Mobil Oil Corporation

2063 MAIN ST., SUITE 501
OAKLEY, CALIFORNIA 94561

95 JUN 13 PM 3:01

June 12, 1995

Scott Seery
Alameda County Environmental Health Department
Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

Re: Former Mobil location 04-H6J, 1024 Main St., Pleasanton, CA

Dear Mr. Seery:

Enclosed is a copy of the System Installation report for the above referenced location. This report summarizes the system and its installation, which was conducted in March 1995.

Should you have any questions, please call me at (510) 625-1173.

Sincerely,

Cherine Foutch
Project Engineer

Enclosure

cc: Kevin Graves, RWQCB
Ron Scheele (w/o enclosure)

SYSTEM INSTALLATION REPORT
May 23, 1995

FORMER MOBIL STATION 04-H6J
1024 Main Street
Pleasanton, California

Alton Project No. 30-0065

Prepared For:

MOBIL OIL CORPORATION
2063 Main Street, Suite 501
Oakley, California 94561

By:

Ron A. Scheele
Geologist

Matthew W. Katen
Senior Project Geologist

REGISTERED GEOLOGIST
MATTHEW W. KATEN
No. 5167
STATE OF CALIFORNIA

ALTON GEOSCIENCE
30A Lindbergh Avenue
Livermore , California 94550

System Installation Report
Former Mobil Station 04-H6J, Pleasanton, California
May 23, 1995

1.0 INTRODUCTION

This report describes the remediation system that was installed at former Mobil Station 04-H6J. Hydrocarbon soil vapors are extracted from five vapor extraction wells and from four dual purpose vapor extraction/groundwater recovery wells. Groundwater is pumped from the dual purpose recovery wells using submersible electric pumps. Extracted groundwater is pumped through an air stripper where it is treated prior to discharge into the sanitary sewer system. The hydrocarbon laden vapor effluent from the air stripper is combined with the hydrocarbon vapor stream from the vapor extraction wells and the mixture is destroyed as it passes through a catalytic oxidizer.

2.0 BACKGROUND

The site is located on the corner of Stanley Boulevard and Main Street in Pleasanton, California (Figure 1). The site operated as a gasoline service station until 1989. In October 1989, three underground fuel storage tanks and an underground waste oil tank were removed.

Between December 1989 and January 1992, twelve onsite and three offsite boring were drilled to characterize the gasoline-affected soil.

Between March 1990 through August 1994, twelve monitoring wells (MW-1 through MW-12), four dual purpose recovery wells (RW-1 through RW-4), and four vapor wells (VMW-1 through VMW-4) were installed for soil and groundwater characterization and for incorporation into a remediation system (Figure 2).

In March 1992, a constant rate aquifer pumping test was performed on Monitoring Wells MW-1 and MW-2 and in November 1993 a vapor extraction test was performed. In August 1994, the gasoline service station building was demolished prior to the start of remediation system construction activities.

3.0 SYSTEM DESIGN AND INSTALLATION

In September 1994, a Remedial Action Plan was submitted to the Regional Water Quality Control Board. Remediation system design was completed in October 1994 and consisted of an automatic recovery system (ARS) for groundwater extraction and a soil vapor extraction system (VES). Included in the design are four dual purpose groundwater recovery/vapor extraction wells (RW-1

through RW-4) and five vapor extraction wells (VMW-1, VMW-2, VMW-4, MW-1 and MW-2) (Figure 2). City of Pleasanton plan check approval and building permits were obtained in November 1994 and an Authority to Construct Permit (application #14053) was obtained from the Bay Area Air Quality Management District (BAAQMD) on March 10, 1995. After unusually wet weather, system construction and installation was completed in March 1995. Final building inspection was performed on March 17, 1995 by a City of Pleasanton building inspector.

4.0 SYSTEM COMPONENTS

Vapor Extraction Blower:	20 HP, belt-driven, Turbotron, regenerative blower made by Lampson Corporation.
Catalytic Oxidizer:	500 CFM, 230V/3-Phase, Model 7, Integrated, Catalytic Oxidizer with heat exchanger made by Global Technologies (Figure 3).
Catalyst:	Platinum metal catalyst made by Allied Signal.
Burner:	Model 40-AH-O, 325,000 BTU/hr. maximum firing rate burner made by Eclipse Cat.
Heat Exchanger:	Stainless steel shell and tube type heat exchanger made by Global Technology.
Chart Recorder:	3 pin, Trueline, chart recorder made by Honeywell.
Vapor/Liquid Separator:	75 gallon tank with automatic fluid transfer pump, mist eliminator, and level switches.
Groundwater Pumps:	Two 1/2 hp, model 25E3, and two 1/3 hp, model 5E5, electric submersible pumps made by Grundfos.
Surge Tank:	400 gallon polyethylene tank.
Transfer Pump:	1/2 Hp centrifugal pump made by Teel
Particulate Filter:	Star-Clear II filter, model C-1100, made by Hayward
Air Stripper:	Carbonair Low Profile, STAT 80, air stripper consisting of five stainless steel aeration trays including a 1/2 hp Price transfer pump, designed for liquid flow of 45 GPM, and a 7.5 hp Rotron regenerative blower designed for air flow of 300 SCFM .

5.0 PROCESS DESCRIPTION

Hydrocarbon vapors are extracted through 2-inch-diameter underground PVC piping from [redacted] extraction wells and through a 4-inch-diameter PVC pipe from an air stripper groundwater treatment unit using a 20 horsepower (hp) vapor extraction blower (Figure 4). The vapor

extraction wells are individually piped back to the system enclosure where they are manifolded together with the air stripper vapor line. The hydrocarbon vapors are drawn from the well bores and air stripper through a vapor/liquid separator, a heat exchanger, and a heater (burner) which raises the vapor temperature to the minimum catalyzing temperature of 600 degrees Fahrenheit (Figure 5). Heated hydrocarbon vapor passes through the catalyst causing an exothermic reaction to take place. The hydrocarbon vapors in the air stream are converted to carbon dioxide and water vapor. The hot purified air then passes through the heat exchanger where the energy released by the reaction is used to preheat incoming hydrocarbon vapors. The purified air passes through a exhaust stack and discharged into the atmosphere.

Groundwater is extracted through 2-inch-diameter PVC piping from four 6-inch-diameter, PVC, dual purpose, (vapor extraction/groundwater) recovery wells, using 4-inch-diameter, Grundfos electric, submersible pumps, and discharged into a 400 gallon polyethylene surge tank. The groundwater is automatically transferred from the surge tank into the top of a low profile air stripper using a centrifugal pump. The groundwater drains downward through four stainless steel trays while being aerated with air flow injected upwards from the bottom of the air stripper by a 7.5 hp blower. The treated groundwater leaves the bottom of the air stripper and is discharged directly into the sewer system. Air flow out the top of the air stripper combines with the influent vapor stream from the extraction wells and is destroyed as it passes through the catalytic oxidizer.

6.0 SYSTEM START-UP AND OPERATION

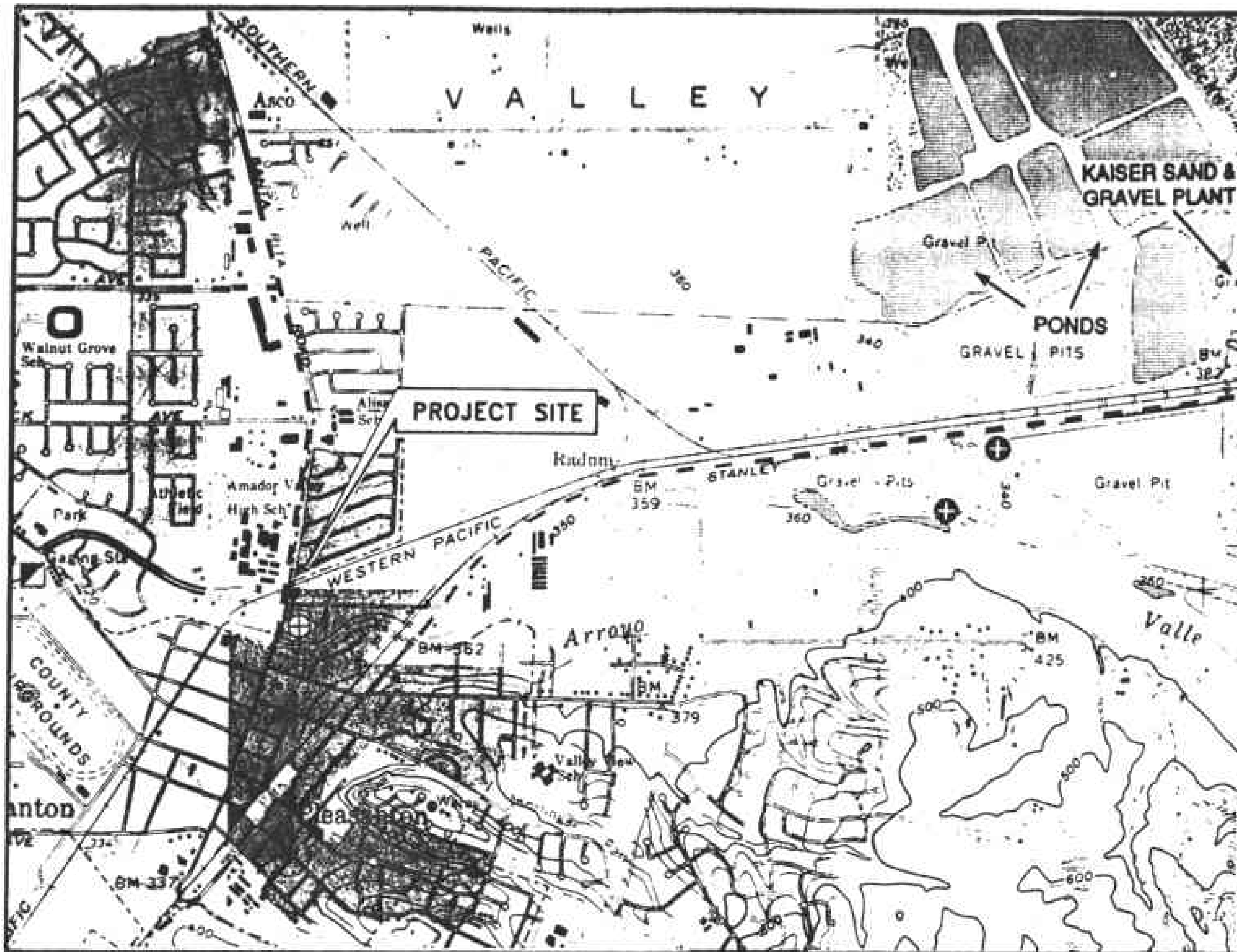
System startup and troubleshooting was performed in late March 1995, and source testing was completed on April 4, 1995. Influent and effluent vapor samples were collected in tedlar bags and were submitted to a state-certified laboratory. As per the BAAQMD Authority to Construct permit requirements, total emissions were calculated based on the analytical results for TPH-G and benzene. Results of source testing and initial operating parameters were included in an Initial Operating Data Report and submitted to the BAAQMD on May 11, 1995. The BAAQMD Permit to Operate is pending.

Initial discharge sampling was performed on March 23, 1995. Permit approval to discharge treated groundwater into the sewer system was received from Dublin San Ramon Services District on April 14, 1995.

Soil vapor extraction operations began on April 4, 1995, and groundwater treatment operations, including destruction of hydrocarbon vapor from the air stripper, began on April 26, 1995.

7.0 LIST OF ATTACHMENTS

- Figure 1: Site Vicinity Map
- Figure 2: Site Plan
- Figure 3: Integrated Model 7 General Arrangement
- Figure 4: System Layout
- Figure 5: Intergrated Catalytic Oxidizer Unit, Process and Instrumentation Diagram

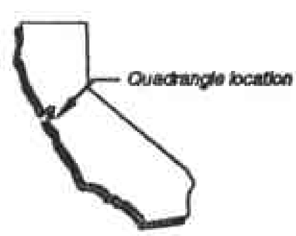


SCALE 1:24,000

Source: U.S.G.S. Map
Livermore Quadrangle
California
7.5 Minute Series

LEGEND

- U.S.G.S. Gauging Station
- City of Pleasanton Monitoring Well
- Kaiser Discharge to Arroyo Valle



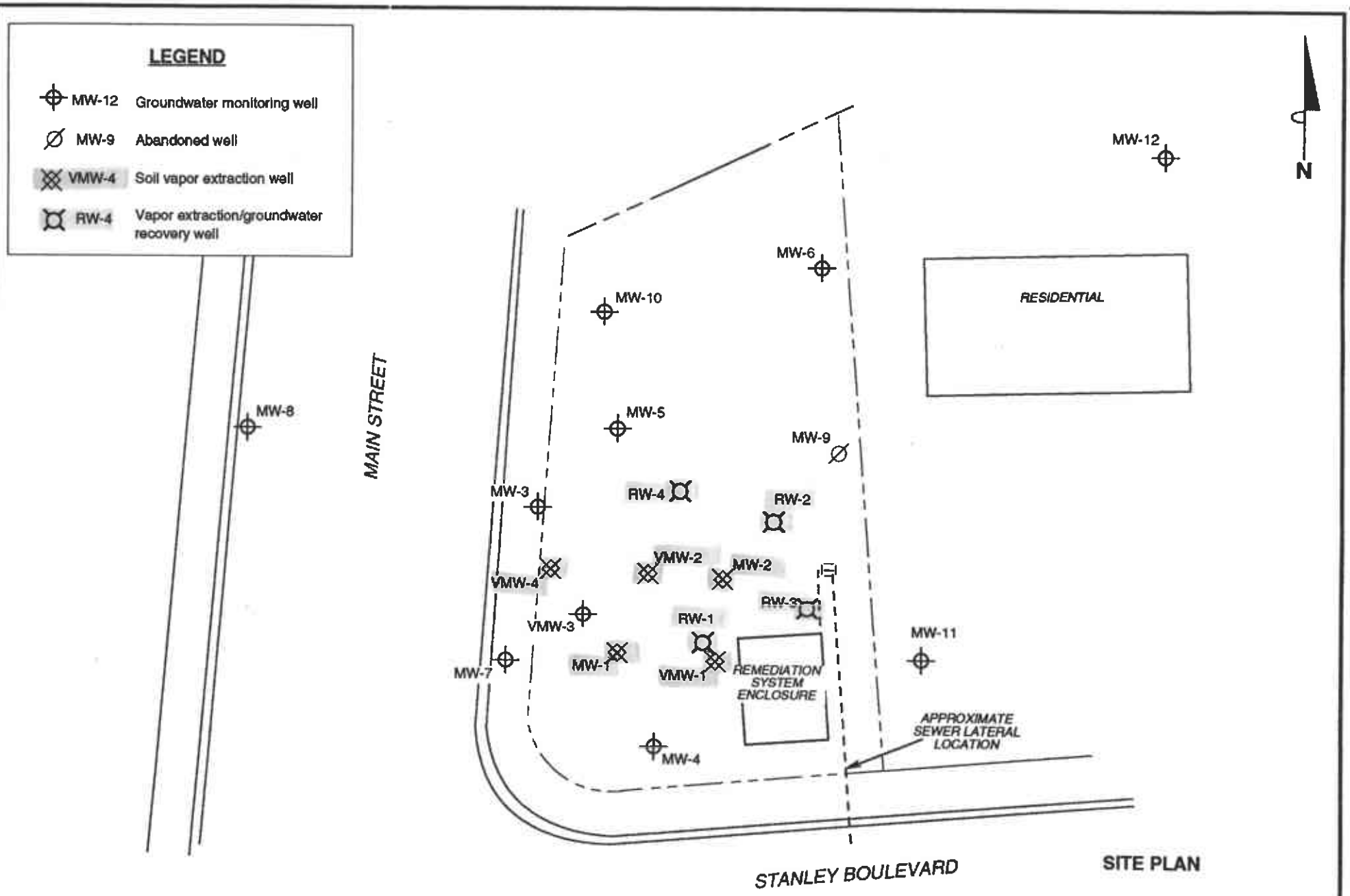
VICINITY MAP

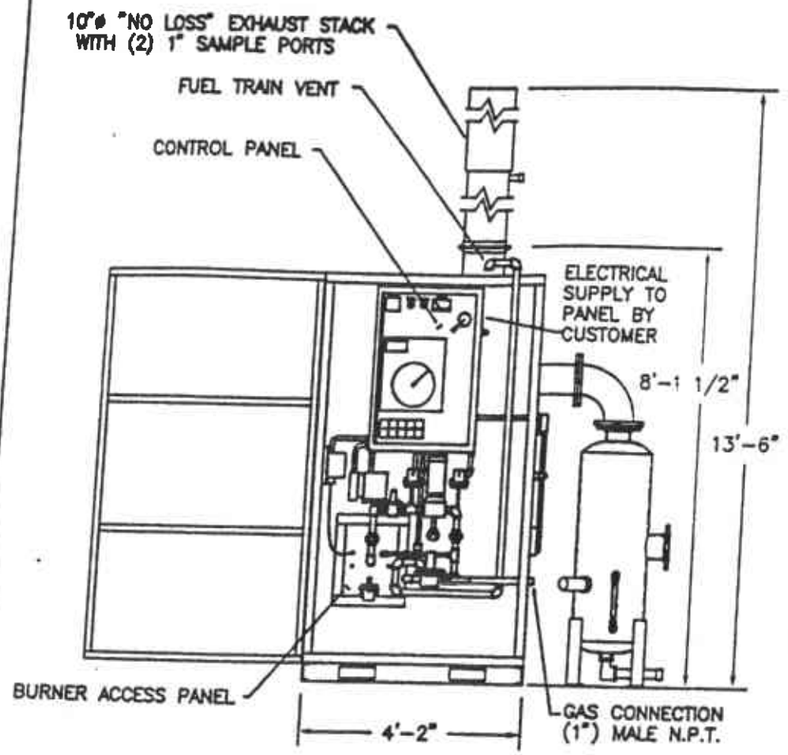
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

FIGURE 1

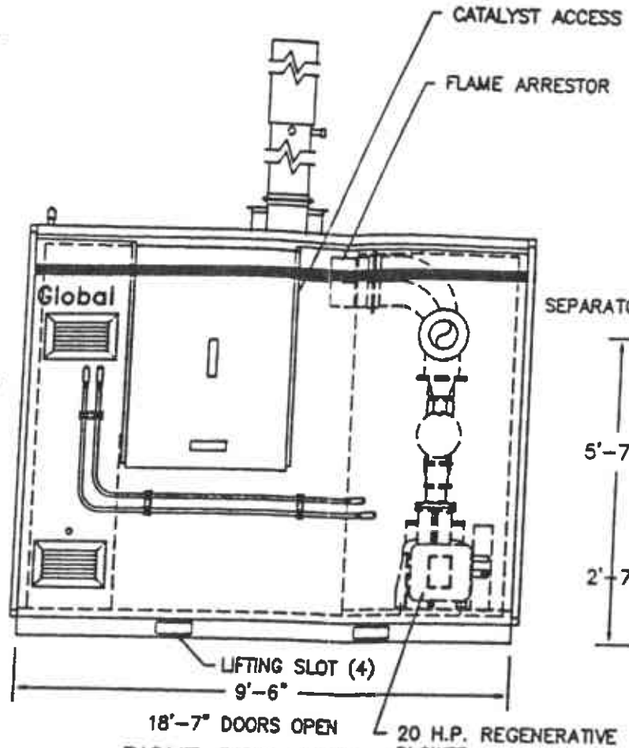
ALTON GEOSCIENCE
Livermore, California

Project No. 30-0065

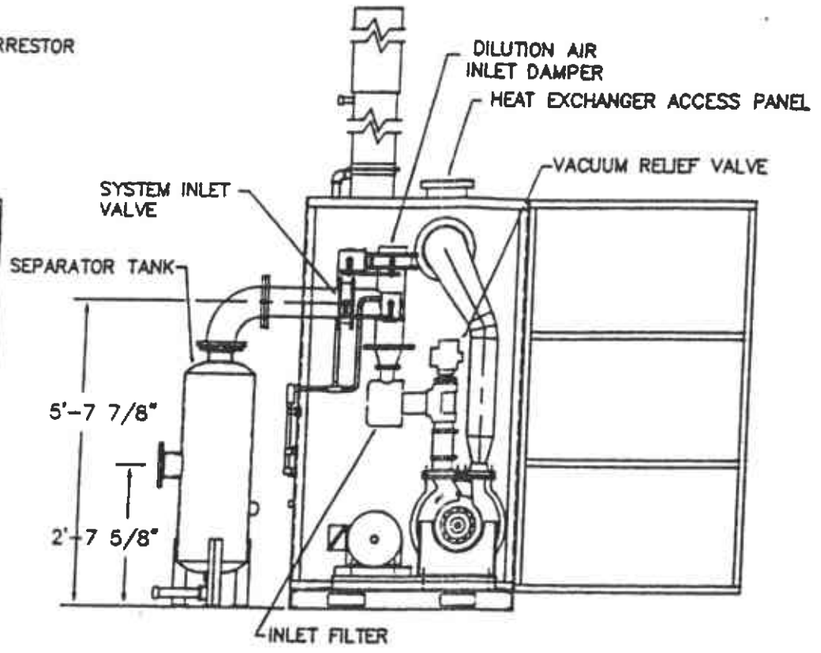

LEGEND
MW-12 Groundwater monitoring well
MW-9 Abandoned well
VMW-4 Soil vapor extraction well
RW-4 Vapor extraction/groundwater recovery well
N
MW-12
MW-6
MW-10
RESIDENTIAL
MW-8
MAIN STREET
MW-5
MW-9
MW-3
RW-4
RW-2
VMW-2
MW-2
VMW-4
RW-3
VMW-3
RW-1
MW-11
MW-7
MW-1
VMW-1
REMEDIATION SYSTEM ENCLOSURE
APPROXIMATE SEWER LATERAL LOCATION
MW-4
STANLEY BOULEVARD
SITE PLAN
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California
SCALE (FEET)
0
30
ALTON GEOSCIENCE
Livermore, California
FIGURE 2
30-0065 05/08/95



FRONT VIEW
DOOR SHOWN OPEN



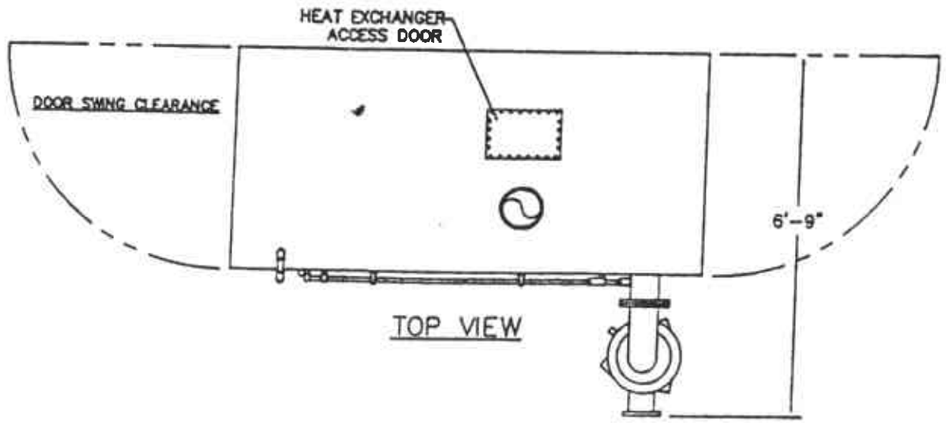
RIGHT SIDE VIEW
SEPARATOR NOT SHOWN



BACK VIEW
DOOR SHOWN OPEN

MODEL 7 CATALYTIC OXIDIZER WITH INTEGRAL REGENERATIVE BLOWER

- UP TO 99.8% DESTRUCTION ON STREAMS OF 100 TO 750 SCFM CAPABILITY
- MINIMUM O_2 CONTENT REQUIRED 18%
- UNDER 65 dBA SOUND LEVEL
- STACK EXIT TEMPERATURE 300–500°F
- SYSTEM BLOWER 20 HP CAPABLE OF 500 ICFM @ 8"HG SUCTION
- STANDARD VOLTAGE: 230/208V 3PH 60HZ (60 AMPS)
- SECONDARY FUEL REQUIREMENT: 325,000 BTU/HR PROPANE OR NATURAL GAS @ 1–5 PSI
- FUEL TRAIN BUILT TO APPLICABLE FM, IRI AND NFPA SPECIFICATIONS
- SYSTEM INLET 6" ASME 150# FLANGE

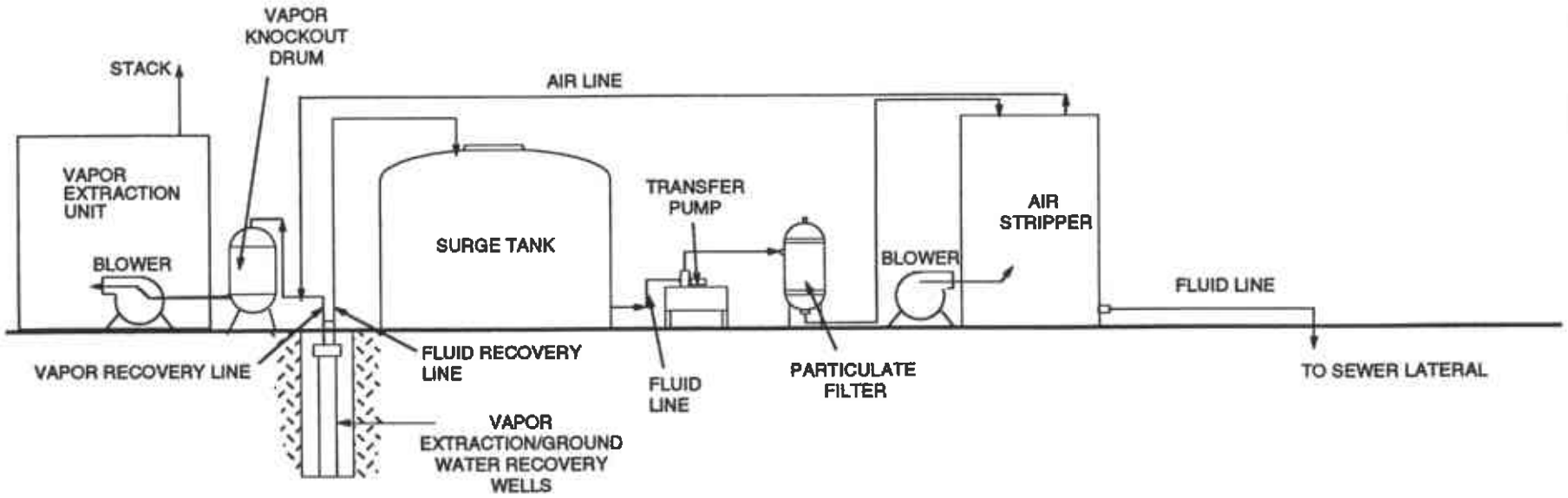


TOP VIEW

APPROXIMATE WEIGHT = 4,500 LBS

FIGURE 3

GLOBAL — Global Technologies, Inc. Milwaukee, Wisconsin	
TITLE: INTEGRATED MODEL 7 GENERAL ARRANGEMENT	RMCATI-7
DRAWN TJS DATE 5-8-03	CUSTOMER — REV —
CHECKED DATE 5-8-03	
APPROVED DATE	SCALE — SHEET 1 OF 1



SYSTEM LAYOUT

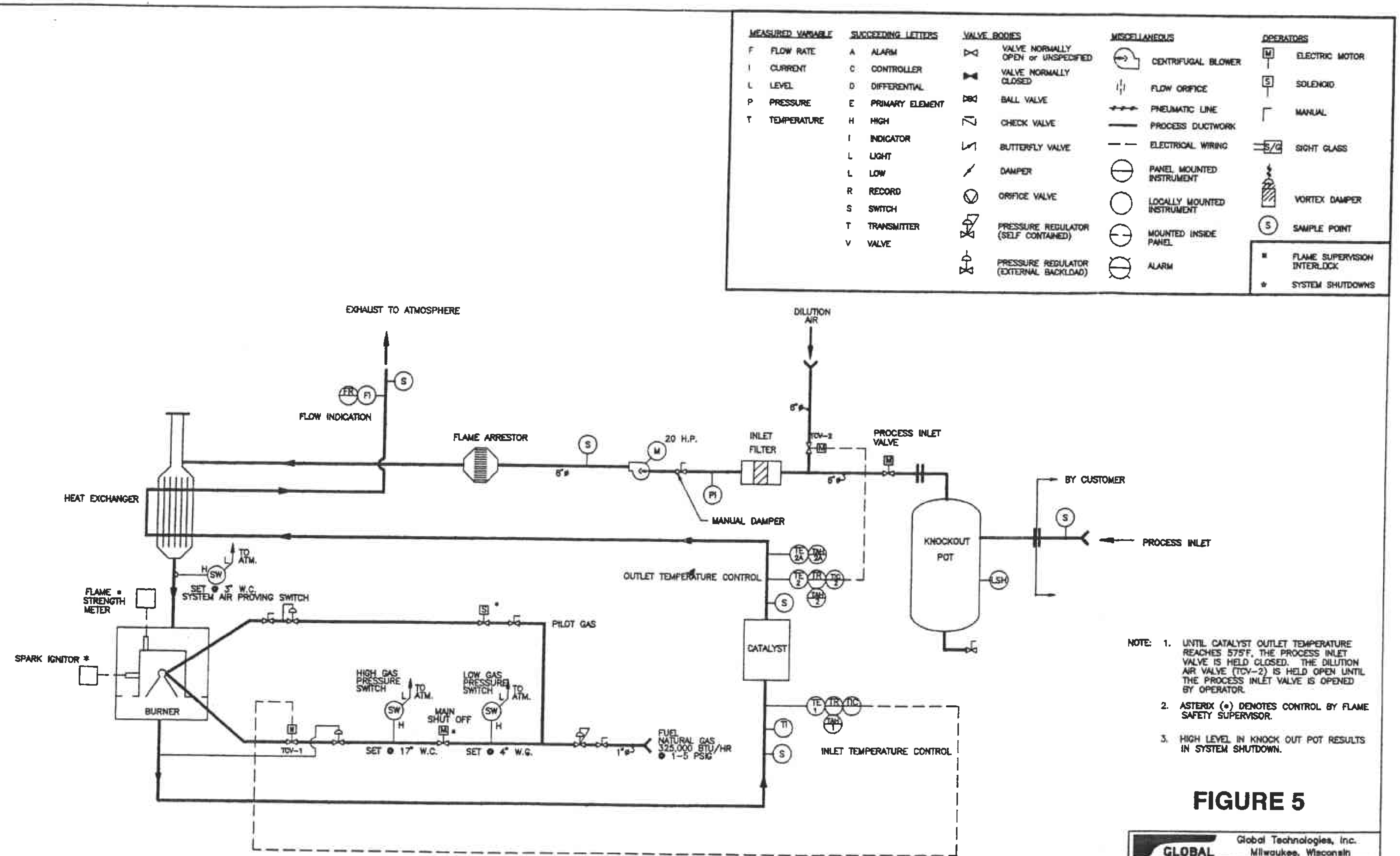
Former Mobil Station 04-H6J
1024 Main Street
Pleasanton, California

FIGURE 4

ALTON GEOSCIENCE
Livermore, California

DRAWING NOT TO SCALE

30-0065 ARS SCHEMATIC 05/19/95



NOTE:

1. UNTIL CATALYST OUTLET TEMPERATURE REACHES 575°F, THE PROCESS INLET VALVE IS HELD CLOSED. THE DILUTION AIR VALVE (TCV-2) IS HELD OPEN UNTIL THE PROCESS INLET VALVE IS OPENED BY OPERATOR.
2. ASTERIX (*) DENOTES CONTROL BY FLAME SAFETY SUPERVISOR.
3. HIGH LEVEL IN KNOCK OUT POT RESULTS IN SYSTEM SHUTDOWN.

FIGURE 5

GLOBAL
Global Technologies, Inc.
Milwaukee, Wisconsin