28, Wisconsin Administrative Code. An unbound WDNR Case Summary and Close Out Form is being submitted to the WDNR and a copy of this form is included in Appendix A of this report.

5.0 GENERAL QUALIFICATIONS

The conclusions and opinions presented are based on the samples collected, conditions at the time of sampling, and the chemical analyses performed by U.S. Oil and U.S. Filter. Environmental conditions are subject to change and variations may exist in both horizontal and vertical directions between sample locations.

This report represents STS's opinions and judgments and no other warranty, either expressed or implied, is made. The opinions presented are based on our understanding of current environmental standards in the state of Wisconsin. No representation is made or intended relative to any future standards or interpretation of existing standards.

APPENDIX A

Closure Documents

- Wisconsin Department of Natural Resources Case Summary and Close Out Form
- Case History and Justification for Closure

Tables

- Table 1 - Soil Field Observations and Laboratory Results
- Table 2 - Groundwater Data

Figures

- Figure 1 - Site Location Diagram
- Figure 2 - Facility Locations
- Figure 3 - UST #6 / #7 Soil Boring Location Diagram

RCL Calculation Sheets

- Site-Specific Residual Contaminant Level (SSRCL) Calculation Input Parameters
- Cumulative Risk Calculations
- SSRCL Calculations for Direct Contact and the Groundwater Pathway

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CASE SUMMARY AND CLOSE OUT FORM

Form ____ - ___
Rev. 11/97

FOR DEPARTMENT USE ONLY

Type of Case: LUST Spill ER Act 453 Other_____ DNR Reviewer:_____

WDNR Site Name: Carver Boat Corporation Resin and Acetone (Former Carver UST #6 / #7)

Complete Site Address: 790 Markham Drive, Pulaski, Wisconsin 54162

WDNR BRRTS Case #: 0 2 - 0 5 - 1 7 8 5 6 8 PECFA Claim #: _ _ _ _ _ _ - _ _ _ _ _ -

Responsible Party Name: Carver Boat Corporation

Complete Responsible Party Address: 790 Markham Drive, Pulaski, Wisconsin 54162

Site Legal Description: ___ 1/4, ____ 1/4, NE 1/4, Sec 6, T 25 N, R 19 (E/W) Town: Pulaski

County: Brown Latitude: 44 ° 40 ' ___ ___ . ___ " Longitude: 88 ° 13 ' 30 "

Type Of Closure Requested:

Soil	Groundwater
____ < NR 720.09/720.11 Generic RCLs	____ < NR 140.10 Table 1 & Table 2 Values
____ NR 720.19(2) Soil Performance Stds.	X NR 140.28(2) PAL Exemption
X NR 720.19(3) Site Specific Stds.	____ NR 726.05(2)(b) Natural Attenuation

Contaminant Type(s): VOCs Quantity Released: Unknown

Date of Incident/Discovery: October 3, 1997 Date Closure Submitted to DNR: _____

Enforcement Actions Closed Out? ____ Yes ____ No X NA Permits Closed Out? ____ Yes ____ No X NA

Form 4 Pending? ____ Yes X No ____ NA

I certify that, to the best of my knowledge, the information presented on and attached to this form are true and accurate. This recommendation for case closure is based upon all available data as of 1/21/99 (date). I have read the Case Summary and Close Out Form Instructions and all required information has been included.

Form completed by: William F. Noel 1/21/99

(Signature) (Date)

Printed Name: William F. Noel Firm Name: STS Consultants, Ltd.

Relationship to Site Owner: Consultant

Address: 1035 Kepler Drive, Green Bay, Wisconsin 54311

Telephone Number: 920-468-1978 FAX Number: 920-468-3312

Environmental Consultant (if different then above): _____

Address: _____

Telephone Number: _____ FAX Number: _____

WDNR BRRTS Case #: 02-05-178568 WDNR Site Name: Carver Boat Corp. Resin & Acetone (Carver UST #6 / #7)

1. CASE HISTORY AND JUSTIFICATION FOR CLOSURE ATTACHED? X Yes _____ No

2. SOIL PRE-REMEDIATION OR INVESTIGATION ANALYTICAL RESULTS

Extent Defined? X Yes ____ No Soil Type(s): Silty sand, silty clay Depth to Bedrock: Not encountered.

Potential Receptors for Direct Contact (i.e. vapor migration, contaminated soil left in place): No identified exceedances of direct contact RCLs.

Attached:
Tables of Pre-remedial Analytical Results? X Yes ____ No Maps of Pre-remedial Sample Locations? X Yes ____No

3. SOIL POST REMEDIATION ANALYTICAL RESULTS

Remedial Action Completed? ___ Yes X No 720.19 Analysis? X Yes ___ No (If yes, attach supporting documentation)

Were Soils Excavated? _____ Yes X No Quantity: _____ Disposal Method: _____

Final Confirmation Sampling Methods: _____

Soil Disposal Form Attached? ____ Yes _No X NA Final Disposal Location: _____

Estimated volume of insitu soils exceeding NR 720 RCLs: None
Attached:
Tables of Post-Remedial Analytical Results? _Yes/No X NA Maps of Post-Remedial Sample Locations? _Yes/No X NA

Brief Description of Remedial Action Taken:
NR 720.19 Analysis

4. GROUNDWATER ANALYTICAL RESULTS

Potential Receptors for Groundwater Migration Pathway: No identified exceedances of NR 140 ESs.

Extent of Contamination Defined? X Yes ____ No____ NA Remedial Action Completed? ____ Yes _____ No X NA

# of Sample Rounds: 1 Depth(s) to Groundwater/Flow Direction(s): 4' BGS/flow likely to north.

Field Analyses? X Yes ____ No Lab Analyses? X Yes ____No # of Sampling Points: 5

NR 141 Monitoring Wells Sampled: 0 # Temporary Groundwater Sampling Points Sampled: 5

Recovery Sumps Sampled: 0 # Municipal Wells Sampled: 0 # Private Wells Sampled: 0

Has DNR Been Notified of Substances in Groundwater w/o Standard? _____Yes _____No X NA

Any Potable Wells Within 1,200 Feet of Site? ___ Yes X No If Yes, How Many? _____

Have They Been Sampled? ____ Yes ____No Have Well Owners/Occupants Been Notified of Results? ____Yes ____No

Preventive Action Limit Exceeded? X Yes ____ No (If Yes, identify location(s): B-6-1, B-6-2, B-6-3

Enforcement Standard Exceeded? _____ Yes X No (If Yes, identify location(s): _____
Attached:
Tables of Analytical Results? X Yes ____ No Map of Groundwater Sample Location Map? X Yes ____ No

Brief Description of Remedial Action Taken:
Compared data to NR 140 Standards.

FOR DEPARTMENT USE ONLY

FIRST REVIEW DATE: _____ **[ ] Approved [ ] Denied**

_____	_____	_____	_____
(Signature)	(Signature)	(Signature)	(Signature)

SECOND REVIEW DATE: _____ **[ ] Approved [ ] Denied**

_____	_____	_____	_____
(Signature)	(Signature)	(Signature)	(Signature)

COMMITTEE RECOMMENDATION:

_____ **Closure Approved Per:**

- _____ No Restrictions
- _____ Groundwater Use Restriction
- _____ Zoning Verification
- _____ Deed Restriction
- _____ Deed Affidavit
- _____ Site Specific Close Out Letter Necessary
- _____ Well Abandonment Documentation
- _____ Soil Disposal Documentation
- _____ Public Notice Needed
- _____ NR 140 Exemption For: _____
- _____ Specific Comments: _____

_____ **Closure Denied, Needs More:**

- _____ Investigation
- _____ Groundwater Monitoring
- _____ Soil Remediation
- _____ Groundwater Remediation
- _____ Documentation Of Soil Landspreading Or Biopile Destiny
- _____ Specific Comments: _____

CASE HISTORY AND JUSTIFICATION FOR CLOSURE
CARVER BOAT CORPORATION
RESIN AND ACETONE USTs
(FORMER CARVER USTs #6 / #7)
PULASKI, WISCONSIN
BRRTS #02-05-178568

Two adjacent underground storage tanks (Carver USTs #6 / #7) were removed by Phenco, Inc. of Neenah, Wisconsin on October 3, 1997. STS Consultants, Ltd., (STS) performed site assessments during removal of the USTs. UST #6 was a 6,000-gallon tank which formerly contained resin, of which, styrene was a primary constituent. UST #7 was a 2,000-gallon tank which formerly contained acetone. The removal of these USTs and the site assessments are documented in a report by STS dated February 26, 1998.

No groundwater samples were collected while the USTs were being removed, nor was there evidence of groundwater impacts. STS field observations of soil conditions provided some indication of volatile organic compounds (VOCs). Laboratory soil test results indicated low-level concentrations of styrene, acetone, tetrachloroethane, and methyl tert-butyl ether (MTBE) in one or more of the soil samples (refer to Table 1).

The laboratory soil data were found to be below site-specific residual containment levels (SSRCLs) for the groundwater pathway and direct contact at non-industrial sites. Groundwater pathway SSRCLs are considered to be conservative because the average TOC concentration for Carver former UST #3 location was used instead of the substantially higher TOC measured in soil from the former USTs #6 / #7 location (USTs #3 and #6 / #7 are located in the northern portion of Carver's property).

Additionally, groundwater did not exceed NR 140 enforcement standards in any of the temporary wells (refer to Table 2). Based on the collected data and observations, STS recommends that this site be closed by the WDNR with PAL exemptions for styrene and benzene per s. NR 140.28, Wisconsin Administrative Code.

TABLE 1
SOIL FIELD OBSERVATIONS AND LABORATORY RESULTS
CARVER BOAT CORPORATION USTs #6 AND #7
PULASKI, WISCONSIN

Sample Location	Depth (feet)	FID (units)	Soil Description	Odor	Acetone (µg/kg)	Styrene (µg/kg)	MTBE (µg/kg)	Tetrachloroethene (µg/kg)	Total Organic Carbon (mg/kg)
Tank Closure Site Assessment Samples (10/97)									
6-SS-1	3	52	Dark Brown Fine to Medium Silty Sand	Slight	<100	36	<25	<25	-
6-SS-2	3	10	Dark Brown Fine to Medium Silty Sand	Possible	<100	<25	<25	26	-
6-SS-3	3	6	Dark Brown Fine to Medium Silty Sand	No	120	31	<25	51	-
6-SS-4	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	28	<25	-
6-SS-5	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	36	<25	-
S-1A	4	65	Brown Red Silty Clay	Slight	-	-	-	-	-
S-2A	4	25	Brown Red Silty Clay	Possible	-	-	-	-	-
S-3A	4	50	Brown Red Silty Clay	Slight	-	-	-	-	-
S-4A	4	7	Brown Red Silty Clay	No	-	-	-	-	-
S-5A	4	7	Brown Red Silty Clay	No	-	-	-	-	-
Site Assessment Sample (11/98)									
B-6-6	1.0-1.5	-	Dark Brown Fine to Medium Silty Sand	No	-	-	-	<27	34,700
Non-Industrial SSRCLs									
GW					1,800	41,000	160	130	
ING					7,800,000	16,000,000	390,000	12,000	
INH					4,600,000	14,000,000	14,000,000	11,000	

Notes:
VOCs not listed were not detected in any sample
- = Not Analyzed
MTBE = Methyl tert Butyl Ether
FID = Flame Ionization Detector
SSRCL = Site-Specific Residual Contaminant Level
GW = Groundwater Pathway
ING = Soil Ingestion Pathway
INH = Soil Inhalation Pathway

TABLE 2
GROUNDWATER DATA
CARVER BOAT CORPORATION UST #6 / #7
PULASKI, WISCONSIN

(Samples collected August 13, 1998)

Field Parameters

Well ID	Depth to Water (Ft from TPVC)	Dissolved Oxygen (mg/L)	Ferrous Iron (mg/L)	pH (units)	Specific Conductance (µmhos/cm)	Temperature (°F)	Color	Odor Noted
B-6-1	7.16	2	0.2	6.26	1034	72.0	Clear	None Noted
B-6-2	7.05	3	0.2	6.77	1253	72.9	Clear	None Noted
B-6-3	7.02	2	0.4	6.39	1101	73.5	Clear	None Noted
B-6-4	6.79	2	0.2	6.09	776	71.8	Clear	None Noted
B-6-5	6.95	3	1.0	6.13	1250	70.8	Clear	None Noted

Analytical Results

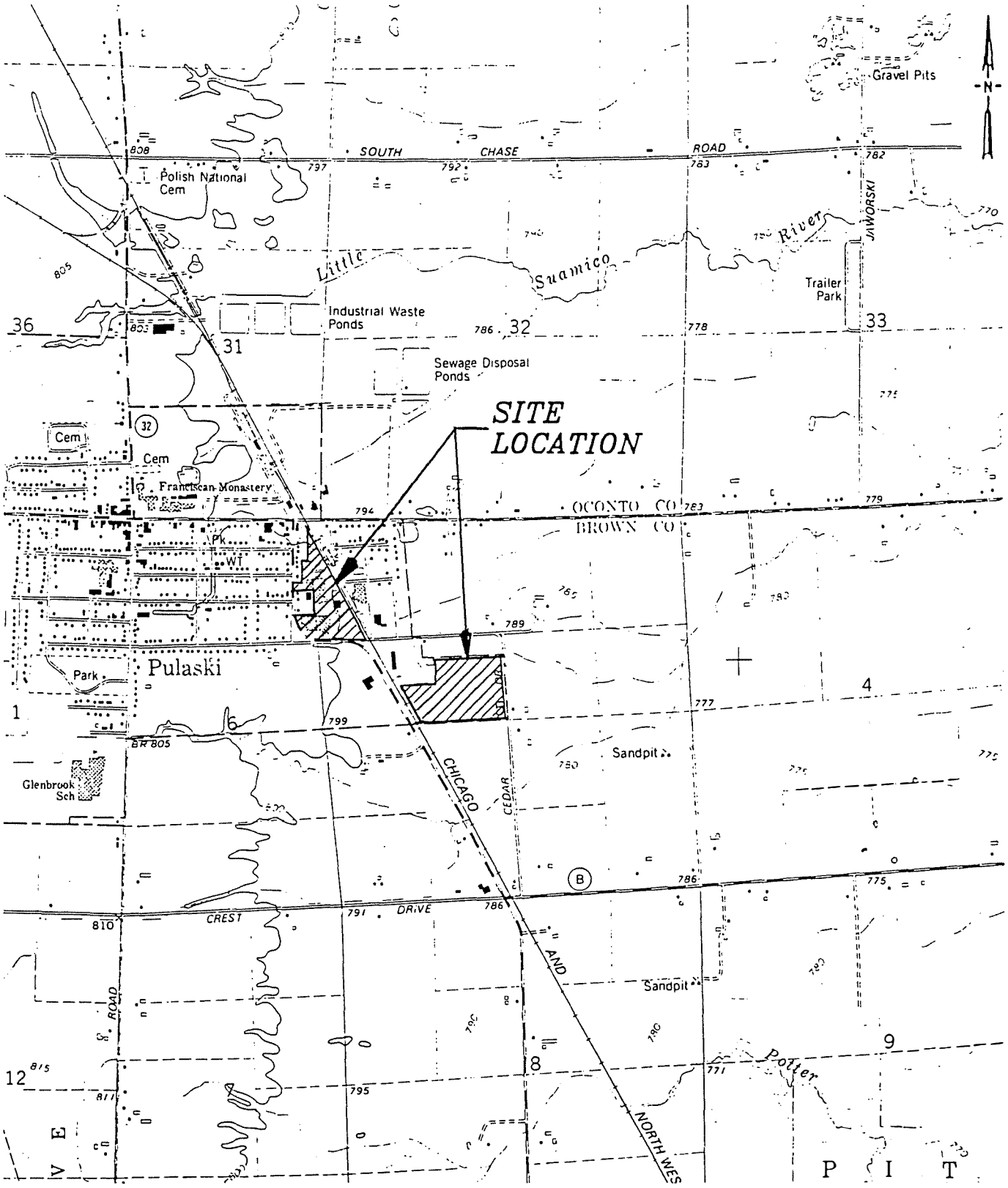
Well ID	VOCs[1] (µg/L)					Nitrate/Nitrite (mg/L)	Sulfate (mg/L)
	Acetone	Benzene	Styrene	Toluene	Xylenes		
B-6-1	11	0.53[2]	60	0.6[2]	<1.23[3]	<0.014	18
B-6-2	1.1	<0.25	20	<0.38	<1.04	<0.014	19
B-6-3	15	<0.25	98	0.39[2]	<1.44[3]	<0.014	10
B-6-4	0.92[2]	<0.25	<0.74	<0.38	<1.04	<0.014	10
B-6-5	<0.28	<0.25	0.91[2]	<0.38	<1.04	0.47	84
NR 140 ES	1000	5.0	100	343	620		
NR 140 PAL	200	0.5	10	68.6	124		

[1]VOCs not listed were not detected

[2]Analyte detected, but below limit of quanititation

[3]o-xylene detected, but below limit of quantitation; m&p-xylene not detected

NE: Not established



MAP SOURCE: MODIFIED FROM PULASKI, WIS. U.S.G.S. QUADRANGLE DATED 1974.

STS Consultants Ltd.
Consulting Engineers

SITE LOCATION DIAGRAM
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F001	SCALE 1"=2000'	
STS PROJECT NO. 23379XF	FIGURE NO. 1	

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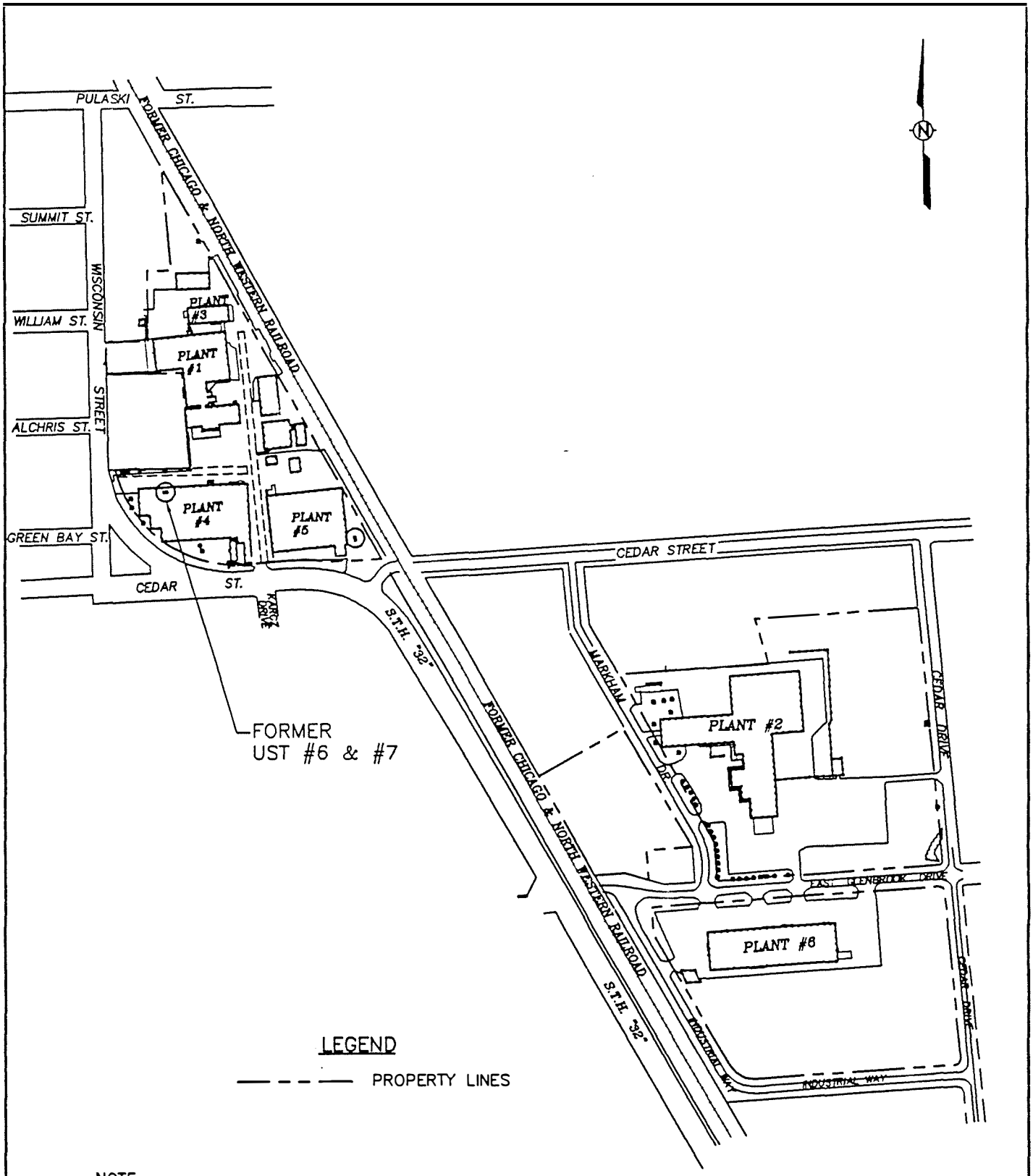
02/23/1998 15:14



NOTE:
MAP MODIFIED FROM DRAWINGS FROM ROBERT E. LEE AND ASSOC.

STS Consultants Ltd.
Consulting Engineers

FACILITY LOCATIONS
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F04	SCALE 1"=500'	
STS PROJECT NO. 23379XF	FIGURE NO. 2	

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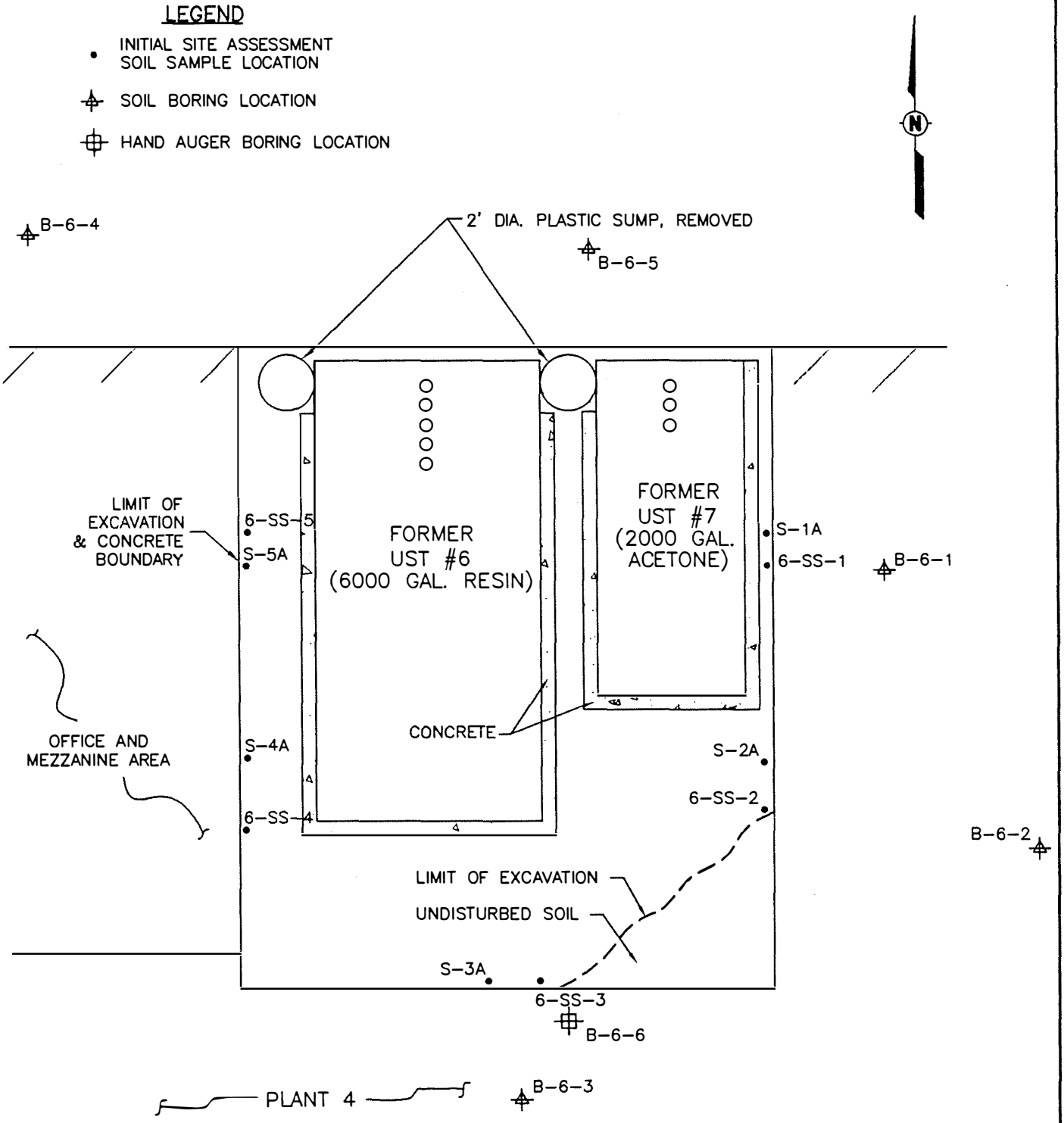
02/24/1998 09:54



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01/05/1999 15:34

STS Consultants Ltd.
Consulting Engineers

UST #6/#7 SOIL BORING LOCATION DIAGRAM
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	R.A.B.	12-18-98
CHECKED BY	W.F.N.	12-18-98
APPROVED BY		
CADFILE	SCALE	1"=5'
STS PROJECT NO. 23379XA	FIGURE NO.	3

Site-Specific Residual Contaminant Level (SSRCL) Calculation Input Parameters
Carver Boat Corporation USTs #6 and #7
Pulaski, Wisconsin
STS Project No. 23379XA

Parameter	SFo		SFi		RfD		RfC		K_{oc}		H'		Da		Dw	
	$(mg/kg\text{-}day)^{-1}$	Source	$(mg/kg\text{-}day)^{-1}$	Source	(mg/kg-day)	Source	(mg/m^3)	Source	(L/kg)	Source	(unitless)	Source	(cm^2/s)	Source	(cm^2/s)	Source
PVOCs																
Acetone					1.0E-01	1	3.5E-01	6	0.575	5	1.59E-03	5	1.24E-01	5	1.14E-05	5
Methyl tert-butyl ether					5.0E-03	4	3.0E+00	1	12.0	9	2.28E-02	7	1.24E-01	7	1.05E-05	7
Styrene					2.0E-01	1	1.0E+00	1	776	5	1.13E-01	5	7.10E-02	5	8.00E-06	5
Tetrachloroethene	5.2E-02	3	2.0E-03	3	1.0E-02	1	3.85E-01	6	155	5	7.54E-01	5	7.20E-02	5	8.20E-06	5

NOTES:

1) Abbreviations for RCL chemical fate parameters and health criteria are defined on the calculation sheets.

2) For Xylene, chemical fate parameters are those published for "p-xylene".

SOURCES:

1) EPA (U.S. Environmental Protection Agency). 1998. Integrated Risk Information System (IRIS). Office of Solid Waste and Emergency Response, Washington, D.C. On-line database available through TOXNET, National Library of Medicine, Bethesda, Maryland.

2) EPA (U.S. Environmental Protection Agency). 1997a. Health Effects Assessment Summary Tables (HEAST). FY-1997 Annual Update. (and Update to Annual) Office of Emerg. and Remedial Response, Washington, D.C.

3) EPA (U.S. Environmental Protection Agency). 1997b. Provisional Toxicity Values Under Development (personal communication). National Center for Environmental Assessment (NCEA). Superfund Technical Support Center (phone: 513-569-7300). Cincinnati, Ohio.

4) EPA (U.S. Environmental Protection Agency). 1997c. Region III (EPA-III) Risk-Based Concentration (RBC) Table for April 1997. [includes documentation of human health criteria that are provisional and/or withdrawn from IRIS or HEAST.] Roy L. Smith, PhD. Office of RCRA. Technical and Program Support Branch. 841 Chestnut Street, Philadelphia, PA 19107.

5) EPA (U.S. Environmental Protection Agency). 1996. Soil Screening Guidance: Technical Background Document. Office of Solid Waste and Emergency Response, Washington, D.C.

6) EPA (U.S. Environmental Protection Agency). 1998. Region 9 Preliminary Remediation Goals (PRGs). Stanford J. Smucker, Ph. D. Regional Toxicologist. 75 Hawthorne Street, San Francisco, CA

7) EPA (U.S. Environmental Protection Agency). 1998. CHEMDAT8 air model chemicals properties database (file: DATATWO.WK1) obtained from EPA's web site.

8) HSDB (Hazardous Substance Data Bank). 1998. On-Line toxicological database available through the National Library of Medicine.

9) ASTM. 1995. Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites (E 1739-95$^{\varepsilon 1}$). West Conshohocken, Pennsylvania.

Cumulative Risk Calculation
Carver Boat Corporation
Pulaski, Wisconsin
STS Project No. 23379XA

Compound	Highest Soil Conc. (mg/kg)	Carcinogens						Non-Carcinogens			
		Ingestion (SFo)			Inhalation (SFi)			Ingestion (RfD)		Inhalation (RfC)	
		RCL (10^{-6}) (mg/kg)	RCL (10^{-5}) (mg/kg)	Soil Conc. / RCL (10^{-5})	RCL (10^{-6}) (mg/kg)	RCL (10^{-5}) (mg/kg)	Soil Conc. / RCL (10^{-5})	RCL (mg/kg)	Soil Conc. / RCL	RCL (mg/kg)	Soil Conc. / RCL
VOCs											
Acetone	0.12							7800	1.54E-05	4600	2.61E-05
Methyl tert butyl ether	0.036							390	9.23E-05	14000	2.57E-06
Styrene	0.031							16000	1.94E-06	14000	2.21E-06
Tetrachloroethene	0.051	12	120	0.00043	11	110	0.00046	780	6.54E-05	1000	5.10E-05
Cumulative Risk or Cumulative Hazard*				**0.0004**			**0.0005**		**0.0002**		**0.0001**

Calculated by: Roger Miller 12/21/98

Checked by: [illegible] 1-12-99

Notes:

1)*Summation of chemical-specific ratios (i.e., soil conc./RCL).

2) For carcinogens, the highest soil concentration was divided by the adjusted RCL (adjusted to a target risk of 1×10^{-5}). The sum of these ratios is below 1 for the ingestion and inhalation pathways. Accordingly, the cumulative risk does not exceed 1×10^{-5}.

3) For non-carcinogens, the highest soil concentration was divided by the RCL. The sum of these ratios is below 1 for the ingestion and inhalation pathways. Accordingly, the cumulative hazard does not exceed a hazard quotient of 1.

4) Risks for carcinogens and noncarcinogens are conservatively presumed to be additive within each exposure pathway.

5) All RCLs for Volatile Organic Compounds (VOCs) were derived from site-specific calculations.

Acetone

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-01	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{7800}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-01	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{100000}$$

Calculated by: Roger Miller 12/21/98

Checked by: [illegible] 1-25-99

Note:
See list of references for numbered source citations.

Acetone

Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.5E-01	6
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.26E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ} \times \text{AT} \times 365\ \text{day/year}}{1/\text{RfC} \times \text{EF} \times \text{ED} \times [(1/\text{VF}) + (\text{Cp} \times 10^{-9}\ \text{kg}/\mu\text{g})]} = \boxed{4600}$$

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25.	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.5E-01	6
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.26E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ} \times \text{AT} \times 365\ \text{day/year}}{1/\text{RfC} \times \text{EF} \times \text{ED} \times \text{IRc} \times [(1/\text{VF}) + (\text{Cp} \times 10^{-9}\ \text{kg}/\mu\text{g})]} = \boxed{5400}$$

$$\text{Volatilization Factor } (m^3/kg) = \frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times \rho_b \times D_A} = \boxed{1.26E+04}$$

$$D_A\ (cm^2/sec) = \frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'} = \boxed{9.91E-05}$$

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source (g/m^2-sec)/(kg/m^3)	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	9.91E-05	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	1.24E-01	5
H' - Henry's Law Constant (unitless)	1.59E-03	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	1.14E-05	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.00345	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	0.575	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: Tom Cathy 1-13-99

Note:
See list of references for numbered source citations.

Methyl tert-butyl ether

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	5.0E-03	4
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{390}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	5.0E-03	4
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{5100}$$

Calculated by: Roger Miller 12/21/98

Checked by: [signature] 1-12-99

Note:
See list of references for numbered source citations.

Methyl tert-butyl ether
Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.0E+00	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	4.35E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **14000**

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.0E+00	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	4.35E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times IRc \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **16000**

Volatilization Factor (m^3/kg) = $\frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A}$ = **4.35E+03**

D_A (cm^2/sec) = $\frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'}$ = **8.31E-04**

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source (g/m^2-sec)/(kg/m^3)	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	8.31E-04	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	1.24E-01	7
H' - Henry's Law Constant (unitless)	2.28E-02	7
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	1.05E-05	7
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.07	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	12	9
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: [signature] 1-13-99

Note:
See list of references for numbered source citations.

Styrene

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	2.0E-01	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{16000}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	2.0E-01	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{200000}$$

Calculated by: Roger Miller 12/21/98

Checked by: [illegible] 1-12-99

Note:
See list of references for numbered source citations.

Styrene

Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	1.0E+00	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.34E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ} \times \text{AT} \times 365 \text{ day/year}}{1/\text{RfC} \times \text{EF} \times \text{ED} \times [(1/\text{VF}) + (\text{Cp} \times 10^{-9} \text{ kg/}\mu\text{g})]} = 14000$$

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25.	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	1.0E+00	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	1.34E+04	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ} \times \text{AT} \times 365 \text{ day/year}}{1/\text{RfC} \times \text{EF} \times \text{ED} \times \text{IRc} \times [(1/\text{VF}) + (\text{Cp} \times 10^{-9} \text{ kg/}\mu\text{g})]} = 16000$$

$$\text{Volatilization Factor } (m^3/kg) = \frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A} = 1.34E+04$$

$$D_A \ (cm^2/sec) = \frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'} = 8.70E-05$$

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source $(g/m^2\text{-sec})/(kg/m^3)$	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	8.70E-05	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	7.10E-02	5
H' - Henry's Law Constant (unitless)	1.13E-01	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	8.00E-06	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	4.66	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	776	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: [signature] 1-13-98

Note:
See list of references for numbered source citations.

Tetrachloroethene

Soil Ingestion Pathway (SFo)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Carcinogenic Contaminants in Non-Industrial Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFo - Slope Factor Oral $(mg/kg\text{-}day)^{-1}$	5.2E-02	3
EF - Exposure Frequency (day/year)	350	WDNR Default Value
IFs - Age Adjusted Soil Ingestion Factor (mg-year/kg-day)	114	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
BWc - Average Body Weight From Ages 1-6 (kg)	15	WDNR Default Value
IRa - Ingestion Rate of Soil Age 7-31 (mg/day)	100	WDNR Default Value
EDa - Exposure Duration During Ages 7-31 (year)	24	WDNR Default Value
BWa - Average Body Weight From Ages 7-31 (kg)	70	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{TR \times AT \times 365\ day/year}{SFo \times 10^{-6}\ kg/mg \times EF \times IFs} = \boxed{12}$$

$$IFs = \frac{IRc \times EDc}{BWc} + \frac{IRa \times EDa}{BWa} = 114$$

Algorithm for Ingestion of Carcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFo - Slope Factor Oral $(mg/kg\text{-}day)^{-1}$	5.2E-02	3
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{TR \times BWa \times AT \times 365\ day/year}{SFo \times 10^{-6}\ kg/mg \times EF \times ED \times IRa} = \boxed{55}$$

Calculated by: Roger Miller 12/21/98

Checked by: [signature] 1/12/99

Note:

See list of references for numbered source citations.

Tetrachloroethene

Soil Inhalation Pathway (SFi)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Carcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFi - Slope Factor Inhalation $(mg/kg\text{-}day)^{-1}$	2.0E-03	3
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
IR - Inhalation Rate (m^3/day)	20	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{TR \times BWa \times AT \times 365\ day/year}{SFi \times EF \times ED \times IR \times [(1/VF) + Cp \times 10^{-9}\ kg/\mu g)]}$ = **11**

Algorithm for Inhalation of Carcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
TR - Target Cancer Risk Level (unitless)	1E-06	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	70	WDNR Default Value
SFi - Slope Factor Inhalation $(mg/kg\text{-}day)^{-1}$	2.0E-03	3
EF- Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRw - Inhalation Rate for Adult Laborer (m^3/day)	24	WDNR Default Value
VF - Volatilization Factor (kg/m^3)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{TR \times BWa \times AT \times 365\ day/year}{SFi \times EF \times ED \times IRw \times [(1/VF) + Cp \times 10^{-9}\ kg/\mu g)]}$ = **15**

Volatilization Factor (m^3/kg) = $\frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times \rho_b \times D_A}$ = **2.56E+03**

D_A (cm^2/sec) = $\frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'}$ = **2.40E-03**

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source $(g/m^2\text{-}sec)/(kg/m^3)$	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	2.40E-03	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	7.20E-02	5
H' - Henry's Law Constant (unitless)	7.54E-01	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	8.20E-06	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.93	$K_{oc} \times f_{oc}$
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	155	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: Tom Crotty

Note:
See list of references for numbered source citations.

Tetrachloroethene

Soil Ingestion Pathway (RfD)

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Algorithm for Ingestion of Noncarcinogenic Contaminants in Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWc - Average Body Weight for Child (kg)	15	WDNR Default Value
AT - Averaging Time (years)	6	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-02	1
EF - Exposure Frequency (day/year)	350	WDNR Default Value
EDc - Exposure Duration During Ages 1-6 (year)	6	WDNR Default Value
IRc - Ingestion Rate of Soil Age 1-6 (mg/day)	200	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWc x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRc}} = \boxed{780}$$

Algorithm for Ingestion of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
BWa - Average Body Weight For Adult (kg)	70	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfDo - Oral Reference Dose (mg/kg-day)	1.0E-02	1
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRa - Ingestion Rate for Adult (mg/day)	100	WDNR Default Value

$$\text{Residual Contaminant Level (mg/kg)} = \frac{\text{THQ x BWa x AT x 365 day/year}}{\text{1/RfDo x } 10^{-6} \text{ kg/mg x EF x ED x IRa}} = \boxed{10000}$$

Calculated by: Roger Miller 12/21/98

Checked by: [illegible] 12-29

Note:

See list of references for numbered source citations.

Tetrachloroethene
Soil Inhalation Pathway (RfC)

Carver Boat Corporation USTs #6 and 7
Pulaski, Wisconsin

Algorithm for Inhalation of Noncarcinogenic Contaminants from Non-Industrial (Residential) Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT- Averaging Time (years)	30	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.9E-01	6
EF - Exposure Frequency (day/year)	350	WDNR Default Value
ED - Exposure Duration (year)	30	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **1000**

Algorithm for Inhalation of Noncarcinogenic Contaminants in Industrial Soil

Parameter	Value	Source
THQ - Target Hazard Quotient (unitless)	1	WDNR Default Value
AT - Averaging Time (years)	25	WDNR Default Value
RfC - Reference Concentration (mg/m^3)	3.9E-01	6
EF - Exposure Frequency (day/year)	250	WDNR Default Value
ED - Exposure Duration (year)	25	WDNR Default Value
IRc - Inhalation Rate Correction for Adult Laborer (unitless)	1.2	WDNR Default Value
VF - Volatilization Factor (m^3/kg)	2.56E+03	Calculation
Cp - Concentration of Particles less than 10 μm ($\mu g/m^3$)	1.4	WDNR Default Value

Residual Contaminant Level (mg/kg) = $\frac{THQ \times AT \times 365\ day/year}{1/RfC \times EF \times ED \times IRc \times [(1/VF) + (Cp \times 10^{-9}\ kg/\mu g)]}$ = **1200**

Volatilization Factor (m^3/kg) = $\frac{Q/C \times (3.14 \times D_A \times T)^{1/2} \times 10^{-4} m^2/cm^2}{2 \times \rho_b \times D_A}$ = **2.56E+03**

D_A (cm^2/sec) = $\frac{[(\theta_a^{10/3} D_a H' + \theta_w^{10/3} D_w)/n^2]}{\rho_b K_d + \theta_w + \theta_a H'}$ = **2.40E-03**

Parameter	Value	Source
Q/C - Inverse Mean Concentration at Center of Source $(g/m^2\text{-sec})/(kg/m^3)$	68.81	WDNR Default Value
D_A - Apparent Diffusivity (cm^2/sec)	2.40E-03	Calculation
T - Exposure Intervals (sec)	9.50E+08	WDNR Default Value
ρ_b - Soil Dry Bulk Density (g/cm^3)	1.5	WDNR Default Value
θ_a - Air Filled Porosity (cm^3/cm^3)	0.28	WDNR Default Value
D_a - Air Diffusion Coefficient (cm^2/sec)	7.20E-02	5
H' - Henry's Law Constant (unitless)	7.54E-01	5
θ_w - Volumetric Soil Moisture Content (cm^3/cm^3)	0.15	WDNR Default Value
D_w - Water Diffusion Coefficient (cm^2/sec)	8.20E-06	5
n - Total Soil Porosity (cm^3/cm^3)	0.43	WDNR Default Value
K_d - Soil:Water Distribution Coefficient (L/kg)	0.93	Koc x foc
K_{oc} - Organic Carbon:Water Partitioning Coefficient (L/kg)	155	5
f_{oc} - Soil Fraction Organic Carbon (g/g)	0.006	WDNR Default Value

Calculated by: Roger Miller 12/21/98

Checked by: Tom Crafey

Note:
See list of references for numbered source citations.

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Acetone--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**0.575**	L/kg	Organic Carbon Partition Coefficient	EPA Soil Screening Guidance[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	0.0021	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_20/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	1000	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 13.0 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **1.8** mg/kg **Acetone** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: LWN 12/21/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]USEPA, 1996, Soil Screening Guidance: Technical Background Document: Publication EPA/540/R-95/128, Washington, D. C.

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Methyl tert-butyl ether--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**12**	L/kg	Organic Carbon Partition Coefficient	ASTM RBCA[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	0.0432	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_2O/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	60	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 14.8 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **0.16** mg/kg **MTBE** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: LEN 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]ASTM, 1995, Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites. (E1739-95$^{\varepsilon 1}$).

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Tetrachloroethene--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**155**	L/kg	Organic Carbon Partition Coefficient	EPA Soil Screening Guidance[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	0.5580	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_20/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	5	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 38.0 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **0.13** mg/kg **Tetrachloroethene** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: [illegible] 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]USEPA, 1996, Soil Screening Guidance: Technical Background Document: Publication EPA/540/R-95/128, Washington, D. C.

Carver Boat Corporation USTs #6 and 7

Pulaski, Wisconsin

Styrene--Groundwater Pathway

Site-Specific Residual Contaminant Level Calculation

Parameter	Value	Units	Description	Source
K_{oc}	**776**	L/kg	Organic Carbon Partition Coefficient	EPA Soil Screening Guidance[1]
f_{oc}	**0.0036**	g/g	Fraction Organic Carbon Content	Average TOC--Site UST #3
K_d	2.7936	L/kg	Soil:Water Distribution Coefficient	K_{oc} x f_{oc}
θ	0.2	cm^3-H_2O/cm^3-soil	Volumetric Water Content, Vadose Zone Soils	WDNR Default Value
n	0.43	cm^3-void/cm^3-soil	Porosity	WDNR Default Value
d	152.4	cm	Groundwater Mixing Zone Thickness	WDNR Default Value
R	25.4	cm	Annualized Groundwater Recharge Rate	WDNR Default Value
ρ_b	1.5	g-soil/cm^3-soil	Soil Bulk Density	WDNR Default Value
ES	100	µg/L	Enforcement Standard	NR 140

Calculate Site-Specific Residual Contaminant Level (RCL)

$$DAF = d/R\theta \times (K_d \times \rho_b + n)$$

DAF 138.6 Dilution Attenuation Factor

$$RCL_{ES} = ES \times 10^{-3}_{mg/\mu g} \times (K_d + \theta/\rho_b) \times DAF$$

RCL_{ES} **41** mg/kg **Styrene** Site-Specific Residual Contaminant Level using ES

Calculated by: Roger Miller 12/21/98

Checked by: WPM 12/23/98

Notes:

1) Site-Specific Residual Contaminant Level (RCL) equation and default values from WDNR Publication RR-519-97, "Soil Cleanup Levels for Polycyclic Aromatic Hydrocarbons (PAHs)--Interim Guidance" (April 1997).

2) NR 140 Enforcement Standard from s. NR140.10, Wisconsin Administrative Code (October 1996).

3) [1]USEPA, 1996, Soil Screening Guidance: Technical Background Document: Publication EPA/540/R-95/128, Washington, D. C.

APPENDIX B

Soil Borings Logs

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solida Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other

Soil Boring Log Information

Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Carver Boat Corporation Plant 4		**B-6-1**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants Ltd. - B. Vande Hey - STS Project No. 23379XA	**07/17/98**	**07/17/98**	**Solid-Stem Auger**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**4.0** Inches

Boring Location
State Plane **N, E** Lat ° ' "
1/4 of **NE** 1/4 of Section **6** T **25** N, R **19** E Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Brown	**05**	**Pulaski**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Fill: Concrete										
			2	Fill: Light brown fine silty sand										
			4											
1	24		6	Brownish red silty sandy clay - occasional silty sand seams - moist to wet at 6.5 feet (Soil was classified from auger cuttings, excluding split spoon from 5.0 feet to 7.0 feet)										SS
			8											
			10	End of Boring Boring advanced from 0.0 feet to 10.0 feet by solid-stem auger to refusal Installed 2-inch diameter Schedule 40 PVC temporary monitoring well at 9.5 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature William F. Vande Hey djp23379

Firm STS Consultants, Ltd.
1035 Kepler Drive, Green Bay, Wisconsin
Tel: 920-468-1978; Fax: 920-468-3312

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solida Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other

Soil Boring Log Information
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Carver Boat Corporation Plant 4		**B-6-2**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants Ltd. - B. Vande Hey - STS Project No. 23379XA	**07/17/98**	**07/17/98**	**Solid-Stem Auger**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**4.0** Inches

Boring Location
State Plane N, E Lat ° ' "
1/4 of **NE** 1/4 of Section **6** T **25** N, R **19** E Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Brown	**05**	**Pulaski**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Fill: Concrete										
			2	Fill: Light brown fine silty sand										
			4											
1	18		6	Brownish red silty clay - trace small gravel - moist to wet at 6.5 feet (Soil was classified from auger cuttings, excluding split spoon from 5.0 feet to 7.0 feet)										SS
			8											
			10	End of Boring Boring advanced from 0.0 feet to 10.5 feet by solid-stem auger Installed 2-inch diameter Schedule 40 PVC temporary monitoring well at 10.0 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature William F. Vande Hey
djp23379

Firm STS Consultants, Ltd.
1035 Kepler Drive, Green Bay, Wisconsin
Tel: 920-468-1978; Fax: 920-468-3312

This form is authorized by Chapters 144, 147 and 162, Wis. Stats. Completion of this report is mandatory. Penalties: Forfeit not less than $10 nor more than $5,000 foreach violation. Fined not less than $10 or more than $100 or imprisoned not less than 30 days, or both for each violation. Each day of continued violation is a separate offense, pursuant to ss 144.99 and 162.02, Wis. Stats.

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solida Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other

Soil Boring Log Information
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Carver Boat Corporation Plant 4		**B-6-3**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants Ltd. - B. Vande Hey - STS Project No. 23379XA	**07/17/98**	**07/17/98**	**Solid-Stem Auger**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**4.0** Inches

Boring Location
State Plane N, E Lat ° ' "
1/4 of **NE** 1/4 of Section **6** T **25** N, R **19** E Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Brown	**05**	**Pulaski**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			2	Fill: Concrete Fill: Light brown fine silty sand										
1	24		4 6 8 10	Brownish red silty clay - occasional silty sand seams - trace small gravel - moist to wet at 6.5 feet (Soil was classified from auger cuttings, excluding sample from 5.0 feet to 7.0 feet)										SS
				End of Boring Boring advanced from 0.0 feet to 10.5 feet by solid-stem auger Installed 2-inch diameter Schedule 40 PVC temporary monitoring well at 10.0 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature William F. Noel djp23379

Firm STS Consultants, Ltd.
1035 Kepler Drive, Green Bay, Wisconsin
Tel: 920-468-1978; Fax: 920-468-3312

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solida Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other

Soil Boring Log Information
Form 4400-122 Rev. 5-92

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Carver Boat Corporation Plant 4		**B-6-4**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants Ltd. - B. Vande Hey - STS Project No. 23379XA	**07/17/98**	**07/17/98**	**Solid-Stem Auger**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**4.0** Inches

Boring Location
State Plane N, E Lat ° ' "
1/4 of **NE** 1/4 of Section **6** T **25** N, R **19** E Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Brown	**05**	**Pulaski**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	Fill: Asphalt										
				Fill: Light brown fine silty sand										
			2											
			4											
1	24		6	Brownish red silty sandy clay - occasional silty sand seams - trace small gravel - moist to wet at 6.5 feet (Soil was classified from auger cuttings, excluding split spoon sample from 5.0 feet to 7.0 feet)										SS
			8											
			10											
				End of Boring Boring advanced from 0.0 feet to 10.5 feet by solid-stem auger Installed 2-inch diameter Schedule 40 PVC temporary monitoring well at 10.0 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature William F. Noel

djp23379

Firm STS Consultants, Ltd.
1035 Kepler Drive, Green Bay, Wisconsin
Tel: 920-468-1978; Fax: 920-468-3312

State of Wisconsin
Department of Natural Resources

Route To:
☐ Solida Waste ☐ Haz. Waste
☐ Emergency Response ☐ Underground Tanks
☐ Wastewater ☐ Water Resources
☐ Superfund ☐ Other

Soil Boring Log Information
Form 4400-122 Rev. 5-92

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Carver Boat Corporation Plant 4		**B-6-5**

Boring Drilled By (Firm name and name of crew chief)	Date Drilling Started	Date Drilling Completed	Drilling Method
STS Consultants Ltd. - B. Vande Hey - STS Project No. 23379XA	**07/17/98**	**07/17/98**	**Solid-Stem Auger**

DNR Facility Well No.	WI Unique Well No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet MSL	Feet MSL	**4.0** Inches

Boring Location
State Plane N, E Lat ° ' "
1/4 of **NE** 1/4 of Section **6** T **25** N, R **19** E Long ° ' "

Local Grid Location (If applicable)
☐ N ☐ E
Feet ☐ S Feet ☐ W

County	DNR County Code	Civil Town/City/ or Village
Brown	**05**	**Pulaski**

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Fill: Asphalt										
			2	Fill: Light brown fine silty sand - trace small gravel										
			4											
1	24		6	Brownish red silty sandy clay - trace small gravel - moist to wet at 6.5 feet (Soil was classified from auger cuttings, excluding split spoon from 5.0 feet to 7.0 feet)									SS
			8											
			10	End of Boring Boring advanced from 0.0 feet to 10.5 feet by solid-stem auger Installed 2-inch diameter Schedule 40 PVC temporary monitoring well at 10.0 feet										

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature William F. Noel
djp23379

Firm STS Consultants, Ltd.
1035 Kepler Drive, Green Bay, Wisconsin
Tel: 920-468-1978; Fax: 920-468-3312

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APPENDIX C

Soil and Groundwater Analytical Reports

USFilter

ENVIROSCAN SERVICES
301 WEST MILITARY ROAD
ROTHSCHILD, WI 54474

TELEPHONE 715-359-7226
FACSIMILE 715-355-3221

December 1, 1998

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

Attn: Pat Mccarey

Re: 23379XA

Please find enclosed the analytical results for the sample(s) received November 17, 1998.

The chain of custody document is enclosed.

If you have any questions about the results, please call. Thank you for using US Filter/Enviroscan for your analytical needs.

Sincerely,

US Filter/Enviroscan

James R. Salkowski

James R. Salkowski
General Manager

USFilter

UNITED STATES FILTER CORPORATION

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

CUST NUMBER: 23379XA
SAMPLED BY: Client
DATE REC'D: 11/17/98
REPORT DATE: 12/01/98
PREPARED BY: JRS
REVIEWED BY:

Attn: Pat McCarey

	Units	Reporting Limit	B-6-6 1-1.5 11/12/98	Qualifiers	Date Analyzed	By
MOSA21-2						
Total Solids	%	-	92.50		11/25/98	SKM
Analytical No.:			55607			

USFilter

UNITED STATES FILTER CORPORATION

STS Consultants
1035 Kepler Drive
Green Bay, WI 54311

Attn: Pat Mccarey

CUST NUMBER: 23379XA
SAMPLED BY: Client
DATE REC'D: 11/17/98
REPORT DATE: 12/01/98
PREPARED BY: JRS
REVIEWED BY:

Client Sample B-6-6 1-1.5 , Enviroscan Analytical # 55607, Results are in Units of mg/kg

Method EPA 8021	MDL	LUST LOD	LUST LOQ	RESULT Wet		RESULT Dry		Quality Control Qualifiers	Analysis Date
Tetrachloroethylene	0.002	0.025	0.060	<	0.025	<	0.027		11/22/98

ENVIRONMENTAL MONITORING AND TECHNOLOGIES, INC.

8100 North Austin Avenue
Morton Grove, Illinois 60053-3203
847-967-6666
FAX: 847-967-6735

LABORATORY REPORT

190026
Page 1 of 1

US Filter/Enviroscan
301 W. Military Road
Rothschild, WI 54474

Report Date: 12/1/98
Sample Received On Ice: 11/20/98
Date Sampled: 11/20/98

Project No.: 11055607
Sample Description: Soil Grab - 11055607
Sample No.: 056399

Analyte	Result	Date Completed	By	Method
Total Organic Carbon	34700	11/25/98	RG	9060(6)

Wisconsin Certified Laboratory #999888890.

All results expressed as ppm unless otherwise indicated

(6) Methods performed according to SW-846 "Test Methods for Evaluating Solid Waste"

The contents of this report apply to the sample analyzed. No duplication of this report is allowed except in its entirety

LABORATORY DIRECTOR

USFilter

UNITED STATES FILTER CORPORATION

Sample Receipt Report

Client: STS Green Bay Date Received: 11 / 17 / 98

Analytical No.: 1105607 Through _____

Check all deviations from EPA or WDNR sample protocol.

[ ] Sample(s) received at _____°C which is above the EPA and WDNR limit of 4°C.

[ ] VOC vial(s) received with headspace. Explain: _____

_____

[ ] Sample(s) received in bottles not furnished by U.S.FILTER/ENVIROSCAN. Preservation method, if used, is unknown.

[ ] Sample(s) not properly preserved per EPA/WDNR protocol for the following:

_____

[ ] Sample(s) received beyond EPA holding time for: _____

_____

[ ] Sample date/time not supplied by client. Actual holding time unknown.

[ ] GRO/PVOC/VOC/DRO (circle appropriate) sample(s) are <19.5 gms and this report is the flag for that information. Sample(s) under-weight: _____

_____

[✓] GRO/PVOC/VOC (circle appropriate) sample(s) were between 26.4-35.4 gms so methanol was added in a 1:1 ratio. Samples(s) included: 1105607 +2ml

_____

[ ] GRO/PVOC/VOC/DRO (circle appropriate) sample(s) were >35.4 gms and are required to be rejected. Sample(s) included: _____

[ ] Other: _____

_____

Client contact concerning the above deviations:

Client _____(contact name) notified of the above deviation(s) of the above deviation(s) on ____/____/____ at ___:___AM/PM by _____
(signature)

and the client ordered: [ ] Proceed with analyses as ordered.
[ ] Proceed with analyses after taking the following corrective action:

_____

[ ] Do NOT proceed with the analyses.

CHAIN OF CUSTODY RECORD

№ 24600

Contact Person Pat McCarney
Phone No. Office
Project No. ~~2?????~~ 23379XA PO No.
Project Name

Special Handling Request
☐ Rush
☐ Verbal
☐ Other

RECORD NUMBER ______ THROUGH ______
Laboratory Envirosca
Contact Person
Phone No.
Results Due

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	PH	Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
	11/12												TOC-sub	perch voc un grout TS
B-6-6 1.0-1.5			X	4		Soil	X			1305560?7			TOC + TETRACHLOROETHYLENE	

Collected by: Pat McCarney	Date 11/12	Time 1700	Delivery by: Courier	Date 11/13	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by: D.G. Schulz	Date 11-17-98	Time 09:40	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☐ Yes ☐ No ☐ N/A on ice

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):
St: gro
6062
210753
12-1

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

9/94cp10k

STS Consultants Ltd.
Consulting Engineers

U.S. Oil Co., Inc.

Analytical Laboratory

1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-1
Lab Code: 5022497D
Sample Type: Water
Sample Date: 13-Aug-98

Test	Result	LOD	LOQ	Unit	pH	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
NITROGEN (NITRATE/NITRITE)									
EPA 300.0	< 0.014	0.014	0.05	MG/L	0.8	10	17-Aug-98	TJW	1
SULFATE									
EPA 300.0	18	0.024	0.079	MG/L	7.0	1	21-Aug-98	TJW	1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

Method 8260 Volatile Organic Compounds

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98
Analyzed By: CJR

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-1
Lab Code: 5022497D
Sample Type: Water
Sample Date: 13-Aug-98
Date Analyzed: 24-Aug-98

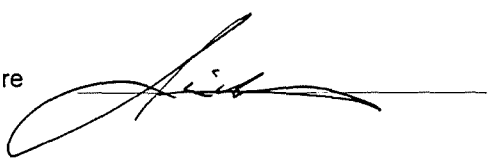
ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
Acetone	11	0.28	0.93	1
Benzene	0.53 "J"	0.25	0.85	1
Bromobenzene	< 0.23	0.23	0.77	1
Bromodichloromethane	< 0.25	0.25	0.84	1
n-Butylbenzene	< 0.43	0.43	1.4	1
sec-Butylbenzene	< 0.37	0.37	1.2	1
tert-Butylbenzene	< 0.4	0.4	1.3	1
Carbon Tetrachloride	< 0.48	0.48	1.6	1
Chlorobenzene	< 0.26	0.26	0.87	1
Chloroethane	< 0.15	0.15	0.51	1
Chloroform	< 0.26	0.26	0.87	1
Chloromethane	< 0.29	0.29	1	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.27	0.27	0.91	1
1,2-Dibromo-3-Chloropropane	< 0.51	0.51	1.7	1
Dibromochloromethane	< 0.31	0.31	1	1
1,2-Dichlorobenzene	< 0.28	0.28	0.93	1
1,3-Dichlorobenzene	< 0.34	0.34	1.1	1
1,4-Dichlorobenzene	< 0.26	0.26	0.87	1
Dichlorodifluoromethane	< 0.54	0.54	1.8	1
1,1-Dichloroethane	< 0.32	0.32	1.1	1
1,2-Dichloroethane	< 0.14	0.14	0.48	1
1,1-Dichloroethene	< 0.61	0.61	2	1
cis-1,2-Dichloroethene	< 0.34	0.34	1.1	1
trans-1,2-Dichloroethene	< 0.46	0.46	1.5	1
1,2-Dichloropropane	< 0.26	0.26	0.86	1
1,3-Dichlorooropane	< 0.23	0.23	0.76	1

ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
2,2-Dichloropropane	< 0.53	0.53	1.8	1
Di-Isopropyl ether	< 0.21	0.21	0.69	1
Ethylbenzene	< 0.32	0.32	1.1	1
EDB (1,2-Dibromoethane)	< 0.24	0.24	0.82	1
Hexachlorobutadiene	< 0.33	0.33	1.1	1
Isopropylbenzene	< 0.33	0.33	1.1	1
p-Isopropyltoluene	< 0.34	0.34	1.1	1
Methylene chloride	< 1	1	3.3	1
MTBE	< 0.21	0.21	0.69	1
Naphthalene	< 0.73	0.73	2.4	1
n-Propylbenzene	< 0.36	0.36	1.2	1
Styrene	60	0.75	2.5	1
1,1,2,2-Tetrachloroethane	< 0.29	0.29	1	1
Tetrachloroethene	< 0.56	0.56	1.9	1
Toluene	0.6 "J"	0.38	1.3	1
1,2,3-Trichlorobenzene	< 0.16	0.16	0.54	1
1,2,4-Trichlorobenzene	< 0.17	0.17	0.57	1
1,1,1-Trichloroethane	< 0.35	0.35	1.2	1
1,1,2-Trichloroethane	< 0.2	0.2	0.66	1
Trichloroethene	< 0.39	0.39	1.3	1
Trichlorofluoromethane	< 0.52	0.52	1.7	1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	1
Vinyl Chloride	< 0.32	0.32	1.1	1
m&p-Xylene	< 0.67	0.67	2.2	1
o-Xylene	0.56 "J"	0.37	1.2	1

Dibromofluoromethane Sur	102 % Rec.
1,2-Dichloroethane-d4 Sur	88 % Rec.
Toluene-d8 Sur	88 % Rec.
4-Bromofluorobenzene Sur	82 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120237
Sample pH 1.8

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

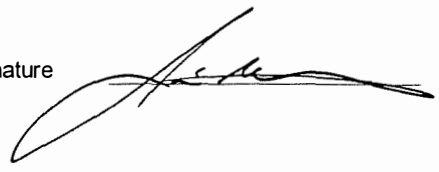
Project #: 23379XA
Sample ID: B-6-1
Report Date: 01-Sep-98
Lab Code: 5022497D

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Acetone	P	P	P	P	P	P	P
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	F	F	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropene	P	P	P	P	P	P	P
Di-isopropyl Ether	P	F	P	P	F	F	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	P	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
Styrene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120237
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-2
Lab Code: 5022497E
Sample Type: Water
Sample Date: 13-Aug-98

Test	Result	LOD	LOQ	Unit	pH	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
NITROGEN (NITRATE/NITRITE)									
EPA 300.0	< 0.014	0.014	0.05	MG/L	0.8	10	17-Aug-98	TJW	1
SULFATE									
EPA 300.0	19	0.024	0.079	MG/L	7.2	1	21-Aug-98	TJW	1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

Method 8260 Volatile Organic Compounds

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98
Analyzed By: CJR

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-2
Lab Code: 5022497E
Sample Type: Water
Sample Date: 13-Aug-98
Date Analyzed: 24-Aug-98

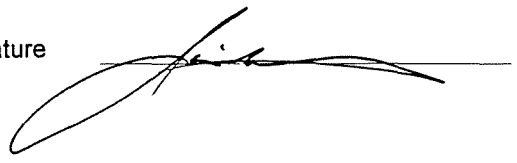
ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
Acetone	1.1	0.28	0.93	1
Benzene	< 0.25	0.25	0.85	1
Bromobenzene	< 0.23	0.23	0.77	1
Bromodichloromethane	< 0.25	0.25	0.84	1
n-Butylbenzene	< 0.43	0.43	1.4	1
sec-Butylbenzene	< 0.37	0.37	1.2	1
tert-Butylbenzene	< 0.4	0.4	1.3	1
Carbon Tetrachloride	< 0.48	0.48	1.6	1
Chlorobenzene	< 0.26	0.26	0.87	1
Chloroethane	< 0.15	0.15	0.51	1
Chloroform	< 0.26	0.26	0.87	1
Chloromethane	< 0.29	0.29	1	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.27	0.27	0.91	1
1,2-Dibromo-3-Chloropropane	< 0.51	0.51	1.7	1
Dibromochloromethane	< 0.31	0.31	1	1
1,2-Dichlorobenzene	< 0.28	0.28	0.93	1
1,3-Dichlorobenzene	< 0.34	0.34	1.1	1
1,4-Dichlorobenzene	< 0.26	0.26	0.87	1
Dichlorodifluoromethane	< 0.54	0.54	1.8	1
1,1-Dichloroethane	< 0.32	0.32	1.1	1
1,2-Dichloroethane	< 0.14	0.14	0.48	1
1,1-Dichloroethene	< 0.61	0.61	2	1
cis-1,2-Dichloroethene	< 0.34	0.34	1.1	1
trans-1,2-Dichloroethene	< 0.46	0.46	1.5	1
1,2-Dichloropropane	< 0.26	0.26	0.86	1
1,3-Dichloropropane	< 0.23	0.23	0.76	1

ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
2,2-Dichloropropane	< 0.53	0.53	1.8	1
Di-Isopropyl ether	< 0.21	0.21	0.69	1
Ethylbenzene	< 0.32	0.32	1.1	1
EDB (1,2-Dibromoethane)	< 0.24	0.24	0.82	1
Hexachlorobutadiene	< 0.33	0.33	1.1	1
Isopropylbenzene	< 0.33	0.33	1.1	1
p-Isopropyltoluene	< 0.34	0.34	1.1	1
Methylene chloride	< 1	1	3.3	1
MTBE	< 0.21	0.21	0.69	1
Naphthalene	< 0.73	0.73	2.4	1
n-Propylbenzene	< 0.36	0.36	1.2	1
Styrene	20	0.74	2.5	1
1,1,2,2-Tetrachloroethane	< 0.29	0.29	1	1
Tetrachloroethene	< 0.56	0.56	1.9	1
Toluene	< 0.38	0.38	1.3	1
1,2,3-Trichlorobenzene	< 0.16	0.16	0.54	1
1,2,4-Trichlorobenzene	< 0.17	0.17	0.57	1
1,1,1-Trichloroethane	< 0.35	0.35	1.2	1
1,1,2-Trichloroethane	< 0.2	0.2	0.66	1
Trichloroethene	< 0.39	0.39	1.3	1
Trichlorofluoromethane	< 0.52	0.52	1.7	1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	1
Vinyl Chloride	< 0.32	0.32	1.1	1
m&p-Xylene	< 0.67	0.67	2.2	1
o-Xylene	< 0.37	0.37	1.2	1

Dibromofluoromethane Sur	103 % Rec.
1,2-Dichloroethane-d4 Sur	88 % Rec.
Toluene-d8 Sur	87 % Rec.
4-Bromofluorobenzene Sur	81 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120237
Sample pH 1.8

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XA
Sample ID: B-6-2
Report Date: 01-Sep-98
Lab Code: 5022497E

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Acetone	P	P	P	P	P	P	P
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	F	F	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	F	P	P	F	F	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	P	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
Styrene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120237
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-3
Lab Code: 5022497F
Sample Type: Water
Sample Date: 13-Aug-98

Test	Result	LOD	LOQ	Unit	pH	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
NITROGEN (NITRATE/NITRITE)									
EPA 300.0	< 0.014	0.014	0.05	MG/L	0.8	10	17-Aug-98	TJW	1
SULFATE									
EPA 300.0	10	0.024	0.079	MG/L	7.4	1	21-Aug-98	TJW	1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

Method 8260 Volatile Organic Compounds

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98
Analyzed By: CJR

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-3
Lab Code: 5022497F
Sample Type: Water
Sample Date: 13-Aug-98
Date Analyzed: 24-Aug-98

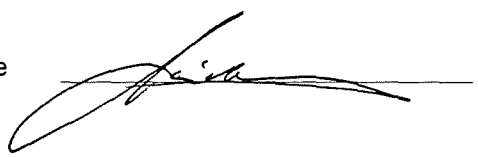
ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
Acetone	15	0.28	0.93	1
Benzene	< 0.25	0.25	0.85	1
Bromobenzene	< 0.23	0.23	0.77	1
Bromodichloromethane	< 0.25	0.25	0.84	1
n-Butylbenzene	< 0.43	0.43	1.4	1
sec-Butylbenzene	< 0.37	0.37	1.2	1
tert-Butylbenzene	< 0.4	0.4	1.3	1
Carbon Tetrachloride	< 0.48	0.48	1.6	1
Chlorobenzene	< 0.26	0.26	0.87	1
Chloroethane	< 0.15	0.15	0.51	1
Chloroform	< 0.26	0.26	0.87	1
Chloromethane	< 0.29	0.29	1	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.27	0.27	0.91	1
1,2-Dibromo-3-Chloropropane	< 0.51	0.51	1.7	1
Dibromochloromethane	< 0.31	0.31	1	1
1,2-Dichlorobenzene	< 0.28	0.28	0.93	1
1,3-Dichlorobenzene	< 0.34	0.34	1.1	1
1,4-Dichlorobenzene	< 0.26	0.26	0.87	1
Dichlorodifluoromethane	< 0.54	0.54	1.8	1
1,1-Dichloroethane	< 0.32	0.32	1.1	1
1,2-Dichloroethane	< 0.14	0.14	0.48	1
1,1-Dichloroethene	< 0.61	0.61	2	1
cis-1,2-Dichloroethene	< 0.34	0.34	1.1	1
trans-1,2-Dichloroethene	< 0.46	0.46	1.5	1
1,2-Dichloropropane	< 0.26	0.26	0.86	1
1,3-Dichloropropane	< 0.23	0.23	0.76	1

ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
2,2-Dichloropropane	< 0.53	0.53	1.8	1
Di-Isopropyl ether	< 0.21	0.21	0.69	1
Ethylbenzene	< 0.32	0.32	1.1	1
EDB (1,2-Dibromoethane)	< 0.24	0.24	0.82	1
Hexachlorobutadiene	< 0.33	0.33	1.1	1
Isopropylbenzene	< 0.33	0.33	1.1	1
p-Isopropyltoluene	< 0.34	0.34	1.1	1
Methylene chloride	< 1	1	3.3	1
MTBE	< 0.21	0.21	0.69	1
Naphthalene	< 0.73	0.73	2.4	1
n-Propylbenzene	< 0.36	0.36	1.2	1
Styrene	98	0.74	2.5	1
1,1,2,2-Tetrachloroethane	< 0.29	0.29	1	1
Tetrachloroethene	< 0.56	0.56	1.9	1
Toluene	0.39 "J"	0.38	1.3	1
1,2,3-Trichlorobenzene	< 0.16	0.16	0.54	1
1,2,4-Trichlorobenzene	< 0.17	0.17	0.57	1
1,1,1-Trichloroethane	< 0.35	0.35	1.2	1
1,1,2-Trichloroethane	< 0.2	0.2	0.66	1
Trichloroethene	< 0.39	0.39	1.3	1
Trichlorofluoromethane	< 0.52	0.52	1.7	1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	1
Vinyl Chloride	< 0.32	0.32	1.1	1
m&p-Xylene	< 0.67	0.67	2.2	1
o-Xylene	0.77 "J"	0.37	1.2	1

Dibromofluoromethane Sur	103 % Rec.
1,2-Dichloroethane-d4 Sur	89 % Rec.
Toluene-d8 Sur	88 % Rec.
4-Bromofluorobenzene Sur	81 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120237
Sample pH 1.8

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

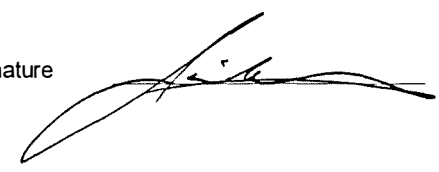
Project #: 23379XA
Sample ID: B-6-3
Report Date: 01-Sep-98
Lab Code: 5022497F

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Acetone	P	P	P	P	P	P	P
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	F	F	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	F	P	P	F	F	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	P	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
Styrene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120237
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-4
Lab Code: 5022497G
Sample Type: Water
Sample Date: 13-Aug-98

Test	Result	LOD	LOQ	Unit	pH	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
NITROGEN (NITRATE/NITRITE)									
EPA 300.0	< 0.014	0.014	0.05	MG/L	0.8	10	17-Aug-98	TJW	1
SULFATE									
EPA 300.0	10	0.024	0.079	MG/L	7.4	1	21-Aug-98	TJW	1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

Method 8260 Volatile Organic Compounds

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98
Analyzed By: CJR

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-4
Lab Code: 5022497G
Sample Type: Water
Sample Date: 13-Aug-98
Date Analyzed: 24-Aug-98

ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
Acetone	0.92 "J"	0.28	0.93	1
Benzene	< 0.25	0.25	0.85	1
Bromobenzene	< 0.23	0.23	0.77	1
Bromodichloromethane	< 0.25	0.25	0.84	1
n-Butylbenzene	< 0.43	0.43	1.4	1
sec-Butylbenzene	< 0.37	0.37	1.2	1
tert-Butylbenzene	< 0.4	0.4	1.3	1
Carbon Tetrachloride	< 0.48	0.48	1.6	1
Chlorobenzene	< 0.26	0.26	0.87	1
Chloroethane	< 0.15	0.15	0.51	1
Chloroform	< 0.26	0.26	0.87	1
Chloromethane	< 0.29	0.29	1	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.27	0.27	0.91	1
1,2-Dibromo-3-Chloropropane	< 0.51	0.51	1.7	1
Dibromochloromethane	< 0.31	0.31	1	1
1,2-Dichlorobenzene	< 0.28	0.28	0.93	1
1,3-Dichlorobenzene	< 0.34	0.34	1.1	1
1,4-Dichlorobenzene	< 0.26	0.26	0.87	1
Dichlorodifluoromethane	< 0.54	0.54	1.8	1
1,1-Dichloroethane	< 0.32	0.32	1.1	1
1,2-Dichloroethane	< 0.14	0.14	0.48	1
1,1-Dichloroethene	< 0.61	0.61	2	1
cis-1,2-Dichloroethene	< 0.34	0.34	1.1	1
trans-1,2-Dichloroethene	< 0.46	0.46	1.5	1
1,2-Dichloropropane	< 0.26	0.26	0.86	1
1,3-Dichloropropane	< 0.23	0.23	0.76	1

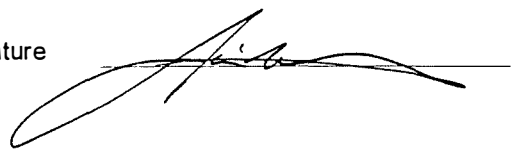
ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
2,2-Dichloropropane	< 0.53	0.53	1.8	1
Di-Isopropyl ether	< 0.21	0.21	0.69	1
Ethylbenzene	< 0.32	0.32	1.1	1
EDB (1,2-Dibromoethane)	< 0.24	0.24	0.82	1
Hexachlorobutadiene	< 0.33	0.33	1.1	1
Isopropylbenzene	< 0.33	0.33	1.1	1
p-Isopropyltoluene	< 0.34	0.34	1.1	1
Methylene chloride	< 1	1	3.3	1
MTBE	< 0.21	0.21	0.69	1
Naphthalene	< 0.73	0.73	2.4	1
n-Propylbenzene	< 0.36	0.36	1.2	1
Styrene	< 0.74	0.74	2.5	1
1,1,2,2-Tetrachloroethane	< 0.29	0.29	1	1
Tetrachloroethene	< 0.56	0.56	1.9	1
Toluene	< 0.38	0.38	1.3	1
1,2,3-Trichlorobenzene	< 0.16	0.16	0.54	1
1,2,4-Trichlorobenzene	< 0.17	0.17	0.57	1
1,1,1-Trichloroethane	< 0.35	0.35	1.2	1
1,1,2-Trichloroethane	< 0.2	0.2	0.66	1
Trichloroethene	< 0.39	0.39	1.3	1
Trichlorofluoromethane	< 0.52	0.52	1.7	1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	1
Vinyl Chloride	< 0.32	0.32	1.1	1
m&p-Xylene	< 0.67	0.67	2.2	1
o-Xylene	< 0.37	0.37	1.2	1

Dibromofluoromethane Sur	104 % Rec.
1,2-Dichloroethane-d4 Sur	88 % Rec.
Toluene-d8 Sur	88 % Rec.
4-Bromofluorobenzene Sur	82 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch # 120237
Sample pH 1.8

GCMS #12

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory

1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XA
Sample ID: B-6-4
Report Date: 01-Sep-98
Lab Code: 5022497G

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Acetone	P	P	P	P	P	P	P
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	F	F	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	F	P	P	F	F	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	P	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
Styrene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120237
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-5
Lab Code: 5022497H
Sample Type: Water
Sample Date: 13-Aug-98

Test	Result	LOD	LOQ	Unit	pH	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
NITROGEN (NITRATE/NITRITE)									
EPA 300.0	0.47	0.014	0.05	MG/L	0.8	10	17-Aug-98	TJW	1
SULFATE									
EPA 300.0	84	0.24	0.79	MG/L	7.5	10	21-Aug-98	TJW	1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

Method 8260 Volatile Organic Compounds

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 01-Sep-98
Analyzed By: CJR

Project #: 23379XA
Project : Carver Boat Corp
Sample ID: B-6-5
Lab Code: 5022497H
Sample Type: Water
Sample Date: 13-Aug-98
Date Analyzed: 24-Aug-98

ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
Acetone	< 0.28	0.28	0.93	1
Benzene	< 0.25	0.25	0.85	1
Bromobenzene	< 0.23	0.23	0.77	1
Bromodichloromethane	< 0.25	0.25	0.84	1
n-Butylbenzene	< 0.43	0.43	1.4	1
sec-Butylbenzene	< 0.37	0.37	1.2	1
tert-Butylbenzene	< 0.4	0.4	1.3	1
Carbon Tetrachloride	< 0.48	0.48	1.6	1
Chlorobenzene	< 0.26	0.26	0.87	1
Chloroethane	< 0.15	0.15	0.51	1
Chloroform	< 0.26	0.26	0.87	1
Chloromethane	< 0.29	0.29	1	1
2-Chlorotoluene	< 0.31	0.31	1	1
4-Chlorotoluene	< 0.27	0.27	0.91	1
1,2-Dibromo-3-Chloropropane	< 0.51	0.51	1.7	1
Dibromochloromethane	< 0.31	0.31	1	1
1,2-Dichlorobenzene	< 0.28	0.28	0.93	1
1,3-Dichlorobenzene	< 0.34	0.34	1.1	1
1,4-Dichlorobenzene	< 0.26	0.26	0.87	1
Dichlorodifluoromethane	< 0.54	0.54	1.8	1
1,1-Dichloroethane	< 0.32	0.32	1.1	1
1,2-Dichloroethane	< 0.14	0.14	0.48	1
1,1-Dichloroethene	< 0.61	0.61	2	1
cis-1,2-Dichloroethene	< 0.34	0.34	1.1	1
trans-1,2-Dichloroethene	< 0.46	0.46	1.5	1
1,2-Dichloropropane	< 0.26	0.26	0.86	1
1,3-Dichloropropane	< 0.23	0.23	0.76	1

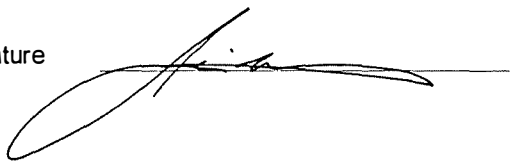
ANALYTE	RESULT	LOD UG/L	LOQ UG/L	Dilution Factor
2,2-Dichloropropane	< 0.53	0.53	1.8	1
Di-Isopropyl ether	< 0.21	0.21	0.69	1
Ethylbenzene	< 0.32	0.32	1.1	1
EDB (1,2-Dibromoethane)	< 0.24	0.24	0.82	1
Hexachlorobutadiene	< 0.33	0.33	1.1	1
Isopropylbenzene	< 0.33	0.33	1.1	1
p-Isopropyltoluene	< 0.34	0.34	1.1	1
Methylene chloride	< 1	1	3.3	1
MTBE	< 0.21	0.21	0.69	1
Naphthalene	< 0.73	0.73	2.4	1
n-Propylbenzene	< 0.36	0.36	1.2	1
Styrene	0.91 "J"	0.74	2.5	1
1,1,2,2-Tetrachloroethane	< 0.29	0.29	1	1
Tetrachloroethene	< 0.56	0.56	1.9	1
Toluene	< 0.38	0.38	1.3	1
1,2,3-Trichlorobenzene	< 0.16	0.16	0.54	1
1,2,4-Trichlorobenzene	< 0.17	0.17	0.57	1
1,1,1-Trichloroethane	< 0.35	0.35	1.2	1
1,1,2-Trichloroethane	< 0.2	0.2	0.66	1
Trichloroethene	< 0.39	0.39	1.3	1
Trichlorofluoromethane	< 0.52	0.52	1.7	1
1,2,4-Trimethylbenzene	< 0.34	0.34	1.1	1
1,3,5-Trimethylbenzene	< 0.36	0.36	1.2	1
Vinyl Chloride	< 0.32	0.32	1.1	1
m&p-Xylene	< 0.67	0.67	2.2	1
o-Xylene	< 0.37	0.37	1.2	1

Dibromofluoromethane Sur	103	% Rec.
1,2-Dichloroethane-d4 Sur	88	% Rec.
Toluene-d8 Sur	88	% Rec.
4-Bromofluorobenzene Sur	81	% Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch # 120237
Sample pH 1.8

GCMS #12

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

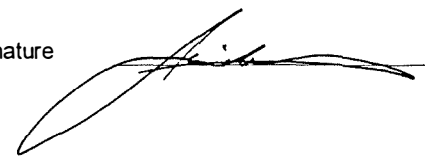
Project #: 23379XA
Sample ID: B-6-5
Report Date: 01-Sep-98
Lab Code: 5022497H

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Acetone	P	P	P	P	P	P	P
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	P	P	P	P	P	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	F	F	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	F	P	P	F	F	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	P	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	P	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
Styrene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	P	P	P	P	P	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120237
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

Authorized Signature



CHAIN OF CUSTODY RECORD 5022497 № 21115

RECORD NUMBER 1 THROUGH 1

Contact Person BILL NOEL
Phone No. 920-468-1978 Office G.B.
Project No. 23379XA PO No.
Project Name CABLER BOAT CORP.

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

Laboratory ~~ENVIROSCAN~~ U S OIL
Contact Person ~~SHARON MALTBY~~ CHRIS ZIBEL
Phone No.
Results Due
CG

Sample I.D.	Date	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
5022497	1998													
A B-3-1	8/13		X		5	WATER	X	X					[VOC (INCLUDING STYRENE) BY 8260], SULFATE, NITRATE/NITRITE	
B MW-4-1					7								VOC BY 8021, PAH BY 8310, SULFATE, NITRATE/NITRITE	
C MW-4-2					7									
D B-6-1					5								[VOC (INCLUDING ACETONE & STYRENE) BY 8260], SULFATE,	
E B-6-2					1								NITRATE/NITRITE	
F B-6-3														
G B-6-4														
H B-6-5														

Collected by: [illegible]	Date 8-13-98	Time 2 00P	Delivery by:
Received by: Leo Huss	Date 8-14-98	Time 7:30	Relinquished by: Leo Huss
Received by:	Date	Time	Relinquished by:
Received by:	Date	Time	Relinquished by:
Received for lab by Linda Smith	Date 8-14-98	Time 1.55	Relinquished by:

Delivery by: Date Time
Relinquished by: Date 8-14-98 Time 1:55
Relinquished by: Date Time
Relinquished by: Date Time
Relinquished by: Date Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☒ Yes ☐ No ☐ N/A Rec on ice & good cond

Final Disposition:

Comments (Weather Conditions, Precautions, Hazards):

QUOTE # 9/2899

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

9/94cp10k

STS Consultants Ltd.
Consulting Engineers

STS Consultants, Ltd.
Solutions through Science & Engineering

October 29, 1998

Ms. Carrie Rackey
Bureau of Remediation and Redevelopment
Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

Subject: Case Update, Carver Boat Corporation, Pulaski, Wisconsin -- BRRTS #02-05-178568 -- STS Project No. 23379XA

Dear Ms. Rackey:

STS Consultants, Ltd. (STS), on behalf of Carver Boat Corporation (Carver), has prepared this letter in response to your letter dated October 26, 1998, which inquired as to the status of the above-referenced project.

STS installed temporary wells on July 17, 1998, in substantial accordance with the Work Plan for this project. The temporary wells were then sampled on August 13, 1998. Carver has authorized STS to collect one additional piece of soil test data, at which time we anticipate that a report will be submitted to the Wisconsin Department of Natural Resources. Dependent on the additional findings and our evaluation of all project data, the submittal may include a request for site closure. We anticipate that a submittal will be made in late 1998.

Please contact us with any questions or comments regarding this project.

Sincerely,

STS CONSULTANTS, LTD.

William F. Noel

William F. Noel, P.E.
Senior Project Engineer

WFN/smd.wd

Copy: Mr. Ted Maloney
Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, Wisconsin 54162

1035 Kepler Drive • Green Bay, WI 54311-8320 • (920) 468-1978 • (920) 468-3312 Fax

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William R. Selbig, Regional Director

Northeast Region Headquarters
1125 N. Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448
Telephone 920-492-5916
FAX 920-492-5859

File

October 26, 1998

Mr. Ted Maloney
Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, WI 54162

SUBJECT: Case Update, Carver Boat Corporation (Resin & Acetone); 790 Markham Drive; Pulaski
BRRTS CASE #02-05-178568

Dear Mr. Maloney:

I am writing to request an update on the status of the above referenced environmental repair case. On March 2, 1998, the Department received a site investigation workplan prepared by STS Consultants. To date, the Department has not received a site investigation report.

Please provide the Department with a letter detailing the status of the above referenced case.

If you have any questions regarding this matter, please contact Roxanne Chronert at (920) 492-5592.

Sincerely,

Carrie Rackey
Program Assistant
Bureau of Remediation and Redevelopment

cc: William Noel; STS Consultants; 1035 Kepler Drive; Green Bay, WI 54311

TELEPHONE LOG

SITE NAME: Carver Boats DATE: 2-27-98

DNR NO.: TIME: 13:46

PECFA CALIM NO.:

TO/FROM: Bill Noel NUMBER: (800) (414) (715) (920) (608) 406-3145

COMPANY/AGENCY: STS

- 1) Temp wells

→ OK but not to use long term

- 2) Review of W.P.

ROXANNE NELEZEN CHRONERT

February 26, 1998

RECEIVED
MAR 0 2 1998
LMD SOLID WASTE

Ms. Roxanne Nelezen Chronert
Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

Re: Work Plan to Investigate Soil and Groundwater Impacts, Vicinity of Former Underground Storage Tank #6 and #7, Carver Boat Corporation, 790 Markham Drive, Pulaski, Wisconsin - BRRTS Case #02-05-178568 – STS Project No. 23379XA

Dear Ms. Nelezen Chronert:

STS Consultants, Ltd., was retained by Carver Boat Corporation to prepare the attached Work Plan to investigate soil and groundwater impacts at this location. This Work Plan was prepared in accordance with Wisconsin Administrative Code NR 716.09.

Sincerely,

STS CONSULTANTS, LTD.

William F. Noel, P.E.
Senior Project Engineer

Paula Leier-Engelhardt, P.G.
Senior Project Geologist

"I, Calvin D. Taylor, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Calvin D. Taylor 2/26/98
Project Hydrogeologist

WFN/slc.wd

Copy to: Mr. Ted Maloney
Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, Wisconsin 54162

(C479A003)

STS Consultants Ltd.
Consulting Engineers

1035 Kepler Drive
Green Bay, Wisconsin 54311-8320
920.468.1978/Fax 920.468.3312

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TABLE

WORK PLAN TO INVESTIGATE SOIL AND GROUNDWATER IMPACTS
VICINITY OF FORMER UST #6 AND #7
CARVER BOAT CORPORATION
PULASKI, WISCONSIN
STS PROJECT NO. 23379XA – FEBRUARY 1998

1.0 INTRODUCTION

1.1 Site Name and Location

The site is owned by Carver Boat Corporation (Carver), Pulaski, Wisconsin. Underground Storage Tanks (USTs) #6 and #7 are located at the north end of Carver's Plant 4, west of the former railroad tracks which bisect Carver's property. The site is in the NE ¼ of Section 6, T25N, R19E, Brown County, Wisconsin. The location of the Carver property is depicted on Figure 1.

1.2 Responsible Party and Consultant

The site owner is:

Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, Wisconsin 54162
Attention: Mr. Ted Maloney
Telephone: 920-822-9000, Ext. 266

The consultant preparing the Work Plan is:

STS Consultants, Ltd.
1035 Kepler Drive
Green Bay, Wisconsin 54311
Attention: Mr. William F. Noel, P.E.
Telephone: 920-468-1978, Ext. 145

1.3 Background

Two adjacent USTs (Carver USTs #6 and #7) were removed by Phenco, Inc., of Neenah, Wisconsin, on October 3, 1997. STS Consultants, Ltd., (STS) performed site assessments during removal of the USTs. UST #6 was a 6,000-gallon tank which formerly contained resin, of which, styrene was a primary constituent. The removal of this UST and the site assessment are documented in a report by STS dated February 26, 1998. Figure 2 shows Carver's entire facility, while Figure 3 shows the area immediately surrounding USTs #6 and #7.

STS' field observations of soil conditions during the site assessment provided some indication of volatile organic compounds (VOCs). Laboratory soil test results indicated low-level concentrations of styrene, acetone, tetrachloroethene, and methyl tert-butyl ether (MTBE) in one or more of the soil samples. Table 1 summarizes field and laboratory data. Based on this information, Carver reported a release to the Wisconsin Department of Natural Resources (WDNR). No groundwater samples were collected while the USTs were being removed, nor was there evidence of groundwater impacts.

Carver retained STS to prepare this Work Plan for further work at this site. This Work Plan has been prepared in accordance with Wisconsin Administrative Code NR 716.09. Relevant items addressed in NR 716.07 were evaluated to ensure that the scope and detail of the proposed field investigation were appropriate to the complexity of the site.

1.4 Geologic and Hydrogeologic Setting

The site is located in a relatively level area at approximately 800 feet above mean sea level. Soil conditions noted during the USTs removals included brown silty sand, changing to brown red silty clay at approximately 3 to 4 feet below ground surface (bgs). Soil conditions do vary across the facility, ranging from silty sand to silt to sandy clay, to silty clay.

Groundwater appeared to be approximately 4 feet bgs during the UST removals. Prior work in the site vicinity was reviewed, and indicated that the horizontal groundwater gradient is relatively flat. The Little Suamico River is located approximately one mile to the north and may affect groundwater flow. The village of Pulaski Municipal Well No. 2 is located approximately 2,300 feet southeast of former USTs #6 and #7. STS understands that this well was constructed in 1975 to a depth of 700 feet and has a capacity of 1,000 gallons per minute.

2.0 SCOPE OF WORK

2.1 Borings

STS will advance five borings with a hydraulic probe to a depth of 10 feet. The borings will be advanced to determine the degree and extent of groundwater VOC impacts. Locations of the previously collected soil samples and proposed hydraulic probes are shown on Figure 3.

2.2 Hydraulic Probe -- Groundwater Sample Collection

A ¾-inch diameter, Schedule 40, screened length of PVC will be installed into each 10-foot-deep hydraulic probe boring. The PVC screen will be purged, then sampled, with a disposable bailer. The PVC screen will be left in place after the sampling until test results are received, to allow for collection of additional samples if appropriate. Upon removal of the screen, the boring will be filled with bentonite and hydrated, with concrete or asphalt at the surface.

2.3 Monitoring Wells -- Groundwater Sample Collection

If groundwater analytical results warrant it, additional hydraulic probes and/or groundwater monitoring wells will be installed, with monitoring wells installed in accordance with NR 141 requirements. Locations will be determined following the hydraulic probe work. Well screens will be installed to intersect the apparent water table at the time of well installation. Groundwater samples will be collected no sooner than seven days after well development.

2.4 Groundwater Sample Analysis

Groundwater samples from the hydraulic probes and, if necessary, the monitoring wells, will be collected and submitted to U.S. Oil for analytical testing for VOCs, including styrene and

acetone, in accordance with EPA Method 8260. Indicators of natural attenuation will also be tested, including laboratory testing for nitrate (EPA Method 353.2) and sulfate (Method SW846-9038), and field testing for dissolved oxygen and ferrous iron (Chemetrics ampoules). Groundwater samples will be collected with disposable sampling devices to minimize or avoid potential for cross-contamination. Groundwater samples for VOC testing will be placed in 40-milliliter, hydrochloric acid-preserved vials with zero headspace. Samples will be shipped on ice under Chain of Custody control.

2.5 Quality Assurance and Quality Control

Quality assurance and quality control procedures implemented for this project will be consistent with items specified in NR 716.13 and those outlined in PUBL-SW-130 93, "Leaking Underground Storage Tank and Petroleum, Analytical and Quality Assurance Guidance, Wisconsin Department of Natural Resources," July 1993.

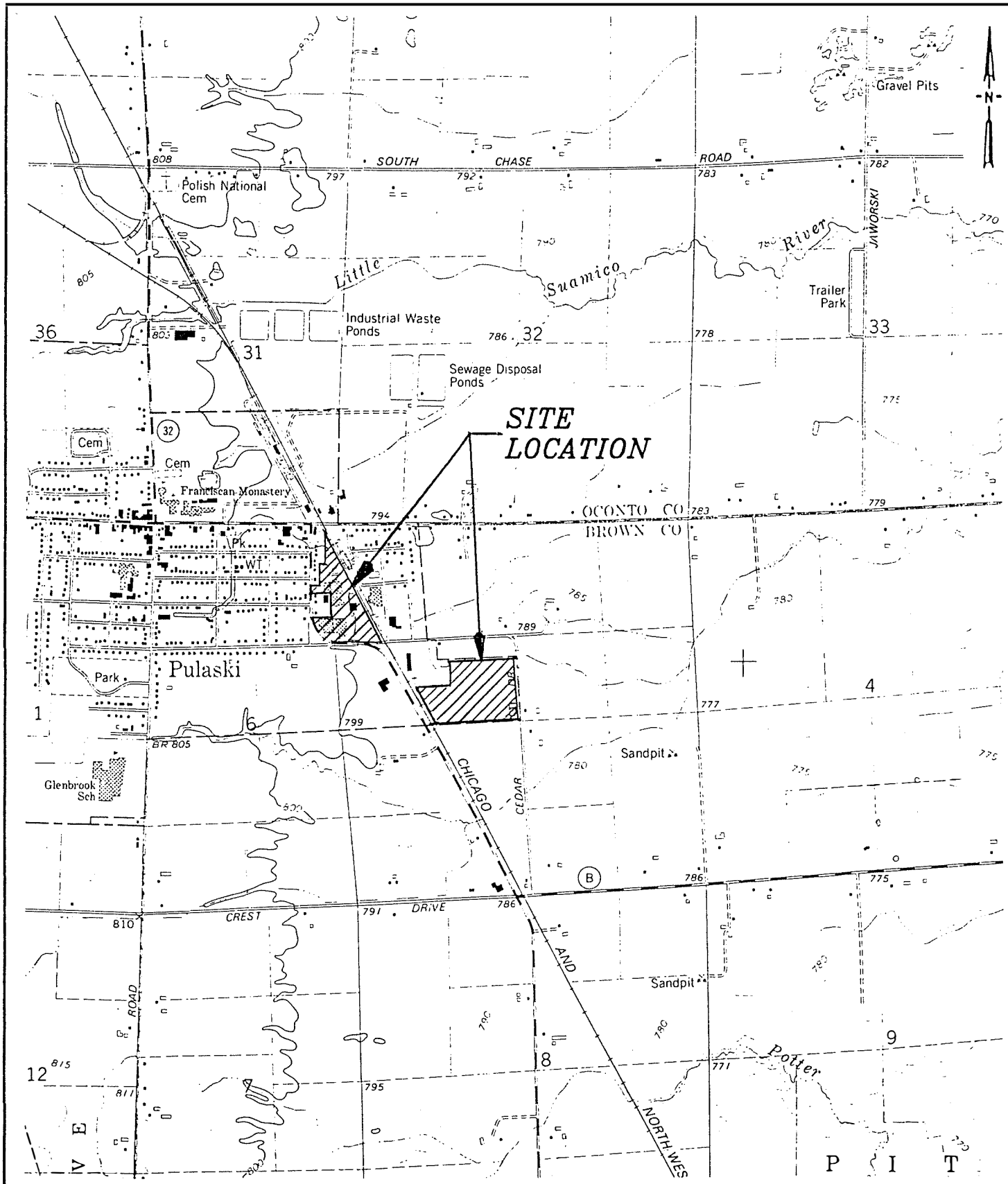
2.6 Report

The report will be prepared in accordance with Chapter NR 716.15 and will include the field and analytical data and our interpretations of the data.

3.0 SCHEDULE

The following is our anticipated schedule for the project:

- Complete the drilling program by March 20, 1998.
- Receive analytical results by April 10, 1998.
- Submit report to the WDNR by April 30, 1998.



MAP SOURCE: MODIFIED FROM PULASKI, WIS. U.S.G.S. QUADRANGLE DATED 1974.

STS Consultants Ltd.
Consulting Engineers

SITE LOCATION DIAGRAM
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F001	SCALE 1"=2000'	
STS PROJECT NO. 23379XF	FIGURE NO. 1	

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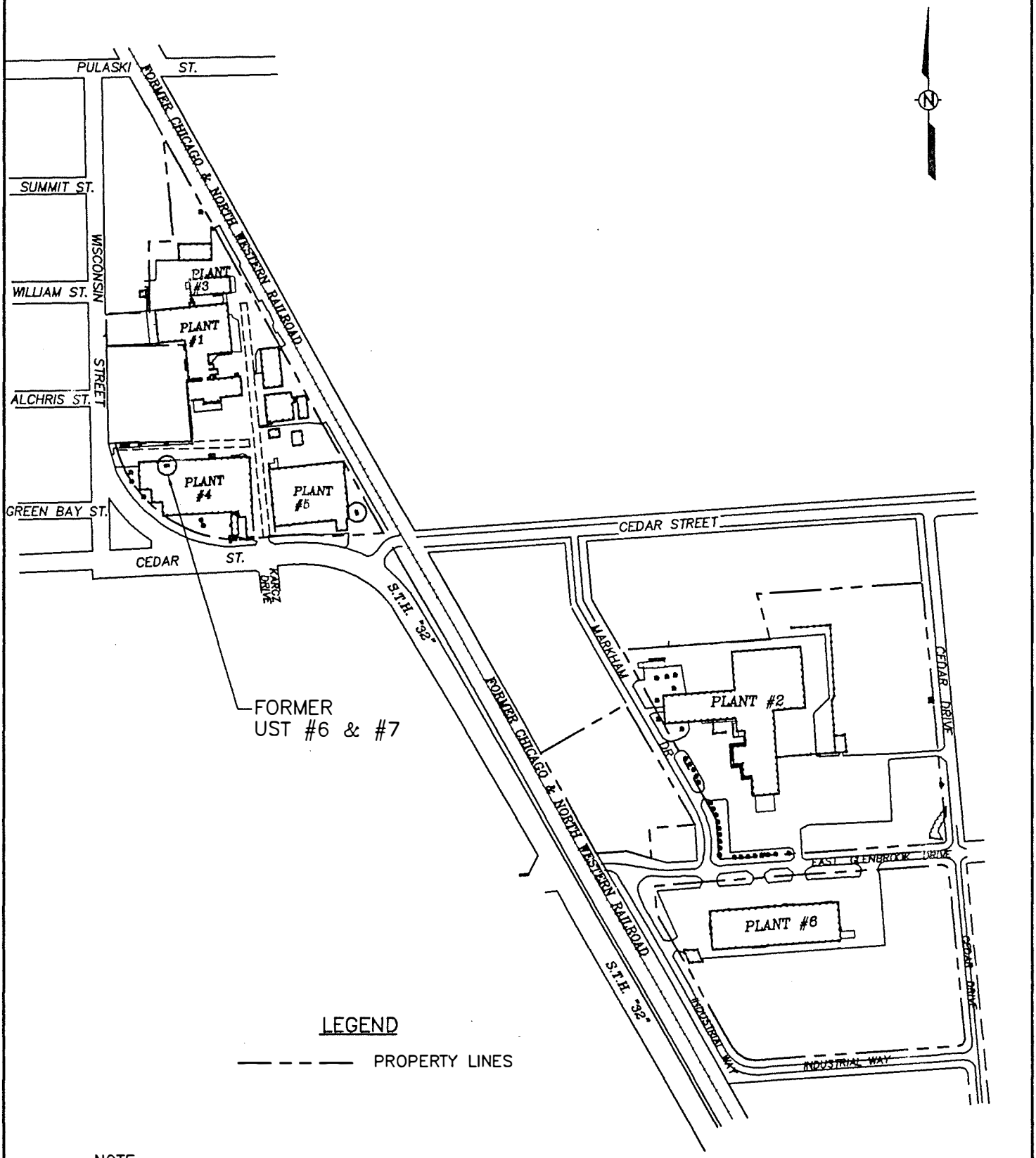
02/23/1998 15:14



NOTE:
MAP MODIFIED FROM DRAWINGS FROM ROBERT E. LEE AND ASSOC.

STS Consultants Ltd.
Consulting Engineers

FACILITY LOCATIONS
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F04	SCALE 1"=500'	
STS PROJECT NO. 23379XF	FIGURE NO. 2	

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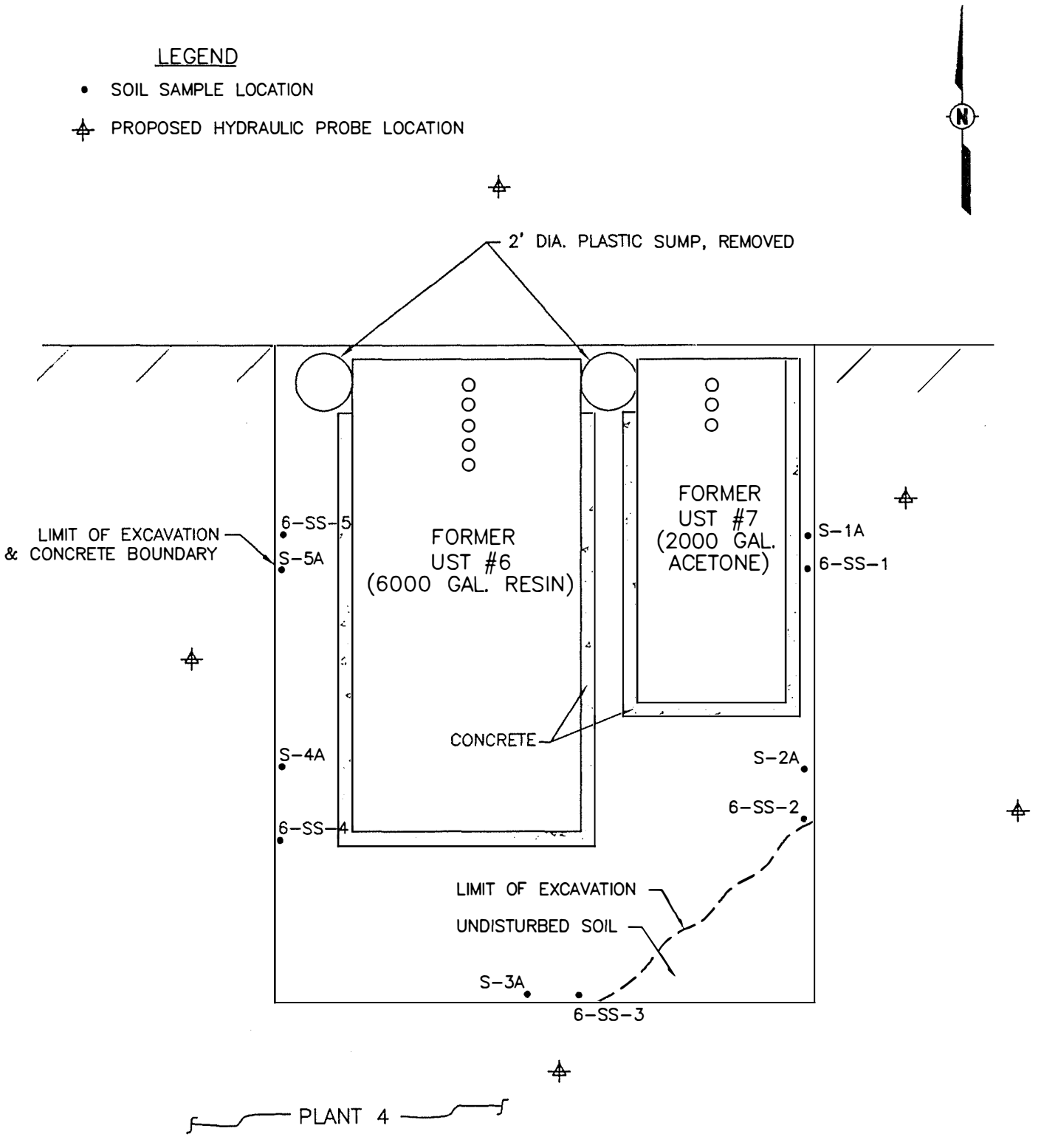
02/24/1998 09:54



STS Consultants Ltd.
Consulting Engineers

UST #6 & #7 PROPOSED HYDRAULIC PROBE LOCATION DIAGRAM
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	R.A.B.	12-23-97
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE	SCALE 1"=5'	
STS PROJECT NO. 23379XA	FIGURE NO. 3	

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02/24/1998 15:30

TABLE 1
SOIL FIELD OBSERVATIONS AND LABORATORY RESULTS
CARVER BOAT CORPORATION USTs #6 AND #7
PULASKI, WISCONSIN

Sample Location	Depth (feet)	FID (units)	Soil Description	Odor	Acetone (µg/kg)	Styrene (µg/kg)	MTBE (µg/kg)	Tetrachloroethene (µg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)
6-SS-1	3	52	Dark Brown Fine to Medium Silty Sand	Slight	<100	36	<25	<25	<25	<25	<25	<50
6-SS-2	3	10	Dark Brown Fine to Medium Silty Sand	Possible	<100	<25	<25	26	<25	<25	<25	<50
6-SS-3	3	6	Dark Brown Fine to Medium Silty Sand	No	120	31	<25	51	<25	<25	<25	<50
6-SS-4	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	28	<25	<25	<25	<25	<50
6-SS-5	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	36	<25	<25	<25	<25	<50
S-1A	4	65	Brown Red Silty Clay	Slight	-	-	-	-	-	-	-	-
S-2A	4	25	Brown Red Silty Clay	Possible	-	-	-	-	-	-	-	-
S-3A	4	50	Brown Red Silty Clay	Slight	-	-	-	-	-	-	-	-
S-4A	4	7	Brown Red Silty Clay	No	-	-	-	-	-	-	-	-
S-5A	4	7	Brown Red Silty Clay	No	-	-	-	-	-	-	-	-

Notes:
- = Not Analyzed
MTBE = Methyl tert Butyl Ether
FID = Flame Ionization Detector
VOCs not listed were not detected in any sample

February 26, 1998

Mr. Ted Maloney
Carver Boat Corporation
790 Markham Drive
P.O. Box 1010
Pulaski, Wisconsin 54162

Re: Underground Storage Tank Closure Report for Carver Boat Corporation, UST #6 and UST #7 at Plant 4, 790 Markham Drive, Pulaski, Wisconsin -- BRRTS Case No. 02-05-178568 – STS Project No. 23379XF

Dear Mr. Maloney:

STS Consultants, Ltd., (STS) is pleased to submit this report documenting the removal of two underground storage tanks (USTs), one 6,000-gallon resin UST (UST #6) and one 2,000-gallon acetone UST (UST #7), located at Carver Boat Corporation, 790 Markham Drive, Pulaski, Wisconsin.

This report summarizes activities conducted at Carver Boat Corporation, and outlines procedures followed for documenting soil conditions around the USTs. Based on conditions observed in the field and the low level concentrations of volatile organic compounds detected in soil samples, we recommend further subsurface investigation. In accordance with Wisconsin Administrative Code ILHR 10, copies of this report are being sent to the Wisconsin Department of Commerce (Madison) and the Wisconsin Department of Natural Resources (Green Bay).

STS appreciates the opportunity to provide environmental services and looks forward to working with you in the future. Please contact us at 920-468-1978 with any questions or comments concerning this report.

Sincerely,

STS CONSULTANTS, LTD.

James L. Calaway
Senior Environmental Technician

William F. Noel, P.E.
Senior Project Engineer

JLC/kjw.wd

STS Consultants Ltd.
Consulting Engineers

1035 Kepler Drive
Green Bay, Wisconsin 54311-8320
920.468.1978/Fax 920.468.3312

Copy to: Wisconsin Department of Commerce
ERS Division
Bureau of Storage Tank Regulation
P.O. Box 7969
Madison, Wisconsin 53707-7969

Ms. Roxanne Nelezen Chronert
Spill Coordinator - Hydrogeologist
Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

B(C479F001)

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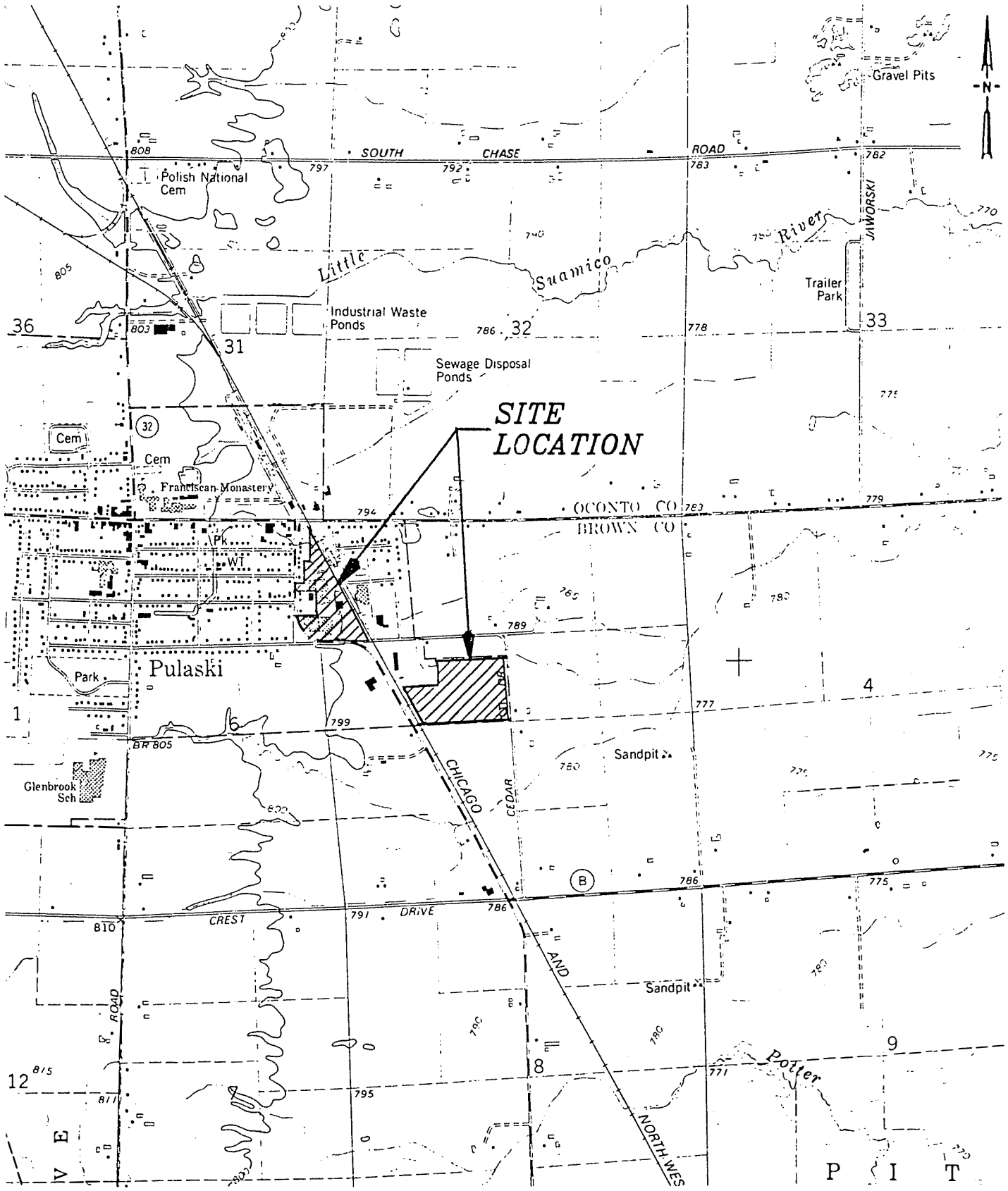
UNDERGROUND STORAGE TANK CLOSURE REPORT
CARVER BOAT CORPORATION
PULASKI, WISCONSIN
STS PROJECT NO. 23379XF – FEBRUARY 1998

1.0 INTRODUCTION

One 6,000-gallon resin underground storage tank (UST #6) and one 2,000-gallon acetone UST (UST #7) located at Carver Boat Corporation (Carver), 790 Markham Drive, Pulaski, Wisconsin, (NE 1/4 of Section 6, T25N, R19E, Brown County, Wisconsin) were decommissioned by excavation and removed on October 3, 1997. Figure 1 shows the location of the Carver facility. UST #6 (Wisconsin Department of Commerce [WDCOMM] No. 051100596) and UST #7 (WDCOMM No. 051100595) were located at the north end of Plant 4. Figure 2 portrays the entire Carver facility, while Figure 3 shows the former location of UST #6 and UST #7. The contractor responsible for tank decommissioning was Phenco Inc., (Phenco) of Neenah, Wisconsin. Mr. John Wolters (Certification No. 01019) was the certified remover/cleaner.

STS Consultants, Ltd., (STS) was retained by Carver to perform sampling, analysis, and documentation required for the closure assessment and to summarize conditions in a closure documentation report. Mr. James L. Calaway, STS, (Certification No. 248261) was the certified site assessor and was present throughout the tank removal.

Inspector Robert E. Dunks (Certification No. 35003) of the Allouez Fire Department was notified prior to the planned tank closures. Inspector Dunks was present at the project site during portions of the work.



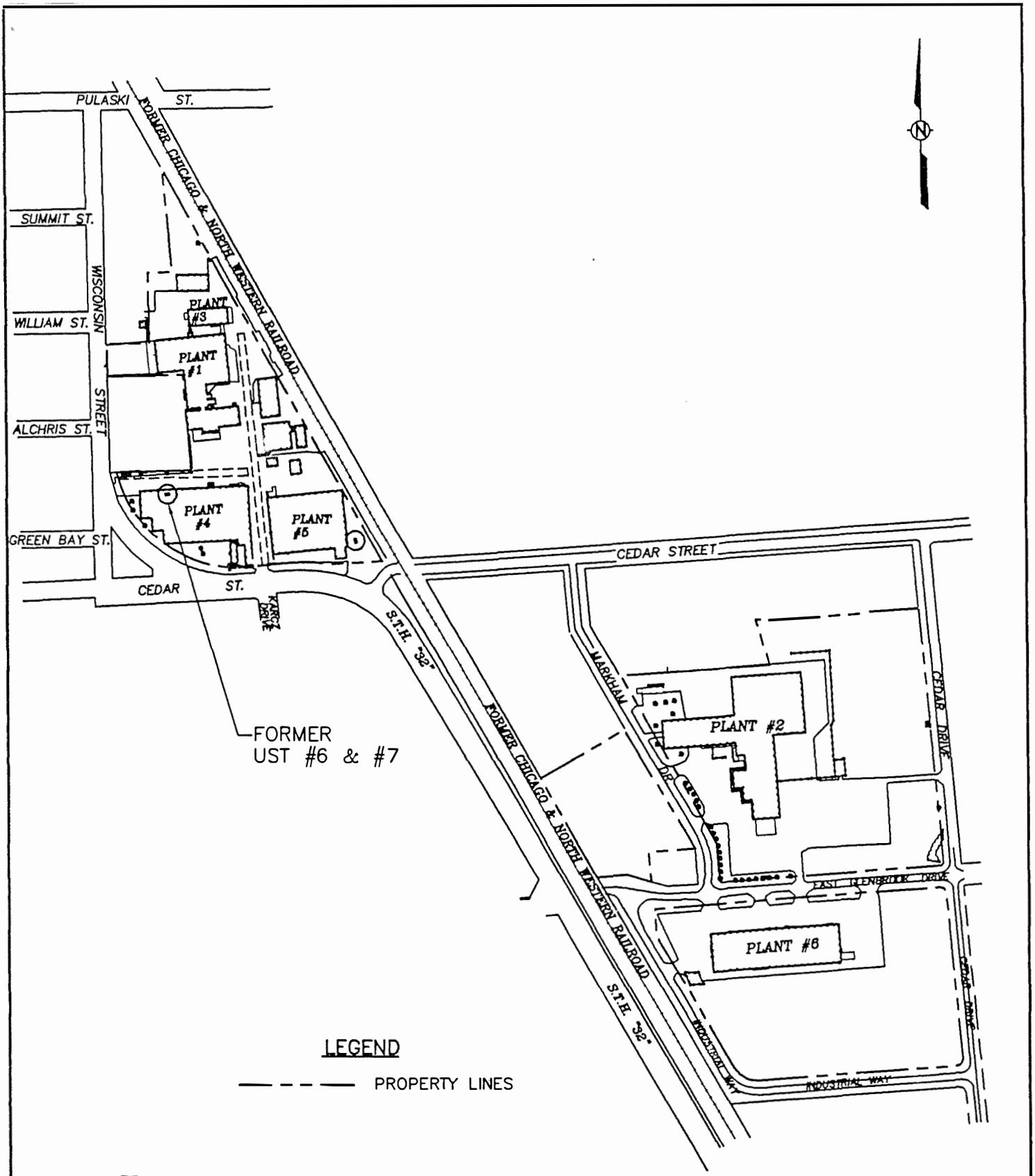
MAP SOURCE: MODIFIED FROM PULASKI, WIS. U.S.G.S. QUADRANGLE DATED 1974.

STS Consultants Ltd.
Consulting Engineers

SITE LOCATION DIAGRAM
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F001	SCALE 1"=2000'	
STS PROJECT NO. 23379XF	FIGURE NO. 1	

W: \DWG97\23379\XF\G479F001
02/23/1998 15:14



NOTE:
MAP MODIFIED FROM DRAWINGS FROM ROBERT E. LEE AND ASSOC.

STS Consultants Ltd.
Consulting Engineers

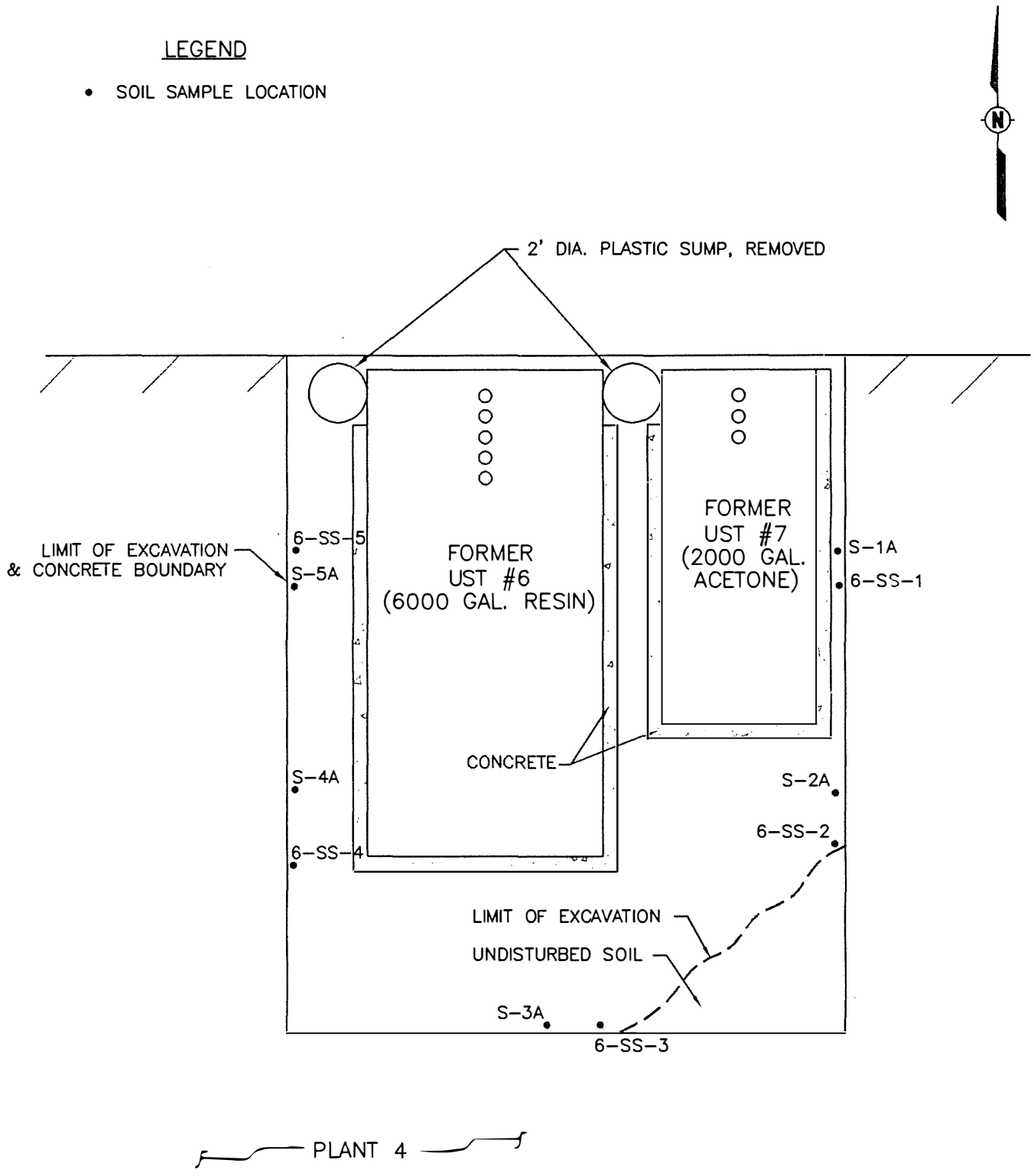
FACILITY LOCATIONS
CARVER BOAT CORPORATION
PULASKI, WISCONSIN

DRAWN BY	P.D.P.	2-23-98
CHECKED BY	W.F.N.	2-23-98
APPROVED BY		
CADFILE G479F04	SCALE 1"=500'	
STS PROJECT NO. 23379XF	FIGURE NO. 2	

W:\DWG97\23379\XF\G479F04
02/24/1998 09:54

LEGEND

- SOIL SAMPLE LOCATION



STS Consultants Ltd. Consulting Engineers	UST #6 & #7 LOCATION DIAGRAM CARVER BOAT CORPORATION PULASKI, WISCONSIN	DRAWN BY: R.A.B. 12-23-97 CHECKED BY: W.F.N. 2-23-98 APPROVED BY: CADFILE: SCALE: 1"=5' STS PROJECT NO.: 23379XF FIGURE NO.: 3

W:\DWG97\23379\XF\G437903A
02/23/1998 16:00

2.0 PROCEDURES AND SITE CONDITIONS

Decommissioning of USTs #6 and #7 by Phenco began on October 2, 1997, with removal of the concrete slab and other concrete above the USTs.

On October 3, 1997, Carver removed approximately 500 gallons of acetone from UST #7. The acetone was transferred to another location at the Carver facility. The resin UST had previously been emptied and cleaned by Carver.

Also on October 3, 1997, Phenco excavated around the immediate exterior of USTs #6 and #7 prior to lifting them from the excavation. Phenco monitored the atmosphere in the USTs and surrounding area for combustible gases. At the time of the UST removals, no holes, deterioration, or cracks were observed in either of the two bare steel tanks. No impacts to groundwater were observed. Low-level soil impacts were observed in soil samples which were field screened with a flame ionization detector (FID).

Soil sample collection was performed on the day of UST removal. STS' site assessor collected soil samples at a depth of 3 feet below ground surface (bgs), above the apparent groundwater table which was at approximately 4 feet bgs. No soil samples could be collected from the north side of the USTs due to the presence of a concrete footing. Soil descriptions are provided on Table 1. Sample locations are shown on Figure 2. Portions of the soil samples were placed in sealed containers for field screening with an FID. Other portions of the soil samples were transferred into laboratory containers. The laboratory containers were placed in an ice-filled cooler for transportation to the U.S. Oil Company, Inc. (U.S. Oil) Laboratory, Kimberly, Wisconsin. The samples were submitted under Chain of Custody control for analysis of volatile organic compounds (VOC) including acetone and styrene by Method 8260. (Styrene is a primary constituent of the resin formerly stored in UST #6.)

TABLE 1
SOIL FIELD OBSERVATIONS AND LABORATORY RESULTS
CARVER BOAT CORPORATION USTs #6 AND #7
PULASKI, WISCONSIN

Sample Location	Depth (feet)	FID (units)	Soil Description	Odor	Acetone (µg/kg)	Styrene (µg/kg)	MTBE (µg/kg)	Tetrachloroethene (µg/kg)	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)
6-SS-1	3	52	Dark Brown Fine to Medium Silty Sand	Slight	<100	36	<25	<25	<25	<25	<25	<50
6-SS-2	3	10	Dark Brown Fine to Medium Silty Sand	Possible	<100	<25	<25	26	<25	<25	<25	<50
6-SS-3	3	6	Dark Brown Fine to Medium Silty Sand	No	120	31	<25	51	<25	<25	<25	<50
6-SS-4	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	28	<25	<25	<25	<25	<50
6-SS-5	3	4	Dark Brown Fine to Medium Silty Sand	No	<100	<25	36	<25	<25	<25	<25	<50
S-1A	4	65	Brown Red Silty Clay	Slight	-	-	-	-	-	-	-	-
S-2A	4	25	Brown Red Silty Clay	Possible	-	-	-	-	-	-	-	-
S-3A	4	50	Brown Red Silty Clay	Slight	-	-	-	-	-	-	-	-
S-4A	4	7	Brown Red Silty Clay	No	-	-	-	-	-	-	-	-
S-5A	4	7	Brown Red Silty Clay	No	-	-	-	-	-	-	-	-

Notes:
- = Not Analyzed
MTBE = Methyl tert Butyl Ether
FID = Flame Ionization Detector
VOCs not listed were not detected in any sample

The UST excavation was backfilled with the soil previously excavated in order to remove the USTs, and with additional imported fill. The backfill was then compacted with the backhoe bucket and a vibratory plate compactor.

Phenco cut up the USTs for transport to Sadoff Iron and Metal (Sadoff), Green Bay, Wisconsin. Tank Disposal Forms signed by a Sadoff representative are included in Appendix A.

Carver previously submitted Underground Petroleum Product Tank Inventory forms (ERS-7437) and a Checklist for Underground Tank Closure (ERS-8951) to WDCOMM under separate cover. Copies of these forms are included in Appendix B.

3.0 SOIL TEST RESULTS

FID screening results, olfactory observations, and analytical test results are summarized on Table 1. Field evidence indicated the possibility of soil impacts, with somewhat higher FID readings reported for the samples collected to the east and south of the excavation. Olfactory observations also indicated the possibility of some impacts to the east with no odors observed on the west side.

Laboratory testing indicated the presence of three VOC compounds in Sample 6-SS-3 and one compound in each of the other samples. Styrene, tetrachloroethene and methyl tert-butyl ether (MTBE) were each detected in two samples, while acetone was detected in one sample. In only one instance did any VOC concentration exceed 100 micrograms per kilogram (µg/kg), that being acetone in Sample 6-SS-3 at 120 µg/kg. Benzene, toluene, ethylbenzene, and xylenes, collectively referred to as BTEX, were not detected in any sample. The U.S. Oil Analytical report is in Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

One 6,000-gallon resin UST and one 2,000-gallon acetone UST were both decommissioned by removal. The steel tanks were observed to be in good condition with no holes or pitting reported. Low level detections of styrene, acetone, tetrachloroethene, and MTBE were reported in soil samples, and along with field indications provide evidence that a release has occurred. We therefore recommend further subsurface investigation.

5.0 GENERAL QUALIFICATIONS

Conditions and conclusions presented in this report are based on site observations and results of field and laboratory tests performed on collected soil samples. The scope of this report is limited to the specific project and locations described herein. Our description of the project represents our understanding of the significant aspects relative to subsurface conditions. This information should not be used for purposes other than intended.

APPENDIX A

Tank Disposal Form

Phenco, inc.

Carver USTs #6, 7, 8

ENVIRONMENTAL CONSTRUCTION

Job #7029

TANK DISPOSAL FORM

Phenco Inc
1977 American Dr.
Neenah Wi 54956

Received from Phenco, Inc. agent for:

Project No. 7029

Name: Carver Boat Corp

Location: Markham Dr.
Pulaski Wi.

3 *Tank (s) have been properly cleaned and rendered non-reusable for recycle or disposal.*

Received by: Cary Kay

Date: 10-7-97

1907 American Drive, P.O. Box 280 * Neenah, Wisconsin 54957-0280
Phone 414/729-4305 * Fax 414/729-4306

APPENDIX B

Underground Petroleum Product Tank Inventory Forms (ERS-7437)

Checklist for Underground Tank Closure (ERS-8951)

State of Wisconsin

WI Tank ID#: 051/00596

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Information Required By Section 101.142, Wis. Stats.

Send Completed Form To: #6
Department of Commerce
ERS Division
Bureau of Storage Tank Regulation
P.O. Box 7969, Madison, WI 53707

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☒ Yes ☐ No If yes, are you correcting/updating information only? ☒ Yes ☐ No

Personal information you provide may be used for secondary purposes. [Privacy Law, s. 15.04 (1)(m)]

This registration applies to a tank that is (check one):

1A. ☐ In Use or
1B. ☐ Newly Installed
2. ☐ Abandoned with Product
3. ☐ Abandoned No Product (empty) or with Water
4. ☒ Closed - Tank Removed
6. ☐ Closed - Filled with Inert Materials
7. ☐ Out of Service - Provide Date: _____
8. ☐ Ownership Change (Indicate new owner name in block 2)

Fire Department providing fire coverage where tank is located:
☐ City ☒ Village #0511 0
☐ Town of PULASKI

A. IDENTIFICATION (Please Print)

1. Tank Site Name: CARVER BOAT CORP.
Site Address: 790 MARKHAM DR.
Site Telephone Number: (920) 822-9000
☐ City ☒ Village ☐ Town of: PULASKI
State: WI
Zip Code: 54162 ~~54166~~
County: BROWN

2. Tank Owner Name: CARVER BOAT CORP.
Mailing Address: P.O. Box 1010
Telephone Number: (920) 822-9000
☐ City ☐ Village ☐ Town of: PULASKI
State: WI
Zip Code: 54162 ~~54166~~
County: BROWN

3. Previous Name:
Previous site address if different than #1:

4. Tank Age (date installed, if known or years old):
5. Tank Capacity (gallons): 6000
6. If more than one tank is located at facility, please provide tank #: 051/00596

B. TYPE OF USER (check one)

1. ☐ Gas/Retail Sales 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile/Commercial 5. ☒ Industrial
6. ☐ Government 7. ☐ School 8. ☐ Residential 9. ☐ Agricultural 10. ☐ Other (specify):
11. ☐ Tribal Nation 12. ☐ Federal Property 13. ☐ Backup Generator

C. TANK CONSTRUCTION (check one)

1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☒ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Lined - Date: _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☒ UL 3. ☐ Other:
Is tank double walled? ☐ Yes ☒ No

Overfill Protection Provided? ☐ Yes ☒ No If yes, identify type:
Spill Containment? ☐ Yes ☒ No

Tank leak detection method: 1. ☒ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring
4. ☐ Inventory control and tightness testing 5. ☐ Interstitial monitoring
7. ☐ Manual tank gauging (only for tanks of 1,000 gallons or less) 8. ☐ Statistical Inventory Reconciliation (SIR)

D. PIPING CONSTRUCTION

1. ☒ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (Specify): 9. ☐ Unknown

Vapor Recovery/Stage II NA
4. ☐ Fiberglass 6. ☐ Flexible 5. ☐ Other (specify):
☐ CARB #: _____
☐ Operational - Provide Date (mo/day/yr):

Piping System Type: 1. ☐ Pressurized piping with A. ☐ auto shutoff; B. ☐ alarm or C. ☐ flow restrictor
2. ☐ Suction piping with check valve at tank 3. ☒ Suction piping with check valve at pump and inspectable 4. ☐ Not needed if waste oil

Piping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☐ Tightness testing 5. ☐ Line leak detector 6. ☒ Not required 8. ☐ SIR

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:
Is pipe double walled? ☐ Yes ☒ No

E. TANK CONTENTS

1. ☐ Diesel 2. ☐ Leaded 3. ☐ Unleaded 4. ☐ Fuel Oil 5. ☐ Gasohol
6. ☒ Other (Specify): RESIN 7. ☐ Empty* 8. ☐ Sand/Gravel/Slurry* 9. ☐ Unknown* 10. ☐ Premix
11. ☐ Waste/Used Motor Oil 13. ☐ Chemical _____ 14. ☐ Kerosene 15. ☐ Aviation
(Indicate chemical name and number)

* If 7, 8, 9, or 13 is chosen, this tank is NOT PECFA eligible.

If Tank Closed, Abandoned or Out of Service, give date (mo/day/yr): 10-3-97

Has a site assessment been completed (see reverse side for details)
☒ Yes ☐ No

Owner or Operator Name (please print): Ted Maloney

Indicate whether:
☐ Owner or ☒ Operator

Owner or Operator Signature: Ted Maloney

Date Signed: 10-3-97

IMPORTANT: Failure to provide sufficient information may cause you to fall under additional regulations, and may delay PECFA eligibility determination. It is necessary to complete ALL shaded areas and as many other items as possible.

ERS-7437 (R. 01/97)

State of Wisconsin

WI Tank ID#: 05110059S

UNDERGROUND PETROLEUM PRODUCT TANK INVENTORY

Information Required By Section 101.142, Wis. Stats.

Send Completed Form To: #7
Department of Commerce
ERS Division
Bureau of Storage Tank Regulation
P.O. Box 7969, Madison, WI 53707

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (including piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☒ Yes ☐ No If yes, are you correcting/updating information only? ☒ Yes ☐ No

Personal information you provide may be used for secondary purposes. [Privacy Law, s. 15.04 (1)(m)]

This registration applies to a tank that is (check one):

1A. ☐ In Use or
1B. ☐ Newly Installed
2. ☐ Abandoned with Product
3. ☐ Abandoned No Product (empty) or with Water
4. ☒ Closed - Tank Removed
6. ☐ Closed - Filled with Inert Materials
7. ☐ Out of Service - Provide Date: _____
8. ☐ Ownership Change (Indicate new owner name in block 2)

Fire Department providing fire coverage where tank is located:
☐ City ☒ Village # 0511 0
☐ Town of PULASKI

A. IDENTIFICATION (Please Print)

1. Tank Site Name	Site Address	Site Telephone Number
CARVER BOAT CORP.	790 MARKHAM DR.	(920) 822-9000
☐ City ☒ Village ☐ Town of: PULASKI	State WI	Zip Code 54162	County BROWN
2. Tank Owner Name	Mailing Address	Telephone Number
CARVER BOAT CORP	P.O. BOX 1010	(920) 822-9000
☐ City ☐ Village ☐ Town of: PULASKI	State WI	Zip Code 54162	County BROWN
3. Previous Name	Previous site address if different than #1	
	PLANT 2 BUILDING 14	
4. Tank Age (date installed, if known or years old)	5. Tank Capacity (gallons)	6. If more than one tank is located at facility, please provide tank #
1-1-84	2,000	05110059S

B. TYPE OF USER (check one)

1. ☐ Gas/Retail Sales 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile/Commercial 5. ☒ Industrial
6. ☐ Government 7. ☐ School 8. ☐ Residential 9. ☐ Agricultural 10. ☐ Other (specify):
11. ☐ Tribal Nation 12. ☐ Federal Property 13. ☐ Backup Generator

C. TANK CONSTRUCTION (check one)

1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☒ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Lined - Date: _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other: | Is tank double walled? ☐ Yes ☒ No

Overfill Protection Provided? ☐ Yes ☒ No If yes, identify type: | Spill Containment? ☐ Yes ☒ No

Tank leak detection method:
1. ☐ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring
4. ☐ Inventory control and tightness testing 5. ☐ Interstitial monitoring
7. ☐ Manual tank gauging (only for tanks of 1,000 gallons or less) 8. ☐ Statistical Inventory Reconciliation (SIR)

D. PIPING CONSTRUCTION

1. ☐ Bare Steel 2. ☐ Cathodically Protected & Coated Steel (Check one: A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (Specify): 9. ☐ Unknown

Vapor Recovery/Stage II ☐ CARB #: _____
4. ☐ Fiberglass 6. ☐ Flexible 5. ☐ Other (specify): ☐ Operational - Provide Date (mo/day/yr):

Piping System Type: 1. ☐ Pressurized piping with A. ☐ auto shutoff; B. ☐ alarm or C. ☐ flow restrictor
2. ☐ Suction piping with check valve at tank 3. ☐ Suction piping with check valve at pump and inspectable 4. ☐ Not needed if waste oil

Piping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☐ Tightness testing 5. ☐ Line leak detector 6. ☒ Not required 8. ☐ SIR

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other: | Is pipe double walled? ☐ Yes ☒ No

E. TANK CONTENTS

1. ☐ Diesel 2. ☐ Leaded 3. ☐ Unleaded 4. ☐ Fuel Oil 5. ☐ Gasohol
6. ☐ Other (Specify): _____ 7. ☐ Empty* 8. ☐ Sand/Gravel/Slurry* 9. ☐ Unknown* 10. ☐ Premix
11. ☐ Waste/Used Motor Oil 13. ☒ Chemical ACETONE 14. ☐ Kerosene 15. ☐ Aviation
(Indicate chemical name and number)

* If 7, 8, 9, or 13 is chosen, this tank is NOT PECFA eligible. 000 67641

If Tank Closed, Abandoned or Out of Service, give date (mo/day/yr):	Has a site assessment been completed (see reverse side for details)
10-3-97	☒ Yes ☐ No

Owner or Operator Name (please print):	Indicate whether:
Ted Maloney	☐ Owner or ☒ Operator
Owner or Operator Signature:	**Date Signed**
Ted Maloney	10-3-97

IMPORTANT: Failure to provide sufficient information may cause you to fall under additional regulations, and may delay PECFA eligibility determination. It is necessary to complete ALL shaded areas and as many other items as possible.

ERS-7437 (R. 01/97)

Wisconsin Department of Industry, Labor and Human Relations

Complete one form for each site closure.

CHECKLIST FOR UNDERGROUND TANK CLOSURE

RETURN COMPLETED CHECKLIST TO:
Safety & Buildings Division
Fire Prevention & Underground Storage Tank Section
P. O. Box 7969, Madison, WI 53707

A. IDENTIFICATION: (Please Print) Indicate whether closure is for: ☒ Tank System ☐ Tank Only ☐ Piping Only

1. Site Name	2. Owner Name
Carver Boat Corp	Carver Boat Corp.
Site Street Address (not P.O. Box)	Owner Street Address
790 Markham Dr	P.O. Box 1010
☐ City ☒ Village ☐ Town of:	☐ City ☒ Village ☐ Town of: State Zip Code
Pulaski	Pulaski WI 54162 ~~54126~~
State Zip Code County	County Telephone No. (include area code)
WI ~~54126~~ 54162 Brown	Brown (920) 822-9000
3. Closure Company Name (Print)	Closure Company Street Address
Phenco Inc	1977 American Dr
Closure Company Telephone No. (include area code)	Closure Company City, State, Zip Code
(920) 729-4305	Neenah WI
4. Name of Company Performing Closure Assessment	Assessment Company Street Address, City, State, Zip Code
STS Consultants Ltd	1035 Kepler Dr Green Bay WI 54311
Telephone # (include area code) / Certified Assessor Name (Print)	Assessor Signature / Assessor Certification No.
(920) 468-1778 Jim Calhoun	Jim Calhoun 2482601

Tank ID #	Closure	Temp. Closure	Closure In Place	Tank Capacity	Contents *	Closure Assessment
1. 05110059S	☒	☐	☐	2000	13	☒ Y ☐ N
2. 05110059S	☒	☐	☐	6000	06	☒ Y ☐ N
3.	☐	☐	☐			☐ Y ☐ N
4.	☐	☐	☐			☐ Y ☐ N
5.	☐	☐	☐			☐ Y ☐ N
6.	☐	☐	☐			☐ Y ☐ N

* Indicate which product by numeric code: 01-Diesel; 02-Leaded; 03-Unleaded; 04-Fuel Oil; 05-Gasohol; 06-Other; 09-Unknown; 10-Premix; 11-Waste oil; 13-Chemical (indicate the chemical name(s) or numbers(s) Acetone _____; 14-Kerosene; 15-Aviation.

Written notification was provided to the local agent 15 days in advance of closure date. ☒ Y ☐ N ☐ NA
All local permits were obtained before beginning closure. ☒ Y ☐ N ☐ NA

Check applicable box at right in response to all statements in Sections B - E.

	Remover Verified	Inspector Verified	NA
B. TEMPORARILY OUT OF SERVICE			
Written inspector approval of temporary closure obtained, which is effective until (provide date)_____	☐ Y ☐ N	☐	☒
1. Product Removed			
a. Product lines drained into tank (or other container) and resulting liquid removed, AND	☐ Y ☐ N	☐	☒
b. All product removed to bottom of suction line, OR	☐ Y ☐ N	☐	☒
c. All product removed to within 1" of bottom.	☐ Y ☐ N	☐	☒
2. Fill pipe, gauge pipe, tank truck vapor recovery fittings, and vapor return lines capped.	☐ Y ☐ N	☐	☒
3. All product lines at the islands or pumps located elsewhere are removed and capped, OR	☐ Y ☐ N	☐	☒
4. Dispensers/pumps left in place but locked and power disconnected.	☐ Y ☐ N	☐	☒
5. Vent lines left open.	☐ Y ☐ N	☐	☒
6. Inventory form filed indicating temporary closure.	☐ Y ☐ N	☐	☒
C. CLOSURE BY REMOVAL			
1. Product from piping drained into tank (or other container).	☒ Y ☐ N	☒	☐
2. Piping disconnected from tank and removed.	☒ Y ☐ N	☒	☐
3. All liquid and residue removed from tank using explosion proof pumps or hand pumps.	☒ Y ☐ N	☒	☐
4. All pump motors and suction hoses bonded to tank or otherwise grounded.	☒ Y ☐ N	☒	☐
5. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed.	☒ Y ☐ N	☒	☐
NOTE: DROP TUBE SHOULD NOT BE REMOVED IF THE TANK IS TO BE PURGED THROUGH THE USE OF AN EDUCTOR.			
6. Vent lines left connected until tanks purged.	☐ Y ☐ N	☐	☒
7. Tank openings temporarily plugged so vapors exit through vent.	☐ Y ☐ N	☐	☒
8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section F.	☒ Y ☐ N	☒	☐
9. Tank removed from excavation after **PURGING/INERTING**; placed on level ground and blocked to prevent movement.	☒ Y ☐ N	☒	☐
10. Tank cleaned before being removed being removed from site.	☒ Y ☐ N	☒	☐

- CONTINUE ON NEXT PAGE -

C. CLOSURE BY REMOVAL (continued)

	Remover Verified	Inspector Verified	NA
11. Tank labeled in 2" high letters after removal but before being moved from site.	☐ Y ☐ N	☐	☒
NOTE: COMPLETE TANK LABELING SHOULD INCLUDE WARNING AGAINST REUSE; FORMER CONTENTS; VAPOR STATE; VAPOR FREEING TREATMENT; DATE.			
12. Tank vent hole (1/8 th " in uppermost part of tank) installed prior to moving the tank from site.	☐ Y ☐ N	☐	☒
13. Inventory form filed by owner with Safety and Buildings Division indicating closure by removal.	☒ Y ☐ N	☒	☐
14. Site security is provided while the excavation is open.	☒ Y ☐ N	☒	☐

D. CLOSURE IN PLACE

NOTE: CLOSURES IN PLACE ARE ONLY ALLOWED WITH THE PRIOR WRITTEN APPROVAL OF THE DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS OR LOCAL AGENT.

1. Product from piping drained into tank (or other container).			
2. Piping disconnected from tank and removed.	☐ Y ☐ N	☐	☒
3. All liquid and residue removed from tank using explosion proof pumps or hand pumps.	☐ Y ☐ N	☐	☒
4. All pump motors and suction hoses bonded to tank or otherwise grounded.	☐ Y ☐ N	☐	☒
5. Fill pipes, gauge pipes, vapor recovery connections, submersible pumps and other fixtures removed.	☐ Y ☐ N	☐	☒
NOTE: DROP TUBE SHOULD NOT BE REMOVED IF THE TANK IS TO BE PURGED THROUGH THE USE OF AN EDUCTOR - EDUCTOR OUTPUT 12 FT ABOVE GRADE.			
6. Vent lines left connected until tanks purged.	☐ Y ☐ N	☐	☒
7. Tank openings temporarily plugged so vapors exit through vent.	☐ Y ☐ N	☐	☒
8. Tank atmosphere reduced to 10% of the lower flammable range (LEL) - see Section F.	☐ Y ☐ N	☐	☒
9. Tank properly cleaned to remove all sludge and residue.	☐ Y ☐ N	☐	☒
10. Solid inert material (sand, cyclone boiler slag, pea gravel recommended) introduced and tank filled.	☐ Y ☐ N	☐	☒
11. Vent line disconnected or removed.	☐ Y ☐ N	☐	☒
12. Inventory form filed by owner with Safety and Buildings Division indicating closure in place.	☐ Y ☐ N	☐	☒

E. CLOSURE ASSESSMENTS

NOTE: DETERMINE IF A CLOSURE ASSESSMENT IS REQUIRED BY REFERRING TO ILHR 10.

1. Individual conducting the assessment has a closure assessment plan (written) which is used as the basis for their work on the site.	☒ Y ☐ N	☒	☐
2. Do points of obvious contamination exist?	☐ Y ☒ N	☒	☐
3. Are there strong odors in the soils?	☐ Y ☒ N	☒	☐
4. Was a field screening instrument used to pre-screen soil sample locations?	☒ Y ☐ N	☒	☐
5. Was a closure assessment omitted because of obvious contamination?	☐ Y ☒ N	☒	☐
6. Was the DNR notified of suspected or obvious contamination?	☐ Y ☒ N	☐	☐

Agency, office and person contacted: _____

7. Contamination suspected because of: ☐ Odor ☐ Soil Staining ☐ Free Product ☐ Sheen On Groundwater ☐ Field Instrument Test

F. METHOD OF ACHIEVING 10% LEVEL DESCRIPTION

☒ Educator Or Diffused Air Blower
Eductor driven by compressed air, bonded and drop tube left in place; vapors discharged minimum of 12 feet above ground. Diffused air blower bonded and drop tube removed. Air pressure not exceeding 5 psig.

☐ Dry Ice
Dry ice introduced at 1.5 pounds per 100 gallons of tank capacity. Dry ice crushed and distributed over the greatest possible tank area. Dry ice evaporated before proceeding.

☐ Inert Gas (CO/2 or N/2) **NOTE: INERT GASSES PRODUCE AN OXYGEN DEFICIENT ATMOSPHERE. THE TANK MAY NOT BE ENTERED IN THIS STATE WITHOUT SPECIAL EQUIPMENT**
Gas introduced through a single opening at a point near the bottom of the tank at the end of the tank opposite the vent. Gas introduced under low pressure not to exceed 5 psig to reduce static electricity. Gas introducing device grounded.

☐ Tank atmosphere monitored for flammable or combustible vapor levels.
Calibrate combustible gas indicator. Drop tube removed prior to checking atmosphere. Tank space monitored at bottom, middle and upper portion of tank. Readings of 10% or less of the lower flammable range (LEL) obtained before removing tank from ground.

G. NOTE SPECIFIC PROBLEMS OR NONCOMPLIANCE ISSUES BELOW

6000 gal TANK Contents

H. REMOVER/CLEANER INFORMATION

Remover Name (print)	Remover Signature	Remover Certification No.	Date Signed
John Wolters	John Wolters	01019	10-3-97

I. INSPECTOR INFORMATION

Inspector Name (print)	Inspector Signature	Inspector Certification No.
ROBERT E. DUNKS	Robert E. Dunks	35003

FDID # For Location Where Inspection Performed	Inspector Telephone Number	Date Signed
0510	(920) 448-2806	10-3-97

APPENDIX C

Analytical Laboratory Reports (Soil Testing)

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 24-Oct-97

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-1
Lab Code: 5018957A
Sample Type: Soil
Sample Date: 03-Oct-97

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	90.6			%		07-Oct-97	BNR	1
VOC								
Mod SW846 8260 (Meth Pres.)						18-Oct-97	CJR	
Acetone	< 100	31	98	UG/KG				2,3
Styrene	36	2	6.4	UG/KG				1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

2 The check standard failed to meet acceptable QC limits.

3 The duplicate RPD failed to meet acceptable QC limits.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

VOC
Method 8260 Volatile Organic Compounds
(Methanol Preserved)

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 23-Oct-97
Analyzed By: CJR

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-1
Lab Code: 5018957A
Sample Type: Soil
Sample Date: 03-Oct-97
Date Analyzed: 17-Oct-97

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
Benzene	< 25	2.5	8	1
Bromobenzene	< 25	2.6	8.1	1
Bromodichloromethane	< 25	2.6	8.1	1
n-Butylbenzene	< 25	3	10	1
sec-Butylbenzene	< 25	1.8	5.5	1
tert-Butylbenzene	< 25	2.5	7.9	1
Carbon Tetrachloride	< 25	4.6	15	1
Chlorobenzene	< 25	1.9	6	1
Chloroethane	< 25	10	31	1
Chloroform	< 25	4.1	13	1
Chloromethane	< 25	4.9	15	1
2-Chlorotoluene	< 25	1.6	5.2	1
4-Chlorotoluene	< 25	2.3	7.3	1
1,2-Dibromo-3-Chloropropane	< 25	11	33	1
Dibromochloromethane	< 25	3.8	12	1
1,2-Dichlorobenzene	< 25	2.8	8.7	1
1,3-Dichlorobenzene	< 25	2.5	7.9	1
1,4-Dichlorobenzene	< 25	2.3	7.2	1
Dichlorodifluoromethane	< 25	9.4	30	1
1,1-Dichloroethane	< 25	2.7	8.4	1
1,2-Dichloroethane	< 25	11	35	1
1,1-Dichloroethene	< 25	6.9	22	1
cis-1,2-Dichloroethene	< 25	4	13	1
trans-1,2-Dichloroethene	< 25	9.4	30	1
1,2-Dichloropropane	< 25	2.8	8.7	1
1,3-Dichloropropane	< 25	3.8	12	1

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
2,2-Dichloropropane	< 25	4.1	13	1
Di-Isopropyl ether	< 25	2.9	9	1
Ethylbenzene	< 25	1.7	5.4	1
EDB (1,2-Dibromoethane)	< 25	3.1	10	1
Hexachlorobutadiene	< 25	3.3	10	1
Isopropylbenzene	< 25	2.6	8.1	1
p-Isopropyltoluene	< 25	2.3	7.1	1
Methylene chloride	< 25	7	22	1
MTBE	< 25	4.5	14	1
Naphthalene	< 25	3.8	12	1
n-Propylbenzene	< 25	2.6	8.1	1
1,1,2,2-Tetrachloroethane	< 25	4.6	14	1
Tetrachloroethene	< 25	5.4	17	1
Toluene	< 25	1.6	4.9	1
1,2,3-Trichlorobenzene	< 25	4	13	1
1,2,4-Trichlorobenzene	< 25	3.3	10	1
1,1,1-Trichloroethane	< 25	3.1	10	1
1,1,2-Trichloroethane	< 25	5	16	1
Trichloroethene	< 25	7.5	24	1
Trichlorofluoromethane	< 25	6.5	21	1
1,2,4-Trimethylbenzene	< 25	1.6	5	1
1,3,5-Trimethylbenzene	< 25	2.4	7.7	1
Vinyl Chloride	< 25	10	31	1
m&p-Xylene	< 25	1.9	5.9	1
o-Xylene	< 25	2.4	7.6	1

Dibromofluoromethane Sur	101 % Rec.
1,2-Dichloroethane-d4 Sur	102 % Rec.
Toluene-d8 Sur	103 % Rec.
4-Bromofluorobenzene Sur	101 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120088
Total % Solids 91

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XF
Sample ID: 6-SS-1
Report Date: 23-Oct-97
Lab Code: 5018957A

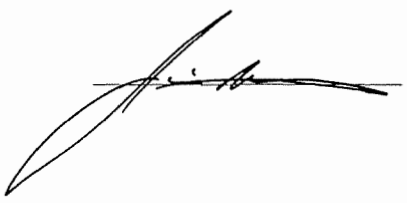
ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachlonde	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	F	P	P	F	F	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	F	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	F	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	F	P	P	F	F	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120088
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

VOC analysis detected unidentified peaks.

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 24-Oct-97

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-2
Lab Code: 5018957B
Sample Type: Soil
Sample Date: 03-Oct-97

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	87.6			%		07-Oct-97	BNR	1
VOC								
Mod SW846 8260 (Meth Pres.)						18-Oct-97	CJR	
Acetone	< 100	31	98	UG/KG				2,3
Styrene	< 25	2	6.4	UG/KG				1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

2 The check standard failed to meet acceptable QC limits.

3 The duplicate RPD failed to meet acceptable QC limits.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

VOC
Method 8260 Volatile Organic Compounds
(Methanol Preserved)

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 23-Oct-97
Analyzed By: CJR

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-2
Lab Code: 5018957B
Sample Type: Soil
Sample Date: 03-Oct-97
Date Analyzed: 17-Oct-97

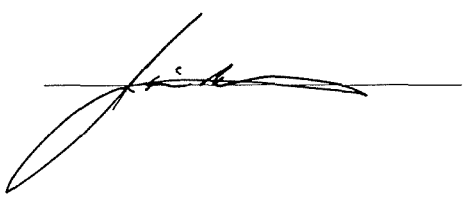
ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
Benzene	< 25	2.5	8	1
Bromobenzene	< 25	2.6	8.1	1
Bromodichloromethane	< 25	2.6	8.1	1
n-Butylbenzene	< 25	3	10	1
sec-Butylbenzene	< 25	1.8	5.5	1
tert-Butylbenzene	< 25	2.5	7.9	1
Carbon Tetrachloride	< 25	4.6	15	1
Chlorobenzene	< 25	1.9	6	1
Chloroethane	< 25	10	31	1
Chloroform	< 25	4.1	13	1
Chloromethane	< 25	4.9	15	1
2-Chlorotoluene	< 25	1.6	5.2	1
4-Chlorotoluene	< 25	2.3	7.3	1
1,2-Dibromo-3-Chloropropane	< 25	11	33	1
Dibromochloromethane	< 25	3.8	12	1
1,2-Dichlorobenzene	< 25	2.8	8.7	1
1,3-Dichlorobenzene	< 25	2.5	7.9	1
1,4-Dichlorobenzene	< 25	2.3	7.2	1
Dichlorodifluoromethane	< 25	9.4	30	1
1,1-Dichloroethane	< 25	2.7	8.4	1
1,2-Dichloroethane	< 25	11	35	1
1,1-Dichloroethene	< 25	6.9	22	1
cis-1,2-Dichloroethene	< 25	4	13	1
trans-1,2-Dichloroethene	< 25	9.4	30	1
1,2-Dichloropropane	< 25	2.8	8.7	1
1,3-Dichloropropane	< 25	3.8	12	1

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
2,2-Dichloropropane	< 25	4.1	13	1
Di-Isopropyl ether	< 25	2.9	9	1
Ethylbenzene	< 25	1.7	5.4	1
EDB (1,2-Dibromoethane)	< 25	3.1	10	1
Hexachlorobutadiene	< 25	3.3	10	1
Isopropylbenzene	< 25	2.6	8.1	1
p-Isopropyltoluene	< 25	2.3	7.1	1
Methylene chloride	< 25	7	22	1
MTBE	< 25	4.5	14	1
Naphthalene	< 25	3.8	12	1
n-Propylbenzene	< 25	2.6	8.1	1
1,1,2,2-Tetrachloroethane	< 25	4.6	14	1
Tetrachloroethene	26	5.4	17	1
Toluene	< 25	1.6	4.9	1
1,2,3-Trichlorobenzene	< 25	4	13	1
1,2,4-Trichlorobenzene	< 25	3.3	10	1
1,1,1-Trichloroethane	< 25	3.1	10	1
1,1,2-Trichlcroethane	< 25	5	16	1
Trichloroethene	< 25	7.5	24	1
Trichlorofluoromethane	< 25	6.5	21	1
1,2,4-Trimethylbenzene	< 25	1.6	5	1
1,3,5-Trimethylbenzene	< 25	2.4	7.7	1
Vinyl Chloride	< 25	10	31	1
m&p-Xylene	< 25	1.9	5.9	1
o-Xylene	< 25	2.4	7.6	1

Dibromofluoromethane Sur	102	% Rec.
1,2-Dichloroethane-d4 Sur	103	% Rec.
Toluene-d8 Sur	102	% Rec.
4-Bromofluorobenzene Sur	99	% Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120088
Total % Solids 88

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XF
Sample ID: 6-SS-2
Report Date: 23-Oct-97
Lab Code: 5018957B

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	F	P	P	F	F	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	F	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	F	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	F	P	P	F	F	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P	QC Batch # 120088
SPCC 1,1,2,2-Tetrachloroethane	P	F = Failed QC limits.
SPCC Bromoform	P	P = Passed QC limits.
SPCC Chlorobenzene	P	NA = Not Applicable
SPCC Chloromethane	P	VOC analysis detected unidentified peaks.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 24-Oct-97

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-3
Lab Code: 5018957C
Sample Type: Soil
Sample Date: 03-Oct-97

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	87.5			%		07-Oct-97	BNR	1
VOC								
Mod SW846 8260 (Meth Pres.)						18-Oct-97	CJR	
Acetone	120	31	98	UG/KG				2,3
Styrene	31	2	6.4	UG/KG				1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1	All laboratory QC requirements were met for this sample.
2	The check standard failed to meet acceptable QC limits.
3	The duplicate RPD failed to meet acceptable QC limits.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

VOC
Method 8260 Volatile Organic Compounds
(Methanol Preserved)

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 23-Oct-97
Analyzed By: CJR

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-3
Lab Code: 5018957C
Sample Type: Soil
Sample Date: 03-Oct-97
Date Analyzed: 17-Oct-97

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
Benzene	< 25	2.5	8	1
Bromobenzene	< 25	2.6	8.1	1
Bromodichloromethane	< 25	2.6	8.1	1
n-Butylbenzene	< 25	3	10	1
sec-Butylbenzene	< 25	1.8	5.5	1
tert-Butylbenzene	< 25	2.5	7.9	1
Carbon Tetrachloride	< 25	4.6	15	1
Chlorobenzene	< 25	1.9	6	1
Chloroethane	< 25	10	31	1
Chloroform	< 25	4.1	13	1
Chloromethane	< 25	4.9	15	1
2-Chlorotoluene	< 25	1.6	5.2	1
4-Chlorotoluene	< 25	2.3	7.3	1
1,2-Dibromo-3-Chloropropane	< 25	11	33	1
Dibromochloromethane	< 25	3.8	12	1
1,2-Dichlorobenzene	< 25	2.8	8.7	1
1,3-Dichlorobenzene	< 25	2.5	7.9	1
1,4-Dichlorobenzene	< 25	2.3	7.2	1
Dichlorodifluoromethane	< 25	9.4	30	1
1,1-Dichloroethane	< 25	2.7	8.4	1
1,2-Dichloroethane	< 25	11	35	1
1,1-Dichloroethene	< 25	6.9	22	1
cis-1,2-Dichloroethene	< 25	4	13	1
trans-1,2-Dichloroethene	< 25	9.4	30	1
1,2-Dichloropropane	< 25	2.8	8.7	1
1,3-Dichloropropane	< 25	3.8	12	1

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
2,2-Dichloropropane	< 25	4.1	13	1
Di-Isopropyl ether	< 25	2.9	9	1
Ethylbenzene	< 25	1.7	5.4	1
EDB (1,2-Dibromoethane)	< 25	3.1	10	1
Hexachlorobutadiene	< 25	3.3	10	1
Isopropylbenzene	< 25	2.6	8.1	1
p-Isopropyltoluene	< 25	2.3	7.1	1
Methylene chloride	< 25	7	22	1
MTBE	< 25	4.5	14	1
Naphthalene	< 25	3.8	12	1
n-Propylbenzene	< 25	2.6	8.1	1
1,1,2,2-Tetrachloroethane	< 25	4.6	14	1
Tetrachloroethene	51	5.4	17	1
Toluene	< 25	1.6	4.9	1
1,2,3-Trichlorobenzene	< 25	4	13	1
1,2,4-Trichlorobenzene	< 25	3.3	10	1
1,1,1-Trichloroethane	< 25	3.1	10	1
1,1,2-Trichloroethane	< 25	5	16	1
Trichloroethene	< 25	7.5	24	1
Trichlorofluoromethane	< 25	6.5	21	1
1,2,4-Trimethylbenzene	< 25	1.6	5	1
1,3,5-Trimethylbenzene	< 25	2.4	7.7	1
Vinyl Chloride	< 25	10	31	1
m&p-Xylene	< 25	1.9	5.9	1
o-Xylene	< 25	2.4	7.6	1

Dibromofluoromethane Sur	100 % Rec.
1,2-Dichloroethane-d4 Sur	103 % Rec.
Toluene-d8 Sur	102 % Rec.
4-Bromofluorobenzene Sur	101 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120088
Total % Solids 88

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XF
Sample ID: 6-SS-3
Report Date: 23-Oct-97
Lab Code: 5018957C

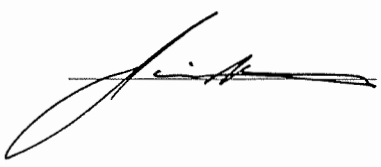
ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	F	P	P	F	F	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	F	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	F	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	F	P	P	F	F	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120088
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

VOC analysis detected unidentified peaks.

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 24-Oct-97

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-4
Lab Code: 5018957D
Sample Type: Soil
Sample Date: 03-Oct-97

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	86.6			%		07-Oct-97	BNR	1
VOC								
Mod SW846 8260 (Meth Pres.)						18-Oct-97	CJR	
Acetone	< 100	31	98	UG/KG				2,3
Styrene	< 25	2	6.4	UG/KG				1

LOD = Limit of Detection

"J" Flag: Analyte detected between LOD and LOQ.

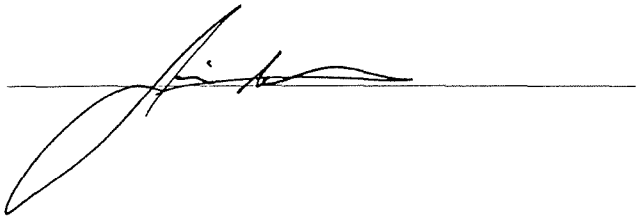
LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1	All laboratory QC requirements were met for this sample.
2	The check standard failed to meet acceptable QC limits.
3	The duplicate RPD failed to meet acceptable QC limits.

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

VOC
Method 8260 Volatile Organic Compounds
(Methanol Preserved)

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 23-Oct-97
Analyzed By: CJR

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-4
Lab Code: 5018957D
Sample Type: Soil
Sample Date: 03-Oct-97
Date Analyzed: 17-Oct-97

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
Benzene	< 25	2.5	8	1
Bromobenzene	< 25	2.6	8.1	1
Bromodichloromethane	< 25	2.6	8.1	1
n-Butylbenzene	< 25	3	10	1
sec-Butylbenzene	< 25	1.8	5.5	1
tert-Butylbenzene	< 25	2.5	7.9	1
Carbon Tetrachloride	< 25	4.6	15	1
Chlorobenzene	< 25	1.9	6	1
Chloroethane	< 25	10	31	1
Chloroform	< 25	4.1	13	1
Chloromethane	< 25	4.9	15	1
2-Chlorotoluene	< 25	1.6	5.2	1
4-Chlorotoluene	< 25	2.3	7.3	1
1,2-Dibromo-3-Chloropropane	< 25	11	33	1
Dibromochloromethane	< 25	3.8	12	1
1,2-Dichlorobenzene	< 25	2.8	8.7	1
1,3-Dichlorobenzene	< 25	2.5	7.9	1
1,4-Dichlorobenzene	< 25	2.3	7.2	1
Dichlorodifluoromethane	< 25	9.4	30	1
1,1-Dichloroethane	< 25	2.7	8.4	1
1,2-Dichloroethane	< 25	11	35	1
1,1-Dichloroethene	< 25	6.9	22	1
cis-1,2-Dichloroethene	< 25	4	13	1
trans-1,2-Dichloroethene	< 25	9.4	30	1
1,2-Dichloropropane	< 25	2.8	8.7	1
1,3-Dichloropropane	< 25	3.8	12	1

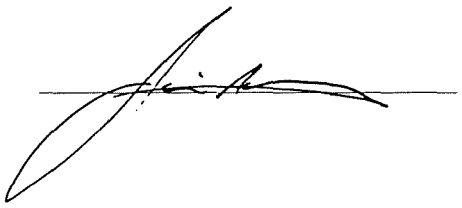
ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
2,2-Dichloropropane	< 25	4.1	13	1
Di-Isopropyl ether	< 25	2.9	9	1
Ethylbenzene	< 25	1.7	5.4	1
EDB (1,2-Dibromoethane)	< 25	3.1	10	1
Hexachlorobutadiene	< 25	3.3	10	1
Isopropylbenzene	< 25	2.6	8.1	1
p-Isopropyltoluene	< 25	2.3	7.1	1
Methylene chloride	< 25	7	22	1
MTBE	28	4.5	14	1
Naphthalene	< 25	3.8	12	1
n-Propylbenzene	< 25	2.6	8.1	1
1,1,2,2-Tetrachloroethane	< 25	4.6	14	1
Tetrachloroethene	< 25	5.4	17	1
Toluene	< 25	1.6	4.9	1
1,2,3-Trichlorobenzene	< 25	4	13	1
1,2,4-Trichlorobenzene	< 25	3.3	10	1
1,1,1-Trichloroethane	< 25	3.1	10	1
1,1,2-Trichloroethane	< 25	5	16	1
Trichloroethene	< 25	7.5	24	1
Trichlorofluoromethane	< 25	6.5	21	1
1,2,4-Trimethylbenzene	< 25	1.6	5	1
1,3,5-Trimethylbenzene	< 25	2.4	7.7	1
Vinyl Chloride	< 25	10	31	1
m&p-Xylene	< 25	1.9	5.9	1
o-Xylene	< 25	2.4	7.6	1

Dibromofluoromethane Sur	101 % Rec.
1,2-Dichloroethane-d4 Sur	103 % Rec.
Toluene-d8 Sur	101 % Rec.
4-Bromofluorobenzene Sur	101 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
QC Batch # 120088
Total % Solids 87

GCMS #12

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XF
Sample ID: 6-SS-4
Report Date: 23-Oct-97
Lab Code: 5018957D

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA%	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	F	P	P	F	F	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	F	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	F	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	F	P	P	F	F	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120088
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

VOC analysis detected unidentified peaks.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 24-Oct-97

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-5
Lab Code: 5018957E
Sample Type: Soil
Sample Date: 03-Oct-97

Test	Result	LOD	LOQ	Unit	Dilution Factor	Date Analyzed:	Analyzed By:	QC Code
TOTAL SOLIDS	89.5			%		07-Oct-97	BNR	1
VOC								
Mod SW846 8260 (Meth Pres.)						18-Oct-97	CJR	
Acetone	< 100	31	98	UG/KG				2,3
Styrene	< 25	2	6.4	UG/KG				1

LOD = Limit of Detection "J" Flag: Analyte detected between LOD and LOQ. LOQ = Limit of Quantitation

QC SUMMARY

CODE:

1 All laboratory QC requirements were met for this sample.

2 The check standard failed to meet acceptable QC limits.

3 The duplicate RPD failed to meet acceptable QC limits.

Authorized Signature

U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

VOC
Method 8260 Volatile Organic Compounds
(Methanol Preserved)

BILL NOEL
S T S CONSULTANTS LTD
1035 KEPLER DRIVE
GREEN BAY WI 54311

Report Date: 23-Oct-97
Analyzed By: CJR

Project #: 23379XF
Project : Carver Boat Corp
Sample ID: 6-SS-5
Lab Code: 5018957E
Sample Type: Soil
Sample Date: 03-Oct-97
Date Analyzed: 17-Oct-97

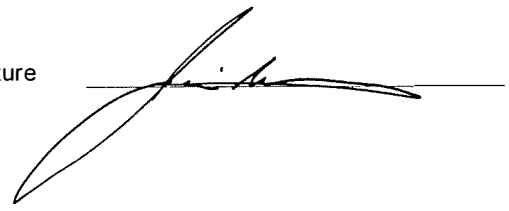
ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
Benzene	< 25	2.5	8	1
Bromobenzene	< 25	2.6	8.1	1
Bromodichloromethane	< 25	2.6	8.1	1
n-Butylbenzene	< 25	3	10	1
sec-Butylbenzene	< 25	1.8	5.5	1
tert-Butylbenzene	< 25	2.5	7.9	1
Carbon Tetrachloride	< 25	4.6	15	1
Chlorobenzene	< 25	1.9	6	1
Chloroethane	< 25	10	31	1
Chloroform	< 25	4.1	13	1
Chloromethane	< 25	4.9	15	1
2-Chlorotoluene	< 25	1.6	5.2	1
4-Chlorotoluene	< 25	2.3	7.3	1
1,2-Dibromo-3-Chloropropane	< 25	11	33	1
Dibromochloromethane	< 25	3.8	12	1
1,2-Dichlorobenzene	< 25	2.8	8.7	1
1,3-Dichlorobenzene	< 25	2.5	7.9	1
1,4-Dichlorobenzene	< 25	2.3	7.2	1
Dichlorodifluoromethane	< 25	9.4	30	1
1,1-Dichloroethane	< 25	2.7	8.4	1
1,2-Dichloroethane	< 25	11	35	1
1,1-Dichloroethene	< 25	6.9	22	1
cis-1,2-Dichloroethene	< 25	4	13	1
trans-1,2-Dichloroethene	< 25	9.4	30	1
1,2-Dichloropropane	< 25	2.8	8.7	1
1,3-Dichloropropane	< 25	3.8	12	1

ANALYTE	RESULT	LOD UG/KG	LOQ UG/KG	Dilution Factor
2,2-Dichloropropane	< 25	4.1	13	1
Di-Isopropyl ether	< 25	2.9	9	1
Ethylbenzene	< 25	1.7	5.4	1
EDB (1,2-Dibromoethane)	< 25	3.1	10	1
Hexachlorobutadiene	< 25	3.3	10	1
Isopropylbenzene	< 25	2.6	8.1	1
p-Isopropyltoluene	< 25	2.3	7.1	1
Methylene chloride	< 25	7	22	1
MTBE	36	4.5	14	1
Naphthalene	< 25	3.8	12	1
n-Propylbenzene	< 25	2.6	8.1	1
1,1,2,2-Tetrachloroethane	< 25	4.6	14	1
Tetrachloroethene	< 25	5.4	17	1
Toluene	< 25	1.6	4.9	1
1,2,3-Trichlorobenzene	< 25	4	13	1
1,2,4-Trichlorobenzene	< 25	3.3	10	1
1,1,1-Trichloroethane	< 25	3.1	10	1
1,1,2-Trichloroethane	< 25	5	16	1
Trichloroethene	< 25	7.5	24	1
Trichlorofluoromethane	< 25	6.5	21	1
1,2,4-Trimethylbenzene	< 25	1.6	5	1
1,3,5-Trimethylbenzene	< 25	2.4	7.7	1
Vinyl Chloride	< 25	10	31	1
m&p-Xylene	< 25	1.9	5.9	1
o-Xylene	< 25	2.4	7.6	1

Dibromofluoromethane Sur	102 % Rec.
1,2-Dichloroethane-d4 Sur	106 % Rec.
Toluene-d8 Sur	100 % Rec.
4-Bromofluorobenzene Sur	100 % Rec.

LOD = Limit of Detection
LOQ = Limit of Quantitation
GCMS #12
QC Batch # 120088
Total % Solids 90

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XF
Sample ID: 6-SS-5
Report Date: 23-Oct-97
Lab Code: 5018957E

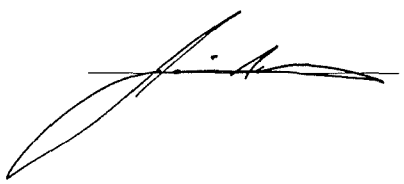
ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	F	P	P	F	F	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1 2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	F	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	F	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	F	P	P	F	F	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P
SPCC 1,1,2,2-Tetrachloroethane	P
SPCC Bromoform	P
SPCC Chlorobenzene	P
SPCC Chloromethane	P

QC Batch # 120088
F = Failed QC limits.
P = Passed QC limits.
NA = Not Applicable

VOC analysis detected unidentified peaks.

Authorized Signature



U.S. Oil Co., Inc.

Analytical Laboratory
1090 Kennedy Ave. Kimberly, WI 54136
920-735-8295

WI DNR Certified Lab #445027660

QC Summary

Method 8260 Volatile Organic Compounds

Project #: 23379XF
Sample ID: 6-SS-5
Report Date: 23-Oct-97
Lab Code: 5018957E

ANALYTE	INITIAL CALIBRATION	KNOWN STANDARD	INT STD AREA %	METHOD BLANK	LCS SPIKE	MATRIX SPIKE	MATRIX SPIKE RPD
Benzene	P	P	P	P	P	P	P
Bromobenzene	P	P	P	P	P	P	P
Bromodichloromethane	P	P	P	P	P	P	P
n-Butylbenzene	P	P	P	P	P	P	P
sec-Butylbenzene	P	P	P	P	P	P	P
tert-Butylbenzene	P	P	P	P	P	P	P
Carbon Tetrachloride	P	P	P	P	P	P	P
Chlorobenzene	P	P	P	P	P	P	P
Chloroethane	P	F	P	P	F	F	P
Chloroform	P	P	P	P	P	P	P
Chloromethane	P	P	P	P	P	P	P
2-Chlorotoluene	P	P	P	P	P	P	P
4-Chlorotoluene	P	P	P	P	P	P	P
1,2-Dibromo-3-Chloropropane	P	P	P	P	P	P	P
Dibromochloromethane	P	P	P	P	P	P	P
1,2-Dichlorobenzene	P	P	P	P	P	P	P
1,3-Dichlorobenzene	P	P	P	P	P	P	P
1,4-Dichlorobenzene	P	P	P	P	P	P	P
Dichlorodifluoromethane	P	P	P	P	P	P	P
1,1-Dichloroethane	P	P	P	P	P	P	P
1,2-Dichloroethane	P	P	P	P	P	P	P
1,1-Dichloroethene	P	P	P	P	P	P	P
cis-1,2-Dichloroethene	P	P	P	P	P	P	P
trans-1,2-Dichloroethene	P	P	P	P	P	P	P
1,2-Dichloropropane	P	P	P	P	P	P	P
1,3-Dichloropropane	P	P	P	P	P	P	P
2,2-Dichloropropane	P	P	P	P	P	P	P
Di-isopropyl Ether	P	P	P	P	P	P	P
Ethylbenzene	P	P	P	P	P	P	P
EDB (1,2-Dibromoethane)	P	P	P	P	P	P	P
Hexachlorobutadiene	P	P	P	P	P	P	P
Isopropylbenzene	P	P	P	P	P	P	P
p-Isopropyltoluene	P	P	P	P	P	P	P
Methylene Chloride	P	F	P	P	P	P	P
MTBE	P	P	P	P	P	P	P
Naphthalene	P	F	P	P	P	P	P
n-Propylbenzene	P	P	P	P	P	P	P
1,1,2,2-Tetrachloroethane	P	P	P	P	P	P	P
Tetrachloroethene	P	P	P	P	P	P	P
Toluene	P	P	P	P	P	P	P
1,2,3-Trichlorobenzene	P	P	P	P	P	P	P
1,2,4-Trichlorobenzene	P	P	P	P	P	P	P
1,1,1-Trichloroethane	P	P	P	P	P	P	P
1,1,2-Trichloroethane	P	P	P	P	P	P	P
Trichloroethene	P	P	P	P	P	P	P
Trichlorofluoromethane	P	F	P	P	F	F	P
1,2,4-Trimethylbenzene	P	P	P	P	P	P	P
1,3,5-Trimethylbenzene	P	P	P	P	P	P	P
Vinyl Chloride	P	P	P	P	P	P	P
m&p-Xylene	P	P	P	P	P	P	P
o-Xylene	P	P	P	P	P	P	P

SPCC 1,1-Dichloroethane	P	QC Batch # 120088
SPCC 1,1,2,2-Tetrachloroethane	P	F = Failed QC limits.
SPCC Bromoform	P	P = Passed QC limits.
SPCC Chlorobenzene	P	NA = Not Applicable
SPCC Chloromethane	P	VOC analysis detected unidentified peaks.

Authorized Signature

CHAIN OF CUSTODY RECORD 5018957 № 28914

Contact Person BILL NOEL
Phone No. 920-468-1978 Office G.B.
Project No. 23379XF PO No.
Project Name CARVER BOAT CORP. - PLANT #4, 051697

Special Handling Request
- ☐ Rush
- ☐ Verbal
- ☐ Other

RECORD NUMBER 1 THROUGH 1
Laboratory US OIL
Contact Person CURIS ZABEL
Phone No.
Results Due

Sample I.D.	Date 1997	Time	Grab	Composite	No. of Containers	Sample Type (Water, soil, air, sludge, etc.)	Preservation Y	Preservation N	Field Data PID/FID Ambient	Field Data PID/FID Sample	Field Data PH	Field Data Special Cond.	Analysis Request	Comments on Sample (Include Major Contaminants)
6-SS-1	10/3		X		2	SOIL	X						VOCs (INCLUDING STYRENE & ACETONE)	5018957 A
6-SS-2	"		"		"	"	"						"	B
6-SS-3	"		"		"	"	"						"	C
6-SS-4	"		"		"	"	"						"	D
6-SS-5	"		"		"	"	"						"	E

Collected by: Jim Calaway	Date 10-3-97	Time 5:00P	Delivery by:	Date	Time
Received by: Ken Nelson	Date 10/6/97	Time 9:45	Relinquished by: Ken Nelson	Date 10/6/97	Time 15:30
Received by:	Date	Time	Relinquished by:	Date	Time
Received by:	Date	Time	Relinquished by:	Date	Time
Received for lab by:	Date 10/6/97	Time 1:30	Relinquished by:	Date	Time

Laboratory Comments Only: Seals Intact Upon Receipt? ☒ Yes ☐ No ☐ N/A ONICE

Final Disposition:	Comments (Weather Conditions, Precautions, Hazards):

Distribution: Original and Green - Laboratory Yellow - As needed Pink - Transporter Goldenrod - STS Project File
Instructions to Laboratory: Forward completed original to STS with analytical results. Retain green copy.

9/94cp10k

KF

STS Consultants Ltd.
Consulting Engineers

January 23, 1998

Ms. Roxanne Nelezen Chronert
Wisconsin Department of Natural Resources
1125 North Military Avenue
P.O. Box 10448
Green Bay, Wisconsin 54307-0448

Re: Site Investigation/Remediation at Carver Boat Corporation, 790 Markham Drive, Pulaski, Wisconsin – **BRRTS Case Nos. 02-05-178563 and 02-05-178568** – STS Project No. 23379XA

Dear Ms. Nelezen-Chronert:

Carver Boat Corporation (Carver) of Pulaski, Wisconsin, has retained STS Consultants, Ltd., (STS) to prepare work plans for investigating impacts at two locations at this site. This letter is in response to your letters dated December 23, 1997, in which you requested that Carver provide written verification that an environmental consultant had been hired for this work.

Two work plans will be submitted. One work plan will address impacts identified on September 26, 1997, during removal of a resin underground storage tank (UST) known as Carver UST No. 3. The Wisconsin Department of Natural Resources (WDNR) assigned the number 02-05-178563 to this release. The second work plan will address impacts identified on October 3, 1997, during removal of two adjacent USTs (a resin UST known as Carver UST No. 6 and an acetone UST known as Carver UST No. 7). The WDNR assigned the number 02-05-178568 to this release.

Please contact us at 920-468-1978 if you have any questions regarding these projects.

Sincerely,

STS CONSULTANTS, LTD.

William F. Noel

William F. Noel, P.E.
Senior Project Engineer

Paula Leier-Engelhardt/WFN

Paula Leier-Engelhardt, P.G.
Senior Environmental Geologist

WFN/kjw.wd

STS Consultants Ltd.
Consulting Engineers

1035 Kepler Drive
Green Bay, Wisconsin 54311-8320
920.468.1978/Fax 920.468.3312

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Tommy G. Thompson, Governor
George E. Meyer, Secretary
William R. Selbig, Regional Director

Northeast Regional Headquarters
Solid Waste Office
PO Box 10448, 1125 N. Military Ave.
Green Bay, Wisconsin 54307-0448
TELEPHONE 414-492-5916
FAX 414-492-5859
TDD 414-492-5812

December 23, 1997

Carver Boat Corporation
Ted Maloney
PO Box 1010
Pulaski WI 54162

SUBJECT: Reported Contamination at Carver Boat Corporation-Resin & Acetone; 790 Markham Drive; Pulaski, Wisconsin
BRRTS CASE #02-05-178568

Dear Mr. Maloney:

The Wisconsin Department of Natural Resources has been notified of resin/acetone contamination at the above referenced location.

Based on the information received by the Department of Natural Resources, we believe you are responsible for restoring the environment at this site under Section 292.11, Wisconsin Stats., known as the hazardous substances spills law. Your responsibilities include investigating the extent of the contamination and then selecting and implementing the most appropriate remedial action. Enclosed is information to help you understand what you need to do to ensure your compliance with the spills law.

The purpose of this letter is threefold: 1) to describe your legal responsibilities, 2) to explain what you need to do to investigate and clean up the contamination, and 3) to provide you with information about cleanups, environmental consultants, possible financial assistance, and working cooperatively with the Department of Natural Resources.

Legal Responsibilities:
Your legal responsibilities are defined both in statute and in administrative codes. The hazardous substances spill law, Section 292.11 (3) Wisconsin Statutes, states:

* RESPONSIBILITY. A person who possesses or controls a hazardous substance which is discharged or who causes the discharge of a hazardous substance shall take the actions necessary to restore the environment to the extent practicable and minimize the harmful effects from the discharge to the air, lands, or waters of the state.

Wisconsin Administrative Codes chapters NR 700 through NR 728 establish requirements for emergency and interim actions, public information, site investigations, design and operation of remedial action systems, and case closure. Chapter NR 708 includes provisions for immediate actions in response to limited contamination. Wisconsin Administrative Code chapter NR 140 establishes groundwater standards for contaminants that reach groundwater.

Steps to Take:
The longer contamination is left in the environment the farther it can spread and the more it may cost to clean up. Quick action may lessen damage to your property and to neighboring properties and reduce your costs in investigating and cleaning up the contamination. To ensure that your cleanup complies with Wisconsin's laws and administrative codes, you should hire a professional environmental consultant who understands what needs to be done. These are the first four steps to take:

1. By January 26, 1998, please submit written verification (such as a letter from your consultant) that you have hired an environmental consultant. You will need to work quickly to meet this timeline.

2. By February 26, 1998, your consultant must submit a workplan and a schedule for conducting the investigation. The consultant must follow the Department's administrative codes and our technical guidance documents. Please include with your workplan a copy of any previous information that has been completed (such as an underground tank removal report or a preliminary soil excavation report).

3. Please keep us informed of what is being done at your site. You or your consultant must provide us with a brief report at least every 90 days, starting after your workplan is submitted. These quarterly reports should summarize the work completed since the last report. Quarterly reports need only include one or two pages of text, plus any relevant maps and tables. However, please note that should conditions at your site warrant, you may receive a letter requiring more or less frequent contacts with the Department.

4. When the site investigation is complete, your consultant must submit a full report on the extent and degree of soil and groundwater contamination and a proposal for cleaning up the contamination.

Due to the number of contaminated sites and our staffing levels, we will be unable to respond to each report. To maintain your compliance with the spills law and chs. NR 700 through NR 728, do not delay the investigation and cleanup of your site by waiting for DNR responses. We have provided detailed technical guidance to environmental consultants. Your consultant is expected to be familiar with our technical procedures and administrative codes and should be able to answer your questions on meeting Wisconsin's cleanup requirements.

Your correspondence and reports regarding this site should be sent to the Department at the following address:

Wisconsin Department of Natural Resources
Roxanne Nelezen Chronert
PO Box 10448
Green Bay WI 54307-0448

If the contamination does not include groundwater contamination, the responsibility for governmental oversight of this site will be transferred to the Department of Commerce in accordance with Wisconsin Act 27.

Unless otherwise requested, please send only **one duplexed copy** of all plans and reports. Correspondence should be identified with the assigned **DNR identification number BRRTS CASE #02-05-178568.**

Information for Site Owners:
Enclosed is a list of environmental consultants and some important tips on selecting a consultant. Also enclosed are materials on controlling costs, understanding the cleanup process, and choosing a site cleanup method. This information has been prepared to help you understand your responsibilities and what your environmental consultant needs to do. Please read this information carefully.

If you have any questions about this letter or your responsibilities, please call Roxanne Nelezen Chronert at (920)492-5592.

Thank you for your cooperation.

Sincerely,

Roxanne Nelezen Chronert
Spills Coordinator - Hydrogeologist

Enclosure

cc: File

Tanks 6+7

2205-178568

Wisconsin Department of Natural Resources

Notification of Petroleum Contamination from Underground / Aboveground Storage Tank Systems

Please complete this form and FAX it to the appropriate WDNR contact person (see list on back page) immediately upon discovery of a release from (CIRCLE ONE): (UST) AST system.

TO: WDNR, Attn: Roxanne Chronert

FAX #: 920-492-5859

PLEASE TYPE or PRINT LEGIBLY:

1. Name, company, mailing address and phone number of person reporting the discharge:

Ted Maloney
Carver Boat Corp
P.O. Box 1010, Pulaski, WI, 54162.
920-822-9000 x266

2. Site Information

Name of site at which discharge occurred (local name of site/business – not responsible party name, unless a residence): Carver Boat Corp

Location (actual street address, not PO box; if no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTHs 60 & 123 on E side of CTH 60):
790 Markham Dr.

Municipality (city, village, township in which the site is located -- not mailing address):
Pulaski

County:
Brown

Legal Description: _____1/4, _____1/4, Section _____, Tn_____, Range _____ E / W

3. Responsible Party (RP) and/or RP Representative Information

RP / Business Name: Carver Boat Corp

Contact Person (if different):

Mailing Address (with zip code): Same as Above

Telephone Number:

4. Identity, physical state and quantity of the hazardous substance discharged (check all that apply):

_____ Unleaded gasoline
_____ Leaded gasoline
_____ Diesel
_____ Fuel oil
_____ Waste oil
X Other Resin + Acetone

Tanks 6+7

5. **Impacts to the environment (enter "K" for known/confirmed or "P" for potential for all that apply):**

____ Fire/explosion threat	K Soil contamination
____ Contaminated private wells (# of wells)____	____ Surface water impacts
____ Contaminated public wells	____ Floating product
____ Groundwater contamination	____ Other____

6. **Contamination was discovered as a result of:**

X Tank closure assessment ____ Site assessment ____ (other)____

On what date:____

Additional Comments:

Carver Tank #	WI DNR Tank #	Contents
Tank 6 (6000 gal)	051100596	Polyester Resin/Styrene Mixture
Tank 7 (2000 gal)	051100597	Acetone

Five samples were taken around the perimeter of the two tank system.
The results were as follows:

Sample #1 Styrene 36 ppb
Sample #2 Tetrachloroethene 26ppb
Sample #3 Acetone 120 ppb
Styrene 31 ppb
Tetrachloroethene 51ppb
Sample #4 Methyl Tertiary Butyl Ether 28 ppb
Sample #5 Methyl Tertiary Butyl Ether 36 ppb

Please note the soil was sampled at 3-feet and groundwater was encountered.

FAX numbers to report leaking tank sites in DNR's five regions are as follows:

Northeast Region (920-492-5859)
Underground Tanks: Attention - Janis DeBrock
Aboveground Tanks: Attention - Roxanne Chronert
Brown, Calumet, Door, Fond du Lac *(except City of Waupun - see South Central Region)*, Green Lake, Kewaunee, Manitowoc, Marinette, Marquette, Menominee, Oconto, Outagamie, Shawano, Waupaca, Waushara, Winnebago Counties

Northern Region (715-365-8932); Attention - Janet Kazda:
Ashland, Barron, Bayfield, Burnett, Douglas, Forest, Florence, Iron, Langlade, Lincoln, Oneida, Polk, Price, Rusk, Sawyer, Taylor, Vilas, Washburn Counties

South Central Region (608-275-3338); Attention - Marilyn Jahnke:
Columbia, Crawford, Dane, Dodge, Fond du Lac *(City of Waupun only)*, Grant, Green, Iowa, Jefferson, Lafayette, Richland, Rock, Sauk Counties

Southeast Region (414-229-0810); Attention - Mike Farley:
Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha Counties

West Central Region (715-839-6076); Attention - John Grump:
Adams, Buffalo, Chippewa, Clark, Dunn, Eau Claire, Jackson, Juneau, LaCrosse, Marathon, Monroe, Pepin, Pierce, Portage, St. Croix, Trempealeau, Vernon, Wood Counties

Department of Natural Resources

ENVIRONMENTAL REPAIR PROGRAM
CASE TRACKING FORM FOR VER. ~~2~~ 2.1
Form 4400-150

I.D. # 02-05-178568

District: NER County: Brown
Site Name: Carver Boat Resin Acetone
Address: 790 Manitowoc Rd
Legal Municipality: Pulaski
T V C

Case No.: PMN:
FID:
Proj. Mgr: Chronert
Support Person:
Legal Desc: __1/4 __1/4 Sec ___, T ___, R ___ E/W
Lat: N ___ ° ___ . ___ ' Long: W ___ ° ___ . ___ '

Date of Discovery: 12 / 22 / 93
Date of RP Contact: 12 / 23 / 97

PRIORITY SCREENING:
___ 1 = High
___ 3 = Low
X 4 = Unknown

PRE-SCORE
_____ . _____

FUNDING SOURCE:
X 1 = RP
___ 2 = LTF
___ 3 = EF
___ 4 = SF
___ 5 = None
___ 6 = Other (Describe In Comments)
___ 7 = EPA Emergency Resp.

ENFORCEMENT AUTHORITY:
X 1 = Spill Law s. 144.76, Wis. Stats.
___ 2 = Envir Repair Law s. 144.442, Wis. Stats.
___ 3 = Hazardous Waste Rules NR 600 Series
___ 4 = Solid Waste Rules NR 500 Series
___ 5 = CERCLA
___ 6 = Abandoned Container s. 144.77, Wis. Stat.
___ 7 = Other (Describe in Comments)

PROGRAMS INVOLVED: (L - LEAD S - SUPPORT)

___ Aban Containers	___ NR 500 Solid Waste	___ Water Supply
___ Lust	___ Spills	___ Water Resources Mgt
___ NR 600 Hazardous Waste	___ Superfund	___ Env. Repair

RESPONSIBLE PARTY:
Business Name: Carver Boat Corp
Owner/Mgr.: Ted Maloney
Address: PO Box 1010
Pulaski WI 54162
Phone: 920 / 822-9000
Contact Person:

Business Name:
Owner/Mgr.:
Address:
Phone: /
Contact Person:

	KNOWN IMPACTS (X)	POTENTIAL IMPACTS (X)
No Threat		
Fire/Explosion threat (1)		
Contaminated Private Well (2)		
Contaminated Public Well (3)		
Groundwater Contamination (4)		
Soil Contamination (5)		
Direct Contact (10)		
Contaminated Surface Water (7)		
Contaminated Air (8)		
Other _____ (6)		

CONSULTANT INFORMATION:
Company: STS
Contact Person:
Address: 1035 Kepler
Green Bay WI 54311
Phone: 920 / 468-1978
(List additional on separate sheet & attach.)

Company:
Contact Person:
Address:
Phone: /

NER ERP Tracking Updates Your Name_____ Date_____

ACTION CODES

01 = Notification
02 = RP Letter Sent
11 = Activity Closed
37 = SI Report Rec'd
41 = RA Report Rec'd
48 = NR140 Exemp Closure
50 = Site Closed w/GW Use Restriction
51 = Deed Affidavit at Closeout
52 = Deed Restriction at Closeout
53 = Deed Affidavit for Enforcement
54 = Activity transferred to DATCP
55 = Closed w/NR720.19 soil standards
58 = Enforcement Start
59 = Enforcement End
61 = NR718 Landspreading Request
62 = NR718 Landspreading Approval
70 = Emergency Response Start
71 = Emergency Response End
74 = Long Term Monitoring Start
75 = Long Term Monitoring End
76 = Activity Transferred to DCOM
77 = Free Product Removal Start
78 = Free Product Removal End
79 = Closure Review Requested
85 = NR720.19 Performance Based Closure
87 = Closeout under NR726.07
89 = DCOM transferred activity back to DNR

Unique ID #	Code	Action Date	Comment
	1	12/22/97	
	2	12/23/97	
	11	4/26/99	No Restrictions
		/ /	
		/ /	
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