

REPORT OF DRY WELL
EXCAVATION
2 BADGER AVENUE
ENDICOTT, NY

OCTOBER 1992

PREPARED FOR:

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DRY WELL EXCAVATION REPORT
2 BADGER AVE, ENDICOTT, NY

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DRY WELL EXCAVATION REPORT
2 BADGER AVE, ENDICOTT, NY

INTRODUCTION

Buck Engineering has previously conducted an environmental investigation in the vicinity of 2 and 7 Badger Avenue in the Village of Endicott, New York. The investigations have included the installation of groundwater monitoring wells, monitoring well sampling and analysis, soil vapor sampling and analysis, and dry well sludge sampling and analysis. The investigations revealed the presence of trichloroethene (TCE) contamination in the groundwater beneath these sites. Based on available evidence, it was concluded that the source of the TCE contamination was likely to be the dry wells located in the northern portion of the 2 Badger Avenue building. Because of this, and because the dry wells are in contravention of applicable regulations, a plan was developed to excavate the dry wells and remove the sludge and contaminated soil.

The results of the environmental investigations at the 2 and 7 Badger Avenue sites has been reported to the NYS Department of Environmental Conservation (DEC). A work plan for the dry well excavation activities was communicated to the DEC prior to the commencement of on-site excavation activities. A copy of the work plan is provided in an appendix.

A site specific health and safety plan was prepared prior to the commencement of excavation activities and is included in an appendix.

This report summarizes the dry well excavation activities and includes copies of appropriate laboratory reports in an appendix.

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EXCAVATION ACTIVITY

Gary Dyer Excavating of Endicott, New York was retained to provide excavation services.

The west dry well within the 2 Badger Avenue was excavated first. The concrete floor surrounding the dry well, an area approximately 10 ft. by 14 ft., was removed using a hydraulic hammer and backhoe. Cinder blocks were encountered at 2 to 3 ft. beneath the surface and are presumed to have formed the walls of the dry well. The dry well and surrounding soil, to a depth of approximately 8 ft., was removed. The excavated soil and sludge was removed from the building using a front-end loader and stockpiled in an area immediately north of the building. A sheet of 6 mil ultraviolet resistant plastic sheeting was placed on the asphalt surface prior to stockpiling the spoil from the dry well excavation.

An HNu photoionization detector was calibrated in the laboratory with TCE prior to the excavation activity. HNu meter readings were taken in the building prior to the start and continuously throughout the excavation activity. Background HNu meter readings taken prior to the start of excavation were in the range of 0.5 to 1.0 ppm. HNu meter readings obtained during the west dry well excavation were as follows:

Background	0.5 to 1 ppm
Soil under concrete	1 ppm
2 to 3 ft.	2 to 3 ppm
4 to 5 ft.	6 to 7 ppm
6 to 8 ft.	2 to 3 ppm
8 ft.	2 to 2.5 ppm

Excavation was halted at the 8 ft. depth based on the low HNu meter readings and visual observations which indicated no discolored soil in the bottom of the excavation. Composite soil samples were obtained from the bottom of the excavation.

The east dry well was then excavated. The concrete floor surrounding the dry well, an area approximately 10 ft. by 14 ft., was removed using a hydraulic hammer and backhoe. The dry well and surrounding soil, to a depth of approximately 6 ft., was removed. A layer of discolored soil (black) was encountered from 2 to 3 ft. beneath the surface. A large piece of concrete (approximately 2 ft. by 2 ft. by 4 ft.) was encountered 3 to 4 ft. beneath the surface and was removed. The profile of an east/west ditch was apparent on the west wall of the excavation. Grey fine grained soil was encountered near the near the northeast corner of the bottom of the excavation (approximately 6 ft. deep). The excavated soil and sludge was removed from the building using a front-

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2 BADGER AVE, ENDICOTT, NY

Excavation Activity (Con't.)

end loader and stockpiled in an area immediately north of the building.

HNu meter readings during the excavation were as follows:

Background	1.5 to 2 ppm
Dry well opening prior to excavation	1.5 to 2 ppm
Soil under concrete	3 to 4 ppm
2 to 3 ft. (discolored soil)	5 to 9 ppm
3 to 4 ft.	13 ppm
5 to 6 ft.	3 to 4 ppm

Excavation was halted at the 6 ft. depth based on the low HNu meter readings. Composite soil samples were obtained from the bottom of the excavation.

Following the completion of the excavation activities, virgin fill material was placed in the excavations and compacted. New concrete was then poured to repair the floor.

Upon completion of the excavation activities, the soil pile was covered with a 6 mil layer of ultraviolet resistant plastic sheeting and weighted. Weights were placed on the edges of the plastic to prevent it from being removed by the wind. A length of plastic construction fence was erected to prevent access to the soil pile.

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HNu MONITORING

The inside of the 2 Badger Avenue building and the down-wind perimeter of the property was monitored periodically during the excavation activities. The monitoring locations and the HNu meter readings obtained are provided below.

Monitoring locations:

1. Inside 2 Badger Avenue, west side;
2. Inside 2 Badger Avenue, east side;
3. End of Badger Avenue at fence next to railroad right-of-way;
4. East side of Badger Avenue, directly east of the excavation;
5. East side of Badger Avenue, southeast of the excavation; and
6. South property line, between utility pole and fire hydrant.

Location	<u>HNu Meter Readings</u>					
	(ppm)					
	1	2	3	4	5	6
8:00 am	0.5	0.5	0.5	0.5	0.5	0.5
8:30 am	0.5	0.5	0.5	0.5	0.5	0.5
9:30 am	0.5	0.5	0.5	0.5	0.5	0.5
9:30 am	1.5	0.5	0.5	0.5	0.5	0.5
10:00 am	0.5	0.5	0.5	0.5	0.5	0.5
10:30 am	1.5	1.5	1.5	1.5	1.5	1.5
11:00 am	1.5	1.5	1.5	1.5	1.5	1.5
11:30 am	1.5	1.5	1.5	1.5	1.5	1.5
12:00 noon	1.0	1.0	1.0	1.0	1.0	1.0
12:30 pm	1.0	1.0	1.0	1.0	1.0	1.0
1:15 pm	1.0	1.0	1.0	1.0	1.0	1.0

At no time during the excavation activities did the ambient concentration of TCE exceed 2.0 ppm at any of the monitoring locations. The values are significantly below the OSHA permissible exposure limits of 50 ppm.

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DISCUSSION

Samples of sludge from the east and west dry wells were obtained in March 1992 and analyzed via gas chromatograph using EPA Methods 5030 and 8010 for purgeable halocarbons. The sample from the west dry well showed 1.4 ug/g of TCE and the sample from the east dry well showed 0.02 ug/g of TCE. A copy of the laboratory report showing these results is provided in an appendix. (Note: The units ug/g - micrograms per gram - is equivalent to parts per million - ppm. A conversion to parts per billion - ppb - can be made by multiplying by 1,000.) Therefore, the sludge samples showed concentrations of TCE in ppm and ppb as follows:

	<u>ppm</u>	<u>ppb</u>
West dry well	1.4	1,400
East dry well	0.02	20

The composite soil samples from the bottom of each dry well excavation were analyzed for volatile organic compounds, total petroleum hydrocarbons and for total metals (arsenic, cadmium, chromium and lead) as specified by EPA UIC dry well closure procedures. Laboratory reports from these analyses are provided in an appendix.

The composite soil sample from the bottom of the east dry well showed a concentration of TCE of 14.2 ug/Kg (micrograms per kilogram or parts per billion - ppb). This compares with a concentration of 20 ppb in the sludge sample, a reduction of 27%. The sample had no indication of petroleum hydrocarbons, arsenic or cadmium and low concentrations of chromium and lead.

The composite soil sample from the bottom of the west dry well showed a concentration of TCE of 162 ug/Kg. This compares with a concentration of 1,400 ppb in the sludge sample, a reduction of 88%. The sample also showed a trace concentration of petroleum hydrocarbons, no indication of arsenic or cadmium and elevated levels of chromium and lead.

Samples of the pile of material excavated soil from the dry wells must be analyzed in the near future to characterize the material for disposal purposes.

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APPENDIX A

LABORATORY REPORTS

The laboratory report resulting from the analysis of composite soil samples from the bottom of the dry well excavations are provided on the following pages. Copies of the laboratory reports from the analysis of dry well sludge samples are also included.

BUCK ENVIRONMENTAL LABORATORIES INC.

ACCREDITED ENVIRONMENTAL ANALYSIS

3845 ROUTE 11 SOUTH, P.O. BOX 5150
CORTLAND, N.Y. 13045 607-753-3403**LABORATORY REPORT**

Lab Log No: 9209260

Client: Touhey Associates
Pine West Plaza, Building 2
Washington Avenue Extension
Albany, NY 12205
Site: 7 Badger AvenueReport Date: 10/13/92
Sampling Date: 09/28/92
Sampled By: Dan Dockstate
Date Received: 09/28/92
Analyzed by: MMV, 10/02/92

Sample ID: soil - East Drywell

VOLATILES BY METHOD 8240

ANALYTE	CAS #	UNITS	DL	RESULT
Benzene	71-43-2	ug/Kg	5.0	ND
Bromodichloromethane	75-27-4	ug/Kg	5.0	ND
Bromoform	75-25-2	ug/Kg	5.0	ND
Bromomethane	74-83-9	ug/Kg	10	ND
Carbon tetrachloride	56-23-5	ug/Kg	5.0	ND
Chlorobenzene	108-90-7	ug/Kg	5.0	ND
Chloroethane	75-00-3	ug/Kg	10	ND
2-Chloroethylvinyl ether	110-75-8	ug/Kg	10	ND
Chloroform	67-66-3	ug/Kg	5.0	ND
Chloromethane	74-87-3	ug/Kg	10	ND
Dibromochloromethane	124-48-1	ug/Kg	5.0	ND
1,1-Dichloroethane	75-34-3	ug/Kg	5.0	ND
1,1-Dichloroethene	75-35-4	ug/Kg	5.0	ND
trans-1,2-Dichloroethene	156-60-5	ug/Kg	5.0	ND
1,2-Dichloropropane	78-87-5	ug/Kg	5.0	ND
cis-1,3-Dichloropropene	10061-01-5	ug/Kg	5.0	ND
trans-1,3-Dichloropropene	10061-02-6	ug/Kg	5.0	ND
Ethyl benzene	100-41-4	ug/Kg	5.0	ND
Methylene chloride	75-09-2	ug/Kg	5.0	ND
1,1,2,2-Tetrachloroethane	79-34-5	ug/Kg	5.0	ND
Tetrachloroethene	127-18-4	ug/Kg	5.0	ND
Toluene	108-88-3	ug/Kg	5.0	ND
1,1,1-Trichloroethane	71-55-6	ug/Kg	5.0	ND
1,1,2-Trichloroethane	79-00-5	ug/Kg	5.0	ND
Trichloroethene	79-01-6	ug/Kg	5.0	14.2
Trichlorofluoromethane	75-69-4	ug/Kg	5.0	ND
Vinyl Chloride	75-01-4	ug/Kg	10	ND
1,2-Dichlorobenzene	95-50-1	ug/Kg	5.0	ND
1,3-Dichlorobenzene	541-73-1	ug/Kg	5.0	ND
1,4-Dichlorobenzene	106-46-7	ug/Kg	5.0	ND
Dichlorodifluoromethane	75-71-8	ug/Kg	5.0	ND
Xylenes (m,o,p)	1330-20-7	ug/Kg	5.0	ND
Acetone	67-64-1	ug/Kg	100	ND
Carbon Disulfide	75-15-0	ug/Kg	100	ND
2-Butanone	78-93-3	ug/Kg	100	ND
Vinyl Acetate	108-05-4	ug/Kg	50	ND
4-Methyl-2-pentanone	108-10-1	ug/Kg	50	ND
2-Hexanone	91-78-6	ug/Kg	50	ND
Styrene	100-42-5	ug/Kg	5.0	ND
1,2-dichloroethane	107-06-2	ug/Kg	5.0	ND
MTBE	1634-04-4	ug/Kg	10	ND

ND - None detected greater than detection limit (DL) noted.

These results are certified as conforming with generally accepted laboratory standards and requirements of the New York State Department of Health ELAP Program.


Laboratory Director
ELAP ID - 10795

BUCK ENVIRONMENTAL LABORATORIES, INC.

ACCREDITED ENVIRONMENTAL ANALYSIS

3845 ROUTE 11 SOUTH, P.O. BOX 5150
CORTLAND, N.Y. 13045 607-753-3403**LABORATORY REPORT**

Lab Log No: 9209260

Client: Touhey Associates
Pine West Plaza, Building 2
Washington Avenue Extension
Albany, NY 12205
Site: 7 Badger AvenueReport Date: 10/13/92
Sampling Date: 09/28/92
Sampled By: Dan Dockstate
Date Received: 09/28/92
Analyzed by: MMV, 10/02/92

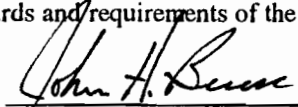
Sample ID: soil - West Drywell

VOLATILES BY METHOD 8240

ANALYTE	CAS #	UNITS	DL	RESULT
Benzene	71-43-2	ug/Kg	5.0	ND
Bromodichloromethane	75-27-4	ug/Kg	5.0	ND
Bromoform	75-25-2	ug/Kg	5.0	ND
Bromomethane	74-83-9	ug/Kg	10	ND
Carbon tetrachloride	56-23-5	ug/Kg	5.0	ND
Chlorobenzene	108-90-7	ug/Kg	5.0	ND
Chloroethane	75-00-3	ug/Kg	10	ND
2-Chloroethylvinyl ether	110-75-8	ug/Kg	10	ND
Chloroform	67-66-3	ug/Kg	5.0	ND
Chloromethane	74-87-3	ug/Kg	10	ND
Dibromochloromethane	124-48-1	ug/Kg	5.0	ND
1,1-Dichloroethane	75-34-3	ug/Kg	5.0	ND
1,1-Dichloroethene	75-35-4	ug/Kg	5.0	ND
trans-1,2-Dichloroethene	156-60-5	ug/Kg	5.0	ND
1,2-Dichloropropane	78-87-5	ug/Kg	5.0	ND
cis-1,3-Dichloropropene	10061-01-5	ug/Kg	5.0	ND
trans-1,3-Dichloropropene	10061-02-6	ug/Kg	5.0	ND
Ethyl benzene	100-41-4	ug/Kg	5.0	ND
Methylene chloride	75-09-2	ug/Kg	5.0	ND
1,1,2,2-Tetrachloroethane	79-34-5	ug/Kg	5.0	ND
Tetrachloroethene	127-18-4	ug/Kg	5.0	ND
Toluene	108-88-3	ug/Kg	5.0	ND
1,1,1-Trichloroethane	71-55-6	ug/Kg	5.0	ND
1,1,2-Trichloroethane	79-00-5	ug/Kg	5.0	ND
Trichloroethene	79-01-6	ug/Kg	5.0	162
Trichlorofluoromethane	75-69-4	ug/Kg	5.0	ND
Vinyl Chloride	75-01-4	ug/Kg	10	ND
1,2-Dichlorobenzene	95-50-1	ug/Kg	5.0	ND
1,3-Dichlorobenzene	541-73-1	ug/Kg	5.0	ND
1,4-Dichlorobenzene	106-46-7	ug/Kg	5.0	ND
Dichlorodifluoromethane	75-71-8	ug/Kg	5.0	ND
Xylenes (m,o,p)	1330-20-7	ug/Kg	5.0	ND
Acetone	67-64-1	ug/Kg	100	ND
Carbon Disulfide	75-15-0	ug/Kg	100	ND
2-Butanone	78-93-3	ug/Kg	100	ND
Vinyl Acetate	108-05-4	ug/Kg	50	ND
4-Methyl-2-pentanone	108-10-1	ug/Kg	50	ND
2-Hexanone	91-78-6	ug/Kg	50	ND
Styrene	100-42-5	ug/Kg	5.0	ND
1,2-dichloroethane	107-06-2	ug/Kg	5.0	ND
MTBE	1634-04-4	ug/Kg	10	ND

ND - None detected greater than detection limit (DL) noted.

These results are certified as conforming with generally accepted laboratory standards and requirements of the New York State Department of Health ELAP Program.


Laboratory Director
ELAP ID - 10795

BUCK ENVIRONMENTAL
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ACCREDITED ENVIRONMENTAL ANALYSIS

3845 ROUTE 11 SOUTH, P.O. BOX 5150
CORTLAND, N.Y. 13045 607-753-3403

Report Date: 10/08/92

Lab Log Number: 9209260

LABORATORY REPORT

Client: **TOUHEY ASSOCIATES**

Site: 7 Badger Avenue

Date of Sample: 9/28/92 by D. Dockstater

Sample: Soil

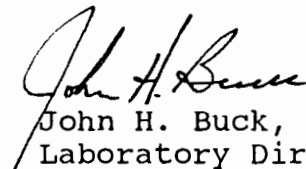
Method: Total Petroleum Hydrocarbon by EPA Method 418.1
(Modified Infrared Absorbtion)

TOTAL PETROLEUM HYDROCARBON
QUANTITATION

West Drywell	9.0 ug/g
East Drywell	ND (<5.0 ug/g)

ND - None detected greater than detection limits noted.

This analysis is certified as conforming to generally accepted laboratory practices and requirements of the New York State Health Department ELAP program.


John H. Buck, P.E.
Laboratory Director

NYS ELAP CERT 10795

**BUCK ENVIRONMENTAL
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ACCREDITED ENVIRONMENTAL ANALYSIS

3845 ROUTE 11 SOUTH,
CORTLAND, N.Y. 13045P.O. BOX 5150
607-753-3403

Report Date: 10/09/92

Lab Log Number: 9209260

LABORATORY REPORT

Client: **TOUHEY ASSOCIATES**

Site: 7 Badger Avenue

Sample Date: 9/28/92 by D. Dockstater

Sample: Soil - West Drywell

Method: Total Metals by EPA 3050

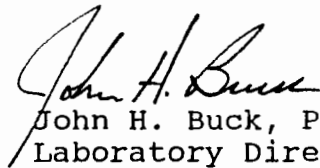
TOTAL METALS RESULTS

	<u>EPA Method</u>	<u>Results (ug/g)</u>
Arsenic	200.7	ND (<10.8)
Cadmium	200.7	ND (<5.40)
Chromium	200.7	1,350
Lead	200.7	269

Dry weight basis.

ND - None detected greater than detection limits noted.

These analyses are certified as conforming to generally accepted laboratory practices and requirements of the New York State Health Department ELAP program.



John H. Buck, P.E.
Laboratory Director

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ACCREDITED ENVIRONMENTAL ANALYSIS

3845 ROUTE 11 SOUTH,
CORTLAND, N.Y. 13045P.O. BOX 5150
607-753-3403

Report Date: 10/09/92

Lab Log Number: 9209260

LABORATORY REPORT

Client: **TOUHEY ASSOCIATES**

Site: 7 Badger Avenue

Sample Date: 9/28/92 by D. Dockstater

Sample: Soil - East Drywell

Method: Total Metals by EPA 3050

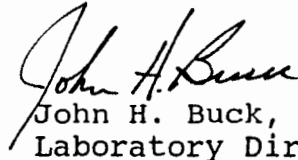
TOTAL METALS RESULTS

	<u>EPA Method</u>	<u>Results (ug/g)</u>
Arsenic	200.7	ND (<11.2)
Cadmium	200.7	ND (<5.60)
Chromium	200.7	13.4
Lead	200.7	48.1

Dry weight basis.

ND - None detected greater than detection limits noted.

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NYS ELAP CERT 10795

**BUCK ENVIRONMENTAL
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ACCREDITED ENVIRONMENTAL ANALYSIS

3845 ROUTE 11 SOUTH,
CORTLAND, N.Y. 13045P.O. BOX 5150
607-753-3403

LABORATORY REPORT

Client: TOUHEY ASSOCIATES

Report Date: 3/26/92

Site: 2 Badger Ave.
Endicott, NY

Sampling Date: 3/12/92

Samples: Drywell - Sludge

Sampled By: P. Shaffner

Analysis Date: 3/19/92

Lab Log Number: 9203078

Purgeable Halocarbons (By EPA 5030 and 8010)

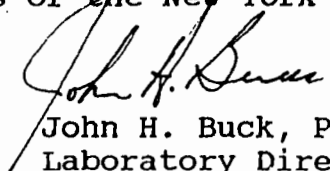
CAS No.	Compound	Drywell-W	Drywell-E*
75-27-4	bromodichloromethane	ND	ND
75-25-2	bromoform	ND	ND
74-83-9	bromomethane	ND	ND
56-23-5	carbon tetrachloride	ND	ND
108-90-7	chlorobenzene	ND	ND
75-00-3	chloroethane	ND	ND
100-75-8	2-chloroethylvinylether	ND	ND
67-66-3	chloroform	ND	ND
74-87-3	chloromethane	ND	ND
124-38-1	dibromochloromethane	ND	ND
95-50-1	1,2-dichlorobenzene	ND	ND
541-73-1	1,3-dichlorobenzene	ND	ND
106-46-7	1,4-dichlorobenzene	ND	ND
75-71-8	dichlorodifluoromethane	ND	ND
75-34-3	1,1-dichloroethane	ND	ND
107-06-2	1,2-dichloroethane	ND	ND
75-35-4	1,1-dichloroethene	ND	ND
156-60-5	trans-1,2-dichloroethene	ND	ND
78-87-5	1,2-dichloropropane	ND	ND
10061-01-5	cis-1,3-dichloropropene	ND	ND
10061-01-6	trans-1,3-dichloropropene	ND	ND
75-09-2	methylene chloride	ND	ND
79-34-5	1,1,2,2-tetrachloroethane	ND	ND
127-18-4	tetrachloroethene	ND	ND
71-55-6	1,1,1-trichloroethane	ND	ND
79-00-5	1,1,2-trichloroethane	ND	ND
79-01-6	trichloroethene	1.4	.02
75-69-4	trichlorofluoromethane	ND	ND
75-01-4	vinyl chloride	ND	ND

All concentrations are reported as ug/g.

ND - None detected greater than detection limit of .04 ug/g.

* - Detection limit for this sample is .004 ug/g.

These analyses are certified as conforming to generally accepted laboratory practices and requirements of the New York State Health Department ELAP program.


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