H
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• Consulting Hydrogeologists
• Engineers
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P.O. Box 1629 Burlington, Vermont 05402-1629
802-658-0820
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May 25, 1995

Ms. June Middleton
Underground Storage Tank Section
Hazardous Materials Mgmt. Div.
Agency of Natural Resources
103 South Main Street
Waterbury, VT 05671-0404

Dear June:

Please find enclosed a report summarizing work completed by our office at the Swanton Texaco facility in Swanton, VT. The report presents observations made during a reconnaissance of the site in 1991, observation of a tank installation in May 1994, and soil stock pile vapor measurements in September 1994.

Please feel free to contact me or Jeff Noyes with any questions or comments you may have.

Sincerely,

Nancy J. Caplow
Hydrogeologist

NJC/jmc

Enclosures

cc: Bill Simendinger

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WESCO, INC./SWANTON TEXACO
Swanton, Vermont

SITE INVESTIGATION

Prepared by:

Wagner, Heindel, and Noyes, Inc.

Prepared for:

WESCO, INC.

May 24, 1995

WESCO, INC./SWANTON TEXACO

Swanton, Vermont

SITE INVESTIGATION

TABLE OF CONTENTS

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WESCO, INC./SWANTON TEXACO
Swanton, Vermont

SITE INVESTIGATION

SUMMARY

Do we have a site assessment for tank removals?

- Work completed at the Swanton Texaco facility included a reconnaissance of the site, observation of the tank installation in May 1994, and soil stockpile vapor measurements in September 1994. Soil PID readings were recorded and groundwater and surface water samples were collected in association with these site visits.

- While petroleum products have been detected in soil and groundwater at this facility, this contamination is at a very low level and does not appear to pose any risk to public health or the environment. A surface water sample collected at the downgradient property boundary showed no evidence of petroleum product contamination. Based on these results, we feel that the only further work required at the site is PID screening and thin-spreading of the remaining stockpiled soils, which should take place in early summer 1995.

1.0 INTRODUCTION

The following report has been prepared in compliance with Special Condition #1 of an underground storage tank permit issued May 16, 1994 to Wesco Inc. by the Hazardous Materials Management Division of the Agency of Natural Resources. This permit authorized the installation of one additional underground storage tank (UST) and the replacement of underground product lines to the existing diesel tanks at the Champlain Farms in Swanton, Vermont (facility ID #0000175). Special Condition #1 of this permit specifies that a qualified person must conduct an assessment of the site evaluating the degree and extent of petroleum contamination, focusing particularly on the discovery of contaminated soils and/or free product found during excavation of the existing UST system. Additional work performed by Wagner, Heindel, and Noyes, Inc. (WH&N) on the

was a consultant present during the excavation?

property is also discussed.

This report includes the following information:

when was tank pit in relation to the tank installation

1. Observations made during tank and product line installation in May 1994.
2. Measurements recorded during a September 1994 site visit of the vapor levels of soils stockpiled on the site during the May 1994 installation.
3. Observations made during an overall reconnaissance of the property.

2.0 SITE LOCATION AND FACILITY DESCRIPTION

The subject property is the Texaco gas station located in Swanton, Vermont at the intersection of Route 78 and Interstate 89 (see map; page A-1). — not enclosed

The site facility consists of three gasoline dispensers in the front of the property, with four diesel dispensers and two satellite dispensers in the rear. Gasoline is stored in a series of four 6,000 gallon underground storage tanks (USTs), located between Route 78 and the gasoline pump area. One 2,000 gallon kerosene tank and three 6,000 gallon diesel fuel tanks are located in the middle of the rear parking lot. The rear parking area was paved in 1992 - previously it was surfaced with gravel.

This part of Swanton is serviced by municipal sewer and water systems.

3.0 SITE PHYSIOGRAPHY

The Swanton Texaco site is situated on filled land, bounded to the north by a slight rise in topography. East of the property lies an additional 50 to 100 feet of low abandoned pasture land, corn field, and marsh area, beyond which is woodland and possible bedrock outcrop. To the west, the site is flanked by the highway embankment for Interstate 89. South of the site is open marsh and scrub land.

The general direction of surface water flow is north to south, with two drainage swale systems around the site's perimeter (see site map; A-2). The first drainage system begins in the northeast corner of the property, approximately 50 to 60 feet from Route 78. The swale extends along the east boundary of the site, and runs to the southeast corner of the property. From there it runs west along the southern margin and then turns south to join with the second drainage system.

This second drainage swale system begins on the northern property boundary, runs parallel to Route 78, enters a culvert beneath the entry to the facility, and joins with the south-flowing drainage swale parallel to Interstate 89. As shown on the site sketch map, the two drainage swale systems converge approximately 300 feet south of the southwest corner of the parking area. In 1991, a retention pond was installed at this location with intake pipes below the pond surface, to insure that product does not leave the pond. Any type of release at the property should be captured by this retention pond/oil-water separator, where it could evaporate or be recovered by absorption pads. Discharge from this pond eventually flows to the Mississquoi River.

Groundwater flow in the area is expected to be in a south to southwesterly direction, locally joining the drainage swales when the phreatic surface is at or above the ditch line.

4.0 MAY 1994 TANK INSTALLATION/PRODUCT LINE REPLACEMENT

In May 1994, Wesco installed a new 6,000 gallon diesel UST at the Swanton Texaco, and replaced all diesel product lines at the facility. This work was performed in conjunction with the relocation of the truck fueling stand, and was authorized in the May 16, 1994 UST permit from the ANR. WH&N personnel observed the site excavation and collected a groundwater sample for analysis. Observations and results are discussed below.

4.1 Observation of Tank Excavation

A WH&N staff hydrogeologist was present at the time of tank installation. The excavated soils consisted of sands and gravel which appeared to be fill material. At the north end of the excavation, approximately 8' below ground surface (bgs), a layer of contaminated soil was encountered on top of what appeared to be a non-native black shale fill. The shale actually had an oily appearance - this fill is likely derived from the Iberville Shale, which has a high organic content and is believed to be responsible for the shale gas which has been discovered over the years in the Champlain Islands.

PID readings in the contaminated soil horizon above the shale in the northwest corner of the excavation ranged from 50 to 80 ppm. PID screening in the remainder of the excavation yielded readings that generally ranged from 5 to 10 ppm. PID readings in the soil stockpile ranged from 20 - 40 ppm, with a peak value of 80 ppm; however, no soil discoloration was observed.

Groundwater seepage was encountered at approximately 10 feet bgs. This groundwater appeared to be clean, and had no petroleum odor. A groundwater recirculation system was used to improve construction conditions. A well was installed at the south end of the excavation, consisting of an 18" diameter SDR 35 pipe.

There was no evidence of free phase product anywhere on the site. Based on PID readings in the area of the excavation, there appeared to be a zone of low level soil contamination downgradient of the diesel fuel island.

4.2 Soil Spreading

The soils excavated during the May 1994 tank installation/line replacement were placed in two piles on the property and covered with plastic. The piles were originally segregated based on contaminant level, with "clean" soils stockpiled on the southwest corner of the site and soils with higher PID readings on the southeast corner. These stockpiles were poly-encapsulated, allowing natural passive bioremediation to occur. On September 1, 1994, WH&N tested the vapor levels of the stockpiled soils using an H-Nu PID-101 equipped with a 10.2 eV lamp. The background PID reading at the site was 0.1 ppm.

At the "clean" pile on the southwest corner of the property, five separate soil borings were monitored for diesel vapors. At all five locations, PID readings were 0.1 ppm, the same as the background level. The volume of this pile was estimated at 65 cubic yards.

At the pile on the southeast corner of the property, the peak PID reading recorded was 3.6 ppm. It was estimated that 1-2 cubic yards of soil were contaminated at this level. PID readings for the remaining ± 20 cubic yards of material ranged from background (0.1 ppm) to 0.8 ppm.

Using a Bobcat Skid Steer loader, the piles were dismantled to segregate soils based on their PID reading. Each individual bucket was screened using the H-Nu. Buckets of soil with PID readings less than 0.3 ppm were thin-spread on the southern section of the property as fill material for planned parking lot expansion.

Soils with a PID reading of 0.3 ppm or greater were stockpiled along the eastern edge of the property, and covered and underlain by new plastic. These soils remain on the site. We recommend that in the summer of 1995, these soils should

be screened using a PID. Soils with PID levels in compliance with State guidelines should be thinspread at the edge of the parking lot.

by status of PCS ?

4.3 Water Quality Sampling

During the September 1, 1994 site visit, water quality samples were collected from two locations on the property and analyzed by EPA Methods 8020 (purgeable aromatics) and 418.1 (total hydrocarbons). Laboratory reports can be found on pages A-3 through A-7; chain-of-custody forms follow on pages A-8 and A-9.

A surface water sample was collected just below the convergence of the two drainage swale systems discussed previously (see map, A-2). No 8020 or 418.1 constituents were detected, indicating that no contaminants are exiting the property in surface water.

A groundwater sample was collected from the 18" diameter well at the south end of the newly installed tank. The constituents detected had the following concentrations:

MAY 1994 GROUNDWATER SAMPLING RESULTS

Constituent	Concentration	Groundwater Standards[1]	Drinking Water Standard[2] (MCL)
		Enforcement Standard	
Benzene (ppb)	3.8	5	5
Xylenes (ppb)	1.4	400	400
MTBE (ppb)	16.4	None	40

1 State of Vermont, Agency of Natural Resources; Chapter 12: Groundwater Protection Rule and Strategy.

2 Maximum Contaminant Level; Vermont Health Advisory Reference Guide; Vermont Department of Health, November 19, 1994

This low level of contamination is below drinking water Maximum Contaminant Levels and Groundwater Enforcement Standards.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- Work completed at the Swanton Texaco facility included a reconnaissance of the site, observation of the tank installation in May 1994, and soil stockpile vapor

measurements in September 1994. Soil PID readings were recorded, and groundwater and surface water samples were collected in association with these site visits.

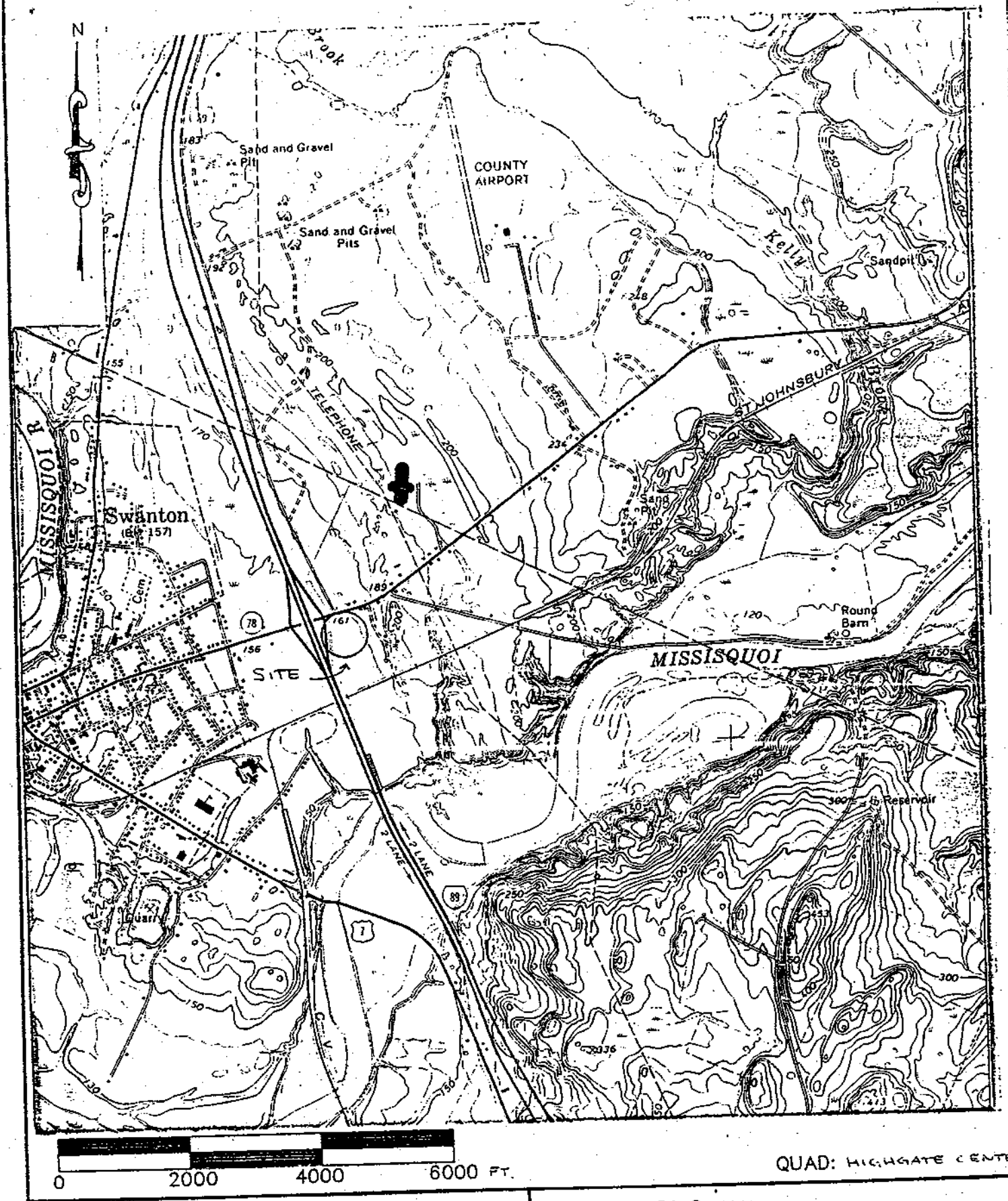
- Soils excavated at the time of the tank installation showed moderate levels of contamination (PID readings up to 80 ppm). These soils were stockpiled on the site and poly-encapsulated, allowing natural passive bioremediation. Soils whose PID readings later declined to <0.3 ppm were eventually spread over the southern portion of the property as fill for parking lot expansion. Soils with PID readings >0.3 ppm were stockpiled at the eastern edge of the site.

- A July 1994 groundwater sample collected from a well near the new UST showed low concentrations of benzene, xylenes, and MTBE, all well below both drinking water MCLs and groundwater Enforcement Standards.

- A water quality sample collected from the retention pond discharge indicates that there was no petroleum contamination in surface waters leaving the property.

- While petroleum products have been detected in soil and groundwater at this facility, this contamination is at a very low level and does not appear to pose any risk to public health or the environment. A surface water sample collected at the downgradient property boundary showed no evidence of petroleum product contamination. Based on these results, we feel that the only further work required at the site is PID screening and thin-spreading of the remaining stockpiled soils, which should take place in the summer of 1995.

[D:\NCAPLDATA\WPDOCS\SWANTON.R1]



QUAD: HIGHGATE CENTE

Wagner, Heindel, and Noyes

CONSULTING SCIENTISTS AND ENGINEERS

• Hydrogeology • Ecology •

• Environmental Engineering •

BURLINGTON, VERMONT

WESCO INC

SWANTON TEXACO STATION

SITE LOCATION MAP

USGS TOPOGRAPHIC MAP

DATE:	SCALE: 1:24000	DRN:	APPD:

ENDYNE, INC.

Laboratory Services

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Swanton Texaco
REPORT DATE: September 8, 1994
DATE SAMPLED: September 1, 1994

PROJECT CODE: HNTX1516
REF.#: 63,895 - 63,896

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Chain of custody indicated preservation with NaN_3.

All samples were prepared and analyzed by requirements outlined in the referenced method and within the specified holding times. All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced method. Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Individual sample performance was monitored by the addition of surrogate analytes to each sample. All surrogate recovery data was determined to be within laboratory QA/QC guidelines unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures

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Laboratory Services

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LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Swanton Texaco
REPORT DATE: September 8, 1994
DATE SAMPLED: September 1, 1994
DATE RECEIVED: September 1, 1994
ANALYSIS DATE: September 7, 1994

PROJECT CODE: HNTX1516
REF.#: 63,896
STATION: Recovery Well
TIME SAMPLED: 10:30
SAMPLER: Greg Leech

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	3.8
Chlorobenzene	1	ND[1]
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	1.4
MTBE	10	16.4

Bromobenzene Surrogate Recovery: 91%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 7

NOTES:
1 None detected

ENDYNE, INC.

Laboratory Services

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LABORATORY REPORT

EPA METHOD 8020--PURGEABLE AROMATICS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Swanton Texaco
REPORT DATE: September 8, 1994
DATE SAMPLED: September 1, 1994
DATE RECEIVED: September 1, 1994
ANALYSIS DATE: September 7, 1994

PROJECT CODE: HNTX1516
REF.#: 63,895
STATION: Swale
TIME SAMPLED: 11:30
SAMPLER: Greg Leech

Parameter	Detection Limit (ug/L)	Concentration (ug/L)
Benzene	1	ND[1]
Chlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
Ethylbenzene	1	ND
Toluene	1	ND
Xylenes	1	ND
MTBE	10	ND

Bromobenzene Surrogate Recovery: 85%

NUMBER OF UNIDENTIFIED PEAKS FOUND: 0

NOTES:
1 None detected

ENDYNE, INC.

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LABORATORY REPORT

TOTAL HYDROCARBONS - EPA METHOD 418.1 (WATER)

CLIENT: Wagner, Heindel, and Noyes, Inc.
REPORT DATE: September 15, 1994
PROJECT NAME: Swanton Texaco
PROJECT CODE: HNTX1517
DATE SAMPLED: September 1, 1994
DATE RECEIVED: September 1, 1994
DATE EXTRACTED: September 13, 1994
DATE ANALYZED: September 14, 1994
SAMPLER: Greg Leech

Reference #	Sample ID	Conc.(mg/L)[1]
63,897	Swale; 11:30	ND[2]
63,898	Recovery Well; 10:30	ND

Notes:

1 Method detection limit is 0.8 ppm.
2 None Detected

ENDYNE, INC.

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Williston, Vermont 05495
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REPORT OF LABORATORY ANALYSIS

CLIENT: Wagner, Heindel, and Noyes, Inc.
PROJECT NAME: Swanton Texaco
DATE REPORTED: September 15, 1994
DATE SAMPLED: September 1, 1994

PROJECT CODE: HNTX1517
REF. #: 63,897 - 63,898

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody record.

Chain of custody did not indicate sample preservation.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which included matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

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CHAIN-OF-CUSTODY RECORD

Project Name: SUMMIT TEXACO	Reporting Address:	Billing Address
Site Location: SUMMIT, VT		
Endyne Project Number: HNTX 1.517	Company:	Sampler Name:
	Contact Name/Phone #:	Phone #:

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
63898	SUMLE	H2O	X								
63899	RECOVERY WELL	↓	↓								

Relinquished by: Signature	Received by: Signature	Date/Time
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or A/P
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8260B
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8.80 Pes/PCB
4	Nitrite N	9	BOD_5	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										

ENDYNE, INC.

32 James Brown Drive
Williston, Vermont 05495
(802) 879-4333

63.895-898

CHAIN-OF-CUSTODY RECORD

1152

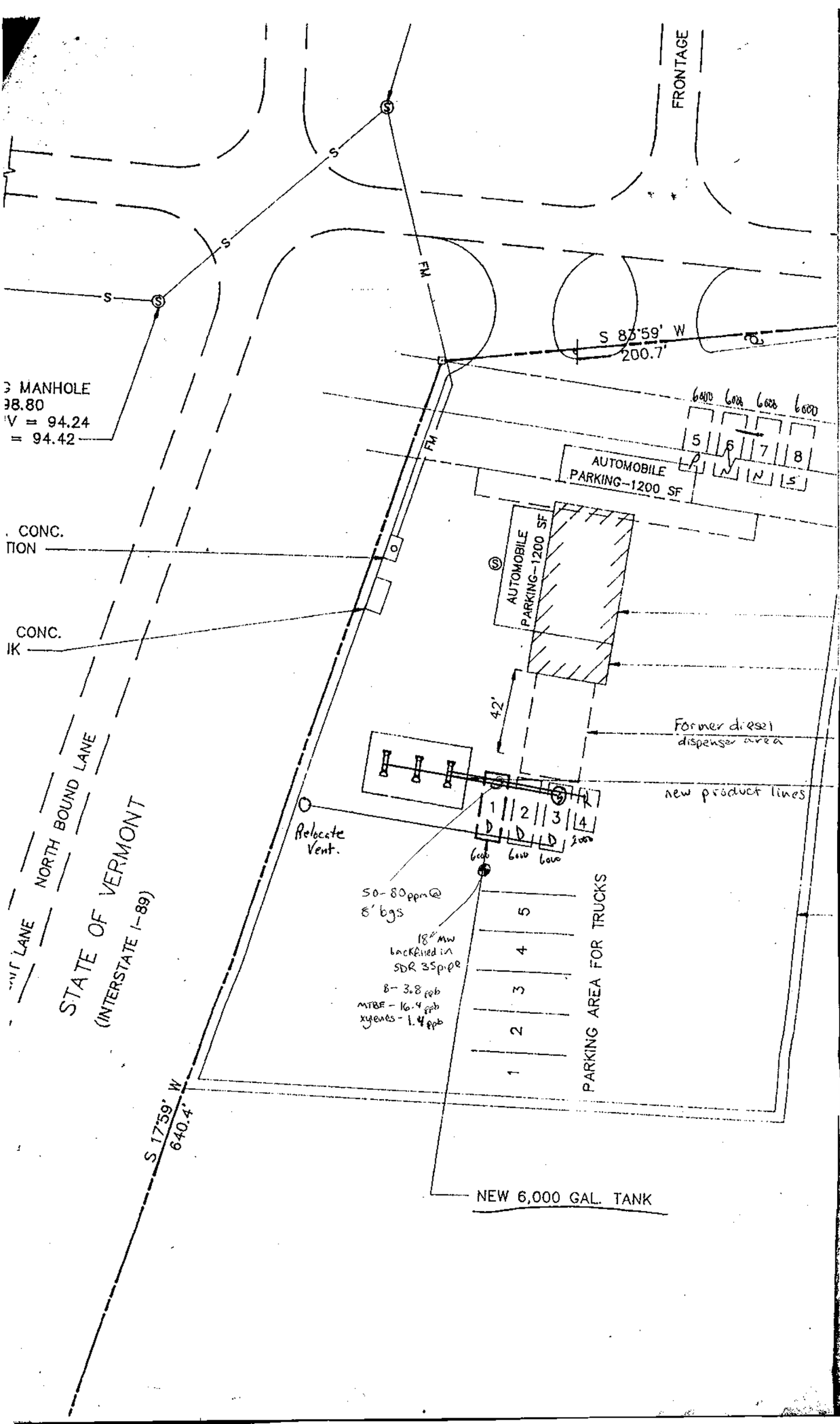
Project Name: SWANTON TEXACO Site Location: SWANTON, VT	Reporting Address: WHN	Billing Address: WHN
Endyne Project Number: HNTX1516	Company: WHN Contact Name/Phone #: GREG LEETH	Sampler Name: GREG LEETH Phone #: 655-0820

Lab #	Sample Location	Matrix	GRAB	COMP	Date/Time	Sample Containers No.	Sample Containers Type/Size	Field Results/Remarks	Analysis Required	Sample Preservation	Rush
63895	SWALE	H2O	X		9/1/94 1130	2	40 ml VOA BER		8020	HCl	2WK
63896	RECOVERY WELL	"	"		1030	"	"		418.1	"	"

Relinquished by: Signature [signature]	Received by: Signature [signature]	Date/Time 9/1/94 1315
Relinquished by: Signature	Received by: Signature	Date/Time

Requested Analyses

1	pH	6	TKN	11	Total Solids	16	Metals (Specify)	21	EPA 624	26	EPA 8270 B/N or Acid
2	Chloride	7	Total P	12	TSS	17	Coliform (Specify)	22	EPA 625 B/N or A	27	EPA 8010 8020
3	Ammonia N	8	Total Diss. P	13	TDS	18	COD	23	EPA 418.1	28	EPA 8080 Pest/PCB
4	Nitrite N	9	BOD,	14	Turbidity	19	BTEX	24	EPA 608 Pest/PCB		
5	Nitrate N	10	Alkalinity	15	Conductivity	20	EPA 601/602	25	EPA 8240		
29	TCLP (Specify: volatiles, semi-volatiles, metals, pesticides, herbicides)										
30	Other (Specify):										


FRONTAGE
S 85°59' W
200.7'
MANHOLE
98.80
V = 94.24
= 94.42
CONC.
TION
CONC.
IK
AUTOMOBILE PARKING–1200 SF
AUTOMOBILE PARKING–1200 SF
42'
Former diesel dispenser area
new product lines
Relocate Vent.
50-80 ppm @ 8' bgs
18" MW backfilled in SDR 35 pipe
B- 3.8 ppb
MTBE - 16.4 ppb
xylenes - 1.4 ppb
PARKING AREA FOR TRUCKS
NEW 6,000 GAL. TANK
STATE OF VERMONT
(INTERSTATE I-89)
NORTH BOUND LANE
S 17°59' W
640.4'