Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

NORTHWEST REGION

AUG 3 1992

MR JOE WEBB
KAISER PERMANENTE
10180 SE SUNNYSIDE ROAD
CLACKAMAS OREGON 97015

Re: File No. 03-92-032
Sunnyside Medical Center

Dear Mr. Webb:

The Department of Environmental Quality has completed its review of the information submitted to date concerning the underground storage tank (UST) investigation conducted at 10180 SE Sunnyside Road in Clackamas, Oregon. The Department has determined that the work conducted at the site appears to have met the requirements of the Oregon Administrative Rules (OAR) 340-122-205 through 340-122-360 and that no further action is required at this time.

This determination is a result of our evaluation and judgement based on the regulations and facts as we now understand them, including:

1. Diesel contamination was discovered next to a backup generator UST during construction. A maximum of 101 parts per million (ppm) diesel was detected in a soil sample taken from the contamination. This concentration is equivalent to the most stringent matrix cleanup level for diesel of 100 ppm.

2. Three monitoring wells were installed next to the tanks. No contamination was observed in the borings and no contamination was detected in the soil.

3. No benzene, ethylbenzene, toluene, or xylenes were detected in ground water samples.

4. The tank systems have been tested regularly and no releases have been noted.

1500 SW First Avenue
Suite 750
Portland, OR 97201-5884
(503) 229-5263
DEQ-1

The Department's determination will not be applicable if new or undisclosed facts show that the site does not comply with the referenced rules. Although the concentrations of contamination detected at the site do not warrant additional action at this time, the contamination will have to be dealt with appropriately in 1995 when the tanks are replaced.

While not being required by the Department at this time, you may wish to continue to monitor the wells. If additional monitoring is conducted, the Department would appreciate receiving copies of any reports.

The Department's determination also does not apply to any conditions at the site other than the release of the petroleum product specifically addressed in the report. We recommend that a copy of this information be kept with the permanent facility records.

Please note that pursuant to OAR 340-122-360(2), a copy of your report must be retained until ten (10) years after the first transfer of the property.

Your efforts to comply with the regulations to ensure that your facility has been adequately cleaned up has been appreciated. If you have any questions, please feel free to contact Andree Pollock at (503) 229-6385 extension 226.

Sincerely,

Andree Pollock

Andree Pollock
UST Cleanup Specialist
Northwest Region

cc: UST Cleanup Section-ECD
Kim Elliot
Fujitani Hilts & Associates
2255 SW Canyon Road
Portland, Oregon 97201

TELEPHONE USE REPORT

CALL FROM/TO: Kim Elliot

COMPANY/TITLE: Fugitani

PHONE NO.:

CITY: COUNTY:

DATE: 3-20-92

TIME: 9:45

(Circle for filing)

AQ	Asbestos
WQ	OSS
SW	HW
General	Spill

03-92-32

SUMMARY OF CALL:

Kim was exploring what their options were. I explained DEQ goals. I said we would want BETX from Groundwater (wells are in place), most people chose to excavate tanks + contaminated backfill, if they choose to leave tanks + contamination in place, we will wants to know concentrations, size of pocket, + justification for leaving in place.

The two tanks I saw only contained diesel and are in a busy area. Tightness testing indicates that the tanks are in good condition.

Sheila A. Monroe
Signature

RB3972 (2/86)

Sunnyside Med. Ctr.

F-2411-04

FHA FUJITANI HILTS & ASSOCIATES, INC.

GEOTECHNICAL CONSULTANTS

Dept. of Environmental Quality
RECEIVED
MAR 12 1992
NORTHWEST REGION

03-92-032 DB logged in

MEMORANDUM FOR RECORD

DATE: March 10, 1992

TO: Joe Webb, Kaiser Permanente
Sharon Hays, Department of Environmental Quality

FROM: Kim Elliott, Fujitani Hilts & Associates, Inc. KEE

SUBJECT: Preliminary assessment of leaking underground storage tanks.

1. On February 12, 1992, while excavating footing trenches for a construction project at the Kaiser Permanente Medical Center, a petroleum product was observed to be contaminating the backfill material surrounding one of the underground storage tanks (USTs) which contained diesel oil for the emergency electrical power generating system.

2. This discovery was reported to Ms. Sharon Hays at the Northwest Region office of DEQ as a suspected leaking UST at 10:55 am on February 13, 1992.

3. On February 20th, Mr. Andree Pollack of DEQ, emphasized that cleanup is required. Construction may proceed, but he cautioned that cleanup may be more complicated if left until after the new structure is completed. Mr. Pollack advised that the extent of contamination must first be defined, then the options for cleanup may be reviewed.

4. A preliminary look at the site and the pumping of water standing in the excavation, indicated that shallow groundwater may lie within the zone of contamination. So, on February 27th, we contracted with Greg VanDeHey Soil Sampling to construct monitoring wells in each of three exploratory drill holes located around the USTs.

5. Three soil samples were taken, one from each hole, just at the water table. No petroleum hydrocarbons were detected in any of the soil samples.

6. Three water samples were also taken, one from each completed well. Small amounts of petroleum hydrocarbons were detected in each sample. Concentrations ranged from 0.18 parts per million (ppm) nearest the open excavations, to 0.37 ppm in the inferred down-gradient direction. TPH-D

7. A more detailed report which will include possible cleanup alternatives will follow.

2255 S.W. Canyon Rd. • Portland, OR 97201 • 503/223-6147 • FAX 503/223-6140

Oregon

DEPARTMENT OF
ENVIRONMENTAL
QUALITY

February 28, 1992

JOE WEBB
KAISER SUNNYSIDE
10180 SE SUNNYSIDE
CLACKAMAS OREGON 97015

RE: Sunnyside Medical Center
File No. 03-92-032

Dear Mr. Webb:

As required by Oregon Administrative Rules (OAR), on February 13,1992, a release was reported from an underground storage tank (UST) system at your facility located at 10180 SE Sunnyside in Clackamas, Oregon. As the responsible party for the facility, you are required to clean up the release according to OAR 340-122-201 through 340-122-360, "Cleanup Rules for Leaking Petroleum UST Systems and Numeric Soil Cleanup Levels for Motor Fuel and Heating Oil". A copy of these rules is enclosed.

The following is an outline of the reporting process required by the Northwest Region, Department of Environmental Quality:

1. If the cleanup is to be completed within 45 days of identifying the release, a single, final report can be submitted within 30 days of cleanup completion. This will satisfy the documentation requirements, provided you meet the provisions of OAR 340-122-360.

2. If cleanup cannot be completed within 45 days, submittal of an initial status report is required within 45 days of reporting the release. The report must summarize the findings to-date, outline your planned actions, and include anticipated dates of completion for each action. Additional interim reports may also be required depending on individual circumstances. A final report will be required within 30 days of completion of the project.

Please read the enclosed rules carefully. Note that one of the first things you must do is determine the scope of the problem in order to select the best method of remediation. The enclosed information will give you the guidance necessary to meet the specific documentation requirements for your site. As the owner, you should be aware of the regulations, even if you have hired a qualified consultant to do the actual work.

811 SW Sixth Avenue
Portland, OR 97204-1390
(503) 229-5696

Please keep the Department up-to-date on activities at the site. This will help to expedite cleanup and closure of the site. **File No. 03-92-032** has been assigned to this project. Please reference this number in all future correspondence.

Removing contaminated soils to the matrix cleanup levels is only one of many options that you may wish to consider for your site. You may find the services of a qualified consultant helpful in evaluating different cleanup options. Cleanup options other than removal to matrix standards require that a Corrective Action Plan (CAP) be submitted to the Department for approval. If a CAP is appropriate for your site, additional information about this process may be obtained from the region.

The Department is required to recover costs from the responsible party for oversight of CAP cleanups. You will be notified if the Department determines that cost recovery will be implemented for your site. For general information about the cost recovery process, please contact the UST Cleanup Program at (503) 229-6635.

Thank you for your cooperation and continued efforts to comply with the regulations. If you have any questions, please contact the Northwest Region at (503) 229-5263.

Sincerely,

UST CLEANUP SECTION
Northwest Region

enclosure

cc: UST Cleanup Section, ECD

TELEPHONE USE REPORT

CALL FROM/TO: Kim Elliot

COMPANY/TITLE: Fujitsu Hilts Ass.

PHONE NO.:

CITY: COUNTY:

DATE: 2/20/92

TIME:

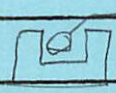
(Circle for filing)

AQ	Asbestos
WQ	OSS
SW	HW
General	Spill

Sunnyside Medical Center

03-92-032

SUMMARY OF CALL:

Last tightness test - no indication of leak.
Tried to determine if water was G.W. or perched in tank p.t.
Tanks in U of Building  Thinks
Need to halt construction + investigate?
Native soils look to be clean backfill dirty.
Recommended that they at least identify extent of contamination.
Probably should remove what they can before doing construction.

Andrea Pollock
Signature

RB3972 (2/86)

LUST FORM

INCIDENT INFORMATION

LUST Incident Nbr: _____ LUST Log Nbr: 03-92-32 UST Facility ID: 3070

Date Received: 2/3/92 Received By: SMH Emergency Resp Taken: Y (N)

Tank Identification: File Name: Sunnyside Medical Center

Street: 10180 SE SUNNYSIDE

City: CLACKAMAS Zip: 97015

County: _____ Phone: _____

Incident Comments: _____

CONTACT & MAIL TYPES

Reported By:	LUST Contact:	Responsible Party:
Name: Kim Elliot	Name: KIM ELLIOT	Name: JOE WEBB maintenance super.
Company: Fujitani & Helts Assoc.	Company: _____	Company: KAISER SUNNYSIDE
Street: 2255 SW CANYON	Street: _____	Street: 10180 SE SUNNYSIDE
City: PORT Zip: 97201	City: _____ Zip: _____	City: CLACK Zip: 97015
State: _____ Phone: 223-6147 799-0836	State: _____ Phone: _____	State: _____ Phone: 786-2742

SITE ASSESSMENT

LUST Incident Nbr: (XXXXXXXXXXXX)

Date Investigated: 7/31/92 Investigated By: AWP By Report

Release Exists: (Y) N (Circle)

Confirmation Method: A)Staff B)Lab:DEQ C)Lab:RP D)Lab:Other (E)RP F)Other (Circle)

Cleanup Necessary: Y N (?) (Circle)

Regulated Tank: Y N (?) (Circle)

Exposure Assessment: Y (N) (Circle)

Off-Site Migration: Y (N) ? (Circle)

Estimated Gallons Released: —

Priority: _____

Discovery Date: 2/3/92

How Discovered: (Circle)
A)Routine Monitoring B)Inventory Control C)Decommissioning D)Site Assessment
E)Complaint F)Tank Test (G)Other - construction

Material Released: (Circle)
A)Unleaded Gasoline B)Leaded Gasoline C)Misc. Gasoline
(D)Diesel E)Fuel Oil F)Waste Oil
G)Lubricant H)Solvent I)Bunker Fuel
J)Other Pet. Dist. K)Chemical L)Unknown

3000 gal Active tank Back up power for generator - emergency power system

Source of Release: (Circle)
A)Tank Leak B)Pipe Leak (C)Overfill D)Surface Spill
E)Pump/Valve Leak F)Other G)Unknown

Impacts: (Circle)				
Soil	(Y)	N	%	?
Groundwater	Y	(N)	%	?
Surface Water	Y	(N)	%	?
Drinking Water	Y	(N)	%	?
Facility (Vapor)	Y	(N)	%	?
Facility (Free Product)	Y	(N)	%	?

Site Assessment Comments: Tank ID # AEGKT #2 AEGAK

SITE MANAGEMENT

LUST Incident Nbr: (XXXXXXXXXXXX)

Date Released Stopped: _____

Cleanup Activity: Start Date: N/A Under Control Date: _____

End Date: N/A Contractor Name: _____

Cleanup Guideline: (Matrix) C.A.P. (Circle) Cleanup Lead: (RP) SLW/TF SLW/oTF (Circle)

Free Product Disposal:		Soil Disposal:	
Est. Gallons:	_____	Est. Cu/Yds:	_____
Resp. Party:	_____	Resp. Party:	_____
Disposal Location:	N/A	Disposal Location:	N/A
Removal Date:	_____	Removal Date:	_____

Enforcement Action: Y (N) (Circle)

Cost Recovery Initiated: Y (N) (Circle) Source of Cost Recovery: Pct. R.P.: _____ Pct. SLW/TF: _____ Pct. SLW/oTF: _____

Estimations: Cost of Cleanup: _____ Staff Time On Project: _____

Site Management Comments: _____

[Version 102]

* closed 8/3/92 *

NWR UST CLEANUP SITE CHECKLIST
(for regional use only)

This site is:

_____ <40 ppm Matrix

__✓__ Regulated Tank

_____ Exempt Tank

_____ Oil Heat Commission eligible

_____ Other _____
(surface spill, non-petroleum UST, etc.)

Assign site to:

_____ Staff (your initials or staff for major RP)

__✓__ Unassigned at this time
(matrix only, soil aeration not anticipated)

_____ Needs to be tracked (supervisor to assign)
Reason:

Action:

__✓__ Send Initial Letter (with rules)

_____ Send Modified Letter (without rules)

_____ Send <40 ppm Letter (without rules)

_____ No letter required _____
(sending other letter, etc.)

Regulated Tank Information (Y/N):

__✓__ Tanks registered ID No._____

_____ Decommissioning notice (30 day) received

_____ 3 day notice received

_____ Fees current

_____ New tanks to be installed

Misc. Notes:

Pollock

F-2411-04

03-92-032

FHA

FUJITANI HILTS & ASSOCIATES, INC.

GEOTECHNICAL CONSULTANTS

July 21, 1992

Kaiser Permanente
ATTN: Joe Webb
10180 S.E. Sunnyside Road
Clackamas, OR 97015

DEPT OF ENVIRONMENTAL QUALITY
RECEIVED
JUL 27 1992
NORTHWEST REGION

SOIL SAMPLING AND GROUND WATER MONITORING
KAISER SUNNYSIDE MEDICAL CENTER
CLACKAMAS, OREGON

Dear Joe:

This letter report summarizes our work involving the installation of monitoring wells, evaluation of ground water conditions, and the sampling and laboratory analysis of soil and ground water samples at the subject site. The purpose of this study was to evaluate the level and extent of contamination discovered on the site. This work was verbally authorized by you on February 12, 1992.

BACKGROUND

On February 12, 1992, while performing construction inspection for the South Expansion project at Kaiser Sunnyside Medical Center (KSMC), a representative of Fujitani Hilts & Associates, Inc. (FHA) observed petroleum product floating on ground water in a shallow footing excavation. The excavation was adjacent to a 3,000 gallon capacity underground storage tank (UST). We were informed by Mr. Joe Webb, Kaiser Permanente's Chief Engineer for Sunnyside Area Maintenance Services, that this, and a second 3,000 gallon UST located a few feet south of the first, were used to store diesel oil for the hospital's emergency power generators.

At Mr. Webb's request, FHA reported the observation on February 13, 1992 to Ms. Sharon Hays, Oregon Department of Environmental Quality (DEQ), as a suspected leaking UST. The site was discussed again on February 20 with Mr. Andree Pollack, DEQ, who stressed that cleanup would be required either now or later, but while the extent of the contamination was being defined, the current construction could continue.

On May 4, 1992, a sample of the backfill material exposed in the footing trench was collected and tested for the presence of total petroleum hydrocarbons (TPH). Laboratory test results indicated that the product was indeed in the diesel range of hydrocarbons and was present at a concentration of 101 parts per million (ppm). The laboratory report is included in Attachment 1.

Mr. Webb has informed us that these tanks, and their associated piping, undergo annual tightness tests, and that the last test was performed in January 1992. None of the previous tests has indicated any leaks.

PHYSICAL SITE CHARACTERISTICS

Location and Topography

The KSMC is located in the NE 1/4 of the NE 1/4 of Section 4, Township 2 South, Range 2 East. The site is shown on the Vicinity Map, Figure 1. KSMC is located on the south side of Sunnyside Road, just east of Interstate 205 in Clackamas County. The surrounding area includes a mix of commercial and residential land use.

The site lies near the west margin of the Boring Hills, an area of small conical hills and intervening valleys which borders the Portland basin to the north and west, and the Cascade Mountains to the east. The subject property lies between approximately 245 and 260 feet elevation. Mount Scott rises to over 1,000 feet elevation just to the north of the site and

Mount Talbert rises to over 700 feet elevation just to the south. Mount Scott Creek flows westward between Mount Scott and Mount Talbert and just to the south of the subject site. The ground surface in the area of the KSMC generally slopes southward toward Mount Scott Creek, but has been modified locally with construction of the medical facility.

Geology

Local bedrock beneath the subject site is basaltic lava flows and associated volcaniclastic materials of the Boring Lava (Trimble, 1963). Flows of the Boring Lava were erupted from a cluster of local vents now represented by the Boring Hills. Thickness of the Boring lava may be several hundred feet adjacent to the vents but thins rapidly with distance away from the source vent. The Boring Lava was generally erupted upon the eroded surface of the Troutdale Formation, a sequence of interbedded sandstone and conglomerate. The Boring Lava is thought to be at least greater than 700,000 years in age based on portable fluxgate magnetometer determinations (Beeson and others, 1989). The Boring Lava is overlain by Quaternary age loess (wind blown silt) and, below an elevation of approximately 400 feet, by silt and sand from catastrophic flood deposits of the last glacial period, approximately 19,000 to 12,000 years before present.

Geotechnical borings (Shannon & Wilson 1970, 1974, 1976, 1977, 1980, 1983, 1988; FHA 1990) drilled at this and other sites in the area have found clayey silt to silty fine sand overlying weathered basalt lava at depths ranging between approximately 20 and 35 feet.

Ground Water

Ground water is often encountered at shallow depths in materials overlying the Boring Lava. Water levels tend to be higher in the spring and lower in the fall, but most geotechnical investigations in the vicinity of the KSMC site (Shannon & Wilson, Inc. 1970, 1974, 1977,

1980, 1983, 1988; FHA 1990) indicate that the seasonal fluctuation is between approximately 4 and 20 feet below the ground surface.

MONITORING WELL CONSTRUCTION

FHA contracted with Greg VanDeHey Soil Sampling, Inc. to install a monitoring well in each of three borings (designated B-1, B-2, and B-3) drilled at the locations shown in the Location Diagram, Figure 2. The work was accomplished on February 27, 1992.

A geologist from FHA was present during the drilling, logged the soil materials observed, and collected soil samples from each boring. Copies of the Start Cards and the Monitoring Well Reports filed with the Oregon Water Resources Division by Greg VanDeHey, a licensed Monitoring Well Constructor, are included in Attachment 2.

The monitoring wells were constructed from 2-inch, threaded, schedule 40, PVC pipe with an 8 foot machine slotted section placed at the bottom of each of the 10-foot bore holes. Silica sand was placed in the bore hole surrounding the slotted section, and a bentonite clay seal was placed above the sand to the ground surface. A water tight protective cover was grouted into place over each monitoring well.

SOIL AND GROUND WATER SAMPLING

Two soil samples were collected from each bore hole using a split-spoon sampler during the drilling process; one just at the ground water surface and a second in the first foot of soil beneath the bottom of the adjacent UST. Soil samplers were decontaminated after each use by washing in an Alconox solution followed by a double rinse in clear water and a final rinse with distilled water.

All of the soil samples were submitted to Haymond Associates, Inc. who analyzed for the presence of TPH. No petroleum hydrocarbons were detected in any of the soil samples. Laboratory reports are included in Attachment 1.

On February 27, 1992, following installation of the monitoring wells, an initial set of water samples was collected. Ground water was sampled using two PVC bailers, one to purge the well, and the other for removing the sample to be tested. The process consisted of removing 3 or more casing volumes of water from the monitoring well with one bailer prior to sampling, and then using the clean bailer to collect the sample. Casing volumes were calculated at about 1.5 gallons. Prior to sampling the next well, both bailers were cleaned in a solution of Alconox, rinsed twice in clear water, and a third time with distilled water. Glass, screw-top (VOA) sample jars were supplied by the testing laboratory. Each jar was carefully filled without leaving air space, and then placed on ice in a cooler until delivered to the testing laboratory.

Initial water samples were analyzed for TPH. The laboratory results of the initial water samples are summarized in Table 1.

Table 1.
Initial Monitoring Well Samples analyzed for Total Petroleum Hydrocarbons by EPA 418.1.

Well ID	TPH in mg/L
B-1	0.30
B-2	0.37
B-3	less than 0.30

Additional water samples were collected from each of the three monitoring wells on March 23, 1992. The additional samples were tested for the presence of benzene, toluene,

ethylbenzene, and xylenes (BTEX). No BTEX compounds were detected in any of the samples. Laboratory reports are included in Attachment 2.

SITE SPECIFIC GROUND WATER CONDITIONS

A leveling survey was performed by FHA on April 1, 1992 to determine the ground elevation at each of the monitoring well locations. Elevation of the ground water surface was then determined. The flow direction was found to be South 41^0 East, and the gradient to be 0.03 ft/ft, i.e. the ground water surface drops approximately 0.03 ft, or 0.36 inches, in elevation for every foot horizontally in the direction S. 41^0 E. Flow direction and the gradient calculation are shown on Figure 3.

Our measurements for this project have found static water levels, within the upper 10 feet of soil, to vary between about 1.5 and 2 feet below the ground surface. Ground water level measurements are summarized in Table 2.

Table 2.
Ground water level measurements.

Date	B-1	B-2	B-3
4/1/92	1.57	1.89	2.07
7/6/92	1.46	1.71	1.97

SUMMARY AND CONCLUSIONS

Some diesel contamination is present within the relatively porous and permeable backfill surrounding the USTs. At a concentration of 101 ppm, however, the contaminated backfill materials appear to meet a level 1 matrix cleanup level. The fine grained character of the

inclosing native soil has effectively confined the spread of this contamination as shown by the barely detectable levels of TPH and non-detectable levels of BTEX in ground water samples from the down-gradient wells. The monitoring wells were placed in native soil as close as possible to the tanks, and the down-gradient well (B-2), at a distance of only 4 feet from the edge of the nearest tank (and probably only 2 feet from the backfill zone), contained concentrations of TPH at only 0.37 ppm.

Cause of the contamination is not certain. Even though tightness testing has not detected any leaks, some may be occurring at a rate which is below the test detection limit. Over a long period of time a very slow leak could introduce a significant amount of product to the soil. The contamination may also be the result of over-filling of the tanks.

No significant contamination appears to be present in the ground water. It is our opinion, therefore, that this site does not present a significant hazard to the environment.

RECOMMENDATIONS

We understand from talking to Mr. Webb that it is Kaiser Permanente's intention to replace the USTs in 1995. In this case, we recommend that the three wells continue to be monitored on a quarterly basis, and the results forwarded to DEQ for review. Unless the concentration of contaminants increases significantly, cleanup of this site could be postponed, without significant threat to the environment, until the tanks are removed for replacement.

LIMITATIONS

Our conclusions are based on the available data reviewed and identified earlier in this report. This assessment reflects our best level of effort given the time and data constraints.

It provides the concerned parties with our judgment concerning the environmental character of the site and should not be interpreted as a warranty that contamination in some other currently undefined areas does not exist.

Sincerely,

FUJITANI HILTS & ASSOCIATES, INC.

By _____
Kim E. Elliott, C.E.G.
Engineering Geologist

By _____
K. Frank Fujitani, P.E.
President

2 Tables
3 Figures
2 Attachments

cc: Mr. Andree Pollack, Oregon Department of Environmental Quality

F246104A.RPT

REFERENCES CITED

Beeson, M.H., Tolan, T.L., and Madin, I.P., 1989. Geologic Map of the Lake Oswego Quadrangle, Clackamas, Multnomah, and Washington Counties, Oregon: Oregon Department of Geology and Mineral Industries Geological Map Series, GMS-59.

Fujitani Hilts & Associates, Inc., September 1980. Geotechnical Investigation Kaiser Sunnyside South Expansion Clackamas, Oregon. *A report prepared for* Kaiser Permanente Facilities Services Department. Report No. F-2411.

Shannon & Wilson, Inc., June 1, 1970. Additional Field Investigations Kaiser Foundation Medical Center Clackamas, County, Oregon. *A report prepared for* Nortec, Inc. Report No. O-507.

_____, April 11, 1974. Subsurface investigation Kaiser Service Center Sunnyside Road Clackamas County, Oregon. *A report prepared for* Wolff Zimmer Gunsul Frasca Partnership. Report No. O-808.

_____, November 24, 1976. Geotechnical Investigation Proposed Medical Clinic Sunnyside Road Clackamas County, Oregon. *A report prepared for* Wolff Zimmer Gunsul Frasca Partnership. Report No. O-1055.

_____, May 24, 1977. Subsurface Investigation Lents Evangelical Church, S.E. Sunnyside Road Clackamas County, Oregon. *A report prepared for* Lents Evangelical Church. Report No. O-1100.

_____, August 27, 1980. Geotechnical Investigation Mount Scott Clinic Addition Clackamas, Oregon. *A report prepared for* Kaiser Permanente Facilities Department. Report No. O-1443.

_____, September 4, 1980. Geotechnical Investigation Process Center Addition Southeast Medical Center Clackamas, Oregon. *A report prepared for* Kaiser Permanente Facilities Department. Report No. O-1444.

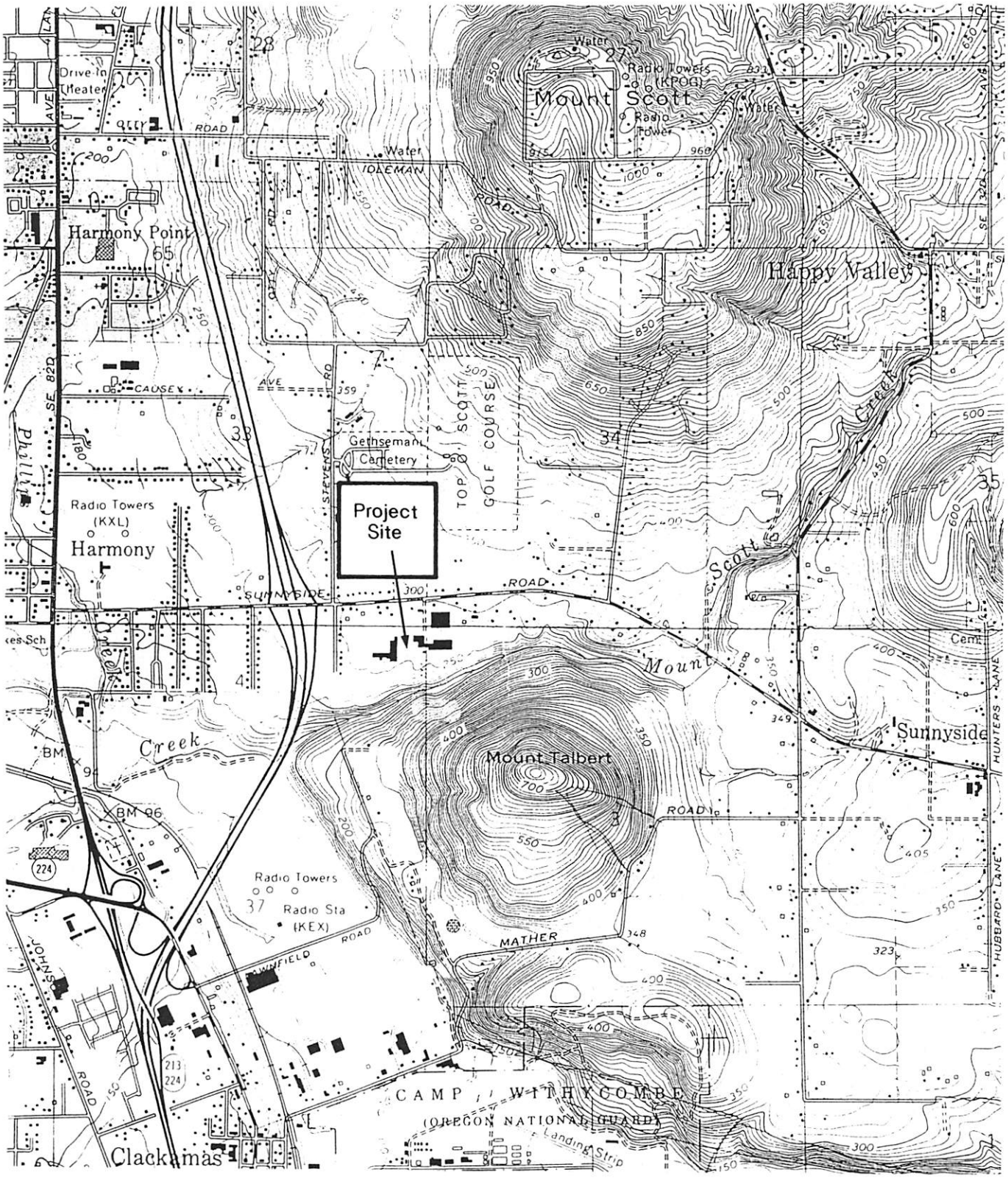
_____, September 25, 1980. Geotechnical Investigation Sunnyside Hospital Expansion, Southeast Medical Center Clackamas, Oregon. *A report prepared for* Kaiser Permanente Facilities Department. Report No. O-1445.

_____, February 3, 1983. Geotechnical Investigation Regional Laboratory Remodel and Addition Kaiser Foundation Hospital Clackamas County, Oregon. *A report prepared for* Kaiser Foundation Hospitals. Report No. O-1654.

REFERENCES, CONTINUED

Shannon & Wilson, Inc., March 3, 1988. Geotechnical Investigation Mount Talbert Medical Office Clackamas, Oregon. *A report prepared for* Kaiser Permanente Facilities Department. Report No. O-2016.

Trimble, D.E., 1963. Geology of Portland, Oregon and Adjacent Areas: U.S. Geological Survey Bulletin 1119.



NORTH

2000 0 2000 4000 FEET

SCALE: 1" = 2000'

Vicinity map of the Sunnyside Kaiser property adapted from the Gladstone, Oregon USGS quadrangle map.

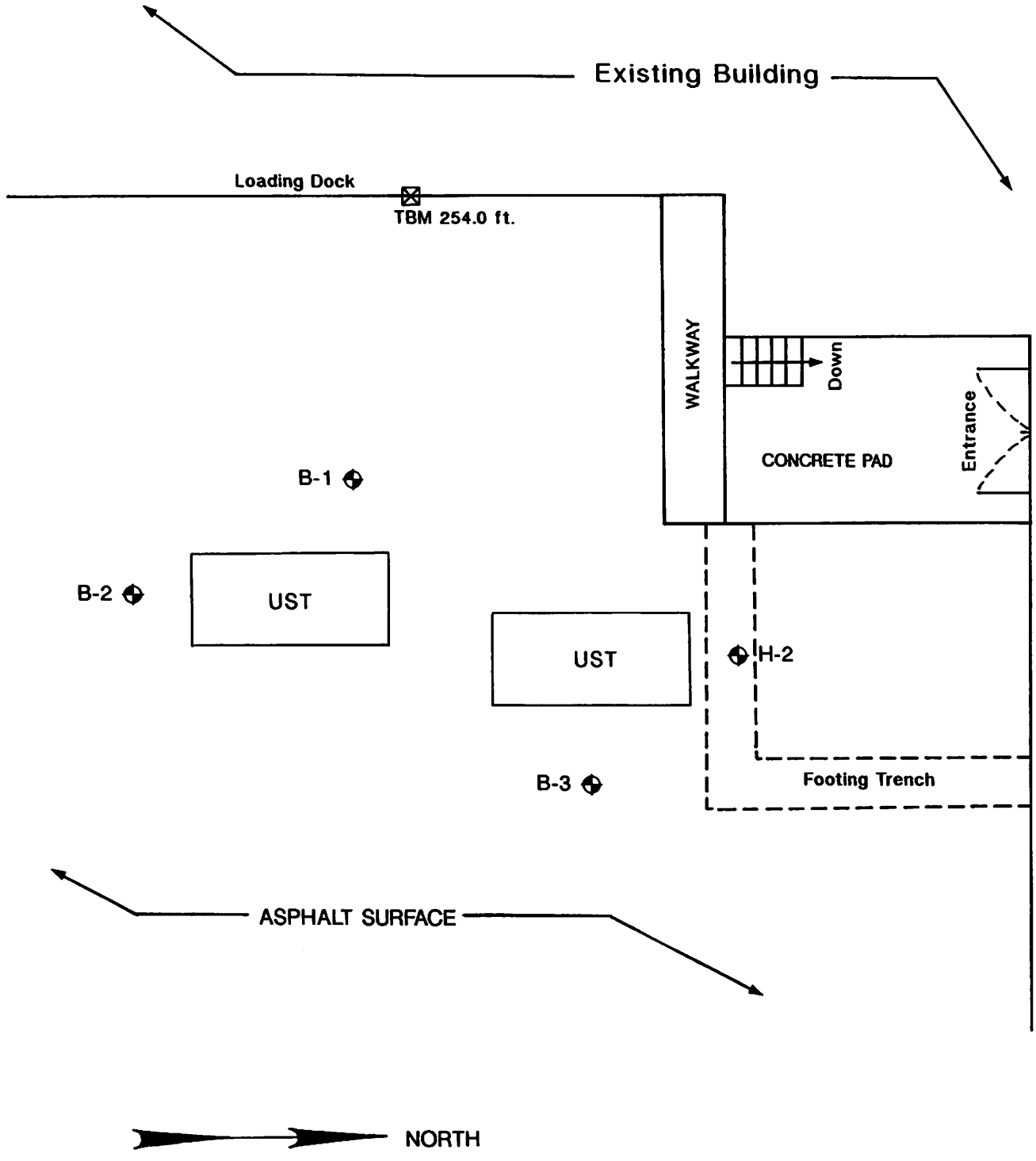
SUNNYSIDE KAISER
CLACKAMAS, OREGON

VICINITY MAP

JULY 1992 F-2411-04

FUJITANI HILTS & ASSOCIATES
Geotechnical Consultants
Portland, Oregon

FIG. 1



LEGEND

B-1 ⊕ BOREHOLE LOCATION AND NUMBER OF MONITORING WELL.

H-2 ⊕ SAMPLE LOCATION OF CONTAMINATED UST BACKFILL.

0 10 20 feet

SCALE: 1" = 10'

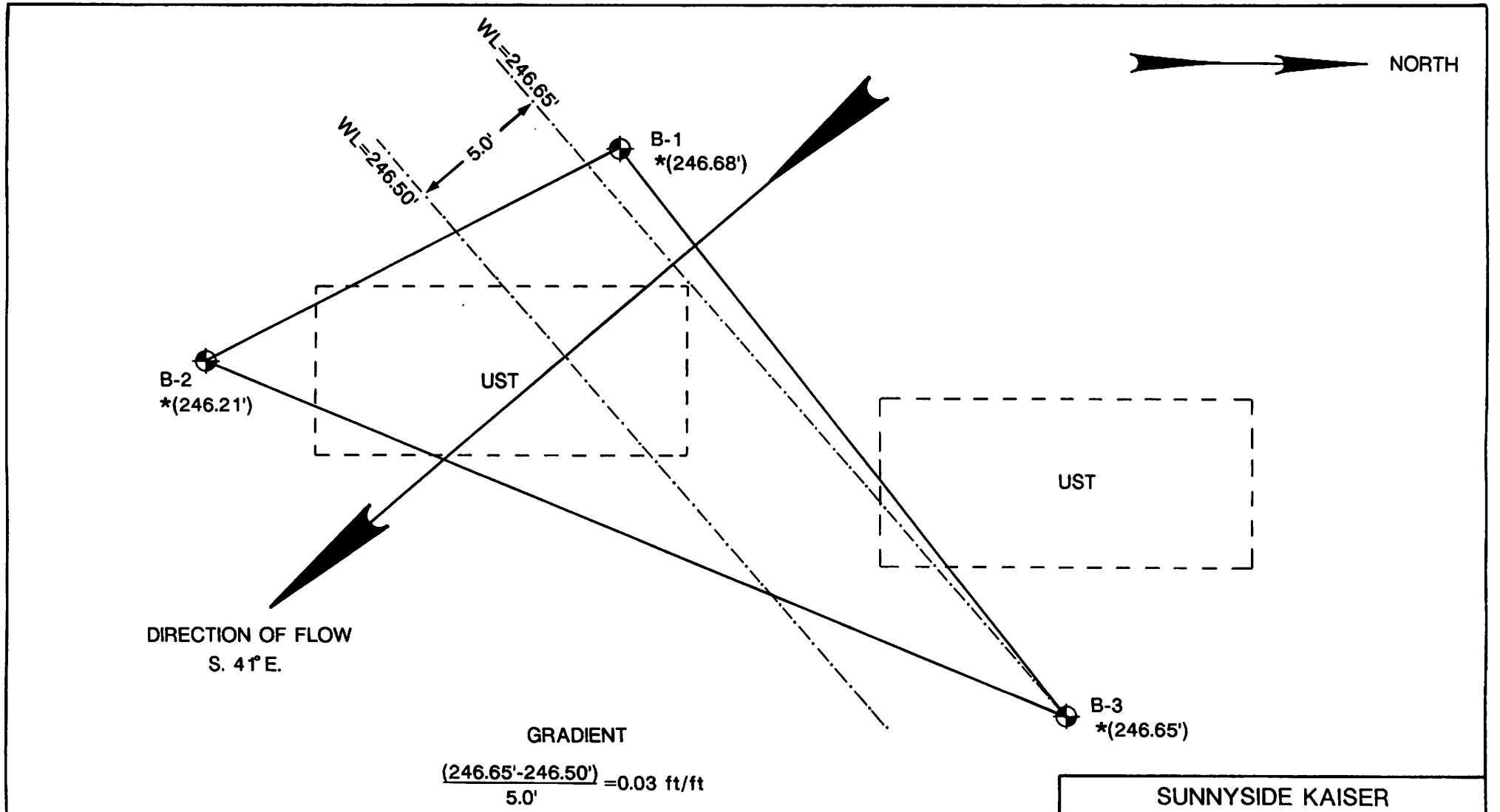
SUNNYSIDE KAISER
CLACKAMAS, OREGON

BORING LOCATION DIAGRAM

JULY 1992 F-2411-04

FUJITANI HILTS & ASSOCIATES
Geotechnical Consultants
Portland, Oregon

FIG. 2



SUNNYSIDE KAISER
CLACKAMAS, OREGON

GROUND WATER GRADIENT
AND FLOW DIRECTION

JULY 1992 F-2411-04

FUJITANI HILTS & ASSOCIATES, INC.
Geotechnical Consultants
Portland, Oregon

FIG. 3

ATTACHMENT 1

W.E.S. Wy' East Environmental Sciences, Inc.
Research, Laboratory & Consulting Services

February 29, 1992

Fujitani Hilts & Assoc.
2255 S.W. Canyon Rd.
Portland, OR 97201

PROJECT NAME/SITE: KAISER PERMANENTE - ENV.

PROJECT #: F-2411-04

(LAB FILE: FUJI22.DOC)

EXTRACTION DATE: 2-27-1992

LAB ID/ FIELD ID:

4093/ B-1, S-1, SOIL

TPH-HCID: GASOLINE: Not detected or present below reporting limit.
DIESEL: Not detected or present below reporting limit.
HEAVY OIL: Not detected or present below reporting limit.
Extract surrogate recovery was 98%

4094/ B-1, S-2, SOIL

TPH-HCID: GASOLINE: Not detected or present below reporting limit.
DIESEL: Not detected or present below reporting limit.
HEAVY OIL: Not detected or present below reporting limit.
Extract surrogate recovery was 82%

4095/ B-2, S-1, SOIL

TPH-HCID: GASOLINE: Not detected or present below reporting limit.
DIESEL: Not detected or present below reporting limit.
HEAVY OIL: Not detected or present below reporting limit.
Extract surrogate recovery was 84%

4096/ B-2, S-2, SOIL

TPH-HCID: GASOLINE: Not detected or present below reporting limit.
DIESEL: Not detected or present below reporting limit.
HEAVY OIL: Not detected or present below reporting limit.
Extract surrogate recovery was 68%

4097/ B-3, S-1, SOIL

TPH-HCID: GASOLINE: Not detected or present below reporting limit.
DIESEL: Not detected or present below reporting limit.
HEAVY OIL: Not detected or present below reporting limit.
Extract surrogate recovery was 51%

W.E.S. Wy' East Environmental Sciences, Inc.
Research, Laboratory & Consulting Services

February 29, 1992

Fujitani Hilts & Assoc.
2255 S.W. Canyon Rd.
Portland, OR 97201

PROJECT NAME/SITE: KAISER PERMANENTE - ENV.

PROJECT #: F-2411-04

(LAB FILE: FUJI22.DOC)

EXTRACTION DATE: 2-27-1992

LAB ID/ FIELD ID:

4098/ B-3, S-2, SOIL

TPH-HCID: GASOLINE: Not detected or present below reporting limit.
DIESEL: Not detected or present below reporting limit.
HEAVY OIL: Not detected or present below reporting limit.
Extract surrogate recovery was 63%

TPH-HCID Parameters:
1) If possible, identification is by comparison to reference chromatograms. If identification cannot be made by comparison, then compounds from C_6 to C_{10} are called "Gasoline"; from C_{11} to C_{28} are called "Diesel"; and C_{29} and beyond are called "Heavy Oil".
2) The reporting limit for Gasoline is 20 mg/kg.
3) The reporting limit for Diesel is 50 mg/kg.
4) The reporting limit for Heavy Oil is 50mg/kg.

BTEX (602/8020) Parameters for Water
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is 3 ug/l (ppb).
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

BTEX (602/8020) Parameters for Soil
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is .1 mg/kg
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

TPH-G Parameters:
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 10 mg/kg.
3) Laboratory blank showed no gasoline.

TPH-418.1 Parameters for Soil
1) The detection limit for TPH is 2 mg/kg.
2) The limit of quantitation is 6 mg/kg.
3) The laboratory blank showed no detected TPH.

TPH-418.1 Parameters for Water
1) The detection limit for TPH is .1 mg/l
2) The limit of quantitation is .3 mg/l
3) The laboratory blank showed no detected TPH.

TPH-D Parameters for Soil
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 20 mg/kg.
3) The laboratory blank showed no diesel.

CHAIN OF CUSTODY

HAYMOND & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS
1128 S.W. 13th, Portland, OR 97205
(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # F-2411-04	PROJECT NAME: KAISER PERMANENTE - ENV.	P.O. #	TODAY'S DATE: 2-27-92
COMPANY NAME: FUJITANI HILTS & ASSOC.		PHONE: 223-6147	
REPORT ATTENTION: Kim		FAX:	
SAMPLES COLLECTED BY: Kim Elliott		DATE COLLECTED: 2-27-92	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED	
B-1, S-1	SOIL	JAR	4° C	HCID +	4093
B-1, S-2	"	"	"	↓	4094
B-2, S-1	"	"	"		4095
B-2, S-2	"	"	"		4096
B-3, S-1	"	"	"		4097
B-3, S-2	"	"	"		4098

RELINQUISHED BY: Kim E Elliott	DATE/TIME 2/27/92 1607	RECEIVED BY: Lab: J Haymond	DATE/TIME 2-27-92 4:11
RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB:	DATE/TIME

REMARKS:

EXPRESS UPS MAIL CXL GREY TAXI CAB

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W.E.S. Wy' East Environmental Sciences, Inc.
Research, Laboratory & Consulting Services

March 9, 1992

Fujitani Hilts & Assoc.
2255 S.W. Canyon Rd.
Portland, OR 97201

PROJECT NAME/SITE: KAISER PERMANENTE - ENV.

PROJECT #: F-2411-04

(LAB FILE: FUJI23.DOC)

EXTRACTION DATE: 3-6-1992

LAB ID/ FIELD ID:

4127/ B-1, W-10, WATER

EPA TPH-418.1: 0.3 mg/kg Total Petroleum Hydrocarbons

4128/ B-2, W-20, WATER

EPA TPH-418.1: 0.37 mg/kg Total Petroleum Hydrocarbons

4129/ B-3, W-30, WATER

EPA TPH-418.1: Hydrocarbons not detected or present below detection limit

TPH-HCID Parameters:
1) If possible, identification is by comparison to reference chromatograms. If identification cannot be made by comparison, then compounds from C_6 to C_{10} are called "Gasoline"; from C_{11} to C_{28} are called "Diesel"; and C_{29} and beyond are called "Heavy Oil".
2) The reporting limit for Gasoline is 20 mg/kg.
3) The reporting limit for Diesel is 50 mg/kg.
4) The reporting limit for Heavy Oil is 50mg/kg.

BTEX (602/8020) Parameters for Water
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is 3 ug/l (ppb).
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

BTEX (602/8020) Parameters for Soil
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is .1 mg/kg
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

TPH-G Parameters:
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 10 mg/kg.
3) Laboratory blank showed no gasoline.

TPH-418.1 Parameters for Soil
1) The detection limit for TPH is 2 mg/kg.
2) The limit of quantitation is 6 mg/kg.
3) The laboratory blank showed no detected TPH.

TPH-418.1 Parameters for Water
1) The detection limit for TPH is .1 mg/l
2) The limit of quantitation is .3 mg/l
3) The laboratory blank showed no detected TPH.

TPH-D Parameters for Soil
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 20 mg/kg.
3) The laboratory blank showed no diesel.

CHAIN OF CUSTODY

HAYMOND & ASSOCIATES, INC.
ENVIRONMENTAL SCIENTISTS
1128 S.W. 13th, Portland, OR 97205
(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # F-2411-04	PROJECT NAME: Kaiser Sunnyside	P.O. #	TODAY'S DATE: 3-6-92
COMPANY NAME: Fujitani Hilts & Assoc., Inc.		PHONE: 223-6147	
REPORT ATTENTION: Kim		FAX: 223-6140	
SAMPLES COLLECTED BY: Kim Elliott		DATE COLLECTED: 3-6-92	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED	
B-1, W-1Ø	WATER	JAR	4° C	TPH 418.1	4127
B-2, W-2Ø	"	"	"	↓	4128
B-3, W-3Ø	"	"	"		4129

RELINQUISHED BY: Kim E Elliott	DATE/TIME 3/6/92 1531	RECEIVED BY: —	DATE/TIME
RELINQUISHED BY: —	DATE/TIME	RECEIVED BY LAB: J Haymond	DATE/TIME 3-6-92 3:30

REMARKS:

EXPRESS UPS MAIL CXL GREY TAXI CAB

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W.E.S. Wy' East Environmental Sciences, Inc.
Research, Laboratory & Consulting Services

March 28, 1992

Fujitani Hilts & Assoc.
2255 S.W. Canyon Rd.
Portland, OR 97201

PROJECT NAME/SITE: KAISER/SUNNYSIDE

PROJECT #: F-2411-04

(LAB FILE: FUJI24.DOC)

EXTRACTION DATE: 3-25-1992

LAB ID/ FIELD ID:

4289/ B-1, W-100, WATER

BTEX - WATER: by Method 8020	BENZENE:	Not detected or present below detection limit.
	TOLUENE:	Not detected or present below detection limit.
	ETHYLBENZENE:	Not detected or present below detection limit.
	XYLENES:	Not detected or present below detection limit.

4290/ B-2, W-200, WATER

BTEX - WATER: by Method 8020	BENZENE:	Not detected or present below detection limit.
	TOLUENE:	Not detected or present below detection limit.
	ETHYLBENZENE:	Not detected or present below detection limit.
	XYLENES:	Not detected or present below detection limit.

4291/ B-3, W-300, WATER

BTEX - WATER: by Method 8020	BENZENE:	Not detected or present below detection limit.
	TOLUENE:	Not detected or present below detection limit.
	ETHYLBENZENE:	Not detected or present below detection limit.
	XYLENES:	Not detected or present below detection limit.

TPH-HCID Parameters:
1) If possible, identification is by comparison to reference chromatograms. If identification cannot be made by comparison, then compounds from C_6 to C_{10} are called "Gasoline"; from C_{11} to C_{28} are called "Diesel"; and C_{29} and beyond are called "Heavy Oil."
2) The reporting limit for Gasoline is 20 mg/kg.
3) The reporting limit for Diesel is 50 mg/kg.
4) The reporting limit for Heavy Oil is 50 mg/kg.

BTEX (602/8020) Parameters for Water
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is 3 ug/L (ppb).
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

BTEX (602/8020) Parameters for Soil
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is .1 mg/kg.
2) The laboratory blank showed no BTEX.
3) Duplicate analysis agreed to within 15%.

TPH-G Parameters for Water
1) The reporting limit is .1 mg/L
2) Laboratory blank showed no gasoline.

TPH-G Parameters for Soil
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 10 mg/kg.
3) Laboratory blank showed no gasoline.

TPH-418.1 Mod. Parameters for Soil
1) The detection limit for TPH is 2 mg/kg.
2) The limit of quantitation is 6 mg/kg.
3) The laboratory blank showed no detected TPH.

EPA TPH-418.1 Parameters for Water
1) The detection limit for TPH is .1 mg/L.
2) The limit of quantitation is .3 mg/L.
3) The laboratory blank showed no detected TPH.

TPH-D Parameters for Soil
1) Duplicate analyses agree to within 10%.
2) The reporting limit is 20 mg/kg.
3) The laboratory blank showed no diesel.

EPA 8015 Modified for Water
1) The detection limit for TPH is 200 ug/L.
2) The limit of quantitation is 400 ug/L.

EPA 8015 Modified for Soil
1) The detection limit for TPH is 5 mg/kg.
2) The limit of quantitation is 10 mg/kg.

CHAIN OF CUSTODY

HAYMOND & ASSOCIATES, INC.

ENVIRONMENTAL SCIENTISTS

1128 S.W. 13th, Portland, OR 97205
(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # F-2411-04	PROJECT NAME: KAISER/SUNNYSIDE	P.O. #	TODAY'S DATE: 3/25/92
COMPANY NAME: Fujitani Hilts & Assoc., Inc.		PHONE: 223-6147	
REPORT ATTENTION: Kim		FAX: 223-6140	
SAMPLES COLLECTED BY: Kim Elliott		DATE COLLECTED: 3/23/92	

FIELD I.D.	MEDIA	CONTAINER	PRESERVATIVE	ANALYSIS REQUIRED	
B-1, W-100	H_2O	VOA Vial	4° C.	BTEX	4289
B-2, W-200	"	"	"	"	4290
B-3, W-300	"	"	"	"	4291

RELINQUISHED BY: Kim E Elliott	DATE/TIME 3/25/92	RECEIVED BY: —	DATE/TIME
RELINQUISHED BY: —	DATE/TIME	RECEIVED BY (LAB): Sarah L Haymond	DATE/TIME 3-25-92 12:00
REMARKS:		EXPRESS UPS MAIL CXL GREY TAXI CAB	

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W.E.S. Wy' East Environmental Sciences, Inc.
Research, Laboratory & Consulting Services

May 7, 1992

Fujitani Hilts & Assoc.
2255 S.W. Canyon Rd.
Portland, OR 97201

PROJECT NAME/SITE: KAISER SUNNYSIDE

PROJECT #: F-2411-04

(LAB FILE: FUJI27.DOC)

EXTRACTION DATE: 5-6-1992

LAB ID/ FIELD ID:

4749/ H-2 S-1, SOIL

TPH-HCID:	GASOLINE:	Not detected or present below reporting limit
	DIESEL:	Detected
	HEAVY OIL:	Not detected or present below reporting limit

TPH 418.- Mod.: 101 mg/kg Total Petroleum Hydrocarbons

TPH-HCID Parameters:
1) If possible, identification is by comparison to reference chromatograms. If identification cannot be made by comparison, then compounds from C_6 to C_{10} are called "Gasoline"; from C_{11} to C_{28} are called "Diesel"; and C_{29} and beyond are called "Heavy Oil."
2) The reporting limit for Gasoline is 20 mg/kg.
3) The reporting limit for Diesel is 50 mg/kg.
4) The reporting limit for Heavy Oil is 50 mg/kg.

BTEX (602/8020) Parameters for Water
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is 3 ug/L (ppb).
2) The laboratory blank showed no BTEX.

BTEX (602/8020) Parameters for Soil
1) The detection limit for Benzene, Toluene, Ethylbenzene and each Xylene is .1 mg/kg.
2) The laboratory blank showed no BTEX.

TPH-G Parameters for Water
1) The reporting limit is .1 mg/L
2) Laboratory blank showed no gasoline.

TPH-G Parameters for Soil
1) The reporting limit is 10 mg/kg.
2) Laboratory blank showed no gasoline.

TPH-418.1 Mod. Parameters for Soil
1) The detection limit for TPH is 2 mg/kg.
2) The limit of quantitation is 6 mg/kg.
3) The laboratory blank showed no detected TPH.

EPA TPH-418.1 Parameters for Water
1) The detection limit for TPH is .1 mg/L.
2) The limit of quantitation is .3 mg/L.
3) The laboratory blank showed no detected TPH.

TPH-D Parameters for Soil
1) The reporting limit is 20 mg/kg.
2) The laboratory blank showed no diesel.

EPA 8015 Modified for Water
1) The detection limit for TPH is 200 ug/L.
2) The limit of quantitation is 400 ug/L.

EPA 8015 Modified for Soil
1) The detection limit for TPH is 5 mg/kg.
2) The limit of quantitation is 10 mg/kg.

CHAIN OF CUSTODY

WY' EAST ENVIRONMENTAL SCIENCES, INC.

1128 S. 13th,
Portland, OR 97205
(503) 223-2737 FAX: 223-6168

CHAIN OF CUSTODY

PROJECT # F-2411-04	PROJECT NAME: Kaiser Sunnyside	P.O. #	TODAY'S DATE: 5-8-92
COMPANY NAME: Fujitani - Hilts.		PHONE: 223-6147	
REPORT ATTENTION: Kim Elliott		FAX:	
SAMPLES COLLECTED BY: Richard Battlerder	DATE COLLECTED: 5-4-92	TIME COLLECTED: 4:00 pm.	

FIELD I.D.	MEDIA (SOIL, WATER...)	CONTAINER (VOA VIAL, 9 oz. JAR..)	PRESERVATIVE (4° C, HCL, ...)	ANALYSIS REQUIRED	LAB I.D.
H-2 S-1	Soil	Jar	4°C.	HCID +	4749

RELINQUISHED BY:	DATE/TIME	RECEIVED BY: —	DATE/TIME
RELINQUISHED BY: Richard Battlerder	DATE/TIME 5-6-92	RECEIVED BY LAB: Carol Haymond	DATE/TIME 5-6-92
REMARKS:		UPS FED-EX GREYHOUND MAIL	

WHITE COPY - WY-EAST ENVIRONMENTAL SCIENCES INC.

PINK COPY - CLIENTS COPY

ATTACHMENT 2

FOR WATER RESOURCES DEPARTMENT USE ONLY

Date Postmarked _____ WRD Receipt 37440

Date Hand-delivered _____ Date Fee Received _____

Watermaster Initials _____

CHECK NO. 2238

START CARD

NOTICE OF BEGINNING OF WELL CONSTRUCTION

(as required by ORS 537.762)

This form must be completed, signed by both the owner (or authorized agent) and constructor, and the original mailed or delivered to the Water Resources Department, 3850 Portland Road NE, Salem, OR 97310, no later than the day construction, alteration, conversion or abandonment work begins. **A $75 fee shall accompany all notices for new well construction or conversion of an existing hole not previously used as a water well** (make checks payable to the Water Resources Department). Notices meeting this requirement but received without the required fee will not be accepted as properly and timely filed. The Water Resources Commission has authority to impose civil penalties for failure to submit the required $75 fee with the start card and for failure to submit cards prior to beginning any construction, alteration, conversion or abandonment work.

Owner's name and mailing address KAISER PERMANENTE

10180 SE Sunnyside Rd

Clackamas OR 97015

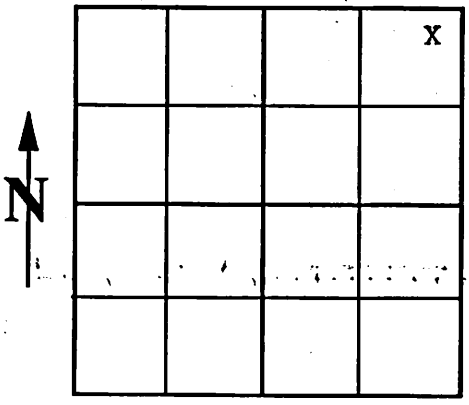
Check type of work: Fee Required ☒ New construction ☐ Conversion — No Fee Required ☐ Repair ☐ Deepening ☐ Recondition ☐ Abandonment

Proposed Commencement Date 2-27-92 Existing or Proposed Well Depth 15' Diameter 2"

Check Use: ☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation ☒ Monitoring ☐ Thermal ☐ Injection ☐ Other _____

Proposed Well Location: County Clackamas Owner's Well Id. No. MW 1

Township 2S (N or S) Range 2E (E or W) Section 4



1. NE 1/4 of NE 1/4 of above section
2. Street address of well location 10180 SE Sunnyside Rd Clackamas OR 97015
3. Tax lot number of well location 190
4. Attach map with location identified. (See reverse of this form for approved maps)
5. Show well location within 1/4, 1/4 of section grid at left.

We hereby certify that we have read the back of this form, and that to the best of our knowledge the information provided herein is accurate and the well is being properly located from septic tanks, septic drain fields and other hazards. (See #2 on back)

_____ Owner's signature

_____ Title _____ Date

_____ Home phone _____ Work phone

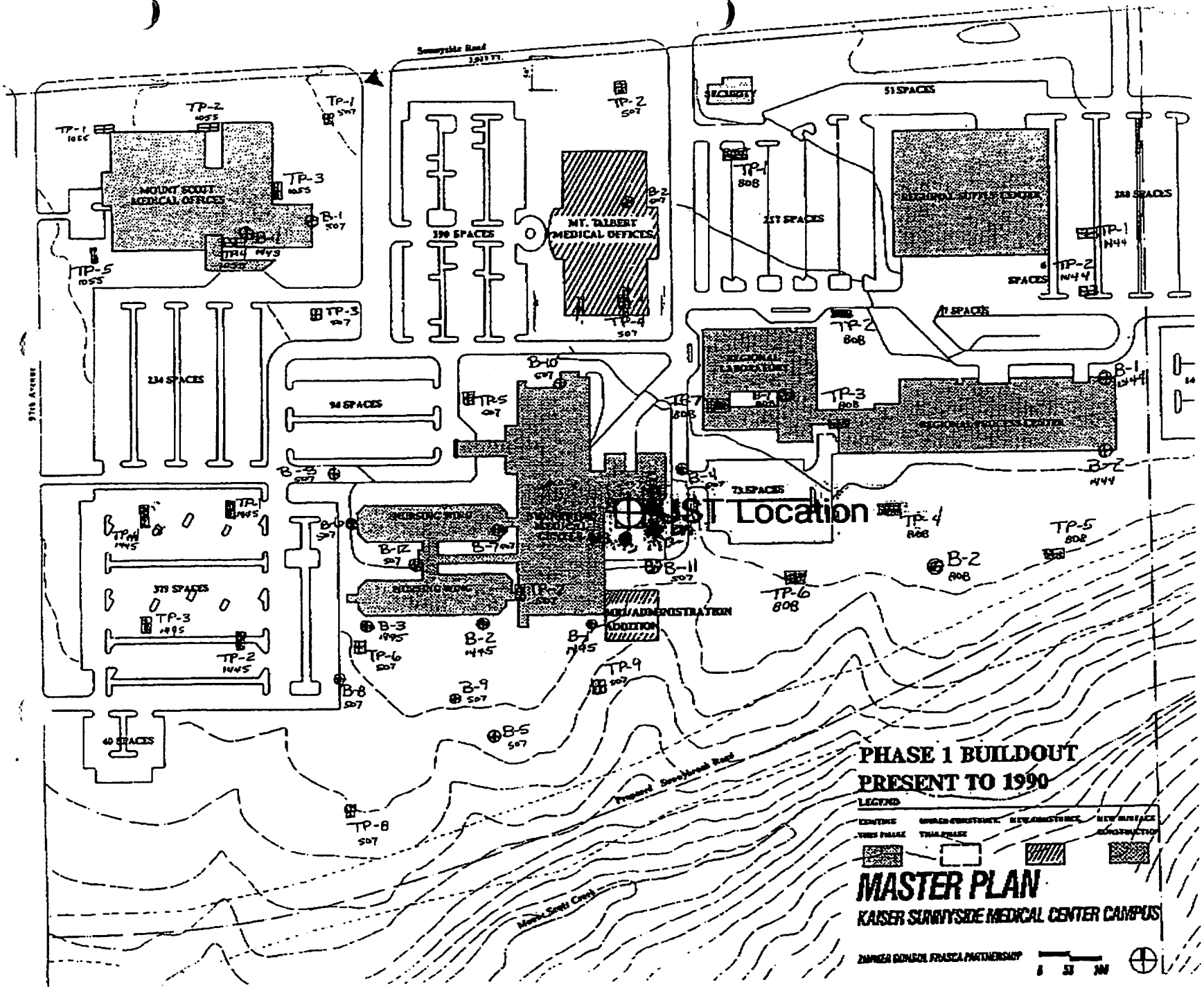
Greg VanDeHey Bonded Water Well Constructor

License No. 10017

Company Greg VanDeHey Soil Sampling

NOTE: This is not a water right application. The owner is responsible for obtaining a water right through the Water Resources Department, if required.

THIS COPY TO CUSTOMER


MOUNT SCOTT MEDICAL OFFICES
MT. TABERT MEDICAL OFFICES
REGIONAL LABORATORY
REGIONAL SUPPLY CENTER
REGIONAL FACILITY CENTER
NURSING WING
NURSING WING
ADMINISTRATION
234 SPACES
94 SPACES
390 SPACES
257 SPACES
51 SPACES
73 SPACES
373 SPACES
40 SPACES
338 SPACES
41 SPACES
6 SPACES
Present Sunnyhook Road
Mystic Sands Creek
PHASE 1 BUILDOUT
PRESENT TO 1990
LEGEND
MASTER PLAN
KAISER SUNNYSIDE MEDICAL CENTER CAMPUS
ZIMMER GUNSUL FRASCA PARTNERSHIP

STATE OF OREGON
MONITORING WELL REPORT
(as required by ORS 537.765 & OAR 690-240-095)

MAR 19 1992

Start Card # 37440

(1) OWNER/PROJECT:

WELL NO. MW 1

me KAISER PERMANENTE

ddress 10180 SE Sunnyside Rd

City Clackamas State OR Zip 97105

(2) TYPE OF WORK:

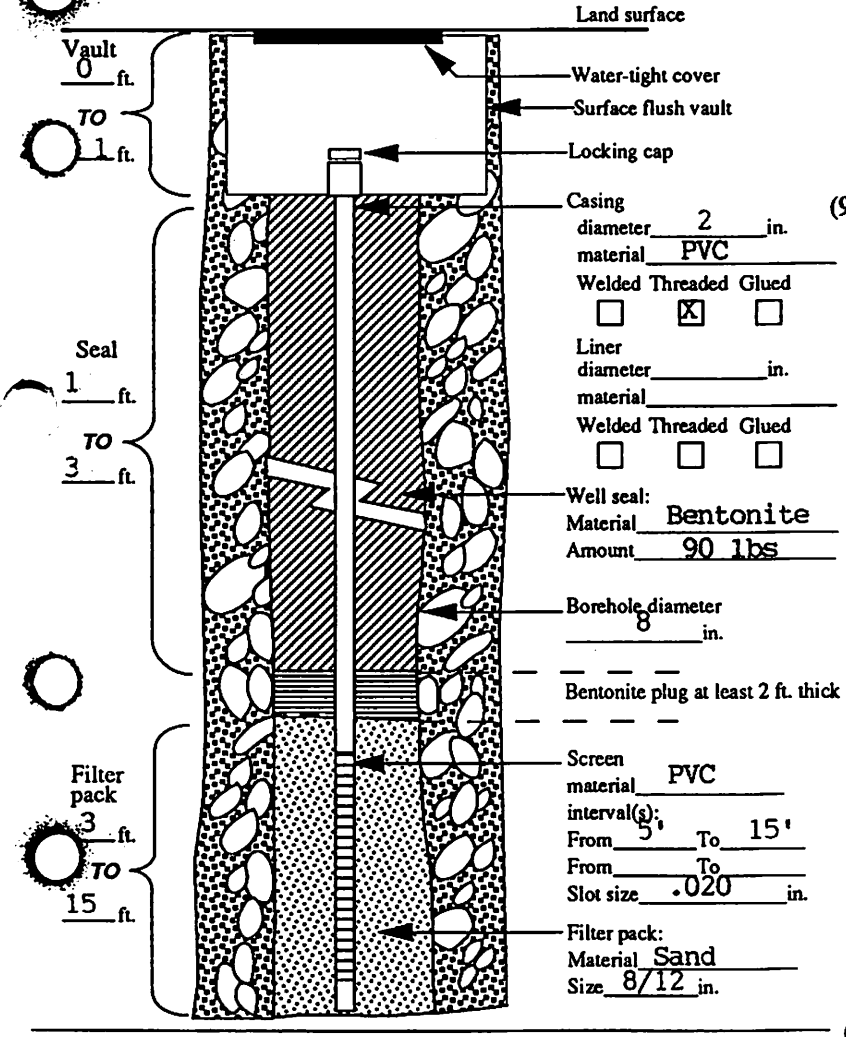
[X] New construction [ ] Repair [ ] Recondition
[ ] Conversion [ ] Deepening [ ] Abandonment

(3) DRILLING METHOD

[ ] Rotary Air [ ] Rotary Mud [ ] Cable
[X] Hollow Stem Auger [ ] Other

(4) BORE HOLE CONSTRUCTION

Special Standards Yes [ ] No [X] Depth of completed well 15 ft.



(5) WELL TEST:

[ ] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Permeability Yield GPM

Conductivity PH

Temperature of water 50 est °F/C Depth artesian flow found ft.

Was water analysis done? [ ] Yes [ ] No

By whom?

Depth of strata to be analyzed. From ft. to ft.

Remarks:

Name of supervising Geologist/Engineer

(6) LOCATION OF WELL By legal description

Well Location: County Clackamas

Township 2S (N or S) Range 2E (E or W) Section 4

1. NE 1/4 of NE 1/4 of above section.
2. Street address of well location 10180 SE Sunnyside Rd Clackamas OR 97015
3. Tax lot number of well location 190
4. ATTACH MAP WITH LOCATION IDENTIFIED.

(7) STATIC WATER LEVEL:

6 Ft. below land surface. Date 2-27-92

Artesian Pressure lb/sq. in. Date

(8) WATER BEARING ZONES:

Depth at which water was first found 6 ft.

From	To	Est. Flow Rate	SWL

(9) WELL LOG:

Ground elevation

Material	From	To	SWL
Asphalt	0	3"	
Base Rock	3"	6"	
Sandy silt	6"	15'	6'

Date started 2-27-92 Completed 2-27-92

(unbonded) Monitor Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.

MWC Number 10041

Signed Gene VanDamme Date

(bonded) Monitor Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

MWC Number 10017

Signed Doug Van De Hey Date 3-10-92