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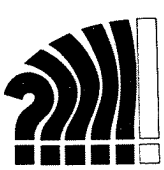


WASTE
RESOURCE
ASSOCIATES, INC.

Revised Engineering Report

"Tank #60 Storage Facility:
Application for Part 360
Storage Permit"

prepared for:

Booth Oil Co., Inc.

submitted by:

Waste Resource Associates, Inc.

February 28, 1983

John Banaszak

Table of Contents

Introduction

The Storage Facility operated by Booth Oil Co., Inc. on Robinson Street utilizes Tank #60 exclusively. Tank #60 is protected by an earthen berm of compacted soils which surrounds the entire tank providing for spill containment and has a capacity of approximately 280,000 gallons. The Tank #60 area is underlain with a strata of impermeable clay-type soils as a sub-base to prevent any vertical migration of contaminants. Additionally, the interior of the bermed area surrounding Tank #60 has been regraded to drain any spilled materials into the sump. The sump is to be equipped with a "Filter Scavenger" device which will provide for effective oil-water separation and the retrieval of any spilled hydrocarbons with the remaining water being discharged to the sewer. Should any leak develop beneath the tank, the material in all likelihood will find its way to the sump and be processed by the "Filter Scavenger". Tank #60 is a 500,000 gallon tank constructed of carbon steel which is approximately 50' in diameter and is used to store industrial and crankcase oils for subsequent processing at the Katherine Street Facility owned and operated by Booth Oil Co., Inc. At no time will a level of more than 20' be maintained in Tank #60 (see Appendix VI).

Application for Approval to Operate a Solid Waste Management Facility

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

APPLICATION FOR APPROVAL TO OPERATE A SOLID WASTE MANAGEMENT FACILITY

SEE APPLICATION INSTRUCTIONS ON REVERSE SIDE

FOR STATE USE ONLY	
PROJECT NO.	DATE RECEIVED
DEPARTMENT ACTION ☐ Approved ☐ Disapproved	DATE

1. OWNER'S NAME	2. ADDRESS (Street, City, State, Zip Code)	3. Telephone No.
Booth Oil Co., Inc.	Katherine St., Buffalo, NY 14210	855-2212
4. OPERATOR'S NAME	**5. ADDRESS (Street, City, State, Zip Code)**	**6. Telephone No.**
Buffalo Waste Oil Service Inc.	Katherine St., Buffalo, NY 14210	855-2212
ENGINEER'S NAME	**8. ADDRESS (Street, City, State, Zip Code)**	**9. Telephone No.**
Randolph W. Rakoczynski	2576 Seneca Ave., Niagara Falls, NY 14305	694-1634
10. ON-SITE SUPERVISOR	**11. ADDRESS (Street, City, State, Zip Code)**	**12. Telephone No.**
Dan Brace	Katherine St., Buffalo, NY 14210	855-2212

13. HAS THE INDIVIDUAL NAMED IN ITEM 10 ATTENDED A DEPARTMENT SPONSORED OR APPROVED TRAINING COURSE?
☐ Yes Date Course Title Location ☐ No

14. PROJECT/FACILITY NAME	15. COUNTY IN WHICH FACILITY IS LOCATED	16. ENVIRONMENTAL CONSERVATION REGION
Tank #60 Storage Facility	Niagara	#9

17. TYPE OF PROJECT FACILITIES: ☐ Composting ☐ Transfer ☐ Shredding ☐ Baling ☐ Sanitary Landfill ☐ Incineration ☐ Pyrolysis
☐ Resource Recovery-Energy ☐ Resource Recovery-Materials ☐ Other interim storage of used oil

18. HAS THIS DEPARTMENT EVER APPROVED PLANS AND SPECIFICATIONS AND/OR ENGINEERING REPORTS FOR THIS FACILITY? ☐ Yes Date _____ ☐ No

19. LIST WASTES NOT ACCEPTED

The only wastes accepted for storage at this facility are used crankcase and industrial oils.

20. BRIEFLY DESCRIBE OPERATION

Bulk tanker load quantities of used crankcase and industrial oils collected from various generators are off-loaded for interim storage in tank #60 and subsequent processing at the Katherine Street Facility of Booth Oil Co., Inc.

The personnel involved with this operation would be the Transportation Manager, Dan Brace, and any of the drivers employed by Booth Oil Co., Inc. The equipment which will be utilized in transfers into or out of the tank could be any of the equipment listed on the Part 364 Waste Haulers Permit Registration filed with the Department.

21. IF FACILITY IS A SANITARY LANDFILL, PROVIDE THE FOLLOWING INFORMATION:
a. Total useable area: (Acres) Initially _____ Currently _____
b. Distance to nearest offsite, downgradient, water supply well _____ Feet
c. No. of groundwater monitoring wells Upgradient _____ Downgradient _____

22. INDICATE WHICH ATTACHMENTS, IF ANY, ARE INCLUDED WITH THIS APPLICATION:
☐ Form 47-19-2 or SW-7 ☐ Operations Plan & Report ☐ USGS Topographic Map ☐ Record Forms ☐ Other _____
☐ Construction Certificate ☐ Boring Logs ☐ Water Sample Analysis ☐ None

23. CERTIFICATION:
I hereby affirm under penalty of perjury that information provided on this form and attached statements and exhibits is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

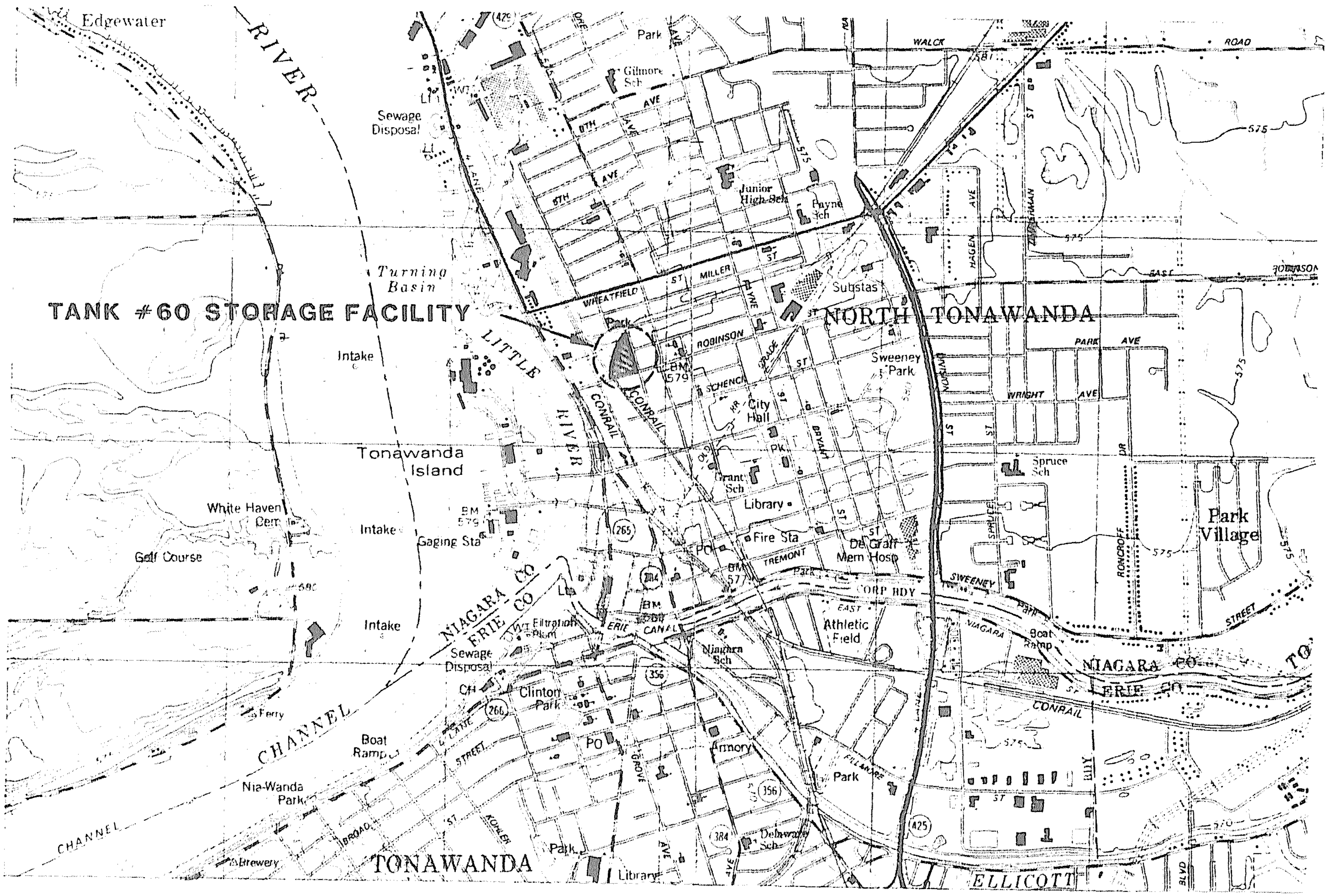
Date

George T. Booth III - President
Signature and Title

47-19-4(3/82)
Formerly SW-22

CENTRAL OFFICE COPY

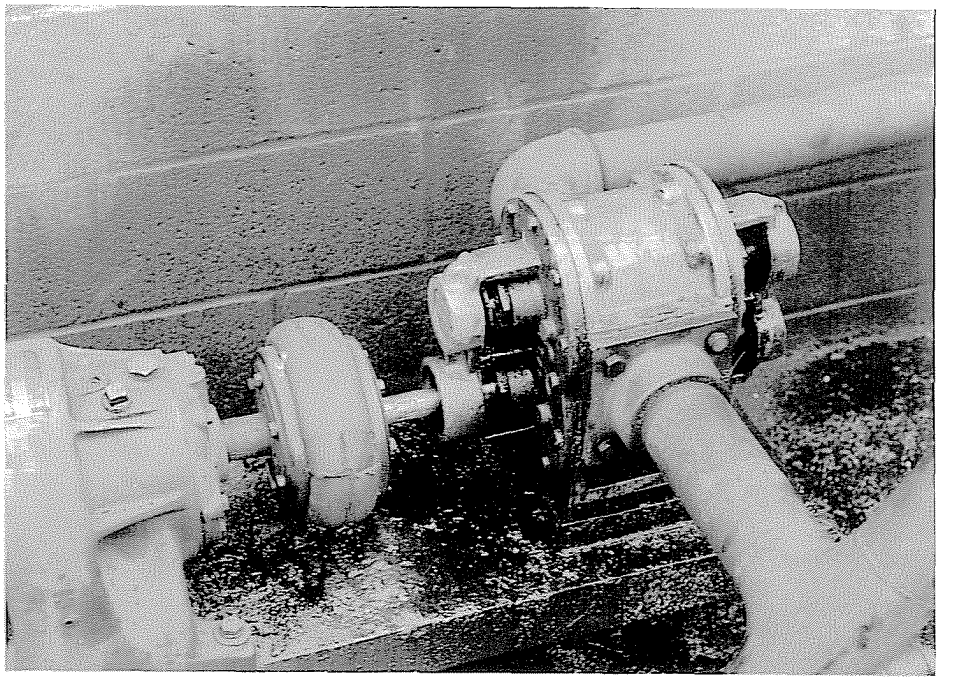
USGS Topographic Map


TANK #60 STORAGE FACILITY
NORTH TONAWANDA
TONAWANDA
Edgewater
RIVER
LITTLE RIVER
CHANNEL
Turning Basin
Tonawanda Island
Intake
Sewage Disposal
White Haven Cem
Golf Course
Gaging Sta
NIAGARA CO
ERIE CO
ERIE CANAL
CONRAIL
Park Village
Junior High Sch
Payne Sch
Gilmore Sch
Substas
Sweeney Park
City Hall
Grant Sch
Library
Fire Sta
DeGraff Mem Hosp
Athletic Field
Spruce Sch
Clinton Park
Armory
Delaware Sch
Nia-Wanda Park
Boat Ramp
Brewery
Ferry
ELLICOTT
WALCK ROAD
WHEATFIELD
MILLER ST
ROBINSON
SCHENCK
BRYANT
TREMONT
DIVISION ST
PARK AVE
WRIGHT AVE
HAGEN AVE
RONCROFT DR
SPRUCE
SWEENEY
GROVE
KOHLER
BROAD
FILLMORE
CORP BDY
575
579
577

Operations Plan & Report

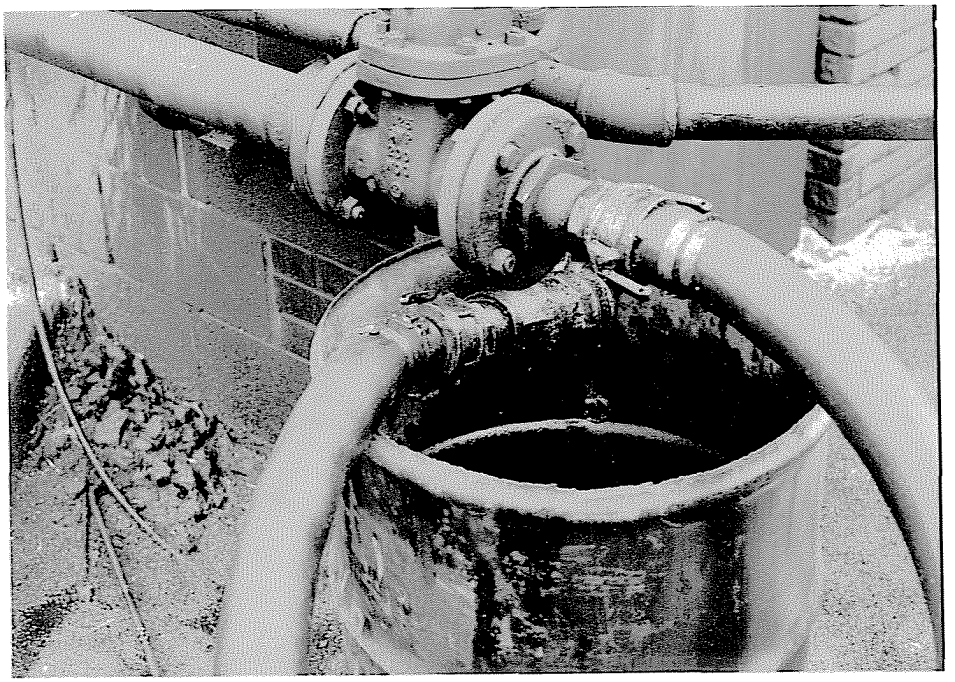
Daily Operations

Prior to any shipment of used crankcase or industrial oil being off-loaded to Tank #60, the driver responsible for that particular load has been instructed by the Transportation Manager on precisely what type of material he is to be picking up from which generator and that its disposition will be Tank #60. Once the tanker has been loaded at the generators site and arrives at Robinson Street, it is off-loaded to Tank #60 using the transfer pump at the northwest corner of the boiler room/pump house building on the eastern parcel. The driver is responsible for visually inspecting the packing gland on the pump to insure it is not leaking and also draining discharge hoses into the 30-gallon drum placed at the hose connection point at the southwest corner of the boiler room/ pump house building once the transfer is completed.



TANK #60 TRANSFER PUMP

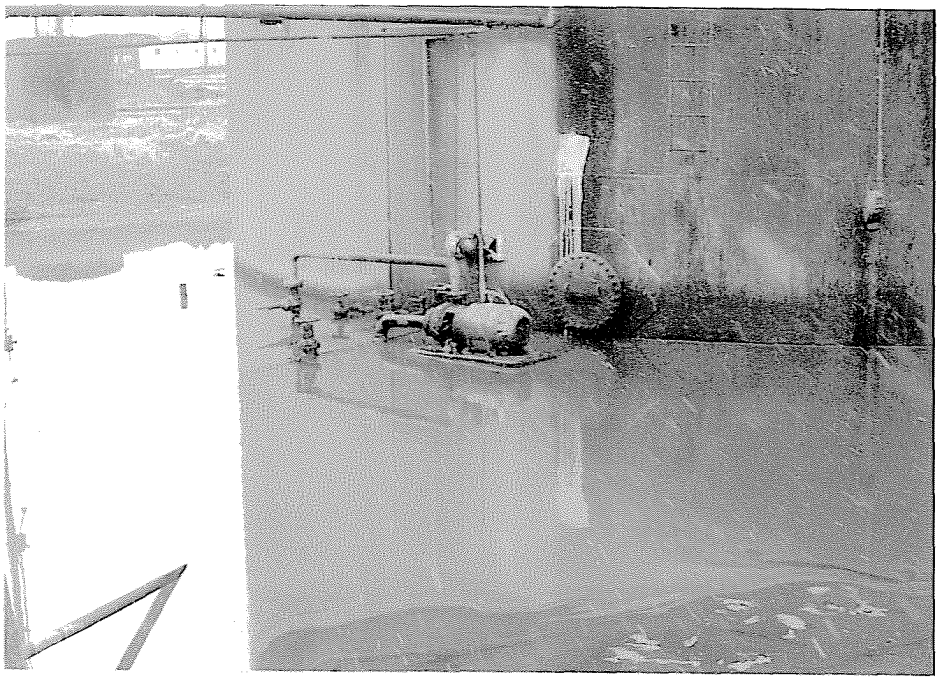
(UNLOADING)



UNLOADING LINE HOSE DRAININGS

The movement of any material from Tank #60 to Katherine Street for processing is also directed by the Transportation Manager. The driver is instructed on the volume of material to be withdrawn from the tank and pumped into his trailer. The pump located within the Tank #60 bermed area immediately south of the tank itself is used to load tankers spotted on the concrete pad immediately due east of the boiler room/pump house building.

TANK #60 LOADING AREA



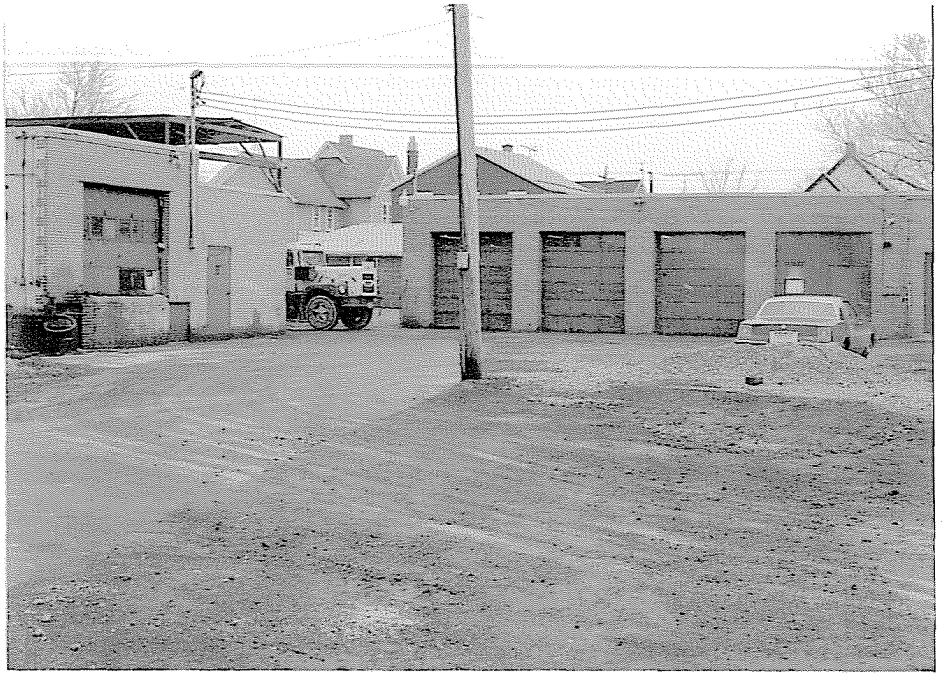
TANK #60 TRANSFER PUMP

(LOADING)

The sump located immediately south of Tank #60 will be equipped with a Filter Scavenger device (see Appendix I). This device will float on any water which is accumulated in the Tank #60 sump and selectively remove any immiscible oil phase or floating oil-water emulsion which accumulates in the sump. This oil and/or oil-water emulsion will be automatically pumped to 55-gallon drums as it collects within the Filter Scavenger.

In the event of a major-type spill within the Tank #60 bermed area or a major structural failure occurring to Tank #60, the Filter Scavenger and/or the existing sump pump can be used to pump material to either tanker trailers or other tanks on-site. This capability augmented with the use of vacuum trucks owned by Booth Oil Co., Inc. will allow even large volumes of spilled oil to be retrieved quickly and effectively.

In the event of minor-type spills which may occur in either loading or unloading, the spilled material will be absorbed from the concrete pads at the loading and unloading areas using absorbent stored in bags in the garage.



UNLOADING/LOADING AREAS

(PROXIMITY TO GARAGE)

Part 360 Compliance

360.8 (b)(6)(ii): Waste Oil Storage, Reprocessing and Re-refining Facilities.

(a): Facility Design, Construction and Operation.

(a)(2): the applicable location building and fire codes.

On May 4, 1954, the City of North Tonawanda issued Building Permit No. 2689 to Booth Oil Co., Inc. for the construction of Tank #60 on the eastern parcel of the plant site on Robinson Street.

SEQR grandfathering

(b): permit application, process (storage) details.

See the preceding sections,

- Application for Approval to Operate a Solid Waste Management Facility
- Operations Plan & Report (Daily Operations)

(c): SPCC/Contingency Plans.

See Appendix III - Contingency Plan.

360.8 (c) - Hazardous Waste Management Facilities

360.8 (c)(1): General Facility Standards:

(i) Ownership/operations change.

If either ownership or operation of the Tank #60 Storage Facility is changed the NYSDEC will be notified for approval.

(ii) Waste Analysis Plan.

The used crankcase and industrial oils directed to Tank #60 are relatively large volume, homogeneous-type waste streams. The driver responsible for picking up the load does perform a visual inspection of the material during loading.

(iii) Site Security.

Mr. Howard Diermeyer is the site superintendent and custodian for the Robinson Street Facility and is in charge of security.

(iv) Inspections.

The drivers who are associated with either off-loading material into or withdrawing material from Tank #60 would perform a visual inspection of the Storage Facility and report any and all problems to the Transportation Manager. Additionally, the Site Superintendent would also perform a daily inspection.

Once each week, Aaron Diermeyer (Production Superintendent at the Katherine Street Facility of Booth Oil) will perform an inspection of the Tank #60 Storage Facility.

(v) Ignitable Waste Precautions.

The flash point of used crankcase and industrial oils handled in Tank #60 is over 140°F and hence does not meet the definition of ignitable. This was determined from analytical data generated on feedstocks as part of a DOE grant effort at Katherine Street (see Appendix V).

(vi) Personnel Training Program.

The personnel associated with operations at the Tank #60 Storage Facility (particularly the drivers) will be advised of their responsibilities and trained as part of the program at Katherine Street.

NOTE: The Personnel Training Program for the Katherine Street Facility is presently being developed.

360.8 (c)(2): Preparedness and Prevention.

(i) Maintenance/Operation

The bermed area surrounding Tank #60 will be looked to in order to provide primary containment of any spills. The deployment of the Filter Scavenger device in the Tank #60 sump will provide the ability to recover any spilled oils and further provide a countermeasure to insure that no immiscible oil spills are discharged inadvertently to the sewer as the Tank #60 sump is pumped out (see Appendix VI - Containment Berm volume calculations).

(ii) Equipment

a) internal communication/alarm

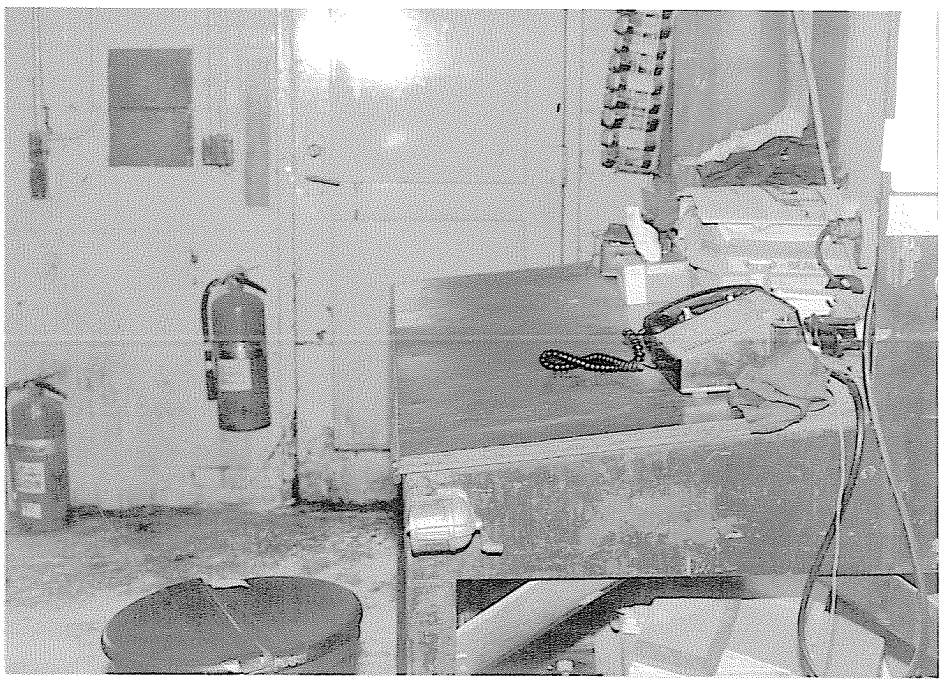
At any time, the maximum number of employees at the site would be two;

- driver
- site superintendent.

These individuals are always in close proximity to one another where voice communication will successfully signal each other of emergency conditions.

b) summoning device

There is a telephone located in the locker room area of the garage that can be used to summon emergency personnel.



LOCKER ROOM TELEPHONE

c) Fire Extinguishers/Spill Control

There are fire extinguishers located in the locker room which are readily accessible to the drivers and site superintendent.

FIRE EXTINGUISHERS

There are bags of absorbent material available in the garage which can be used for the clean-up of small spills.

d) Water

There is a fire hydrant located on Robinson Street which can be used to supply adequate water volumes for any major fire fighting.

(iii) Testing/Maintenance

The Site Superintendent has responsibility for the maintenance of all equipment on-site and reporting any defects or deficiencies to the Transportation Manager.

(iv) Access

The Site Superintendent and all drivers have keys to the locker room door of the garage. The locker room is connected with an unlocked door to the garage area.

(v) Aisle Space

The only time when access to the south side of Tank #60 would be restricted would be during loading of a tanker. In this situation, access would still be possible from an approach from the northwest side of Tank #60 (along the railroad tracks).

(vi) Arrangements with Local Authorities

A copy of the Contingency Plan (Appendix III) is being sent to Joseph Belczak of the North Tonawanda Fire Department, Frank Malone of the North Tonawanda Police Department and Edwin S. Dojka, City Engineer for North Tonawanda.

360.8 (c)(3): Contingency Plan.

See Appendix III

360.8 (c)(4):. Manifest System.

Manifests for all manifested loads of crankcase and industrial oils off-loaded to Tank #60 will be kept at the Katherine Street Facility.

(i) Operating Records

The operating record of the Katherine Street Facility will reflect all movements into and out of Tank #60.

(ii) Records: Availability/Retention/Disposition

All records pertaining to the Tank #60 Storage Facility will be maintained at Katherine Street for a period of three (3) years.

(iii) Annual Report

An annual report of all shipments transferred into and tankers withdrawn from Tank #60 will be submitted by March 1st for the preceding calendar year, if required.

360.8 (c)(6): Closure Plan.

See Appendix IV

360.8 (c)(9): Specific Requirements for Storage in Tanks

(i)(a) Accidental ignition of wastes.

The used crankcase and industrial oils are compatible and not ignitable hence there is very little chance of ignition. Wastestreams similar to those to be stored in Tank #60 were tested as part of a DOE-funded program at Katherine Street and the flash point of these oils was found to be well over 140^{o}F (see Appendix V).

(i)(b) Tank Failure due to Waste Characteristics

The chemical and physical nature of the used crankcase and industrial oils is such that there should not be a premature failure in the tank due to rupture, leak or corrosion, attributable to these wastes. Tank #60 is constructed of carbon steel and is approximately 29 years old. It is not anticipated that its past use to store industrial and crankcase oils has had a deleterious effect on its structural integrity, and in fact, they may have served to inhibit tank oxidation which is generally responsible for structural failures.

(i)(c) Uncovered Tanks

Not applicable to Tank #60.

(i)(d) Continuous Feed

Not applicable to Tank #60.

(ii) Waste Analysis

See 360.8 (c)(1)(ii) response

(iii) Inspections

- Daily Inspection Results.

The Daily Inspection Form (Appendix II), will be filled out by each driver responsible for pumping into or out of Tank #60 each day.

- Weekly Inspections.

Aaron Diemeyer, Production Superintendent (Katherine Street) will perform a weekly inspection to detect any leakage or corrosion assoicated with the tank and the integrity and visual appearance of the Tank #60 bermed area.

(iv) Closure.

Upon closure, the draft closure plan for Tank #60 as presented will be followed (see Appendix IV).

Air Emissions

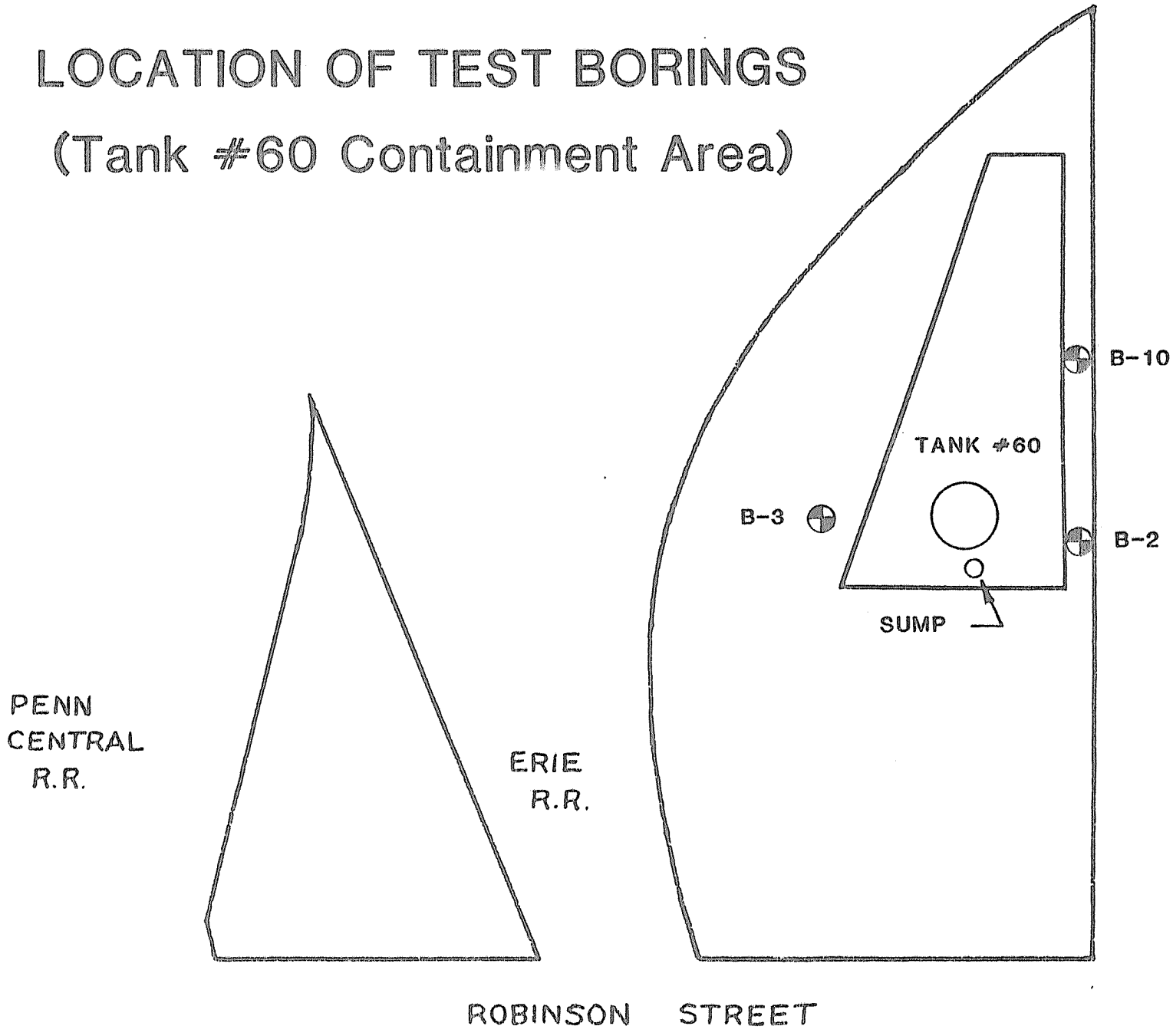
Sources of air emissions of volatile organic chemicals (VOCs) requires certification for their operation. A VOC is a chemical whose vapor pressure at standard temperature and pressure is greater than 0.10 mm Hg.

A reasonable estimate for the vapor pressure for the waste oils under consideration is 0.015 mm Hg at 70°F. This information was discussed with Mr. Fred Meli of Region #9 NYSDEC and it was generally agreed that no Certificate to Operate would be required for Tank #60.

Boring Logs

LOCATION OF TEST BORINGS

(Tank #60 Containment Area)



EARTH DIMENSIONS, INC.

Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655-1717

HOLE NO. B-2 SURF. ELEV. 580.1

6F80 PROJECT Booth Oil Company, Inc.
North Tonawanda, NY
LOCATION See survey

CLIENT Trautman Associates
DATE STARTED 7/2/80 COMPLETED 7/2/80

DEPTH (ft)	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	1	2	5	7	10	12	Moist gray crushed dolomitic gravel, angular, loose	
								0.3
							Moist black (CLAYEY-SILT) fill with 15 to 30% gravel, broken bricks	Gravel fill to 0.3 feet over mostly clayey silt soil fill to 4.5 feet over water sorted sand and gravel with some silt and clay to 6.5 feet over clayey lake sediments to 24.5 feet over loamy glacial till to end of boring.
	2	3	4	5	8	9		
	3	8	17	10	7	27		4.5
5							Moist faintly mottled brown gravelly silt loam (CLAYEY-SILT) with 15 to 25% rounded gravel, very firm	
								6.0
	4	6	11	20	26	31	Wet gray very gravelly sandy loam (SILTY-SAND) with 30 to 50% rounded gravel, loose	
								6.5
	5	8	16	24	29	40	Moist brown SILTY-CLAY with very thin coarse silt, very fine sand lenses, extremely firm, plastic	Noted brown oil film barely evident to water and gravel between 6.0 and 6.5 feet in depth.
							- - - -grades downward to - - - - - - -	8.0
10							Moist grayish brown SILTY-CLAY with very thin coarse silt, very fine sand lenses, very firm, plastic	
							- - - -grades downward to - - - - - - -	11.0
							Wet gray SILTY-CLAY with an occasional reddish brown interbed, soft, sticky	
15	6	2	3	4	5	7		

continued on page 2...

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bh LOGGED BY Donald W. Owens/Soil Scientist

EARTH DIMENSIONS, INC.

Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655-1717

HOLE NO. B-2 continued SURF. ELEV. 580.1

6F80 PROJECT Booth Oil Company, Inc.
North Tonawanda, NY LOCATION See survey

CLIENT Trautman Associates DATE STARTED 7/2/80 COMPLETED 7/2/80

DEPTH (feet)	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
20	7	2	3	3		6	Wet gray SILTY-CLAY with an occasional reddish brown interbed, soft, sticky	
	7							
	7							
								No water at completion, but anticipate water to be 6 feet below surface at some future time.
								24.5
25	8	1	2	2		4	----grades downward to----	
	8						Wet brown loam (SANDY-SILT) with 10 to 15% mostly subangular dolomitic gravel, firm, non-plastic, massive soil structure	
	8							
	9	10	11	22		33		
	9							
30	9							30.0
							Boring completed at 30 feet.	

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bh LOGGED BY Donald W. Owens/Soil Scientist SHEET 2 OF 2

EARTH DIMENSIONS, INC.

Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655-1717

HOLE NO. B-3 SURF. ELEV. 580.1

6F80 PROJECT Booth Oil Company, Inc. LOCATION See survey
~~North Tonawanda~~

CLIENT Trautman Associates DATE STARTED 7/1/80 COMPLETED 7/1/80

DEPTH (feet)	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	N	DESCRIPTION & CLASSIFICATION	WATER TABLE & REMARKS
	1	5	3	6	7	9	Extremely moist very slaggy (SANDY-SILT) fill with 30 to 50% slag	Mostly soil fill to 5.0 feet over water sorted sand and gravel with some silt and clay.
	1							
	1							
	1							
	2	3	3	6	8	9	Moist black (CLAYEY-SILT) and reddish brown (SILTY-CLAY) fill with 5 to 10% shale fragments	
	2							
	2							
	2							
	3	5	7	14	17	21		Oily odors were detected in the surface fill to 6.0 feet. Free flowing oil noted between 6.0 and 7.5 feet with a trace of oil noted in the coarse silt lenses of the SILTY-CLAY zone - between 7.5 and 8.5 feet.
5	3							
	3							
	3							
	4	11	20	12	19	32	Wet gravelly brownish gray sandy loam (SILTY-SAND) with 15 to 25% rounded gravels, gray, gravelly, sandy	
	4							
	4							
	4							
		SHELBY TUBE SAMPLE					Distinctly mottled brown (SILTY-CLAY) with very thin coarse silt lenses, very firm, plastic	Shelby tube sample taken from 8.0 to 10.0 foot depth.
10							- - - - -grades downward to - - - - - - -	Some silt and clay to 7.5 feet over clay lake sediments to completion.
	5	7	11	12	14	23	Extremely moist brownish gray (SILTY-CLAY) with very thin coarse silt lenses, very firm, plastic	
	5							
	5							
	5							
							Boring completed at 12 feet.	Water table at 6.0 feet below surface at completion.
15								

N = NUMBER OF BLOWS TO DRIVE 2 " SPOON 12 " WITH 140 lb. WT. FALLING 30 " PER BLOW.

bh LOGGED BY Donald W. Owens/Soil Scientist SHEET 1 OF 1

EARTH DIMENSIONS, INC.

Test Borings and Logs
797 Center Street • East Aurora, New York 14052 • (716) 655-1717

HOLE NO. B-10 SURF. ELEV. 579.5

6F80 PROJECT Booth Oil Company, Inc.
North Tonawanda, New York LOCATION See survey

CLIENT Trautman Associates DATE STARTED 7/2/80 COMPLETED 7/2/80

DEPTH (Feet)	SAMPLE NO.	BLOWS ON SAMPLER 0/6 6/12 12/18 18/24 N	DESCRIPTION & CLASSIFICATION		WATER TABLE & REMARKS
			Moist gray crushed dolomitic gravel, angular, loose	0.3	A plastic like liner between crushed surficial stone and the underlying layers at 0.3 foot depth.
			Moist black CLAYEY-SILT fill with 15 to 30% gravel, broken bricks, coal, cinders		
			- - - -grades downward to- - - - - -	2.5	
			Moist brown silt loam (SANDY-SILT) fill with 5 to 15% rounded gravels	3.0	Mostly soil fill to 3.0 feet over silty water deposited sediments containing some stone fragments to 5.0 feet over clayey lake sediments to end of boring.
5			Moist distinctly mottled grayish brown silt loam (SANDY-SILT) with sand lenses and embedded 10 to 15% rounded gravel, nonplastic		
			- - - -grades downward to - - - - - -	4.0	
			Wet brownish gray silt loam (CLAYEY-SILT) 5 to 15% rounded embedded gravels, firm, slightly plastic	5.0	There is no visual evidence of oil contaminants.
10			Moist distinctly mottled brown (SILTY-CLAY) with very thin coarse silt - very fine sand-silt lenses, extremely firm, plastic	6.0	No samples were retained; augered with a hand bucket auger.
			Boring completed at 6.0 feet.		
15					Water table is at 4.5 feet below the surface at completion.

N = NUMBER OF BLOWS TO DRIVE _____" SPOON _____" WITH _____ lb. WT. FALLING _____" PER BLOW.

bh LOGGED BY Donald W. Owens/Soil Scientist SHEET 1 OF 1

Water Sample Analysis

It is anticipated that with proper operation of the "Filter Scavenger" device described in Appendix I, water quality of the aqueous material discharged to the sewer from the Tank #60 sump will be approximated by the water analysis which follows. Since the water analysis was generated from a groundwater sample obtained from the drawdown well system, the specific conductivity of the surface water discharged from the Tank #60 sump should be substantially less.

ACTS TESTING LABS, INC.

3900 Broadway • Buffalo, N.Y. 14227-1192 • (716) 684-3300

TECHNICAL REPORT November 1, 1982

Mr. George Booth
BOOTH OIL COMPANY, INCORPORATED

SUBJECT:

Analysis of one water sample received on October 22, 1982.

RESULTS:

pH Units	6.63
Specific Conductivity	5,400 micromhos/centimeter
Oil & Grease	20.5 mg/l
Total Organic Carbon	35.0 mg/l
Lead	LT 0.1

mg/l = milligrams per liter.
LT = Less Than

EXPERIMENTAL:

All analyses were conducted according to procedures listed in "Standard Methods for the Examination of Water and Wastewater", 15th Edition, 1980.

ACTS TESTING LABS, INC.

Thomas Knickerbocker
Environmental Laboratory
Coordinator

ACTS TESTING LABS, INC.

Daniel P. Murtha, Ph.D.
Laboratory Director

ped

Appendix I

There are two filter elements which come as standard equipment with the "Filter Scavenger", a blue filter element for light oils (low viscosity) and a green element for heavy oils (high viscosity). The green filter element will be used in the "Filter Scavenger" deployed in the Tank #60 sump.

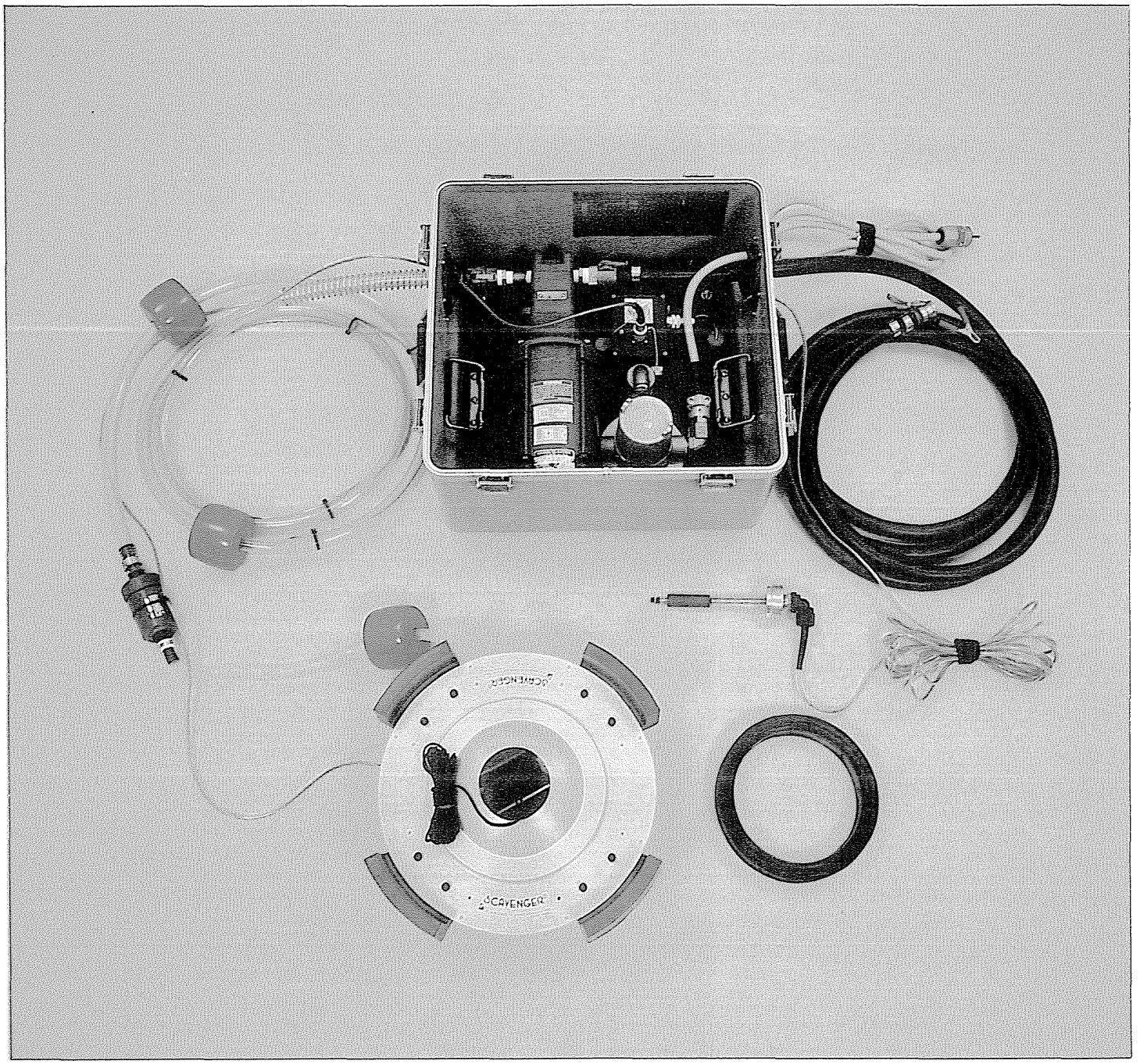
OIL RECOVERY SYSTEMS
PORTABLE OIL-WATER SEPARATOR

The Scavenger® separates and retrieves light oil products such as gasoline, diesel oil, fuel oil and a wide range of other hydrocarbons from the water surface above or below ground level.

The key to its effectiveness is an oil-water separator cartridge which discriminates between floating hydrocarbons and water, preventing water from entering the system.

OIL
RECOVERY
SYSTEMS, INC.
Main Street, Greenville
New Hampshire 03048
(603) 878-2500

PS1



Scavenger® System Specifications

Motor: Explosion-proof 1/4 H.P., 115 V.A.C., 60 Hz, 4.2 A., 1725 R.P.M., or
Explosion-proof 1/4 H.P., 230 V.A.C., 60 Hz, 2.1 A., 1460 R.P.M., or
Explosion-proof 1/4 H.P., 12 V.D.C., 14 A., 1750 R.P.M.

Pump: 5 G.P.M. self-priming, close coupled gear pump.

Pump Control Switch: Intrinsically safe, less than 4 mA at 10V.

Hose Fittings: "Kamloc" quick disconnect.

Input Hose: 15 feet long, 3/4 inch dia., gasoline resistant.

Output Hose: 20 feet long, 3/4 inch dia., gasoline resistant, grounded.

Case: Fiberglass or aluminum. Weatherproof and designed to store all components of the System, making it completely portable.

Case Dimensions: 24 in. × 24 in. × 24 in.

Total Weight of Unit: 110 lbs. (approx.)

Floating Collection Element:
Diameter: 17-1/2 in.
Height: 9-1/2 in.
Draft: 5 in.
Weight: 11 lbs.

Motor Control and Pump Assembly:
Dimensions: 18 in. × 18 in. × 7 in. height

OIL RECOVERY SYSTEMS, INC.
Main Street, Greenville
New Hampshire 03048
(603) 878-2500

Daily Inspection Form

Tank #60

		Yes	No
1.	Is the transfer pump packing gland leaking?	___	___
	If yes, what action was taken:		
2.	Is the Filter Scavenger in the Tank #60 Sump operational?	___	___
	If no, what action was taken:		
3.	Are any of the 55-gallon drums for Filter Scavenger discharge or 30-gallon drums for draining hoses full?	___	___
	If yes, what action was taken:		
4.	What is the level in the tank:	_____	
	If over 20', inform Transportation Manager immediately.		

Driver Signature: _____

Date: _____

Appendix II

Weekly Inspection Form

Tank #60

		Yes	No
1.	Is the transfer pump packing gland leaking? If yes, what action was taken:	___	___
2.	Is the Filter Scavenger in the Tank #60 Sump operational? If no, what action was taken:	___	___
3.	Are any of the 55-gallon drums for Filter Scavenger discharge or 30-gallon drums for draining hoses full? If yes, what action was taken:	___	___
4.	What is the level in the tank: If over 20', inform Transportation Manager immediately.	___	___
5.	Is there any visual evidence of deterioration to the tank exterior or any leakage from the tank? If yes, what action was taken:	___	___
6.	Is there any visual evidence of any failure or erosion of the containment berm or leakage from the containment berm? If yes, what action was taken:	___	___

Signature: _____

Date: _____

Appendix III

Contingency Plan

This plan has been developed in order to minimize the hazard to human health or the environment which might occur from any fire, explosion or unplanned sudden/non-sudden release of used oil to air, soil or surface water.

A. Actions in the event of an Emergency

1. Fire or Explosion

Either the Site Superintendent or the driver at the facility will attempt to extinguish the fire with a hand-held extinguisher. If unsuccessful, the North Tonawanda Fire Department will be summoned.

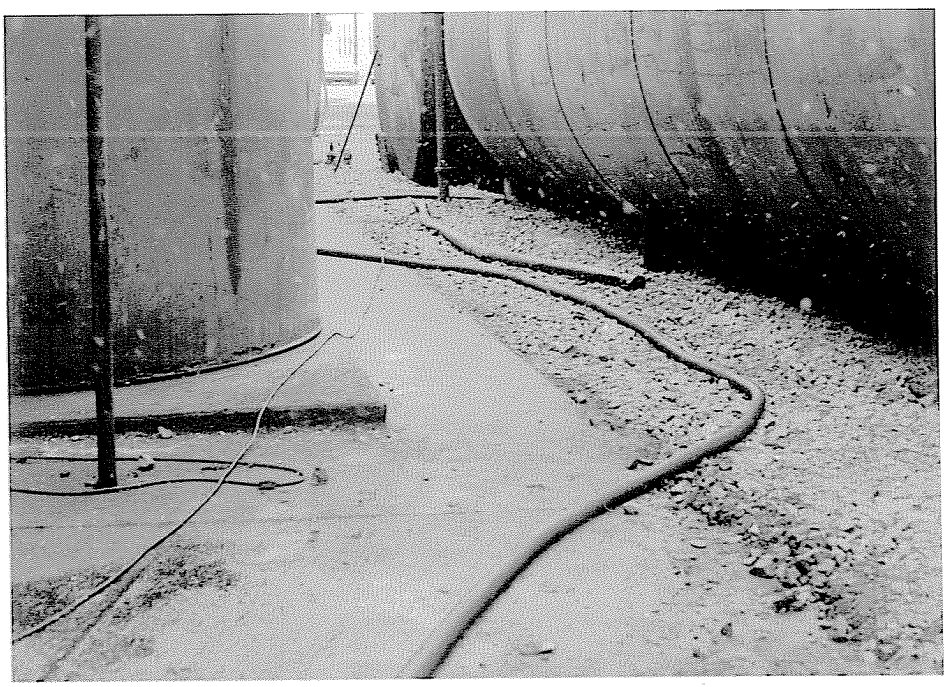
2. Sudden/Non-sudden Releases

Any minor sudden or non-sudden releases will be handled with the Filter Scavenger, Tank #42/#43 sump, Drawdown Well System described in Section B - SPCC Plan.

A major sudden release will cause either a driver or the Site Superintendent to contact the Transportation Manager so that additional vacuum truck/tanker trailer equipment can be dispatched to the facility.

B. SPCC (Spill Prevention Control and Countermeasure) Plan

The system employed to handle the spills of any used oil at the Tank #60 Storage Facility relies on the ability of the "Filter Scavenger" device to separate oil and water which accumulates in the Tank #60 containment berm. It will be automatically pumped to 55-gallon drums as shown in the diagrams which follow.



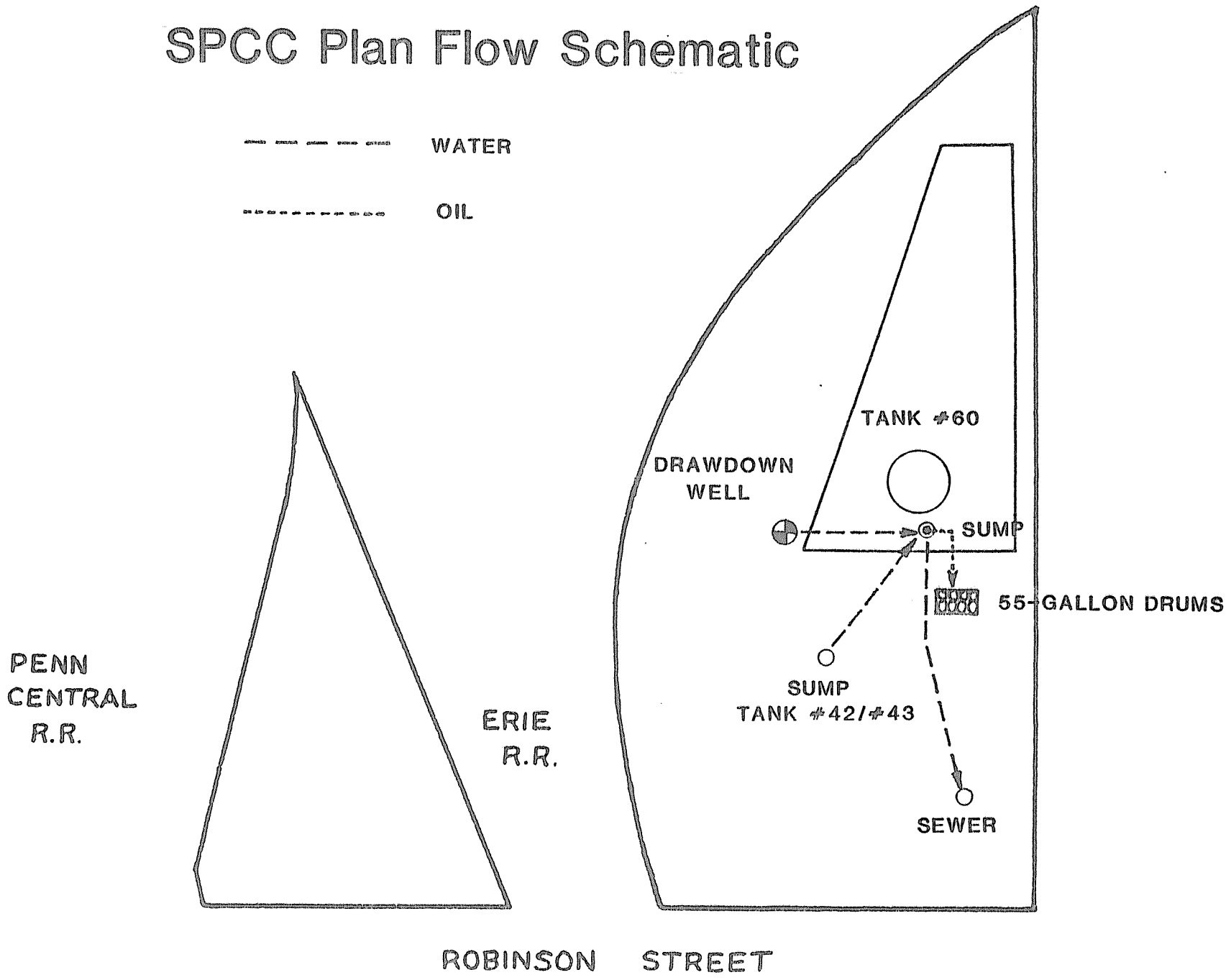
TANK #60 UNLOADING PUMP PAD

(ANY SPILLS WILL FLOW TO GRANULAR MATERIAL IN TANK FARM)

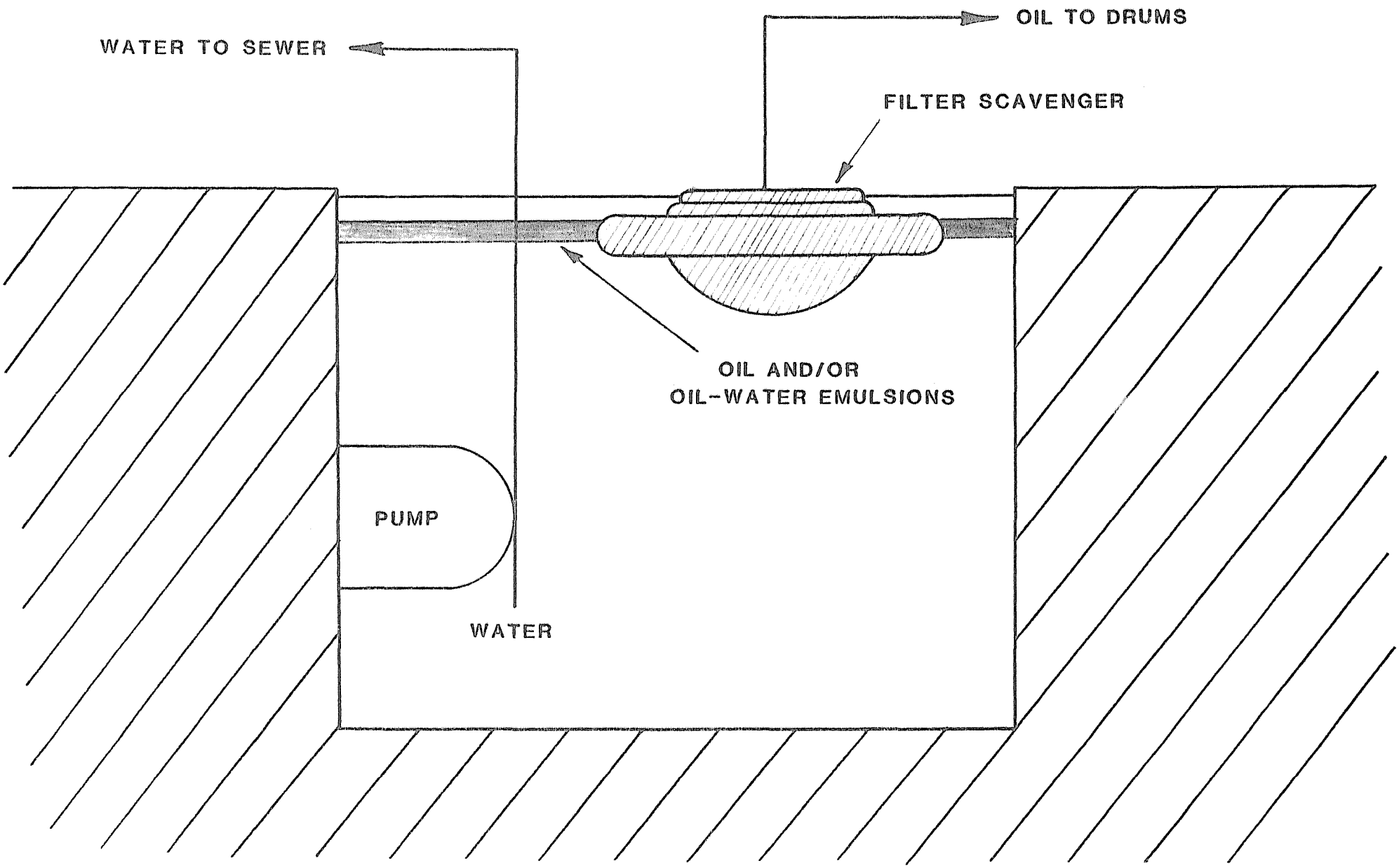
TANK #42/#43 SUMP

(ANY SPILLS WHICH COLLECT IN GRANULAR MATERIAL IN TANK FARM WILL COLLECT WITHIN SUMP)

SPCC Plan Flow Schematic



TANK #60 SUMP CROSS-SECTION



C. Arrangements

This plan is being distributed to the following agencies or offices in the City of North Tonawanda:

Fire Department
Police Department
City Engineer

D. Emergency Coordinator

In the event of an emergency at the Tank #60 Storage Facility the following personnel from Booth Oil Co., Inc. will act as Emergency Coordinator:

Emergency Coordinator:

Dan Brace	855-2212 (work)
(Transportation Manager: Katherine Street)	833-0278 (home)

Alternate Emergency Coordinator:

Aaron Diermeyer	855-2212 (work)
(Production Superintendent: Katherine Street)	695-2069 (home)

Appendix IV

Draft Closure Plan

This closure plan has been developed in order to leave the Tank #60 Storage Facility in an environmentally acceptable condition at the end of its intended useful life.

1. Description

Once the Tank #60 Storage Facility is no longer needed for the interim storage of used oils to be processed at Katherine Street, closure of the Tank #60 Storage Facility will commence.

a. free liquids

Any and all free liquids present in Tank #60 at the onset of closure will be withdrawn using vacuum truck equipment and removed to the Katherine Street Facility for processing.

b. sludge

Any and all sludge remaining in Tank #60 after the withdrawal of free liquids will be removed and disposed of at a facility in accordance with applicable environmental regulations.

2. Maximum Inventory

The maximum inventory of material which will be stored in Tank #60 at any point in time is 293,590 gallons (20').

3. Decontamination

Once all free liquid and sludge has been removed from Tank #60, the interior of the tank wil be decontaminated using high pressure steam. During the decontamination process the Filter Scavenger device will continue to be operated so that any oil generated in decontamination efforts will be removed from washwater directed to the Tank #60 sump prior to sewer discharge.

4. Schedule

Anticipated date when used oils are to be no longer received at Tank #60	May 1, 1984
Removal of all free liquid	June 1, 1984
Removal of all sludge	August 1, 1984
Tank decontamination	October 1, 1984
Completion of Closure	November 1, 1984

Closure Estimate

The closure of Tank #60 would be most expensive when the only contents of the tank would be sludge. In other words, all free liquid (used oil) would have been withdrawn from the tank. It is anticipated at such time there would be approximately three feet (3') of sludge remaining in the tank.

Sludge Volume: (50' diameter)(3' deep)

Tank Area = $(3.14)(50/2)^2$ = 1,962.5 ft^3/ft. depth

(1,962.5 ft^3/ft. depth)(3 ft. deep) = 5,887.5 ft^3

(5,887.5 ft^3) / (27.0 ft^3/cu.yd.) = 218 cu.yds.

Free Liquid Removal: no cost (to be performed by Booth Oil Co. employees using the company's equipment)	$ 0
Sludge Removal: 218 cu.yds. at $15/cu.yd. =	$3,270
Sludge Disposal: 218 cu.yds. at $50/cu.yd. =	$10,900
Decontamination: Tank - $1,500	$1,500
Total Closure Cost Estimate =	$14,170

Appendix V

ACTS TESTING LABS, INC.

3900 Broadway • Buffalo N Y 14227-1192 • (716) 684 3300

TECHNICAL REPORT April 6, 1982

Mr. George Booth, II
BOOTH OIL COMPANY
DOE Project

Sample: Feedstock 1
1. Industrial

Received: March 11, 1982

Flash Point (Pensky Martens)	GT 200°F

GT - Greater Than

Scavenger® System Specifications

Motor: Explosion-proof 1/4 H.P., 115 V.A.C., 60 Hz, 4.2 A., 1725 R.P.M., or
Explosion-proof 1/4 H.P., 230 V.A.C., 60 Hz, 2.1 A., 1460 R.P.M., or
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OIL RECOVERY SYSTEMS, INC.
Main Street, Greenville
New Hampshire 03048
(603) 878-2500

BOOTH OIL COMPANY, INC.

April 6, 1982
Feedstock 1 - 6.
Crankcase - Page Two

Flash Point (Pensky Martens)	GT 200°F

Appendix VI

Containment Berm Volume

Tank Capacity: (50' diameter, 36' high)

Tank Area = $(3.14)(50/2)^2$ = 1,962.5 ft^3/ft. depth

Volume = (Tank Area)(Height)

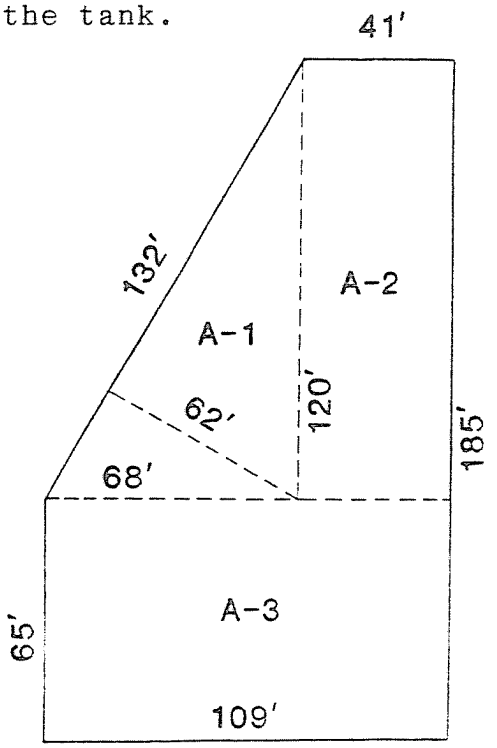
= (1,962.5 ft^3/ft. depth)(36' high)(7.48 gal/ft^3)

= 528,462 gallons

Containment Berm:

The volume capacity of the containment area is its surface area times the depth of liquid it can contain.

Surface Area - the surface area of the containment berm is represented by the following three components minus the surface area of the tank.



Tank #60 Containment Berm
(Surface Area)

$A_1 = \frac{1}{2}(120)(68) = 4080$

A_1 = 1/2(132)(62) = 4,092 sq. ft.

A_2 = (41)(120) = 4,920 sq. ft.

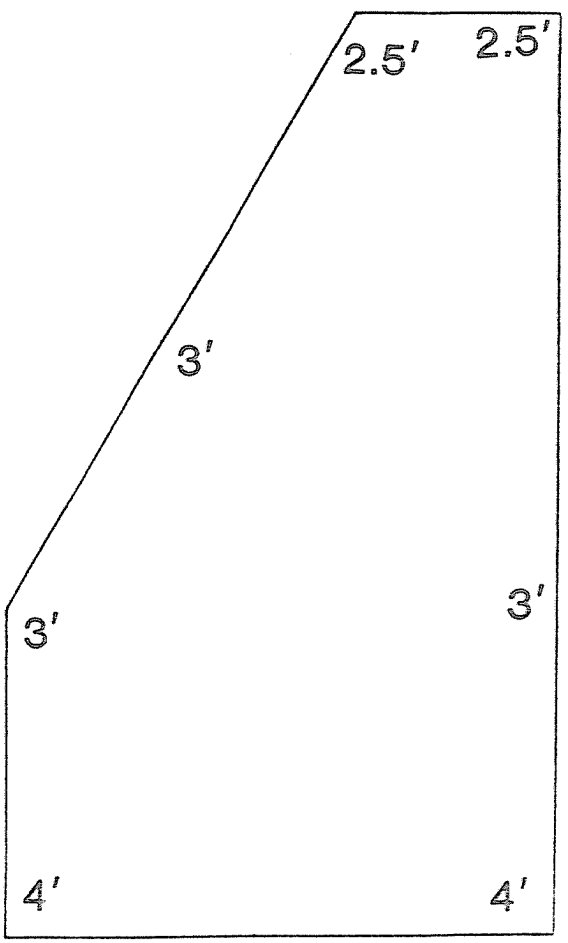
A_3 = (65)(109) = 7,085 sq. ft.

16,097 sq. ft.

A_{tank} = - 1,963 sq. ft.

A_{berm} = 14,134 sq. ft.

Volume $_{berm}$ = (14,134 sq. ft.)(7.48 gal/ft^3) = 105,722 gal/ft.



Freeboard to Overtopping

At 2.5' depth,

$$\text{Volume}_{\text{berm}} = (105{,}722 \text{ gal/ft})(2.5 \text{ ft}) = 264{,}304 \text{ gal}$$

With 20' of material in the tank, we actually have 17' of free liquid (3' of sludge - see Closure Plan, Appendix IV)

will not always have 3' of sludge

$$\text{Volume}_{\text{tank liquid}} = (1{,}962.5 \text{ ft}^3/\text{ft depth})(17')$$

$$= 249{,}552 \text{ gallons}$$

$$\text{Rain Storage} = \text{Volume}_{\text{berm}} - \text{Volume}_{\text{tank liquid}}$$

$$= 264{,}305 - 249{,}552$$

$$= 14{,}753 \text{ gallons}$$

$$(14{,}753 \text{ gallons}) / (7.48 \text{ gallons/ft}^3) = 1{,}972 \text{ cu. ft.}$$

$$1{,}972 \text{ cu.ft.}/14{,}134 \text{ sq. ft.} = 0.14 \text{ ft.}$$

In the event of a major tank failure, the containment berm should provide capacity for the entire tank contents (up to the 20' level) plus almost 2" of rainfall.

17' 2"