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FINAL

REMEDIAL DESIGN REPORT ADDENDUM

REYNOLDS CAN PLANT SITE
FULTON, NEW YORK

Submitted To:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233-7010

Prepared For:

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DIVISION OF HAZARDOUS WASTE REMEDIATION

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SECTION 1

INTRODUCTION

1.1 Background

From 1976 through 1993, the Miller Brewing Company (Miller) operated a cannery (Can Plant) in the Town of Volney, Oswego County, New York. In November 1993, the Can Plant was sold to Reynolds Metals Company with Miller retaining responsibility for environmental contamination identified on the property. Several sources of contamination were identified during site investigations conducted at the property. Figure 1-1 presents an overall site plan of the property.

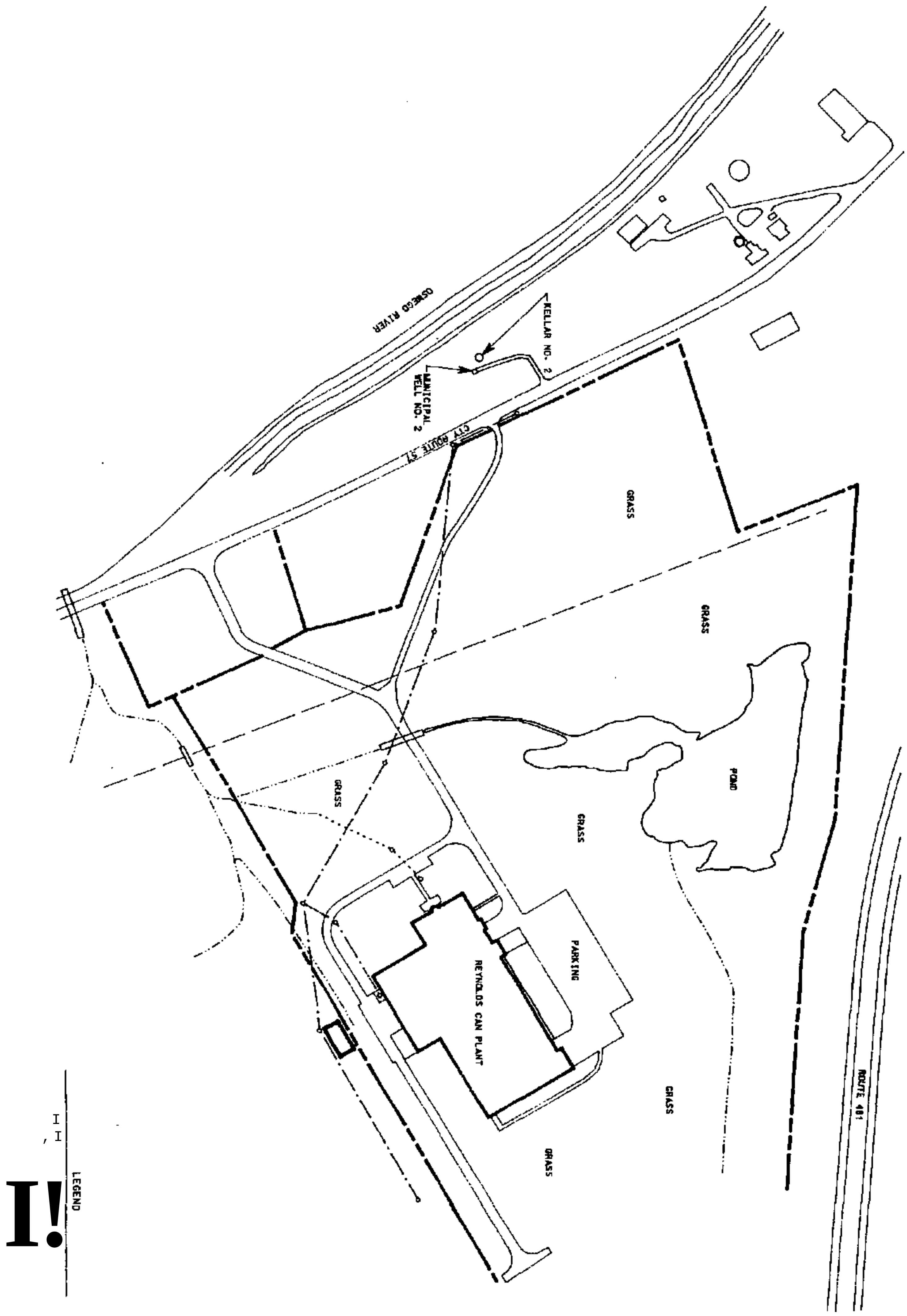
The spill containment area located on the north side of the Can Plant was identified as a source area due to a former underground storage tank associated with spill containment. During removal of the USTs, soil and groundwater contamination were identified. Additional hydrogeologic investigations were conducted to determine the extent of groundwater contamination associated with this source area. During these investigations similar VOC contamination was identified in the municipal well system located between.the Can Plant and the Oswego River. In 1988, a groundwater recovery and treatment system was installed in the area of the identified groundwater contamination as an Interim Remedial Measure (IRM). This system consisted of three recovery wells and an air stripper treatment system.

Due to the recurring concentrations of contaminants in the municipal wells, a comprehensive remedial investigation/feasibility study (RI/FS) was conducted to establish the extent of soil and groundwater contamination on the Can Plant and to select a remedial action of the identified contamination. During the RI, additional source areas and groundwater contamination were identified on the Can Plant property.

During the initial remedial design work, an IRM was implemented to treat the groundwater recovered from municipal wells M-2 and K-2. An activated carbon system was used as an interim remedial measure until a full scale one-million gallon per day air stripping system with vapor phase activated carbon treatment was designed and installed. In 1992, the full scale groundwater treatment system went into operation. The effluent from this system is currently used to supplement drinking water for the city of Fulton.

The results of the RI/FS revealed that one (1) additional source area requires remediation, known as the southern operable unit which was located in the area of three (3) underground storage tanks used as part of the Can Plant industrial wastewater treatment system.

The feasibility study selected the remedial action for the Can Plant to include source remedial action in the southern operable unit using soil vapor extraction, a groundwater collection and treatment system that will be designed to provide hydraulic control of the groundwater



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ENVIRONMENTAL / CONSULTING ENGINEERS

PROJECT:

REMEDIAL DESIGN REPORT ADDENDUM
REYNOLDS CAN PLANT SITE
FULTON, NEW YORK

CLIENT:

MILLER BREWING COMPANY
3939 W. Highland Boulevard
Milwaukee. Wisconsin 53201-0482

EARTH TECH

contaminant plumes and effectively treat the recovered groundwater for discharge to a surface water body. This proposed remedial action was accepted by the NYSDEC and a record of decision (ROD) developed for the selected remedial action,

In May 1995, a Remedial Design Report was prepared that presented the basis of design for the Proposed Remedial Action Plan issued by NYSDEC. This Remedial Design Report was used to develop technical specifications for solicitation of a design/build contractor to be responsible for detailed engineering design and specification, construction and operation of the final remedial system.

In July 1995, Miller solicited bids from pre-qualified design/build contractors for design installation and operation, monitoring and maintenance of the remedial system. In August 1995, The Earth Technology Corporation (EARTH TECH) was selected as the design/build/operate contractor.

1.2 Objective

The objective of this remedial design report addendum is to present the selected remedial system for implementation at the Reynolds Can Plant and to describe alternatives proposed to be incorporated into the detailed engineering design of the remedial action system. These alternatives were developed within the requirements of the ROD to enhance the effectiveness of the overall approach to design, installation and operation of the remedial system. The engineering design of the remedial system has been initiated contingent upon NYSDEC approval of the presented remedial system alternatives.

SECTION 2

DESIGN CRITERIA

The design criteria for the soil vapor extraction system, groundwater collection system and groundwater treatment system was set forth in the Remedial Design Report. This section presents the overall approach to be used in implementing the overall design of this system and the proposed alternatives to be used to optimize overall remediation. The detailed design will be based upon a maximum flow of 220 gpm and an average flow of 110 gpm. Influent characteristics are based upon the estimated maximum concentrations presented in the Remedial Design Report (Table 2-1). Figure 2-1 presents a process flow diagram of the selected remedial system. The following subsections present descriptions of the selected process equipment for the soil vapor extraction and groundwater recovery and treatment system.

2.1 Groundwater Collection System

The proposed groundwater recovery wells will be installed at the locations presented in the Remedial Design Report. An important key to the successful implementation of this remedial action will be the effectiveness of the groundwater recovery system. Past operation of the existing IRM groundwater recovery and treatment system revealed recovery well construction deficiencies due to inorganic groundwater characteristics.

The problems encountered during operation of this system will be avoided by incorporating measures in recovery well construction to minimize potential blinding of the recovery well screens. As was presented in the Remedial Design Report, recovery well construction will be based upon field observations during advancement of the auger hole. Specific classification of subsurface conditions and observed aquifer conditions will be used to design each individual recovery well to optimize the recovery of the contaminated aquifer. Due to the history of groundwater recovery problems in the existing groundwater recovery and treatment. system, specific measures will be incorporated into the groundwater recovery well installation process to ininimize potential problems to be encountered relative to recovery well yield and flow rates.

These recovery well construction techniques will include:

- A soil sample will be collected from within the interval to be screened and analyzed for particle size distribution. The results of this analysis will be used to determine the screen slot size and the filter sand pack size.

- The sand pack will be imported clean silica sand, appropriately sized for the formation within the screened interval. Natural sand pack will not be used for this application.

TABLE 2-1

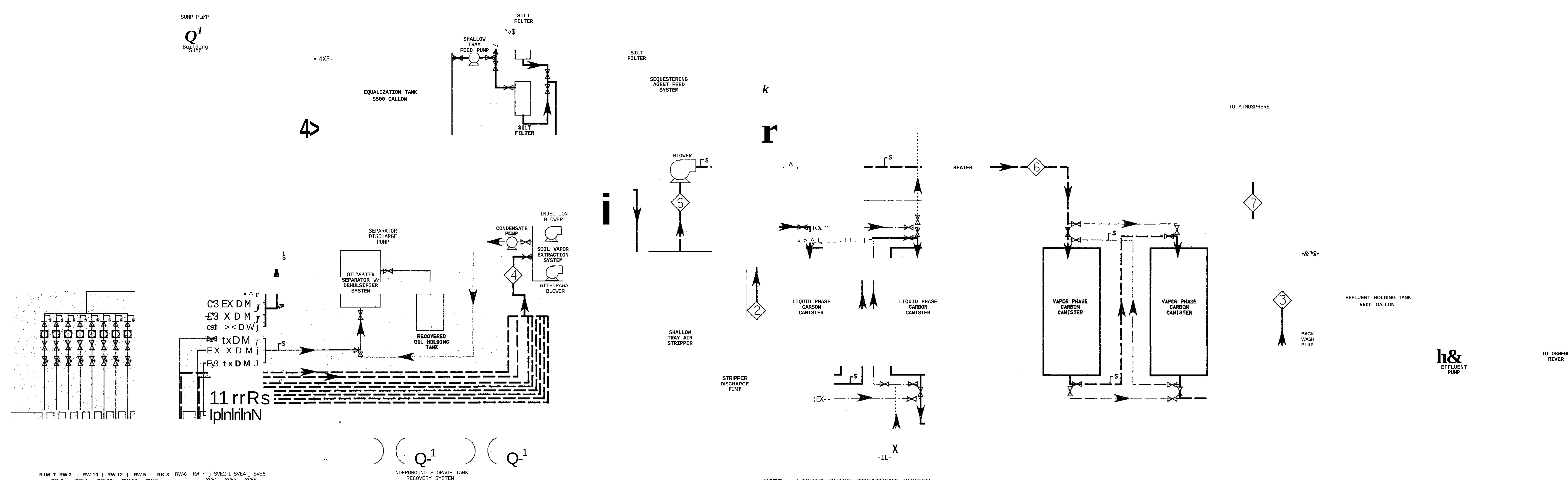
GROUNDWATER RECOVERY AND TREATMENT SYSTEM DESIGN BASIS

Maximum Flow - 220 gpm
Average Flow - 110 gpm

PARAMETER	INFLUENT CONC;Hng/D	EFLUENT CONC. (ng/1)
Methylene Chloride	717	<30
1,1-Dichloroethylene	650	<10
1,1-Dichloroethane	583	<10
1,1,1 -Trichloroe thane	4,365	<10
Trichloroethylene	320	<10
Tetrachloroethylene	1,316	<10
cis-1,2-Dichloroethylene	10,097	<10
Toluene	78	<10
Ethylbenzene	14	<10
Total Xylenes	120	<10
1,2-Dichloroethane	4	<30
trans-l,2-Dichloroethylene	19	<10
Carbon Tetrachloride	37	<10
bibromochloromethane	3	<10
Acetone	551	<10
Methyl Isobutyl Ketone (MIBK)	219	<10
Methyl Ethyl Ketone (MEK)	2	<10
Chloroform	3	<10
Vinyl Chloride	4	<10
Dichlorodifluoromethane	2	<10
1,1,2-Trichloroe thane	2	<10
Benzene	0.2	<10
Bromodichloromethane	0.1	<10
1,2-Dichloropropane	0.4	<10

STREAM ^COMPONENT DESIGN BASIS-	UNITS.		^ >	<3>	<3>	<3>	<§>	O**
PROPERTY								
Water Flow - Average	gpm.	••110.	110	110				
Maximum	gpm	220	220	220				
Water Flow - Average	lb/hr	55.044	55.044	55.044				
- Maximum	lb/hr	110.088	110,088'	110.088				
Air Flow	cfm	0	0	0	220	2.400	2.620	2.620
Temperature	F	50	50	50	50	50	85	70
PRIMARY CONTAMINANTS AT MAXIMUM CONCENTRATION AND MAXIMUM FLOW								
Methylene Chloride	ug/L	717	24	<24	*	2.45	>2.45	ND
	lb/hr	0.08	0.0026	<0.0026	*	0.08	>0.08	ND
1.1 - DIchIoroethy1ene	ug/L	G50	1	< 1	*	2.01	>2.01	ND
	lb/hr	0.07	0.0001	<0.0001	*	0.07	>0.07	ND
1.1 - DichIoroethane	ug/L	583	1	< 1	*	1.76	>1.76	ND
	lb/hr	0.06	0.0001	<o;oooi	*	0.06	>0.06	ND
1.1.1 - TrichIoroethane	ug/L	4.365	1	< 1	*	9.81	> 9.81	ND
	lb/hr	• 0.48	0.0001	<0.0001	*	0.480	>0.480	NO
TrichIoroethyIene	ug/L	320	1	< 1		0.73	>0.73	ND
	lb/hr	0.035	0.0001	<0.0001		0.035	>0.035	ND
TetrachIoroethy!ene	ug/L	1316	1	< 1		2.38	>2.38	ND
	lb/hr	0.145	0.0001	<0.0001	*	0.145	>0.145	ND
cis-1.2. - DichIoroethyIene	ug/L	10,097	15	<10		31.2	>31.2	ND
	lb/hr	1.1.1	0.0017	<0.0011		1.11	>1.11	ND
Toluene	ug/L	78		< 1	*	0.25	>0.25	ND
	.lb/hr	0.009	0.0001	<0.0001		0.008	>0.008	ND
EthyI benzene	ug/L	14	1	< 1	*	0.037	>0.037	ND
	lb/hr	0.002	0.0001	<0.0001	*	0.001	>0.001	ND
Total Xylenes	ug/L	120	1	< 1	*	0.34	>0.34	ND
	lb/hr	0.013	0.0001	<0.0001	*	0.013	>0.013	ND
trans-1>2- 0ichIoroethyIene	ug/L	19	1	< 1	*	0.06	>0.06	ND
	lb/hr	0.002	0.0001	<0.0001		0.002.	>0.002	ND
Carbon TetrachIorIde	ug/L	37	1	< 1		0.07	>0.07	ND
	lb/hr	0.004	0.0001	<0.0Q01	*	0.004	>0.004	ND
Acetone	ug/L	551	551	< 10		0.00	0.00	ND
	lb/hr	0.06	0.061	<0.0011	*	0.000	0.000	ND
Methyl Isobutyl Ketone	ug/L	219	170	< 10	*	0.15	>0.15	ND
	lb/hr	0.02	0.019	<0.0011	*	0.005	>0.005	ND

ND DENOTES "NOT DETECTED".
* TO BE DETERMINED DURING INITIAL STARTUP STUDY.
** EMISSION LIMITS TO BE ESTABLISHED IN AIR PERMIT.



NOTE: LIQUID PHASE TREATMENT SYSTEM SELECTED FOR INITIAL STARTUP STUDY. ALTERNATIVE SYSTEM MAY BE SUBSTITUTED BASED UPON RESULTS OF INITIAL STARTUP STUDY.

LEGEND

- STREAM DESIGNATION
- S SAMPLE PORT
- DX VALVE
- W CHECK VALVE
- WATER STREAM
- AIR STREAM
- BACK WASH LINE
- FLOW DIRECTION

E A R T H T E C H

DOCUMENTS PREPARED BY EARTH TECH ARE INSTRUMENTS OF SERVICE IN REGARDS TO THE PROJECT. THEY ARE NOT INTENDED OR PORTRAYED TO BE APPROPRIATE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT RECEIVING WRITTEN VALIDATION OR ADJUSTMENT BY EARTH TECH FOR THE SPECIFIC PURPOSE.

ALL DIMENSIONS MUST BE FIELD VERIFIED BY CONTRACTOR AND NOTIFY OWNER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.

DRAWING TITLE:

PROCESS FLOW DIAGRAM

DRAWN BY: PAULO N. AMADO
CHECKED BY: DAVID J RUSSELL, P.E
SCALE: NO SCALE
DATE: 8/21/95
PROJECT NO. 957961
DRAWING NO. 2 - 1

- The driller shall emplace the sand in a manner as to avoid any gaps or bridges within the sand pack.

- Wells will be developed using an appropriate combination of surging and pumping to produce a clear, sediment-free discharge.

During well development, initial groundwater sampling of the recovered groundwater and monitoring of the flow rate will be conducted to establish initial groundwater characteristics for each recovery well. Temperature, conductivity, and pH will be measured and recorded in the field. Subsequent to well development, well samples will be collected and submitted for the following analyses: Total Dissolved Solids, Total Suspended Solids, Turbidity, Alkalinity, Hardness, Chloride, Sulfate, Iron, Calcium, Magnesium, Manganese, Sodium, Potassium, and Iron Bacteria. This information will be used to determine aquifer inorganic parameter quality and the potential impact to well maintenance requirements. Specific capacity testing will be conducted to establish the optimum recovery well flow rates for each recovery well.

Based upon the observed field conditions of each recovery well, field adjustments as needed in recovery well construction will be incorporated to optimize the effectiveness of each recovery well in capturing the contaminant plume.

Groundwater recovery pumps will be designed to maintain optimum recovery flow rate based upon groundwater elevation in each recovery well. This will be accomplished by adjusting recovery well flow based upon the groundwater elevation in each well. Excessive groundwater drawdown and the introduction of air to the recovery well pumps will be avoided.

2.2 Groundwater Treatment System

The design criteria of the groundwater treatment system to be installed will comply with the Remedial Design Report with an alternative approach concerning secondary treatment of the air stripper effluent stream. Due to the potential for ketones to be present in the air stripper effluent stream, the performance of the liquid phase activated carbon will be evaluated during the initial startup period. The groundwater treatment system will be installed with liquid phase activated carbon as the secondary treatment system. Upon start-up of the system a determination of the actual recovered concentrations and types of ketones will be made. Current groundwater monitoring data indicates that the ketone compounds are limited to the recovery wells currently present in the southern operable unit proposed recovery wells (RW-6 and RW-7).

Observed concentrations from these recovery wells as well as the other eleven (11) recovery wells will be used to establish the effectiveness of liquid phase activated carbon as the secondary treatment unit. During recovery well installation and development, groundwater samples will be collected for overall bench-scale testing to provide initial evaluation of the treatment system components and operation. This testing will also provide a basis for initial chemical dosages and resultant effluent quality. The collected groundwater samples will be exposed to the designed treatment processes to provide initial data relative to operating parameters.

During the initial startup period of the groundwater treatment system, water samples from the influent and effluent of the air stripper and the liquid phase activated carbon system will be collected and analyzed to establish air stripper removal rates, air stripper effluent quality and the liquid phase activated carbon effluent quality. Based upon these results a determination of the potential for long term treatment with liquid phase activated carbon will be made. If substantial concentrations of ketones are observed in the air stripper effluent and activated carbon is deemed to not be the optimum technology for this application, an alternative technology will be designed and installed. Potential alternative treatment systems for the air stripper effluent include chemical oxidation and biological treatment.

The groundwater treatment system will continue to operate during this evaluation period using liquid phase activated carbon. If the initial start-up study indicates that the loadings of ketones are not capable of being adsorbed, a contingency plan to reduce the contributing flows from the identified recovery wells (RW-6 and RW-7) with ketones will be implemented. This contingency plan will allow continued operation of the groundwater recovery and treatment system with maintained permit compliance until the alternative treatment system is operational.

For purposes of the detailed design, the groundwater flow from recovery wells RW-6, RW-7 and the underground storage tank collection system will be considered separate groundwater streams due to their characteristics and requirements for pretreatment. In addition to evaluating overall stripper effluent treatment, the combined flows from RW-6, RW-7 and the underground storage tanks collection system will also be evaluated for isolated pretreatment with these technologies prior to combining with the influent to the air stripper.

2.2.1 Oil/Water Separator

The recovered groundwater from RW-6 and RW-7 and the underground storage tank recovery system will be manifolded and directed to an oil/water separator with demulsifying system. This system will provide for chemical addition of a demulsifying agent, physical separation of the resultant oils through a coalescing plate-type oil/water separator and final pH neutralization prior to discharge to combine with the other groundwater recovery flows. Recovered oil will be directed to a separate holding vessel for off site disposal. Groundwater samples will be collected upon initial installation of these recovery wells to establish estimated operating parameters for the oil/water separator system.

2.2.2 Equalization Tank

The combined influent groundwater will be pumped by the groundwater recovery pump system to an equalization tank. This equalization tank will provide equalization of flows and allow continuous operation of the groundwater recovery system with batch operation of the groundwater treatment system.

2.2.3 Filtration System

The equalized recovered groundwater will be pumped through a filtration system to remove silt and suspended solids. A silt filter designed to remove particulates greater than 10 microns will be used to remove accumulated solids. During initial recovery well installation, groundwater samples will be collected and analyzed to establish particle size distribution of the suspended solids present in the recovered groundwater.

2.2.4 Sequestering System

Due to the expected inorganic characteristics of the recovered groundwater and past operational problems with the current IRM system, a sequestering agent feed system will be used to chemically treat the recovered groundwater prior to treatment with the air stripper. The sequestering system will be used to sequester inorganic components within the recovered groundwater that may adversely affect the performance of the treatment system components. During initial recovery well installation, groundwater samples will be collected to establish the expected inorganic components and concentrations in the recovered groundwater. Based upon these initial results, the optimum sequestering agent and dosages will be established for the initial startup period.

2.2.5 Air Stripper

The influent groundwater stream will be treated for volatile organics using a low profile tray air stripper. This type air stripper was selected due to its low profile, ease of maintenance and performance record relative to similar groundwater recovery and treatment applications. The air stripper will be designed to provide up to 99% removal of volatile organics with the exception of ketone components. The air stripper off gas will be directed to vapor phase activated carbon and the water effluent will be directed to liquid phase activated carbon for polishing and secondary treatment.

2.2.6 Vapor Phase Activated Carbon

The off gas from the air stripper and the soil vapor extraction system will be directed to a vapor phase activated carbon system capable of treating the air flow and contaminants associated with the combined air stream. An in-line heater will also be included to provide temperature control of the air stream to minimize condensation from forming in the vapor phase units; thereby, optimizing removal efficiency. The vapor phase activated carbon system will be designed to allow operation in series and with piping and valving to allow either unit to be operated in the lead or lag series position..

2.2.7 Liquid Phase Activated Carbon

For the initial start-up study, the air stripper effluent will be pumped through a liquid phase activated carbon system. This system is included to serve two (2) purposes. The liquid phase activated carbon will provide polishing treatment of the air stripper effluent to ensure permit compliance is maintained if the air stripper performance is impeded and the liquid phase activated carbon will provide secondary treatment of the air stripper effluent due to the presence of ketone compounds which are not readily removed with air stripping technology. The liquid phase activated carbon system will be designed to treat residual ketones. During initial recovery well installation, groundwater samples will be collected and analyzed to establish the expected ketone components and concentrations in the recovered groundwater that will require treatment. The liquid phase activated carbon system will be designed to allow operation in series and with piping and valving to allow either unit to be operated in the lead or lag series position.

Based upon the results of the initial start-up study, an evaluation will be conducted of the liquid phase activated carbon system to establish if this system is the optimum system for treatment of the resultant air stripper effluent stream. This will include evaluating the resultant components and concentrations of the air stripper effluent, carbon usage rates under actual operating conditions and effluent quality. Potential alternative systems (ie. chemical oxidation, biological) will be evaluated based upon actual operating data. Based upon the results of this evaluation, the optimum treatment system for long term operation will be defined. The groundwater recovery and treatment system will continue to operate with the liquid phase activated carbon system until an alternative system is specified and installed.

2.2.8 Effluent Holding Tank

The detailed design will include an effluent holding tank which was not included in the original Remedial Design Report. This effluent holding tank will provide a collection system to be used for potential required backwashing of the liquid phase activated carbon system and as a holding tank for discharge of the effluent to the discharge pipe. A discharge pump will be included with the holding tank to pump the effluent to the discharge pipe which will discharge the effluent to the Oswego River. A separate backwash pump system will also be installed to provide backwashing of the liquid phase activated carbon using the treated effluent, if needed. The resultant backwash water will be directed to the equalization tank and filtration system for processing through the treatment system.

2.3 Process Monitoring and Control System

A Programmable Logic Controller (PLC) will be designed to provide required process/control functions of the groundwater recovery and treatment system. The PLC system will include monitoring of the recovery and treatment system operations as well as controlling required treatment system adjustments and shutdowns due to faults within the system. The PLC will be designed to provide continuous operation of the system with required monitoring.

2.4 Process Building

The process building will be designed to contain the required groundwater recovery and treatment system components. Based upon the established design criteria and preliminary designed components the process building will comprise an 80 feet by 40 feet area on the adjacent Miller Brewing property. The dimensions of the building differ from that presented in the Remedial Design Report due to larger area requirements for the selected process equipment.

All access to the process building will be available through the Miller Brewing property. All recovery, process and utility piping will be directed to the location of the process building. The process building will be constructed in a similar location as identified in the Remedial Design Report. The foundation walls and concrete slab floor will be integrated to provide for secondary containment of the process equipment. The floor will be sloped to a sump where any leaks within the process equipment can be pumped back through the treatment system. The control panel will be located within the building which will allow operation of all aspects of the remedial system from the centralized location. The design and construction of the building will meet or exceed state and local requirements for construction of the building.

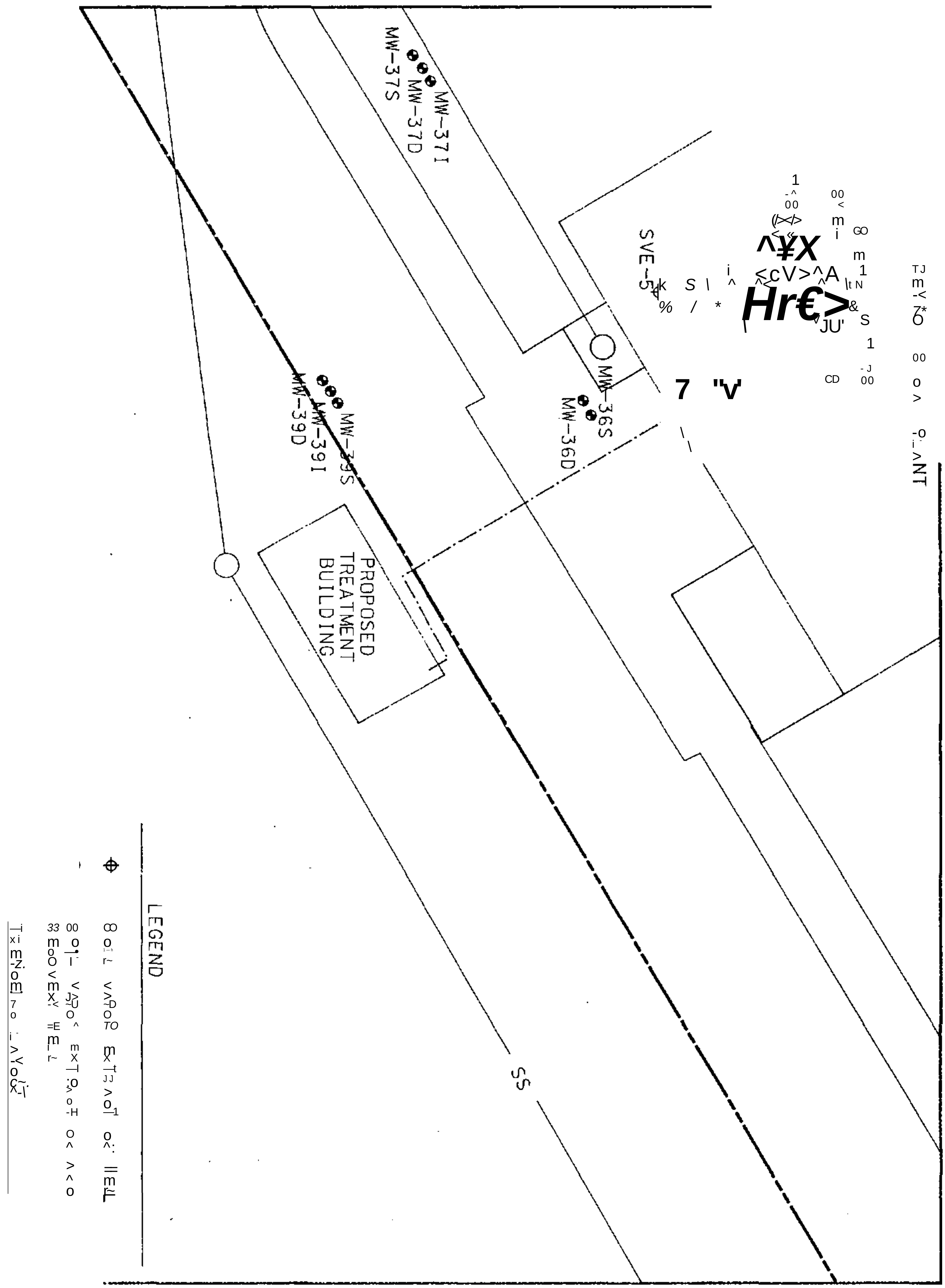
2.5 Soil Vapor Extraction System

The selected soil vapor extraction (SVE) system to be installed to remediate soil contamination in the southern operable unit will include enhancements to provide better overall remediation. The area requiring remediation is complicated by the presence of four (4) underground storage tanks (USTs) located between the proposed dual extraction recovery wells. As an alternative to using only RW-6 and RW-7 as dual extraction wells, six (6) additional SVE wells will be installed. RW-6 and RW-7 will be used as dual SVE and groundwater recovery wells as originally designed. Figure 2-2 presents the proposed locations for the additional SVE wells.

The SVE system to be designed and implemented will be an injection/withdrawal SVE system. This alternative was selected due to the following reasons.

- Injection/withdrawal SVE systems installed with a site cap promote lateral air flows between injection and withdrawal wells. Vacuum-only systems will draw air that travels laterally in the upper part of the vadose zone, not along the capillary fringe. The capillary fringe zone is typically the area with the highest concentration of contaminants. Injection/withdrawal systems provide air to subsurface soil through the injection wells. Air travels laterally from the injection well to the extraction well.

- All multi-well systems have nodes of little or no air flow between wells. Additionally, at the Miller facility, the USTs will block air flow for much of the impacted soils. Optimum air flow control is maintained in injection/withdrawal systems due to the fact that air flows from the injection well to the withdrawal well. By switching wells between injection and withdrawal, air flows can be adjusted throughout the contaminated soil zones.



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ENVIRONMENTAL / CONSULTING ENGINEERS

SOIL V[…] EXTRACTI[…] RECOVER[…] PARTIAL

PROJECT

REMEDIAL DESIGN REPORT ADDENDUM
REYNOLDS CAN PLANT SITE
FULTON. NEW YORK

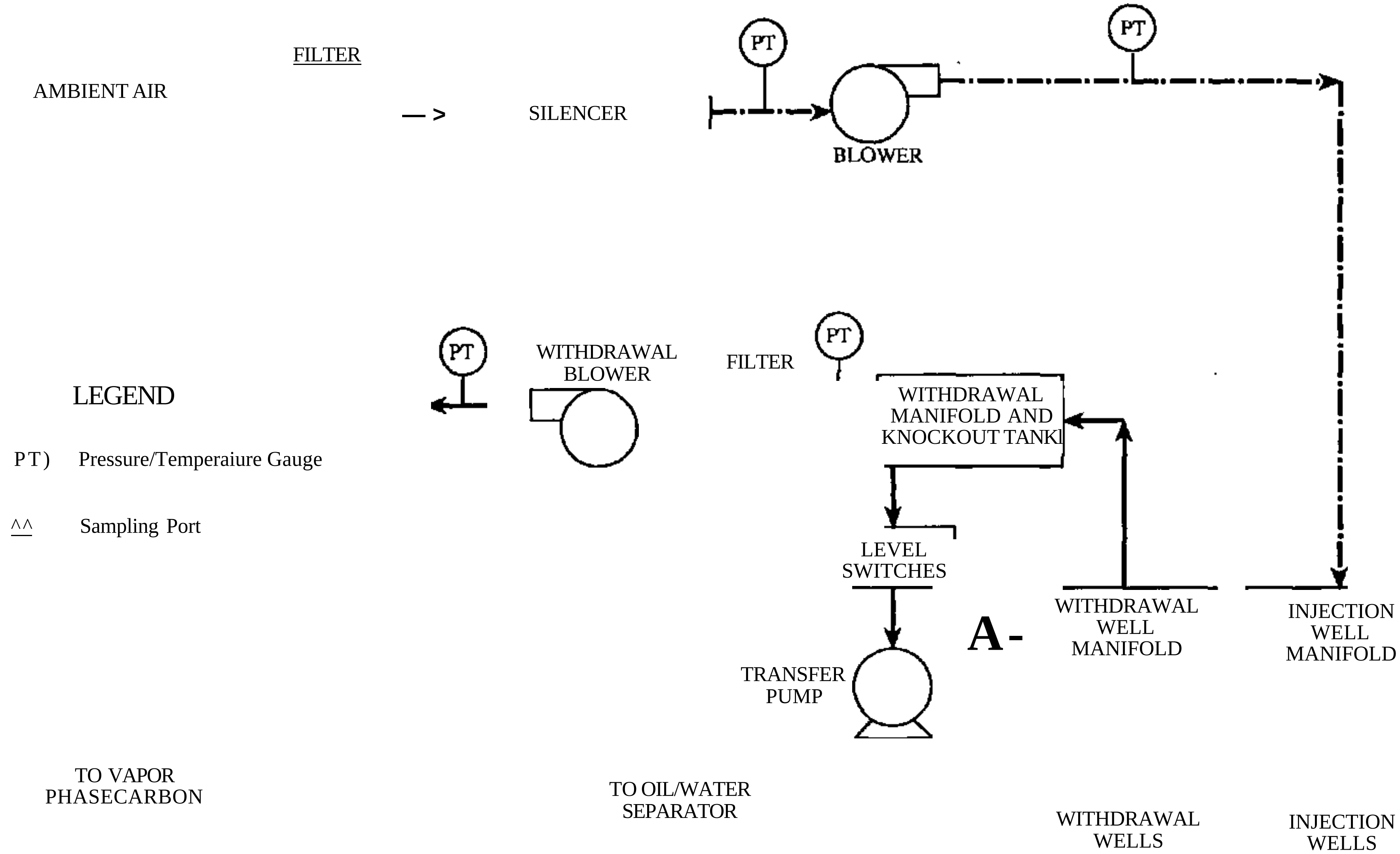
CLIENT:

MILLER BREWING COMPANY
3939 W. Highland Boulevard
Milwaukee. Wisconsin 53201-0482

- By using pressurized injection, the pressure gradient differential is split between pressure and vacuum, decreasing the potential to breakthrough a well seal causing short-circuiting of air.

Figure 2-3 presents a SVE schematic showing the major components of the proposed injection/withdrawal system. The injection/withdrawal system will include an extraction blower and injection blower that will provide the required vacuum and injection air flow.

The eight (8) SVE wells will be piped separately to the treatment system building allowing individual control of the operation of each individual well. This design will allow total control of each individual SVE well including use of all wells as either withdrawal or injection. This approach will also allow air flow and pressure measurements to be collected from each well, as well as collection of individual air samples. Based upon the operating results of the system, well parameters can be altered to ensure that the entire soil volume receives adequate treatment. The selected SVE system design will provide maximum flexibility in the operation of the system optimizing the overall remediation of the contaminated soils.



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ENVIRONMENTAL/CONSULTING ENGINEERS

EAR

PROJECT:

REMEDIAL DESIGN REPORT ADDENDUM

REYNOLDS CAN PLANT SITE

Fulton, New York

TITLE: SOIL VAPOR EXTRACTION SYSTEM

SCALE: NO SCALE

DATE: 8/21/95

PROJECT NO. 957961

FIGURE NO. **2-3**

SECTION 3

PROJECT SCHEDULE

EARTH TECH has developed a project schedule for preparation of the detailed engineering design, construction and installation of the selected remedial system. The engineering design plans and specifications will be submitted as progress submittals with 50%, 95% and 100% complete submissions. The project schedule is included as an enclosure.

In order to mobilize and initiate construction of the remedial system prior to adverse weather conditions, EARTH TECH is requesting pre-approval to initiate selected tasks prior to final approval of the engineering design submittal. These critical tasks are specifically concrete pad construction, recovery well installation and underground piping installation. Approval to initiate these tasks is requested upon review of the 50% submittal. Pre-approval of these tasks with the 50% submittal has been assumed in developing the project schedule. This proposed schedule will allow installation of the remedial system components that can be adversely affected by weather conditions during mild weather conditions and allow the other tasks that are not significantly affected by weather conditions to be conducted during the winter months. The enclosed project schedule clearly presents this overall approach to installation and construction of the system.

The required project plan submittals will be included with the 50% design submittal with requested approval of the Health and Safety Plan and Project Construction Quality Assurance and Quality Control Plan. These plans have been identified as being required to be in place prior to mobilization and initiation of construction activities.

Construction and environmental permitting activities will also be initiated to expedite the critical path tasks for construction and installation of the remedial system. Local construction permits will be acquired through the local township and county as required and environmental permits will be coordinated through NYSDEC.

The project schedule indicates that mobilization will be initiated during October 1995 and anticipated start-up of the remedial system in April 1996.

Reynolds Can Plant Remediation Site
Project Schedule

ID	Task Name	Start	Finish
1	AWARD CONTRACT		8/7
2	ENGINEERING DESIGN		
3	Conceptual Design	8/7	8/21
4	Remedial Design Report Addendum	8/22	8/30
5	Client Conceptual Design Review	8/31	9/6
6	Submit Remedial Design Report Addendum to NYSDEC		9/7
7	50% Plans and Specs	8/25	9/18
8	Client Review 50% Plans and Specs	9/19	9/25
9	Submit 50% Plans and Specs to NYSDEC		9/26
10	NYSDEC Review 50% Plans and Specs	9/27	10/10
11	Receive 50% Comments and Pre-approval from NYSDEC		10/11
12	95% Plans and Specs	9/18	10/18
13	Client Review 95% Plans and Specs	10/19	10/25
14	Submit 95% Plans and Specs to NYSDEC		10/26
15	NYSDEC Review 95% Plans and Specs	10/27	11/9
16	Receive 95% Comments from NYSDEC		11/10
17	100% Plans and Specs	10/18	11/16
18	Client Review 100% Plans and Specs	11/17	11/24
19	Submit 100% Plans and Specs to NYSDEC		11/27
20	NYSDEC Review 100% Plans and Specs	11/28	12/5
21	NYSDEC Approval of Plans and Specs		12/6
22	Mobilization	10/12	10/19
23	Site Improvements	10/20	10/26
24	GROUNDWATER RECOVERY		
25	Pre-Construction Conference	10/19	10/19
26	Recovery Well Installation	10/20	11/2
27	Install Two Monitor Wells	11/3	11/6
28	Recovery Trenching and Piping Installation	10/19	12/11
29	Recovery Well Pump Installation	11/10	11/24
30	Install SVE Wells	11/6	11/13
31	Install Discharge Pipe	11/10	11/24
32	PROCESS TREATMENT BUILDING		
33	Concrete/Building Foundation	10/30	11/10
34	Utilities	11/13	12/4
35	Pre-engineered Building	12/5	1/1
36	Finishes	1/2	1/11
37	Doors and Ventilation	1/2	1/5
38	Special Construction	1/8	1/11
39	Thermal Protection	1/8	1/16
40	Miscellaneous Metal Work	1/8	1/16
41	Specialties	1/8	1/11
42	HVAC WORK		
43	HVAC Installation	1/16	1/19
44	Ductwork and Installation	1/22	1/31
45	ELECTRICAL AND PLUMBING WORK		
46	Electrical Installation	2/1	2/21
47	Instrumentation and Control	2/22	3/6
48	EQUIPMENT INSTALLATION		
49	Pump Installation	2/1	2/6
50	EQ and Holding Tanks	2/1	2/6
51	Oil/Water Separator	2/7	2/13
52	Filtration System	2/7	2/12
53	Air Stripper	2/14	2/20
54	Sequestering System	2/14	2/15
55	Vapor Phase Carbon	2/21	2/28
56	Liquid Phase Carbon	2/21	2/28
57	Process Piping	2/29	3/18
58	Testing and Checkout	3/19	4/1
59	Testing Adjusting and Balancing	4/2	4/8
60	Seeding and Landscaping	4/9	4/16
61	Cleanup	4/17	4/23
62	Demobilization	4/24	4/29
63	INITIAL STARTUP STUDY		
64	Initial Startup Study	4/9	6/3
65	Initial Startup Study Report	6/4	6/17
66	Prepare Certification Report	6/18	7/1
67	SUBSTANTIAL COMPLETION		7/2

Project: MILLER BREWING COMPANY
Prepared By: EARTH TECH
Date: 9/8/95

Task | Progress | Milestone | Summary | Rolled Up Task | Rolled Up Milestone | Rolled Up Progress

Task Coloring: Blue - Standard, Red - Critical, Green - Review

SECTION 4

REFERENCES

1. Remedial Design Report, Reynolds Can Plant Site, Fulton, New York, March 1995, Revised May 1995

2. Record of Decision, Former Miller Container Site, Town of Volney, Oswego County, Site Number 7-38-029, March 1995

3. Request for Proposals, Design/Build/Operate, Reynolds Can Plant Facility, Site Remediation Project, Fulton, New York, May 1995

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