

A Subsurface Investigation Work Plan
for
Pap's General Store
1637 80th Street
Balsam Lake, WI

September 2000

WDNR Activity #03-49-223213
PECFA #54810-2432-37

Prepared by:

Cedar Corporation
604 Wilson Avenue
Menomonie, WI 54751

Cedar Project #: 2880-0001-300-01

Signature Page For The
Subsurface Investigation Work Plan
For
Pap's General Store
1637 80th Street
Balsam Lake, WI

I, Matthew A. 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.

Matthew A. Taylor
Matthew A. Taylor, P.G.
Hydrogeologist
PECFA Registration #41812

Sept. 22, 2000
Date

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I. INTRODUCTION

A release of petroleum products was identified during the removal of an underground storage tank system at Pap's General Store in the Town of Apple River, Wisconsin (Figure 1). Owner and site location information is listed below.

Pap's General Store
1637 80th Street
Balsam Lake, WI 54810

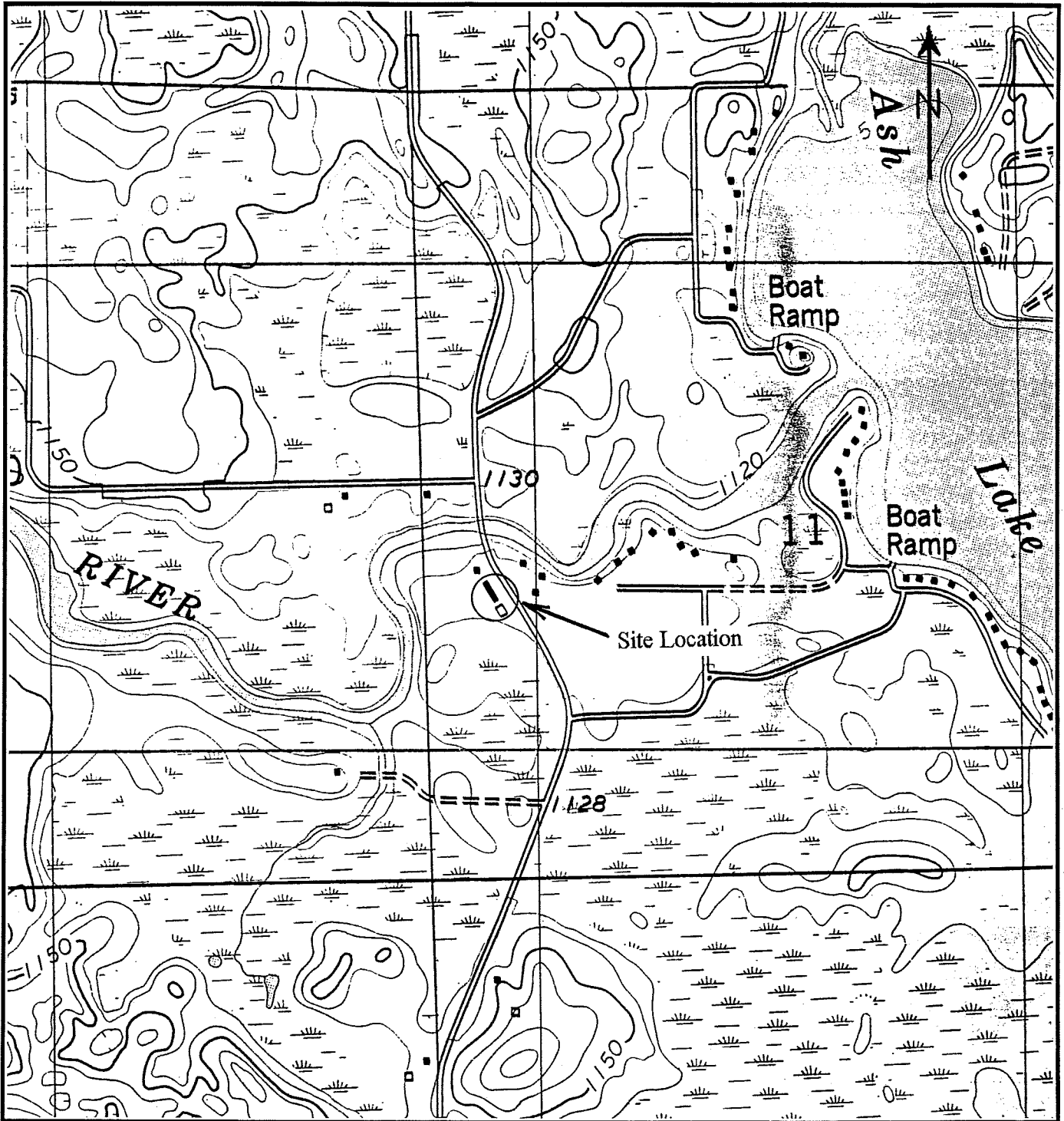
Section Location: NW 1/4, SW 1/4, Section 11, T34N, R16W
County: Polk
PECFA Claim #: 54810-2432-37
BRRTS Activity #: 03-49-223213
Owner: Mr. Rick Scoglio
1637 80th Street
Balsam Lake, WI 54810
715-268-8108

To determine the extent of petroleum contamination at this location in accordance with the Wisconsin DNR Spill Statute 144.76 and NR 700 through 746 an environmental investigation will be necessary. This work plan identifies the currently known conditions of the site and local area, including geology, hydrogeology, and known locations of environmental contaminants. The purpose of the work plan is to identify the procedures, sample locations, and protocols needed to define the extent and magnitude of contamination on this site.

II. SITE SCOPING

A. Location and Land Use

The project area consists of the Pap's General Store site located at 1637 80th Street (a/k/a County Road E) in the Town of Apple River (Figure 2). The subject property is currently operated as a retail fuel sales outlet/convenience store. Surrounding land use is undeveloped or residential. The USTs listed in Table 1 are noted in the DCOMM database as being or having been located at the site.



LEGEND

Range, Wis.
USGS Topographic Quadrangle
7.5 Minute Series

Contour Interval - 10 feet

NW 1/4, SW 1/4 of Section 11,
Township 34 N, Range 16 W,
Polk County



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USGS

DATE

6/99

REVISED BY

MAT

SCALE

1" : 1000'

SITE LOCATION MAP

PAP'S GENERAL STORE
1637 80th STREET
BALSAM LAKE, WI

CHECKED BY

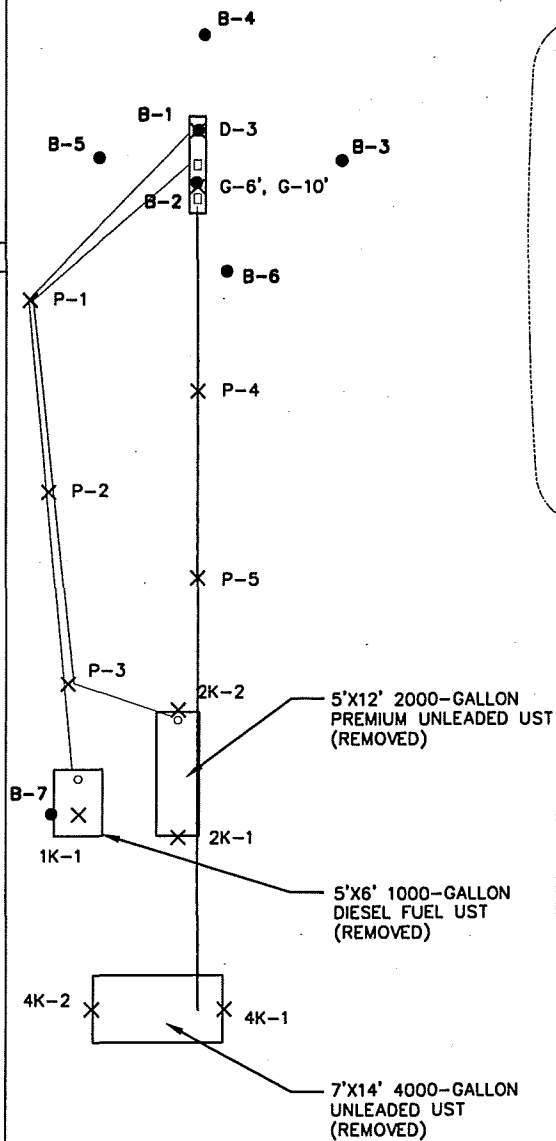
MAT

JOB NO.

FIGURE

1

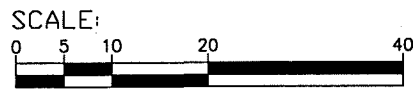
PAP'S
GENERAL STORE
1637 80th ST.
TOWN OF APPLE RIVER



80th STREET / C.T.H. "E"

O/H
DOOR

- D-3 X TANK CLOSURE
SOIL SAMPLE LOCATION
- B-7 • PROPOSED SOIL
BORING LOCATION



DRAWN BY KAT
DATE SEPT 2000
REFERENCE FILE S001base.dwg
DRAWING FILE S001base.dwg

PROJECT TITLE SKOGLUND OIL CO. PAP'S GENERAL STORE 1637 80th ST. BALSAM LAKE, WI
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FIGURE 2

Table 1

Tank ID No.	Size (Gallons)	Contents	Status
469642	10,000	Unleaded Gasoline	In Use
469655	4,000	Unleaded Gasoline	In Use
324236	4,000	Unleaded Gasoline	Removed
324237	2,000	Unleaded Gasoline	Removed
324238	1,000	Diesel	Removed

B. Other Petroleum Investigations in the Project Area

There are at no other sites on the WDNR's leaking underground storage tank database in the project area that have/are undergoing investigation for releases of petroleum products to the environment.

C. Impact to Receptors

The potential for impacts was reviewed as required by s. NR716.07. It appears that there is no potential impact from contamination at this site to any of the following: species, habitat, or ecosystems sensitive to the contamination; wetlands; and outstanding or exceptional resource waters.

D. Impact to Public or Private Water Supplies

Based on site reconnaissance it appears there are several private water supply wells located within a 1,200 foot radius of the site. The potential for impacts to public water supplies is unknown at this time. The depth to regional ground water is approximately 16 feet bgs (below ground surface). It is not know at this time if contamination observed during the tank closure extends to the regional water table. If ground water at the site is found to be contaminated, all potable wells with the potential to be impacted will be sampled as part of the investigation.

III. TOPOGRAPHY AND SURFACE WATER DRAINAGE

The site is situated on a relatively flat area. Surface water at the site would most likely infiltrate or run off to the north (Apple River).

As indicated in Figure 1, the main drainage feature in the project area is the Apple River, which runs west to east through the project. The site is approximately 300 feet south of the river.

IV. GEOLOGY

Soils in the project area are anticipated to be comprised of sand based on previous observations.

Bedrock in the project area consists of Cambrian Age sandstones most likely of the Mt. Simon Formation (Mudrey and Others, 1987). Depth to bedrock based on regional bedrock geology maps is greater than 100 feet below surface.

V. HYDROGEOLOGY

Based on information from topographic maps, the regional ground water elevation is approximately 1115 feet above mean sea level (MSL) or 17 feet below the surface elevation (1132 feet MSL) at the site. It is not known at the current time if contamination observed during the tank closure extends to regional ground water.

VI. SCOPE OF INVESTIGATIVE WORK

1. The investigation will focus on identifying the extent of contamination in the soils and ground water through the construction of soil borings and monitoring wells, if necessary. All work will be completed within existing Administrative Codes - NR141, NR500, NR600, and NR700.
2. Soil samples will be acquired using the methodology determined by the DNR as to location, number, duplication, handling, documentation and transfer. These methods include those procedures presented as Section VII to this plan. The proposed location of soil borings is indicated on Figure 2.
3. Field screening of soil samples will be completed on site during the evaluation and the results will be used to direct the investigation in the field. As these in field results are not conclusive, laboratory analyses may indicate that additional work may be necessary and an addendum to this program may be required.
4. Laboratory analyses will be employed to document the extent and magnitude of soil contamination. These analyses will be performed by a third party subcontracted analytical laboratory certified by the Wisconsin DNR under NR 149 to complete purgeable organic compound analyses. The methods employed will be as specified by the DNR in the LUST Analytical Guidance, July, 1993, PUBL-SW-130-93, and NR 700.
5. Cedar Corporation proposes seven borings be completed. Borings will be completed to the water table, or through the vertical extent of contamination.

Sampling in each boring will be completed as per Section VII of this plan. Soil samples will be collected continuously from the ground surface to the base of each borehole. Soil samples will be logged for geological description, field screened for volatile compounds, and split for laboratory analyses as needed to define the extent and degree of contamination. If the extent of contamination extends beyond the proposed scope, Cedar Corporation will confer with Rick Scoglio prior to proceeding.

A minimum of two soil samples from each boring will be laboratory analyzed. In view of the nature of the petroleum product released, the Wisconsin DNR has determined that soil samples be tested for gasoline range organics (GRO), volatile organic compounds (VOCs), diesel range organics (DRO), lead (Pb), and polynuclear aromatic hydrocarbons (PAHs).

Ground water at this site is approximately 17 feet bgs. It is unknown if contamination has impacted the ground water and if ground water observation wells will be necessary. In the event monitoring wells are necessary, we propose a minimum of three monitoring wells be installed initially to define ground water flow direction. Additional wells may be required to identify the extent of the contamination.

6. Cedar Corporation will formally prepare a Remedial Investigation Report following NR716.15 for submittal to the proper authorities.

VII. SAMPLING PROCEDURES

All laboratory analyses will be completed at a laboratory certified to perform this work and selected through a bid process for this project.

A. Soil Boring Construction

1. Soil borings at this site will be completed using a hollow stem auger drilling rig at the locations depicted on Figure 2. Soil samples are recovered using standard split spoon sampling methods. In this method, a 24" sample can be collected by advancing the auger to the desired depth and driving the spoon into the formation by repetitively dropping a weight onto rods connected to the split spoon.

The sample is retrieved from the boring and immediately opened. A field geological log is completed and the soils are sampled for field screening, laboratory analysis, and/or sieve analysis.

2. If during the first phase of investigation it appears the contamination extends to regional ground water, three monitoring wells will be installed.

3. The investigation will include the collection of those soil and/or water samples as necessary for the proper evaluation of existing conditions at the site.
4. All samples will be field screened using accepted and regularly used methods. Field screening will employ the standard "headspace" method wherein a measure of total volatile organic compounds is made using a flame ionization or photoionization detector with a 10.6 eV ionization lamp.

B. Soil Sampling for Laboratory Analyses

1. The environmental conditions assessor will acquire samples for field screening in all soils where discoloring or odor suggests contamination is present; or,
 - i) one sample for each 2 or 4 feet of depth in a continuous soil unit; and,
 - ii) one sample for each different soil unit encountered.
2. The environmental conditions assessor will acquire soil samples for laboratory analyses from soil borings and monitoring wells:
 - a) Where contamination is determined by field screening;
 - i) one sample in the upper 4 feet of the boring;
 - ii) one sample from that soil sample having the highest field screen value;
 - iii) one sample from the bottom of the soil boring or at that point immediately above the water table.
 - b) Where contamination is not determined by field screening:
 - i) one sample in the upper 4 feet of the boring;
 - ii) one sample from the bottom of the soil boring or at that point immediately above the water table.

If a soil sample is to be laboratory analyzed, a sample is taken and the sample is sealed in a glass jar having a teflon lined septum. The analytical laboratory provides clean sample jars. WDNR Analytical Guidance, July, 1993, PUBL-SW-130-93, and "Methanol Preservation Required for All Soil VOC Samples" in July, 1994 edition of Release News (Volume 4, No. 3), are used for sampling and analytical guidance for GRO, DRO, and VOC analysis. For GRO and VOCs analyses, some 20 to 70 grams of soils are preserved in methanol in a tared 60 ml or 120 ml capacity sample containers. For DRO analyses, a tared 60 ml or 120 ml capacity sample container is filled with 20 to 70 grams of soil. Additional soil samples are collected in 4 oz. sample jars to determine dry weights for GRO, DRO, and VOC analyses. The pertinent sample data is recorded on the label and on the chain-of-custody document and is then transported to an analytical laboratory with the completed chain-of-custody document. The sample is transported in a cooler at a maintained temperature of 4° Celsius.

C. Sample Identification

All samples to be sent to a laboratory for analysis will be properly labeled. Each label will include:

1. Sample identification number.
2. Time and date of acquisition.
3. Sample location.
4. Analyses required.
5. Name of sampler.

D. Chain of Custody Documentation

All samples sent to a laboratory will have a chain-of-custody document completed. This document (DNR Form 4400-151) will:

1. Be completed in duplicate.
2. Include that information required on sample labels.
3. Provide sufficient space for signature, time and date of those persons relinquishing and receiving the samples.
4. Be signed by those persons relinquishing and receiving the samples.
5. Be kept with the sample at all times until the sample is analyzed and be returned to the sampler with sample analyses when complete.

VIII. INVESTIGATIVE WASTES

The investigation process may generate an unknown quantity of contaminated soils. These will be separately drummed in DOT approved 55 gallon drums and stored on site. Disposal of wastes will be completed in a manner appropriate as determined by the nature of the waste and the hazardous material(s) contaminating the waste. All waste disposal will be documented and completed by approved DNR methods.

IX. SCHEDULE

Upon submittal of this work plan to the WDNR, Cedar Corporation will begin the investigation. The tentative schedule is as follows:

- * Complete drilling and field work - fall 2000.
- * Complete investigation report - winter/spring 2001.