Appendix O

Well Susceptibility Forms

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GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98027

WELL NO. 1

GROUND WATER CONTAMINATION

Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: **System Information**

Well owner/manager : SAMMAMISH PLATEAU WATER + SEWER DISTRICT

Water system name : SAMMAMISH PLATEAU WATER + SEWER DISTRICT

County: KING

Water system number: 409009 Source number: S01

Well depth: 154 (ft.) (*From WFI form*)

Source name: WELL 1

WA well identification tag number: ___ ___ ___-___ ___ ___

✓ well not tagged

Number of connections: 9000 Population served: 26,000

Township: 24 N Range: 06E

Section: 10 1/4 1/4 Section: SW/NE

Latitude/longitude (if available): ________ / ________

How was lat./long. determined?

_____ global positioning device _____ survey _____ topographic map
_____ other: ________

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: **Well Construction and Source Information**

1) Date well originally constructed: 9 / 8 / 54 month/day/year

last reconstruction: 3 / 13 / 84 month/day/year

_____ information unavailable

5/1954 3/1984

2) Well driller: H.O. MEYER CO. ARMSTRONG DRILL.

RT. 4, BOX 17 10715 66TH AVE E

KIRKLAND, WA. PUYALLUP, WA.

___ well driller unknown

3) Type of well:

[✓ Drilled:] ___ rotary ___ bored [✓ cable (percussion)] ___ Dug

___ Other: ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: ________

Additional comments: ____________________

4) Well report available? [✓ YES] (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 500 (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ____________________

___ Pumping rate unknown

6) Is this source treated? NO

If so, what type of treatment:

___ disinfection ___ filtration ___ carbon filter ___ air stripper ___ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: ___ YES ___ NO N/A

Residual level: ________ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20-50 ft __ 50-100 ft [✓ 100-200 ft] __ > 200 ft

__ information unavailable (*'<' means less than; '>' means greater than*)

2) Depth to ground water (static water level):

__ < 20 ft __ 20-50 ft __ 50-100 ft [✓ > 100 ft]

__ flowing well/spring (artesian)

How was water level determined?

[✓ well log] __ other: ____________________

__ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO n/A

5) Wellhead elevation (height above mean sea level): 465 (ft)

How was elevation determined? __ topographic map __ Drilling/Well Log __ altimeter

__ other: CONSTRUCTION / TESTING REPORT

__ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

[✓ evidence of a confining layer in well log]

__ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the ~~top of the open interval~~? __ YES [✓ NO] bottom of the lowest confining layer.

__ information unavailable

7) Sanitary setback:

__ < 100 ft* X 100–120 ft __ 120–200 ft __ > 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

X wellhead enclosed in a wellhouse

X controlled access (describe): Fenced + Gated

__ other uses for wellhouse (describe):

__ no wellhead control

9) Surface seal:

__ 18 ft

__ < 18 ft (no Department of Ecology approval) ('<' *means less than*)

__ < 18 ft (Approved by Ecology, include documentation) ('<' *means less than*)

X > 18 ft ('>' *means greater than*)

__ depth of seal unknown

__ no surface seal

10) Annual rainfall (inches per year):

__ < 10 in/yr __ 10-25 in/yr X > 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 81,388,000 (gallons)

How was this determined?

[✓ meter]

___ estimated: ___ pumping rate (____________________)

___ pump capacity (____________________)

___ other: ______________________________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 980 (ft)

1 year ground water travel time : 1390 (ft)

5 year ground water travel time: 3110 (ft)

10 year ground water travel time: 4400 (ft)

These are the CFR's per this packet. The District has additional WHPA Captur Zone information for this well, which is attached. The followin questions are answered for the capture zones identified on the WHP map.

Information available on length of screened/open interval?

[✓ YES] ___ NO

Length of screened/open interval: 10 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES [✓ NO] (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES [✓ NO] (mark and identify on map).

Comments: ______________________________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application		✓	✓	
stormwater injection wells	no	No	No	
other injection wells *see comments	No	No	No	
abandoned ground water well				✓
landfills, dumps, disposal areas				✓
known hazardous materials clean-up site				✓
water system(s) with known quality problems				✓
population density > 1 house/acre	no	yes	yes	
residences commonly have septic tanks	✓	✓	✓	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

*Well 1R has been used as an injection well as part of a groundwater recharge project, with drinking quality water.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL	___	X
< 2 mg/liter nitrate	X	___
2-5 mg/liter nitrate	___	X
> 5 mg/liter nitrate	___	X

___ Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL	___	X
VOCs detected at least once	___	X
VOCs never detected	X	___

___ VOC sampling records unavailable

C. EDB/DBCP: (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	YES	NO
EDB/DBCP detected below MCL at least once	___	___
EDB/DBCP detected above MCL at least once	___	___
EDB/DBCP never detected	___	___

___ EDB/DBCP tests required but not yet completed

X EDB/DBCP tests not required

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)	___	___

___ Other SOC tests performed but none detected (list test methods in comments

X Other SOC tests not performed

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________________

E. Bacterial contamination:	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___	X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___	X

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

X YES ___ NO

Describe with references to map produced in Part IV:
THERE ARE STREAMS FLOWING INTO AND OUT OF LAUGHING JACOBS LAKE, AND THE LAKE ITSELF IS IN THE FIVE YEAR BOUNDARY. THE TEN YEAR BOUNDARY, INCLUDES A PORTION OF YELLOW LAKE. THERE IS A STEEP RAVINE ASSOCIATED WITH THE SOUTHWESTERN EDGE OF THE FIVE AND TEN YEAR BOUNDARIES

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES X NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

X YES ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES X NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? No

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	__	X	__
6 month–1 year travel time	__	X	__
1–5 year travel time	__	X	__
5–10 year travel time	__	X	__

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time *	__	X	__
1–5 year travel time	__	X	__
5–10 year travel time	__	X	__

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

* Well 1R has been used as an injection well as part of a groundwater recharge project, with drinking quality water.

Suggestions and Comments

Did you attend one of the susceptibility workshops? [✓ YES] NO

Did you find it useful? [✓ YES] NO

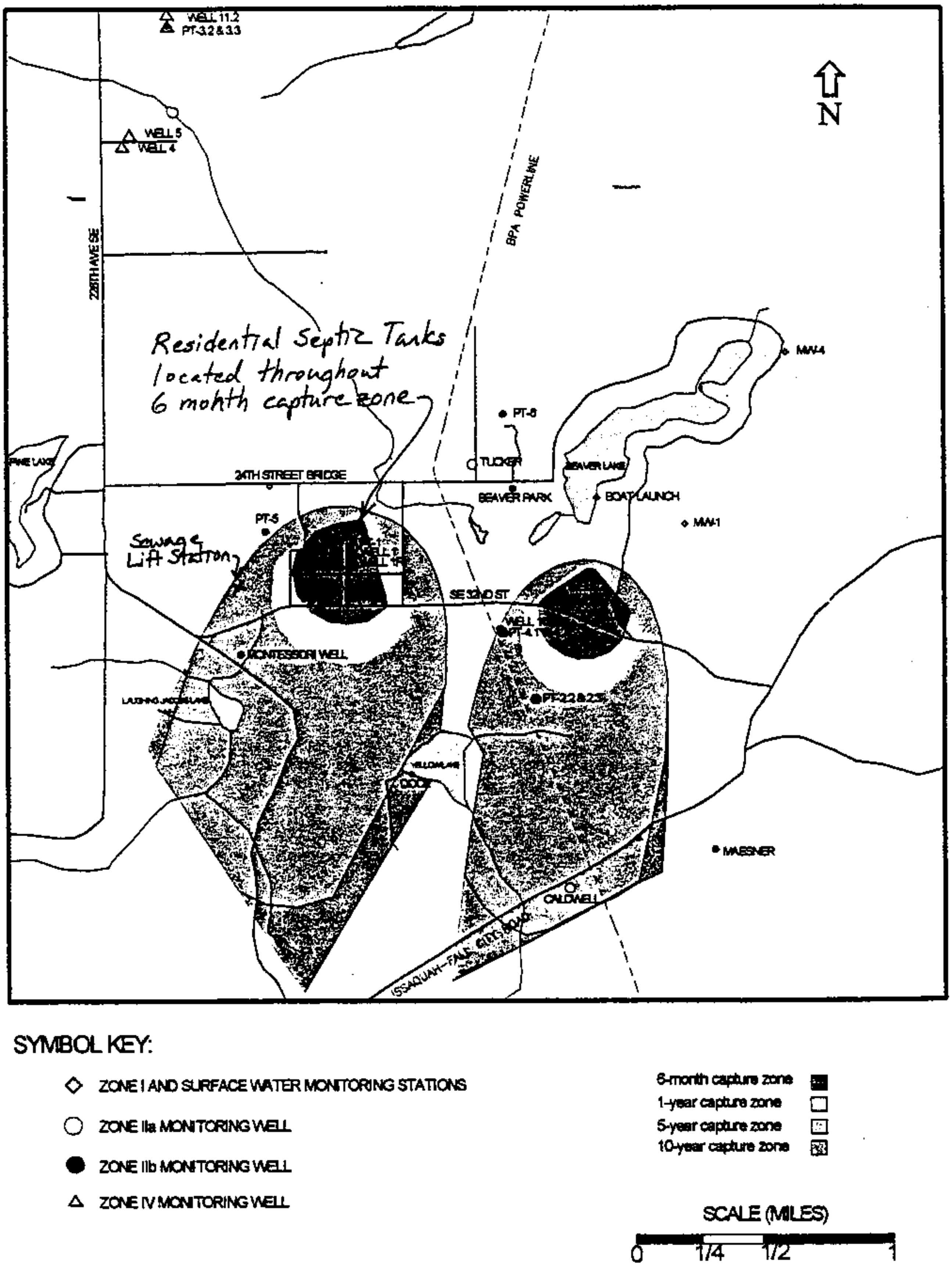
Did you seek outside assistance to complete the assessment? [✓ YES] NO

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

Be more specific on the CFR vs. WHPA travel - to indicate that WHPA information can be used, if available.

Well 1

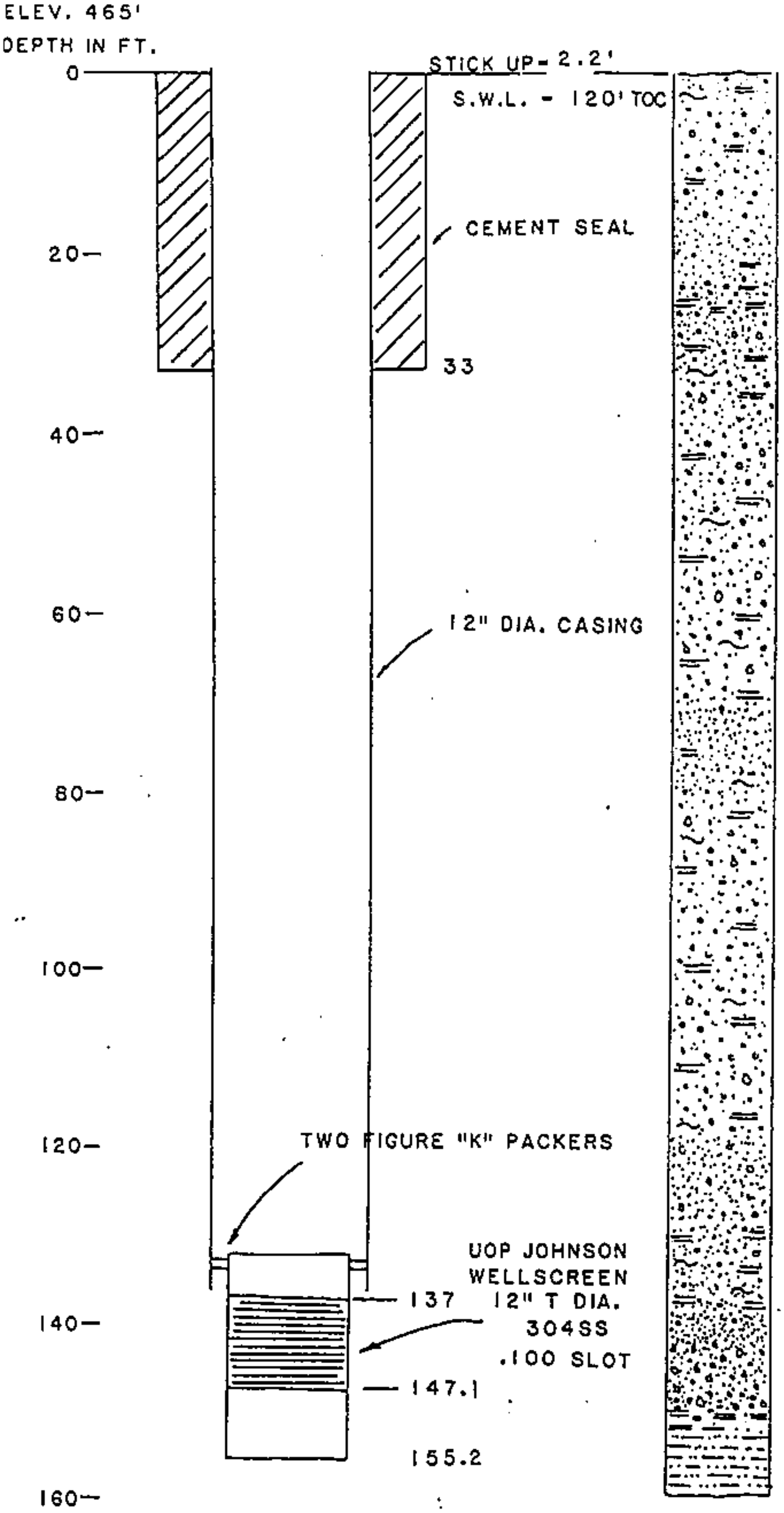
SAMMAMISH PLATEAU WELLS 1R & 2
WHPA CAPTURE ZONES



Residential Septic Tanks located throughout 6 month capture zone

Sewage Lift Station

KING CC .TY WATER DISTRICT #82 W _ 1-R



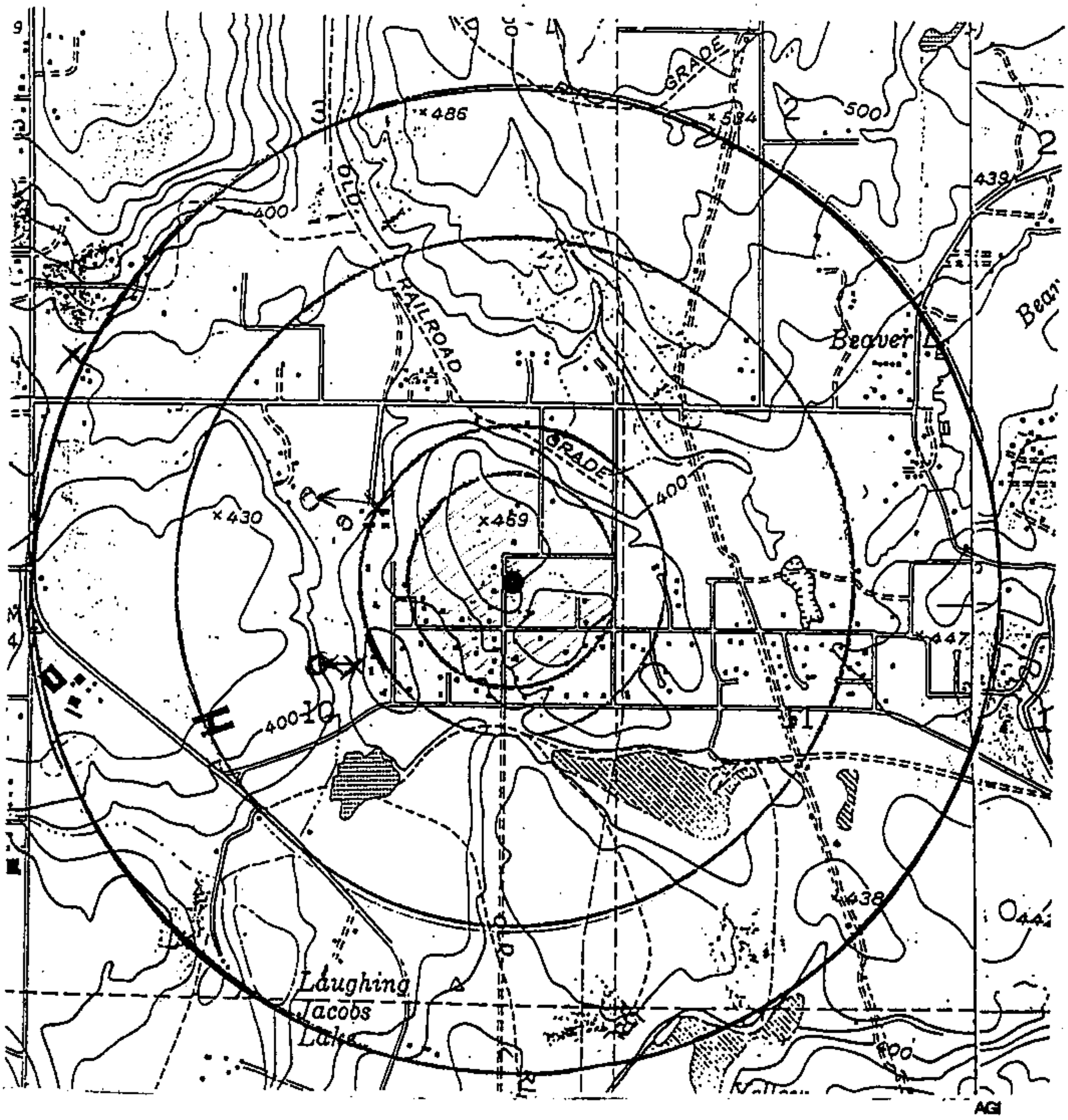
0-3 TOPSOIL, BROWN SAND, GRAVEL, COBBLES, CLAY, SILT
3-17 GRAVEL, BROWN SAND, CLAY
17-23 BROWN SAND, GRAVEL, CLAY
23-25 GRAVEL, SAND, CLAY
25-27 GRAVEL, SAND, CLAY LAYERS
27-70 GRAVEL, SAND, COBBLES, GREY CLAY MINOR SILT
70-80 SAND, GRAVEL, GREY CLAY, MINOR SILT
80-118 PARTIALLY CEMENTED GRAVEL & SAND, GREY CLAY, SOME COBBLES, MINOR SILT
118-128 SAND, GRAVEL, COBBLES, CLEAN WATER BEARING
128-138 SAND, GRAVEL, COBBLES, CLAY, SILT, DIRTY
138-143 SAND, GRAVEL, MINOR CLAY, SILT, CLEAN
143-149 GRAVEL, SAND, COBBLES, CLEAN
149-150 GRAVEL, SAND, BLUE CLAY LAYERS
150-159 BLUE CLAY, SILT, SAND

T.D. 159'

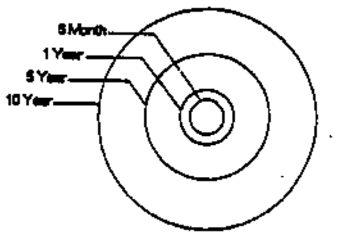
J.R.CARR/ASSOC.

Not Used - Provided FYI only. See WHPA Zones.

Sammamish Plateau Water & Sewer District
Well 1R



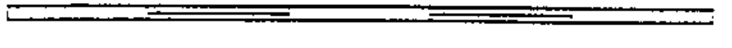
LEGEND



X - SEWER LIFT STATION

▨ - SEPTIC TANKS

SCALE (FT)



WELL 1

DEPARTMENT OF CONSERVATION AND DEVELOPMENT APPL. #3697

WELL LOG No....../......

Date June 8, 19 64

Record by Driller

Source Driller's Record

Location: State of WASHINGTON

County King

Area

Map

NW¼SE¼ NE ¼ sec. 10 T. 24 N., R. 6 E. E./W.

Diagram of Section

Drilling Co. Ho. O. Meyer Drilling Co.

Address Route 4, Box 17, Kirkland, Washington

Method of Drilling ...... Date July 8, 19 54

Owner Harold Hestnes

Address 603 Jones Bldg., Seattle 1, Washington

Land surface, datum ...... ft. above/below

24/6E-10H
File number

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Correlation	Material	Thickness (feet)	Depth (feet)
	Community domestic supply		
	Top soil	3	3
	Yellow hardpan	13	16
	Grey hardpan	8	24
	Gravel & sand, some sed.water	4	28
	Hardpan & coarse gravel	12	40
	Hardpan 50% solids	15	55
	Hardpan with course gravel and boulders	5	60
	Yellow clay and sand	3	63
	Hardpan and sm. gravel	7	70
	Gravel, sand with some sed. some water	5	75
	Med gravel, sand, very little Sediment	5	80
	gravel & sand, hardpan	5	85
	Dry gravel & sand	5	90
	Coarse sand & med. gravel	10	100
	Coarse sand & coarse gravel	2	102
	Very coarse gravel, up to 6 and 6" dia.	2	104
	Some sed. in coarse gravel and sand	7	111
	Loose coarse gravel & sand	6	117
	Top of water 117'		
	Loose sand & med. coarse gr.	3	120
	Med. coarse sand & water	10	130
	Gravel up to 5" dia. med. coarse sand	6	136
	Test bailed at 50 gpm at 136'		
	Coarse gravel & sand; some rocks had to be broken	4	140
	Very coarse gravel, med. sand	2	142
	Med. grade sand & gravel	5	147
	Thin layer hardpan, med. sand and gravel	3	150
	Blue clay and silt	4	154
	Casing: 12" from 0 to 138'		
	Screened from 138 to 150'		
	SWL: 111'6"		
	Yields 320 gpm with 8' DD after 12 hours		
	400 gpm with 11' DD after 12 hours		
	650 gpm with 16' DD after 12 hours		
	August 5 & 6, 1954		

Sheet ...... of ...... sheets

S. F. No. 7419—OS—6-61—2M.

Sec. 11-16.

J.R. CARR / ASSOCIATES
CONSULTING HYDROGEOLOGISTS

KING COUNTY WATER DISTRICT #82
WELL #1 - REPLACEMENT
CONSTRUCTION AND TESTING

June 1, 1984

SUMMARY

- The decision to replace Well 1 was based on inefficiency which when coupled with a declining water level during summer months reduced its yield to about 200 gpm.
- Well 1 - Replacement (1-R) is capable of sustaining a safe yield of 425 gpm with a specific capacity Q/S = 50 gpm/ft - drawdown.
- Water quality from Well 1-R is excellent.
- Well 1-R has a 50% greater specific capacity than Well 1.

(206) 851-5562 P.O. BOX 1158. GIG HARBOR. WA. 98335

I CONSTRUCTION AND TESTING

Well 1-R is located approximately 15 ft. southeast of Well 1 in the SE1/4 of the NE1/4 of Section 10 T24N R6E.

The contract for drilling was awarded to the low bidder, Armstrong Drilling of Puyallup, Washington. All drilling, construction and testing was done with a 72 Speed Star cable tool drill rig. Drilling for Well 1-R began February 23, 1984 and continued to a depth of 159 ft. with 12-inch diameter casing. See Figure 1 for geologic log.

The aquifer, penetrated from 118-149 ft. consists of sand, gravel, and cobbles with minor amounts of clay and silt from 128-138 ft. After sieve analysis of the aquifer samples, screen design was prepared and on March 8 the screen assembly was lowered into the well. Design of the screen assembly is shown in Figure 1. The 12-inch casing was extracted to 137 ft. to expose the screen. After pulling the casing the top of the packer assembly was measured at a depth of 132.1 ft. below ground surface, placing the screened interval at 137-147.1 ft. below ground surface.

A cement surface seal was placed into the annulus between the 16-inch diameter surface casing and the 12-inch diameter pipe, providing a 4 inch annular seal from ground surface to a depth of 33 ft. Initial static water level was 117.8 ft. below ground surface.

Development, using a surge block and bailer, initially produced several feet of sand in the bottom of the well, which after 8 hours development was reduced to a virtually sand-free condition. After development the static water level was 117.8 ft. below ground surface. On March 13, 1984, a 5-inch diameter line-shaft turbine test pump was installed with the intake at 136 ft. Discharge was to the east into a swampy lowland area. Preliminary testing resulted in the flow rates and corresponding capacities shown below:

$Q = 300$ gpm $Q/S = 71$ gpm/ft-drawdown
$Q = 400$ gpm $Q/S = 67$ gpm/ft-drawdown
$Q = 500$ gpm $Q/S = 59$ gpm/ft-drawdown
$Q = 500$ gpm $Q/S = 53$ gpm/ft-drawdown
$Q = 747$ gpm $Q/S = 47$ gpm/ft-drawdown

These values are approximate as stabilization of the water level was not achieved for each pumping rate. Initial backwashing produced approximately 10 grains/liter of sand.

On March 14, a 6 hour test was run at a flow rate of $Q = 610$ gpm. The original Well 1, 16 ft. to the northwest, was used as an observation well during testing. Results of the 6-hour test are shown in Figures 2 and 3. After 6 hours the drawdown in the pumping well was 12.2 ft. for a specific capacity $Q/S = 50$ gpm/ft-drawdown. Drawdown is plotted for the pumping and observation wells in Figure 2. As indicated, aquifer transmissivities of $T = 375{,}000$ gpd/ft. and $T = 460{,}000$ gpd/ft. were calculated for the pumping and observation wells respectively. Recovery is plotted for the observation well in Figure 3. This data indicates an aquifer transmissivity of $T = 413{,}000$ gpd/ft. Using this value a storage coefficient of $S = 0.0003$ was calculated indicating confined aquifer conditions.

II WATER QUALITY

Water quality data for Well 1-R is presented on page 10. Results of the analysis by W.M.A. Laboratory meet all D.S.H.S. standards. As reported, the nitrate concentration $N = 1.6$ mg/L is higher than previously reported values for Well 1 of 0.79 mg/L (7/25/83) and 0.3 mg/L (8/3/76). A water sample should be analyzed for nitrate in early August 1984 to determine if the nitrate concentration is seasonally variable. Quarterly analysis for nitrate of the water should be done to evaluate the water quality trend.

III SAFE YIELD

SAFE YIELD = SAFE DRAWDOWN x SPECIFIC CAPACITY

Maximum drawdown level	137 ft.	(Top of Screen)
Static water level	118 ft.	(Ground surface 3/14/84)
Total Available Drawdown	19 ft.	

Less Allowances For:

Seasonal fluctuations	6 ft.	(Estimated from Figure 4)
Total	6 ft.	

Useable Drawdown = 19 - 6 = 13 ft.

Available Yield = Useable Drawdown x Specific Capacity
= 13 ft. x 50 gpm/ft-drawdown
= **650 gpm**

A safety factor of 50% or more is desirable as it allows for unforeseen or unpredictable fluctuations in the water table and promotes longer well life.

Using a Safe Drawdown = 8.5 ft., gives a Safety Factor =

$$\frac{\text{useable drawdown - safe drawdown}}{\text{safe drawdown}}$$

$$= \frac{13\text{ ft.} - 8.5\text{ ft.}}{8.5\text{ ft.}}$$

$$= 53\%$$

SAFE YIELD = SAFE DRAWDOWN x SPECIFIC CAPACITY

SAFE YIELD = 8.5 ft. x 50 gpm/ft-drawdown
= **425 gpm**

IV RECOMMENDATIONS

- Well 1-R should be pumped at a maximum rate of 425 gpm, with the pump bowls at 137 ft. below ground surface, and 8-inch suction pipe to a depth of 151 ft.
- Water levels and corresponding production rates should be monitored closely with special attention in July and August as higher production rates lower the water level.
- Annual withdrawal from this aquifer should be reduced, with planned reductions during late summer and fall.
- Water quality should be monitored quarterly to establish seasonal fluctuations of nitrate and other indicators of potential contamination.

Prepared by:

J.R. CARR/ASSOCIATES

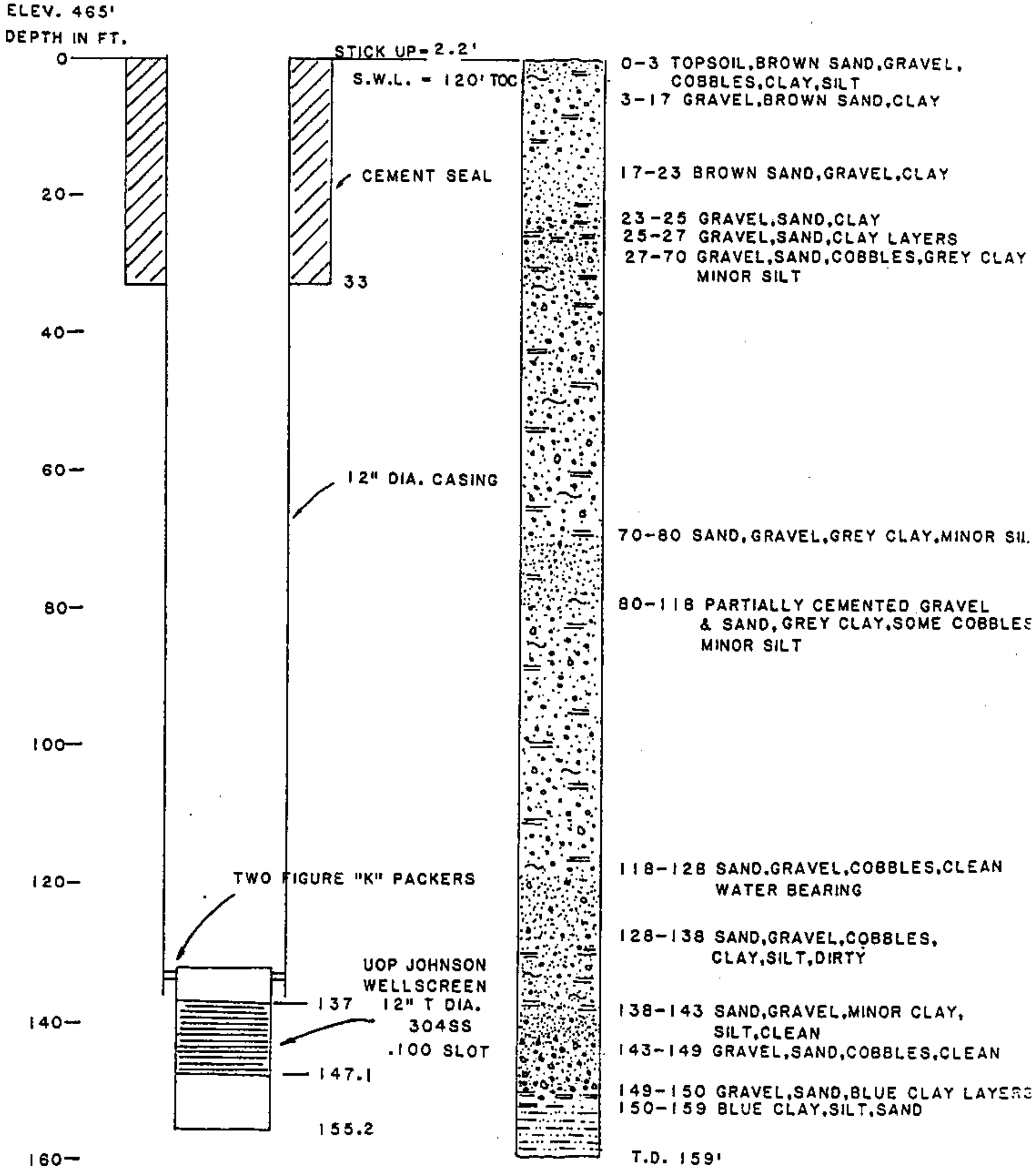
T. L. Mogg

Terry L. Mogg

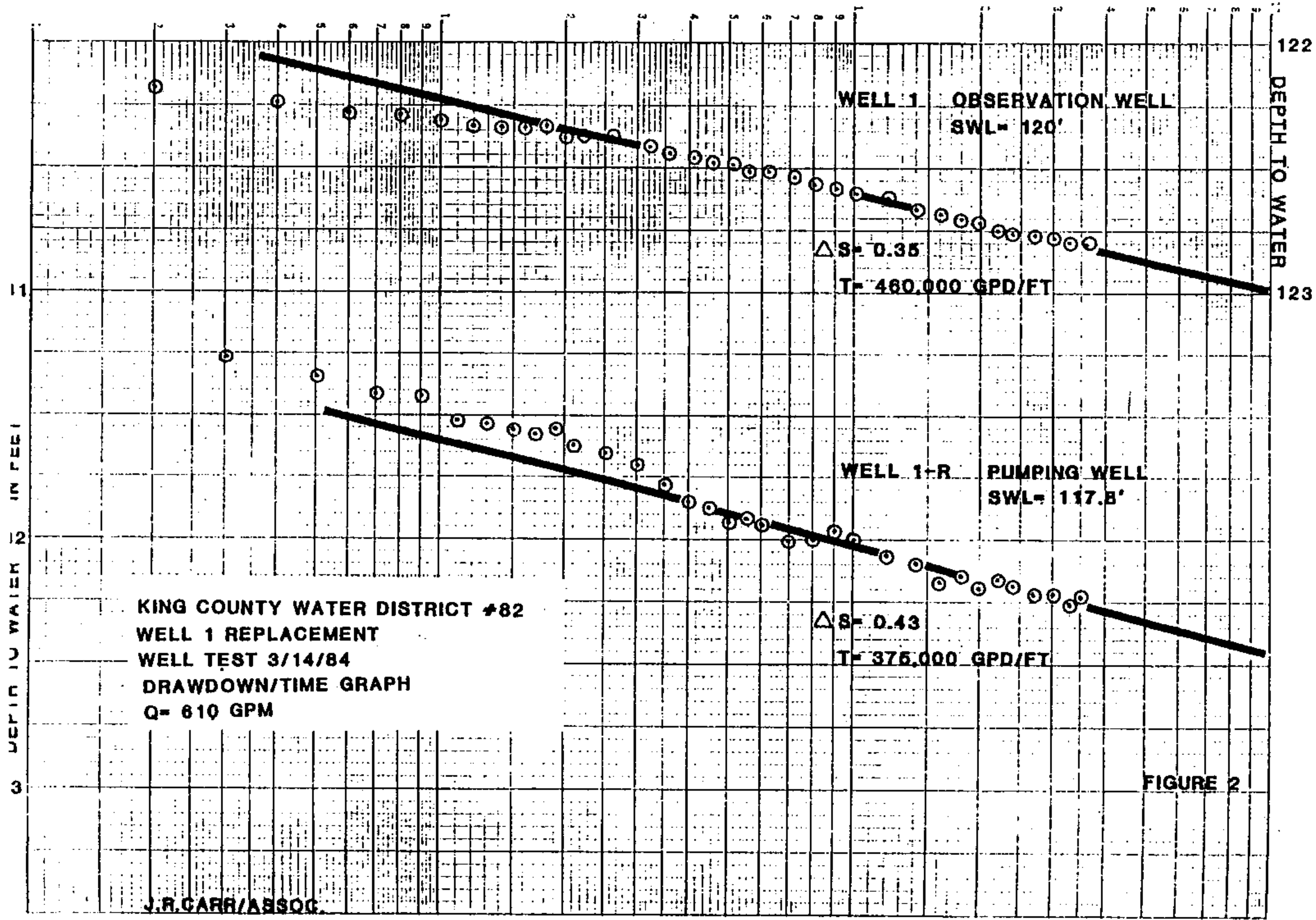
J. R. Carr

TLM/JRC/vg

KING COUNTY WATER DISTRICT #82 WELL 1-R FIGURE 1



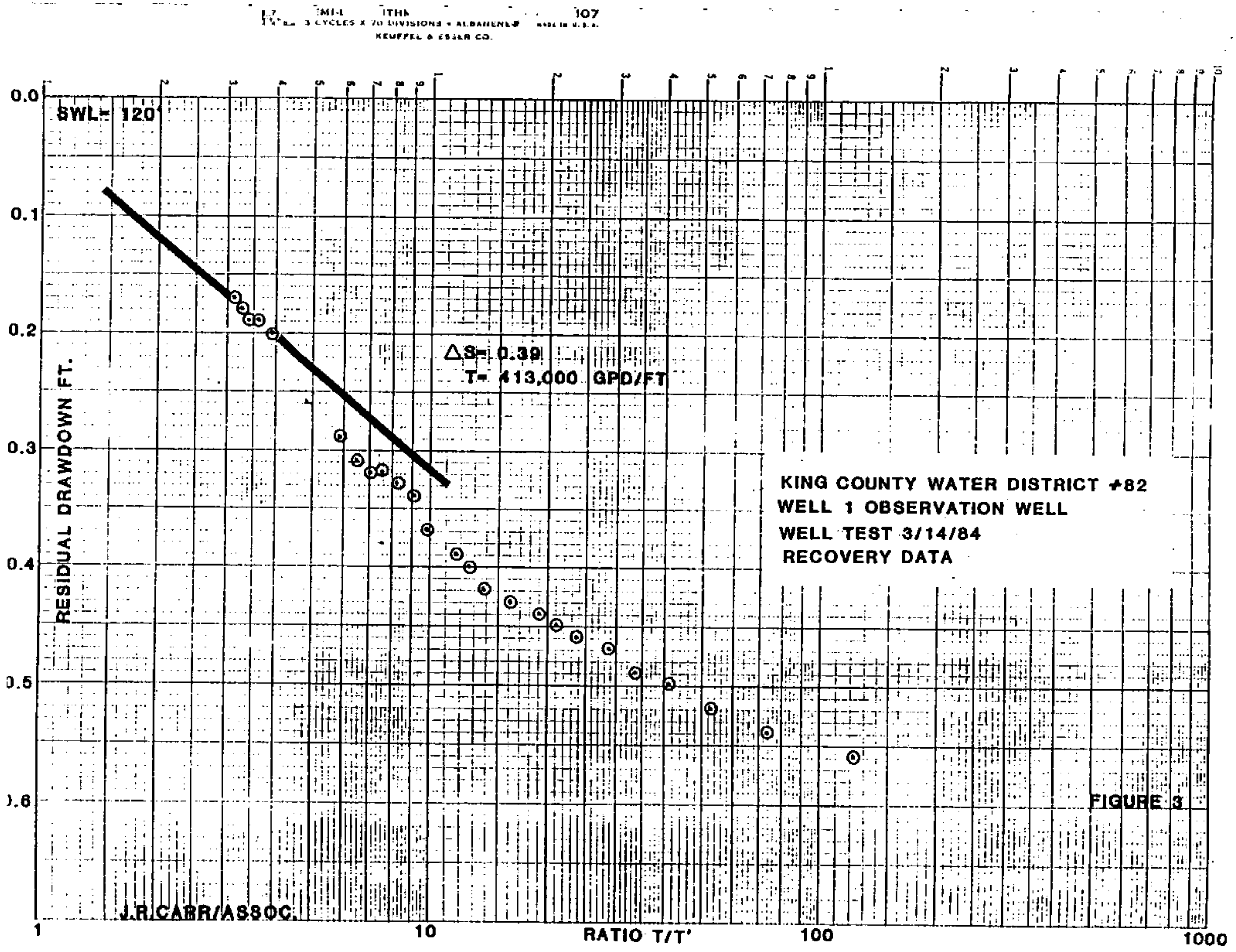
J.R.CARR/ASSOC.



KING COUNTY WATER DISTRICT #82
WELL 1 REPLACEMENT
WELL TEST 3/14/84
DRAWDOWN/TIME GRAPH
Q= 610 GPM

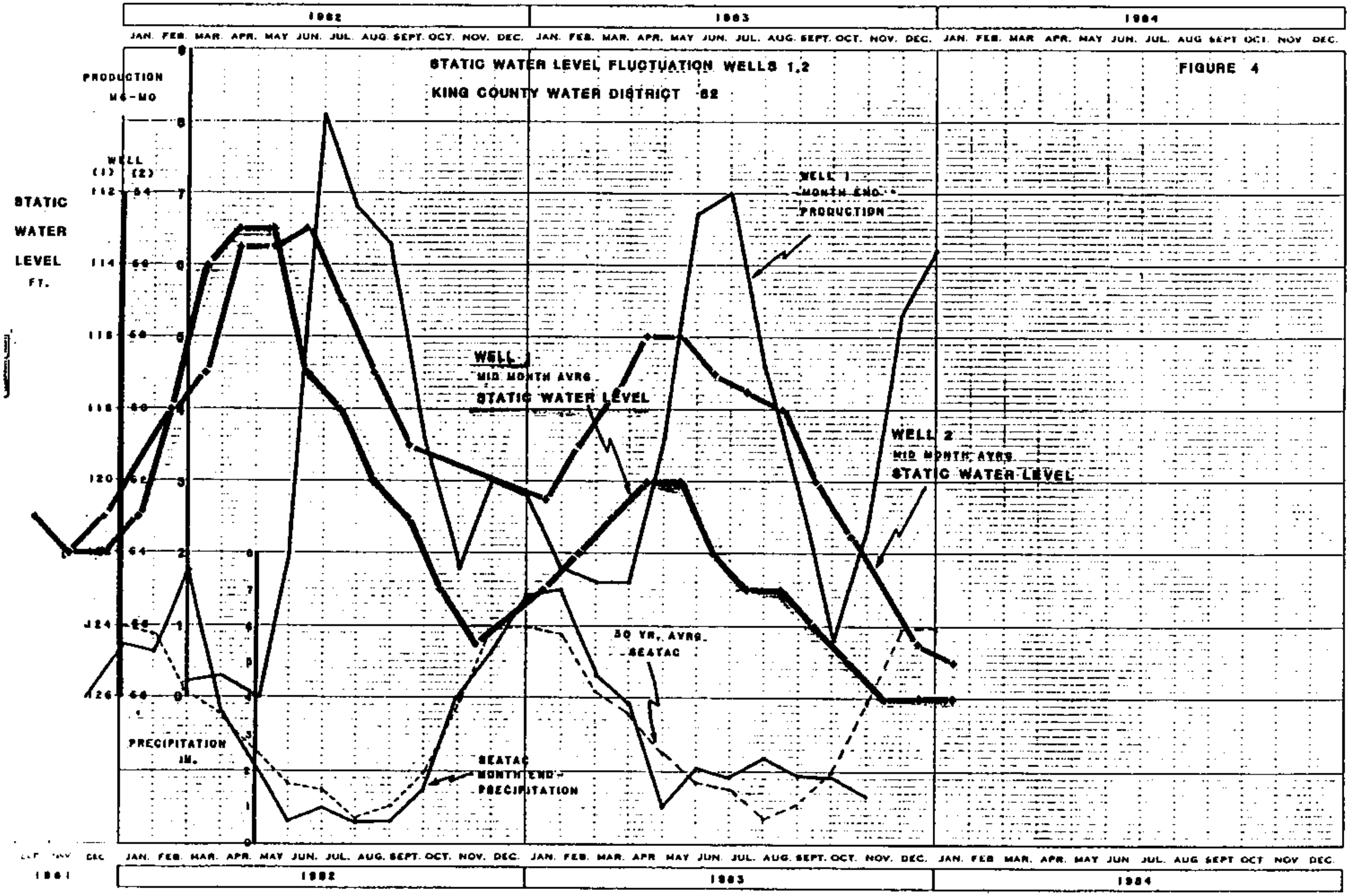
J.R.CARR/ASSOC.

FIGURE 2



KING COUNTY WATER DISTRICT #82
WELL 1 OBSERVATION WELL
WELL TEST 3/14/84
RECOVERY DATA

FIGURE 3



STATIC WATER LEVEL FLUCTUATION WELLS 1,2

KING COUNTY WATER DISTRICT 82

FIGURE 4

J.R. CARR/ASSOC.

ase Print Plainly
E HEAVY PENCIL
NOT WRITE IN SHADED AREAS

LABORATORY NAME
WMA Lab - Tacoma

SEE BACK FOR INSTRUCTIONS

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

NUMBER	CO.	CITY	DATE RECEIVED	DATE COLLECTED	COLLECTED BY:
403445	17		03/15/84	03/14/84	Doug Teal Telephone: 306- 851-5562

this a follow up of a previous out of compliance sample? Yes ☐ No ☐

If yes, what was the laboratory number of the previous sample? — — — — — — —

TEM I.D. NO.	SYSTEM NAME:	SYSTEM CLASS (circle one)	COUNTY
	KCWD 82	[✓ 1] 2 3 4	King

SAMPLE LOCATION: 1 -

THIS SAMPLE TAKEN BEFORE TREATMENT ☑ U AFTER ☐ T
U

IF TAKEN *AFTER* TREATMENT WAS IT __FILTERED __FLUORIDATED __CHLORINATED __WATER SOFTENER: TYPE USED ____

SOURCE TYPE: 3
__ 1. SURFACE ✓ 3. WELL
__ 2. SPRING __ 4. PURCHASE

SOURCE NO. — —

IF SOURCE IS LAKE OR STREAM, ENTER NAME

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (ADDRESS)

DATE OF FINAL REPORT 03/20/84

REMARKS:
Well 1-R
1330
6 hr test at 600 GPM

SEND REPORT TO: (PRINT FULL NAME & ADDRESS)
J.R. Carr / Associates
Name
P.O. Box 1158
Street
Gig Harbor, WA. 98335
CITY ZIP CODE
Telephone: (206) 851-5562
Area Code

LABORATORY REPORT
(DO NOT WRITE BELOW THIS LINE)

TESTS		*MCL	Less Than <	RESULTS		Compliance YES	Compliance NO	Chemist Initials	Laboratory Number (If different than above)
Arsenic	As	0.05 P		0.002	mg/l	✓		JTV	
Barium	Ba	1.0 P		00.03	mg/l	✓		JTV	
Cadmium	Cd	0.01 P		0.001	mg/l	✓		JTV	
Chromium	Cr	0.05 P		0.001	mg/l	✓		JTV	
Iron	Fe	0.3		00.03	mg/l	✓		JTV	
Lead	Pb	0.05 P		0.001	mg/l	✓		JTV	
Manganese	Mn	0.05		0.012	mg/l	✓		JTV	
Mercury	Hg	0.002 P		.0005	mg/l	✓		DLA	
Selenium	Se	0.01 P		0.001	mg/l	✓		JTV	
Silver	Ag	0.05 P		0.001	mg/l	✓		JTV	
Sodium	Na			0009	mg/l	✓		JTV	
Hardness				0062	mg/l As CaCO3	✓		DLA	
Conductivity		700		0118	Micromhos/cm 25° C	✓		DLA	
Turbidity		1.0 P		000.5	NTU	✓		DLA	
Color		15.0		001.	Color Units	✓		DLA	
Fluoride	F	2.0 P		000.1	mg/l	✓		DLA	
Nitrate	as N	10.0 P		001.6	mg/l	✓		DLA	
Chloride	Cl	250		0001	mg/l	✓		DLA	PAGE 10
Sulfate	SO_4	250			mg/l				

*MCL is the Maximum Contaminant Level Allowed

Laboratory Supervisor

Washington State Department of Health
Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read instructions on back before completing

FILE
DATE RECEIVED 01/13/94
FEB 1 1994
Ans'd......
UPDATED
DATE UPDATED: 01/11/94

1. SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
419003	KING	A	COMM	9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER
STREET ADDRESS: 1510 228TH AVE SE.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

4. OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER & OWNER NO.: 3007
STREET ADDRESS: 1510 228TH AVE. S.E.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

5. SYSTEM CONTACT PERSON: RONALD E. LITTLE - MANAGER TITLE:
DAY TELEPHONE: 206-392-6256 EVENING TELEPHONE:

6. OWNERSHIP (CHECK ONE ONLY)
- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☒ LOCAL GOVERNMENT (COUNTY/CITY/PUD/WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)
- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- ☐ LODGING / FOOD SERVICE
- ☐ SCHOOL / DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY: TITLE:
DAY TELEPHONE: DATE:

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI:

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 8844
10. NUMBER ACTIVE RESIDENTIAL POPULATION: 25,647

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS: 0

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH: MAKE ENTRY FOR EACH MONTH

JAN: MAY: AUG: NOV: MAR: SEP:

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 8,844
15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 12,850,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME (LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX/NAME EXAMPLE: 77050Y/SEATTLE)	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL.	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION	VOC EVALUATION
S01	WELL 1	X								X				X					154	500	SW/NE	10	24N	06E		
S02	WELL 2	X									X			X					132	360	NW/SE	11	24N	06E		
S03	WELL # 5	X								X					X				716	450	NW/SW	34	25N	06E		
S04	WELL #4	X								X					X				714	625	SW/NW	34	25N	06F		
S05	WELL 6	X									X				X				365	600	NE/SE	32	25N	06E		
S06	WELL #7	X									X			X					150	2,000	SE/SE	21	24N	06E		
S07	WELL #9	X								Y				X					150	3,500	SE/SE	21	24N	06E		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	33	30

NO. APPROVED SERVICES (PER PLANS): 0
DATE OF LAST SANITARY SURVEY: 0000 BY DOH ☐ LHD ☐
SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? ☒ YES ☐ NO
GW MGMT AREA? ☐ YES ☐ NO
FOR LHD USE ONLY
EFFECTIVE DATE RETRO. CHANGES:
SIGNATURE OF DOH REVIEWER:
DATE:

WATER SYSTEM

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES - 1989

ITEM	WELL 1 8/4/89	WELL 2 4/10/89	WELL 4 4/10/89	WELL 5 4/10/89	WELL 6 7/17/89	WELL 7 7/17/89	WELL 8 4/10/89	*MCL
pH	7.06	7.23	8.22	8.32	7.46	7.48	*7.05	----
Arsenic	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Barium	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	1.0
Cadmium	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	0.01
Chromium	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.005
Iron	*0.05	*0.05	*0.05	*0.05	*0.05	0.05	*0.05	0.3
Lead	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Manganese	*0.010	*0.010	0.041	0.042	0.026	*0.010	*0.010	0.05
Mercury	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	0.002
Selenium	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	0.01
Silver	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.010	0.05
Sodium	*10	*10	*10	*10	*10	*10	*10	
Hardness	60	87	63	81	48	74	81	
Conductivity	155	220	160	150	120	200	200	700
Turbidity	*0.1	*0.4	*0.2	*0.1	*0.1	0.2	*0.1	1.0
Color	*5.0	*5.0	*5.0	*5.0	*5.0	15.0	*5.0	15.0
Fluoride	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	2.0
Nitrate	1.1	*0.7	*0.2	*0.2	*0.2	1.6	*0.2	10.0
Chloride	*10	*10	*10	*10	*10	*10	*10	250
Sulfate								250

PARTS PER MILLION

*MCL is the Maximum Contaminant Level Allowed

*Less Than

(Note: Well 7 was re-tested for Iron & Turbidity and those numbers are listed

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1990

ITEM	WELL 1 9/7/90	WELL 2 4/10/89	WELL 4 9/7/90	WELL 5 9/7/90	WELL 6 9/7/90	WELL 7 9/7/90	WELL 8 9/7/90	** MCL
pH	6.74	7.23	7.26	7.74	7.88	7.29	7.12	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.0100	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.0100	<0.039	<0.037	<0.028	<0.010	<0.010	0.05
Mercury	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	<10	<10	<10	<10	<10	<10	<11	
Hardness	79	87	58	58	51	72	72	
Conductivity	85	220	150	154	125	189	188	700
Turbidity	<0.2	<0.4000	<0.1	<0.1	<0.2	<0.1	<0.9	1.0
Color	<5.0	<5.0	<10.0	<10.0	<5.0	<5.0	<10.	15
Fluoride	<0.2	<0.2000	<0.2	<0.2	<0.2	<0.2	<0.2	2.0
Nitrate	<1.3	<0.7000	<0.2	<0.2	<0.2	<0.2	<1.3	10.0
Chloride	<10	<10	<10	<10	<10	<10	<10	250

PARTS PER MILLION

<   Less than Detectable Limits

**   Maximum Contaminant Level

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1991

ITEM	WELL 1 7/12/91	WELL 2 7/12/91	WELL 4 7/12/91	WELL 5 7/12/91	WELL 6 7/12/91	WELL 7 7/12/91	WELL 8 7/12/91	** MCL
pH	6.6	6.4	7.3	6.7	6.7	7.1	6.8	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.010	<0.018	<0.026	<0.023	<0.010	<0.010	0.05
Mercury	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	7.	6.	9.	8	5	10	12	
Hardness	61	66	52	51	43	61	75	
Conductivity	180	270	120	130	120	190	210	700
Turbidity	0.2	0.6	.4	<0.3	.3	.4	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nitrate	1.2	<1.9	1.8	<0.2	<0.2	<0.2	1.3	
Chloride	<10	<10	<10	<10	21	24	<10	

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS – 1992

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	** MCL
	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	2/14/92	7/12/91	
pH	7.0	7.3	7.93	8.4	8.4	7.7	6.8	
Arsenic	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	.05
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	0.3
Lead	<0.002	<0.002	<0.0025	<0.002	<0.002	<0.002	<0.005	0.05
Manganese	<0.01	<0.01	0.043	<0.041	0.038	<0.01	<0.010	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	0.05
Sodium	9.5	6.1	8.7	8.4	4.8	10	12	
Hardness	85.	75	62	62	56	79	75	
Conductivity	180.	150	140	140	120	170	210	700
Turbidity	0.46	0.42	.33	0.32	.90	.32	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2
Nitrate	1.0	<1.8	<1.0	<1.0	<1.0	<1.0	1.3	10
Chloride	<20.	<20	<20	<20	<20	<20	<10	250
Sulfate	10.	<10.	<10.	<10	<10	11		250
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		1.0
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		5.0
Aluminum	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Calcium	19.	18.	18	18	16	20.		

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1993

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	WELL 9	** MCL
	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Barium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1
Cadmium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Copper	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3
Iron	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.17	0.3
Lead	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.05
Manganese	< 0.01	< 0.01	< 0.043	< 0.041	< 0.092	< 0.01	< 0.01	< 0.01	0.05
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
Selenium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Sodium	9.1	9.3	9.0	7.7	8.4	9.5	10.	8.5	
Zinc	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5
Hardness	78.	80	65	65	93	79	75	68	
Conductivity	190	150	160	150	210	190	190	160	700
Turbidity	0.10	0.49	0.17	0.15	0.1	0.1	0.14	0.43	1
Color	5.	5.	5.	5.	5.	5.	5.	5.	15
Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	250
Fluoride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2
Nitrate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.0	10
Sulfate	< 10	< 10	< 10	< 13	< 10	< 10	< 10	< 10	250

LEGEND

<	Less Than Detectable Limits
**	Maximum Contaminant Level

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98027

WELL NO. 2

GROUND WATER CONTAMINATION

Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER & SEWER DIST.

Water system name : SAMMAMISH PLATEAU WATER & SEWER DIST.

County: KING

Water system number: 409009 Source number: 502

Well depth: 132 (ft.) (*From WFI form*)

Source name: WELL 2

WA well identification tag number: ___ ___ ___-___ ___ ___

X well not tagged

Number of connections: 9000 Population served: 26,000

Township: 24 N Range: 06E

Section: 11 1/4 1/4 Section: NW/SE

Latitude/longitude (if available): ________ / ________

How was lat./long. determined?

___ global positioning device ___ survey ___ topographic map
___ other: ________

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 10/15/68 month/day/year

last reconstruction: __/__/__ month/day/year

___ information unavailable

2) Well driller: RICHARDSON WELL DRILLING
219 So. 115TH ST.
TACOMA, Wn. 98444

__ well driller unknown

3) Type of well:

X Drilled: __ rotary __ bored X cable (percussion) __ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other: ________

Additional comments: ________________

4) Well report available? X YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 360 (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ________________

__ Pumping rate unknown.

6) Is this source treated? No

If so, what type of treatment:

__ disinfection __ filtration __ carbon filter __ air stripper __ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: __ YES __ NO N/A

Residual level: ________ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ < 20 ft ___ 20–50 ft ___ 50–100 ft X 100–200 ft ___ > 200 ft

___ information unavailable (*'<' means less than; '>' means greater than*)

2) Depth to ground water (static water level):

___ < 20 ft ___ 20–50 ft X 50–100 ft ___ > 100 ft

___ flowing well/spring (artesian)

How was water level determined?

X well log ___ other: ______________________________

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO N/A

5) Wellhead elevation (height above mean sea level): 414 (ft)

How was elevation determined? ___ topographic map X Drilling/Well Log ___ altimeter

___ other: ______________________________

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

X evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the top of the open interval? X YES ___ NO

___ information unavailable

7) Sanitary setback:

___ < 100 ft* [✓ 100–120 ft] ___ 120–200 ft ___ > 200 ft
* if less than 100 ft describe the site conditions:

____

____

____

____

8) Wellhead construction:

[✓ wellhead enclosed in a wellhouse]

[✓ controlled access (describe): FENCED + GATED]

____

___ other uses for wellhouse (describe): _______________

____

___ no wellhead control

9) Surface seal:

___ 18 ft

___ < 18 ft (no Department of Ecology approval) *('<' means less than)*

___ < 18 ft (Approved by Ecology, include documentation) *('<' means less than)*

[✓ > 18 ft] *('>' means greater than)*

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ < 10 in/yr ___ 10–25 in/yr [✓ > 25 in/yr]

PART IV: **Mapping Your Ground Water Resource**

1) Annual volume of water pumped: 44,273,500 (gallons)

How was this determined?

[✓ meter]

___ estimated: ___ pumping rate (________________)

___ pump capacity (________________)

___ other: ________________________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 440 (ft)

1 year ground water travel time : 620 (ft)

5 year ground water travel time: 1390 (ft)

10 year ground water travel time: 1970 (ft)

These are the CFR's per this packet. The District has additional WHPA Capture Zone Information for this well, which is attached. The following questions are answered for the capture zones identified on the WHPA map.

Information available on length of screened/open interval?

[✓ YES] ___ NO

Length of screened/open interval: 20 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES [✓ NO] (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES [✓ NO] (mark and identify on map).

Comments: ________________________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application	/	/		
stormwater injection wells	No	No	No	
other injection wells *see comments	No	No	No	
abandoned ground water well				✓
landfills, dumps, disposal areas	No	No	No	
known hazardous materials clean-up site	No	No	No	
water system(s) with known quality problems				✓
population density > 1 house/acre	YES	YES	YES	
residences commonly have septic tanks	YES	YES	YES	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

*Well 2 has been used as an injection well as part of a groundwater recharge project, with drinking quality water.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2-5 mg/liter nitrate		X
> 5 mg/liter nitrate		X

___ Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	

___ VOC sampling records unavailable

C. EDB/DBCP:

(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)

	YES	NO
EDB/DBCP detected below MCL at least once		
EDB/DBCP detected above MCL at least once		
EDB/DBCP never detected		

___ EDB/DBCP tests required but not yet completed

X EDB/DBCP tests not required

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)		

___ Other SOC tests performed but none detected
(list test methods in comments

X Other SOC tests not performed

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________________

E. Bacterial contamination:

	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___	X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___	X

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

[✓ YES] ___ NO

Describe with references to map produced in Part IV:

THEIR ARE STREAMS FEEDING AND EXITING YELLOW LAKE, IN THE 5 YEAR CAPTURE ZONE, ALTHOUGH YELLOW LAKE IS OUTSIDE THE CAPTURE ZONE. THERE IS ALSO A RAVINE LOCATED AT THE SOUTHERN EDGE OF THE FIVE AND TEN YEAR CAPTURE ZONES.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES [✓ NO]

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

[✓ YES] ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

___ YES ___X___ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? No

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time		✓	
6 month-1 year travel time		✓	
1-5 year travel time		✓	
5-10 year travel time		✓	

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time		✓	
1-5 year travel time		✓	
5-10 year travel time		✓	

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

* Well 2 has been used as an injection well as part of a groundwater recharge project, with drinking quality water.

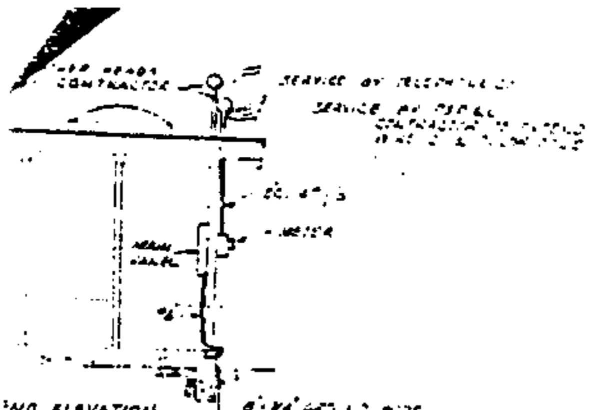
Suggestions and Comments

Did you attend one of the susceptibility workshops? X YES ___ NO

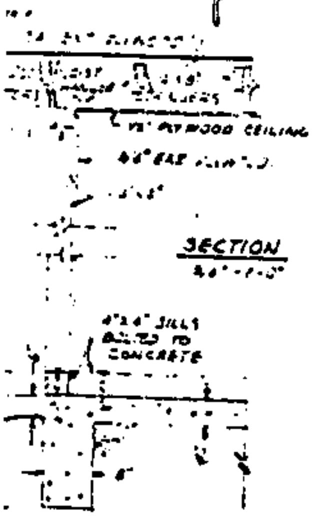
Did you find it useful? X YES ___ NO

Did you seek outside assistance to complete the assessment? X YES ___ NO

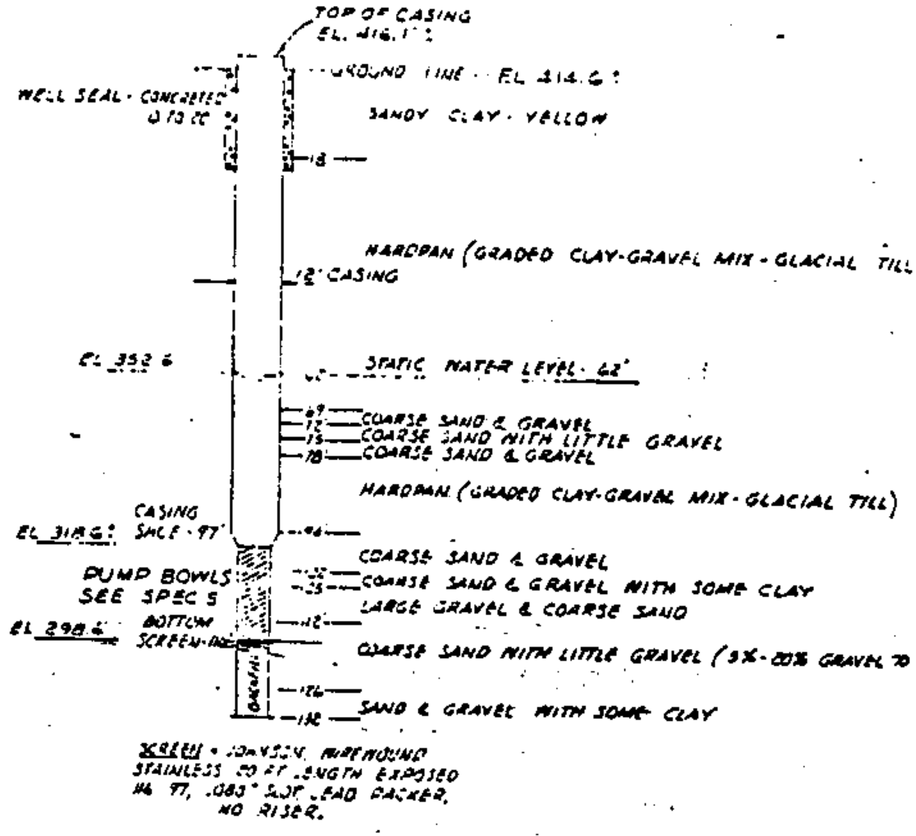
This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.



ND ELEVATION



SECTION



LOG OF EXISTING WELL Nº 2

...CONSTRUCTION GRADE
...OF "JOHNS-MANVILLE"
...OR EQUAL

...WITH CONCRETE
...OR EQUAL

...EXTERIOR STAIN

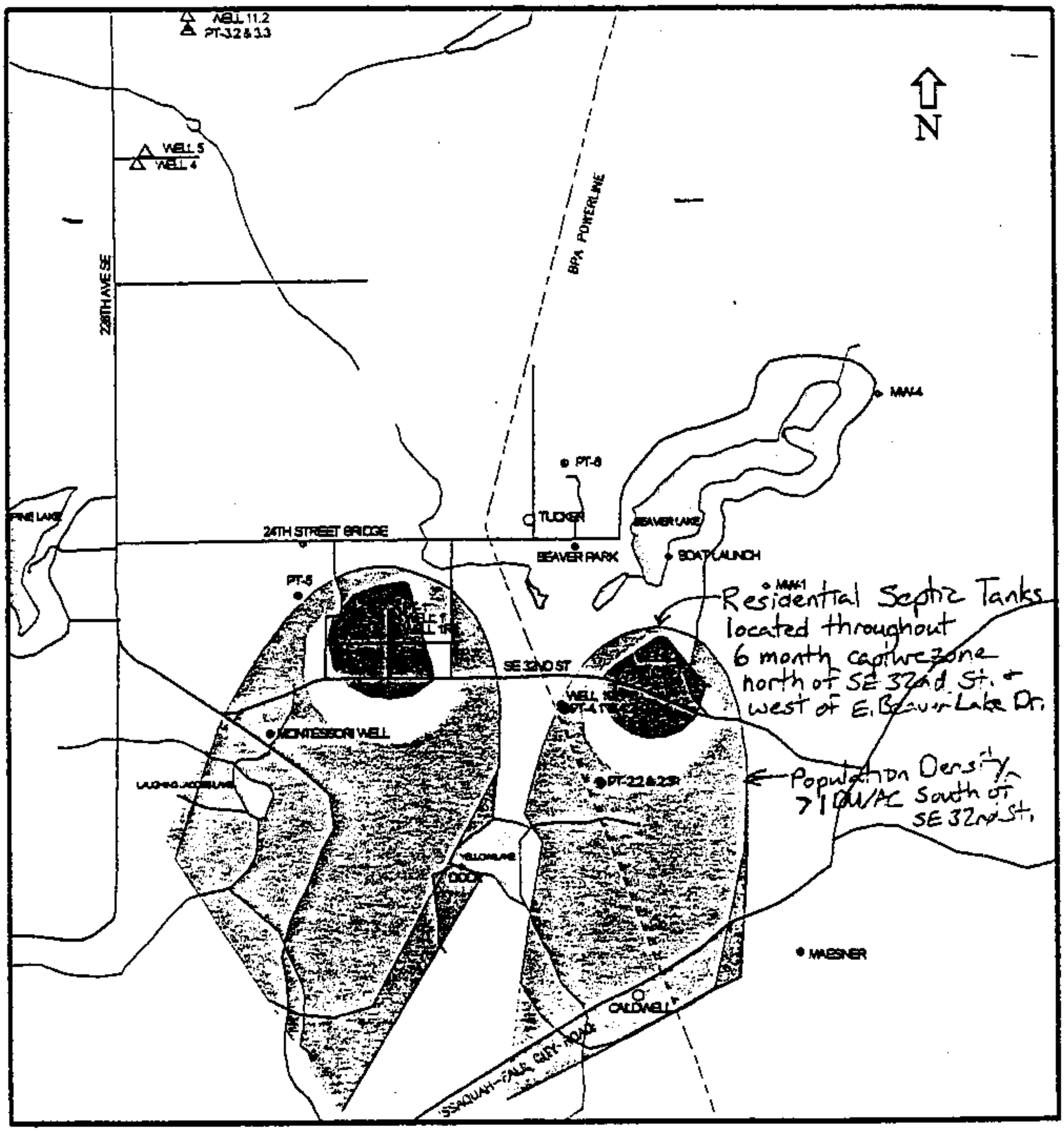
CONTRACT II - U.L.I.D. #1, #2 & #3

KING COUNTY WATER DISTRICT Nº 121

WELL SITE & CONTROL BUILDING Nº 2
BUILDING PLAN MECHANICAL & ELECT DETAILS

Well 2

SAMMAMISH PLATEAU WELLS 1R & 2
WHPA CAPTURE ZONES



Residential Septic Tanks located throughout 6 month capture zone north of SE 32nd St. + west of E. Beaver Lake Dr.

Population Density > 1 DU/AC South of SE 32nd St.

SYMBOL KEY:

- ◇ ZONE I AND SURFACE WATER MONITORING STATIONS
- ○ ZONE IIa MONITORING WELL
- ● ZONE IIb MONITORING WELL
- △ ZONE IV MONITORING WELL

6-month capture zone ▨
1-year capture zone ☐
5-year capture zone ☐
10-year capture zone ▨

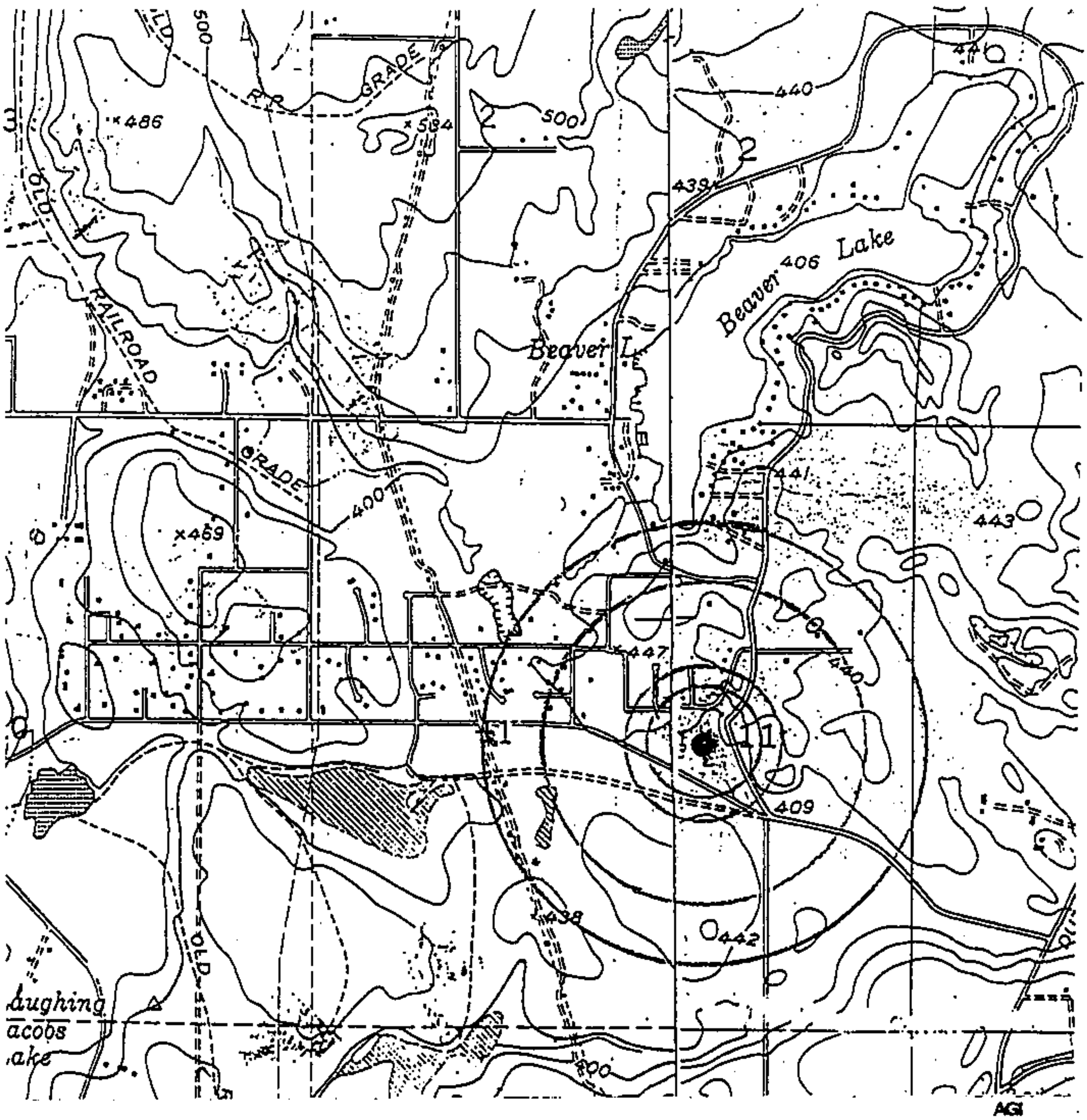
SCALE (MILES)

0 1/4 1/2 1

Not Used - Provided FYI only. See WHPA Zones

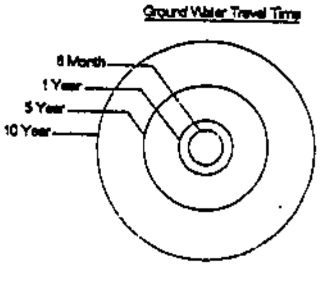
Sammamish Plateau Water & Sewer District

Well 2



AGI

LEGEND



SCALE (FT)

0 1000 2000 3000 4000 5000

[illegible]

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ______

Permit No. ______

(1) OWNER: Name King County Water District #121 Address 24256 SE 32nd, Rt 1, Issaquah, Wa 98027

(2) LOCATION OF WELL: County King — NW ¼ SE ¼ Sec 11 T. 24 N., R. 6E W.M.

Bearing and distance from section or subdivision corner 570 ft West & 100 ft South of NE corner of NW 1/4

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 2

New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches.
Drilled 132 ft. Depth of completed well 116 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from 0 ft. to 97 ft.
Threaded ☐ ______ " Diam. from ______ ft. to ______ ft.
Welded ☒ ______ " Diam. from ______ ft. to ______ ft.

Perforations: Yes ☐ No ☒
Type of perforator used ______
SIZE of perforations ______ in. by ______ in.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UPO Johnson
Type Stainless Steel Model No. ______
Diam. 12" Slot size .080" from 96 ft. to 116 ft.
Diam. ______ Slot size ______ from ______ ft. to ______ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: ______
Gravel placed from ______ ft. to ______ ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Concrete
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ______ Depth of strata ______
Method of sealing strata off ______

(7) PUMP: Manufacturer's Name ______
Type: ______ H.P. ______

(8) WATER LEVELS: Land-surface elevation above mean sea level 414 ft.
Static level 62 ft. below top of well Date 10/10/68
Artesian pressure ______ lbs. per square inch Date ______
Artesian water is controlled by ______ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller

Yield:	gal./min. with	ft. drawdown after	hrs.
200	11	12	
500	36	12	

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 10/10 & 10/11/68

Bailer test ______ gal./min. with ______ ft. drawdown after ______ hrs.

Artesian flow ______ g.p.m. Date ______

Temperature of water 50°F Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Yellow sandy clay	0	18
Hardpan	18	69
Coarse sand & gravel, water	69	72
Coarse sand & little gravel	72	75
Coarse gravel & sand	75	78
Hardpan	78	90
Light brown hardpan	90	94
Coarse sand & gravel Water	94	101
Coarse sand & gravel	101	102
Clay coated sand & gravel	102	105
Large gravel & coarse sand	105	111
Large gravel & coarse sand	111	112
Coarse sand & little gravel	112	113
Coarse sand & little pea gravel	113	119
Coarse sand & little gravel	119	122
Coarse sand & some gravel	122	126
Clay coated sand & gravel	126	132

Work started Sept. 17 1968 Completed Oct. 15, 1968

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Richardson Well Drilling Co., Inc.
(Person, firm, or corporation) (Type or print)

Address 219 So. 115th St., Tacoma, Wash. 98444

[Signed] ______ (Well Driller)

License No. 223-02-6500 Date October 30 1968

(USE ADDITIONAL SHEETS IF NECESSARY)

L. F. No. 7214—(Rev. 2-66)—2-66—5M. 4516.

Rec. # 9070
Cert. # 6802

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL LOG

Record by Driller
Source Driller's Record

Location: State of WASHINGTON
County King
Area
Map
N½ NW ¼ SE ¼ sec. 11 T. 24 N., R. 6 E. ~~W.~~

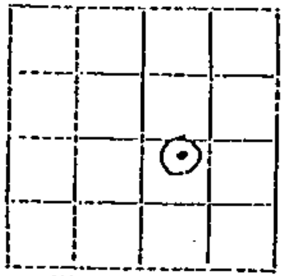


Diagram of Section

Drilling Co. Richardson Well Drilling Co., Inc.
Address 219 So. 115th St., Tacoma, Wash. 98444
Method of Drilling Cable Date October 30, 1968
Owner King County Water District No. 121
Address 24256 S.E. 32nd, Rt. 1, Issaquah, WA
Land surface, datum 414 ft. above ~~below~~ mean sea level
SWL: 62 ft. Date October 10, 1968 Dims: 12" x 116'

Correlation	Material	From (feet)	To (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Municipal		
	Clay, yellow sandy	0	18
	Hardpan	18	69
	Sand, coarse & gravel, water	69	72
	Sand, coarse & little gravel	72	75
	Gravel, coarse & sand	75	78
	Hardpan	78	90
	Hardpan, light brown	90	94
	Sand, coarse & gravel, water	94	101
	Sand, coarse & gravel	101	102
	Sand, clay coated & gravel	102	105
	Gravel, large & sand, coarse	105	111
	Gravel, large & sand, coarse	111	112
	Sand, coarse & little gravel	112	113
	Sand, coarse & little pea gravel	113	119
	Sand, coarse & little gravel	119	122

WE LOG.--Continued 17 No....../......

Correlation	Material	From (feet)	To (feet)
	Depth forward	———	
	Sand, coarse & some gravel	122	126
	Sand, clay coated & gravel	126	132
	Casing: 12" from 0 ft. to 97 ft.		
	Screens: UOP Johnson, Stainless		
	Diam: 12" slot size .080 from 96 ft. to 116 ft.		
	Surface seal: to 20 ft., concrete		
	Pump test: 300 g.p.m. with 11 ft. after 12 h		
	500 g.p.m. with 36 ft. " 12 "		

1449—OS—12-63.

Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

File
DATE RECEIVED 01/12/94
RECEIVED
FEB 1 1994
Ans'd......
UPDATED
DATE UPDATED: 01/11/[illegible]

1. SYSTEM ID NO.: [illegible] | 2. COUNTY: [illegible] | GROUP: A | TYPE: COMM | WRIA: 9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER

STREET ADDRESS: 1510 228TH AVE SE.

P.O. BOX (IF APPLICABLE):

CITY: ISSAQUAH | STATE: WA | ZIP CODE: 98027

4. OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER & | OWNER NO.: 3007

STREET ADDRESS: 1510 228TH AVE. S.E.

P.O. BOX (IF APPLICABLE):

CITY: ISSAQUAH | STATE: WA | ZIP CODE: 98027

5. SYSTEM CONTACT PERSON: RONALD E. LITTLE - MANAGER | TITLE:

DAY TELEPHONE: 206-392-6256 | EVENING TELEPHONE:

6. OWNERSHIP (CHECK ONE ONLY)
- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☐ LOCAL GOVERNMENT (COUNTY/CITY/PUD/WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)
- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS/INDUSTRIAL/AGRICULTURAL/COMMERCIAL
- ☐ LODGING/FOOD SERVICE
- ☐ SCHOOL/DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY: | TITLE:

DAY TELEPHONE: | DATE:

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 8844

10. NUMBER ACTIVE RESIDENTIAL POPULATION: 25,647

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN		JULY	
	MAY		NOV
MAR		SEP	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 8,844

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 12,850,000 GALLONS

DOH URCE IMBER	17. SOURCE NAME LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX/NAME EXAMPLE: 77050Y/SEATTLE	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	RANNEY/INF. GAL.	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG	SWTR EVALUATION	VOC EVALUATION
501	WELL 1	X								X				X					154	500	SW/NE	10	24N	06E		
502	WELL 2	X									X			X					132	360	NW/SE	11	24N	06E		
503	WELL # 5	X								X					X				716	450	NW/SW	34	25N	06E		
504	WELL # 4	X								X					X				714	625	SW/NW	34	25N	06E		
505	WELL 6	X									X				X				365	600	NE/SE	32	25N	06E		
506	WELL #7	X									X			X					150	2,000	SE/SE	21	24N	06E		
507	WELL #7	X								X				X					150	3,500	SE/SE	21	24N	06E		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	30	30

NO. APPROVED SERVICES (PER PLANS): 0 | DATE OF LAST SANITARY SURVEY: 0000 | BY DOH ☐ | LHD ☐

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? X YES ☐ NO | GW MGMT AREA? ☐ YES ☐ NO | FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES | SIGNATURE OF DOH REVIEWER | DATE

WATER SYSTEM

DOH 331-011 (Rev. 3/92)

1989

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES - 1989

ITEM	WELL 1 8/4/89	WELL 2 4/10/89	WELL 4 4/10/89	WELL 5 4/10/89	WELL 6 7/17/89	WELL 7 7/17/89	WELL 8 4/10/89	*MCL
pH	7.06	7.23	8.22	8.32	7.46	7.48	*7.05	----
Arsenic	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Barium	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	1.0
Cadmium	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	0.01
Chromium	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.005
Iron	*0.05	*0.05	*0.05	*0.05	*0.05	0.05	*0.05	0.3
Lead	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Manganese	*0.010	*0.010	0.041	0.042	0.026	*0.010	*0.010	0.05
Mercury	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	0.002
Selenium	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	0.01
Silver	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.010	0.05
Sodium	*10	*10	*10	*10	*10	*10	*10	
Hardness	60	87	63	61	48	74	81	
Conductivity	155	220	160	150	120	200	200	700
Turbidity	*0.1	*0.4	*0.2	*0.1	*0.1	0.2	*0.1	1.0
Color	*5.0	*5.0	*5.0	*5.0	*5.0	15.0	*5.0	15.0
Fluoride	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	2.0
Nitrate	1.1	*0.7	*0.2	*0.2	*0.2	1.6	*0.2	10.0
Chloride	*10	*10	*10	*10	*10	*10	*10	250
Sulfate								
								250

PARTS PER MILLION

*MCL is the Maximum Contaminant Level Allowed

*Less Than

(Note: Well 7 was re-tested for Iron & Turbidity and those numbers are listed above.)

AmTest/Lab

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1990

ITEM	WELL 1 9/7/90	WELL 2 4/10/89	WELL 4 9/7/90	WELL 5 9/7/90	WELL 6 9/7/90	WELL 7 9/7/90	WELL 8 9/7/90	** MCL
pH	6.74	7.23	7.26	7.74	7.88	7.29	7.12	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.0100	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.0100	<0.039	<0.037	<0.028	<0.010	<0.010	0.05
Mercury	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	<10	<10	<10	<10	<10	<10	<11	
Hardness	79	87	58	58	51	72	72	
Conductivity	85	220	150	154	125	189	188	700
Turbidity	<0.2	<0.4000	<0.1	<0.1	<0.2	<0.1	<0.9	1.0
Color	<5.0	<5.0	<10.0	<10.0	<5.0	<5.0	<10.	15
Fluoride	<0.2	<0.2000	<0.2	<0.2	<0.2	<0.2	<0.2	2.0
Nitrate	<1.3	<0.7000	<0.2	<0.2	<0.2	<0.2	<1.3	10.0
Chloride	<10	<10	<10	<10	<10	<10	<10	250

PARTS PER MILLION

< Less than Detectable Limits

** Maximum Contaminant Level

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1991

ITEM	WELL 1 7/12/91	WELL 2 7/12/91	WELL 4 7/12/91	WELL 5 7/12/91	WELL 6 7/12/91	WELL 7 7/12/91	WELL 8 7/12/91	** MCL
pH	6.6	6.4	7.3	6.7	6.7	7.1	6.8	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.010	<0.018	<0.026	<0.023	<0.010	<0.010	0.05
Mercury	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	7.	6.	9.	8	5	10	12	
Hardness	61	66	52	51	43	61	75	
Conductivity	180	270	120	130	120	190	210	700
Turbidity	0.2	0.6	.4	<0.3	.3	.4	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nitrate	1.2	<1.9	1.8	<0.2	<0.2	<0.2	1.3	
Chloride	<10	<10	<10	<10	21	24	<10	

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1992

ITEM	WELL 1 2/14/92	WELL 2 2/14/92	WELL 4 2/14/92	WELL 5 2/14/92	WELL 6 2/14/92	WELL 7 2/14/92	WELL 8 7/12/91	** MCL
pH	. 7.0	7.3	7.93	8.4	8.4	7.7	6.8	
Arsenic	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	.05
Cadmium	<0.002	<0.002	<0.002 .	<0.002	<0.002	<0.002	<0.002	1.00
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.010	0.01
Iron	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	0.05
Lead	<0.002	<0.002	<0.0025	<0.002	<0.002	<0.002	<0.005	0.3
Manganese	<0.01	<0.01	0.043	<0.041	0.038	<0.01	<0.010	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	0.05
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.002
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	0.01
Sodium	9.5	6.1	8.7	8.4	4.8	10	12	0.05
Hardness	85.	75	62	62	56	79	75	
Conductivity	180.	150	140	140	120	170	210	
Turbidity	0.46	0.42	.33	0.32	.90	.32	0.3	700
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	1.0
Fluoride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	15
Nitrate	1.0	<1.8	<1.0	<1.0	<1.0	<1.0	1.3	2
Chloride	<20.	<20	<20	<20	<20	<20	<10	10
Sulfate	10.	<10.	<10.	<10	<10	11		250
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		250
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		1.0
Aluminum	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		5.0
Calcium	19.	18.	18	18	16	20.		

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1993

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	WELL 9	** MCL
	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Barium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1
Cadmium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Copper	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3
Iron	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.17	0.3
Lead	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.05
Manganese	< 0.01	< 0.01	< 0.043	< 0.041	< 0.092	< 0.01	< 0.01	< 0.01	0.05
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
Selenium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Sodium	9.1	9.3	9.0	7.7	8.4	9.5	10.	8.5	
Zinc	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5
Hardness	78.	80	65	65	93	79	75	68	
Conductivity	190	150	160	150	210	190	190	160	700
Turbidity	0.10	0.49	0.17	0.15	0.1	0.1	0.14	0.43	1
Color	5.	5.	5.	5.	5.	5.	5.	5.	15
Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	250
Fluoride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2
Nitrate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.0	10
Sulfate	< 10	< 10	< 10	< 13	< 10	< 10	< 10	< 10	250

LEGEND

< Less Than Detectable Limits
** Maximum Contaminant Level

WTRMCLS.XLS

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 – 228TH Avenue SE
Sammamish, Washington 98075

(425) 392-6256

WELL 2.2

GROUND WATER CONTAMINATION

Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, well field, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager: **Sammamish Plateau Water & Sewer District**

Water system name: **Sammamish Plateau Water & Sewer District**

County: **King**

Water system number: **409009** Source number: ____

Well depth: **180** (ft.) (From WFI form)

Source name: **Well 2.2**

WA well identification tag number: **AAD383**

____ well not tagged

Number of connections: **14358** Population served: **48,036**

Township: **24N** Range: **06E**

Section: **11** 1/4 1/4 Section: **NW/SW**

Latitude/longitude (if available): ____ / ____

How was lat./long. determined?

____ global positioning device ____ survey ____ topographic map
____ other: ____

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: **05 / 09 / 96** month/day/year

____ last reconstruction: __ / __ / __ month/day/year

____ information unavailable

2) Well driller: **Holt Drilling, Inc.**

___ well driller unknown

3) Type of well:

_X_ **Drilled**: ___ rotary ___ bored _X_ cable (percussion) ___ Dug

___ **Other**: ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other:

Additional comments: ______________________________

4) Well report available? _X_ YES (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: **500** (gallons/min)

Source of information: **Recharge/Production Well 2.2 Construction and Testing Report**

If not documented, how was pumping rate determined? ______________________________

______ Pumping rate unknown

6) Is this source treated?

If so, what type of treatment:

___ disinfection _X_ filtration ___ carbon filter ___ air stripper _X_ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

The water is chlorinated and filtered to remove Manganese. The water is also treated with sodium hydroxide (NaOH) for corrosion control.

7) If source is chlorinated, is a chlorine residual maintained: _X_ YES ___ NO

Residual level: **minimum 0.3ppm free after the filters** (*At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20–50 ft __ 50–100 ft _X_ 100–200 ft __ >200 ft

__ information unavailable ('<' means less than; '>' means greater than)

2) Depth to ground water (static water level):

__ < 20 ft __ 20–50 ft _X_ 50–100 ft __ >100 ft

__ flowing well/spring (artesian)

How was water level determined?

_X_ well log __ other: ____________________

__ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO

5) Wellhead elevation (height above mean sea level): _420_ (ft)

How was elevation determined?
_X_ topographic map __ Drilling/Well Log __ altimeter

__ other: ____________________

__ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

_X_ evidence of a confining layer in well log

__ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer? _X_ YES __ NO

__ information unavailable

7) Sanitary setback:

__ < 100 ft* _X_ 100–120 ft __ 120–200 ft __ > 200 ft
* if less than 100 ft describe the site conditions:

The well is drilled approximately 68 feet from the eastern property line, which is the right of way line of Beaver Lake Drive. However, the roadway was relocated and the ditchline and roadbed are more then 100 feet from the well.

8) Wellhead construction:

_X_ wellhead enclosed in a well house

_X_ controlled access (describe): **The well is locked in a shelter that is monitored.**

__ other uses for well house (describe): ____

__ no wellhead control

9) Surface seal:

__ 18 ft

__ < 18 ft (no Department of Ecology approval) ('<' means less than)

__ < 18 ft (Approved by Ecology, include documentation) ('<' means less than)

_X_ > 18 ft ('>' means greater than)

__ depth of seal unknown

__ no surface seal

10) Annual rainfall (inches per year):

__ < 10 in/yr __ 10–25 in/yr _X_ > 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: **261,000,000** (gallons)

How was this determined?

__ meter

__ estimated: __ pumping rate (________)

__ pump capacity (________)

X other: **Water rights**

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time: **1,390** (ft)

1 year ground water travel time: **1,970** (ft)

5 year ground water travel time: **4,400** (ft)

10 year ground water travel time: **6,220** (ft)

Information available on length of screened/open interval?

X YES __ NO

Length of screened/open interval: **25** (ft)

These are the CFR's per this packet. The District has additional Well Head Protection Area (WHPA) Capture Zone information, which is attached. The following questions are answered for the capture zones identified on the WHPA map.

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6-month time of travel boundary? X YES __ NO (mark and identify on map).

There are two wetlands located on the Well 2.2 property. One wetland is approximately 120-feet to the northwest and the other approximately 60-feet to the southeast.

4) Is there a storm water and/or wastewater facility, treatment lagoon, or holding pond located within the 6-month time of travel boundary? __ YES X NO (mark and identify on map).

Comments: **Septic Systems serve the homes to the north of SE 32nd Way and west of Beaver Lake Drive and are within the 6-month time of travel boundary. Gravity sewers serve the areas to the south of SE 32nd Way and east of Beaver Lake Drive.**

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application				**X**
stormwater injection wells	**No**	**No**	**No**	
other injection wells **(see comments)**	**No**	**No**	**No**	
abandoned ground water well				**X**
landfills, dumps, disposal areas	**No**	**No**	**No**	
known hazardous materials clean-up site	**No**	**No**	**No**	
water system(s) with known quality problems				**X**
population density > 1 house/acre	**4 house / acre**			
residences commonly have septic tanks	**Yes**	**No**	**No**	
Wastewater treatment lagoons	**No**	**No**	**No**	
sites used for land application of waste	**No**	**No**	**No**	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

Well 2.1 has been used as an injection well as part of a groundwater recharge project.

System, or domestic, water was used in the project.

Septic systems serve the homes to the north of SE 32nd Way and west of Beaver Lake Drive.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions (Unless listed on assessment, MCLs are listed in assistance package):

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2–5 mg/liter nitrate		X
> 5 mg/liter nitrate		X
Nitrate sampling records unavailable		X

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	
VOC sampling records unavailable		X

C. EDB/DBCP:	YES	NO
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)		
EDB/DBCP detected below MCL at least once		X
EDB/DBCP detected above MCL at least once		X
EDB/DBCP never detected		X
EDB/DBCP tests required but not yet completed		X
EDB/DBCP tests not required	X	

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected		X
(pesticides and other synthetic organic chemicals)		X
Other SOC tests performed but none detected * (list test methods in comments)		X
Other SOC tests not performed	X	

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here:

E. Bacterial contamination:	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).		X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.		X
Source sampling records for bacteria unavailable		X

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10-year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

X YES   ______ NO

Describe with references to map produced in Part IV:

There are streams feeding and discharging from Yellow Lake, in the 5 year capture zone, although Yellow Lake is outside the capture zone. There is also a ravine located at the southern edge of the five and ten year capture zones.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

______ YES   X NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

X YES   ______ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

______YES ___X___NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

___X___YES ______NO

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time		X	
6 month–1 year travel time	X		
1–5 year travel time	X		
5–10 year travel time		X	

b) Presence of groundwater recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time	X		
1–5 year travel time		X	
5–10 year travel time		X	

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

The Wellhead Protection Program for Plateau and Cascade View Wells Report prepared in June 24, 1998 for the Sammamish Plateau Water & Sewer District discussed the ground water flow for the Plateau Area wells. The ground water flow directions within each aquifer were evaluated using static water levels from well completed within the aquifers. Well 2.2 is in aquifer zone II, which is made up of three subzones; IIa, IIb, and IIc. The top of zone II occurs at elevations of approximately 350 to 160 feet above MSL. Zone II thickness ranges from 5 to 150 feet. A potentiometer surface map for wells completed in Zone II shows that ground water flow is generally to the northwest or northeast direction.

The WHPA for aquifer zone II is attached and is used to answer the questions in this survey.

Suggestions and Comments

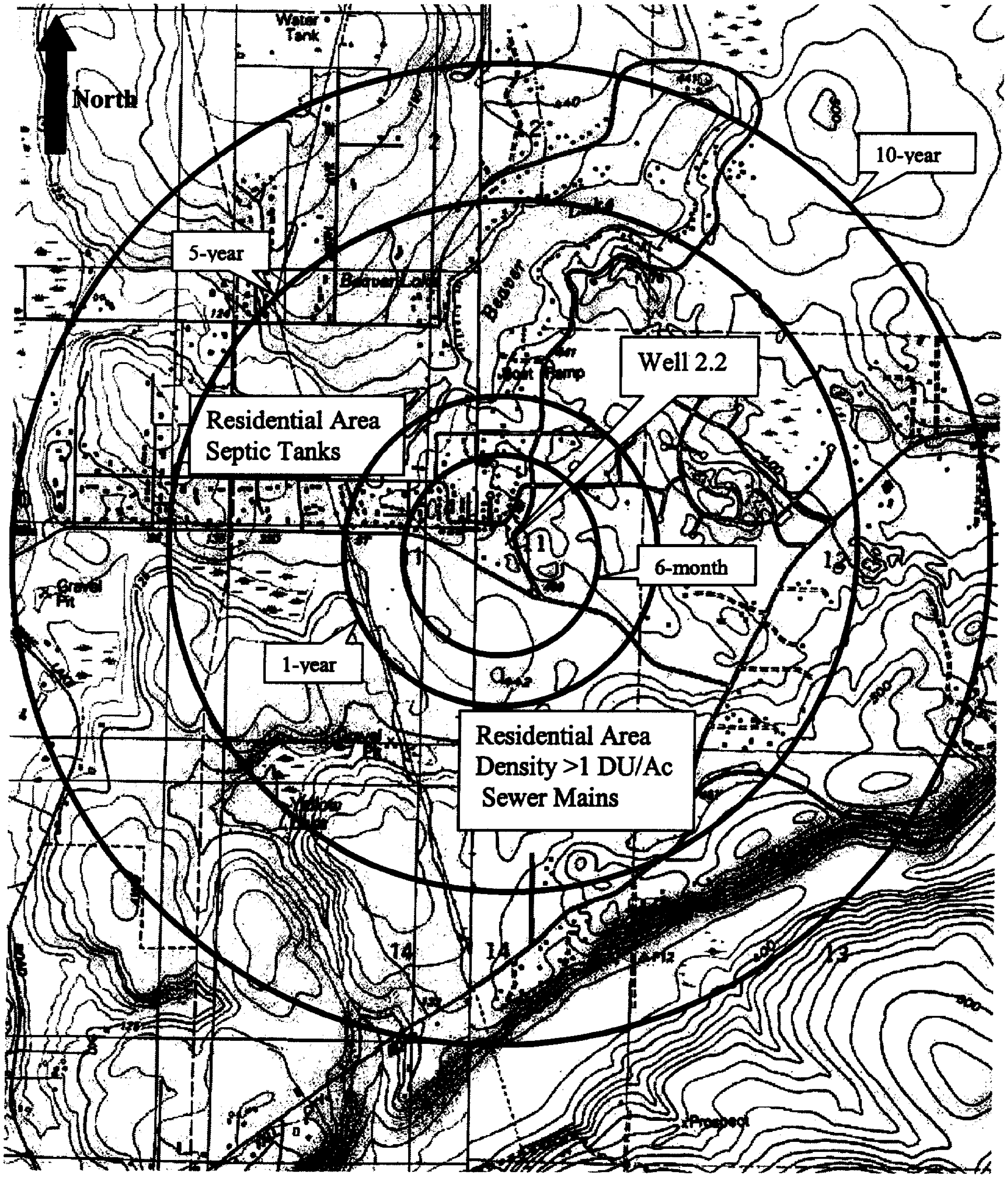
Did you attend one of the susceptibility workshops? ______YES __X__NO

Did you find it useful? ______YES ______NO

Did you seek outside assistance to complete the assessment? __X__YES ______NO

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

Sammamish Plateau Water and Sewer District
Well 2.2
"Calculated Fixed Radius" Water Travel Times
FOR INFORMATION ONLY (WHPA USED FOR ANALYSIS)



Scale: 1" = 2,000'
Ground Water Travel Times shown:
6 month, 1 year, 5 year and 10 year

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W 16281
UNIQUE WELL I.D. #AAD383
Water Right Permit No. ______

(1) **OWNER:** Name Sammamish Plateau Water and Sewer District Address 1510 228th Avenue SE, Issaquah, WA 98029

(2) **LOCATION OF WELL:** County King . NW ¼ SE ¼ Sec. 11 T. 24 N., R. 6E W.M.

(2a) **STREET ADDRESS OF WELL** (or nearest address) 3401 East Beaver Lake Drive

(3) **PROPOSED USE:** ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 2.2
Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐
Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 16 inches.
Drilled 182 feet. Depth of completed well 180 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 16 " Diam. from +2 ft. to 149 ft.
Welded ☒ ______ " Diam. from ______ ft. to ______ ft.
Liner installed ☐
Threaded ☐ ______ " Diam. from ______ ft. to ______ ft.

Perforations: Yes ☐ No ☒
Type of perforator used ______
SIZE of perforations ______ in. by ______ in.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type 304 Stainless Model No. TS
Diam. 16" Slot size Variable 0.030 to 0.050 from 150 ft. to 155 ft.
Diam. 16" Slot size 0.050 from 155 ft. to 170 ft.
16" 0.060 170 175

Gravel packed: Yes ☐ No ☒ Size of gravel ______
Gravel placed from ______ ft. to ______ ft.

Surface seal: Yes ☒ No ☐ To what depth? 32 ft.
Material used in seal Cement/Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ______ Depth of strata ______
Method of sealing strata off ______

(7) **PUMP:** Manufacturer's Name ______
Type: ______ H.P. ______

(8) **WATER LEVELS:** Land-surface elevation above mean sea level approx. 417 ft.
Static level 63.8 ft. below top of well Date 5-9-96
Artesian pressure ______ lbs. per square inch Date ______
Artesian water is controlled by ______ (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? AGI
Yield: 500 gal./min. with 44.59 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1 min	84.65	5 min	80.50	60 min	66.67
2 min	83.10	10 min	77.32	125 min	64.98
3 min	82.18	20 min	73.11	203 min	64.56

Date of test 5-20 to 21-96

Bailer test ______ gal./min. with ______ ft. drawdown after ______ hrs.
Airtest ______ gal./min. with stem set at ______ ft. for ______ hrs.
Artesian flow ______ g.p.m. Date ______
Temperature of water 51°F Was a chemical analysis made? Yes ☒ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Fill material	0	8
Yellow silty sand grading from fill-clay	8	23
Tan-gray silt-bound sand and gravel	23	68
Brown coarse sand w/gravel increasing w/dth	68	78
Gray-tan Till	78	96
Gray sand & grvl w/large cobbles, w-bearing	96	103
Gray Till	103	114
Gray to brwn coarse sand & grvl, w-bearing	114	132
Gray fine to medium coarse sand w/silt	132	147
Gray coarse sand & gravel, water-bearing	147	175
Gray silty clay w/little gravel	175	182

Work started April 16, 1996, 19 . Completed May 9, , 19 96

WELL CONSTRUCTOR CERTIFICATION:

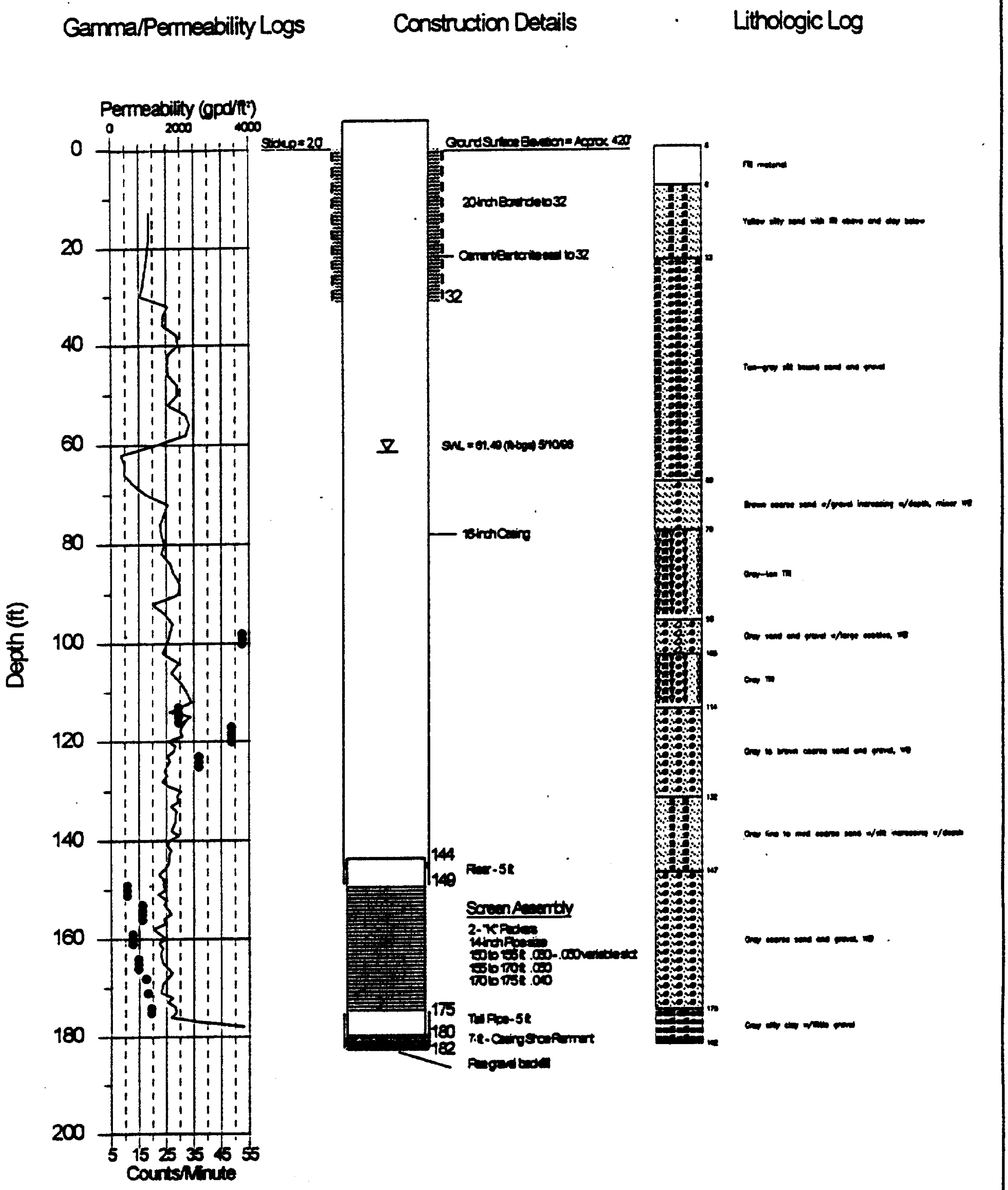
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling 10621 Todd Road East
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address Puyallup, WA 98372

(Signed) Randy Holt License No. 1099
(WELL DRILLER)
Contractor's Registration No. HOLTTI068703 Date 7-9, 19 96

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-



AGI TECHNOLOGIES

Sammamish Plateau Water and Sewer District
Project # 15,287.019

Well 2.2 Hydrogeologic Logs and Construction Details

Figure 2

completed in three of the four aquifers that lie beneath the Plateau Upland: Zones II, III, and IV.

Aquifer Zone II - Plateau Wells 1R, 2, 10, and Proposed Wells 2.2, 15, and 16

- Aquifer Zone II transmissivity ranges between 5,000 and 300,000 gallons per day per foot (gpd/ft), and thickness ranges between 5 and 150 feet.
- The aquifer system is bounded by the Plateau margins to the north, east, and west, and a bedrock boundary exists to the south and southeast of the North Fork Channel.
- The central portion of the Plateau near the North Fork receives most of the recharge. The general direction of ground water flow in Aquifer Zone II is northward between District Wells 10 and 15. North of District Well 10, ground water flows east and west toward the Plateau margins.
- The hydraulic gradient in Aquifer Zone II is approximately 0.001 to 0.002 between District Wells 10 and 15.

Aquifer Zone III Plateau Wells 6 and 11.1

- Aquifer Zone III transmissivity ranges between 11,000 and 45,000 gpd/ft, and thickness ranges between 20 and 100 feet.
- Data are insufficient to determine aquifer boundaries; however, it is likely the aquifer is bounded by bedrock to the south near the North Fork Channel.
- The aquifer is recharged in the central portion of the Plateau. The direction of ground water flow is away from the north-south ground water divide and appears to be eastward in the vicinity of Well 11.1. At Well 6, ground water flows to the west.
- The hydraulic gradient in Aquifer Zone III is approximately 0.001 eastward at Well 11.1 and approximately 0.003 westward at Well 6.

Aquifer Zone IV Plateau Wells 4, 5, and 11.2

- Aquifer Zone IV transmissivity ranges between 14,000 and 42,000 gpd/ft, and thickness ranges between 90 and 200 feet.

4.3.3 Additional Data Needs

To maintain the inventory of potential sources of contamination, the following data need to be collected and included during future risk analysis updates:

- Status of previously identified potential contamination sources
- New potential contamination sources

4.4 WHPAs AND POTENTIAL CONTAMINANTS

Figures 4.1 through 4.6 show the WHPAs delineated for the District's production wells and the location of potential contaminant sources. Each WHPA and the risk from potential contaminant sources are described in the following sections.

4.4.1 Plateau Aquifer Zone II

WHPAs for District Wells 1R, 2.1, 2.2, 10, 15, and 16 are contiguous, so they were evaluated as one well field; the composite WHPA is shown in Figure 4.1. From the proposed District Well 16 location at the northern limit, the combined WHPA fans over 30,000 feet to the south-southwest and over 22,000 feet to the southeast. The Klahanie housing development, two regional thoroughfares, one powerline, and one gas line lie within this WHPA. Potential sources of contamination, identified by yellow numbers on Figure 4.1, include:

No. 8 - Natural gas line right-of-way where herbicides may be used for maintenance.

No. 10 - Active fire station which has an active diesel underground storage tank.

No. 11 - Powerline right-of-way where herbicides may be used for maintenance.

No. 12 - Regional thoroughfare where hazardous materials may be spilled in a truck accident and where herbicides may be used for maintenance.

No. 29 - Junior High School where degreasers and cleaners are used for maintenance.

No. 32 - Sanitary sewer pipes which could break and leak contents (not identified by a yellow number on Figure 4.1 because of the widespread nature of potential source).

No. 33 - Residential septic systems which could either overflow or leak and discharge to soil before adequate biodegradation occurs (not identified by a yellow number on Figure 4.1 because of the widespread nature of potential source).

Risk assessment for the above activities shows no high or medium-risk activities.

4.4.2 Plateau Aquifer Zone III

District Wells 6 and 11.1 were evaluated separately because they are not contiguous, as shown on Figure 4.2. The Well 6 WHPA extends approximately 3,600 feet to the east in a relatively narrow, 500-foot wide fan. No potential sources of contamination were located within or near this WHPA. The Well 11.1 WHPA extends approximately 2,000 feet uniformly in a radial pattern and encompasses the Sammamish Plaza shopping complex. Potential sources of contamination identified by yellow numbers on Figure 4.2 include:

No. 1 - Removed underground storage tank, which is not on the Department of Ecology (DOE) leaking underground storage tank list.

No. 2 - Location of illegal drug laboratory, which was removed from the DOE contaminated site list.

No. 3 - Inglewood Junior High School, which may store hazardous laboratory chemicals which could spill.

No. 4 - Removed underground storage tank, which is not on the DOE leaking underground storage tank list.

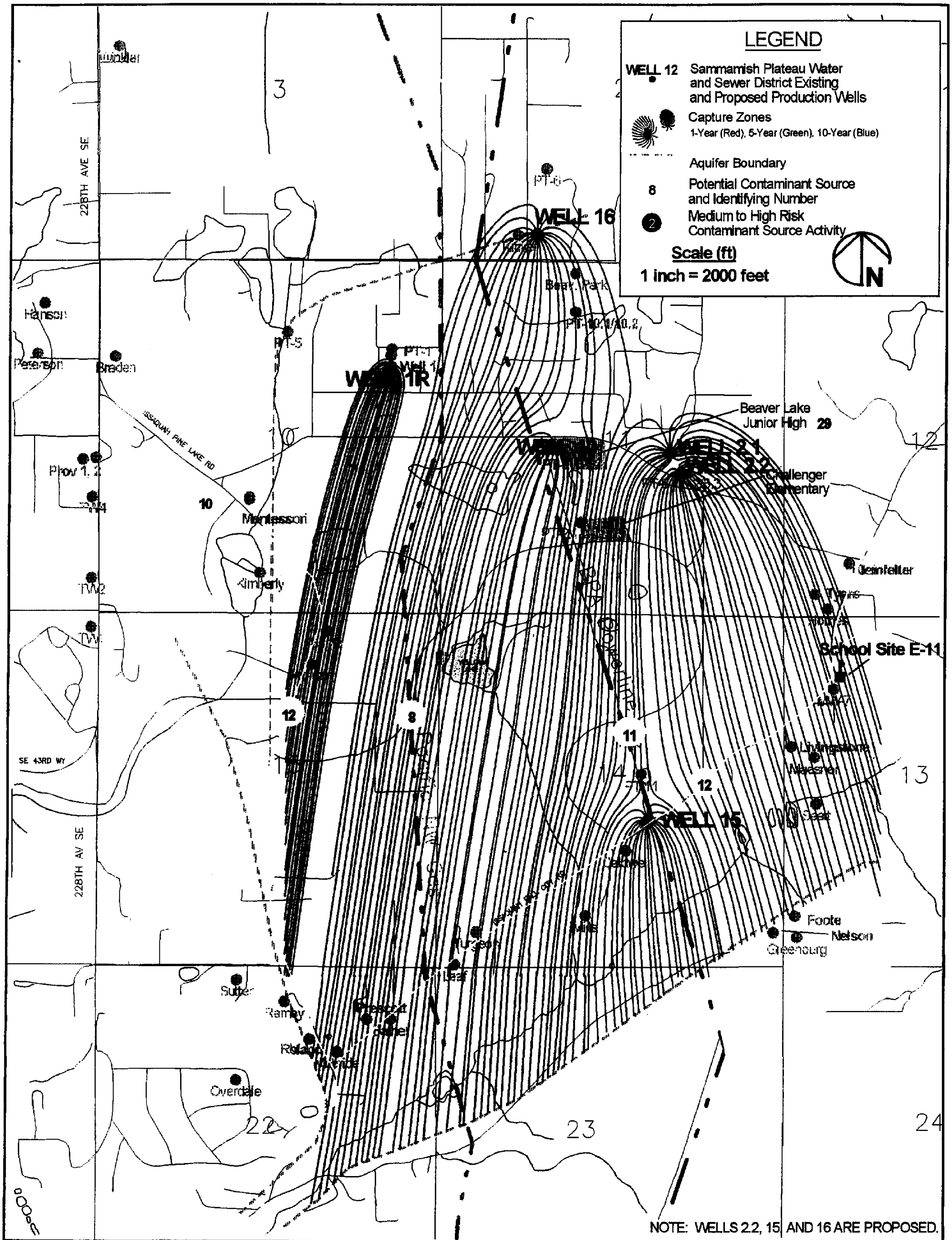
No. 6 - Active underground storage tanks, which are not on the DOE leaking underground storage tank list.

No. 7 - Removed underground storage tank, which is on the DOE leaking underground storage tank list.

No. 8 - Natural gas line right of way where herbicides may be used for maintenance.

No. 9 - One active and one removed underground storage tank, which are on the DOE leaking underground storage tank list.

No. 11 - Powerline right-of-way where herbicides may be used for maintenance.



NOTE: WELLS 2.2, 15 AND 16 ARE PROPOSED.

AGI TECHNOLOGIES

Sammamish Plateau
Water and Sewer District
Wellhead Protection
Project No. - 15,287.015

Wellhead Protection Areas Composite Aquifer Zone II - Plateau Area

Figure 4.1

D:\coffey\plat-whp\fig1-6.grf

SOUND ANALYTICAL SERVICES

4813 PACIFIC HWY. E. TACOMA, WA 98424
(206) 922-2310 FAX (206) 922-5047

WATER BACTERIOLOGICAL ANALYSIS

SAMPLE COLLECTION: READ INSTRUCTIONS ON BACK OF GOLDENROD COPY
If instructions are not followed, sample will be rejected.

DATE COLLECTED MONTH / DAY / YEAR [illegible]

TIME COLLECTED 15:02 ☐ AM ☑ PM

COUNTY NAME King

TYPE OF SYSTEM ☑ PUBLIC ☐ INDIVIDUAL (serves only 1 residence)

IF PUBLIC SYSTEM, COMPLETE: [illegible]

CIRCLE GROUP [✓ A] B

NAME OF SYSTEM ·VUSD Well 3,2

SPECIFIC LOCATION WHERE SAMPLE COLLECTED (ie, kitchen tap @ school, fire station, fountain)
·charge @ 6"x5" orifice

TELEPHONE NO. DAY ( ) ···-5?32

EVENING ( )

SAMPLE COLLECTED BY: (Name) ··tt E Coffey/AGI

SYSTEM OWNER/MANAGER: (Name) Ron Little

SOURCE TYPE: ☐ GROUND WATER UNDER SURFACE INFLUENCE
☐ SURFACE ☑ WELL or WELL FIELD ☐ SPRING ☐ PURCHASED or INTERTIE ☐ COMBINATION or OTHER

SEND REPORT TO: (Print Full Name, Address and Zip Code)
AGI Technologies Attn: Scott Coffey
PO Box 1158
··g Harbor WASHINGTON 98335

[redacted]

REMARKS:
.6531

LABORATORY RESULTS (for lab use only)

METHOD USED

MF	MPN	PA	[✓ MMO]	

TOTAL COLIFORM ________ /100 ml E. COLI ________ /100 ml
FECAL COLIFORM ________ /100 ml HETEROTROPHIC ________ /per ml

[redacted]

DRINKING WATER SAMPLE RESULTS

☑ UNSATISFACTORY, Coliforms present

REPEAT SAMPLES REQUIRED ☐ E. Coli present ☐ Fecal present ☑ E. Coli absent ☐ Fecal absent

☐ SATISFACTORY, Coliforms absent

SEE REVERSE SIDE OF GREEN COPY FOR EXPLANATION OF RESULTS

[redacted]

ROUTE

ACCT. #

SOUND ANALYTICAL SERVICES, INC.

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 • TELEPHONE 206-922-2310 • FAX 206-922-5047

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS

DO NOT WRITE IN SHADED AREAS, PLEASE FILL BOXES NUMBERED 1 THRU 13, SEE BACK FOR INSTRUCTIONS

LABORATORY NUMBER 107[illegible]257

DATE RECEIVED [illegible]

1. Date Collected 5/21/96

2. System Name: [illegible]

3. System ID [illegible]2

4. Circle Group [✓ A] B

5. County: K[illegible]

6. Source Type: (circle) Surface [✓ Well] Spring Purchase

7. Sample Taken (circle) [✓ Before Treatment] After Treatment

8. Source No.: [illegible] Source Name: [illegible]

10. Collected By: [illegible]

Telephone: ( ) [illegible]

11. If taken after treatment, circle: Fluoridation Chlorination Filtration Other ______ Water Softener Type ______

12. If taken from distribution, indicate address

Name:

13. Party to pay for testing: [illegible]

Name: [illegible]

Address: [illegible]

Telephone: ( ) [illegible]

14. Remarks [illegible]

LABORATORY REPORT
(Do Not Write Inside This Box)

Tests		MCL	Less Than <	Result	Units	Compliance Yes	Compliance No	Chemist Initials
Antimony	Sb	0.006		[illegible] ND	mg/L	✓		PK
Arsenic	As	0.05		0.010 ~~ND~~	mg/L	✓		PK
Barium	Ba	2.0		ND	mg/L	✓		PK
Beryllium	Be	0.004		ND	mg/L	✓		PK
Cadmium	Cd	0.005		ND	mg/L	✓		PK
Chromium	Cr	0.1		ND	mg/L	✓		PK
Copper	Cu	1.3 *		ND	mg/L	✓		PK
Iron	Fe	0.3		ND	mg/L	✓		PK
Lead	Pb	0.015 *		ND	mg/L	✓		PK
Manganese	Mn	0.05		0.086	mg/L		✓	PK
Mercury	Hg	0.002		ND	mg/L	✓		LC
Nickel	Ni	0.1		ND	mg/L	✓		PK
Selenium	Se	0.050		ND	mg/L	✓		PK
Silver	Ag	0.1		ND	mg/L	✓		PK
Sodium	Na	None		5.0	mg/L			PK
Thallium	Tl	0.002		ND	mg/L	✓		PK
Zinc	Zn	5.0		ND	mg/L	✓		PK
Hardness		None		70	mg/L			KK
Conductivity		700		140	umhos	✓		KK
Turbidity		1.0		0.2	NTU	✓		KK
Color		15.0		ND	Units	✓		KK
Chloride	Cl	250		3	mg/L	✓		KK
Cyanide	CN	0.2		ND	mg/L	✓		LE
Fluoride	F	2.0		ND	mg/L	✓		KK
Nitrate	as N	10.0		0.16	mg/L	✓		KK
Nitrite	as N	1.0		ND	mg/L	✓		KK
Sulfate	SO_4	250		8	mg/L	✓		KK
TDS		500		120	mg/L	✓		KK

LABORATORY COMMENTS

* FEDERAL ACTION LEVEL

Laboratory Supervisor: [illegible]

Date of Report: [illegible]

MCL - Maximum Contaminant Level

Reference SOP #SAS-0513

WHITE COPY - STATE GREEN COPY - CUSTOMER BLUE COPY - LABORATORY GOLDENROD COPY - REGIONAL OFFICE

Please Print Plainly

USE HEAVY PENCIL

Health Services Division
PUBLIC HEALTH LABORATORIES
1610 N.E. 150TH ST., SEATTLE, WA 98155-7224

WATER SAMPLE INFORMATION FOR RADIATION CHEMICAL ANALYSES

UMBER	SYSTEM NAME:	SYSTEM I.D. NO.	SYSTEM CLASS (circle one)	SOURCE NUMBER
0 1 0 5261	SAMMAMISH PLATEAU WATER&SEWER	NEW	1 2 3 4	NEW

In this follow up of a previous out of compliance sample? Yes ☐ No ☐

COUNTY: KING

I yes, what was the laboratory number of the previous sample? ___

SOURCE TYPE: ___ 1. SURFACE ___ 2. SPRING ___ 3. WELL ___ 4. PURCHASE

IF SOURCE IS LAKE OR STREAM, ENTER NAME

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (ADDRESS)

DATE OF FINAL REPORT: 06/06/96

DATE COLLECTED	DATE RECEIVED
05 / 21 / 96	05 / 23 / 96

SEND REPORT TO: (PRINT FULL NAME & ADDRESS)

NAME: RON LITTLE
SAMMAMISH PLATEAU WATER/SEWER
STREET: 1510 - 228th AVE. S.E.
CITY: ISSAQUAH WA ZIP CODE: 98029
TELEPHONE: (206) 851-5562
AREA CODE

LABORATORY REPORT
(DO NOT WRITE BELOW THIS LINE)

ANALYSES	LESS THAN <	RESULTS pCi/L	*MCL pCi/L	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
.ss Alpha		ND .		✓		
Uranium		.				
Gross Alpha minus Uranium		.	15			
Radium-226		.	3			
Rarlium-228		.				
Radium-226 Plus Radium-228		.	5			
RADON-222		135 ± 35 pCi/L				MS/DBR
Gross Beta		ND .	50	✓		
Strontium-89		.	80			
Strontium-90		.	8			
Cesium-134		.	80			
Iodine-131		.	3			
Tritium		.	20,000			

LABORATORY SUPERVISOR
(Name or Initials)
DBR / JCm 6-6-

CHARGE: $50.00 RN + $50.00 ALPHA/BETA → $100.0 TOT

REMARKS:

ADDITIONAL COPY TO:

SCOTT COFFEY
AGI TECHNOLOGIES
P.O. BOX 1158
GIG HARBOR, WA 98335

*MCL is the maximum contaminant Level Allowed
pCi/L is picoCuries per liter

DSHS 4-020 (Rev. 3/88) -88-

SOUND ANALYTICAL SERVICES, INC.

ANALYTICAL & ENVIRONMENTAL CHEMISTS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 • TELEPHONE (206)922-2310 • FAX (206)922-5047

Report To: Sammamish Plateau Water &
Sewer District

Date: June 6, 1996

Report On: Analysis of Water

Report No.: 56831

IDENTIFICATION:
Sample received on 05-22-96
P.O. No. 478

ANALYSIS:

Lab Sample No. 56831-1

Client ID: Well 2.2

ICP Metals Per EPA Method 6010
Date Analyzed: 5-23-96
Units: mg/L

Parameter	Result	PQL
Calcium	15	0.50
Potassium	3.4	0.50
Magnesium	4.8	0.10

General Chemistry
Units: mg/L

Parameter	Method	Result	PQL
Bicarbonate (as $CaCO_3$)	SM 2320B	65	5

PQL - Practical Quantitation Limit

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98027

WELL NO. 4

GROUND WATER CONTAMINATION

Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER + SEWER DIST.

Water system name : SAMMAMISH PLATEAU WATER + SEWER DIST

County: KING

Water system number: 409009 Source number: 504

Well depth: 714 (ft.) (*From WFI form*)

Source name: WELL #4

WA well identification tag number: __ __ __-__ __ __

______ well not tagged

Number of connections: 9000 Population served: 26,000

Township: 25 N Range: 06E

Section: 34 1/4 1/4 Section: SW/NW

Latitude/longitude (if available): ________/________

How was lat./long. determined?

______ global positioning device ______ survey ______ topographic map

____other: ________

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 3 / 23 / 70 month/day/year

last reconstruction: __ / __ / __ month/day/year

______ information unavailable

2) Well driller: RICHARDSON WELL DRILLING
P.O. BOX 2266
TACOMA, Wn. 98444

___ well driller unknown

3) Type of well:

X Drilled: ___ rotary ___ bored X cable (percussion) ___ Dug

___ Other: ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: ________

Additional comments: ____________________

4) Well report available? X YES (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 625 gpM (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ____________________

___ Pumping rate unknown

6) Is this source treated?

If so, what type of treatment:

___ disinfection ___ filtration ___ carbon filter ___ air stripper X other

Purpose of treatment (describe materials to be removed or controlled by treatment):

CHLORINATION FOR ODOR CONTROL.

7) If source is chlorinated, is a chlorine residual maintained: ___ YES X NO

Residual level: ________ (*At the point closest to the source.*)

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ < 20 ft ___ 20–50 ft ___ 50–100 ft ___ 100–200 ft [✓ > 200 ft]

___ information unavailable ('<' *means less than;* '>' *means greater than*)

2) Depth to ground water (static water level):

___ < 20 ft ___ 20–50 ft ___ 50–100 ft [✓ > 100 ft]

___ flowing well/spring (artesian)

How was water level determined?

[✓ well log] ___ other: ____________________

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO NA

5) Wellhead elevation (height above mean sea level): 360± (ft)

How was elevation determined? ___ topographic map ___ Drilling/Well Log ___ altimeter

___ other: HYDRAULIC PROFILE MAP

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

[✓ evidence of a confining layer in well log]

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the ~~top~~ bottom of ~~the open interv~~al? [✓ YES] ___ NO
OF THE LOWEST CONFINING LAYER

___ information unavailable

7) Sanitary setback:

___ < 100 ft* X 100–120 ft ___ 120–200 ft ___ > 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

✓ wellhead enclosed in a wellhouse

✓ controlled access (describe): Locked entrance/EXIT IN WELLHOOSE

___ other uses for wellhouse (describe):

___ no wellhead control

9) Surface seal:

___ 18 ft

___ < 18 ft (no Department of Ecology approval) ('<' *means less than*)

___ < 18 ft (Approved by Ecology, include documentation) ('<' *means less than*)

X > 18 ft ('>' *means greater than*)

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ < 10 in/yr ___ 10–25 in/yr X > 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 105,062,000 (gallons)

How was this determined?

[✓ meter]

__ estimated: __ pumping rate (________________)

__ pump capacity (________________)

__ other: ________________________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 620 (ft)

1 year ground water travel time : 880 (ft)

5 year ground water travel time: 1970 (ft)

10 year ground water travel time: 2780 (ft)

Information available on length of screened/open interval?

[✓ YES] __ NO

Length of screened/open interval: 20 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? [✓ YES] __ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? __ YES [✓ NO] (mark and identify on map).

Comments: ________________________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application	✓	✓	✓	
stormwater injection wells	No	No	No	
other injection wells	No	No	No	
abandoned ground water well				✓
landfills, dumps, disposal areas	No	No	No	
known hazardous materials clean-up site	No	No	No	
water system(s) with known quality problems				✓
population density > 1 house/acre	YES	YES	Yes	
residences commonly have septic tanks	✓	✓	✓	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment. MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)

	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2-5 mg/liter nitrate		X
> 5 mg/liter nitrate		X

___ Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)

	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	

___ VOC sampling records unavailable

C. EDB/DBCP:

(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)

	YES	NO
EDB/DBCP detected below MCL at least once		
EDB/DBCP detected above MCL at least once		
EDB/DBCP never detected		

___ EDB/DBCP tests required but not yet completed

[✓ EDB/DBCP tests not required]

D. Other SOCs (Pesticides):

	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)		

___ Other SOC tests performed but none detected (list test methods in comments

[✓ Other SOC tests not performed]

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________________

E. Bacterial contamination:

	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).		X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.		X

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time-of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

[✓ YES] ___ NO

Describe with references to map produced in Part IV:

2 PERENNIAL STREAMS Flowing into and out of a large wetland in the north third of the capture zones. Steep hill going up to the south.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt, terrain?

___ YES [✓ NO]

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

[✓ YES] ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES [✓ NO]

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? YES

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	✓		
6 month-1 year travel time	✓		
1-5 year travel time	✓		
5-10 year travel time	✓		

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time		✓	
1-5 year travel time		✓	
5-10 year travel time		✓	

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Suggestions and Comments

Did you attend one of the susceptibility workshops? X YES __ NO

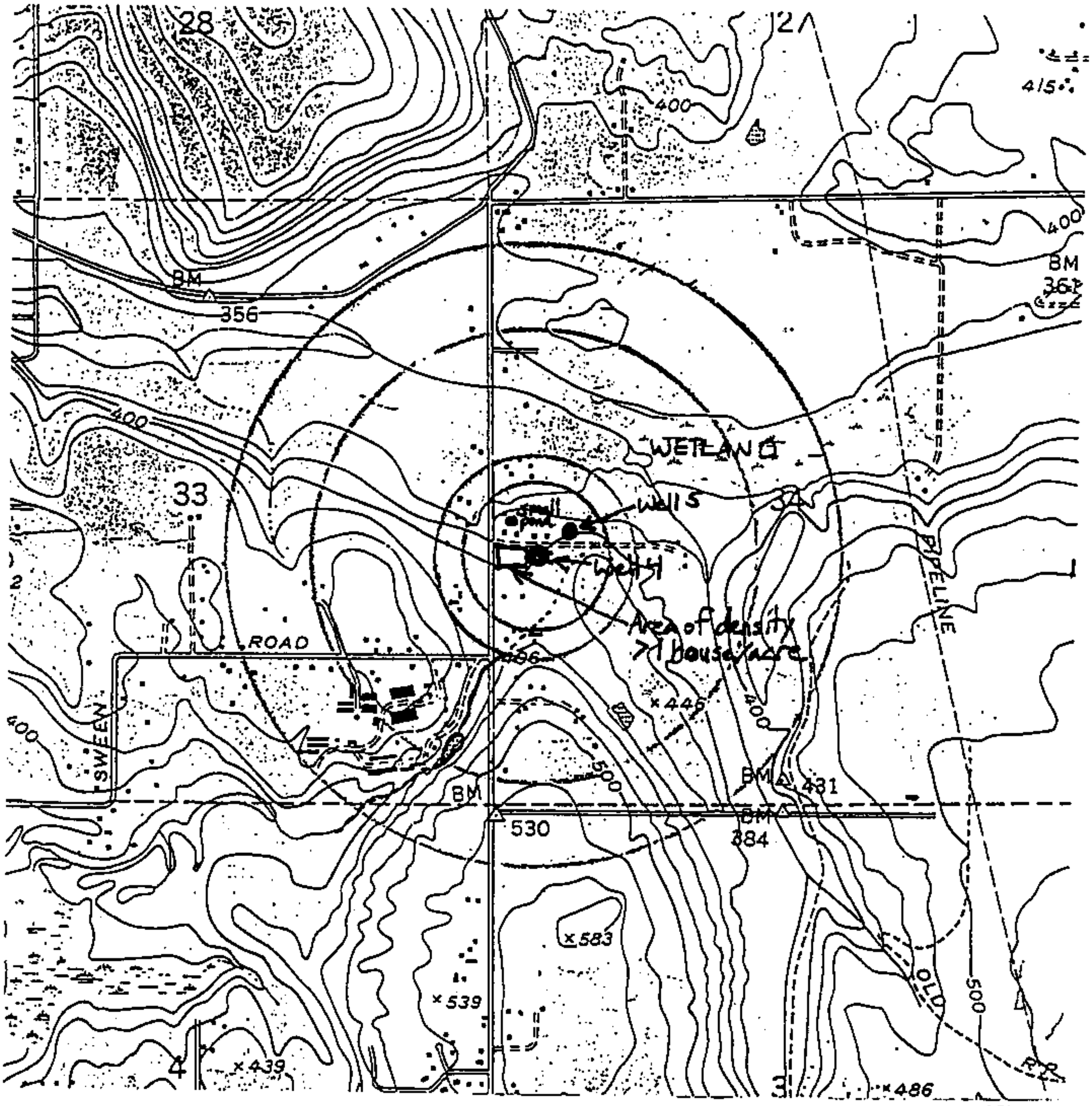
Did you find it useful? X YES __ NO

Did you seek outside assistance to complete the assessment? X YES __ NO

- -

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

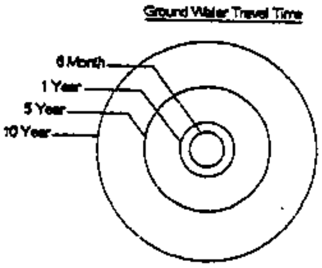
Sammamish Plateau Water & Sewer District
Well 4



LEGEND

All Capture Zone areas served by residential septic tanks.

Ground Water Travel Time



SCALE (FT)

0 1000 2000 3000 4000 5000

le Original and First Copy with
Division of Water Management
ond Copy—Owner's Copy
ird Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. 10373 [illegible]

Permit No. [illegible]

(1) OWNER: Name King County Water District [illegible] Address [illegible]

) LOCATION OF WELL: County King [illegible] Sec [illegible]

Bearing and distance from section or subdivision corner 859 feet east & 70 feet [illegible] quarter corner of [illegible]

) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: [illegible]

(5) DIMENSIONS: [illegible]

(6) CONSTRUCTION DETAILS: [illegible]

(7) PUMP: [illegible]

(8) WATER LEVELS: [illegible]

(9) WELL TESTS: [illegible]

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
[illegible]	[illegible]	[illegible]

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME [illegible]

Address [illegible]

[Signed] [illegible]

Appl. 10373
Per. 9719

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL LOG

Record by Driller

Source Driller's record

Location: State of WASHINGTON

County King

Area

Map

NW ¼ SW ¼ sec. 34 T. 25 N., R. 6 E ~~W~~

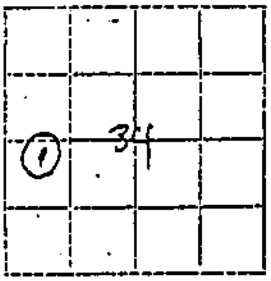


Diagram of Section

Drilling Co. Richardson Well Drilling Co., Inc.

Address P.O.Box 2266, Tacoma, WA 98444

Method of Drilling cable Date March 23 19 70

Owner King County Water District #82

Address Issaquah, WA

Land surface, datum ft. above / below

SWL: 175 Date March 16, 19 70 Dims.: 12" x 717

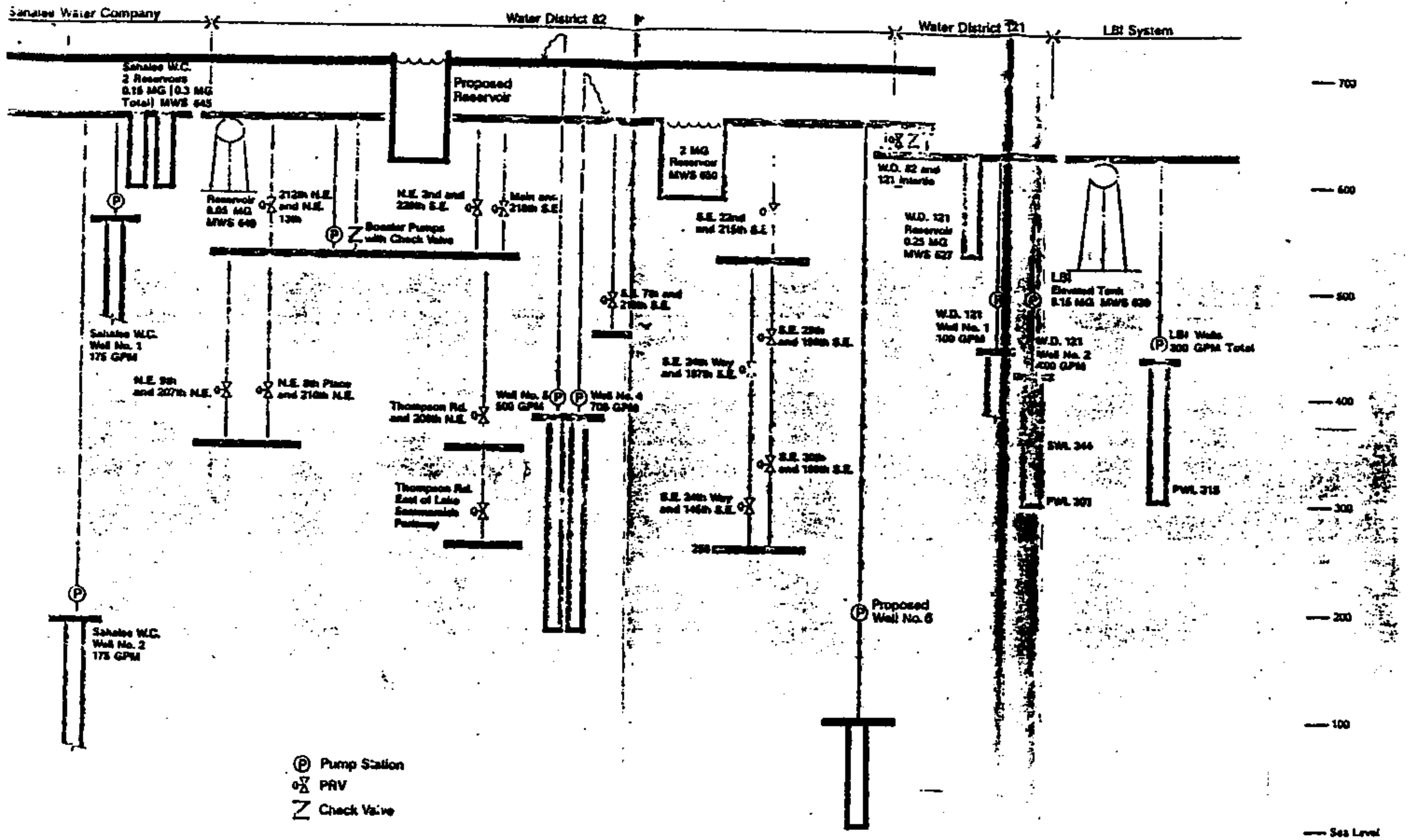
CORRELATION	MATERIAL	From (feet)	To (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Municipal supply		
	top soil	0	3
	hardpan & boulders	m 3	43
	sand cemented & gravel	43	72
	clay, yellow, gravel & sand	72	79
	hardpan, brown	79	110
	clay & sand, yellow	110	118
	hardpan, brown	118	155
	clay, bn, gravel & sand	155	169
	gravel, sand & clay grey	169	190
	clay (bn) fine sand & gravel	190	199
	gravel, course sand & some water	199	202
	gravel, sand & clay grey	202	221
	clay, grey & fine sand	221	249
	sand-course & fine & clay grey	249	264
	rock, gravel & clay grey	264	271

Turn up

Sheet ____ of ____ sheets

ELL LOG.—Continued No............../.........-...............

ATION	MATERIAL	From (feet)	To (feet)
	Depth forward	———	
	sand, cemented & gravel	271	280
	rock, gravel & grey clay	280	330
	clay, sand & gravel	330	351
	clay, grey sand & gravel	351	370
	sand, cemented & gravel	370	380
	glay gray & gravel X8H	380	397
	sand cemented & gravel	397	411
	clay grey, some sand & gravel	411	433
	clay, grey & fine sand	433	542
	clay, dry grey	542	570
	sand, fine & clay grey	570	574
	clay grey	574	595
	sand f & c & gray clay	595	649
	clay, sand grey	649	651
	sand, clay grey & some clay	651	686
	gravel, clay grey & sand	686	689'
	sand, cemented & gravel clay	689	696
	sand & gravel, water formation	696	7171
	Casing: 12" from 0' to 680'		
	Screens: UOP Johnson, stainless Steel		
	10 SS 100 from 697' to 717'		
	Surface Seel: cement 20;		
	Pump test: 750 gpm with ? DD afger 24 hrs.		
	800 broken suction could not get		



Sahalee Water Company
Water District 82
Water District 121
LBI System
Sahalee W.C. 2 Reservoirs 0.15 MG (0.3 MG Total) MWS 645
Proposed Reservoir
Reservoir 0.05 MG MWS 640
212th N.E. and N.E. 13th
Booster Pumps with Check Valve
N.E. 2nd and 220th S.E.
Main ave. 218th S.E.
2 MG Reservoir MWS 650
W.D. 82 and 121 Intertie
W.D. 121 Reservoir 0.25 MG MWS 627
LBI Elevated Tank 0.15 MG MWS 630
W.D. 121 Well No. 1 100 GPM
W.D. 121 Well No. 2 400 GPM
LBI Wells 300 GPM Total
SWL 344
PWL 301
PWL 315
Sahalee W.C. Well No. 1 175 GPM
N.E. 9th and 207th N.E.
N.E. 8th Place and 210th N.E.
Thompson Rd. and 208th N.E.
Well No. 5 500 GPM
Well No. 4 700 GPM
Thompson Rd. East of Lake Sammamish Parkway
S.E. 7th and 218th S.E.
S.E. 22nd and 215th S.E.
S.E. 28th and 196th S.E.
S.E. 24th Way and 197th S.E.
S.E. 30th and 188th S.E.
S.E. 24th Way and 146th S.E.
250
Proposed Well No. 6
Sahalee W.C. Well No. 2 175 GPM
700
600
500
400
300
200
100
Sea Level
Ⓟ Pump Station
PRV
Z Check Valve

Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

File
DATE RECEIVED 01/12/94
RECEIVED
FEB 1 1994
Ans'd......
UPDATED
DATE UPDATED: 01/11/[illegible]

1. SYSTEM ID NO.: [illegible]9000[illegible]
2. COUNTY: KING
GROUP: A
TYPE: COMM
WRIA: 9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER
STREET ADDRESS: 1510 228TH AVE SE.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH
STATE: WA
ZIP CODE: 98027

4. OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER &
OWNER NO.: 3007
STREET ADDRESS: 1510 228TH AVE. S.E.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH
STATE: WA
ZIP CODE: 98027

5. SYSTEM CONTACT PERSON: RONALD E. LITTLE - MANAGER
TITLE:
DAY TELEPHONE: 206-392-6256
EVENING TELEPHONE:

6. OWNERSHIP (CHECK ONE ONLY)
- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☒ LOCAL GOVERNMENT (COUNTY/CITY/PUD/WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)
- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS/INDUSTRIAL/AGRICULTURAL/COMMERCIAL
- ☐ LODGING/FOOD SERVICE
- ☐ SCHOOL/DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY:
TITLE:
DAY TELEPHONE:
DATE:

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI:

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 8844
10. NUMBER ACTIVE RESIDENTIAL POPULATION: 25,647

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH; MAKE ENTRY FOR EACH MONTH

JAN		JUL	
	MAY		NOV
MAR		SEP	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 8,844
15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 12,850,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX/NAME EXAMPLE: 77050Y/SEATTLE	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	RANNEY/INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION VOC EVALUATION
S01	WELL 1	X								X				X					154	500	SW/NE	10	24N	06E	
S02	WELL 2	X									X			X					132	360	NW/SE	11	24N	06E	
S03	WELL # 5	X								X					X				716	450	NW/SW	34	25N	06E	
S04	WELL # 4	X								X					X				714	625	SW/NW	34	25N	06E	
S05	WELL 6	X									X				X				365	500	NE/SE	32	25N	06E	
S06	WELL #7	X									X			X					150	2,000	SE/SE	21	24N	06E	
S07	WELL #8	X								X				X					150	3,500	SE/SE	21	24N	06E	

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	30	30

NO. APPROVED SERVICES (PER PLANS): 0
DATE OF LAST SANITARY SURVEY: 0000 BY DOH ☐ LHD ☐
SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? ☒ YES ☐ NO
GW MGMT AREA? ☐ YES ☐ NO
FOR LHD USE ONLY
EFFECTIVE DATE RETRO. CHANGES:
SIGNATURE OF DOH REVIEWER:
DATE:

WATER SYSTEM

DOH [illegible]

1989

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES - 1989

ITEM	WELL 1 6/4/89	WELL 2 4/10/89	WELL 4 4/10/89	WELL 5 4/10/89	WELL 6 7/17/89	WELL 7 7/17/89	WELL 8 4/10/89	*MCL
pH	7.06	7.23	8.22	8.32	7.46	7.48	*7.05	----
Arsenic	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Barium	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	1.0
Cadmium	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	0.01
Chromium	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.005
Iron	*0.05	*0.05	*0.05	*0.05	*0.05	0.05	*0.05	0.3
Lead	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Manganese	*0.010	*0.010	0.041	0.042	0.026	*0.010	*0.010	0.05
Mercury	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	0.002
Selenium	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	0.01
Silver	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.010	0.05
Sodium	*10	*10	*10	*10	*10	*10	*10	
Hardness	60	87	63	61	48	74	81	
Conductivity	155	220	160	150	120	200	200	700
Turbidity	*0.1	*0.4	*0.2	*0.1	*0.1	0.2	*0.1	1.0
Color	*5.0	*5.0	*5.0	*5.0	*5.0	15.0	*5.0	15.0
Fluoride	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	2.0
Nitrate	1.1	*0.7	*0.2	*0.2	*0.2	1.6	*0.2	10.0
Chloride	*10	*10	*10	*10	*10	*10	*10	250
Sulfate								250

PARTS PER MILLION

*MCL is the Maximum Contaminant Level Allowed

*Less Than

(Note: Well 7 was re-tested for Iron & Turbidity and those numbers are listed above.)

[illegible]

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1990

ITEM	WELL 1 9/7/90	WELL 2 4/10/89	WELL 4 9/7/90	WELL 5 9/7/90	WELL 6 9/7/90	WELL 7 9/7/90	WELL 8 9/7/90	** MCL
pH	6.74	7.23	7.26	7.74	7.88	7.29	7.12	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.0100	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.0100	<0.039	<0.037	<0.028	<0.010	<0.010	0.05
Mercury	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	<10	<10	<10	<10	<10	<10	<11	
Hardness	79	87	58	58	51	72	72	
Conductivity	85	220	150	154	125	189	188	700
Turbidity	<0.2	<0.4000	<0.1	<0.1	<0.2	<0.1	<0.9	1.0
Color	<5.0	<5.0	<10.0	<10.0	<5.0	<5.0	<10.	15
Fluoride	<0.2	<0.2000	<0.2	<0.2	<0.2	<0.2	<0.2	2.0
Nitrate	<1.3	<0.7000	<0.2	<0.2	<0.2	<0.2	<1.3	10.0
Chloride	<10	<10	<10	<10	<10	<10	<10	250

PARTS PER MILLION

< Less than Detectable Limits

** Maximum Contaminant Level

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1991

ITEM	WELL 1 7/12/91	WELL 2 7/12/91	WELL 4 7/12/91	WELL 5 7/12/91	WELL 6 7/12/91	WELL 7 7/12/91	WELL 8 7/12/91	** MCL
pH	6.6	6.4	7.3	6.7	6.7	7.1	6.8	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.05
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	1.00
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.01
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	0.3
Manganese	<0.010	<0.010	<0.018	<0.026	<0.023	<0.010	<0.005	0.05
Mercury	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	0.05
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0010	0.002
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.005	0.01
Sodium	7.	6.	9.	8	5	10	<0.010	0.05
Hardness	61	66	52	51	43	61	12	
Conductivity	180	270	120	130	120	190	75	
Turbidity	0.2	0.6	.4	<0.3	.3	.4	210	700
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	0.3	1.0
Fluoride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<5.	15
Nitrate	1.2	<1.9	1.8	<0.2	<0.2	<0.2	<0.2	
Chloride	<10	<10	<10	<10	21	24	1.3	
							<10	

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS – 1992

ITEM	WELL 1 2/14/92	WELL 2 2/14/92	WELL 4 2/14/92	WELL 5 2/14/92	WELL 6 2/14/92	WELL 7 2/14/92	WELL 8 7/12/91	** MCL
pH	7.0	7.3	7.93	8.4	8.4	7.7	6.8	
Arsenic	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	.05
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	0.3
Lead	<0.002	<0.002	<0.0025	<0.002	<0.002	<0.002	<0.005	0.05
Manganese	<0.01	<0.01	0.043	<0.041	0.038	<0.01	<0.010	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	0.05
Sodium	9.5	6.1	8.7	8.4	4.8	10	12	
Hardness	85.	75	62	62	56	79	75	
Conductivity	180.	150	140	140	120	170	210	700
Turbidity	0.46	0.42	.33	0.32	.90	.32	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2
Nitrate	1.0	<1.8	<1.0	<1.0	<1.0	<1.0	1.3	10
Chloride	<20.	<20	<20	<20	<20	<20	<10	250
Sulfate	10.	<10.	<10.	<10	<10	11		250
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		1.0
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		5.0
Aluminum	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Calcium	19.	18.	18	18	16	20.		

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1993

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	WELL 9	** MCL
	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Barium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1
Cadmium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Copper	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3
Iron	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.17	0.3
Lead	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.05
Manganese	< 0.01	< 0.01	< 0.043	< 0.041	< 0.092	< 0.01	< 0.01	< 0.01	0.05
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
Selenium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Sodium	9.1	9.3	9.0	7.7	8.4	9.5	10.	8.5	
Zinc	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5
Hardness	78.	80	65	65	93	79	75	68	
Conductivity	190	150	160	150	210	190	190	160	700
Turbidity	0.10	0.49	0.17	0.15	0.1	0.1	0.14	0.43	1
Color	5.	5.	5.	5.	5.	5.	5.	5.	15
Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	250
Fluoride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2
Nitrate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.0	10
Sulfate	< 10	< 10	< 10	< 13	< 10	< 10	< 10	< 10	250

LEGEND

< Less Than Detectable Limits
** Maximum Contaminant Level

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system.
Photocopy as necessary.

PART I: System Information

Well owner/manager : Sammamish Plateau Water & Sewer District

Water system name : Sammamish Plateau Water & Sewer District

County: King

Water system number: 409009

Source number: New Replacement Well (Replaces Original Well 4 source number SO4

Well depth: 855 (ft.) (*From WFI form*)

Source name: Well 4R

WA well identification tag number: AAS–270
______ well not tagged

Number of connections: 14358

Population served: 48,036

Township: 25N

Range: 06E

Section: 34

1/4 1/4 Section: NW1/4 of the SW1/4

Latitude/longitude (if available): 47.609 / -122.03
How was lat./long. determined?

______ global positioning device ________ survey _____ topographic map
x other: Online King County imap - http://www.metrokc.gov/gis/mapportal/iMAP_main.htm

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 03 / 18 / 04 month/day/year

last reconstruction: __ / __ /__ month/day/year

______ information unavailable

2) Well driller: Stephen J Schneider – Schneider Equipment Inc.

21881 River Road NE

St. Paul, Oregon 97137

__ well driller unknown

3) Type of well:

x Drilled: x rotary __ bored __ cable (percussion) _ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other:

Additional comments: ______________________________

____

4) Well report available? x YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 2,000 (gallons/min)

Source of information: Replacement Well 4R Construction and Testing Report (CDM, 2004)

If not documented, how was pumping rate determined? ______________________________

____

_ Pumping rate unknown

6) Is this source treated?

If so, what type of treatment:

x disinfection x filtration __ carbon filter __ air stripper __ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

Water is chlorinated and filtered to remove Manganese and Arsenic

____

7) If source is chlorinated, is a chlorine residual maintained: X YES __ NO

Residual level: minimum 0.3 ppm free after the filters (*At the point closest to the source.*)

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20–50 ft __ 50–100 ft __ 100–200 ft _X_ >200 ft

__ information unavailable ('<' *means less than;* '>' *means greater than*)

2) Depth to ground water (static water level):

__ < 20 ft __ 20–50 ft __ 50–100 ft _X_ >100 ft

__ flowing well/spring (artesian)

How was water level determined?

__ well log _X_ other: ____Measured to within 0.01 ft with electronic sounding device

_ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

______ psi (pounds per square inch)
or
______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO

5) Wellhead elevation (height above mean sea level): __352__ (ft)

How was elevation determined? _X_ topographic map __ Drilling/Well Log __ altimeter

__ other: ____

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

_X_ evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the **bottom** of the **lowest confining layer**? _X_ YES __ NO

__ information unavailable

7) Sanitary setback:

_X_ < 100 ft* __ 100–120 ft __ 120–200 ft __ > 200 ft

* if less than 100 ft describe the site conditions:

Well site is about 70 feet from Main Street – a gravel county road that provides access to about 12 Properties. A setback exemption was allowed by King County Health Department due to the deep (695 ft) surface seal

8) Wellhead construction:

_X_ wellhead enclosed in a wellhouse

_X_ controlled access (describe): The well will be locked in a wellhouse that is monitored via telemetered security systems

__ other uses for wellhouse (describe): ____

__ no wellhead control

9) Surface seal:

__ 18 ft

__ < 18 ft (no Department of Ecology approval) (*'<' means less than*)

__ < 18 ft (Approved by Ecology, include documentation)(*'<' means less than*)

_x_ > 18 ft ('>' *means greater than*)

__ depth of seal unknown

__ no surface seal

10) Annual rainfall (inches per year):

__ < 10 in/yr __ 10–25 in/yr _X_ > 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 359,739,504 (gallons)

How was this determined?

__ meter

__ estimated: __ pumping rate (______________________)

__ pump capacity (______________________)

X other: Water Rights

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 780 (ft)

1 year ground water travel time : 1,103 (ft)

5 year ground water travel time: 2,467 (ft)

10 year ground water travel time: 3,489 (ft)

Information available on length of screened/open interval?

X YES __ NO

Length of screened/open interval: 85 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? X YES __ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? X YES __ NO (mark and identify on map).

Comments: A large wetland occupies the north half of the 6-month time of travel boundary. Septic Systems serve the homes along Main Street. A gravity sewer line runs parallel along Main Street

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application				X
stormwater injection wells				
other injection wells (See Comments)	X	X	X	
abandoned ground water well				
landfills, dumps, disposal areas				
known hazardous materials clean-up site				
water system(s) with known quality problems				
population density > 1 house/acre				
residences commonly have septic tanks				
Wastewater treatment lagoons				
sites used for land application of waste				

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

The Wellhead Protection Program for Plateau and Cascade View wells Report prepared in June 24, 1998

for the Sammamish Plateau Water & Sewer District discussed the ground water flow for the Plateau area wells.

Well 4R is in Zone IV. The top of Zone IV occurs at elevations of approximately 340 to 500 feet below sea level.

Sections related to potential sources for the Zone IV and shallower Zone III aquifers are attached and used to

Answer the questions in the above survey. Well 5 continues to be used as a recharge well as

part of a groundwater recharge project. Potable system groundwater is used for the injection source.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2–5 mg/liter nitrate		
> 5 mg/liter nitrate		
Nitrate sampling records unavailable		

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	
VOC sampling records unavailable		X

C. EDB/DBCP:	YES	NO
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)		
EDB/DBCP detected below MCL at least once		
EDB/DBCP detected above MCL at least once		
EDB/DBCP never detected		
EDB/DBCP tests required but not yet completed		
EDB/DBCP tests not required	X	

D. Other SOCs (Pesticides):	YES
Other SOCs detected (pesticides and other synthetic organic chemicals)	
Other SOC tests performed but none detected (list test methods in comments)	
Other SOC tests not performed	X

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ____________________

____

____

____

E. Bacterial contamination: YES NO

Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records)..____ __X_

Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.......____ __X__

Source sampling records for bacteria unavailable ____

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

__ YES _X_ NO

Describe with references to map produced in Part IV:

____

____

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

__ YES _X_ NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

_X_ YES __ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES _X_ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? YES

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	___	_X_	____
6 month–1 year travel time	___	_X_	____
1–5 year travel time	_X_	___	____
5–10 year travel time	___	_X_	____

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time	_X__	___	____
1–5 year travel time	___	___	____
5–10 year travel time	___	___	____

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

The Wellhead Protection Program for Plateau and Cascade View wells Report prepared in June 24, 1998 for the Sammamish Plateau Water & Sewer District discussed the ground water flow for the Plateau area wells. The ground water flow directions within each aquifer zone were evaluated using static water level from wells completed within the aquifer zone. Well 4R is in Zone IV. The top of Zone IV occurs at elevations of approximately 340 to 500 feet below sea level. A potentiometric surface map for wells completed in Zone IV shows that ground water flow is generally to the west and northwest direction.

Suggestions and Comments

Did you attend one of the susceptibility workshops? __ YES _X_ NO

Did you find it useful? __ YES __ NO

Did you seek outside assistance to complete the assessment? _X_ YES __ NO

- -

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

____

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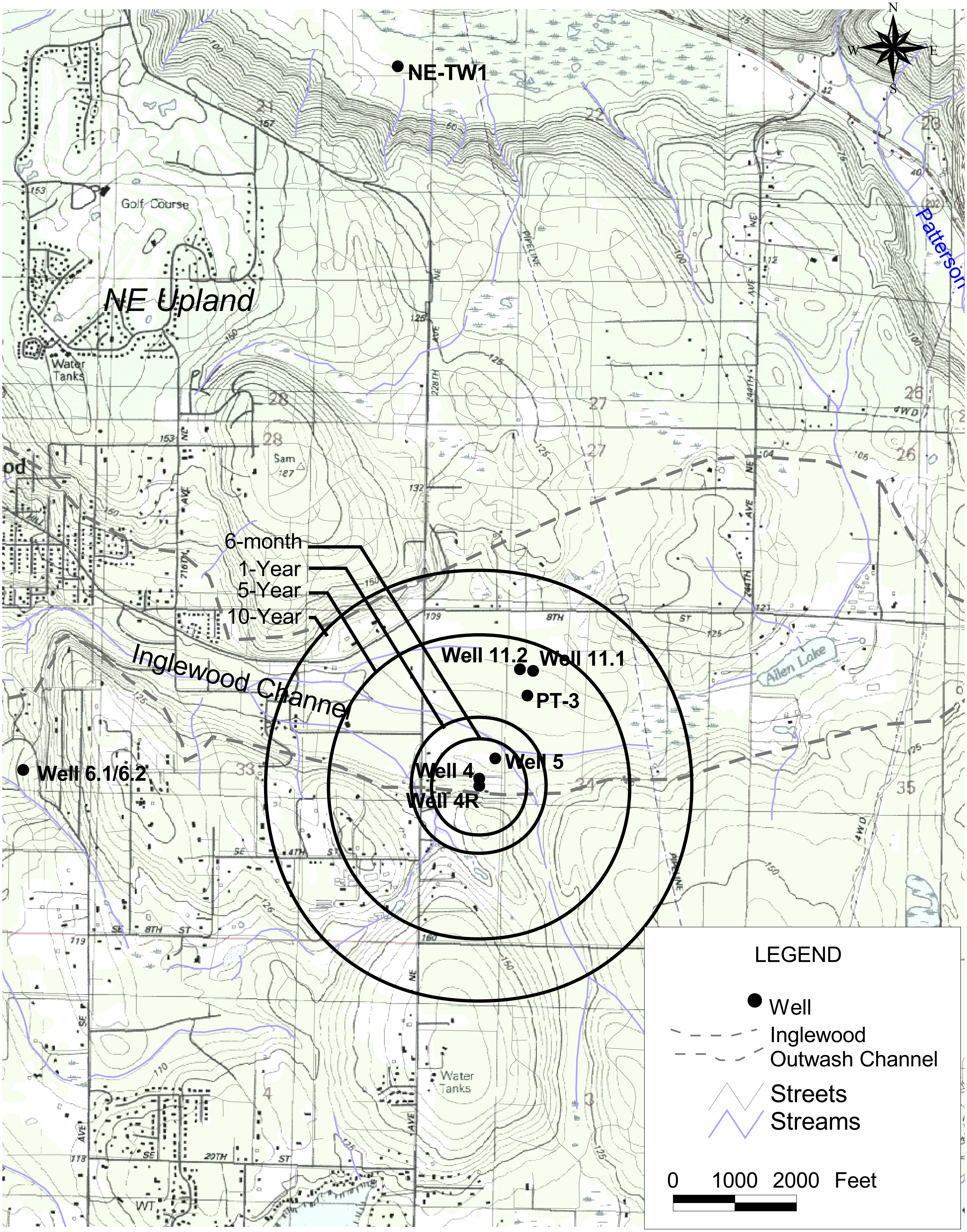
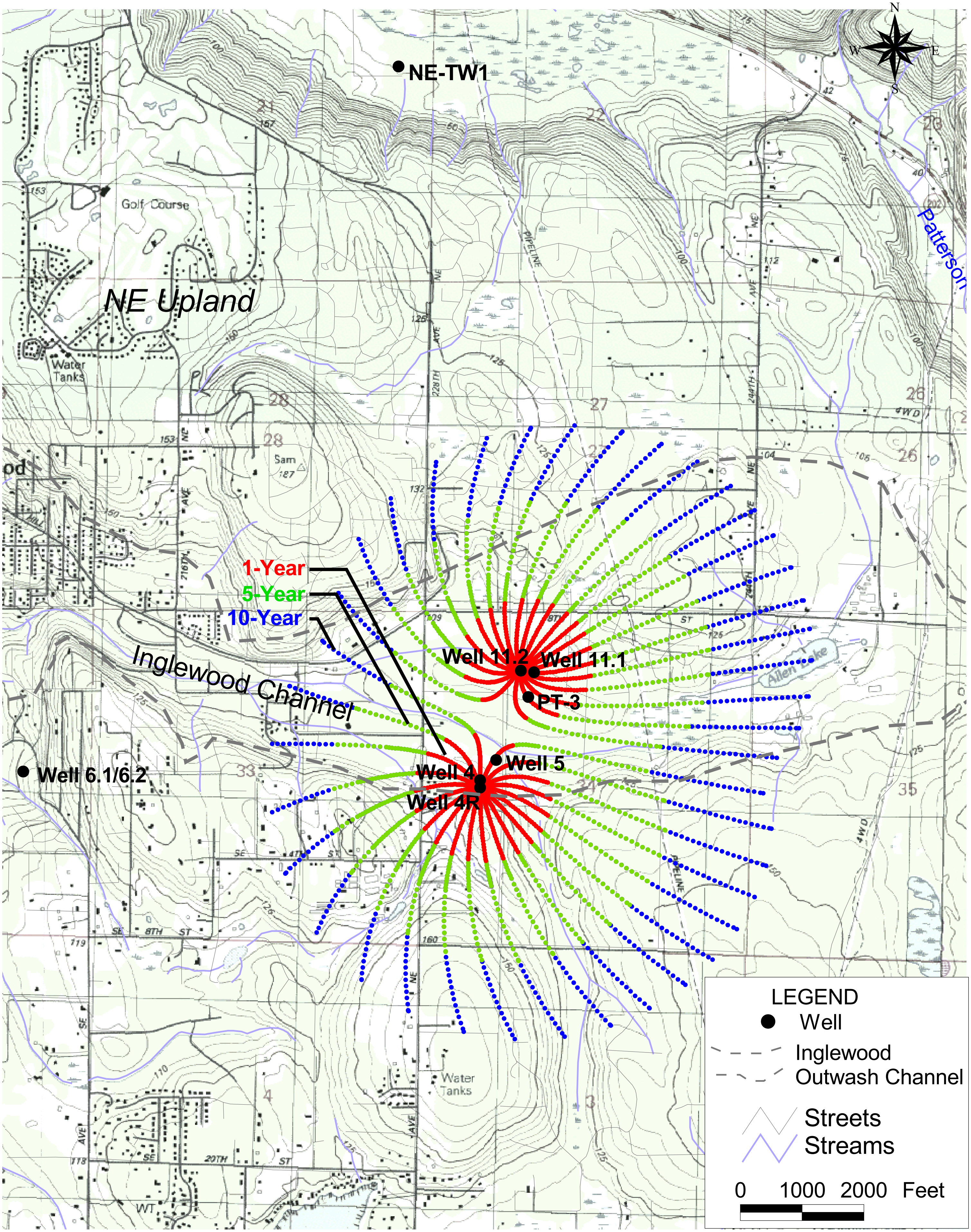


CDM

Sammamish Plateau Water and Sewer District
Well 4R Calculated Fixed Radius Map

Figure A-1



CDM

Sammamish Plateau Water and Sewer District
Well 4R & Well 11.2 Capture Zone Delineations

Figure 9

Table A-1: Input Data for EPA WHPA Code 2.2 Analytical Models

Zone/Well Name	**Zone IV / 4R, 11.2**

GPTRAC Semi-analytical Options

Variable Name	Symbol	Value
Aquifer type	IAQFR	Confined
Transmissivity	TRANSM	5561 FT2/DAY
Hydraulic gradient	GRADNT	0.002
Ambient flow direction	ALPHA	180^{o}
Porosity	POROS	20 percent
Saturated thickness	B	100 to 200 ft
Confining bed hydraulic conductivity[1]	KPRIM	10^{-1} gal/day/ft2
Confining bed thickness[1]	BPRIM	92 ft
Areal recharge rate[2]	CAPN	NA
Original saturated thickness[2]	CAPH	NA
Maximun radius of influence[2]	RMAX	NA
Boundary conditions	IBOUND	None
Well pumping rate (4R, 11.2)	QPWELL	2,000, and 1,800 gpm
Well recharge rate	QRWELL	NA
X-coordinate (ft) (4R, 11.2)	XPWELL	1,344,847, 1,345,493
Y-coordinate (ft) (4R, 11.2)	YPWELL	224,324, 226,241

1Leaky confined aquifers only; 2 Unconfined aquifers only
NA Not applicable

COMMENTS
Ambient flow direction is measured counterclockwise from x-axis. Well pumping rate was estimated from water right application.

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98027

WELL NO. 6

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER + SEWER DIST.

Water system name : SAMMAMISH PLATEAU WATER + SEWER DIST

County: KING

Water system number: 409009 Source number: S05

Well depth: 365 (ft.) (*From WFI form*)

Source name: WELL 6

WA well identification tag number: ___ ___ ___-___ ___ ___

___ well not tagged

Number of connections: 9000 Population served*: 26,000

Township: 25 N Range: 06E

Section: 32 1/4 1/4 Section: NE/SE

Latitude/longitude (if available): ___/___

How was lat./long. determined?

___ global positioning device ___ survey ___ topographic map
___ other: ___

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 8/__/80 month/day/year

last reconstruction: __/__/__ month/day/year

___ information unavailable

2) Well driller: STORY & ARMSTRONG
16715 66th AVE E.
PUYALLUP WA.

__ well driller unknown

3) Type of well:

[✓ Drilled:] __ rotary __ bored [✓ cable (percussion)] __ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other: ________

Additional comments: ________________________________

4) Well report available? [✓ YES (attach copy to form)] __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 600 (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ________________

__ Pumping rate unknown

6) Is this source treated? YES

If so, what type of treatment:

__ disinfection __ filtration __ carbon filter __ air stripper [✓ other]

Purpose of treatment (describe materials to be removed or controlled by treatment):
CHLORINATION FOR ODOR CONTROL

7) If source is chlorinated, is a chlorine residual maintained: __ YES [✓ NO]

Residual level: ________ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20–50 ft __ 50–100 ft __ 100–200 ft _X_ > 200 ft

__ information unavailable ('<' *means less than;* '>' *means greater than*)

2) Depth to ground water (static water level):

__ < 20 ft __ 20–50 ft __ 50–100 ft _X_ > 100 ft

__ flowing well/spring (artesian)

How was water level determined?

_X_ well log __ other: ______________________________

__ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO N/A

5) Wellhead elevation (height above mean sea level): 280 (ft)

How was elevation determined? __ topographic map _X_ Drilling/Well Log __ altimeter

__ other: ______________________________

__ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

YES evidence of a confining layer in well log

__ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the top of the open interval? _X_ YES __ NO

__ information unavailable

7) Sanitary setback:

___ < 100 ft* [✓ 100–120 ft] ___ 120–200 ft ___ > 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

[✓ wellhead enclosed in a wellhouse]

[✓ controlled access (describe):] FENCED + GATED (LOCKED)

___ other uses for wellhouse (describe):

___ no wellhead control

9) Surface seal:

___ 18 ft

___ < 18 ft (no Department of Ecology approval) ('<' *means less than*)

___ < 18 ft (Approved by Ecology, include documentation) ('<' *means less than*)

[✓ > 18 ft] ('>' *means greater than*)

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ < 10 in/yr ___ 10–25 in/yr [✓ > 25 in/yr]

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 15,477,160 (gallons)

How was this determined?

[✓ meter]

___ estimated: ___ pumping rate (________________)

___ pump capacity (________________)

___ other: ________________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 280 (ft)

1 year ground water travel time : 390 (ft)

5 year ground water travel time: 880 (ft)

10 year ground water travel time: 1240 (ft)

Information available on length of screened/open interval?

[✓ YES] ___ NO

Length of screened/open interval: 20 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES [✓ NO] (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES [✓ NO] (mark and identify on map).

Comments: ________________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application	✓	✓	✓	
stormwater injection wells	No	No	No	
other injection wells	No	No	No	
abandoned ground water well				✓
landfills, dumps, disposal areas	No	No	No	
known hazardous materials clean-up site	No	No	No	
water system(s) with known quality problems				✓
population density > 1 house/acre	YES	YES	YES	
residences commonly have septic tanks	✓	✓	✓	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2-5 mg/liter nitrate		X
> 5 mg/liter nitrate		X

___ Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	

___ VOC sampling records unavailable

C. EDB/DBCP: (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	YES	NO
EDB/DBCP detected below MCL at least once		
EDB/DBCP detected above MCL at least once		
EDB/DBCP never detected		

___ EDB/DBCP tests required but not yet completed

X EDB/DBCP tests not required

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)		

___ Other SOC tests performed but none detected
(list test methods in comments

X Other SOC tests not performed

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ____________________

____

____

____

E. Bacterial contamination:

	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___	X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___	X

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

[✓ YES] ___ NO

Describe with references to map produced in Part IV:

STEEP HILLSIDE + ravine. This area is on the hillside coming down from the East Sammamish Plateau to Lake Sammamish.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES [✓ NO]

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

[✓ YES] ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

___ YES [✓ NO]

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? No

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	___	✓	___
6 month–1 year travel time	___	✓	___
1–5 year travel time	___	✓	___
5–10 year travel time	___	✓	___

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time	___	✓	___
1–5 year travel time	___	✓	___
5–10 year travel time	___	✓	___

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Suggestions and Comments

Did you attend one of the susceptibility workshops? _X_ YES __ NO

Did you find it useful? _X_ YES __ NO

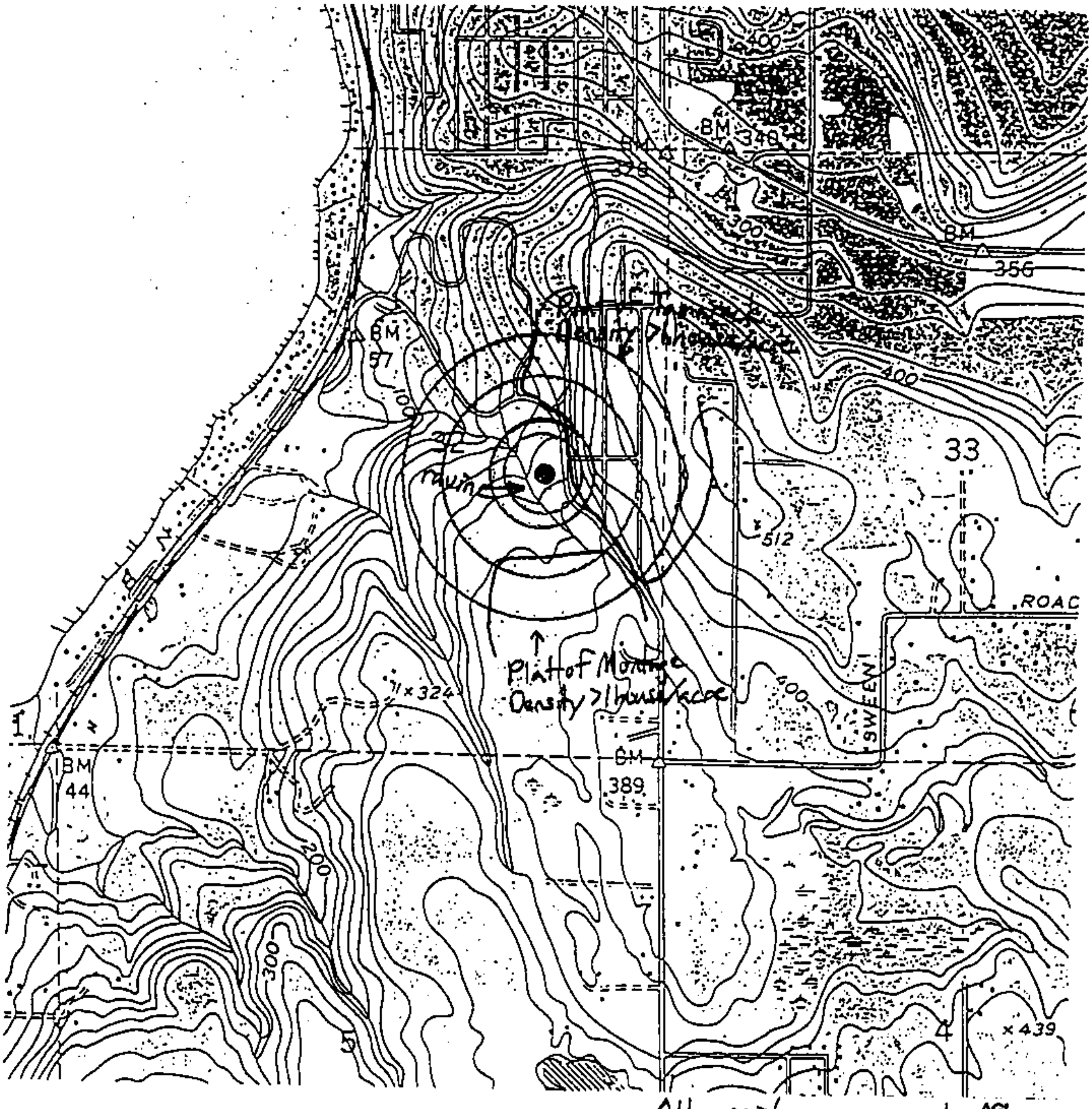
Did you seek outside assistance to complete the assessment? _X_ YES __ NO

- -

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

Sammamish Plateau Water & Sewer District

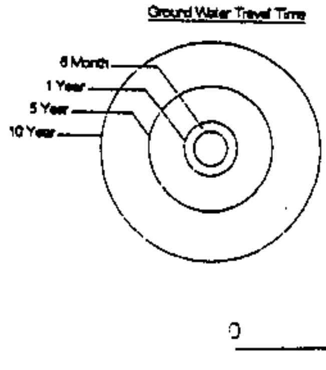
Well 6



All residences, except those in the Plat of Montage are served by septic tanks.

AGI

LEGEND



SCALE (FT)

0 1000 2000 3000 4000 5000

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. G1-23897
Permit No. G1-23897

(1) OWNER: Name KING COUNTY WATER DIST. 82 Address 1510 228th AVE. S.E. ISSAQUAH

(2) LOCATION OF WELL: County KING NE ¼ SE ¼ Sec. 32 T. 25 N., R. 6E W.M.

Bearing and distance from section or subdivision corner 2538 ft N & 1020 ft W of SE cor. Sec. 32-25-6 E.W.M.

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 6

New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12" inches.
Drilled 366 ft. Depth of completed well 366 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16" Diam. from 0 ft. to 20 ft.
Threaded ☐ 12" Diam. from 0 ft. to 366 ft.
Welded ☒ Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name JOHNSON
Type STAINLESS Model No. [illegible]
Diam. 6 Slot size 50 from 340 ft. to 360 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: F-5
Gravel placed from 325 ft. to 366 ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal CONCRETE
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name PEERLESS
Type: TURBINE HP 125

(8) WATER LEVELS: Land-surface elevation above mean sea level 280 ft.
Static level 112 ft. below top of well Date 8/80
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? DRILLER
Yield: 600 gal./min. with 142 ft. drawdown after 6 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1	160'	1000	119'		
10	145'				
100	132'				

Date of test 8-4-80
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
SAND & GRAVEL W/CLAY	0	37
SANDY CLAY	37	50
SAND & GRAVEL W/ CLAY	50	68
COMPACTED SAND & GRAVEL	68	108
BROWN SAND AND GRAVEL	108	142
WATER BEARING [illegible]		
BROWN FINE SAND	142	178
GRAY SILT & FINE SAND	178	214
& CLAY & LAYER OF PEAT		
GRAY VERY FINE SAND	214	250
[illegible]		
GRAY VERY DIRTY FINE	250	260
TO MED. SAND		
SILT & CLAY W/ SAND LAYERS	260	290
DARK GRAY SILT & CLAY	290	339
[illegible]		
GRAY POORLY SORTED [illegible]	[illegible]	362
[illegible]		
[illegible]		
SILTY GRAY FINE SAND	[illegible]	[illegible]

Work started JULY 1980. Completed Sept. 1980

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Story & Armstrong
(Person, firm, or corporation) (Type or print)

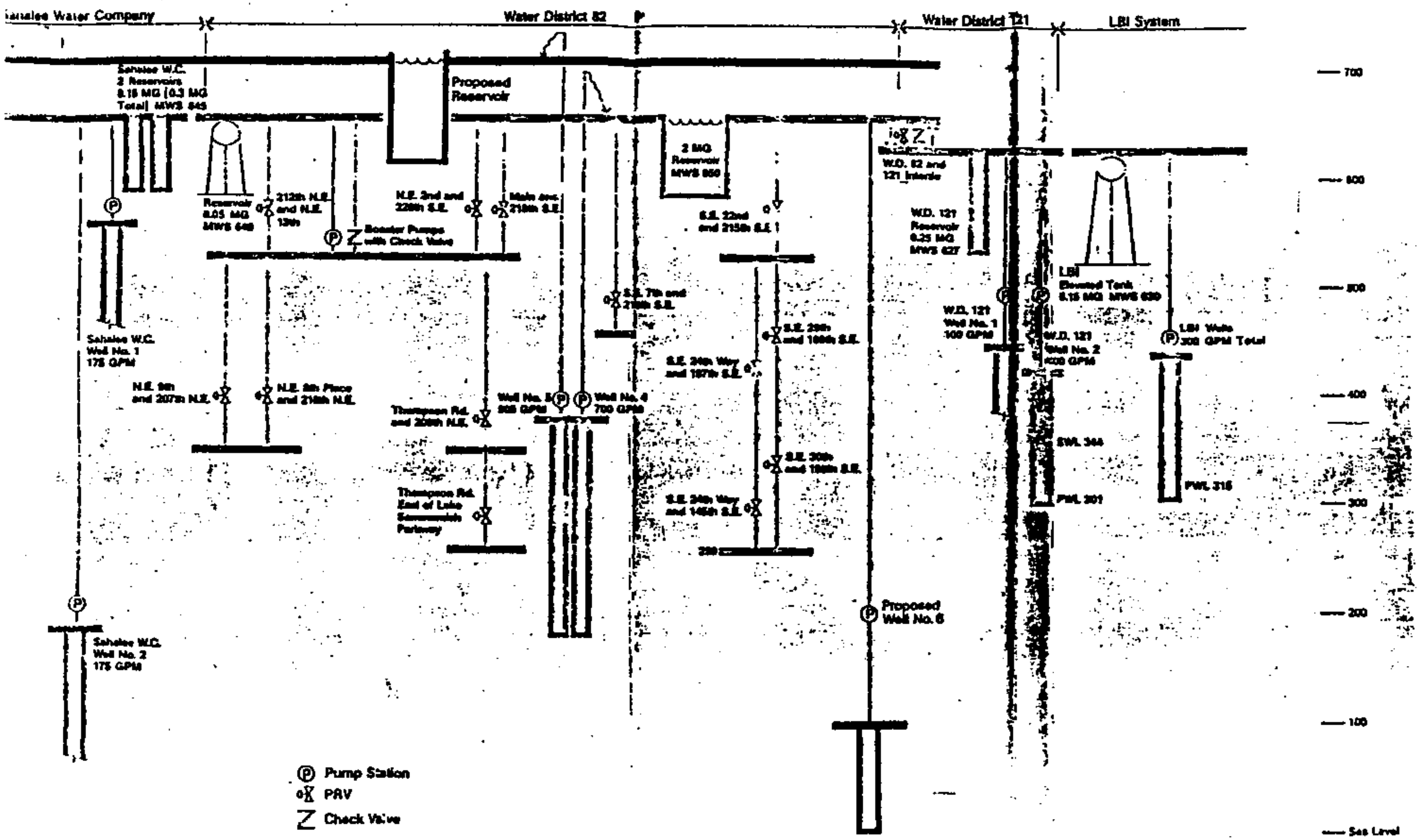
Address 10715 - 66th Av. East Puyallup, Wn

[Signed] Edgar L. [illegible]
(Well Driller)

License No. 0492 Date 9-17, 1982

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20



ahalee Water Company
Water District 82
Water District 121
LBI System
Sahalee W.C. 2 Reservoirs 0.15 MG (0.3 MG Total) MWS 645
Proposed Reservoir
Reservoir 0.05 MG MWS 640
212th N.E. and N.E. 13th
Booster Pumps with Check Valve
N.E. 2nd and 228th S.E.
Main ave. 218th S.E.
2 MG Reservoir MWS 650
S.E. 22nd and 215th S.E.
W.D. 82 and 121 Intertie
W.D. 121 Reservoir 0.25 MG MWS 627
LBI Elevated Tank 0.15 MG MWS 630
W.D. 121 Well No. 1 100 GPM
W.D. 121 Well No. 2 400 GPM
LBI Wells 300 GPM Total
SWL 344
PWL 301
PWL 316
Sahalee W.C. Well No. 1 175 GPM
S.E. 7th and 218th S.E.
S.E. 29th and 188th S.E.
S.E. 24th Way and 187th S.E.
N.E. 9th and 207th N.E.
N.E. 8th Place and 218th N.E.
Thompson Rd. and 208th N.E.
Well No. 5 305 GPM
Well No. 4 700 GPM
S.E. 30th and 188th S.E.
Thompson Rd. East of Lake Sammamish Parkway
S.E. 24th Way and 145th S.E.
230
Proposed Well No. 6
Sahalee W.C. Well No. 2 175 GPM
Pump Station
PRV
Check Valve
700
600
500
400
300
200
100
Sea Level

Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

FILE
DATE RECEIVED 01/1?/9?
FEB 1 1994
Ans'd......
UPDATED
DATE UPDATED: 01/11/..

1. SYSTEM ID NO. ..900..	2. COUNTY ..ING	GROUP A	TYPE COMM	WRIA 9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER
STREET ADDRESS: 1510 228TH AVE SE.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH STATE: WA ZIP CODE: 98027
4. OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER &
OWNER NO.: 3007
STREET ADDRESS: 1510 228TH AVE. S.E.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH STATE: WA ZIP CODE: 98027
5. SYSTEM CONTACT PERSON: .ONALD E. LITTLE TITLE: MANAGER
DAY TELEPHONE: 206-392-6256
EVENING TELEPHONE:

6. OWNERSHIP (CHECK ONE ONLY)

- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☒ LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- ☐ LODGING / FOOD SERVICE
- ☐ SCHOOL / DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY TITLE
DAY TELEPHONE DATE

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 8844
10. NUMBER ACTIVE RESIDENTIAL POPULATION: 25,647

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH; MAKE ENTRY FOR EACH MONTH

JAN	FEB	MAY	JUN	JUL	NOV
MAR		APR		AUG	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 8,844
15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 12,850,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME	18. SOURCE CATEGORY								19. USE			20.	21. TREATMENT					22. WELL DEPTH	23. SOURCE CAPACITY	24. SOURCE LOCATION				
	LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME EXAMPLE: 77050Y / SEATTLE	WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	(FEET)	(GPM)	1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION VOC EVALUATION
501	WELL 1	X								X				X					154	500	SW/NE	10	24N	06E	
502	WELL 2	X									X			X					132	360	NW/SE	11	24N	06E	
503	WELL # 5	X								X					X				716	450	NW/SW	34	25N	06E	
504	WELL # 4	X								X					X				714	625	SW/NW	34	25N	06E	
505	WELL 6	X									X				X				365	500	NE/SE	32	25N	06E	
506	WELL #7	X									X			X					150	2,000	SE/SE	21	24N	06E	
507	WELL #[illegible]	X								X				X					150	3,500	SE/SE	21	24N	06E	

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	30	30

NO. APPROVED SERVICES (PER PLANS) 0
DATE OF LAST SANITARY SURVEY 0000 BY DOH LHD
SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? (YES NO GW MGMT AREA? YES NO FOR LHD USE ONLY
EFFECTIVE DATE RETRO. CHANGES
SIGNATURE OF DOH REVIEWER DATE

WATER SYSTEM

1989

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES - 1989

ITEM	WELL 1 8/4/89	WELL 2 4/10/69	WELL 4 4/10/89	WELL 5 4/10/89	WELL 6 7/17/89	WELL 7 7/17/89	WELL 8 4/10/89	*MCL
pH	7.06	7.23	8.22	8.32	7.46	7.48	*7.05	----
Arsenic	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Barium	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	1.0
Cadmium	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	0.01
Chromium	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.005
Iron	*0.05	*0.05	*0.05	*0.05	*0.05	0.05	*0.05	0.3
Lead	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Manganese	*0.010	*0.010	0.041	0.042	0.026	*0.010	*0.010	0.05
Mercury	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	0.002
Selenium	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	0.01
Silver	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.010	0.05
Sodium	*10	*10	*10	*10	*10	*10	*10	
Hardness	60	87	63	61	48	74	81	
Conductivity	155	220	160	150	120	200	200	700
Turbidity	*0.1	*0.4	*0.2	*0.1	*0.1	0.2	*0.1	1.0
Color	*5.0	*5.0	*5.0	*5.0	*5.0	15.0	*5.0	15.0
Fluoride	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	2.0
Nitrate	1.1	*0.7	*0.2	*0.2	*0.2	1.6	*0.2	10.0
Chloride	*10	*10	*10	*10	*10	*10	*10	250
Sulfate								250

PARTS PER MILLION

*MCL Is the Maximum Contaminant Level Allowed

*Less Than

(Note: Well 7 was re-tested for Iron & Turbidity and those numbers are listed above.)

[illegible]

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1990

ITEM	WELL 1 9/7/90	WELL 2 4/10/89	WELL 4 9/7/90	WELL 5 9/7/90	WELL 6 9/7/90	WELL 7 9/7/90	WELL 8 9/7/90	** MCL
pH	6.74	7.23	7.26	7.74	7.88	7.29	7.12	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.0100	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.0100	<0.039	<0.037	<0.028	<0.010	<0.010	0.05
Mercury	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	<10	<10	<10	<10	<10	<10	<11	
Hardness	79	87	58	58	51	72	72	
Conductivity	85	220	150	154	125	189	188	700
Turbidity	<0.2	<0.4000	<0.1	<0.1	<0.2	<0.1	<0.9	1.0
Color	<5.0	<5.0	<10.0	<10.0	<5.0	<5.0	<10.	15
Fluoride	<0.2	<0.2000	<0.2	<0.2	<0.2	<0.2	<0.2	2.0
Nitrate	<1.3	<0.7000	<0.2	<0.2	<0.2	<0.2	<1.3	10.0
Chloride	<10	<10	<10	<10	<10	<10	<10	250

PARTS PER MILLION

< Less than Detectable Limits

** Maximum Contaminant Level

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1991

ITEM	WELL 1 7/12/91	WELL 2 7/12/91	WELL 4 7/12/91	WELL 5 7/12/91	WELL 6 7/12/91	WELL 7 7/12/91	WELL 8 7/12/91	** MCL
pH	6.6	6.4	7.3	6.7	6.7	7.1	6.8	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.010	<0.018	<0.026	<0.023	<0.010	<0.010	0.05
Mercury	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	7.	6.	9.	8	5	10	12	
Hardness	61	66	52	51	43	61	75	
Conductivity	180	270	120	130	120	190	210	700
Turbidity	0.2	0.6	.4	<0.3	.3	.4	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nitrate	1.2	<1.9	1.8	<0.2	<0.2	<0.2	1.3	
Chloride	<10	<10	<10	<10	21	24	<10	

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS – 1992

ITEM	WELL 1 2/14/92	WELL 2 2/14/92	WELL 4 2/14/92	WELL 5 2/14/92	WELL 6 2/14/92	WELL 7 2/14/92	WELL 8 7/12/91	** MCL
pH	7.0	7.3	7.93	8.4	8.4	7.7	6.8	
Arsenic	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	.05
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	0.3
Lead	<0.002	<0.002	<0.0025	<0.002	<0.002	<0.002	<0.005	0.05
Manganese	<0.01	<0.01	0.043	<0.041	0.038	<0.01	<0.010	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	0.05
Sodium	9.5	6.1	8.7	8.4	4.8	10	12	
Hardness	85.	75	62	62	56	79	75	
Conductivity	180.	150	140	140	120	170	210	700
Turbidity	0.46	0.42	.33	0.32	.90	.32	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2
Nitrate	1.0	<1.8	<1.0	<1.0	<1.0	<1.0	1.3	10
Chloride	<20.	<20	<20	<20	<20	<20	<10	250
Sulfate	10.	<10.	<10.	<10	<10	11		250
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		1.0
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		5.0
Aluminum	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Calcium	19.	18.	18	18	16	20.		

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1993

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	WELL 9	** MCL
	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Barium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1
Cadmium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Copper	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3
Iron	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.17	0.3
Lead	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.05
Manganese	< 0.01	< 0.01	< 0.043	< 0.041	< 0.092	< 0.01	< 0.01	< 0.01	0.05
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
Selenium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Sodium	9.1	9.3	9.0	7.7	8.4	9.5	10.	8.5	
Zinc	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5
Hardness	78.	80	65	65	93	79	75	68	
Conductivity	190	150	160	150	210	190	190	160	700
Turbidity	0.10	0.49	0.17	0.15	0.1	0.1	0.14	0.43	1
Color	5.	5.	5.	5.	5.	5.	5.	5.	15
Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	250
Fluoride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2
Nitrate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.0	10
Sulfate	< 10	< 10	< 10	< 13	< 10	< 10	< 10	< 10	250

LEGEND

<	Less Than Detectable Limits
**	Maximum Contaminant Level

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98027

WELL NO. 7

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER + SEWER DIST

Water system name : SAMMAMISH PLATEAU WATER + SEWER DIST

County: KING

Water system number: 409009 Source number: SO 6

Well depth: 150 (ft.) (*From WFI form*)

Source name: WELL 7

WA well identification tag number: ___ ___ ___-___ ___ ___

______ well not tagged

Number of connections: 9000 Population served: 26,000

Township: 24 N Range: 06E

Section: 21 1/4 1/4 Section: SE/SE

Latitude/longitude (if available): ____________/____________

How was lat./long. determined?

______ global positioning device ________ survey _____ topographic map
____other: ____________________

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 3 / 8 / 84 month/day/year

last reconstruction: __ / __ /__ month/day/year

______ information unavailable

2) Well driller: HOKKAIDO DRILLING & DEV.
P.O. BOX 100
GRAHAM, WA.

__ well driller unknown

3) Type of well:

X Drilled: __ rotary __ bored X cable (percussion) __ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other: ________

Additional comments: ________________________

4) Well report available? X YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 2,000 (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ________________

__ Pumping rate unknown

6) Is this source treated? YES - will be

If so, what type of treatment:

__ disinfection __ filtration __ carbon filter __ air stripper X other

Purpose of treatment (describe materials to be removed or controlled by treatment):

IN 1994 TREATMENT TO RAISE PH USING SODIUM HYDROXIDE - FOR CORROSION CONTROL TO BE IMPLEMENTED IN FALL OF 1994.

7) If source is chlorinated, is a chlorine residual maintained: __ YES __ NO N/A

Residual level: ____________ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20-50 ft [✓ 50-100 ft] __ 100-200 ft __ >200 ft

__ information unavailable ('< ' *means less than;* '> ' *means greater than*)

2) Depth to ground water (static water level):

[✓ < 20 ft] __ 20-50 ft __ 50-100 ft __ >100 ft

__ flowing well/spring (artesian)

How was water level determined?

[✓ well log] __ other: ______________________________

__ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO N/A

5) Wellhead elevation (height above mean sea level): ±72 (ft)

How was elevation determined? __ topographic map [✓ Drilling/Well Log] __ altimeter

__ other: ______________________________

__ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

YES evidence of a confining layer in well log

__ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the top of the open interval? [✓ YES] __ NO

__ information unavailable

7) Sanitary setback:

[✓ < 100 ft*] ___ 100–120 ft ___ 120–200 ft ___ > 200 ft
* if less than 100 ft describe the site conditions:

____
____
____
____

8) Wellhead construction:

[✓ wellhead enclosed in a wellhouse]

[✓ controlled access (describe):] GATED/LOCKED
____

___ other uses for wellhouse (describe): ____________________
____

___ no wellhead control

9) Surface seal:

___ 18 ft

___ < 18 ft (no Department of Ecology approval) ('<' *means less than*)

___ < 18 ft (Approved by Ecology, include documentation) ('<' *means less than*)

[✓ > 18 ft] ('>' *means greater than*)

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ < 10 in/yr ___ 10–25 in/yr [✓ > 25 in/yr]

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 519,977,000 (gallons)

How was this determined?

[✓ meter]

___ estimated: ___ pumping rate (___________________)

___ pump capacity (___________________)

___ other: ___________________________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 800 (ft)

1 year ground water travel time : 1140 (ft)

5 year ground water travel time: 2540 (ft)

10 year ground water travel time: 3590 (ft)

The Sammamish Plateau Water + Sewer District Participated in the Lower Issaquah Valley Wellhead Protection Plan. The Figure for 1yr, 5yr + 10yr Capture Zones are attached, as we as figures regarding potentia contamination sources. A com copy of the report is also included. District Wells 7 + 8 are considered combined.

Information available on length of screened/open interval?

[✓ YES] ___ NO

Length of screened/open interval: 85 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? [✓ YES] ___ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES ___ NO (mark and identify on map).

Comments: ___________________________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

Note; We need the one yr. capture → zone

	6 month	1 year	5 year	unknown
likely pesticide application	✓	✓	✓	
stormwater injection wells				✓
other injection wells				✓
abandoned ground water well				✓
landfills, dumps, disposal areas	No	No	No	
known hazardous materials clean-up site	No	No	Yes	✓
water system(s) with known quality problems				✓
population density > 1 house/acre	No	No	No	
residences commonly have septic tanks	No	No	Yes	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

Underground STORAGE TANKS - See attached Figures + Table

Chemical Handlers

Lube/Oil Change Facilities

CAR REPAIR STATIONS

DRY CLEANERS

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)

	YES	NO
Results greater than MCL	___	X
< 2 mg/liter nitrate	X	___
2-5 mg/liter nitrate	___	X
> 5 mg/liter nitrate	___	X

___ Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)

	YES	NO
Results greater than MCL or SAL	___	X
VOCs detected at least once	~~X~~	X
VOCs never detected	X	___

___ VOC sampling records unavailable

C. EDB/DBCP:

(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)

	YES	NO
EDB/DBCP detected below MCL at least once	___	___
EDB/DBCP detected above MCL at least once	___	___
EDB/DBCP never detected	___	___

___ EDB/DBCP tests required but not yet completed

X EDB/DBCP tests not required

D. Other SOCs (Pesticides):

	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)	___	___

___ Other SOC tests performed but none detected (list test methods in comments

X Other SOC tests not performed

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________________

____

____

____

E. Bacterial contamination:	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___	X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___	X

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

[✓ YES] ___ NO

Describe with references to map produced in Part IV:

ISSAQUAH CREEK

STEEP HILL (GRAVEL Pit) GRAND RIDGE AREA

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES [✓ NO]

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

[✓ YES] ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

___ YES [✓ NO]

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? YES

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	✓		
6 month–1 year travel time	✓		
1–5 year travel time	✓		
5–10 year travel time	✓		

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time			✓
1–5 year travel time			✓
5–10 year travel time			✓

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

See Lower Issaquah Valley Wellhead Protection Plan

District Wells 7+8 are considered together.
The District is currently applying for a Well Field designation

Suggestions and Comments

Did you attend one of the susceptibility workshops? X YES ___ NO

Did you find it useful? X YES ___ NO

Did you seek outside assistance to complete the assessment? X YES ___ NO

……

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

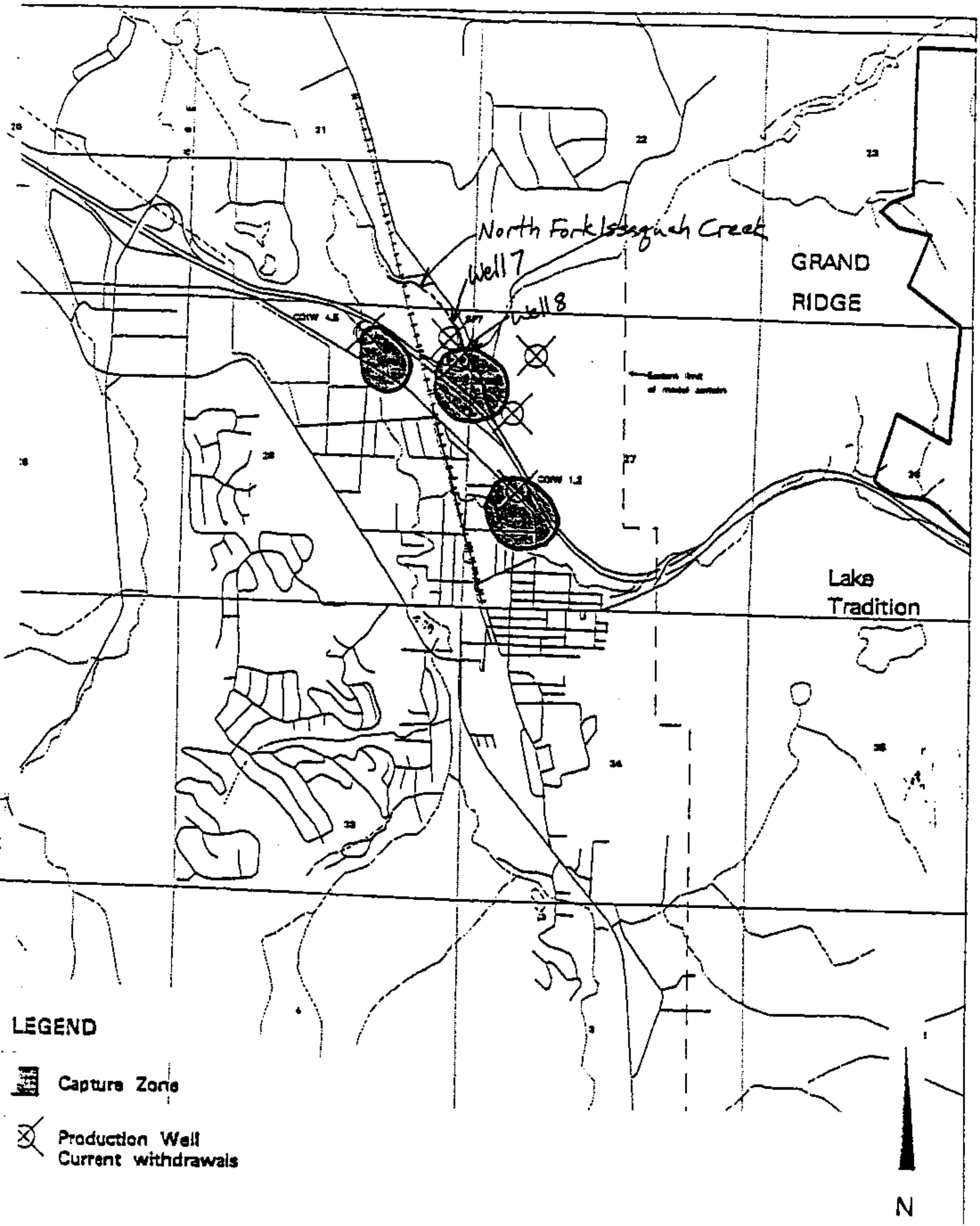


FIGURE 15
ONE YEAR CAPTURE ZONES FOR PRODUCTION WELLS
SAMMAMISH PLATEAU/WHP STUDY/WA

12 fig01.ams 3/5/93

Golder Associates

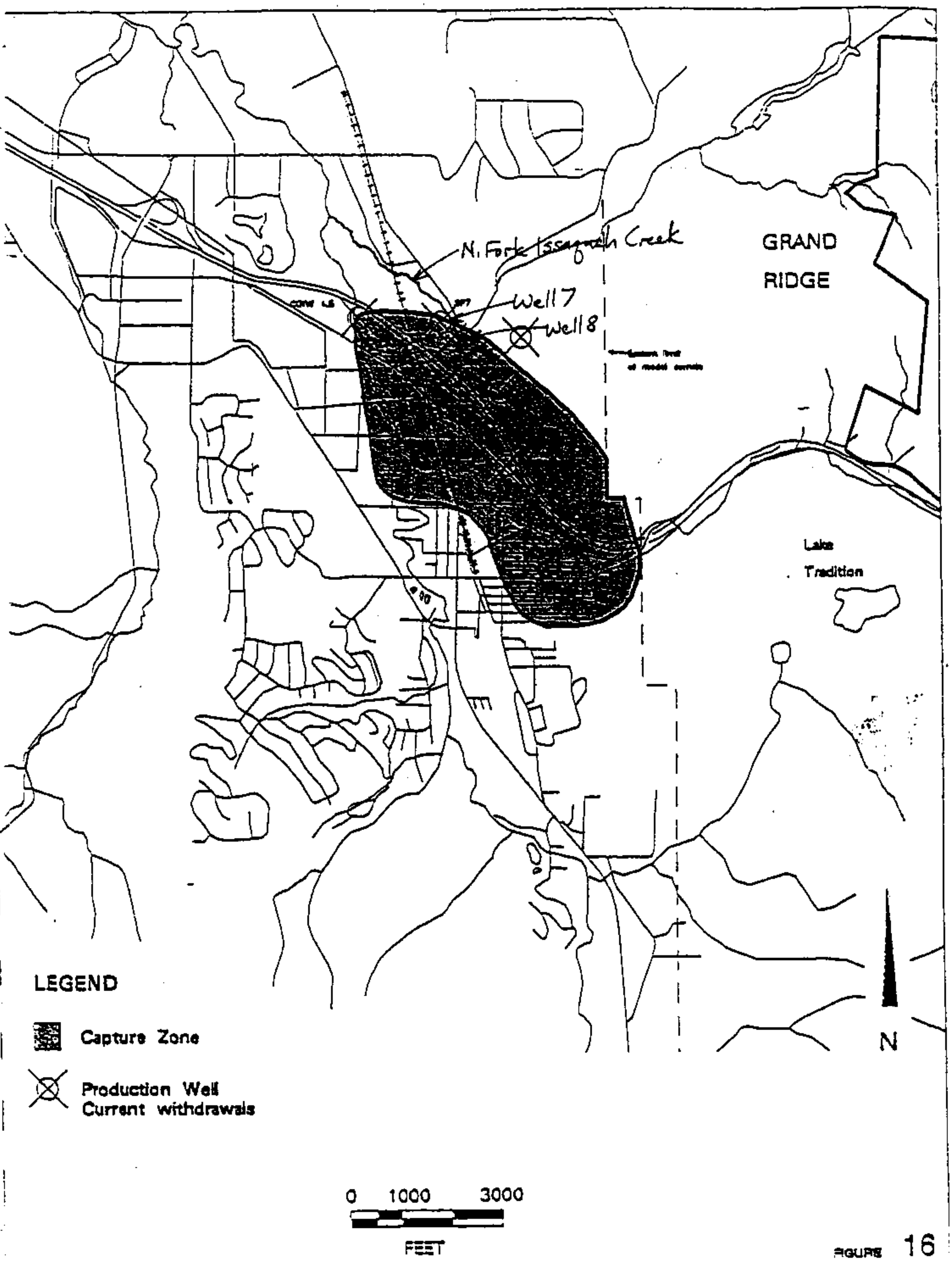


FIGURE 16
FIVE YEAR CAPTURE ZONE FOR PRODUCTION WELLS
SAMMAMISH PLATEAU/WHP STUDY/WA
Golder Associates

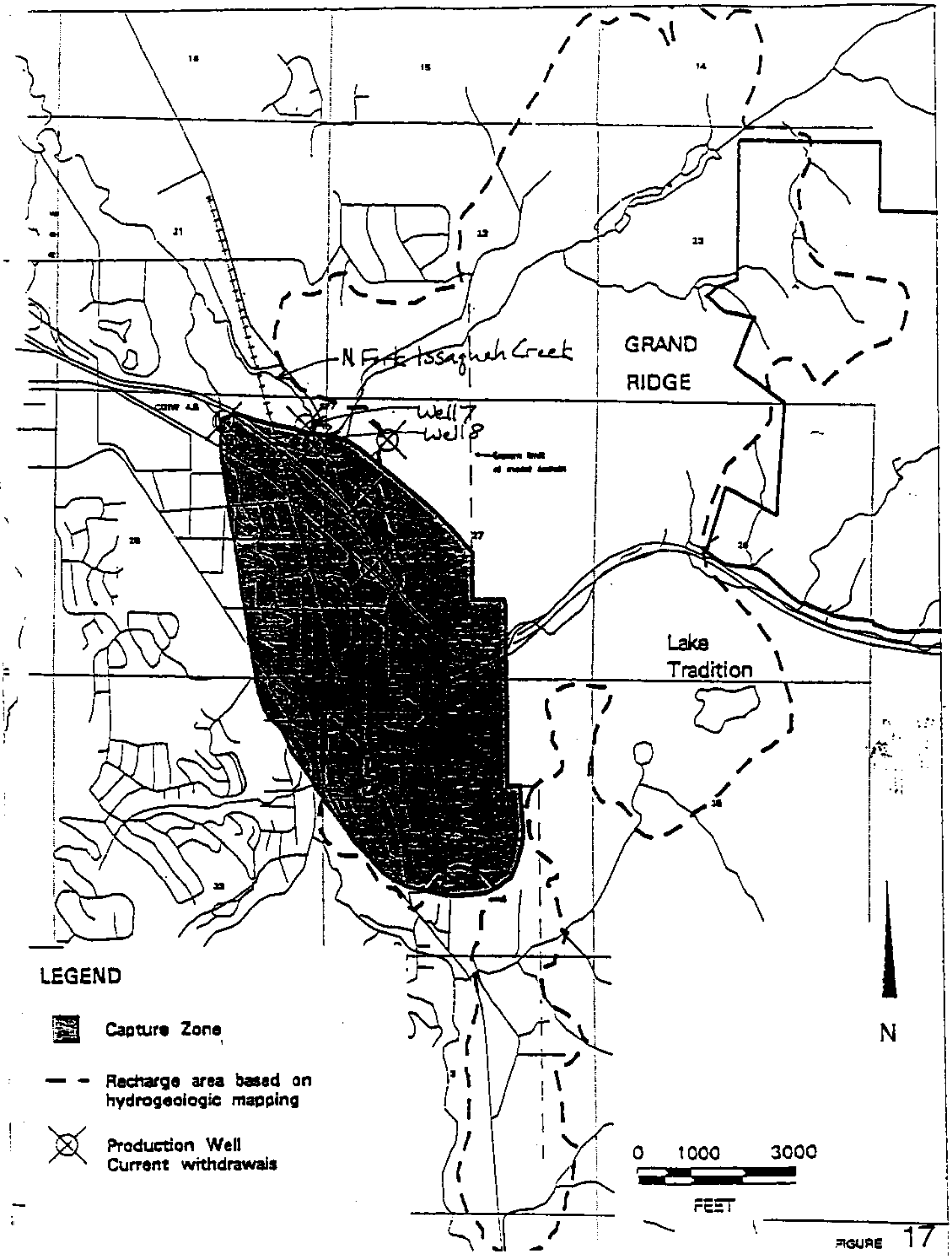


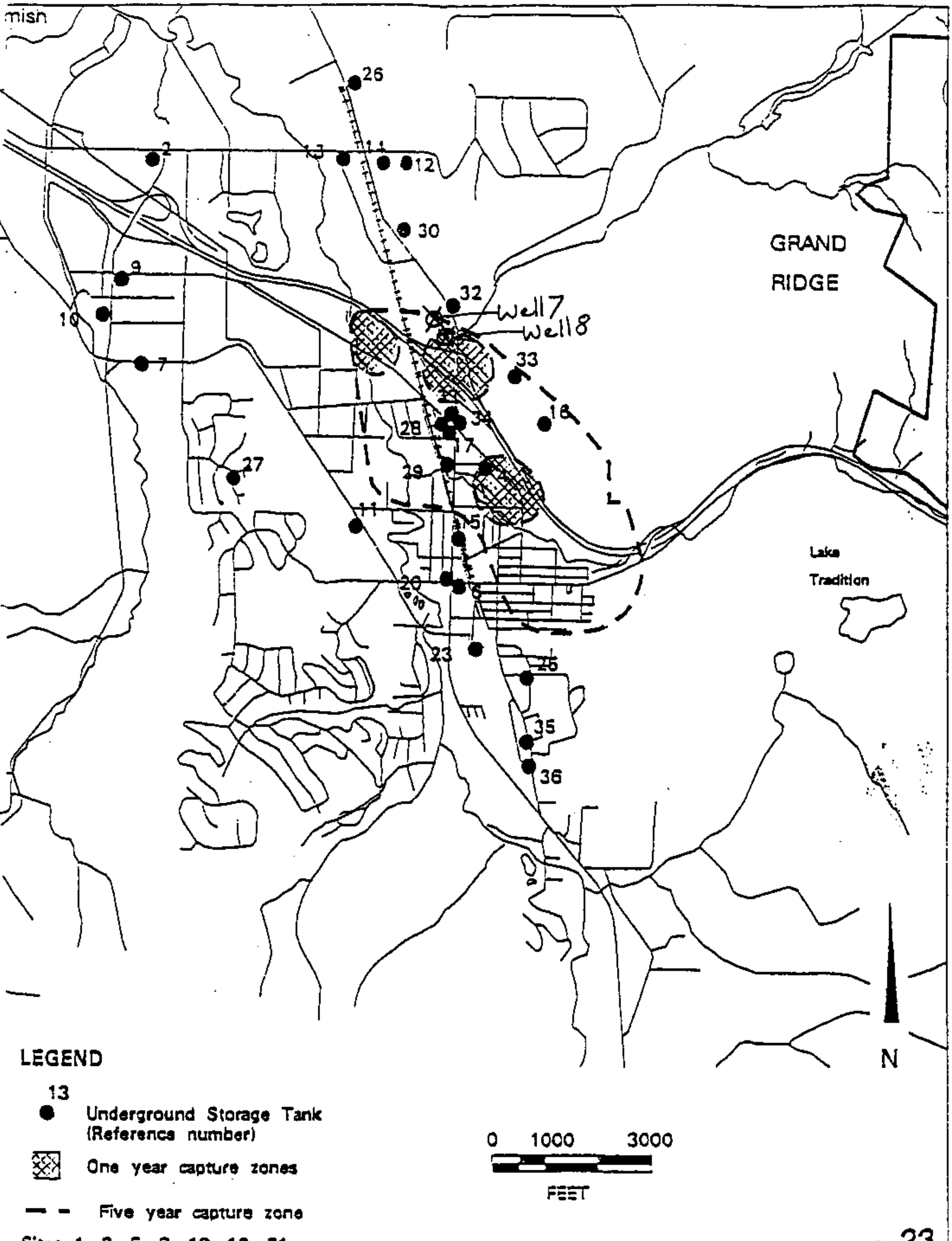
FIGURE 17

TEN YEAR CAPTURE ZONE FOR PRODUCTION WELLS

SAMMAMISH PLATEAU/WHP STUDY/WA

3-1252 fgo10.ami 9/5/93

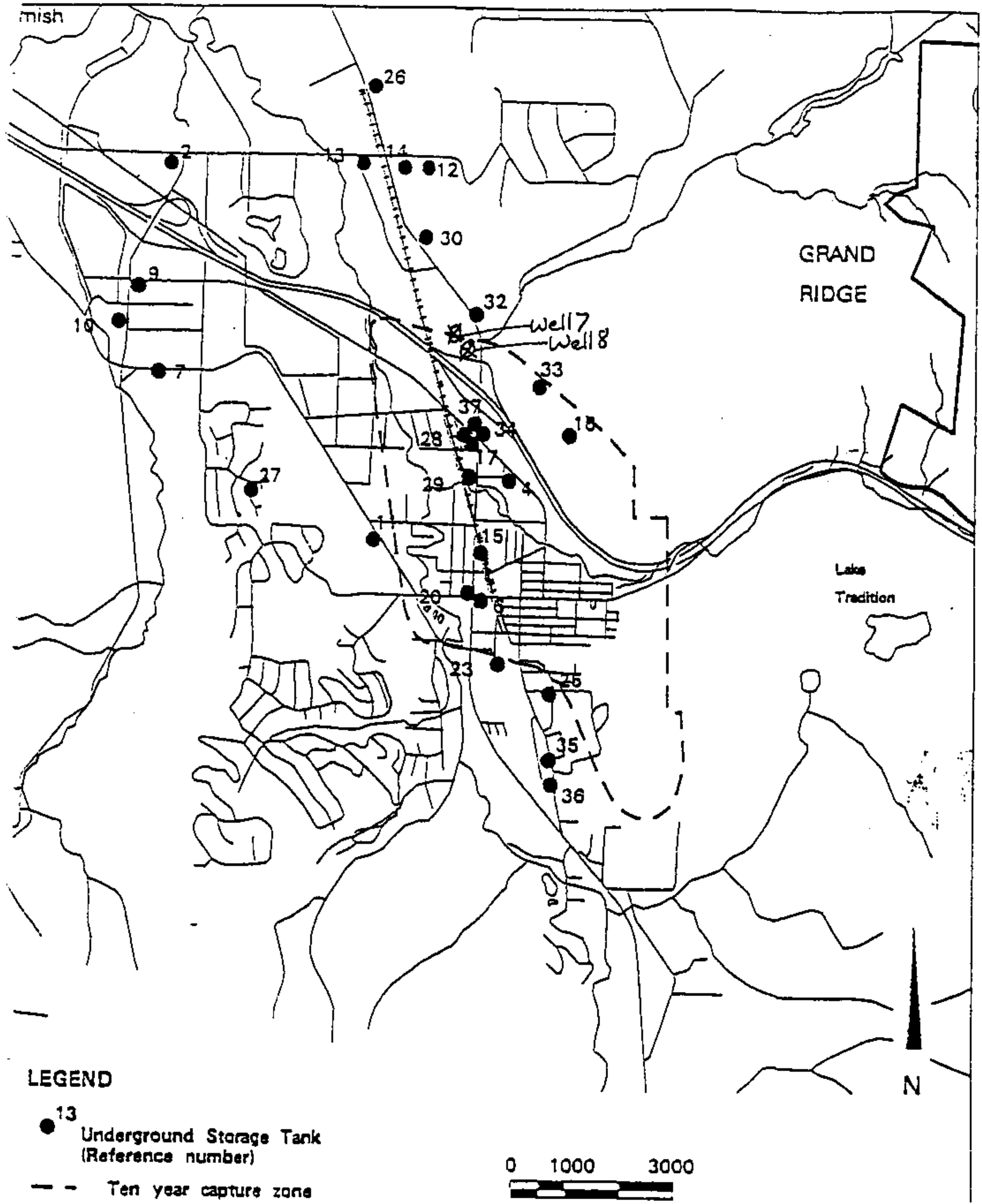
Golder Associates



Sites 1, 3, 5, 8, 18, 19, 21, 22, 24, and 31 are outside the immediate vicinity of capture zones

FIGURE 23
UNDERGROUND STORAGE TANKS IN VICINITY OF 1-YR AND 5-YR CAPTURE ZONES

SAMMAMISH PLATEAU/WHP STUDY/WA

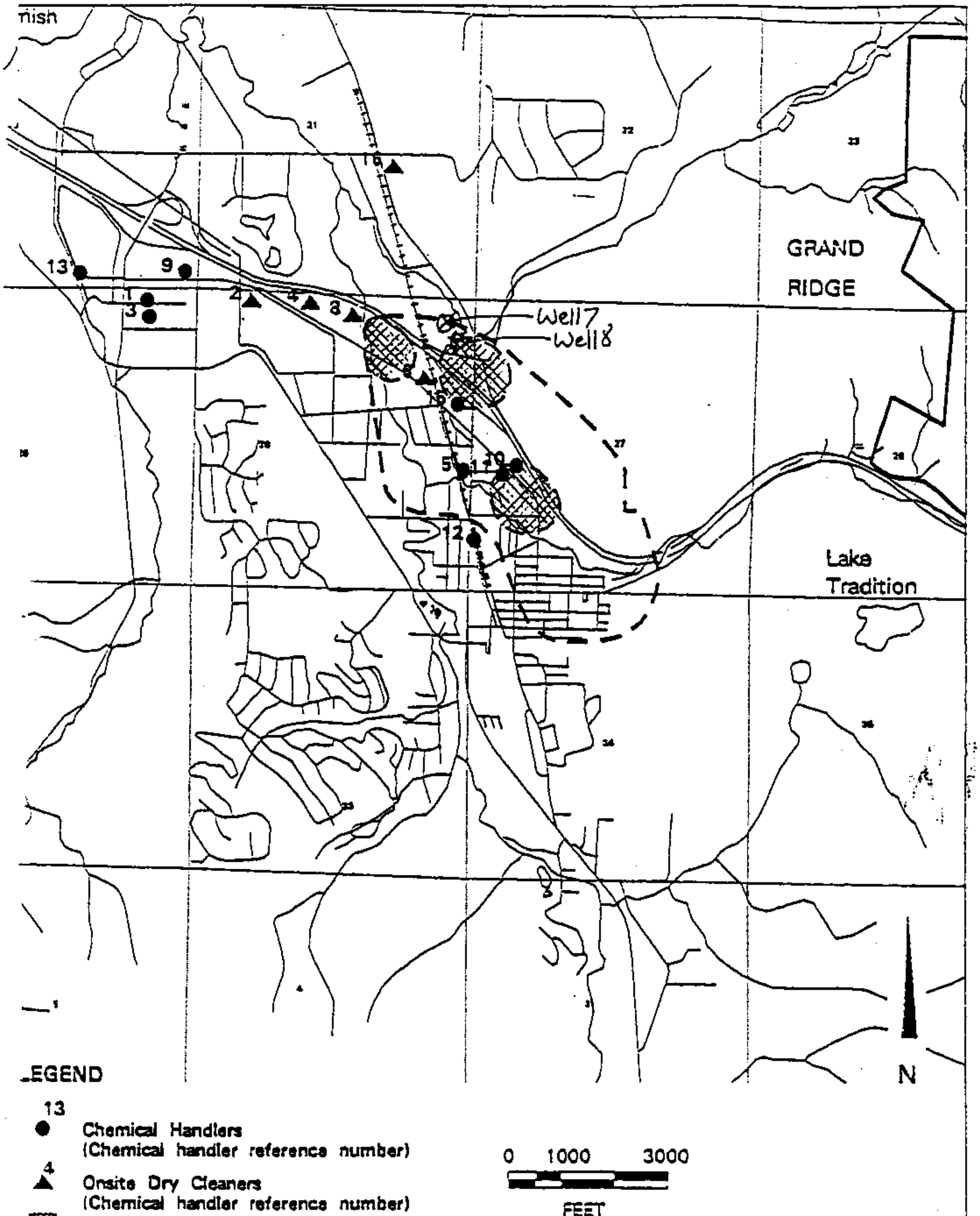


Sites 1, 3, 5, 8, 18, 19, 21, 22, 24, and 31 are outside the immediate vicinity of capture zone

FIGURE 24
UNDERGROUND STORAGE TANKS
IN VICINITY OF 10-YR CAPTURE ZONE

SAMMAMISH PLATEAU/WHP STUDY/WA

-1252 fgucic2.aml 5/14/93



Sites 7 and 14 are not within map range

FIGURE 26

CHEMICAL HANDLER LOCATIONS IN VICINITY OF 1-YR AND 5-YR CAPTURE ZONES

SAMMAMISH PLATEAU/WHP STUDY/WA

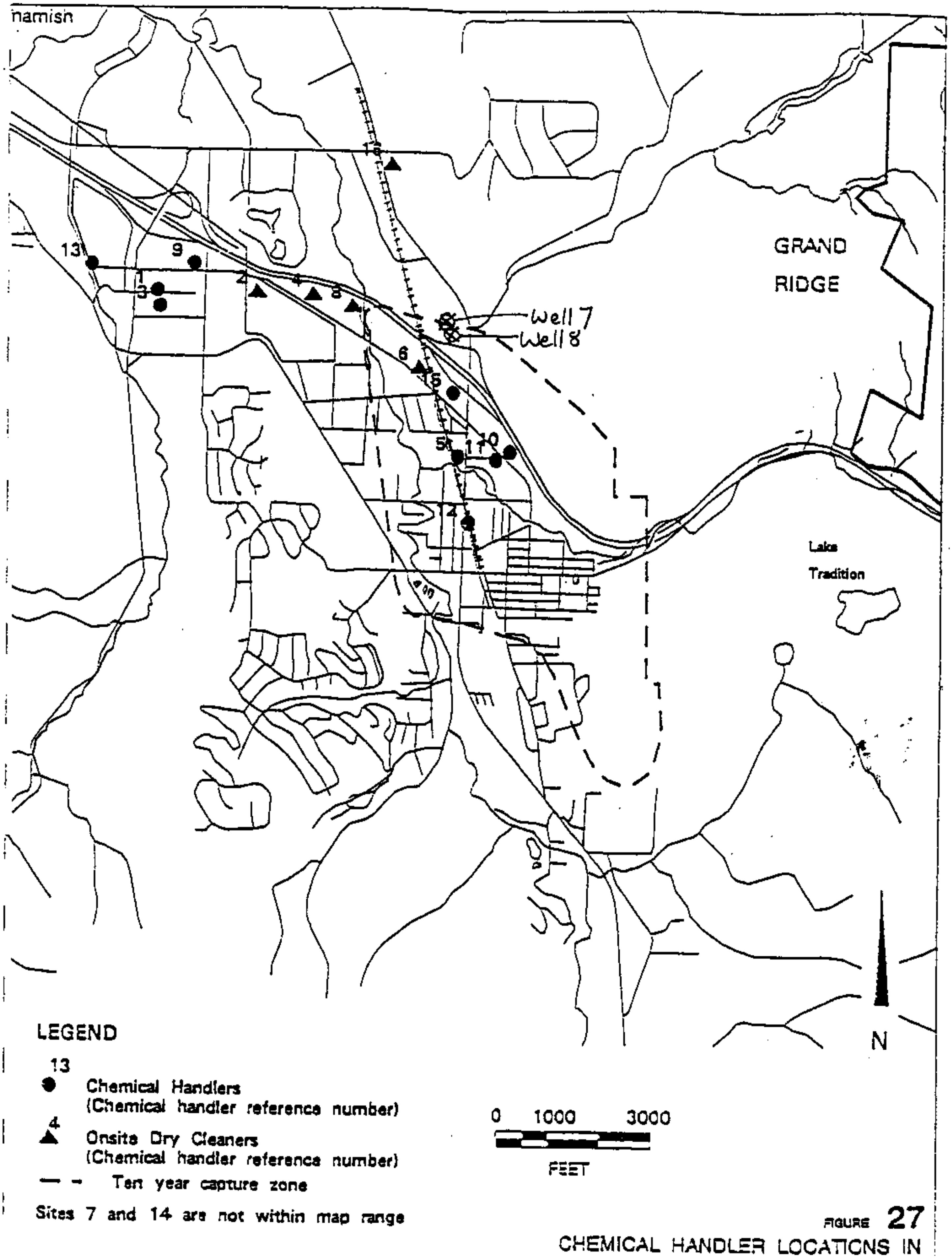
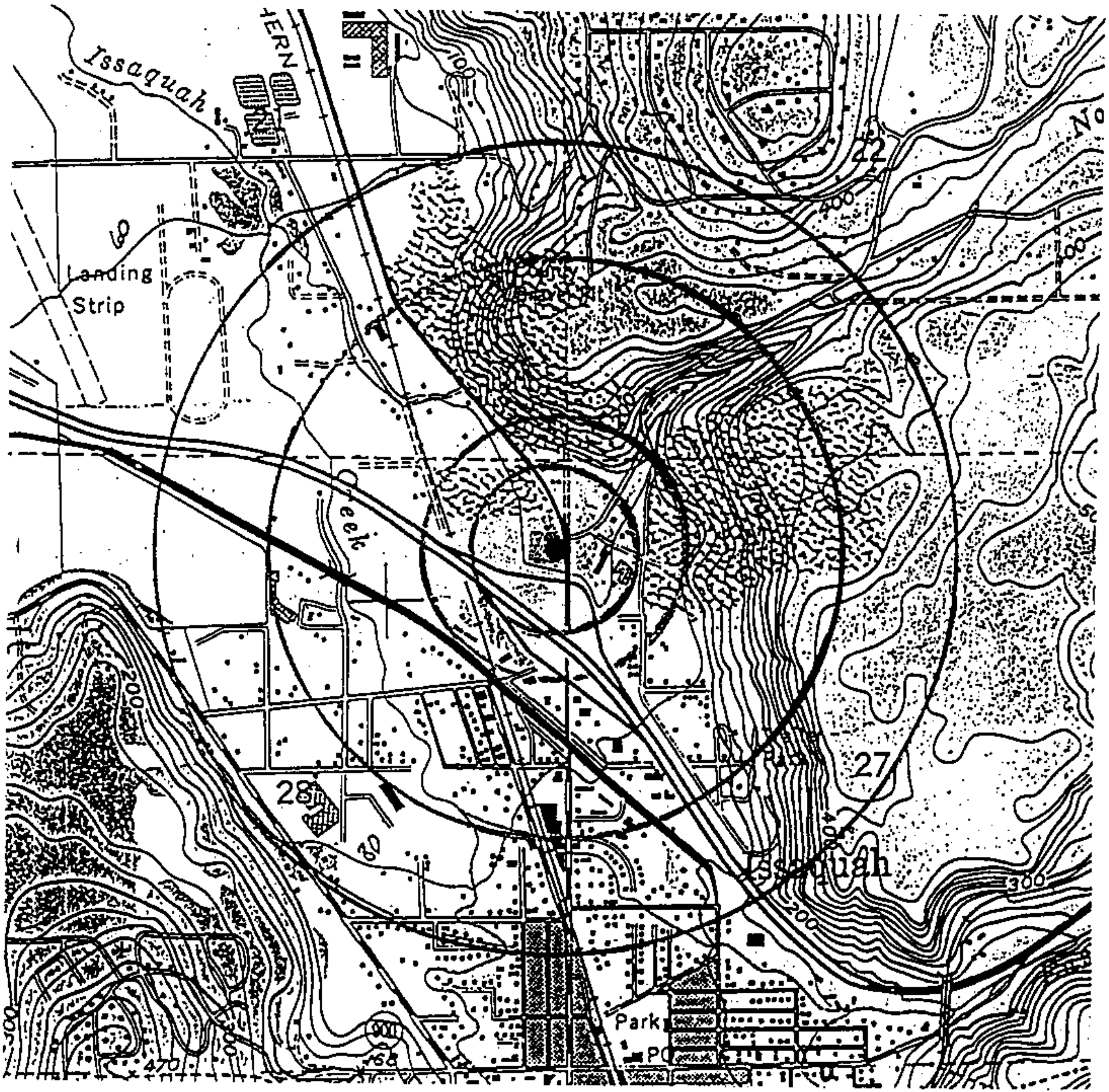


FIGURE 27
CHEMICAL HANDLER LOCATIONS IN
VICINITY OF 10-YEAR CAPTURE ZONE
SAMMAMISH PLATEAU/WHP STUDY/WA

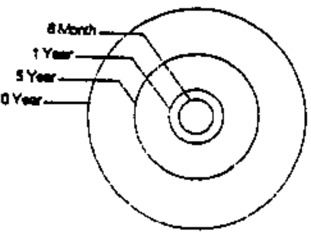
Sammamish Plateau Water & Sewer District

Well 7



AGI

LEGEND



SCALE (FT)

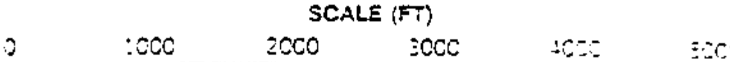


TABLE 15

SUMMARY UST'S AND CHEMICAL HANDLERS IN WHPA'S

	Source Type/Number	Owner	Contaminant	Quantity Onsite (gallons)	Previous Quantities	Number of Operational Tanks
1-YR WHPA - COI 1/2	UST-14	Reda Transportation	Gasoline	20,000	NA	1
	CH-10	Gilman Auto Body	Solvent	55	NA	-
	CH-11	Grange Supply	Solvent	55	NA	-
	UST-4	Grange Supply	Gasoline	70,000	NA	3
1-YR WHPA - COI 4/5	None					
1-YR WHPA - SPWSD 7/8	CH-15	Precision Tune	Waste oil	500		-
	UST-17	Chevron	Gasoline	60,000	NA	3
	UST-28	B.P.	Gasoline	82,200	NA	5
	UST-34	Arco	Gasoline	81,100	NA	5
	UST-37	Texaco	Gasoline	80,000	NA	4
5-YR WHPA	UST-33	Lakeside	Gasoline	61,100	NA	5
	UST-16	Closed	Gasoline	0	3,300	0
	UST-17	Chevron	Gasoline	60,000	NA	3
	UST-28	B.P.	Gasoline	82,200	NA	5
	UST-34	Arco	Gasoline	81,000	122,200	5
	UST-37	Texaco	Gasoline	80,000	NA	4
	UST-29	Darigold	Gasoline	60,000	60,000+	3
	CH-6	Dirks Dry Clean	Solvent	55	NA	-
	CH-5	Darigold	Diesel	NA	NA	-
	CH-12	Lakeside	Waste Oil/Solvent	5000/50	NA	-
10-YR WHPA	UST-15	Issaquah Feed	Gasoline	0	4,400	0
	UST-20	Mobil (closed)	Gasoline	30,000(1)	51,100	1
	UST-6	Texaco	Gasoline	50,000	NA	3
	UST-23	Issaquah Middle School	Gasoline	30,000	31,100	2
	UST-25	Clark Elementary	Gasoline	1,100	2,200	1
	UST-35	Bus Garage	Gasoline	0	11,100	1
	UST-36	Transportation	Gasoline	60,000	NA	1

(1) status unknown
(2) closed in-place
NA Not available

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No.
Permit No.

(1) OWNER: Name KING COUNTY WATER DISTRICT 82 Address 1510 228th SE

(2) LOCATION OF WELL: County KING — NE ¼ NE ¼ Sec. 28 T. 24 N., R. 6 W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 7

New well ☒ Deepened ☐ Reconditioned ☐

Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches.

Drilled 151 ft. Depth of completed well 151 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16 " Diam. from 0 ft. to 82.6 ft.

Threaded ☐ " Diam. from ft. to ft.

Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name UOP - JOHNSON

Type 304 SS Model No.

Diam. 14 PS Slot size .100 from 82.6 ft. to 103 ft.

Diam. Slot size .100 from 103 ft. to 123.6 ft.

Gravel packed: Yes ☐ No ☒ .060 Size of gravel: 136.7-146.9

Gravel placed from XX ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 80 ft.

Material used in seal

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP: Manufacturer's Name

Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level.... ft.

Static level 6.17 ft. below top of well Date 3/17/84

Artesian pressure lbs. per square inch Date

Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller

Yield: 1952 gal./min. with 37.9 ft. drawdown after 24 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 3/17/84

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water 56.3 Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Fill, wood, clay, gravel, silt	0	6
Gravel, sand, clay, silt	6	17
Gravel, brown sand	17	20
Brown clay, sand	20	24
Brown sand, gravel, clay, silt	24	65
Brown sand, clay, silt	65	69
Brown sand, gravel, clay, silt	69	85
Brown sand, gravel, clay, silt, WATER BEARING	85	90
Gravel, cobbles, brown sand clay, silt	90	130
Brown sand, gravel	130	133
Brown sand, gravel, layers clay	133	136
Sand, gravel, clay, silt, WATER BEARING	136	148
Brown clay, sand, some gravel	148	151

Work started Feb. 28 1984. Completed Mar. 18 1984

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Hokkaido Drilling & Dev. Corp. (Person, firm, or corporation) (Type or print)

Address P.O. Box 100 Graham, WA

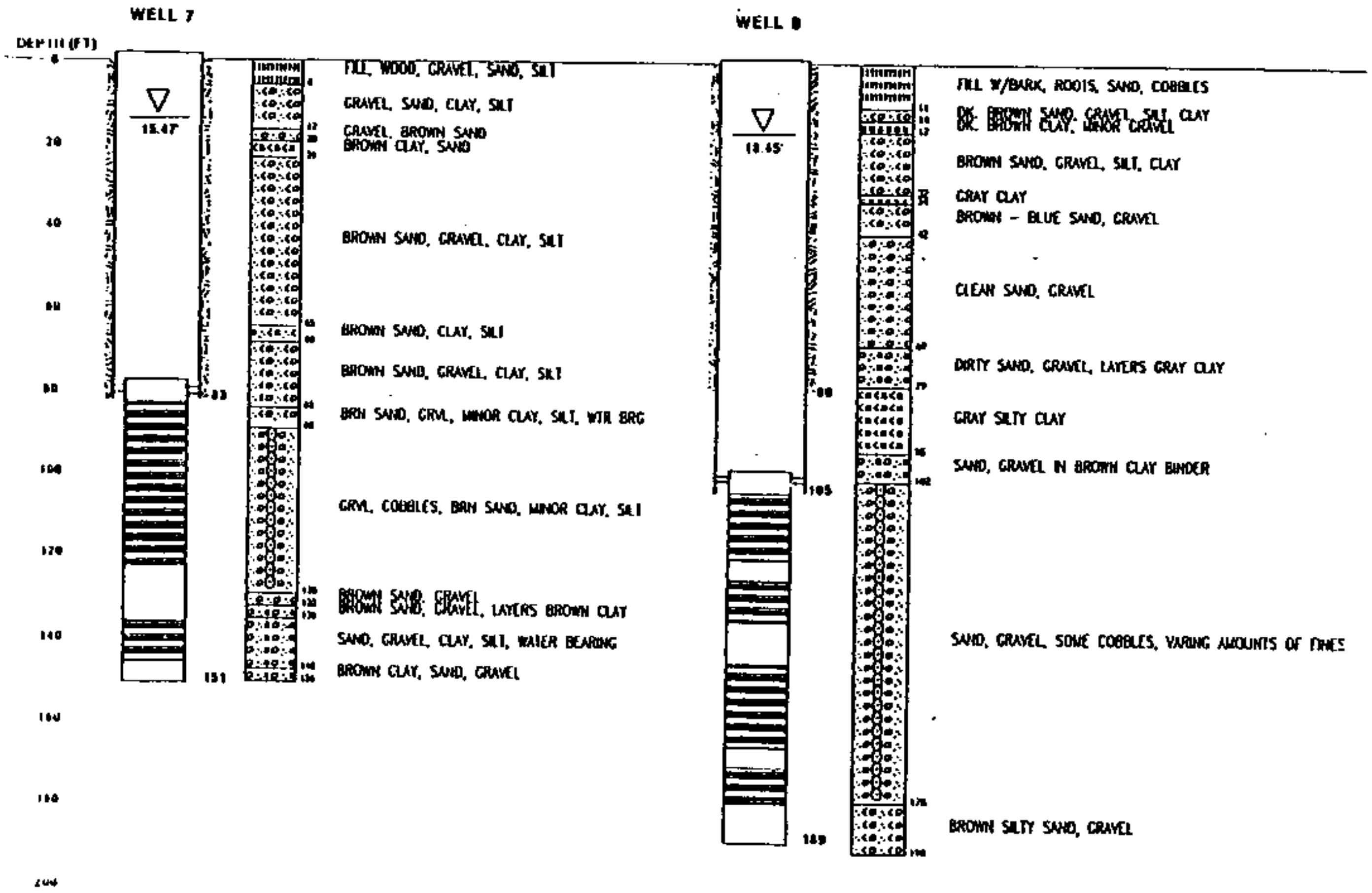
[Signed] (Well Driller)

License No. 0492 Date April 10 1984

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

SPW&SD WELLS 7 & 8
PUMPING WELLS



NOTE:

- WELL 8 IS 350 FEET SOUTH OF WELL 7
- WELLS 7 & 8 ARE 16-INCH DIAMETER WITH 14-INCH SCREEN ASSEMBLIES
- ∇ NON-PUMPING WATER LEVELS (9/16/90)
- GROUND SURFACE ELEVATION APPROX. 72 FEE
- NOT TO SCALE

FIGURE 1-4

CARR/ASSOCIATES 9265

Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read instructions on back before completing

File

DATE RECEIVED 01/11/94

RECEIVED
FEB 1 1994
Ans'd......

UPDATED

DATE UPDATED: 01/11/94

1. SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
[illegible]	[illegible]	A	COMM	9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER
STREET ADDRESS: 1510 228TH AVE SE.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

4. OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER &
OWNER NO.: 3007
STREET ADDRESS: 1510 228TH AVE. S.E.
P.O. BOX (IF APPLICABLE):
CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

5. SYSTEM CONTACT PERSON: RONALD E. LITTLE - MANAGER
TITLE:
DAY TELEPHONE: 206-392-6256
EVENING TELEPHONE:

6. OWNERSHIP (CHECK ONE ONLY)

- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☒ LOCAL GOVERNMENT (COUNTY/CITY/PUD/WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS/INDUSTRIAL/AGRICULTURAL/COMMERCIAL
- ☐ LODGING/FOOD SERVICE
- ☐ SCHOOL/DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY:
TITLE:
DAY TELEPHONE:
DATE:

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI:

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 8844
10. NUMBER ACTIVE RESIDENTIAL POPULATION: 25,647

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS: 0

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN		JUL	
	MAY		NOV
MAR		SEP	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 8,844
15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 12,850,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME	18. SOURCE CATEGORY								19. USE			20.	21. TREATMENT					22. WELL DEPTH	23. SOURCE CAPACITY	24. SOURCE LOCATION				
	LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX/NAME EXAMPLE: 77050Y/SEATTLE	WELL	WELL FIELD	SURFACE	SPRING	RANNEY/INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	(FEET)	(GPM)	1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION VOC EVALUATION
S01	WELL 1	X								X				X					154	500	SW/NE	10	24N	06E	
S02	WELL 2	X									X			X					132	360	NW/SE	11	24N	06E	
S03	WELL # 5	X								X					X				716	450	NW/SW	34	25N	06E	
S04	WELL # 4	X								X					X				714	625	SW/NW	34	25N	06E	
S05	WELL 6	X									X				X				365	600	NE/SE	32	25N	06E	
S06	WELL #7	X									X			X					150	2,000	SE/SE	21	24N	06E	
S07	WELL #3	X								X				X					150	3,500	SE/SE	21	24N	06E	

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	30	30

NO. APPROVED SERVICES (PER PLANS): 0
DATE OF LAST SANITARY SURVEY: 0000 BY DOH ☐ LHD ☐
SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? ☐ YES ☐ NO
GW MGMT AREA? ☐ YES ☐ NO
FOR LHD USE ONLY
EFFECTIVE DATE RETRO. CHANGES:
SIGNATURE OF DOH REVIEWER:
DATE:

WATER SYSTEM

1989

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES - 1989

ITEM	WELL 1 8/4/89	WELL 2 4/10/89	WELL 4 4/10/89	WELL 5 4/10/89	WELL 6 7/17/89	WELL 7 7/17/89	WELL 8 4/10/89	*MCL
pH	7.06	7.23	8.22	8.32	7.46	7.48	*7.05	----
Arsenic	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Barium	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	1.0
Cadmium	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	0.01
Chromium	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.005
Iron	*0.05	*0.05	*0.05	*0.05	*0.05	0.05	*0.05	0.3
Lead	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Manganese	*0.010	*0.010	0.041	0.042	0.026	*0.010	*0.010	0.05
Mercury	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	0.002
Selenium	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	0.01
Silver	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.010	0.05
Sodium	*10	*10	*10	*10	*10	*10	*10	
Hardness	60	87	63	61	48	74	81	
Conductivity	155	220	160	150	120	200	200	700
Turbidity	*0.1	*0.4	*0.2	*0.1	*0.1	0.2	*0.1	1.0
Color	*5.0	*5.0	*5.0	*5.0	*5.0	15.0	*5.0	15.0
Fluoride	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	2.0
Nitrate	1.1	*0.7	*0.2	*0.2	*0.2	1.6	*0.2	10.0
Chloride	*10	*10	*10	*10	*10	*10	*10	250
Sulfate								250

PARTS PER MILLION

*MCL Is the Maximum Contaminant Level Allowed

*Less Than

(Note: Well 7 was re-tested for Iron & Turbidity and those numbers are listed above.)

AmTest/lsh

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1990

ITEM	WELL 1 9/7/90	WELL 2 4/10/89	WELL 4 9/7/90	WELL 5 9/7/90	WELL 6 9/7/90	WELL 7 9/7/90	WELL 8 9/7/90	** MCL
pH	6.74	7.23	7.26	7.74	7.88	7.29	7.12	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.0100	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.0100	<0.039	<0.037	<0.028	<0.010	<0.010	0.05
Mercury	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	<10	<10	<10	<10	<10	<10	<11	
Hardness	79	87	58	58	51	72	72	
Conductivity	85	220	150	154	125	189	188	700
Turbidity	<0.2	<0.4000	<0.1	<0.1	<0.2	<0.1	<0.9	1.0
Color	<5.0	<5.0	<10.0	<10.0	<5.0	<5.0	<10.	15
Fluoride	<0.2	<0.2000	<0.2	<0.2	<0.2	<0.2	<0.2	2.0
Nitrate	<1.3	<0.7000	<0.2	<0.2	<0.2	<0.2	<1.3	10.0
Chloride	<10	<10	<10	<10	<10	<10	<10	250

PARTS PER MILLION

< Less than Detectable Limits

** Maximum Contaminant Level

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1991

ITEM	WELL 1 7/12/91	WELL 2 7/12/91	WELL 4 7/12/91	WELL 5 7/12/91	WELL 6 7/12/91	WELL 7 7/12/91	WELL 8 7/12/91	** MCL
pH	6.6	6.4	7.3	6.7	6.7	7.1	6.8	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.010	<0.018	<0.026	<0.023	<0.010	<0.010	0.05
Mercury	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	7.	6.	9.	8	5	10	12	
Hardness	61	66	52	51	43	61	75	
Conductivity	180	270	120	130	120	190	210	700
Turbidity	0.2	0.6	.4	<0.3	.3	.4	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nitrate	1.2	<1.9	1.8	<0.2	<0.2	<0.2	1.3	
Chloride	<10	<10	<10	<10	21	24	<10	

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS – 1992

ITEM	WELL 1 2/14/92	WELL 2 2/14/92	WELL 4 2/14/92	WELL 5 2/14/92	WELL 6 2/14/92	WELL 7 2/14/92	WELL 8 7/12/91	** MCL
pH	7.0	7.3	7.93	8.4	8.4	7.7	6.8	
Arsenic	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	.05
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	0.3
Lead	<0.002	<0.002	<0.0025	<0.002	<0.002	<0.002	<0.005	0.05
Manganese	<0.01	<0.01	0.043	<0.041	0.038	<0.01	<0.010	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	0.05
Sodium	9.5	6.1	8.7	8.4	4.8	10	12	
Hardness	85.	75	62	62	56	79	75	
Conductivity	180.	150	140	140	120	170	210	700
Turbidity	0.46	0.42	.33	0.32	.90	.32	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2
Nitrate	1.0	<1.8	<1.0	<1.0	<1.0	<1.0	1.3	10
Chloride	<20.	<20	<20	<20	<20	<20	<10	250
Sulfate	10.	<10.	<10.	<10	<10	11		250
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		1.0
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		5.0
Aluminum	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Calcium	19.	18.	18	18	16	20.		

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1993

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	WELL 9	** MCL
	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Barium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1
Cadmium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Copper	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3
Iron	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.17	0.3
Lead	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.05
Manganese	< 0.01	< 0.01	< 0.043	< 0.041	< 0.092	< 0.01	< 0.01	< 0.01	0.05
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
Selenium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Sodium	9.1	9.3	9.0	7.7	8.4	9.5	10.	8.5	
Zinc	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5
Hardness	78.	80	65	65	93	79	75	68	
Conductivity	190	150	160	150	210	190	190	160	700
Turbidity	0.10	0.49	0.17	0.15	0.1	0.1	0.14	0.43	1
Color	5.	5.	5.	5.	5.	5.	5.	5.	15
Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	250
Fluoride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2
Nitrate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.0	10
Sulfate	< 10	< 10	< 10	< 13	< 10	< 10	< 10	< 10	250

LEGEND

<	Less Than Delectable Limits
**	Maximum Contaminant Level

WTRMCLS.XLS

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98027

WELL NO. 8

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

TABLE OF CONTENTS

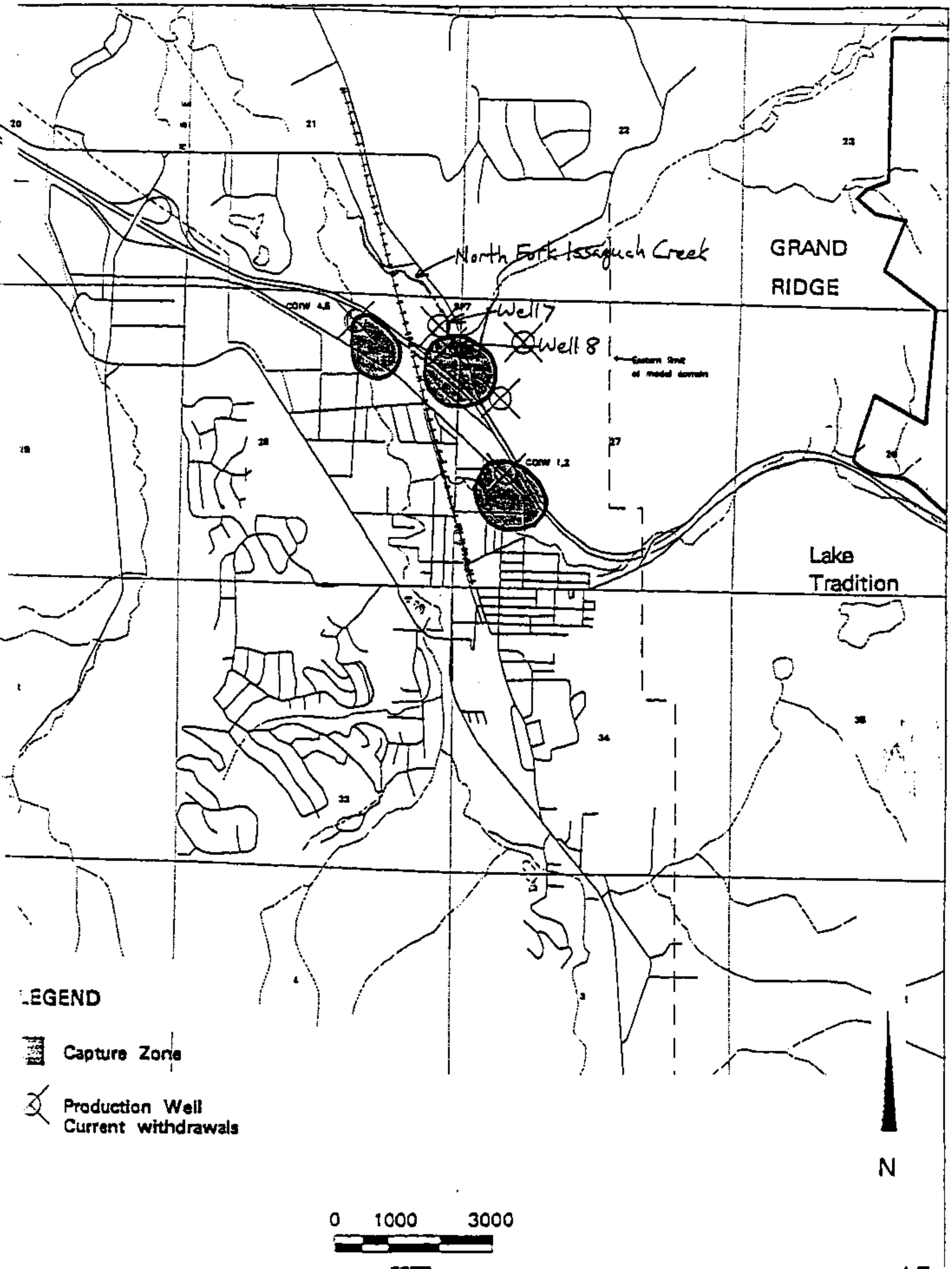


FIGURE 15

ONE YEAR CAPTURE ZONES FOR PRODUCTION WELLS

SAMMAMISH PLATEAU/WHP STUDY/WA

32 fgo1.aml 5/5/93

Golder Associates

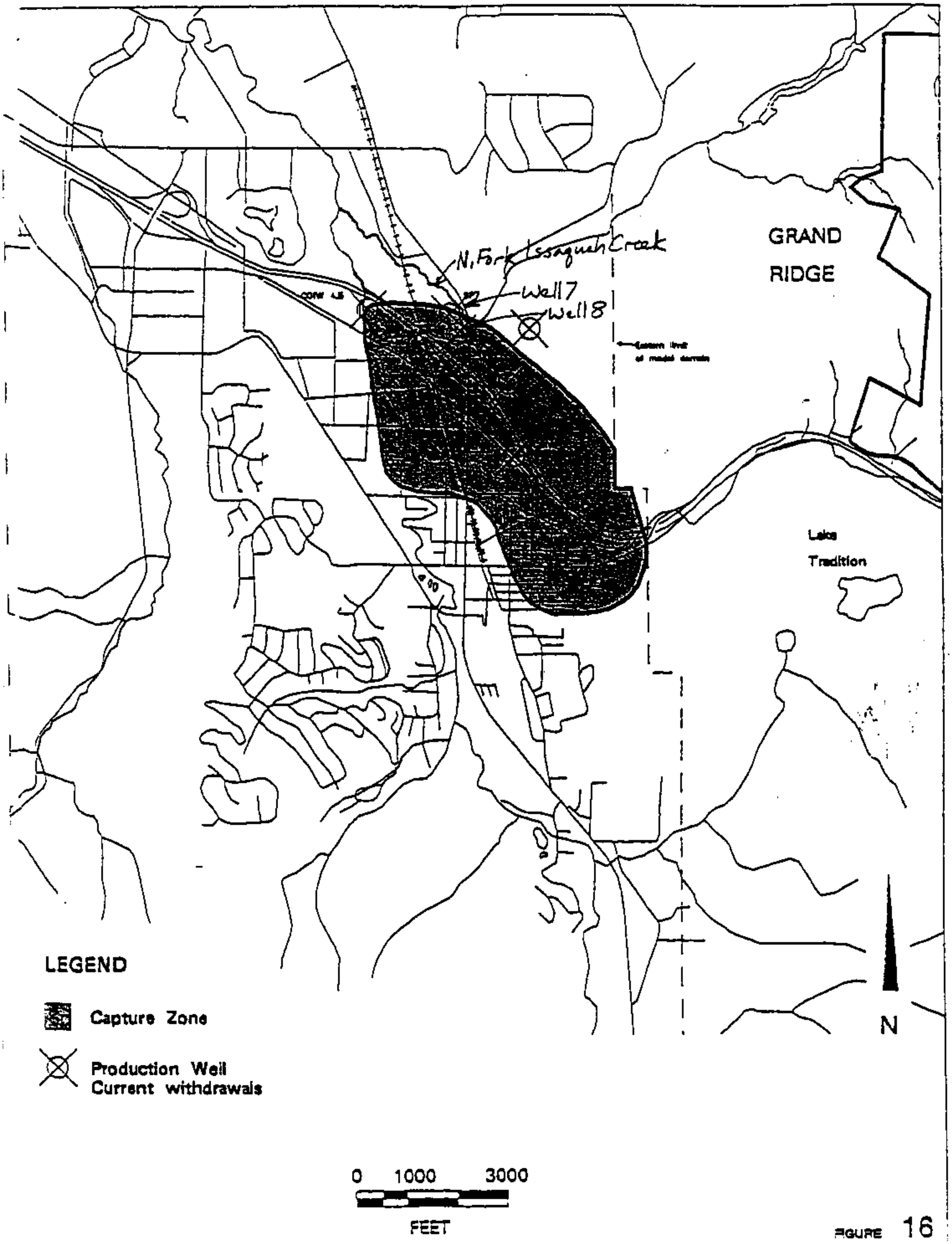


FIGURE 16

FIVE YEAR CAPTURE ZONE FOR PRODUCTION WELLS

SAMMAMISH PLATEAU/WHP STUDY/WA

[illegible]

Golder Associates

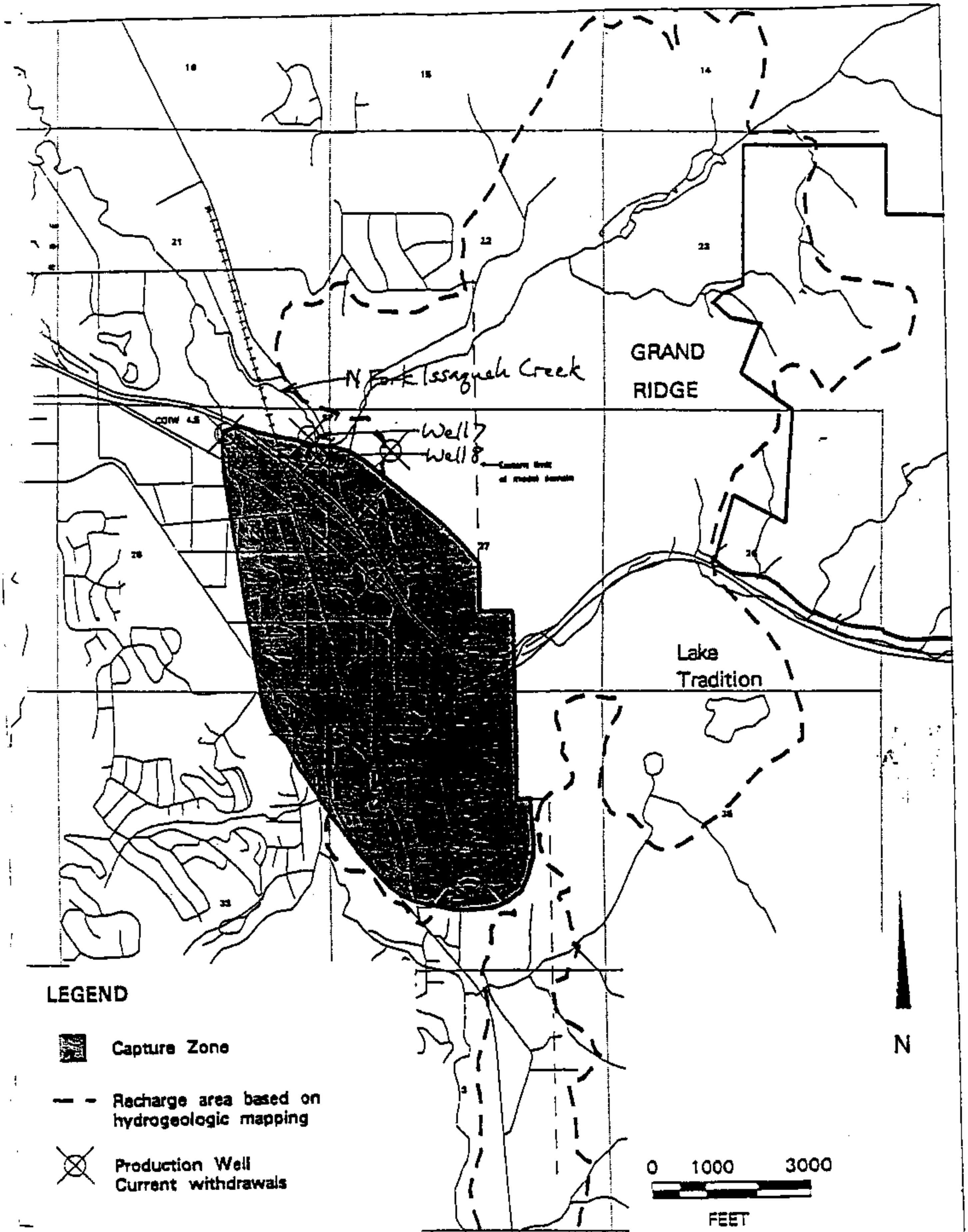


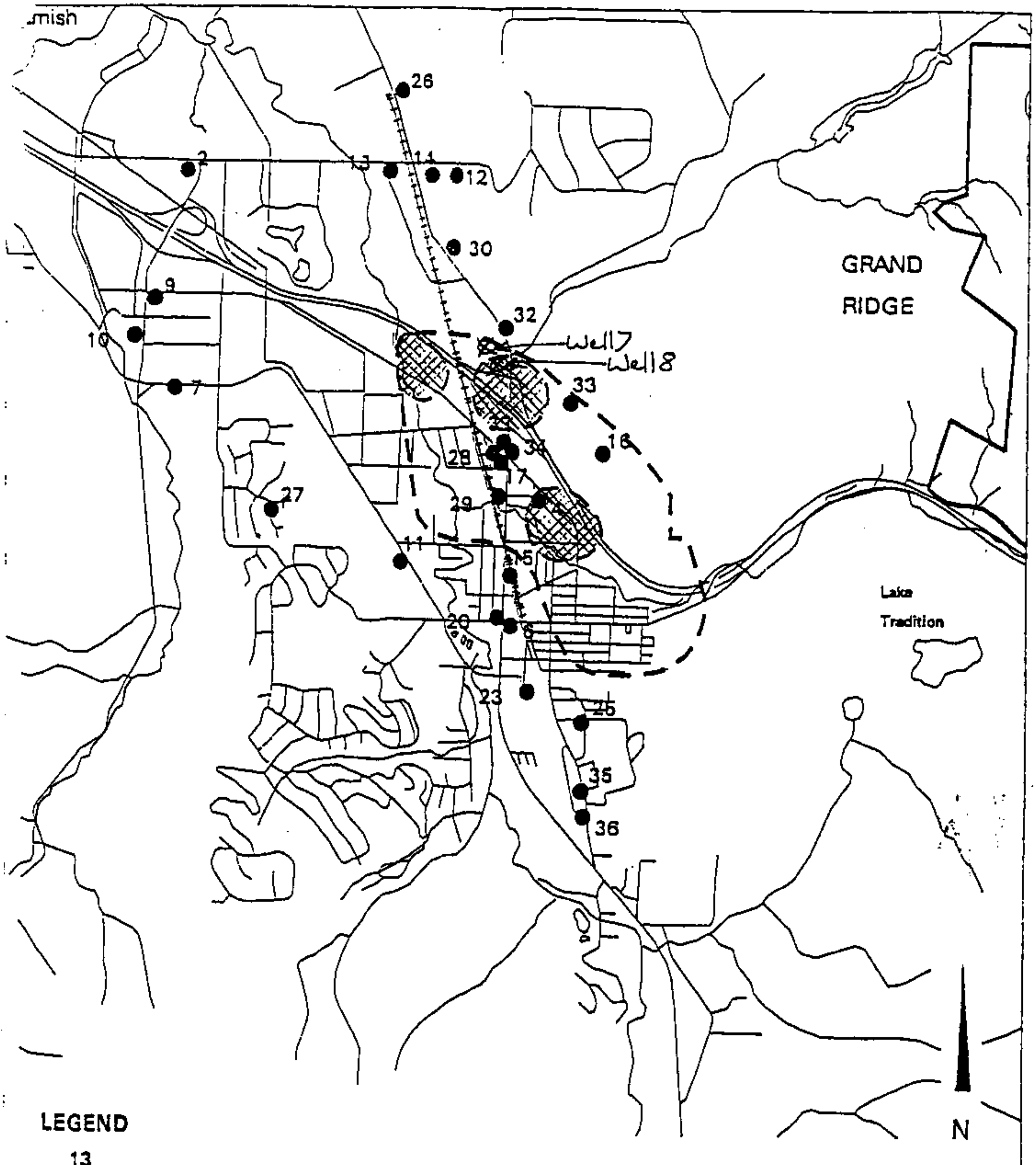
FIGURE 17

TEN YEAR CAPTURE ZONE FOR PRODUCTION WELLS

SAMMAMISH PLATEAU/WHP STUDY/WA

Golder Associates

J13-1252 fgo10.aml 9/5/93



LEGEND

13
● Underground Storage Tank (Reference number)

▨ One year capture zones

— - Five year capture zone

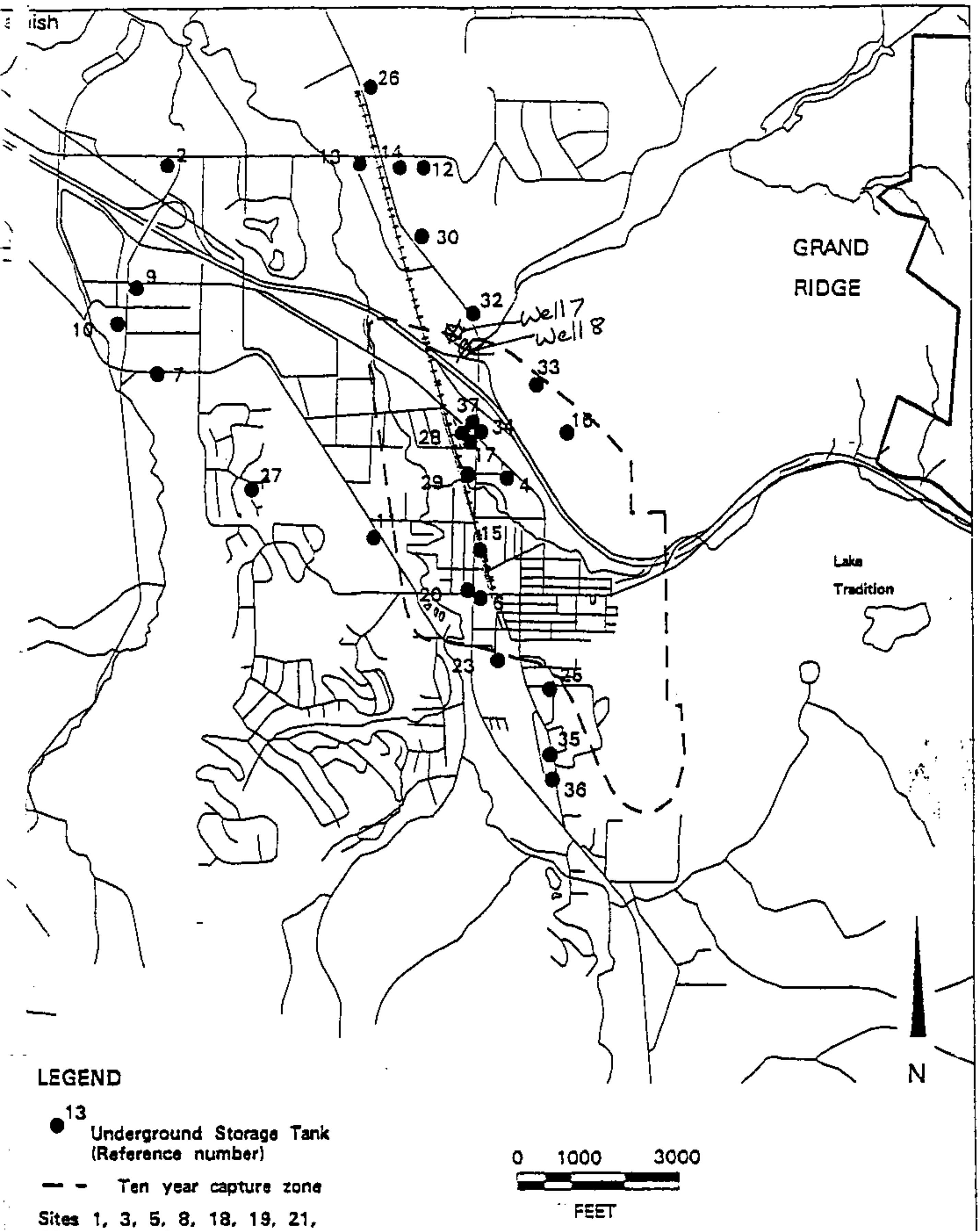
Sites 1, 3, 5, 8, 18, 19, 21, 22, 24, and 31 are outside the immediate vicinity of capture zones

0 1000 3000
FEET

FIGURE 23
UNDERGROUND STORAGE TANKS IN VICINITY OF 1-YR AND 5-YR CAPTURE ZONES
SAMMAMISH PLATEAU/WHP STUDY/WA

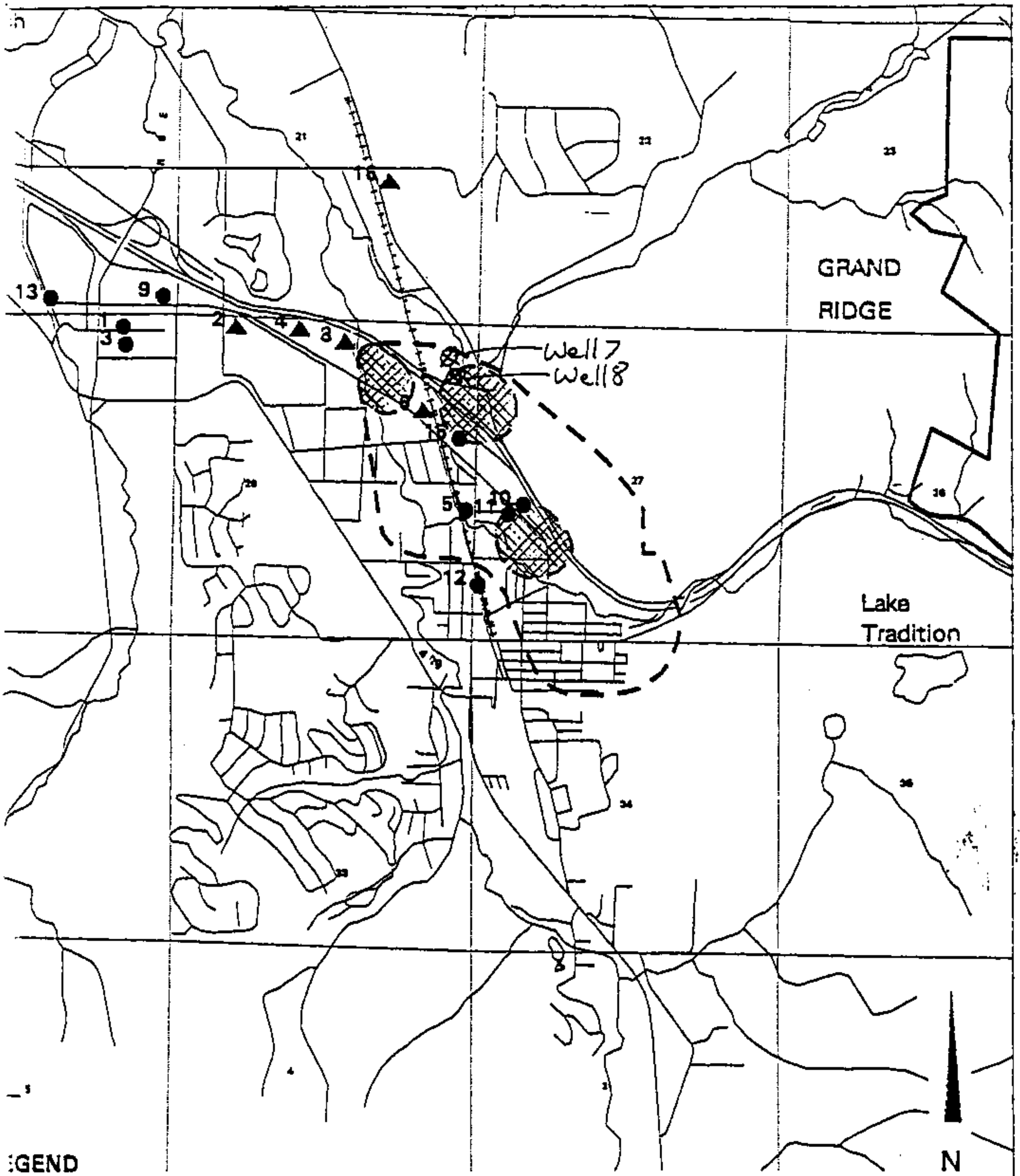
3-1252 'quglo.aml 5/3/93

Golder Associates



Sites 1, 3, 5, 8, 18, 19, 21, 22, 24, and 31 are outside the immediate vicinity of capture zone

FIGURE 24
UNDERGROUND STORAGE TANKS
IN VICINITY OF 10-YR CAPTURE ZONE
SAMMAMISH PLATEAU/WHP STUDY/WA



GEND

13
● Chemical Handlers
(Chemical handler reference number)

4
▲ Onsite Dry Cleaners
(Chemical handler reference number)

▨ One year capture zones

– – Five year capture zone

tes 7 and 14 are not within map range

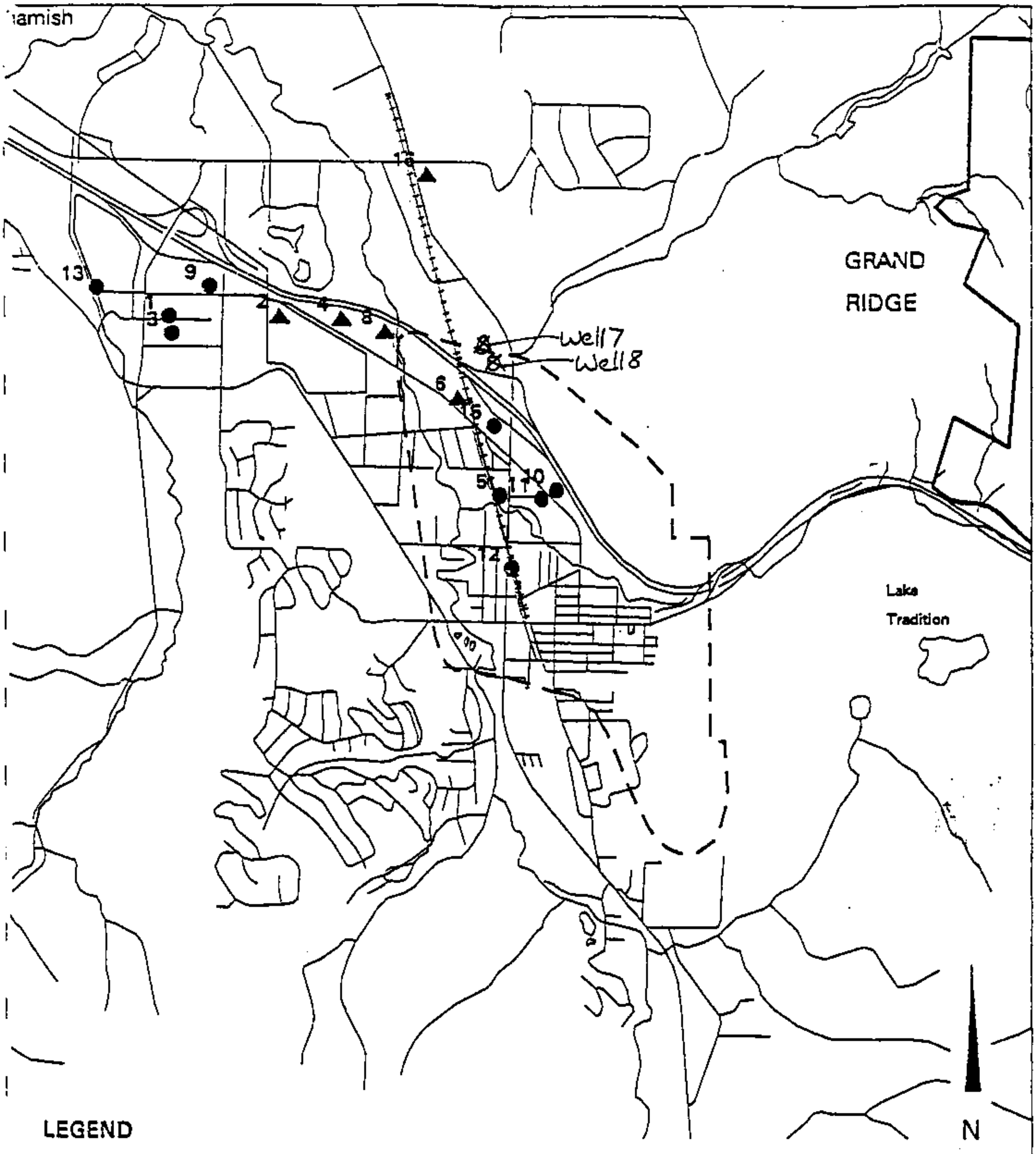
0 1000 3000
FEET

FIGURE 26
CHEMICAL HANDLER LOCATIONS IN VICINITY OF 1-YR AND 5-YR CAPTURE ZONES

SAMMAMISH PLATEAU/WHP STUDY/WA

2 fgdo.aml 11/11/93

Golder Associates



LEGEND

13
● Chemical Handlers
(Chemical handler reference number)

4
▲ Onsite Dry Cleaners
(Chemical handler reference number)

— – Ten year capture zone

Sites 7 and 14 are not within map range

0 1000 3000

FEET

FIGURE 27

CHEMICAL HANDLER LOCATIONS IN VICINITY OF 10-YEAR CAPTURE ZONE

SAMMAMISH PLATEAU/WHP STUDY/WA

TABLE 15

SUMMARY UST'S AND CHEMICAL HANDLERS IN WHPA'S

	Source Type/Number	Owner	Contaminant	Quantity Onsite (gallons)	Previous Quantities	Number of Operational Tanks
1-YR WHPA - COI 1/2	UST-14	Reda Transportation	Gasoline	20,000	NA	1
	CH-10	Gilman Auto Body	Solvent	55	NA	-
	CH-11	Grange Supply	Solvent	55	NA	-
	UST-4	Grange Supply	Gasoline	70,000	NA	3
1-YR WHPA - COI 4/5	None					
1-YR WHPA - SPWSD 7/8	CH-15	Precision Tune	Waste oil	500		-
	UST-17	Chevron	Gasoline	60,000	NA	3
	UST-28	B.P.	Gasoline	82,200	NA	5
	UST-34	Arco	Gasoline	81,100	NA	5
	UST-37	Texaco	Gasoline	80,000	NA	4
5-YR WHPA	UST-33	Lakeside	Gasoline	61,100	NA	5
	UST-16	Closed	Gasoline	0	3,300	0
	UST-17	Chevron	Gasoline	60,000	NA	3
	UST-28	B.P.	Gasoline	82,200	NA	5
	UST-34	Arco	Gasoline	81,000	122,200	5
	UST-37	Texaco	Gasoline	80,000	NA	4
	UST-29	Darigold	Gasoline	60,000	60,000+	3
	CH-6	Dirks Dry Clean	Solvent	55	NA	-
	CH-5	Darigold	Diesel	NA	NA	-
	CH-12	Lakeside	Waste Oil/Solvent	5000/50	NA	-
10-YR WHPA	UST-15	Issaquah Feed	Gasoline	0	4,400	0
	UST-20	Mobil (closed)	Gasoline	30,000(1)	51,100	1
	UST-6	Texaco	Gasoline	50,000	NA	3
	UST-23	Issaquah Middle School	Gasoline	30,000	31,100	2
	UST-25	Clark Elementary	Gasoline	1,100	2,200	1
	UST-35	Bus Garage	Gasoline	0	11,100	1
	UST-36	Transportation	Gasoline	60,000	NA	1

(1) status unknown
(2) closed in-place
NA Not available

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. ....

Permit No. ....

(1) OWNER: Name KING COUNTY WATER DISTRICT # 82 Address 1510 228 th SE

) LOCATION OF WELL: County KING — NE ¼ NE ¼ Sec 28 T 24 N., R 6 E W.M.

earing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one).... 8

New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches.
Drilled 190 ft. Depth of completed well ~~192~~189 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16 " Diam. from +2.0 ft. to 105 ft.
Threaded ☐ " Diam. from 120 ft. to 125 ft.
Welded ☐ " Diam. from 135 ft. to 145 ft.
165 - 170
179 - 189

Perforations: Yes ☐ No ☒
Type of perforator used ....
SIZE of perforations .... in. by .... in.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.
.... perforations from .... ft. to .... ft.

Screens: Yes ☒ No ☐
Manufacturer's Name uop-JOHNSON 304-SS
Type 16T Model No. ....
Diam. .... Slot size .060 from 105 ft. to 120 ft.
Diam. .... Slot size .... from 125 ft. to 135 ft.
145-165, 170-179

Gravel packed: Yes ☐ No ☒ Size of gravel: ....
Gravel placed from .... ft. to .... ft.

Surface seal: Yes ☒ No ☐ To what depth? 80 ft.
Material used in seal Cement/Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? .... Depth of strata ....
Method of sealing strata off ....

(7) PUMP: Manufacturer's Name ....
Type: .... H.P. ....

(8) WATER LEVELS: Land-surface elevation above mean sea level.... +- 72 ft.
Static level 12.6 ft. below top of well Date 8/27/84
Artesian pressure .... lbs. per square inch Date ....
Artesian water is controlled by .... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller
Yield: 1977 gal./min. with 22 ft. drawdown after 8 hrs.
" " " "
" " " "

ecovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ....
ailer test .... gal./min. with .... ft. drawdown after .... hrs.
rtesian flow .... g.p.m. Date ....
emperature of water .... Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Fill, w/bark,roots,sand,cbls	0	11
D.Brown sand,gravel,silt,clay	11	14
D.Brown clay, minor gravel	14	17
Brown sand, gravel,silt,clay	17	32
Grey clay	32	34
Brown-blue sand,gravel,silt wood,peat	34	42
Clean sand, gravel	42	69
Dirty sand, gravel, layers grey clay	69	79
Grey silty clay	79	95
Sand, gravel, in brown clay binder	95	102
Sand, gravel, some cobbles varying amounts of fines	102	178
Brown silty sand, gravel	178	190

Work started 8/6/84 19.... Completed 8/29/84 19....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Hokkaido Drilling & Developing (Person, firm, or corporation) (Type or print)

Address Graham, WA

[Signed] Bob Carper (Well Driller)

License No. 1237 Date [illegible] 19 84

(USE ADDITIONAL SHEETS IF NECESSARY)

?? 050-1-20

Health

Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

FILE

DATE RECEIVED 01/13/94

FEB 1 1994

Ans'd......

UPDATED

DATE UPDATED: 01/11/94

1. SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
[illegible]	KING	A	COMM	9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER

STREET ADDRESS: 1510 228TH AVE SE.

P.O. BOX (IF APPLICABLE):

CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

4. OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER & OWNER NO.: 3007

STREET ADDRESS: 1510 228TH AVE. S.E.

P.O. BOX (IF APPLICABLE):

CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

5. SYSTEM CONTACT PERSON: RONALD E. LITTLE - MANAGER TITLE:

DAY TELEPHONE: 206-392-6256 EVENING TELEPHONE:

6. OWNERSHIP (CHECK ONE ONLY)

- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☐ LOCAL GOVERNMENT (COUNTY/CITY/PUD/WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS/INDUSTRIAL/AGRICULTURAL/COMMERCIAL
- ☐ LODGING/FOOD SERVICE
- ☐ SCHOOL/DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY: TITLE:

DAY TELEPHONE: DATE:

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI:

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 8844

10. NUMBER ACTIVE RESIDENTIAL POPULATION: 25,647

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN				JULY	
		MAY			NOV
MAR				SEP	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 8,844

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 12,850,000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME	18. SOURCE CATEGORY								19. USE			20.	21. TREATMENT					22. WELL DEPTH	23. SOURCE CAPACITY	24. SOURCE LOCATION					
	LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX/NAME EXAMPLE: 77050Y/SEATTLE	WELL	WELL FIELD	SURFACE	SPRING	RANNEY/INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	(FEET)	(GPM)	1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION	VOC EVALUATION
S01	WELL 1	X								X				X					154	500	SW/NE	10	24N	06E		
S02	WELL 2	X									X			X					132	360	NW/SE	11	24N	06E		
S03	WELL # 5	X								X					X				716	450	NW/SW	34	25N	06E		
S04	WELL # 4	X								X					X				714	625	SW/NW	34	25N	06E		
S05	WELL 6	X									X				X				365	600	NE/SE	32	25N	06E		
S06	WELL #7	X									X			X					150	2,000	SE/SE	21	24N	06E		
S07	WELL #8	X								X				X					150	3,500	SE/SE	21	24N	06E		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	30	30

NO. APPROVED SERVICES (PER PLANS): 0

DATE OF LAST SANITARY SURVEY: 0000 BY DOH ☐ LHD ☐

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? (YES ☐ NO ☐ GW MGMT AREA? ☐ YES ☐ NO ☐ FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES:

SIGNATURE OF DOH REVIEWER: DATE:

WATER SYSTEM

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES - 1989

ITEM	WELL 1 8/4/89	WELL 2 4/10/89	WELL 4 4/10/89	WELL 5 4/10/89	WELL 6 7/17/89	WELL 7 7/17/89	WELL 8 4/10/89	*MCL
pH	7.06	7.23	8.22	8.32	7.46	7.48	*7.05	----
Arsenic	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Barium	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	*0.25	1.0
Cadmium	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	*0.002	0.01
Chromium	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.005
Iron	*0.05	*0.05	*0.05	*0.05	*0.05	0.05	*0.05	0.3
Lead	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.05
Manganese	*0.010	*0.010	0.041	0.042	0.026	*0.010	*0.010	0.05
Mercury	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	*0.0010	0.002
Selenium	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	*0.005	0.01
Silver	*0.010	*0.010	*0.010	*0.010	*0.010	*0.010	0.010	0.05
Sodium	*10	*10	*10	*10	*10	*10	*10	
Hardness	60	87	63	61	48	74	81	
Conductivity	155	220	160	150	120	200	200	700
Turbidity	*0.1	*0.4	*0.2	*0.1	*0.1	0.2	*0.1	1.0
Color	*5.0	*5.0	*5.0	*5.0	*5.0	15.0	*5.0	15.0
Fluoride	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	*0.2	2.0
Nitrate	1.1	*0.7	*0.2	*0.2	*0.2	1.6	*0.2	10.0
Chloride	*10	*10	*10	*10	*10	*10	*10	250
Sulfate								250

PARTS PER MILLION

*MCL is the Maximum Contaminant Level Allowed

*Less Than

(Note: Well 7 was re-tested for Iron & Turbidity and those numbers are listed above.)

AnTest/t.h

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1990

ITEM	WELL 1 9/7/90	WELL 2 4/10/89	WELL 4 9/7/90	WELL 5 9/7/90	WELL 6 9/7/90	WELL 7 9/7/90	WELL 8 9/7/90	** MCL
pH	6.74	7.23	7.26	7.74	7.88	7.29	7.12	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.0100	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.0100	<0.039	<0.037	<0.028	<0.010	<0.010	0.05
Mercury	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.0100	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	<10	<10	<10	<10	<10	<10	<11	
Hardness	79	87	58	58	51	72	72	
Conductivity	85	220	150	154	125	189	188	700
Turbidity	<0.2	<0.4000	<0.1	<0.1	<0.2	<0.1	<0.9	1.0
Color	<5.0	<5.0	<10.0	<10.0	<5.0	<5.0	<10.	15
Fluoride	<0.2	<0.2000	<0.2	<0.2	<0.2	<0.2	<0.2	2.0
Nitrate	<1.3	<0.7000	<0.2	<0.2	<0.2	<0.2	<1.3	10.0
Chloride	<10	<10	<10	<10	<10	<10	<10	250

PARTS PER MILLION

< Less than Detectable Limits

** Maximum Contaminant Level

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1991

ITEM	WELL 1 7/12/91	WELL 2 7/12/91	WELL 4 7/12/91	WELL 5 7/12/91	WELL 6 7/12/91	WELL 7 7/12/91	WELL 8 7/12/91	** MCL
pH	6.6	6.4	7.3	6.7	6.7	7.1	6.8	
Arsenic	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Barium	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3
Lead	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.05
Manganese	<0.010	<0.010	<0.018	<0.026	<0.023	<0.010	<0.010	0.05
Mercury	<0.0010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.05
Sodium	7.	6.	9.	8	5	10	12	
Hardness	61	66	52	51	43	61	75	
Conductivity	180	270	120	130	120	190	210	700
Turbidity	0.2	0.6	.4	<0.3	.3	.4	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nitrate	1.2	<1.9	1.8	<0.2	<0.2	<0.2	1.3	
Chloride	<10	<10	<10	<10	21	24	<10	

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1992

ITEM	WELL 1 2/14/92	WELL 2 2/14/92	WELL 4 2/14/92	WELL 5 2/14/92	WELL 6 2/14/92	WELL 7 2/14/92	WELL 8 7/12/91	** MCL
pH	7.0	7.3	7.93	8.4	8.4	7.7	6.8	
Arsenic	<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	.05
Barium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	1.00
Cadmium	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.01
Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.010	0.05
Iron	<0.05	<0.05	<0.05	<0.05	0.37	<0.05	<0.05	0.3
Lead	<0.002	<0.002	<0.0025	<0.002	<0.002	<0.002	<0.005	0.05
Manganese	<0.01	<0.01	0.043	<0.041	0.038	<0.01	<0.010	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	0.002
Selenium	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.01
Silver	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.010	0.05
Sodium	9.5	6.1	8.7	8.4	4.8	10	12	
Hardness	85.	75	62	62	56	79	75	
Conductivity	180.	150	140	140	120	170	210	700
Turbidity	0.46	0.42	.33	0.32	.90	.32	0.3	1.0
Color	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.	15
Fluoride	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	2
Nitrate	1.0	<1.8	<1.0	<1.0	<1.0	<1.0	1.3	10
Chloride	<20.	<20	<20	<20	<20	<20	<10	250
Sulfate	10.	<10.	<10.	<10	<10	11		250
Copper	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		1.0
Zinc	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		5.0
Aluminum	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0		
Calcium	19.	18.	18	18	16	20.		

SAMMAMISH PLATEAU WATER AND SEWER DISTRICT
WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSIS - 1993

ITEM	WELL 1	WELL 2	WELL 4	WELL 5	WELL 6	WELL 7	WELL 8	WELL 9	** MCL
	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	3-2-93	
Arsenic	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Barium	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1
Cadmium	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.01
Chromium	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Copper	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.3
Iron	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.17	0.3
Lead	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.05
Manganese	< 0.01	< 0.01	< 0.043	< 0.041	< 0.092	< 0.01	< 0.01	< 0.01	0.05
Mercury	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
Selenium	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01
Silver	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.05
Sodium	9.1	9.3	9.0	7.7	8.4	9.5	10.	8.5	
Zinc	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	5
Hardness	78.	80	65	65	93	79	75	68	
Conductivity	190	150	160	150	210	190	190	160	700
Turbidity	0.10	0.49	0.17	0.15	0.1	0.1	0.14	0.43	1
Color	5.	5.	5.	5.	5.	5.	5.	5.	15
Chloride	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	250
Fluoride	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	2
Nitrate	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.1	< 1.0	10
Sulfate	< 10	< 10	< 10	< 13	< 10	< 10	< 10	< 10	250

LEGEND

< Less Than Detectable Limits

** Maximum Contaminant Level

WTRMCLS.XLS

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.1

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER + SEWER DIST.

Water system name : SAMMAMISH PLATEAU WATER + SEWER DIST

County: KING

Water system number: 409009 Source number: 507

Well depth: 150 (ft.) (*From WFI form*)

Source name: WELL 8

WA well identification tag number: ___ ___ ___-___ ___ ___

_____ well not tagged

Number of connections: 9000 Population served: 26,000

Township: 24N Range: 06E

Section: 21 1/4 1/4 Section: SE/SE

Latitude/longitude (if available): ________/________

How was lat./long. determined?

_____ global positioning device _____ survey _____ topographic map
_____ other: ________

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 8 / 29 / 84 month/day/year

last reconstruction: __ / __ / __ month/day/year

_____ information unavailable

2) Well driller: HOKKAIDO DRILLING + DEV.
P.O. BOX 100
GRAHAM WA.

__ well driller unknown

3) Type of well:

X Drilled: __ rotary __ bored ✓ cable (percussion) __ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other: ________

Additional comments: ________________________________

4) Well report available? X YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 3500 (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ________________

__ Pumping rate unknown

6) Is this source treated? YES - will be

If so, what type of treatment:

__ disinfection __ filtration __ carbon filter __ air stripper X other

Purpose of treatment (describe materials to be removed or controlled by treatment):

IN 1994 TREATMENT TO RAISE PH USING SODIUM HYDROXIDE — FOR CORROSION CONTROL TO BE IMPLEMENTED IN FALL OF 1994

7) If source is chlorinated, is a chlorine residual maintained: __ YES __ NO N/A

Residual level: ____________ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ < 20 ft ___ 20–50 ft ___ 50–100 ft [✓ 100–200 ft] ___ > 200 ft

___ information unavailable (*'<' means less than; '>' means greater than*)

2) Depth to ground water (static water level):

[✓ < 20 ft] ___ 20–50 ft ___ 50–100 ft ___ > 100 ft

___ flowing well/spring (artesian)

How was water level determined?

[✓ well log] ___ other: ______________________________

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO N/A

5) Wellhead elevation (height above mean sea level): ± 72 (ft)

How was elevation determined? ___ topographic map [✓ Drilling/Well Log] ___ altimeter

___ other: ______________________________

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

YES evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the top of the open interval? [✓ YES] ___ NO

___ information unavailable

7) Sanitary setback:

[✓ < 100 ft*] ___ 100-120 ft ___ 120-200 ft ___ > 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

[✓ wellhead enclosed in a wellhouse]

[✓ controlled access (describe): GATED / LOCKED]

___ other uses for wellhouse (describe):

___ no wellhead control

9) Surface seal:

___ 18 ft

___ < 18 ft (no Department of Ecology approval) *('<' means less than)*

___ < 18 ft (Approved by Ecology, include documentation) *('<' means less than)*

[✓ > 18 ft] *('>' means greater than)*

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ < 10 in/yr ___ 10-25 in/yr [✓ > 25 in/yr]

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 151,020,000 (gallons)

How was this determined?

[✓ meter]

___ estimated: ___ pumping rate (________________)

___ pump capacity (________________)

___ other: ________________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 440 (ft)

1 year ground water travel time : 620 (ft)

5 year ground water travel time: 1390 (ft)

10 year ground water travel time: 1970 (ft)

The Sammamish Plateau Water + Sewer District participated in the Lower Issaquah Valley Wellhead Protection Plan. The Figures for 1yr., 5yr. + 10yr. Capture Zones are attached, as well as figures regarding potentia contamination sources. A complete copy of the report is also included. District Wells 7 + 8 are considered combined

Information available on length of screened/open interval?

[✓ YES] ___ NO

Length of screened/open interval: 54 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? [✓ YES] ___ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES ___ NO (mark and identify on map).

Comments: ________________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

Note: We used the 1 year capture zone →

	6 month	1 year	5 year	unknown
likely pesticide application	✓	✓	✓	
stormwater injection wells				✓
other injection wells				✓
abandoned ground water well				✓
landfills, dumps, disposal areas	No	No	No	
known hazardous materials clean-up site	No	No	Yes	✓
water system(s) with known quality problems				✓
population density > 1 house/acre	No	No	No	
residences commonly have septic tanks	No	No	Yes	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

Underground STORAGE TANKS - See attached figures + table

Chemical Handlers

Lube/Oil Change Facilities

CAR REPAIR STATIONS

DRY CLEANERS

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL	___	___
< 2 mg/liter nitrate	___	___
2-5 mg/liter nitrate	___	___
> 5 mg/liter nitrate	___	___

___ Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL	___	X
VOCs detected at least once	___	X
VOCs never detected	X	___

___ VOC sampling records unavailable

C. EDB/DBCP: (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	YES	NO
EDB/DBCP detected below MCL at least once	___	___
EDB/DBCP detected above MCL at least once	___	___
EDB/DBCP never detected	___	___

___ EDB/DBCP tests required but not yet completed

X EDB/DBCP tests not required

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)	___	___

___ Other SOC tests performed but none detected
(list test methods in comments

X Other SOC tests not performed

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________________

E. Bacterial contamination:	YES	NO
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___	✓
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___	✓

___ Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

[✓ YES] ___ NO

Describe with references to map produced in Part IV:

ISSAQUAH CREEK

GRAVEL Pits (Steep Hill) Grand Ridge Area

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES [✓ NO]

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

[✓ YES] ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains or large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

YES [✓ NO]

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? YES

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	✓		
6 month–1 year travel time	✓		
1–5 year travel time	✓		
5–10 year travel time	✓		

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time			✓
1–5 year travel time			✓
5–10 year travel time			✓

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

See Lower Issaquah Valley Wellhead Protection Plan

District Wells 7+8 are considered together

The District is currently applying for a well field designation.

Suggestions and Comments

Did you attend one of the susceptibility workshops? ___ YES ___ NO

Did you find it useful? ___ YES ___ NO

Did you seek outside assistance to complete the assessment? ___ YES ___ NO

……

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system.
Photocopy as necessary.

PART I: System Information

Well owner/manager : Sammamish Plateau Water & Sewer District

Water system name : Sammamish Plateau Water & Sewer District

County: King

Water system number: 409009 Source number: S13

Well depth: 222 (ft.) (*From WFI form*)

Source name: Well 9

WA well identification tag number: AAD–365

Number of connections: 14358 Population served: 48,036

Township: 24N Range: 06E

Section: 27 1/4 1/4 Section: SW1/4 of the NW1/4

Latitude/longitude (if available): 47.53978 / -122.03307
How was lat./long. determined?

____ global positioning device ____ survey ____ topographic map
x other: Online King County imap - http://www.metrokc.gov/gis/mapportal/iMAP_main.htm

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 07 / 15 / 91 month/day/year

last reconstruction: __ / __ /__ month/day/year

____ information unavailable

2) Well driller: ______Hokkaido Well Drillng and Development Corporation__________

____________________24511 104th Avenue Court East____________________________

____________________Graham, WA   98338______________________________________

__ well driller unknown

3) Type of well:

_x_Drilled: __ rotary __ bored _X_ cable (percussion) __ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other:

Additional comments: ____

____

4) Well report available? _x_ YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: _________2,000_______________(gallons/min) Drilling and Completion Reports for Test Wells VT-7 and VT-8 and Production Well 9 (Carr/Associates, 1992)

If not documented, how was pumping rate determined? ______________________

____

_ Pumping rate unknown

6) Is this source treated?

If so, what type of treatment:

_x_ disinfection ___ filtration __ carbon filter __ air stripper _X_ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

Water is chlorinated, Fluoridated, and treated with NaOH (Caustic Soda) to increase natural water pH for corrosion control

7) If source is chlorinated, is a chlorine residual maintained: _X_ YES __ NO

Residual level: _minimum 0.3 ppm free after the filters_ (*At the point closest to the source*.)

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20–50 ft __ 50–100 ft _X_ 100–200 ft ___>200 ft

__ information unavailable ('<' *means less than;* '>' *means greater than*)

2) Depth to ground water (static water level):

_X_ < 20 ft __ 20–50 ft __ 50–100 ft _X_ >100 ft

__ flowing well/spring (artesian)

How was water level determined?

__ well log _X_ other: Measured to within 0.01 ft with electronic sounding device

_ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO

5) Wellhead elevation (height above mean sea level): 76.99 (ft)

How was elevation determined? __ topographic map __ Drilling/Well Log __ altimeter

_X_ other: 1991 Lower Issaquah Valley Concept Engineering Survey

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

_X_ evidence of a confining layer in well log
(Note: confining layers are thin and believed to pinch out to the east)

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the **bottom** of the **lowest confining layer**? _X_ YES __ NO

__ information unavailable

7) Sanitary setback:

_____ < 100 ft* _X_ 100–120 ft__ 120–200 ft __ > 200 ft

* if less than 100 ft describe the site conditions:

____

____

8) Wellhead construction:

_X_ wellhead enclosed in a wellhouse

_X_ controlled access (describe): The well is locked in a wellhouse that is monitored via telemetered security systems

__ other uses for wellhouse (describe): ______________________________

____

__ no wellhead control

9) Surface seal:

__ 18 ft

__ < 18 ft (no Department of Ecology approval) ('<' *means less than*)

__ < 18 ft (Approved by Ecology, include documentation)('<' *means less than*)

_x_ > 18 ft ('>' *means greater than*)

__ depth of seal unknown

__ no surface seal

10) Annual rainfall (inches per year):

__ < 10 in/yr __ 10–25 in/yr _X_> 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 261,984,204 (gallons)

How was this determined?

__ meter

__ estimated: __ pumping rate (______________________)

__ pump capacity (______________________)

X other: Water Rights shared with SPWSD Wells 7 & 8. Annual estimate based on 50% of the additional water rights shared wells 7&8 are pumped from Well 9

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 2,754 (ft)

1 year ground water travel time : 3,895 (ft)

5 year ground water travel time: 8,709 (ft)

10 year ground water travel time: 12,317 (ft)

Information available on length of screened/open interval?

X YES __ NO

Length of screened/open interval: 25 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? X YES __ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? X YES __ NO (mark and identify on map).

Comments: A large stormwater infiltration gallery for Issaquah Highlands was recently installed and activated within 600 ft upgradient of District Well 9. The District has challenged a recent NPDES permit submitted by the Issaquah Highlands Developer for this facility. The District is concerned of potential groundwater contamination from this nearby stormwater injection and hopes to work with the City of Issaquah and Port Blakely (Developer) in a cooperative manner to resolve these concerns.

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application	X			
stormwater injection wells	X		X	
other injection wells (See Comments)				
abandoned ground water well	X			
landfills, dumps, disposal areas				
known hazardous materials clean-up site				
water system(s) with known quality problems				
population density > 1 house/acre	X	X	X	
residences commonly have septic tanks	X	X		
Wastewater treatment lagoons				
sites used for land application of waste				

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

The Lower Issaquah Valley Wellhead Protection Plan Report was prepared in November 1993 for the City of Issasquah and the Sammamish Plateau Water & Sewer District. Well 9 was not included in this report, but areas identified in the attached contaminant inventory from this report (Section 7) would be included for Well 9. SPWSD will develop a contaminant source inventory that will include Well 9's modeled capture areas and update information found in the 1993 inventory.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2–5 mg/liter nitrate		
> 5 mg/liter nitrate		
Nitrate sampling records unavailable		

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	
VOC sampling records unavailable		

C. EDB/DBCP:	YES	NO
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)		
EDB/DBCP detected below MCL at least once		
EDB/DBCP detected above MCL at least once		
EDB/DBCP never detected		
EDB/DBCP tests required but not yet completed		
EDB/DBCP tests not required	X	

D. Other SOCs (Pesticides):	YES	NO
Other SOCs detected (pesticides and other synthetic organic chemicals)		X
Other SOC tests performed but none detected (list test methods in comments)		
Other SOC tests not performed		

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________________

E. Bacterial contamination: YES NO

Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records)..____ __X_

Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.......____ __X__

Source sampling records for bacteria unavailable ____

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

_X_ YES ___ NO

Describe with references to map produced in Part IV:

5 and 10yr boundaries extend beyond East Fork and Main Stem of Issaquah Creek and into areas west and Northeast of the Lower Issaquah Valley that are identified as bedrock boundaries.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

__ YES _X_ NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

_X_ YES __ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

_X_ YES ___ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? YES

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	___	_X_	____
6 month–1 year travel time	_X_	___	____
1–5 year travel time	_X_	___	____
5–10 year travel time	_X__	___	____

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time	_X__	___	____
1–5 year travel time	___	___	____
5–10 year travel time	___	___	____

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

The Lower Issaquah Valley Wellhead Protection Plan Report prepared in November, 1993 for the City of Issaquah and the Sammamish Plateau Water & Sewer District and the Draft Hydrogeology of the Grand Ridge Delta (AGI, October 1997) discussed the, hydrogeology, ground water flow, and recharge area for the LIV area wells.

Based on water levels from wells completed in the LIV Groundwater and hydrogeologic interpretation, recharge is from the east (Issaquah Highlands) and from the south-southeast up the Issaquah Valley and from the East Fork Issaquah Creek Channel/Tradition Plateau.

The hydrogeologic data also indicate the prolific aquifer zones are separated by silty aquitards. These foreset beds deposited by an ancestral delta dip to the west at about 25 degrees (from horizontal). Groundwater monitoring data also show direct water level response in deeper well completion zones located west of the more easterly, shallow zone, recharge. **Figure 3** shows this relationship in a cross section (A-A') that runs East-West through groundwater monitoring wells (VT-7 and VT-8), Production Well 9, and the nearby Issaquah Highlands infiltration gallery.

Suggestions and Comments

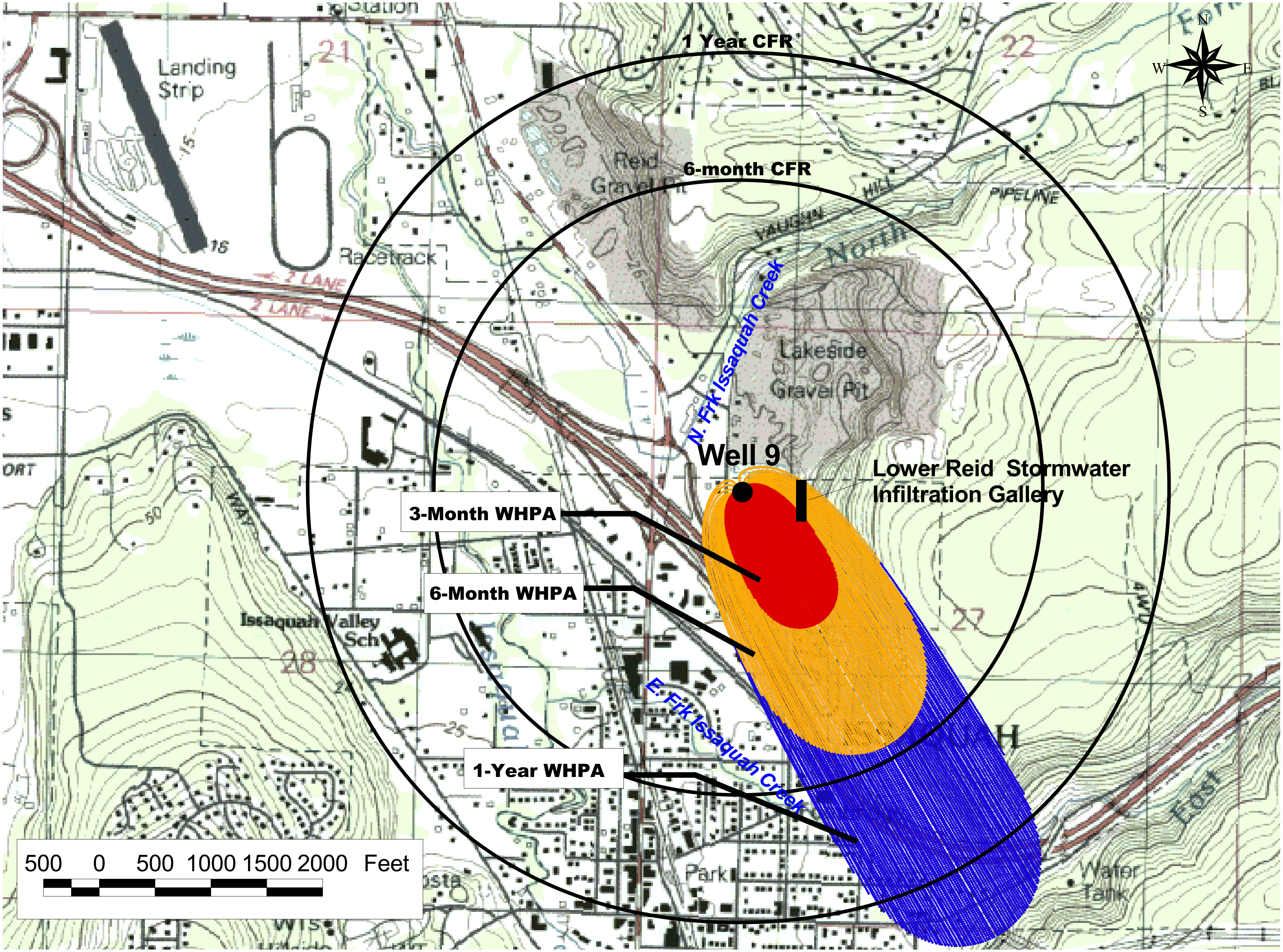
Did you attend one of the susceptibility workshops? __ YES _X_ NO

Did you find it useful? __ YES __ NO

Did you seek outside assistance to complete the assessment? _X_ YES __ NO

- -

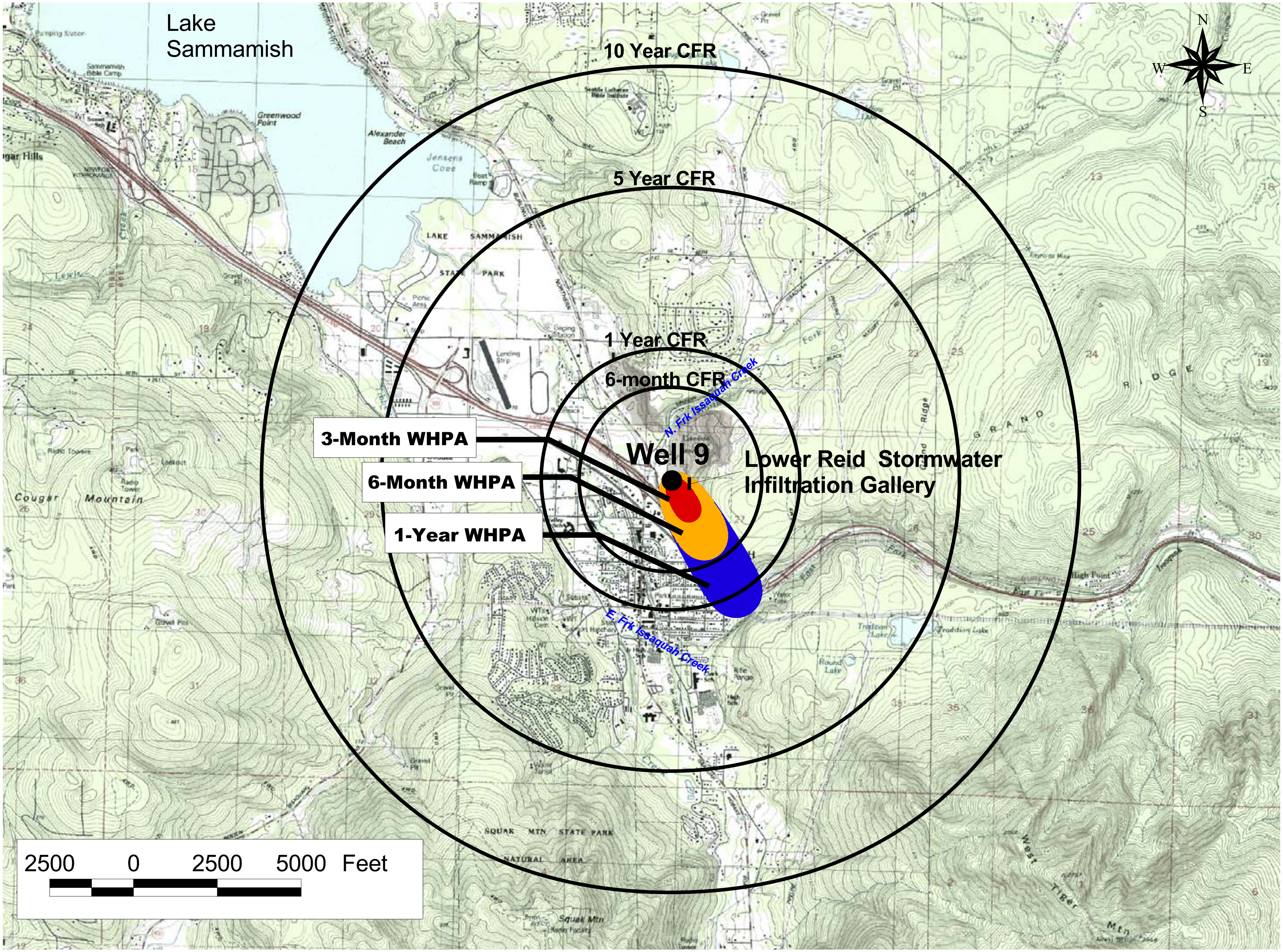
This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.



CDM

Wellhead Protection Zones for Well 9 based on EPA GPTRAC and CFR methods

Figure 1



CDM

5 and 10 year Calculated Fixed Radius Areas for SPWSD Well 9

Figure 2

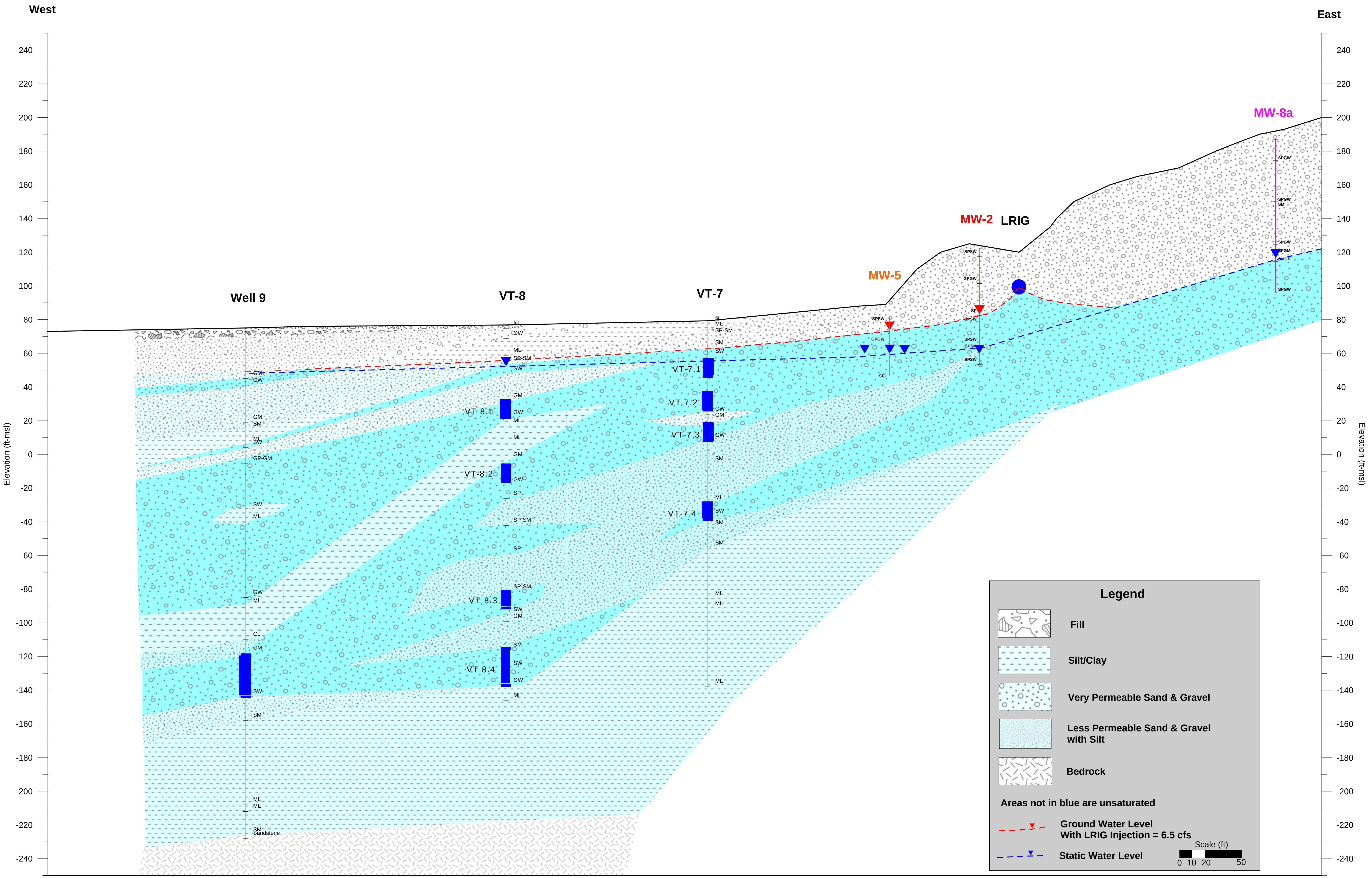

West
East
Elevation (ft-msl)
240
220
200
180
160
140
120
100
80
60
40
20
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
-220
-240
Well 9
VT-8
VT-7
MW-5
MW-2
LRIG
MW-8a
VT-8.1
VT-8.2
VT-8.3
VT-8.4
VT-7.1
VT-7.2
VT-7.3
VT-7.4
Sandstone
Legend
Fill
Silt/Clay
Very Permeable Sand & Gravel
Less Permeable Sand & Gravel with Silt
Bedrock
Areas not in blue are unsaturated
Ground Water Level With LRIG Injection = 6.5 cfs
Static Water Level
Scale (ft)
0 10 20 50

Figure 3

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington

(206) 392-6256

WELL 10

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER & SEWER DISTRICT

Water system name : SAMMAMISH PLATEAU WATER & SEWER DISTRICT

County: KING

Water system number: 409004 Source number: ______

Well depth: 194 (ft.) *(From WFI form)*

Source name: WELL 10

WA well identification tag number:___ ___ ___-___ ___ ___

______ well not tagged

Number of connections: 10,050 Population served: 26,000

Township: 24N Range: 6E

Section: 11 1/4 1/4 Section: NE4 SW4

Latitude/longitude (if available): ______/______

How was lat./long. determined?

____ global positioning device ____ survey ____ topographic map
____ other: ______

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 8/24/93 month/day/year

last reconstruction: __/__/__ month/day/year

______ information unavailable

2) Well driller: Armstrong Drilling
10715 66 Avenue East
Puyallup WA 98371

__ well driller unknown

3) Type of well:

✓ **Drilled:** __ rotary __ bored ✓ cable (percussion) __ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other: ______

Additional comments: ______

4) Well report available? ✓ YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 500 (gallons/min)

Source of information: Water Well Report

If not documented, how was pumping rate determined? ______

__ Pumping rate unknown

6) Is this source treated? __ YES ✓ NO

If so, what type of treatment:

__ disinfection __ filtration __ carbon filter __ air stripper __ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: __ YES __ NO

Residual level: ______ (*At the point closest to the source.*)

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ (less than) 20 ft ___ 20-50 ft ___ 50-100 ft [✓ 100-200 ft] ___ (greater than) 200 ft

___ information unavailable

2) Depth to ground water (static water level):

___ (less than) 20 ft ___ 20-50 ft [✓ 50-100 ft] ___ (greater than) 100 ft

___ flowing well/spring (artesian)

How was water level determined?

[✓ well log] ___ other: ______________________________

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

________ psi (pounds per square inch)
or
________ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO N/A

5) Wellhead elevation (height above mean sea level): 420 (ft)

How was elevation determined? ___ topographic map [✓ Drilling/Well Log] ___ altimeter

___ other: ______________________________

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

Yes evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer? [✓ YES] ___ NO

___ information unavailable

7) Sanitary setback:

___ (less than) 100 ft* [✓ 100–120 ft] ___ 120–200 ft ___ (greater than) 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

___ wellhead enclosed in a wellhouse

___ controlled access (describe): FENCED & LOCKED

___ other uses for wellhouse (describe):

___ no wellhead control

9) Surface seal:

___ 18 ft

___ (less than) 18 ft (no Department of Ecology approval)

___ (less than) 18 ft (Approved by Ecology, include documentation)

[✓ (greater than) 18 ft]

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ (less than) 10 in/yr ___ 10–25 in/yr [✓ (greater than) 25 in/yr]

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 26,704,300 (gallons)

How was this determined?

☐ meter

☒ estimated: ☒ pumping rate (50.8 gpm)

☐ pump capacity ( )

☐ other:

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 310 (ft)

1 year ground water travel time : 440 (ft)

5 year ground water travel time: 980 (ft)

10 year ground water travel time: 1390 (ft)

These are the CFR's per this packet. The DISTRICT HAS ADDITIONAL WHPA CAPTURE ZONE INFO FOR THIS WELL, WHICH IS ATTACHED. THE FOLLOWING QUESTIONS ARE ANSWERED FOR THE CAPTURE ZONES IDENTIFIED ON THE WHPA MAP

Information available on length of screened/open interval?

☒ YES ☐ NO

Length of screened/open interval: 30 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ☐ YES ☒ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ☐ YES ☒ NO (mark and identify on map).

Comments:

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application		✓	✓	
stormwater injection wells	NO	NO	NO	
other injection wells *SEE COMMENTS	NO	NO	NO	
abandoned ground water well				✓
landfills, dumps, disposal areas				✓
known hazardous materials clean-up site				✓
water system(s) with known quality problems				✓
population density (greater than) 1 house/acre	NO	NO	NO	
residences commonly have septic tanks	✓	✓	✓	
Wastewater treatment lagoons	NO	NO	NO	
sites used for land application of waste	NO	NO	NO	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

*WELL 1R (AS SHOWN ON THE WHPA CAPTURE ZONE MAP) HAS BEEN USED AS AN INJECTION WELL AS PART OF A GROUNDWATER RECHARGE PROJECT, WITH DRINKING QUALITY WATER.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES
Results greater than MCL	____
(less than) 2 mg/liter nitrate	____
2–5 mg/liter nitrate	____
(greater than) 5 mg/liter nitrate	____
Nitrate sampling records unavailable	____

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES
Results greater than MCL or SAL	____
VOCs detected at least once	____
VOC test performed but never detected	____
VOC sampling records unavailable	____

C. EDB/DBCP: (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	YES
EDB/DBCP detected below MCL at least once	____
EDB/DBCP detected above MCL at least once	____
EDB/DBCP never detected	____
EDB/DBCP tests required but not yet completed	____
EDB/DBCP tests not required	____

D. Other SOCs (pesticides and other synthetic organic chemicals):	YES
Other SOCs detected	____
Other SOC tests performed but none detected *	____
Other SOC tests not performed	____

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ____________________

____

____

____

THE TEST RESULTS RECENTLY PERFORMED ON WELL 10 ARE ENCLOSED. THIS WELL JUST RECENTLY WENT ON-LINE

E. Bacterial contamination: YES

Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records). N/A

Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source. ___

Source sampling records for bacteria unavailable ___

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1)Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

[✓ YES] ___ NO

Describe with references to map produced in Part IV:

THERE ARE STREAMS FLOWING INTO AND OUT OF YELLOW LAKE WHICH IS IN THE ONE YEAR BOUNDARY. THERE IS A STEEP RAVINE ASSOCIATED SOUTHERN BOUNDARY OF THE FIVE AND TEN YEAR PLAN;

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES [✓ NO]

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

[✓ YES] ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES __ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
6 month travel time	___	___	___
6 month–1 year travel time	___	___	___
1–5 year travel time	___	___	___
5–10 year travel time	___	___	___

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
1 year travel time	___	___	___
1–5 year travel time	___	___	___
5–10 year travel time	___	___	___

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

____

____

____

____

____

____

____

____

Suggestions and Comments

Did you attend one of the susceptibility workshops? ___ YES ___ NO

Did you find it useful? ___ YES ___ NO

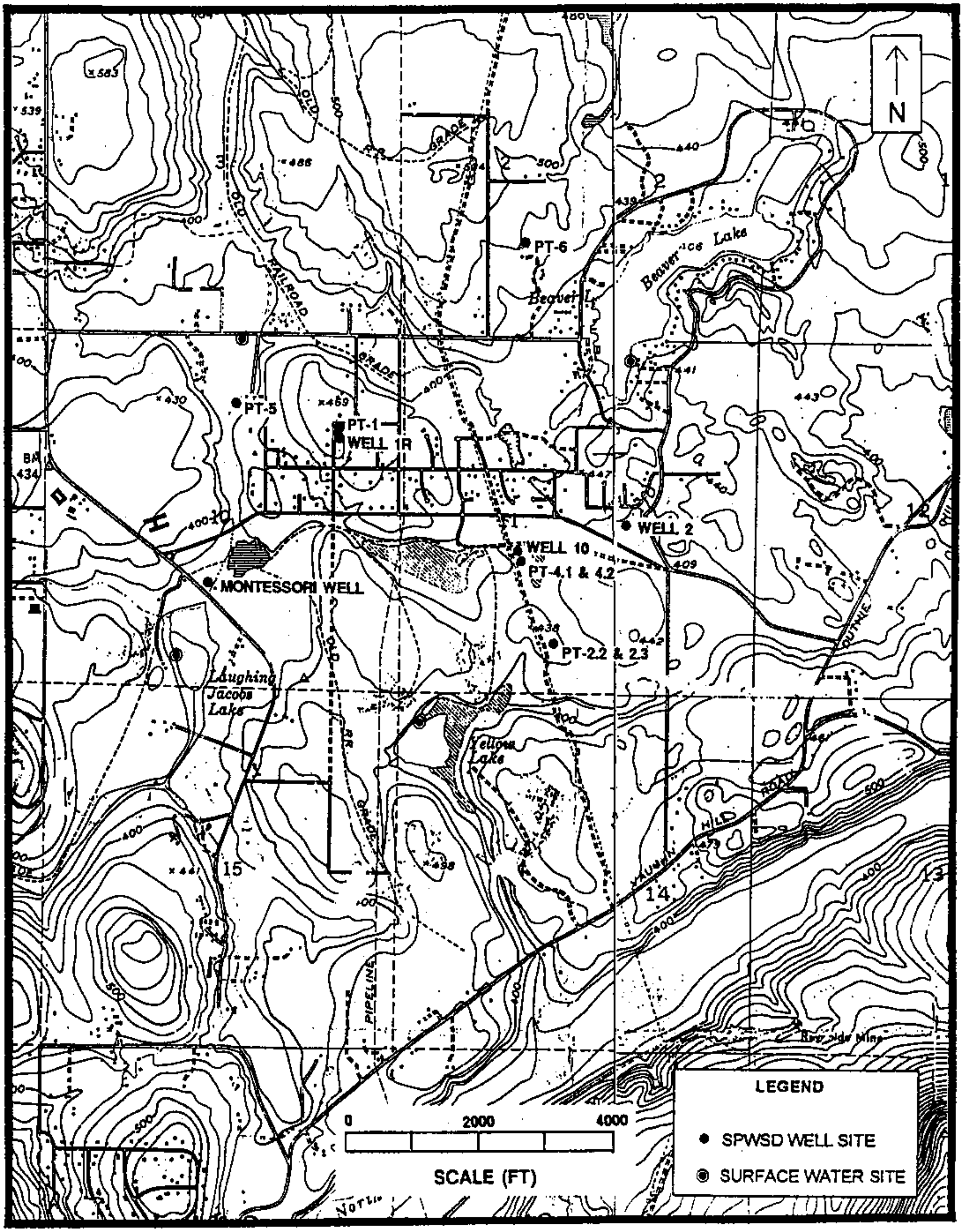
Did you seek outside assistance to complete the assessment? ___ YES ___ NO

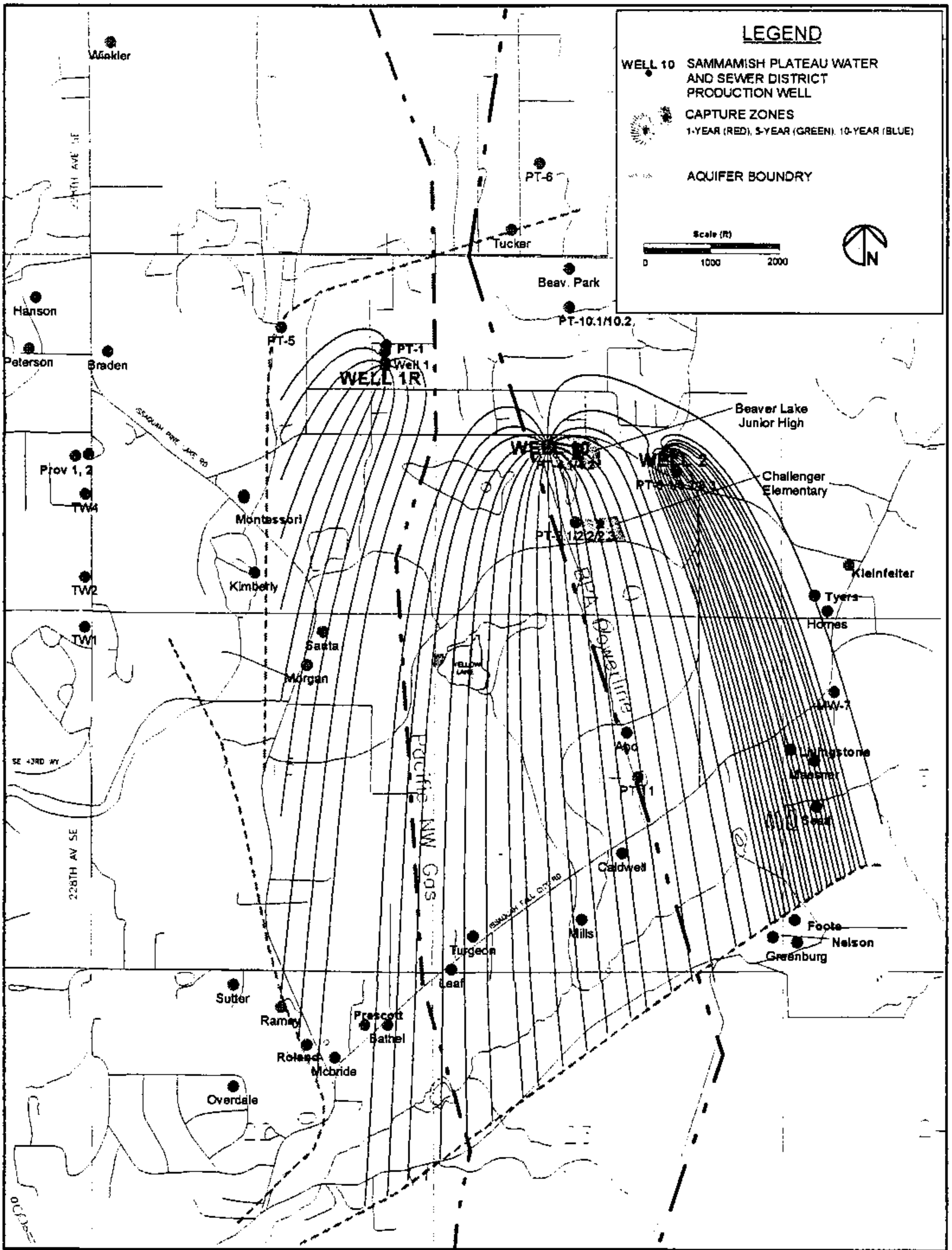
……

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WELL SITE LOCATION MAP





AGI TECHNOLOGIES

Sammamish Plateau
Water and Sewer District
Wellhead Protection
Project # - 15287.015

Distribution of Plateau Aquifer Zone II Wellhead Protection Areas

Figure 1-1

File Original and First Copy with
Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 062368

Water Right Permit No. G1-27166

(1) **OWNER:** Name Sammamish Plateau Water Dist. Address 1510 228th Ave SE, Issaquah, WA 98

(2) **LOCATION OF WELL:** County King NE ¼ SW ¼ Sec 11 T 24 N., R 6E W.M.

(2a) **STREET ADDDRESS OF WELL** (or nearest address)

(3) **PROPOSED USE:** ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (If more than one) 10

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐

Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 12 inches.
Drilled *194 feet. Depth of completed well 193 ft.

(6) **CONSTRUCTION DETAILS:**

Casing Installed: 12 " Diam. from +2.5 ft. to 135 ft.
Welded ☒ " Diam. from ft. to ft.
Liner installed ☐
Threaded ☐ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name
Type 304 Stainless Model No.
Diam. 10" Slot size 0.030 from 135 ft. to 155 ft.
Diam. Slot size from 173 ft. to 183 ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 65 ft.
Material used in seal Bent/Grvl 65-55;Cmnt 55-0
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level Approx 420 ft.
Static level 67.23 BGS ft. below top of well Date 8/23/93
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Carr/AGI
Yield: 508 gal./min. with 38 ft. drawdown after 24 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1	79.20	10	83.27	30	80.30
2	85.00	15	82.36	60	77.70
5	84.37	20	81.58	90	76.07

Date of test 8/24-25/93

Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water 8°C Was a chemical analysis made? Yes ☒ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Topsoil	0	5
Sand & Gravel, gray-tan, cmnt	5	34
Sand & Gravel, Loose, dry	34	36
Till, Cemented Silt & Cbls	36	70
Sand, brown, claybound	70	75
Sand & Grvl, Brn-Gry, W-B	75	97
Clay w/sand, bluish-gry, lean	97	123
Sandy Gravel,olive-gry, W-B	123	160
Silt w/peat & grvl, olive-gry	160	169
Grvl w/sand-peat-silt,ol-gry	169	175
Sabd w/silt,grvly,olive-blk	175	193

Work started 7/5/93, 19. Completed 8/26, 19 93

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Armstrong Drilling, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 10715 66th Avenue East
Puyallup, WA 98371

(Signed) (WELL DRILLER) License No. 0012

Contractor's Registration No. ARMSTDI135NC Date 9-15, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329-

Carr/Associates
A Division of Applied Geotechnology Inc.

PRODUCTION WELL 10

CONSTRUCTION AND TESTING REPORT

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

SUMMARY

Sammamish Plateau Water & Sewer District Well 10 is capable of producing 550 gpm continuously from a pumping level of 130 feet below ground surface. The well is completed in the lower part of the Plateau Aquifer. Screens are set from 135 to 155 and 173 to 183 feet below ground surface. Water levels of wells completed in the lower part of the Plateau Aquifer (PT-4.2, PT-5, PT-6, and Montessori School Well) reflected this pumping test of Well 10. Water levels in wells completed in the upper part of the Plateau Aquifer (PT-4.1, PT-1, and Well 2) showed little or no influence from pumping of Well 10. Surface waters in the surrounding area showed no changes in water levels due to the aquifer test.

Water quality samples from Well 10 show all parameters meet Washington State Department of Health water quality standards.

BACKGROUND

Property owner:	Issaquah School District
Hydrogeologist:	Carr/Associates, a Division of AGI; Eric Semsak
Drilling contractor:	Armstrong Drilling, Inc.
Drilling method:	Cable tool
Start date:	July 5,1993
Completion date:	August 26, 1993

PERMITS AND APPLICATIONS

Copies of the water right application and preliminary permit are included in the Appendix.

Start card number:	62368
Water right application number:	G1-21766
Application submitted:	May 4, 1993
Instantaneous:	500 gpm
Annual:	200 af/yr
Continuous equivalent:	124 gpm

DRILLING OBJECTIVE

The objective of this project was to supply additional ground water resources to augment the District's existing supply for future demands of a growing community.

Desired yield:	500 gpm
Target aquifer:	Plateau Aquifer
Required quality:	Potable

WELL SITE

The well site, illustrated in **Figure 1**, is located in the northwest corner of Issaquah School District's new middle school property, approximately 115 feet south of Southeast 32nd Street at about 251st Avenue Southeast. The site lies adjacent to the northwestern portion of the school's parking lot and east of the Bonneville Power transmission lines.

Map location/coordinates:	T24N/R6E/NE4SW4, Section 11
County:	King
Top of 12-inch casing elevation:	Approximately 420 ft.
Site characteristics:	Flat-lying site bordering the Issaquah Middle School's parking lot and the Bonneville Power transmission lines
Ground surface elevation:	418.37

COMPLETION RECORD

Well 10 is completed in accordance with WAC Chapter 173-160, effective May 5, 1988, and meets all requirements for a State of Washington, Group A public supply well.

The well completion record is illustrated in **Figure 2** and described in the Water Well Report (Form ECY 050-1-20) in the Appendix.

Total depth drilled:	194 ft.
Completion depth:	193 ft.

Surface Seal

Depth of seal:	65 ft.
Type of seal:	0 to 55 ft., cement; 55 to 65 ft., alternating layers of bentonite & gravel

Casing Record

Casing Depth	Diameter	Description
0 to 135 ft.	12-inch	mild-steel casing

Screen Assembly

Continuous wrap, wire-wound, welded, type 304 stainless-steel, well screens manufactured by Johnson Division were installed as listed below:

Screen Depth	Diameter	Description
130 to 135 ft.	10-inch ID	riser, mild-steel casing with two Figure "K" Neoprene packers
135 to 155 ft.	10-inch ID	type 304 stainless-steel screen (0.030-inch slot)
155 to 173 ft.	10-inch ID	blank mild-steel casing
173 to 183 ft.	10-inch ID	type 304 stainless-steel screen (0.030-inch slot)
183 to 193 ft.	10-inch ID	tailpipe, mild-steel casing

HYDROGEOLOGIC LOG

The hydrogeologic log is illustrated in **Figure 3** and described in the Water Well Report in the Appendix.

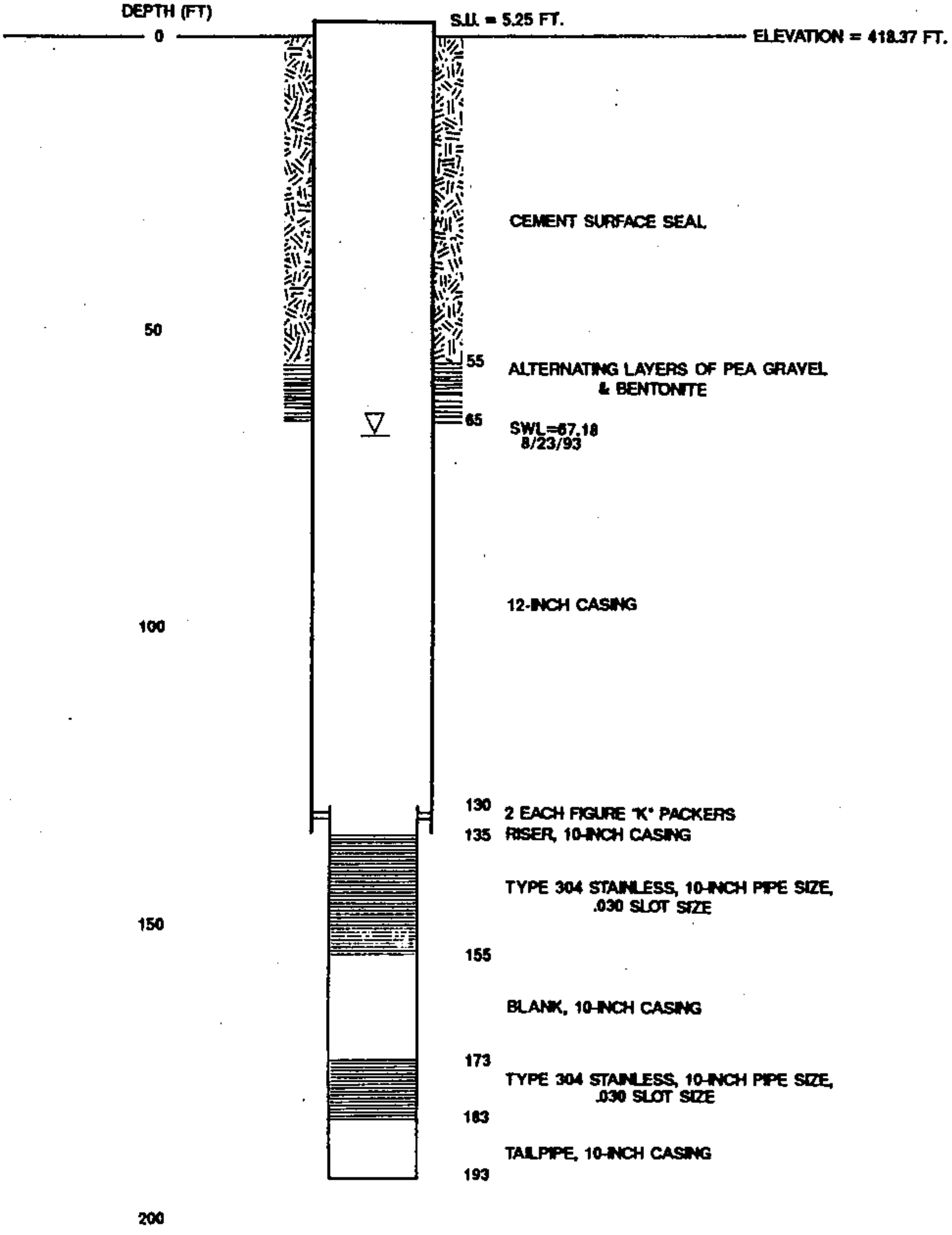
At Well 10, the upper 70-foot layer of sediments is glacial till comprised of low permeable, gray-tan silt, sand, and gravel. Between depths of 34 and 36 feet, a thin glacial outwash unit consisting of dry, loose sand and gravel bisects the upper 70 feet of till. A brown, claybound sand unit separates the overlying till from the upper water-bearing zone of the Plateau Aquifer. This zone lies between depths of 75 and 97 feet and consists of brown to gray, coarse sand and gravel with some silt. Beneath this aquifer zone, an impermeable, bluish-gray clay unit was encountered between depths of 97 and 123 feet. This sandy clay separates the upper and lower water-bearing zones of the Plateau Aquifer. At this site, the lower Plateau Aquifer (123 to 193 feet) is bisected by a 9-foot layer of silt and peat (160 to 169 feet). Above this silt, the lower aquifer appears to be more permeable. Below it, permeabilities tend to decrease with depth.

FIGURE 2

SAMMAMISH PLATEAU WATER & SEWER DISTRICT

WELL 10

COMPLETION DETAILS



Carr/Associates
Project: SPWSD Well 10
Lab No. 34339
Page 3 of 4
September 7, 1993

Lab Sample No. 34339-1 Client ID: Well 10

EPA Method 524.2 (continued)

TRIHALOMETHANES (THM)

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2941	Chloroform	ND	0.5	
2943	Bromodichloromethane	ND	0.5	
2944	Dibromochloromethane	ND	0.5	
2942	Bromoform	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
4-Bromofluorobenzene	96	80 - 120
1,2 Dichlorobenzene d4	93	70 - 130

Continued . . . . .

Carr/Associates
Project: SPWSD Well 10
Lab No. 34339
Page 4 of 4
September 7, 1993

Lab Sample No. 34339-1 Client ID: Well 10

INORGANIC PARAMETERS	RESULT	MCL
Antimony(GFAA), mg/L	< 0.006	0.006
Arsenic (GFAA), mg/L	< 0.01	0.05
Barium, mg/L	< 0.005	2.0
Beryllium, mg/L	< 0.004	0.004
Cadmium, mg/L	< 0.005	0.005
Chromium, mg/L	0.01	0.1
Copper, mg/L	< 0.025	1.0
Iron, mg/L	< 0.1	0.3
Lead (GFAA), mg/L	< 0.003	0.05
Manganese, mg/L	< 0.015	0.05
Mercury (CVAA), mg/L	< 0.0002	0.002
Nickel, mg/L	< 0.04	0.1
Selenium (GFAA), mg/L	< 0.005	0.05
Silver, mg/L	< 0.01	0.1
Sodium, mg/L	3.5	N/A
Thallium (GFAA), mg/L	< 0.002	0.002
Zinc, mg/L	< 0.2	5.0
Fluoride, mg/L	< 0.1	2.0
Nitrate Nitrogen, mg/L	0.05	10.0
Chloride, mg/L	1.4	250
Sulfate, mg/L	2.8	250
Cyanide, mg/L	< 0.05	0.2
Turbidity, NTU	< 0.1	1
Hardness (as $CaCO_3$) mg/L	30	N/A
Conductivity, umhos/cm	77	700
Color, Color Units	< 5	15.0
Total Dissolved Solids, mg/L	49	500

MCL - Maximum Contaminant Level
N/A - Not Applicable
< - Less than practical quantitation limit

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206) 922-2310 - FAX (206) 922-5047

QUALITY CONTROL REPORT

General Chemistry

Client: Carr/Associates
Lab No: 34339qc1
Matrix: Water
Units: mg/L
Date: September 7, 1993

METHOD BLANKS

Parameter	Result	PQL
Fluoride, mg/L	ND	0.1
Chloride, mg/L	ND	1.0
Nitrate Nitrogen, mg/L	ND	0.05
Nitrite Nitrogen, mg/L	ND	0.05
Sulfate, mg/L	ND	1.0
Cyanide, mg/L	ND	0.05
Total Dissolved Solids, mg/L	ND	2
Turbidity, NTU	ND	0.1
Hardness (as $CaCO_3$), mg/L	ND	2
Conductivity, umhos/cm	ND	10
Color, color units	ND	5

ND - Not Detected
PQL - Practical Quantitation Limit

DUPLICATE

Dup No. 34339-1

Parameter	Sample(S)	Duplicate(D)	RPD
Total Dissolved Solids	49	46	6.3

RPD = Relative Percent Difference
$= [(S - D) / ((S + D) / 2)] \times 100$

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QUALITY CONTROL REPORT

ORGANIC COMPOUNDS IN DRINKING WATER
EPA METHOD 524.2

Page 1 of 3

Client: Carr/Associates
Lab No: 34339qc2
Units: ug/L
Date: September 7, 1993

METHOD BLANK

REGULATED COMPOUNDS

EPA Code No.	Compound Name	Result	PQL	Flags
2976	Vinyl Chloride	ND	1.0	
2977	1,1-Dichloroethene	ND	0.5	
2981	1,1,1-Trichloroethane	ND	0.5	
2982	Carbon Tetrachloride	ND	0.5	
2990	Benzene	ND	0.5	
2980	1,2-Dichloroethane	ND	0.5	
2984	Trichloroethene	ND	0.5	
2969	1,4-Dichlorobenzene	ND	0.5	
2964	Methylene Chloride	ND	0.5	
2979	trans-1,2-Dichloroethene	ND	0.5	
2380	Cis-1,2-Dichloroethene	ND	0.5	
2983	1,2-Dichloropropane	ND	0.5	
2991	Toluene	ND	0.5	
2985	1,1,2-Trichloroethane	ND	0.5	
2987	Tetrachloroethene	ND	0.5	
2989	Chlorobenzene	ND	0.5	
2992	Ethylbenzene	ND	0.5	
2995	Meta-Xylene, para-Xylene	ND	0.5	
2997	ortho-xylene	ND	0.5	
2996	Styrene	ND	0.5	
2968	1,2-Dichlorobenzene	ND	0.5	
2378	1,2,4-Trichlorobenzene	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

SOUND ANALYTICAL SERVICES, INC.

QUALITY CONTROL REPORT

ORGANIC COMPOUNDS IN DRINKING WATER EPA METHOD 524.2

Page 2 of 3

Client: Carr/Associates
Lab No: 34339qc2
Units: ug/L
Date: September 7, 1993

METHOD BLANK

UNREGULATED COMPOUNDS

EPA Code No.	Compound Name	Result	PQL	Flags
2212	Dichlorodifluoromethane	ND	1.0	
2210	Chloromethane	ND	1.0	
2214	Bromomethane	ND	1.0	
2218	Trichlorofluoromethane	ND	1.0	
2216	Chloroethane	ND	1.0	
2978	1,1-Dichloroethane	ND	0.5	
2416	2,2-Dichloropropane	ND	0.5	
2430	Bromochloromethane	ND	0.5	
2410	1,1-Dichloropropene	ND	0.5	
2408	Dibromomethane	ND	0.5	
2412	1,3-Dichloropropane	ND	0.5	
2986	1,1,1,2-Tetrachloroethane	ND	0.5	
2994	Isopropylbenzene	ND	0.5	
2993	Bromobenzene	ND	0.5	
2988	1,1,2,2-Tetrachloroethane	ND	0.5	
2414	1,2,3-Trichloropropane	ND	0.5	
2998	n-Propylbenzene	ND	0.5	
2965	2-Chlorotoluene	ND	0.5	
2966	4-Chlorotoluene	ND	0.5	
2424	1,3,5-Trimethylbenzene	ND	0.5	
2426	t-Butylbenzene	ND	0.5	
2418	1,2,4-Trimethylbenzene	ND	0.5	
2428	sec-Butylbenzene	ND	0.5	
2967	1,3-Dichlorobenzene	ND	0.5	
2030	4-Isopropyltoluene	ND	0.5	
2422	n-Butylbenzene	ND	0.5	
2246	Hexachlorobutadiene	ND	0.5	
2248	Naphthalene	ND	0.5	
2420	1,2,3-Trichlorobenzene	ND	0.5	

ND - Not Detected PQL - Practical Quantitation Limit

QUALITY CONTROL REPORT

ORGANIC COMPOUNDS IN DRINKING WATER
EPA METHOD 524.2

Client: Carr/Associates
Lab No: 34339qc2
Units: ug/L
Date: September 7, 1993

METHOD BLANK

TRIHALOMETHANES (THM)

EPA Code No.	Compound Name	Result	PQL	Flags
2941	Chloroform	ND	0.5	
2943	Bromodichloromethane	ND	0.5	
2944	Dibromochloromethane	ND	0.5	
2942	Bromoform	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
4-Bromofluorobenzene	97	80 - 120
1,2 Dichlorobenzene d4	92	70 - 130

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QUALITY CONTROL REPORT

Total Metals

Client: Carr/Associates
Lab No: 34339qc3
Units: mg/L
Date: September 7, 1993

METHOD BLANK

Parameter	Result	PQL
Antimony	ND	0.006
Arsenic	ND	0.01
Barium	ND	0.005
Beryllium	ND	0.004
Cadmium	ND	0.005
Chromium	ND	0.01
Copper	ND	0.025
Iron	ND	0.1
Lead	ND	0.003
Mercury	ND	0.0002
Manganese	ND	0.015
Nickel	ND	0.04
Selenium	ND	0.005
Silver	ND	0.01
Sodium	ND	0.50
Thallium	ND	0.002
Zinc	ND	0.2

ND - Not Detected
PQL - Practical Quantitation Limit

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STATE OF WASHINGTON
DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORIES
OFFICE OF RADIATION LABORATORIES
1610 N.E. 150TH ST., SEATTLE, WA 98155-7224

WATER SAMPLE INFORMATION FOR RADIATION ANALYSES

B NUMBER	SYSTEM NAME:	SYSTEM I.D. NO.	SYSTEM CLASS (circle one)	SOURCE NUMBER
1 0 1 0 4 3 2 2	Samm. Plateau Water/Sewer Dis	4 0 5 1 0 2	A B	[illegible] E [illegible]

this follow up of a previous out of compliance sample? Yes ☐ No ☐

COUNTY KING

if yes, what was the laboratory number of the previous sample? _ _ _ _ _ _ _

OURCE TYPE ___1. SURFACE X 3. WELL ___2. SPRING ___4. PURCHASE

IF SOURCE IS LAKE OR STREAM, ENTER NAME: WELL 10

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (ADDRESS)

DATE OF FINAL REPORT _ 7/_ 9/2 2

	DATE COLLECTED	DATE RECEIVED
1	0 6/2 5/9 3	0 6/2 5/9 3

SEND REPORT TO: (PRINT FULL NAME & ADDRESS)

CARR & ASSOCIATES
NAME

P. O. BOX 1166
STREET

Gig Harbor WA 98329
CITY ZIP CODE

TELEPHONE (206) 851-0562
AREA CODE

LABORATORY REPORT
(DO NOT WRITE BELOW THIS LINE)

ANALYSES	LESS THAN	RESULTS pCi/L	*MCL pCi/L	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
Gross Alpha	<	3.0		✓		
Uranium		.				
Gross Alpha minus Uranium		.	15			
Radium-226		.	3			
Radium-228		.				
Radium-226 Plus Radium-228		.	5			
Radon-222						
Gross Beta	<	3.0	50	✓		
Strontium-89		.	80			
Strontium-90		.	8			
Cesium-134		.	80			
Iodine-131		.	3			
Tritium		.	20,000			

LABORATORY SUPERVISOR
(Name or Initials)

QUALITY ASSURANCE SUPERVISOR
(Name or Initials)

CHARGE: $72.20

REMARKS:

*MCL is the maximum contaminant Level Allowed

DOH 306-001 (Rev. 3/90) 68-

DISTRIBUTION: White — Laboratory / Data Processing Green — Billing Yellow — Water Supplier Pink — Engineer Office Gold — District Engineer

WATER MANAGEMENT LABS
1515 80TH STREET E
~~TACOMA~~, WA 98404
(206) 531-3121

WATER BACTERIOLOGICAL ANALYSIS

SAMPLE COLLECTION: READ INSTRUCTIONS ON BACK OF GOLDENROD COPY

If instructions are not followed, sample will be rejected.

DATE COLLECTED MONTH/ DAY / YEAR: 8 / 25 / 93

TIME COLLECTED: 08 : 25 ☒ AM ☐ PM

COUNTY NAME: King

TYPE OF SYSTEM: ☒ PUBLIC ☐ INDIVIDUAL (serves only 1 residence)

IF PUBLIC SYSTEM, COMPLETE: I.D. No.

CIRCLE GROUP [✓ A] B

NAME OF SYSTEM: SPWSD

SPECIFIC LOCATION WHERE SAMPLE COLLECTED (ie, kitchen tap @ school, fire station, fountain): well 10 discharge tube

TELEPHONE NO. DAY (206) 851-5562

EVENING ( )

SAMPLE COLLECTED BY: (Name): CR carr / Associates

SYSTEM OWNER/MGR.: (Name): Ron Little

SOURCE TYPE ☐ GROUND WATER UNDER SURFACE INFLUENCE

☐ SURFACE ☒ WELL or WELL FIELD ☐ SPRING ☐ PURCHASED or INTERTIE ☐ COMBINATION or OTHER

SEND REPORT TO: (Print Full Name, Address and Zip Code)

Carr Associates
Po Box 1158
Gig Harbor WASHINGTON 98335

TYPE OF SAMPLE (check only one in this column)

☐ ROUTINE DRINKING WATER check treatment →
- ☐ Chlorinated (Residual:____Total____Free)
- ☐ Filtered
- ☐ Untreated or Other________

☐ REPEAT SAMPLE
Previous coliform presence Lab #________
Previous coliform presence Date____/____/____

☒ RAW SOURCE WATER Source # S ☐ Total Coliform
☒ NEW CONSTRUCTION or REPAIRS ☐ Fecal Coliform
☐ OTHER (Specify) ________

REMARKS

LABORATORY RESULTS (FOR LAB USE ONLY)

METHOD USED

MF	MPN	PA	[✓ MMO]	

TOTAL COLIFORM A /100 ml
FECAL COLIFORM____/100 ml
E. COLI____/100 ml
HETEROTROPHIC____/per ml

ANOTHER SAMPLE REQUIRED

SAMPLE NOT TESTED BECAUSE:
- ☐ Sample too old
- ☐ Wrong container
- ☐ Incomplete form
- ☐ ________

TEST UNSUITABLE BECAUSE:
- ☐ Confluent growth
- ☐ TNTC
- ☐ Turbid culture
- ☐ Excess debris

NewConst DRINKING WATER SAMPLE RESULTS

☐ UNSATISFACTORY, Coliforms present

REPEAT SAMPLES REQUIRED ☐ E. Coli present ☐ E. Coli absent ☐ Fecal present ☐ Fecal absent

☒ SATISFACTORY, Coliforms absent

SEE REVERSE SIDE OF GREEN COPY FOR EXPLANATION OF RESULTS

LAB NO.: 89-5C357

DATE, TIME RECEIVED: 8-25-93 11:39 AM

RECEIVED BY: CH

DATE REPORTED: 8-31-93

ROUTE

ACCT

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228th Avenue S.E.
Issaquah, Washington 98029

(425) 392-6256

WELL 11.1

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

Well 11.1

TABLE OF CONTENTS

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER & SEWER

Water system name : SAMMAMISH PLATEAU WATER & SEWER

County: KING

Water system number: 409009 Source number: ______

Well depth: 491 (ft.) (*From WFI form*)

Source name: WELL 11.1

WA well identification tag number: A A D - 3 8 L

______ well not tagged

Number of connections: 11,080 Population served: 33,240

Township: 25N Range: 06E

Section: 34 1/4 1/4 Section: NE/NW

Latitude/longitude (if available): ______ / ______

How was lat./long. determined?

____ global positioning device ____ survey ____ topographic map
____ other: ______

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 8 / 9 / 93 month/day/year

last reconstruction: __ / __ / __ month/day/year

______ information unavailable

2) Well driller: HOLT DRILLING

10621 TODD ROAD EAST

PUYALLUP, WA. 98372

___ well driller unknown

3) Type of well:

X Drilled: X rotary ___ bored X cable (percussion) ___ Dug

___ Other: ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: ________

Additional comments: ____________________

4) Well report available? X YES (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 500 GPM (gallons/min)

Source of information: CONSTRUCTION & TESTING REPORT

If not documented, how was pumping rate determined? ____________________

___ Pumping rate unknown

6) Is this source treated? ___ YES X NO

If so, what type of treatment:

___ disinfection ___ filtration ___ carbon filter ___ air stripper ___ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

____

7) If source is chlorinated, is a chlorine residual maintained: ___ YES X NO

Residual level: __________ (*At the point closest to the source.*)

PART III: **Hydrogeologic Information**

1) Depth to top of open interval: [check one]

___ (less than) 20 ft ___ 20-50 ft ___ 50-10 ft ___ 100-200 ft X (greater than) 200 ft

___ information unavailable

2) Depth to ground water (static water level):

___ (less than) 20 ft ___ 20-50 ft ___ 50-100 ft X (greater than) 100 ft

___ flowing well/spring (artesian)

How was water level determined?

X well log ___ other: ______________________________

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

________ psi (pounds per square inch)
or
________ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO N/A

5) Wellhead elevation (height above mean sea level): 360 (ft)

How was elevation determined? ___ topographic map X Drilling/Well Log ___ altimeter

___ other: ______________________________

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

___ evidence of a confining layer in well log

X no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer? ___ YES ___ NO

___ information unavailable

7) Sanitary setback:

___ (less than) 100 ft* X 100-120 ft ___ 120-200 ft ___ (greater than) 200 ft
* if less than 100 ft describe the site conditions:

8) Wellhead construction:

X wellhead enclosed in a wellhouse

___ controlled access (describe): ___

___ other uses for wellhouse (describe): ___

___ no wellhead control

9) Surface seal:

___ 18 ft

___ (less than) 18 ft (no Department of Ecology approval)

___ (less than) 18 ft (Approved by Ecology, include documentation)

X (greater than) 18 ft

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ (less than) 10 in/yr ___ 10-25 in/yr X (greater than) 25 in/yr

PART IV: **Mapping Your Ground Water Resource**

1) Annual volume of water pumped: 262,800,000. (gallons)

How was this determined?

___ meter

X estimated: ✓ pumping rate (500gpM)

___ pump capacity (________)

___ other: ________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 980 (ft)

1 year ground water travel time : 1390 (ft)

5 year ground water travel time: 3110 (ft)

10 year ground water travel time: 4400 (ft)

These are the CF
per the sample pac
The DISTRICT HAS
ADDITIONAL WHPA
CAPTURE ZONE INF
FOR THIS WELL WA
IS ATTACHED.

Information available on length of screened/open interval?

X YES ___ NO

Length of screened/open interval: 40 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

Comments: ________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application		X	X	
stormwater injection wells	No	No	No	
other injection wells* SEE COMMENTS	No	X		
abandoned ground water well				/
landfills, dumps, disposal areas				/
known hazardous materials clean-up site				/
water system(s) with known quality problems				/
population density (greater than) 1 house/acre	X	X	X	
residences commonly have septic tanks	✓	✓	✓	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

* WELL 5 (AS SHOWN ON THE LOCATION MAP) HAS BEEN USED AS AN INJECTION WELL AS PART OF THE GROUNDWATER RECHARGE PROJECT.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES
Results greater than MCL	____
(less than) 2 mg/liter nitrate	____
2-5 mg/liter nitrate	____
(greater than) 5 mg/liter nitrate	____
Nitrate sampling records unavailable	____

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES
Results greater than MCL or SAL	____
VOCs detected at least once	____
VOC test performed but never detected	____
VOC sampling records unavailable	____

C. EDB/DBCP:	YES
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	
EDB/DBCP detected below MCL at least once	____
EDB/DBCP detected above MCL at least once	____
EDB/DBCP never detected	____
EDB/DBCP tests required but not yet completed	____
EDB/DBCP tests not required	____

D. Other SOCs (pesticides and other synthetic organic chemicals):	YES
Other SOCs detected	____
Other SOC tests performed but none detected *	____
Other SOC tests not performed	____

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ____________________

THE TEST RESULTS FOR TESTS PERFORMED ON WELL 11.1 AT THE TIME OF CONSTRUCTION ARE ENCLOSED

E. <u>Bacterial contamination</u>:

	YES
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	N/A
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___
Source sampling records for bacteria unavailable	___

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1)Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

X YES __ NO

Describe with references to map produced in Part IV:

INGLEWOOD CREEK IS LOCATED WITHIN THE ONE YEAR BOUNDARY. VARIOUS WETLANDS ARE ALSO LOCATED IN THE FIVE & TEN YEAR PLAN.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

__ YES X NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

X YES __ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES [✓ NO]

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
6 month travel time	__	✓	__
6 month-1 year travel time	__	✓	__
1-5 year travel time	__	✓	__
5-10 year travel time	__	✓	__

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
1 year travel time	__	✓	__
1-5 year travel time	__	✓	__
5-10 year travel time	__	✓	__

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Suggestions and Comments

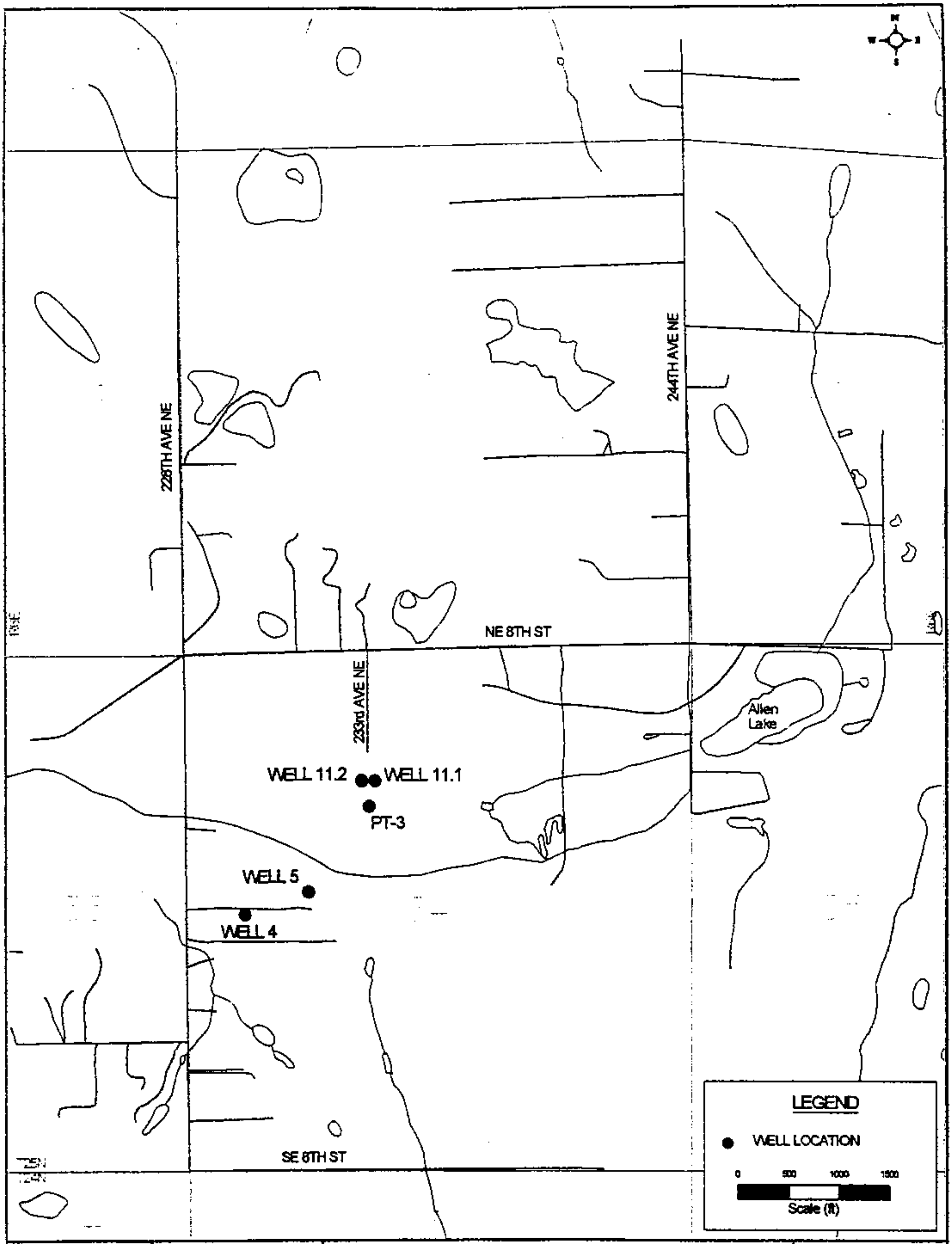
Did you attend one of the susceptibility workshops? __ YES __ NO

Did you find it useful? __ YES __ NO

Did you seek outside assistance to complete the assessment? __ YES __ NO

. . . .

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

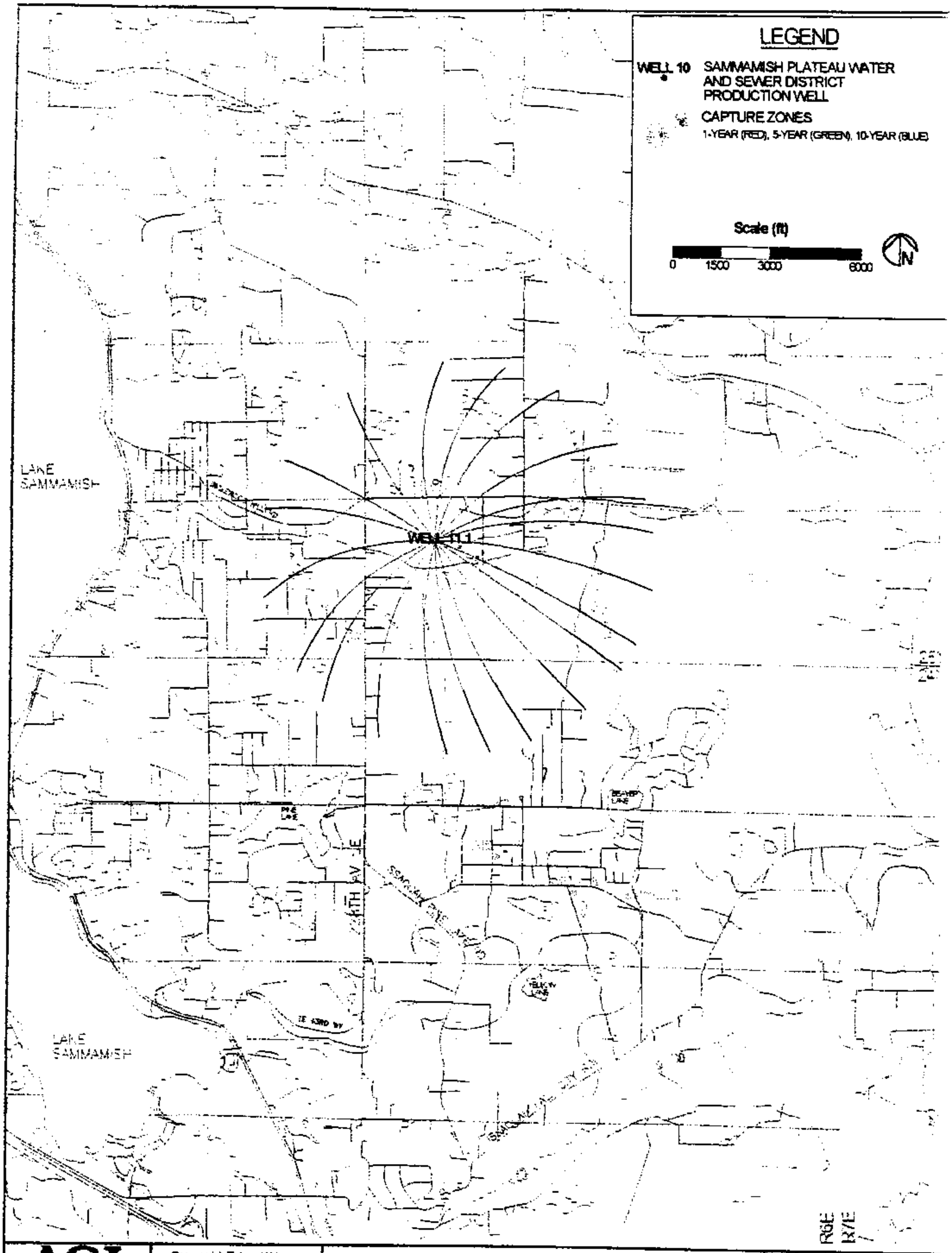


AGI TECHNOLOGIES

Sammamish Plateau Water
and Sewer District
Well 11.1 Development/Testing
Project # - 15,287 002

Location Map

Figure 1

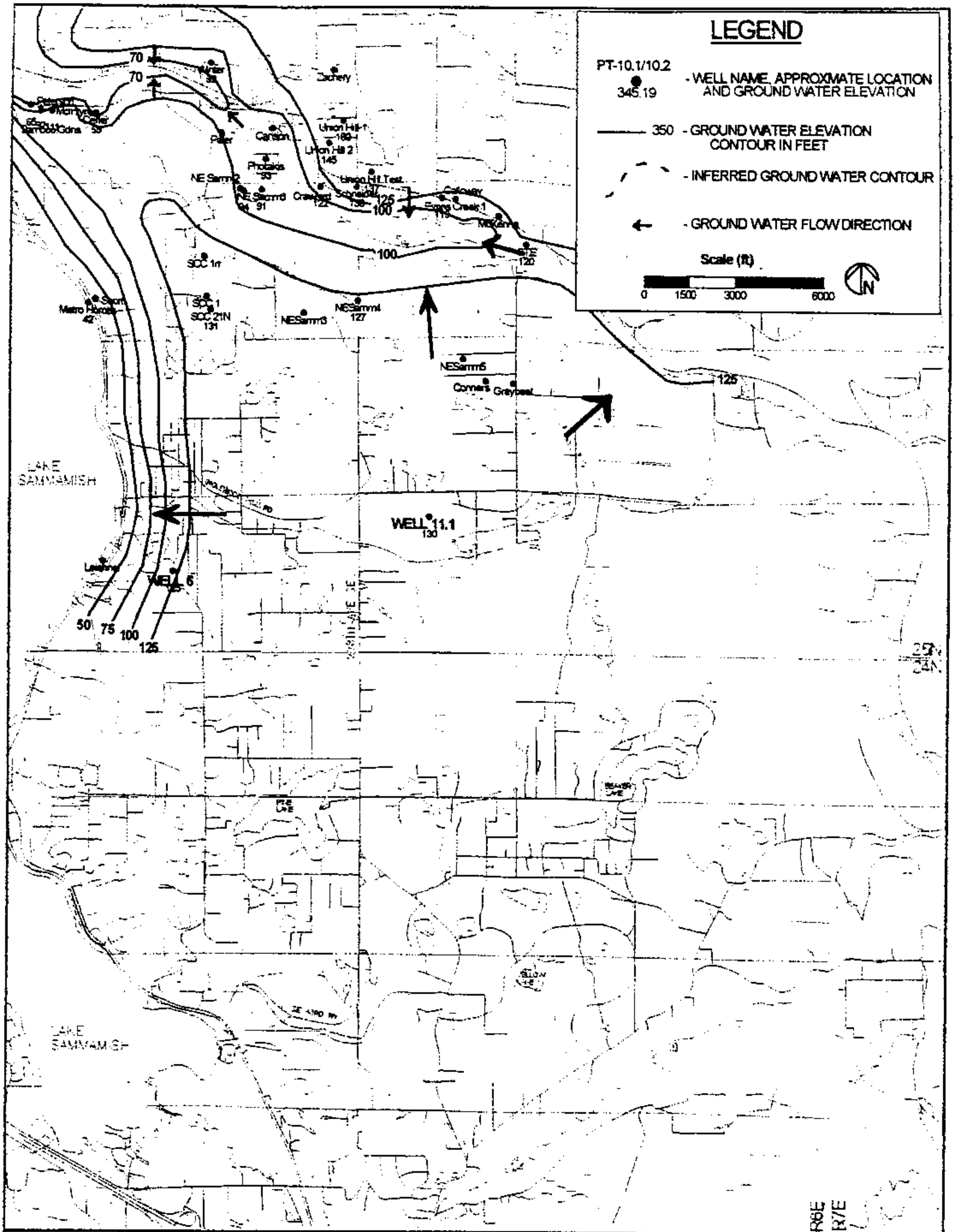


AGI TECHNOLOGIES

Sammamish Plateau Water and Sewer District
Well 11.1 Development/Testing
Project # - 15,287 002

Well 11.1 Wellhead Protection Area

Figure 6



AGI
TECHNOLOGIES

Sammamish Plateau Water
and Sewer District
Well 11.1 Development/Testing
Project # - 15,287.002

Aquifer Zone III Potentiometric Surface Map

Figure 5

ginal and First Copy with
epartment of Ecology
ond Copy—Owner's Copy
Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. ______

UNIQUE WELL I.D. # AAD381

Water Right Permit No. G1-26573

1) OWNER: Name Sammamish Plateau Water and Sewer District Address 1510 228th Ave SE, Issaquah, WA 98027

LOCATION OF WELL: County King NW ¼ NW ¼ Sec. 34 T. 25 N., R. 6E W.M.

2a) STREET ADDRESS OF WELL (or nearest address) Lake Washington School Dist.#414, Redmond, WA

PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

TYPE OF WORK: Owner's number of well (If more than one) 11.1

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

DIMENSIONS: Diameter of well 10 inches.

Drilled 499 feet. Depth of completed well 491 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16 " Diam. from 0 ft. to 186 ft.

Welded ☒ 16 " Diam. from 212 ft. to 219 ft.

Liner installed ☐

Threaded ☐ 10 " Diam. from +2.2 ft. to 409 ft.

Perforations: Yes ☐ No ☒

Type of perforator used ______

SIZE of perforations ______ in. by ______ in.

______ perforations from ______ ft. to ______ ft.

______ perforations from ______ ft. to ______ ft.

______ perforations from ______ ft. to ______ ft.

Screens: Yes ☒ No ☐

Manufacturer's Name Johnson

Type 304 Stainless Model No. P.S.

Diam. 6 inch Slot size 0.35 from 409 ft. to 419 ft.

426 431

Diam. ______ Slot size ______ from 461 ft. to 486 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel CSS 8-12

Gravel placed from 377 ft. to 491 ft.

Surface seal: Yes ☒ No ☐ To what depth? 43 ft.

Material used in seal Cement

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? ______ Depth of strata ______

Method of sealing strata off ______

PUMP: Manufacturer's Name ______

Type: ______ H.P. ______

(8) WATER LEVELS: Land-surface elevation above mean sea level 360 ft.

Static level 230 ft. below top of well Date 7/21/93

Artesian pressure ______ lbs. per square inch Date ______

Artesian water is controlled by ______ (Cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? ______

Yield: ______ gal./min. with ______ ft. drawdown after ______ hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ______

Bailer test ______ gal./min. with ______ ft. drawdown after ______ hrs.

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Hard-pan	0	41
Brown Siltbound Sands and Gravels	41	90
Brownish-Orange Siltbound sands and Gravels	90	112
Brown Siltbound Sands and Gravels.	112	115
Brown Siltbound Sands and Gravels with Cobbles	115	137
Brown Siltbound Sands and Gravels	137	156
Brown sands and Gravels with Silt, WB	156	180
Brown sands and Gravels, Water Bearing	180	201
Brown Sands and Gravels with Silt	201	204
Brown sands and Gravels with trace Silt	204	210
Brown Siltbound Sands and Gravels	210	220
Gray Silty Sands with few Gravels	220	241
Silty Sands and Gravels	241	251
Brownish-Gray Silty Sands and Gravels	251	291
Silty sands, Gravels and Cobbles	291	305
Silty Sands, Gravels and with few Cobbles	306	321
Tan Silty Sands and Gravels Water Bearing	321	351
Tan Silty Sands and Gravels	351	363
Tan Siltbound sands and Gravels	363	375
Tan Siltbound Sands and Gravels with Cobbles	375	390
Tan Silty sands, Gravels and Cobbles; WB	390	410
Tannish Sands and Gravels	410	423
Tan Silty sands and Gravels	423	429
Tannish Sands and Gravels	429	434
Tan Silty Sands, Gravels and Cobbles	434	464
Tannish Sands and Gravels	464	489
Gray Sands and Cobbles	489	499
Note: Final development and testing has not been done as of the completion date.		

Work started 4/28/93, 19__. Completed 8/9/93, 19__

WELL CONSTRUCTOR CERTIFICATION:

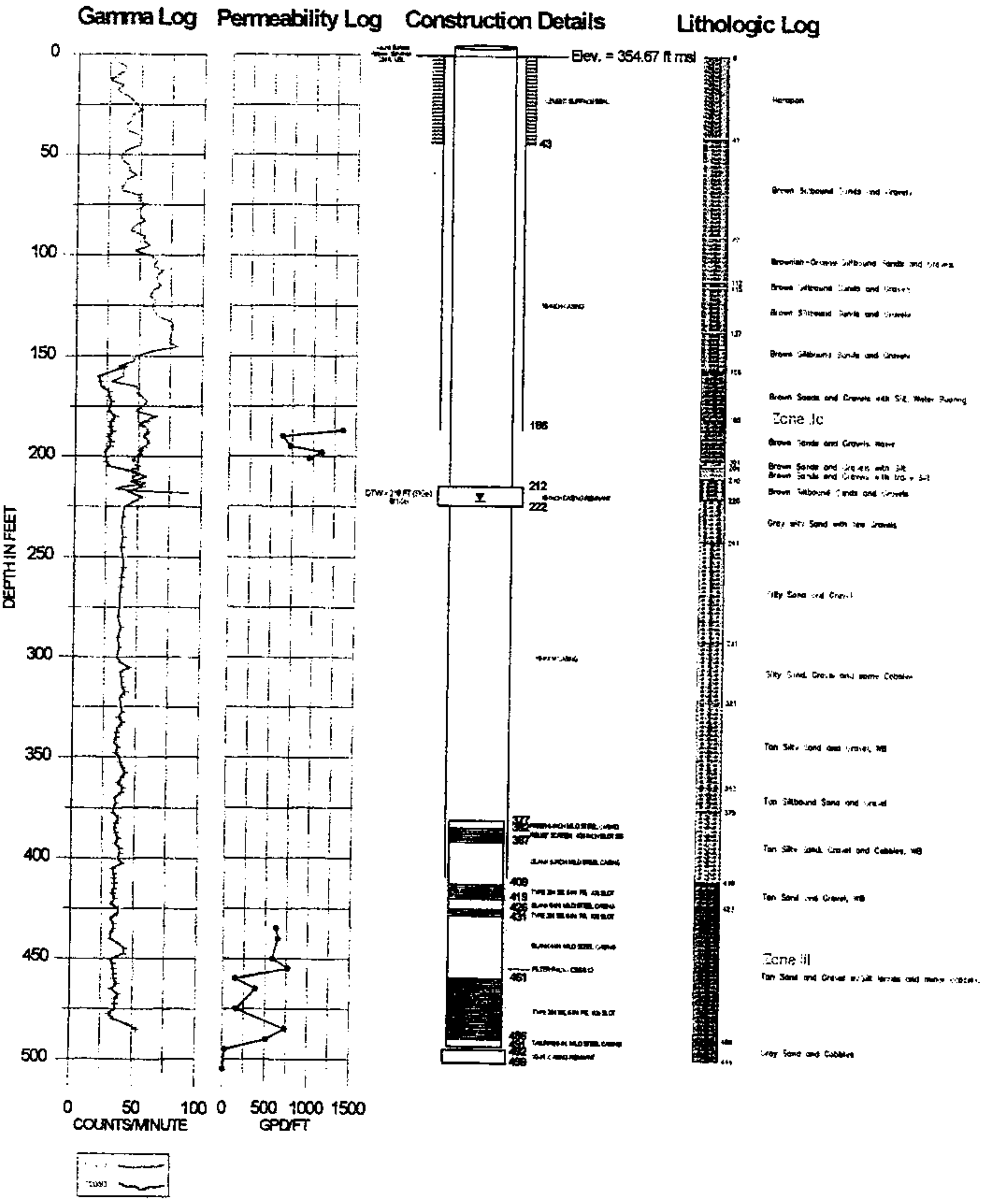
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10621 Todd Road East, Puyallup, WA 98372

(Signed) ______ WELL DRILLER License No. ______

Contractor's



AGI TECHNOLOGIES	Sammamish Plateau Water and Sewer District Well 11.1 Development/Testing Project # - 15,287.002	**Well 11.1** Hydrogeologic Logs and Construction Details	Figure 2

PRODUCTION WELL 11.1
SHALLOW COMPLETION CONSTRUCTION AND TESTING REPORT
SAMMAMISH PLATEAU WATER AND SEWER DISTRICT

SUMMARY

On June 1, 1993, Holt Drilling of Puyallup, Washington finished the first completion of Well 11.1. For this completion, the 16-inch well was screened above sea level in a brown sand and gravel aquifer between 186 and 210 feet below ground surface (bgs). A 6-hour test at 130 gallons per minute (gpm) caused 14.5 feet of drawdown for a specific capacity of 9 gallons per minute per foot of drawdown (gpm/ft-dd).

The optimum yield for the Well 11.1 shallow completion is calculated at 200 gpm. This is below the District's target aquifer criteria for a production well. As a result, Well 11.1 was drilled to and completed in the deeper Aquifer Zone III. Zone III is a below-sea level aquifer and was also tested at Well 11.1. The results of the Zone III test are found in the February 2, 1996 Production Well 11.1 Construction and Testing Report. Details of the shallow completion test are described below:

SHALLOW COMPLETION DETAILS

Screened zone:	Plateau Aquifer Zone II
Screen depth:	186 to 210 ft. (bgs)
Screen elevation:	169 to 145 ft. (msl)
Initial water level:	158.99 ft. (below measuring point)
Date:	June 3, 1993
Measuring point stickup:	2.17 ft. (above ground surface)
Ground surface elevation:	354.67 ft. (msl)

Pumping Test Results

Results of the Well 11.1, Zone II pumping test are illustrated in **Figures 1** and **2**. To conduct the test, a 50-horsepower submersible pump was installed in the well to a depth of 182 feet. The results of this 6-hour pumping test are:

OPTIMUM YIELD CALCULATION

Well No.: Production Well 11.1

Owner: Sammamish Plateau Water and Sewer District

OPTIMUM YIELD = USABLE DRAWDOWN x LONG-TERM SPECIFIC CAPACITY

LONG-TERM SPECIFIC CAPACITY = 45 gpm/ft. of drawdown at stabilization or at maximum pumping term

= 45 gpm/ft.

USABLE DRAWDOWN = TOTAL AVAILABLE DRAWDOWN - ALLOWANCES

TOTAL AVAILABLE DRAWDOWN is:

Max. Pump Setting	370 ft. (Below Ground Surface)
Static Water Level	220 ft. (Below Ground Surface)
Total Available Drawdown	150 ft.

ALLOWANCES include:

Pump Submergence	24 ft.
Interference	4 ft.
Seasonal Fluctuations	10 ft. (Estimated)
Other (Tidal, Barometric)	1 ft.
Total Allowances	39 ft.

USABLE DRAWDOWN = 150 ft. - 39 ft. = 111 ft.

For Well 11.1,

OPTIMUM YIELD = 111 ft. x 4.5 gpm/ft. - drawdown

= **500 gpm** (Estimated)

ase Print Plainly

E HEAVY PENCIL

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORIES
OFFICE OF RADIATION LABORATORIES
1610 N.E. 150TH ST., SEATTLE, WA 98155-7224

WATER SAMPLE INFORMATION FOR RADIATION ANALYSES

NUMBER	SYSTEM NAME:	SYSTEM I.D. NO.	SYSTEM CLASS (circle one)	SOURCE NUMBER
0 1 05127	SAMMAMISH PLATEAU W/S.	409009	A B	

is follow up of a previous out of compliance sample? Yes ☐ No ☐

s, what was the laboratory number of the previous sample? ___

COUNTY: KING

RCE: ___ 1. SURFACE ___ 3. WELL ___ 2. SPRING ___ 4. PURCHASE

IF SOURCE IS LAKE OR STREAM, ENTER NAME:

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (ADDRESS)

DATE OF FINAL REPORT: 08/28/95

	DATE COLLECTED	DATE RECEIVED
1	08/09/95	08/11/95

SEND REPORT TO: (PRINT FULL NAME & ADDRESS)

AGI TECHNOLOGIES
SAMMAMISH PLATEAU WATER (NAME)
P.O. BOX 1158 (STREET)
GIG HARBOR (CITY) WA 98335 (ZIP CODE)
TELEPHONE (206) 851-5562 (AREA CODE)

LABORATORY REPORT
(DO NOT WRITE BELOW THIS LINE)

ANALYSES	LESS THAN <	RESULTS pCi/L	*MCL pCi/L	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
ss Alpha	<	3.0		✓		
ilum		.				
ss Alpha ...s Uranium		.	15			
ium-226		.	3			
dium-228		.				
ium-226 Plus ium-228		.	5			
fon-222		225 ± 25 pCi/L				JBR
s Beta	<	4.0	50	✓		
ilium-89		.	80			
ronilum-90		.	8			
m-134		.	80			
ne-131		.	3			
m		.	20,000			

s the maximum contaminant Level Allowed

LABORATORY SUPERVISOR (Name or Initials): Jam/JBR

QUALITY ASSURANCE SUPERVISOR (Name or Initials): JMS

CHARGE: 120.00

REMARKS:

New Well #11.1

BILL TO:

Sammamish Plateau W/S.
ATTN: RON LITTLE
1510 - 228th Ave. S.E.
Issaquah, WA 98027

WATER
MANAGEMENT
LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
531-3121

VOLATILE ORGANIC CHEMICAL REPORT

Results by Analysis by EPA Method 524.2
Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry

Send Report To:
AGI Technologies
P.O. box 1158
Gig Harbor, WA 98335

Bill:
Sammamish Plateau Water and Sewer Distr
1510 228th Ave. E.
Issaquah, WA 98027

COUNTY : King
SYSTEM NAME : SPWSD well 11.1
SYSTEM ID NO. : NA Engineering
DATE COLLECTED: 08/09/95
DATE ANALYZED : 08/15/95
SOURCE NUMBER : S01
SOURCE TYPE : Well

LABORATORY NO. : 089
DATA FILE : 08972485
ANALYST : Martin L Okiro
DATE OF REPORT : August 18, 1995
SUPERVISOR'S INITIALS : LMK

EPA CODE	NAME OF COMPOUND	MCL* ug/L	AMOUNT ug/L
	REGULATED COMPOUNDS		
2976	VINYL CHLORIDE	2	ND
2977	1,1-DICHLOROETHYLENE	7	ND
2981	1,1,1-TRICHLOROETHANE	200	ND
2982	CARBON TETRACHLORIDE	5	ND
2990	BENZENE	5	ND
2980	1,2-DICHLOROETHANE	5	ND
2984	TRICHLOROETHYLENE	5	ND
2969	p-DICHLOROBENZENE	75	ND
2979	t-1,2-DICHLOROETHYLENE	100	ND
2380	c-1,2-DICHLOROETHYLENE	70	ND
2983	1,2-DICHLOROPROPANE	5	ND
2991	TOLUENE	1000	ND
2987	TETRACHLOROETHYLENE	5	ND
2989	CHLOROBENZENE	100	ND
2992	ETHYL BENZENE	700	ND
2995	m/p-XYLENES		ND
2997	o-XYLENE (total xylene MCL) =	10000	ND
2996	STYRENE	100	ND
2968	o-DICHLOROBENZENE	600	ND
2964	METHYLENE CHLORIDE	5	ND
2985	1,1,2-TRICHLOROETHANE	5	ND
2418	1,2,4-TRIMETHYLBENZENE	70	ND
	TRIHALOMETHANES (THM total) =	100	
2941	CHLOROFORM		ND
2943	BROMODICHLOROMETHANE		ND
2944	CHLORODIBROMOMETHANE		ND
2942	BROMOFORM		ND

* MCL: Maximum Contaminant Level
NOTE: An amount of ND indicates that the true concentration is less then the method detection limit of 0.5 ug/L.

EPA CODE	NAME OF COMPOUND	AMOUNT ug/L
	UNREGULATED COMPOUNDS	
2210	CHLOROMETHANE	ND
2214	BROMOMETHANE	ND
2216	CHLOROETHANE	ND
2978	1,1-DICHLOROETHANE	ND
2416	2,2,-DICHLOROPROPANE	ND
2410	1,1-DICHLOROPROPANE	ND
2408	DIBROMOMETHANE	ND
2412	1,3-DICHLOROPROPANE	ND
2986	1,1,1,2-TETRACHLOROETHAN	ND
2993	BROMOBENZENE	ND
2414	1,2,3-TRICHLOROPROPANE	ND
2988	1,1,2,2-TETRACHLOROETHAN	ND
2965	o-CHLOROTOLUENE	ND
2966	p-CHLOROTOLUENE	ND
2967	m-DICHLOROBENZENE	ND
2212	DICHLORODIFLUOROMETHANE	ND
2218	TRICHLOROFLUOROMETHANE	ND
2430	BROMOCHLOROMETHANE	ND
2994	ISOPROPYLBENZENE	ND
2998	N-PROPYLBENZENE	ND
2424	1,3,5-TRIMETHYLBENZENE	ND
2426	TERT-BUTYLBENZENE	ND
2428	SEC-BUTYLBENZENE	ND
2030	p-ISOPROPYLTOLUENE	ND
2422	n-BUTYLBENZENE	ND
2378	1,2,4-TRICHLOROBENZENE	ND
2248	NAPTHALENE	ND
2246	HEXACHLOROBUTADIENE	ND
2420	1,2,3-TRICHLOROBENZENE	ND
2228	cis-1,3-DICHLOROPROPENE	ND
2224	trans-1,3-DICHLOROPROPENE	ND

NOTE:DIBROMOETHANE(EDB) AND DIBROMOCHLOROPROPANE(DBCP) WERE ALSO ANALYZED FOR AND WERE AT CONCENTRATIONS BELOW DETECTION LIMITS. THIS DOES NOT CONSTITUTE AN ADEQUATE ANALYSIS FOR THESE COMPOUNDS. **Composite results are totals.

All results are in milligrams per liter except color which is in color units, pH which is in pH units, specific conductivity which is in micro-mho per cm and turbidity which is in nephelometric turbidity units. Bicarbonate, carbonate and total hardness are in milligrams per liter as calcium carbonate. Total Coliform results are per 100 mls.

Microbiology Lab Number: 08996350
Chemistry Lab Number: 08922147

Sample was analyzed according to <u>Standard Methods for the Examination of Water and Wastewater</u>, <u>18th Edition</u>.

Chain of Custody record and results of Voc analysis are enclosed.

Sincerely,

Diane DuMond
Lab Coordinator

DD:jlp
enclosure

c:\comm\agi8-10

Test	Result
Iron	0.09
Lead	< 0.002*
Magnesium	5
Manganese	0.048
Mercury	< 0.0005*
Nickel	< 0.04*
Nitrate Nitrogen	< 0.2*
Nitrite Nitrogen	< 0.2*
Potassium	1.3
Selenium	< 0.005*
Silica	21
Silver	< 0.01*
Sodium	7
Specific Conductivity	162
pH	7.4
Sulfate	1
Thallium	< 0.001*
Total Dissolved Solids	98
Total Hardness	71
Turbidity	0.5
Zinc	< 0.05*
Total Coliform	Absent (MMO-MUG Negative)

* < is less than

WATER
MANAGEMENT
LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
531-3121

August 30,1995

AGI Technologies
PO Box 1158
Gig Harbor, WA 98335
Attn: Scott Coffey

Dear Sir:

Results of analysis of one ground water engineering sample taken by yourself on 08-09-95 at 10:19 a.m. and received 08-10-95 at 10:00 a.m. are as follows:

Sample Identification: Sammamish Plateau Water and Sewer District, Well 11.1

Test	Result
Antimony	< 0.002*
Arsenic	< 0.01*
Barium	< 0.1*
Beryllium	< 0.002*
Bicarbonate	82
Cadmium	< 0.002*
Calcium	20
Carbonate	0
Chloride	2
Chromium	< 0.01*
Color	< 5*
Copper	< 0.02*
Cyanide	< 0.1*
Fluoride	< 0.1*

Please Print Plainly

ISE HEAVY PENCIL

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORIES
OFFICE OF RADIATION LABORATORIES
1610 N.E. 150TH ST., SEATTLE, WA 98155-7224

WATER SAMPLE INFORMATION FOR RADIATION ANALYSES

AB. NUMBER	SYSTEM NAME:	SYSTEM I.D. NO.	SYSTEM CLASS (circle one)	SOURCE NUMBER
1 0 1 0 4 1 1 1	SPWSD	4 0 9 0 0 9	A B	New

s this follow up of a previous out of compliance sample? Yes ☐ No ☐

If yes, what was the laboratory number of the previous sample? _ _ _ _ _ _ _

COUNTY: King

OURCE YPE: __ 1. SURFACE __ 2. SPRING __ 3. WELL __ 4. PURCHASE

IF SOURCE IS LAKE OR STREAM, ENTER NAME:

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (ADDRESS) New Well

DATE OF FINAL REPORT: 06/29/93

	DATE COLLECTED	DATE RECEIVED
1	0 6/0 4/9 3	0 6/0 8/9 3

SEND REPORT TO: (PRINT FULL NAME & ADDRESS)

NAME: (collected by CH/Carr Associates
Carr/Associates
STREET: P.O. Box 1158
CITY: Gig Harobr WA ZIP CODE: 98335-0168
TELEPHONE: (206) 851-5562 (AREA CODE)

LABORATORY REPORT
(DO NOT WRITE BELOW THIS LINE)

ANALYSES	LESS THAN	RESULTS pCi/L	*MCL pCi/L	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
Gross Alpha	<	3.0		✓		
Uranium		.				
Gross Alpha minus Uranium		.	15			
Radium-226		.	3			
Radium-228		.				
Radium-226 Plus Radium-228		.	5			
Radon-222						
Gross Beta	<	4.0	50	✓		
Strontium-89		.	80			
Strontium-90		.	8			
Cesium-134		.	80			
Iodine-131		.	3			
Tritium		.	20,000			

LABORATORY SUPERVISOR (Name or initials)

QUALITY ASSURANCE SUPERVISOR (Name or initials)

CHARGE: $70.00

REMARKS:

*MCL is the maximum contaminant Level Allowed

DOH 308-001 Rev [illegible]

DISTRIBUTION: White— Laboratory & Data Processing Green— Billing Yellow— Water Sampler Pink— Customer Office Gold— District Engineer

DEPARTMENT OF HEALTH

WATER BACTERIOLOGICAL ANALYSIS

SAMPLE COLLECTION: READ INSTRUCTIONS ON BACK OF GOLDENROD COPY
If instructions are not followed, sample will be rejected.

DATE COLLECTED MONTH / DAY / YEAR [illegible]

TIME COLLECTED ___ : 1:35 ☐ AM ☑ PM

COUNTY NAME King

TYPE OF SYSTEM
☒ PUBLIC
☐ INDIVIDUAL (serves only 1 residence)

IF PUBLIC SYSTEM, COMPLETE: I.D. No. [illegible]

CIRCLE GROUP [✓ A] B

NAME OF SYSTEM SPWSD

SPECIFIC LOCATION WHERE SAMPLE COLLECTED (ie, kitchen tap @ school, fire station, fountain) Well 11 Shallow.

TELEPHONE NO.
DAY (206) 951-5562
EVENING ( )

SAMPLE COLLECTED BY: (Name) CZ Carr/Associates

SYSTEM OWNER/MGR.: (Name) —

SOURCE TYPE ☐ GROUND WATER UNDER SURFACE INFLUENCE
☐ SURFACE ☒ WELL or WELL FIELD ☐ SPRING ☐ PURCHASED or INTERTIE ☐ COMBINATION or OTHER

SEND REPORT TO: (Print Full Name, Address and Zip Code)
Carr / Associates Craig Russell
PO Box 1155
Gig Harbor WASHINGTON 98335

TYPE OF SAMPLE (check only one in this column)
☐ ROUTINE DRINKING WATER — check treatment → ☐ Chlorinated (Residual Total Free) ☐ Filtered ☐ Untreated or Other
☐ REPEAT SAMPLE — Previous coliform presence Lab # / Date
☐ RAW SOURCE WATER Source # ☐ Total Coliform ☐ Fecal Coliform
☒ NEW CONSTRUCTION or REPAIRS
☐ OTHER (Specify)

REMARKS
MMO-MUG NEGATIVE

LABORATORY RESULTS (FOR LAB USE ONLY)

TOTAL COLIFORM A /100 ml E. COLI [illegible] /100 ml
FECAL COLIFORM [illegible] /100 ml HETEROTROPHIC [illegible] /100 ml

ANOTHER SAMPLE REQUIRED

SAMPLE NOT TESTED BECAUSE: [illegible]
TEST UNSUITABLE BECAUSE: Confluent growth; TNTC; Turbid culture; Excess debris

NEW CONST DRINKING WATER SAMPLE RESULTS
☐ REPEAT SAMPLE REQUIRED, Coliforms present ☐ SATISFACTORY, Coliforms absent
☐ E. Coli present ☐ E. Coli absent
☐ Fecal present ☐ Fecal absent

SEE REVERSE SIDE OF GREEN COPY FOR EXPLANATION OF RESULTS

LAB NO. [illegible] DATE TIME RECEIVED [illegible] RECEIVED BY [illegible]

DATE REPORTED [illegible]

LABORATORY: [illegible] TACOMA, WA.

REMARKS

DOH 305-002 (REV 7/91)

WATER SUPPLIER COPY

DRINKING WATER REQUEST FOR ANALYSIS

CONTACT Craig Russell
COMPANY Carr /Associates
ADDRESS
CITY/STATE
PHONE /

Sound Analytical Services, Inc.
4813 Pacific Hwy East
Tacoma, WA 98424
(206) 922-2310

SAMPLE INFORMATION
SAMPLED BY CR Carr /associates

				REQUESTED ANALYSIS											
				INORGANICS				ORGANICS				MICROBIOLOGY			
	ID	DATE	TIME	CI	PI	SI	PV	VOC	EDB	PST	HRB	TC	FC	FS	EC
1	SPWGD	6/3/93	1335					✓							
2															
3															
4															
5															
6															
7															

OTHER ANALYSIS
OTHER ANALYSIS
SPECIAL INSTRUCTIONS:

ANALYSIS CODE:
INORGANICS: COMPLETE INORGANICS = CI PRIMARY INORGANICS = PI SECONDARY INORGANICS = SI PHASE II & V = PV
ORGANICS: VOLATILE ORGANIC COMPOUNDS = [✓ VOC] EDB/DBCP = EDB PESTICIDES = PST HERBICIDES = HRB
MICROBIOLOGY: TOTAL COLIFORM = TC FECAL COLIFORM = FC FECAL STREP = FS E COLI = EC

Relinquished by C Russell Date/Time 6/3/93@1630 Received by Mary Gates Date/Time 6/3/93 4:3
Relinquished by Date/Time Received by Date/Time

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206) 922-2310 - FAX (206) 922-5047

DATA QUALIFIER FLAGS

ND:	Indicates that the analyte was analyzed for but was not detected. The associated numerical value is the practical quantitation limit, corrected for sample dilution.
J:	The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.
C:	The identification of this analyte was confirmed by GC/MS.
B1:	This analyte was also detected in the associated method blank. The reported sample results have been adjusted for moisture, final extract volume, and/or dilutions performed during extract preparation. The analyte concentration was evaluated prior to sample preparation adjustments, and was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).
B2:	This analyte was also detected in the associated method blank. However, the analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).
E:	The concentration of this analyte exceeded the instrument calibration range.
D:	The reported result for this analyte is calculated based on a secondary dilution factor.
A:	This TIC is a suspected aldol-condensation product.
M:	Quantitation Limits are elevated due to matrix interferences.
S:	The calibration quality control criteria for this compound were not met. The reported concentration should be considered an estimated quantity.
X1:	Contaminant does not appear to be "typical" product. Elution pattern suggests it may be ____________________.
X2:	Contaminant does not appear to be "typical" product. Further testing is suggested for identification.
X3:	Identification and quantification of peaks was complicated by matrix interference; GC/MS confirmation is recommended.
X4:	RPD for duplicates outside QC limits. Sample was re-analyzed with similar results. Sample matrix is nonhomogeneous.
X4a:	RPD for duplicates outside QC limits due to analyte concentration near the method practical quantitation limit/detection limit.
X5:	Matrix spike was diluted out during analysis.
X6:	Recovery of matrix spike outside QC limits. Sample was re-analyzed with similar results.
X7:	Recovery of matrix spike outside QC limits. Matrix interference is indicated by blank spike recovery data.
X7a:	RPD value for MS/MSD outside QC limits due to high contaminant levels.
X8:	Surrogate was diluted out during analysis.
X9:	Surrogate recovery outside QC limits due to matrix composition.
X10:	Surrogate recovery outside QC limits due to high contaminant levels.

SOUND ANALYTICAL SERVICES, INC.

QUALITY CONTROL REPORT

ORGANIC COMPOUNDS IN DRINKING WATER
EPA METHOD 524.2

Page 3 of 3

Client:	Carr/Associates
Lab No:	32506qc
Units:	ug/L
Date:	June 17, 1993

METHOD BLANK

TRIHALOMETHANES (THM)

EPA Code No.	Compound Name	Result	PQL	Flags
2941	Chloroform	ND	0.5	
2943	Bromodichloromethane	ND	0.5	
2944	Dibromochloromethane	ND	0.5	
2942	Bromoform	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
4-Bromofluorobenzene	98	80 - 120
1,2 Dichlorobenzene d4	88	70 - 130

SOUND ANALYTICAL SERVICES, INC.

QUALITY CONTROL REPORT

ORGANIC COMPOUNDS IN DRINKING WATER EPA METHOD 524.2

Page 2 of 3

Client: Carr/Associates
Lab No: 32506qc
Units: ug/L
Date: June 17, 1993

METHOD BLANK

UNREGULATED COMPOUNDS

EPA Code No.	Compound Name	Result	PQL	Flags
2212	Dichlorodifluoromethane	ND	1.0	
2210	Chloromethane	ND	1.0	
2214	Bromomethane	ND	1.0	
2218	Trichlorofluoromethane	ND	1.0	
2216	Chloroethane	ND	1.0	
2978	1,1-Dichloroethane	ND	0.5	
2416	2,2-Dichloropropane	ND	0.5	
2430	Bromochloromethane	ND	0.5	
2410	1,1-Dichloropropene	ND	0.5	
2408	Dibromomethane	ND	0.5	

UNREGULATED COMPOUNDS

EPA Code No.	Compound Name	Result	PQL	Flags
2412	1,3-Dichloropropane	ND	0.5	
2986	1,1,1,2-Tetrachloroethane	ND	0.5	
2994	Isopropylbenzene	ND	0.5	
2993	Bromobenzene	ND	0.5	
2988	1,1,2,2-Tetrachloroethane	ND	0.5	
2414	1,2,3-Trichloropropane.	ND	0.5	
2998	n-Propylbenzene	ND	0.5	
2965	2-Chlorotoluene	ND	0.5	
2966	4-Chlorotoluene	ND	0.5	
2424	1,3,5-Trimethylbenzene	ND	0.5	
2426	t-Butylbenzene	ND	0.5	
2418	1,2,4-Trimethylbenzene	ND	0.5	
2428	sec-Butylbenzene	ND	0.5	
2967	1,3-Dichlorobenzene	ND	0.5	
2030	4-Isopropyltoluene	ND	0.5	
2422	n-Butylbenzene	ND	0.5	
2246	Hexachlorobutadiene	ND	0.5	
2248	Naphthalene	ND	0.5	
2420	1,2,3-Trichlorobenzene	ND	0.5	

ND - Not Detected PQL - Practical Quantitation Limit

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 • TELEPHONE (206)922-2310 • FAX (206)922-5047

QUALITY CONTROL REPORT

ORGANIC COMPOUNDS IN DRINKING WATER
EPA METHOD 524.2

Page 1 of 3

Client: Carr/Associates
Lab No: 32506qc
Units: ug/L
Date: June 17, 1993

METHOD BLANK

REGULATED COMPOUNDS

EPA Code No.	Compound Name	Result	PQL	Flags
2976	Vinyl Chloride	ND	1.0	
2977	1,1-Dichloroethene	ND	0.5	
2981	1,1,1-Trichloroethane	ND	0.5	
2982	Carbon Tetrachloride	ND	0.5	
2990	Benzene	ND	0.5	
2980	1,2-Dichloroethane	ND	0.5	
2984	Trichloroethene	ND	0.5	
2969	1,4-Dichlorobenzene	ND	0.5	
2964	Methylene Chloride	6.8	0.5	
2979	trans-1,2-Dichloroethene	ND	0.5	
2380	Cis-1,2-Dichloroethene	ND	0.5	
2983	1,2-Dichloropropane	ND	0.5	
2991	Toluene	ND	0.5	
2985	1,1,2-Trichloroethane	ND	0.5	
2987	Tetrachloroethene	ND	0.5	
2989	Chlorobenzene	ND	0.5	
2992	Ethylbenzene	ND	0.5	
2995	Meta-Xylene, para-Xylene	ND	0.5	
2997	ortho-xylene	ND	0.5	
2996	Styrene	ND	0.5	
2968	1,2-Dichlorobenzene	ND	0.5	
2378	1,2,4-Trichlorobenzene	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

SOUND ANALYTICAL SERVICES, INC.

Carr/Associates
Lab No. 32506
Page 6 of 6
June 17, 1993

Lab Sample No. 32506-2 Client ID: FIELD BLANK

EPA Method 524.2 (continued)

TRIHALOMETHANES (THM)

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2941	Chloroform	ND	1.0	
2943	Bromodichloromethane	ND	1.0	
2944	Dibromochloromethane	ND	1.0	
2942	Bromoform	ND	1.0	

ND - Not Detected
PQL - Practical Quantitation Limit

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
4-Bromofluorobenzene	97	80 - 120
1,2 Dichlorobenzene d4	93	70 - 130

Carr/Associates
Lab No. 32506
Page 5 of 6
June 17, 1993

Lab Sample No. 32506-2 Client ID: FIELD BLANK

EPA Method 524.2 (continued)

UNREGULATED COMPOUNDS

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2212	Dichlorodifluoromethane	ND	2.0	
2210	Chloromethane	ND	2.0	
2214	Bromomethane	ND	2.0	
2218	Trichlorofluoromethane	ND	2.0	
2216	Chloroethane	ND	2.0	
2978	1,1-Dichloroethane	ND	1.0	
2416	2,2-Dichloropropane	ND	1.0	
2430	Bromochloromethane	ND	1.0	
2410	1,1-Dichloropropene	ND	1.0	
2408	Dibromomethane	ND	1.0	
2412	1,3-Dichloropropane	ND	1.0	
2986	1,1,1,2-Tetrachloroethane	ND	1.0	
2994	Isopropylbenzene	ND	1.0	
2993	Bromobenzene	ND	1.0	
2988	1,1,2,2-Tetrachloroethane	ND	1.0	
2414	1,2,3-Trichloropropane	ND	1.0	
2998	n-Propylbenzene	ND	1.0	
2965	2-Chlorotoluene	ND	1.0	
2966	4-Chlorotoluene	ND	1.0	
2424	1,3,5-Trimethylbenzene	ND	1.0	
2426	t-Butylbenzene	ND	1.0	
2418	1,2,4-Trimethylbenzene	ND	1.0	
2428	sec-Butylbenzene	ND	1.0	
2967	1,3-Dichlorobenzene	ND	1.0	
2030	4-Isopropyltoluene	ND	1.0	
2422	n-Butylbenzene	ND	1.0	
2246	Hexachlorobutadiene	ND	1.0	
2248	Naphthalene	ND	1.0	
2420	1,2,3-Trichlorobenzene	ND	1.0	

ND - Not Detected
PQL - Practical Quantitation Limit

Continued . . . .

Carr/Associates
Lab No. 32506
Page 4 of 6
June 17, 1993

Lab Sample No. 32506-2 Client ID: FIELD BLANK

Organic Compounds in Drinking Water
EPA Method 524.2
Date Analyzed: 6-9-93

REGULATED COMPOUNDS

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2976	Vinyl Chloride	ND	2.0	
2977	1,1-Dichloroethene	ND	1.0	
2981	1,1,1-Trichloroethane	ND	1.0	
2982	Carbon Tetrachloride	ND	1.0	
2990	Benzene	ND	1.0	
2980	1,2-Dichloroethane	ND	1.0	
2984	Trichloroethene	ND	1.0	
2969	1,4-Dichlorobenzene	ND	1.0	
2964	Methylene Chloride	11	1.0	B1
2979	trans-1,2-Dichloroethene	ND	1.0	
2380	Cis-1,2-Dichloroethene	ND	1.0	
2983	1,2-Dichloropropane	ND	1.0	
2991	Toluene	ND	1.0	
2985	1,1,2-Trichloroethane	ND	1.0	
2987	Tetrachloroethene	ND	1.0	
2989	Chlorobenzene	ND	1.0	
2992	Ethylbenzene	ND	1.0	
2995	Meta-Xylene, para-Xylene	ND	1.0	
2997	ortho-xylene	ND	1.0	
2996	Styrene	ND	1.0	
2968	1,2-Dichlorobenzene	ND	1.0	
2378	1,2,4-Trichlorobenzene	ND	1.0	

ND - Not Detected
PQL - Practical Quantitation Limit

Continued . . . .

Carr/Associates
Lab No. 32506
Page 3 of 6
June 17, 1993

Lab Sample No. 32506-1 Client ID: SPWSD

EPA Method 524.2 (continued)

TRIHALOMETHANES (THM)

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2941	Chloroform	ND	0.5	
2943	Bromodichloromethane	ND	0.5	
2944	Dibromochloromethane	ND	0.5	
2942	Bromoform	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

Volatile Surrogates

Surrogate	Percent Recovery	Control Limits
4-Bromofluorobenzene	94	80 - 120
1,2 Dichlorobenzene d4	80	70 - 130

Continued . . . .

Carr/Associates
Lab No. 32506
Page 2 of 6
June 17, 1993

Lab Sample No. 32506-1 Client ID: SPWSD

EPA Method 524.2 (continued)

UNREGULATED COMPOUNDS

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2212	Dichlorodifluoromethane	ND	1.0	
2210	Chloromethane	ND	1.0	
2214	Bromomethane	ND	1.0	
2218	Trichlorofluoromethane	ND	1.0	
2216	Chloroethane	ND	1.0	
2978	1,1-Dichloroethane	ND	0.5	
2416	2,2-Dichloropropane	ND	0.5	
2430	Bromochloromethane	ND	0.5	
2410	1,1-Dichloropropene	ND	0.5	
2408	Dibromomethane	ND	0.5	
2412	1,3-Dichloropropane	ND	0.5	
2986	1,1,1,2-Tetrachloroethane	ND	0.5	
2994	Isopropylbenzene	ND	0.5	
2993	Bromobenzene	ND	0.5	
2988	1,1,2,2-Tetrachloroethane	ND	0.5	
2414	1,2,3-Trichloropropane	ND	0.5	
2998	n-Propylbenzene	ND	0.5	
2965	2-Chlorotoluene	ND	0.5	
2966	4-Chlorotoluene	ND	0.5	
2424	1,3,5-Trimethylbenzene	ND	0.5	
2426	t-Butylbenzene	ND	0.5	
2418	1,2,4-Trimethylbenzene	ND	0.5	
2428	sec-Butylbenzene	ND	0.5	
2967	1,3-Dichlorobenzene	ND	0.5	
2030	4-Isopropyltoluene	ND	0.5	
2422	n-Butylbenzene	ND	0.5	
2246	Hexachlorobutadiene	ND	0.5	
2248	Naphthalene	ND	0.5	
2420	1,2,3-Trichlorobenzene	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

Continued . . . .

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Carr/Associates Date: June 17, 1993

Report On: Analysis of Water Lab No.: 32506
Page 1 of 6

IDENTIFICATION:

Sample Received on 06-03-93

ANALYSIS:

Lab Sample No. 32506-1 Client ID: SPWSD

Organic Compounds in Drinking Water
EPA Method 524.2
Date Analyzed: 6-9-93

REGULATED COMPOUNDS

EPA Code No.	Compound Name	Concentration ug/L	PQL	Flags
2976	Vinyl Chloride	ND	1.0	
2977	1,1-Dichloroethene	ND	0.5	
2981	1,1,1-Trichloroethane	ND	0.5	
2982	Carbon Tetrachloride	ND	0.5	
2990	Benzene	ND	0.5	
2980	1,2-Dichloroethane	ND	0.5	
2984	Trichloroethene	ND	0.5	
2969	1,4-Dichlorobenzene	ND	0.5	
2964	Methylene Chloride	1.2	0.5	B1
2979	trans-1,2-Dichloroethene	ND	0.5	
2380	Cis-1,2-Dichloroethene	ND	0.5	
2983	1,2-Dichloropropane	ND	0.5	
2991	Toluene	ND	0.5	
2985	1,1,2-Trichloroethane	ND	0.5	
2987	Tetrachloroethene	ND	0.5	
2989	Chlorobenzene	ND	0.5	
2992	Ethylbenzene	ND	0.5	
2995	Meta-Xylene, para-Xylene	ND	0.5	
2997	ortho-xylene	ND	0.5	
2996	Styrene	ND	0.5	
2968	1,2-Dichlorobenzene	ND	0.5	
2378	1,2,4-Trichlorobenzene	ND	0.5	

ND - Not Detected
PQL - Practical Quantitation Limit

Continued . . . .

DRINKING WATER REQUEST FOR ANALYSIS

CONTACT Cray Russell
COMPANY Carr /Associates
ADDRESS
CITY/STATE
PHONE /

Sound Analytical Services, Inc.

4813 Pacific Hwy East
Tacoma, WA 98424
(206) 922-2310

SAMPLE INFORMATION
SAMPLED BY CR Carr /Associates

				REQUESTED ANALYSIS											
				INORGANICS				ORGANICS				MICROBIOLOGY			
	ID	DATE	TIME	CI	PI	SI	PV	VOC	EDB	PST	HRB	TC	FC	FS	EC
1	SPWSD 11shallow	6/3/93	1335	✓											
2															
3															
4															
5															

6 OTHER ANALYSIS
7 OTHER ANALYSIS

SPECIAL INSTRUCTIONS:

ANALYSIS CODE:
INORGANICS: COMPLETE INORGANICS = [✓ CI] PRIMARY INORGANICS = PI SECONDARY INORGANICS = SI PHASE II & V = PV
ORGANICS: VOLATILE ORGANIC COMPOUNDS = VOC EDB/DBCP = EDB PESTICIDES = PST HERBICIDES = HRB
MICROBIOLOGY: TOTAL COLIFORM = TC FECAL COLIFORM = FC FECAL STREP = FS E COLI = EC

Relinquished by Cray Russell Date/Time 6/3/93 @1629 Received by Mary Crater Date/Time 6/3/93 4:30
Relinquished by Date/Time Received by Date/Time

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206) 922-2310 - FAX (206) 922-5047

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

DO NOT WRITE IN SHADED AREAS. PLEASE FILL BOXES NUMBERED 1 THRU 14. SEE BACK FOR INSTRUCTIONS

LABORATORY NUMBER: 107-32505-1

DATE RECEIVED: 06-03-93

1. DATE COLLECTED: 06-03-93

2. SYSTEM NAME: SPWSD 11SHALLOW

3. SYSTEM ID #:

4. CIRCLE GROUP A B

5. COUNTY:

6. SOURCE TYPE:
☐ SURFACE ☐ WELL
☐ SPRING ☐ PURCHASE

7. SAMPLE TAKEN:
☐ BEFORE TREATMENT ☐ AFTER TREATMENT

8. SOURCE NO.:

9. SOURCE NAME:

10. COLLECTED BY:

TELEPHONE(______)__________

11. IF TAKEN AFTER TREATMENT, CHECK TREATMENT:
☐ FLUORIDATION
☐ CHLORINATION
☐ FILTRATION
☐ WATER SOFTENER, TYPE:__________
☐ OTHER:__________

12. IF TAKEN FROM DISTRIBUTION, INDICATE ADDRESS:

13. PARTY TO PAY FOR TESTING:

SIGNATURE: __________
NAME: __________

ADDRESS: __________

TELEPHONE: (______)__________

14. REMARKS: (water quality problems, address for extra copies, etc.)

LABORATORY REPORT
(DO NOT WRITE INSIDE THIS BOX)

TESTS	MCL^1	LESS THAN	RESULTS	UNITS	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
Antimony Sb	0.006	<	.005	mg/l	✓		PB
Arsenic^P As	0.05	<	0.010	mg/l	✓		PB
Barium^P Ba	2.0	<	0.005	mg/l	✓		SP
Beryllium Be	0.004	<	.002	mg/l	✓		SP
Cadmium^P Cd	0.005	<	.005	mg/l	✓		PB
Chromium^P Cr	0.1	<	0.01	mg/l	✓		SP
Copper Cu	1.0^2	<	0.025	mg/l	✓		SP
Iron Fe	0.3		0.25	mg/l	✓		SP
Lead^P Pb	0.05^2	<	0.003	mg/l	✓		PB
Manganese Mn	0.05	<	0.015	mg/l	✓		SP
Mercury^P Hg	0.002	<	.0002	mg/l	✓		LE
Nickel Ni	0.1	<	0.04	mg/l	✓		SP
Selenium^P Se	0.05	<	0.01	mg/l	✓		PB
Silver Ag	0.1	<	0.01	mg/l	✓		SP
Sodium^P Na		<	0.5	mg/l			SP
Thallium Tl	0.002	<	.002	mg/l	✓		PB
Zinc Zn	5.0		0.33	mg/l	✓		SP
Hardness			65	mg/l as	✓		LE
Conductivity	700		150	µmhos/cm	✓		LE
Turbidity^P	1.0		0.3	NTU	✓		LE
Color	15.0	<	5.0	Color Units	✓		GA
Chloride Cl	250		2.0	mg/l	✓		RK
Cyanide CN	0.2	<	0.05	mg/l	✓		SH
Fluoride^P F	2.0	<	0.1	mg/l	✓		RK
Nitrate^P as N	10.0		0.54	mg/l	✓		RK
Nitrite as N	1.0	<	0.05	mg/l	✓		RK
Sulfate SO_4	250		3.0	mg/l	✓		RK
TDS	500		100	mg/l	✓		GA

LABORATORY COMMENTS:

CHARGE:	LABORATORY SUPERVISOR:	DATE OF REPORT: 6/15/93

1-MCL:Maximum Contamination Level; 2-This is the State MCL. Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper; P-Primary Standard; TDS-Total Dissolved Solids

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 · TELEPHONE (206)922-2310 · FAX (206)922-5047

QUALITY CONTROL REPORT

Total Metals

Client: Carr Associates
Lab No: 32505qc2
Units: mg/L
Date: June 11, 1993

METHOD BLANK

Parameter	Result	PQL
Antimony	ND	0.005
Arsenic	ND	0.010
Barium	ND	0.005
Beryllium	ND	0.002
Cadmium	ND	0.004
Chromium	ND	0.01
Copper	ND	0.025
Iron	ND	0.10
Lead	ND	0.003
Manganese	ND	0.015
Mercury	ND	0.0002
Nickel	ND	0.04
Selenium	ND	0.010
Silver	ND	0.01
Sodium	ND	0.50
Thallium	ND	0.002
Zinc	ND	0.02

ND - Not Detected
PQL - Practical Quantitation Limit

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206) 922-2310 - FAX (206) 922-5047

QUALITY CONTROL REPORT

General Chemistry

Client:	Carr/Associates
Lab No:	32505qc1
Matrix:	Water
Units:	mg/L
Date:	June 11, 1993

METHOD BLANKS

Parameter	Result	Detection Limit
Turbidity, NTU	ND	0.1
Hardness (as $CaCO_3$), mg/L	ND	2
Conductivity, umhos/cm	ND	10
Color, color units	ND	5
Total Dissolved Solids, mg/L	ND	10
Fluoride, mg/L	ND	0.1
Chloride, mg/L	ND	1.0
Nitrate Nitrogen, mg/L	ND	0.05
Nitrite Nitrogen, mg/L	ND	0.05
Sulfate, mg/L	ND	1.0

ND - Not Detected

DUPLICATE

Dup No. 32505-1

Parameter	Sample(S)	Duplicate(D)	RPD
Total Dissolved Solids	100	110	9.5

RPD = Relative Percent Difference
= [(S - D) / ((S + D) / 2)] x 100

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS
4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: Carr/Associates — Date: June 11, 1993

Report On: Analysis of Water — Lab No.: 32505

IDENTIFICATION:
Sample received on 06-03-93

ANALYSIS:

Lab Sample No. 32505-1 — Client ID: SPWSD 11 Shallow

INORGANIC PARAMETERS	RESULT	MCL
Antimony(GFAA), mg/L	< 0.005	0.006
Arsenic (GFAA), mg/L	< 0.010	0.05
Barium, mg/L	< 0.005	2.0
Beryllium, mg/L	< 0.002	0.004
Cadmium, mg/L	< 0.005	0.005
Chromium, mg/L	< 0.01	0.1
Copper, mg/L	< 0.025	1.0
Iron, mg/L	0.25	0.3
Lead (GFAA), mg/L	< 0.003	0.05
Manganese, mg/L	< 0.015	0.05
Mercury (CVAA), mg/L	< 0.0002	0.002
Nickel, mg/L	< 0.04	0.1
Selenium (GFAA), mg/L	< 0.010	0.01
Silver, mg/L	< 0.01	0.05
Sodium, mg/L	< 0.50	N/A
Thallium (GFAA), mg/L	< 0.002	0.002
Zinc, mg/L	0.33	5.0
Fluoride, mg/L	< 0.1	2.0
Nitrate Nitrogen, mg/L	0.54	10.0
Nitrite Nitrogen, mg/L	< 0.05	1.0
Chloride, mg/L	2	250
Sulfate, mg/L	3	250
Cyanide, mg/L	< 0.05	0.2
Turbidity, NTU	0.3	1
Hardness (as $CaCO_3$) mg/L	65	N/A
Conductivity, umhos/cm	150	700
Color, Color Units	< 5	15.0
Total Dissolved Solids, mg/L	100	500

MCL - Maximum Contaminant Level
N/A - Not Applicable

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228TH Avenue S.E.
Issaquah, Washington 98029

(425) 392-6256

WELL 11.2

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

Well 11.2

TABLE OF CONTENTS

Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER AND SEWER DIST.

Water system name : SAMMAMISH PLATEAU WATER & SEWER DISTRICT

County: KING

Water system number: 409009 Source number: S12

Well depth: 884 (ft.) *(From WFI form)*

Source name: WELL 11.2

WA well identification tag number: A A D - 3 8 2

______ well not tagged

Number of connections: 11,080 Population served: 33240

Township: 25 N Range: 06E

Section: 34 1/4 1/4 Section: NE/NW

Latitude/longitude (if available): ______ / ______

How was lat./long. determined?

____ global positioning device ____ survey ____ topographic map
____ other: ______

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 8 / 6 / 93 month/day/year

last reconstruction: __ / __ / __ month/day/year

______ information unavailable

2) Well driller: HOLT DRILLING
10621 TODD ROAD EAST
PUYALLUP WA. 98372

__ well driller unknown

3) Type of well:

✓ **Drilled:** X rotary __ bored X cable (percussion) __ **Dug**

__ **Other:** __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other: ________

Additional comments: ________

4) Well report available? X YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 2,000 (gallons/min)

Source of information: WATER FACILITIES INVENTORY

If not documented, how was pumping rate determined? ________

__ Pumping rate unknown

6) Is this source treated? __ YES X NO

If so, what type of treatment:

__ disinfection __ filtration __ carbon filter __ air stripper __ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: __ YES X NO

Residual level: ________ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

___ (less than) 20 ft ___ 20-50 ft ___ 50-10 ft ___ 100-200 ft X (greater than) 200 ft

___ information unavailable

2) Depth to ground water (static water level):

___ (less than) 20 ft ___ 20-50 ft ___ 50-100 ft X (greater than) 100 ft

___ flowing well/spring (artesian)

How was water level determined?

X well log ___ other: ___________________

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure: N/A

________ psi (pounds per square inch)
or
________ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO N/A

5) Wellhead elevation (height above mean sea level): 360 (ft)

How was elevation determined? ___ topographic map X Drilling/Well Log ___ altimeter

___ other: ___________________

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

X evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer? X YES ___ NO

___ information unavailable

7) Sanitary setback:

___ (less than) 100 ft* X 100-120 ft ___ 120-200 ft ___ (greater than) 200 ft
* if less than 100 ft describe the site conditions:

____

____

____

____

8) Wellhead construction:

X wellhead enclosed in a wellhouse

___ controlled access (describe): ____

____

___ other uses for wellhouse (describe): ____

____

___ no wellhead control

9) Surface seal:

___ 18 ft

___ (less than) 18 ft (no Department of Ecology approval)

___ (less than) 18 ft (Approved by Ecology, include documentation)

X (greater than) 18 ft

___ depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ (less than) 10 in/yr ___ 10-25 in/yr X (greater than) 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 511,408,800 (gallons)

How was this determined?

___ meter

X estimated: ✓ pumping rate (973 gpm)

___ pump capacity (___)

___ other: ___

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 800 (ft)

1 year ground water travel time : 1140 (ft)

5 year ground water travel time: 2540 (ft)

10 year ground water travel time: 3590 (ft)

THESE ARE THE CFRs PER THIS PACKET. THE DISTRICT HAS ADDITIONAL WHPA CAPTURE ZONE INFO FOR THIS WELL WHICH IS ATTACHED. THE FOLLOWING QUESTIONS ARE ANSW FOR THE CAPTURE ZONE IDENTIFIED ON THE WHPA MAP

Information available on length of screened/open interval?

___ YES ___ NO

Length of screened/open interval: 77 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

Comments: ___

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application		X	X	
stormwater injection wells	No	No	No	
other injection wells * SEE COMMENTS	No	X		
abandoned ground water well				✓
landfills, dumps, disposal areas				✓
known hazardous materials clean-up site				✓
water system(s) with known quality problems				✓
population density (greater than) 1 house/acre	No	X	X	
residences commonly have septic tanks	X	X	X	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

* WELL 5 (AS SHOWN ON THE AQUIFER ZONE IV POTENTIOMETRIC SURFACE MAP) HAS BEEN USED AS AN INJECTION WELL AS PART OF THE GROUNDWATER RECHARGE PROJECT.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES
Results greater than MCL	____
(less than) 2 mg/liter nitrate	____
2-5 mg/liter nitrate	____
(greater than) 5 mg/liter nitrate	____
Nitrate sampling records unavailable	____

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES
Results greater than MCL or SAL	____
VOCs detected at least once	____
VOC test performed but never detected	____
VOC sampling records unavailable	____

C. EDB/DBCP: (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	YES
EDB/DBCP detected below MCL at least once	____
EDB/DBCP detected above MCL at least once	____
EDB/DBCP never detected	____
EDB/DBCP tests required but not yet completed	____
EDB/DBCP tests not required	____

D. Other SOCs (pesticides and other synthetic organic chemicals):	YES
Other SOCs detected	____
Other SOC tests performed but none detected *	____
Other SOC tests not performed	____

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ____________________

THE TEST RESULTS FOR TEST PERFORMED ON WELL 11.2 AT THE TIME OF CONSTRUCTION ARE ENCLOSED.

E. Bacterial contamination:

	YES
	N/A
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___
Source sampling records for bacteria unavailable	___

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1)Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

X YES ___ NO

Describe with references to map produced in Part IV:

ENGLEWOOD CREEK IS LOCATED WITHIN THE ONE YEAR BOUNDARY. VARIOUS WETLANDS ARE ALSO LOCATED IN THE FIVE AND TEN YEAR BOUNDARIES.

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES X NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

X YES ___ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES [✓ NO]

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
6 month travel time		✓	
6 month-1 year travel time		✓	
1-5 year travel time		✓	
5-10 year travel time		✓	

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
1 year travel time		✓	
1-5 year travel time		✓	
5-10 year travel time		✓	

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Suggestions and Comments

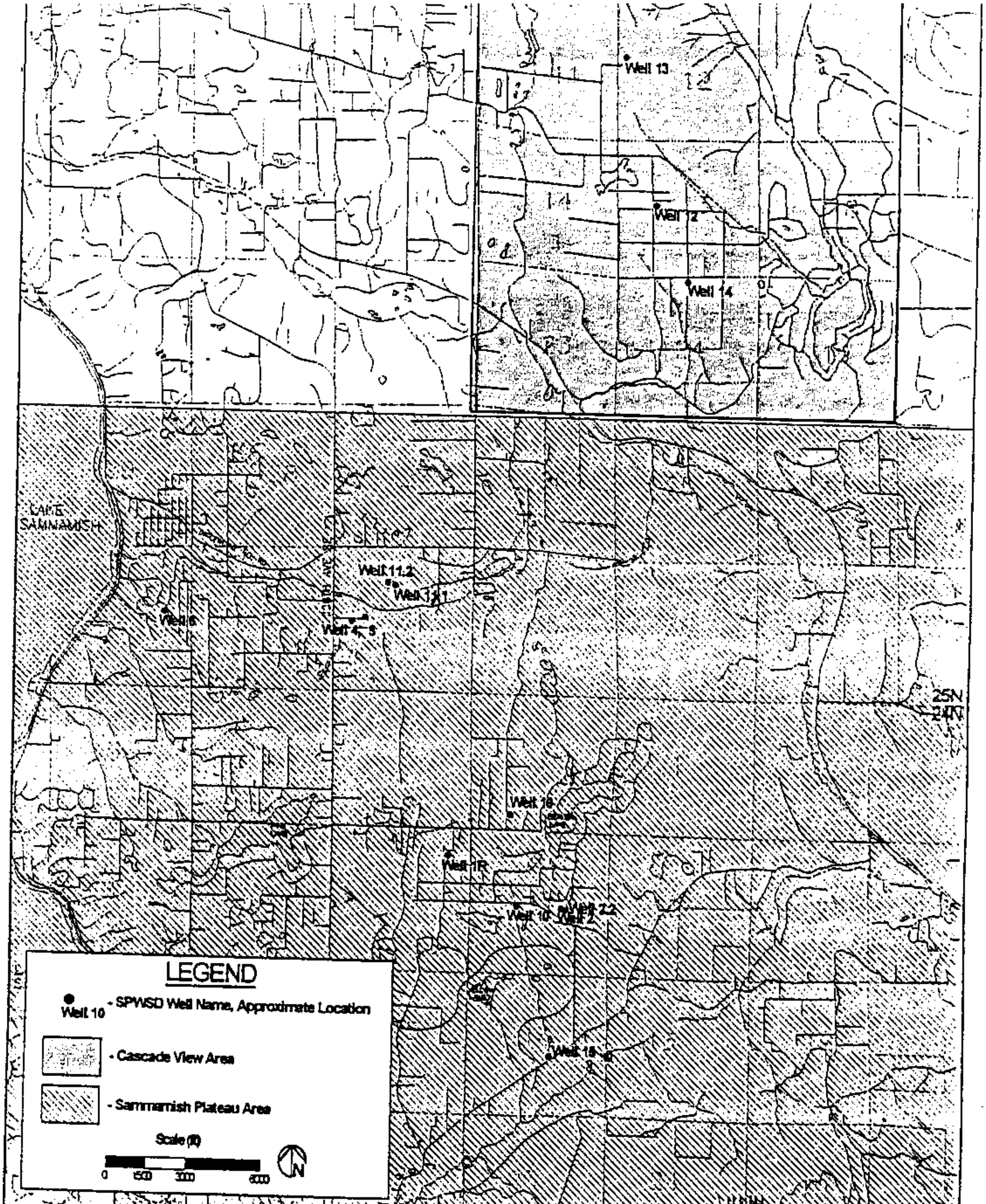
Did you attend one of the susceptibility workshops? ___ YES ___ NO

Did you find it useful? ___ YES ___ NO

Did you seek outside assistance to complete the assessment? ___ YES ___ NO

……

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.



AGI
TECHNOLOGIES

Sammamish Plateau
Water and Sewer District
Wellhead Protection
Project No. - 15,287.015

Sammamish Plateau Water and Sewer District
Production Well Location Map

Figure 1.1

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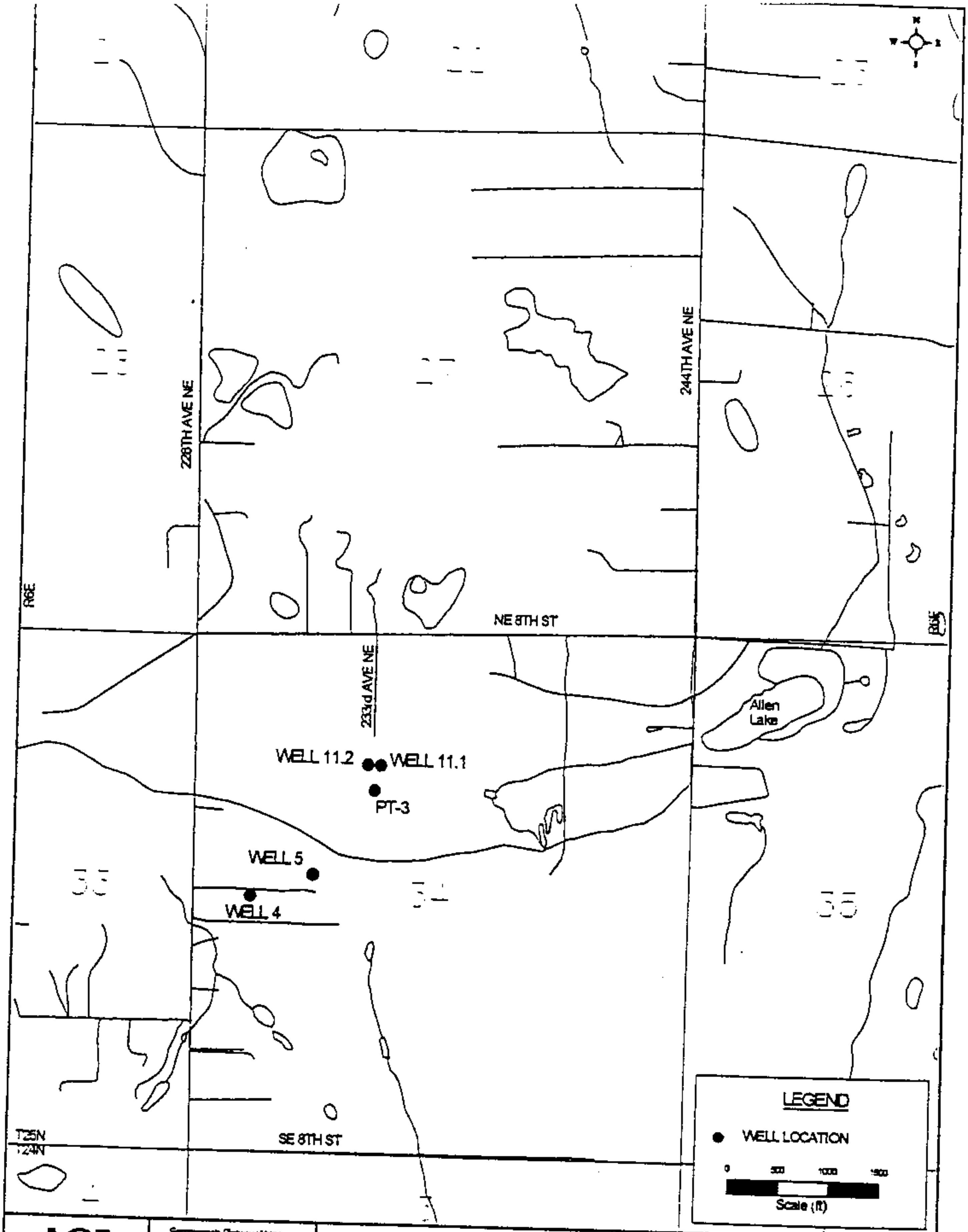
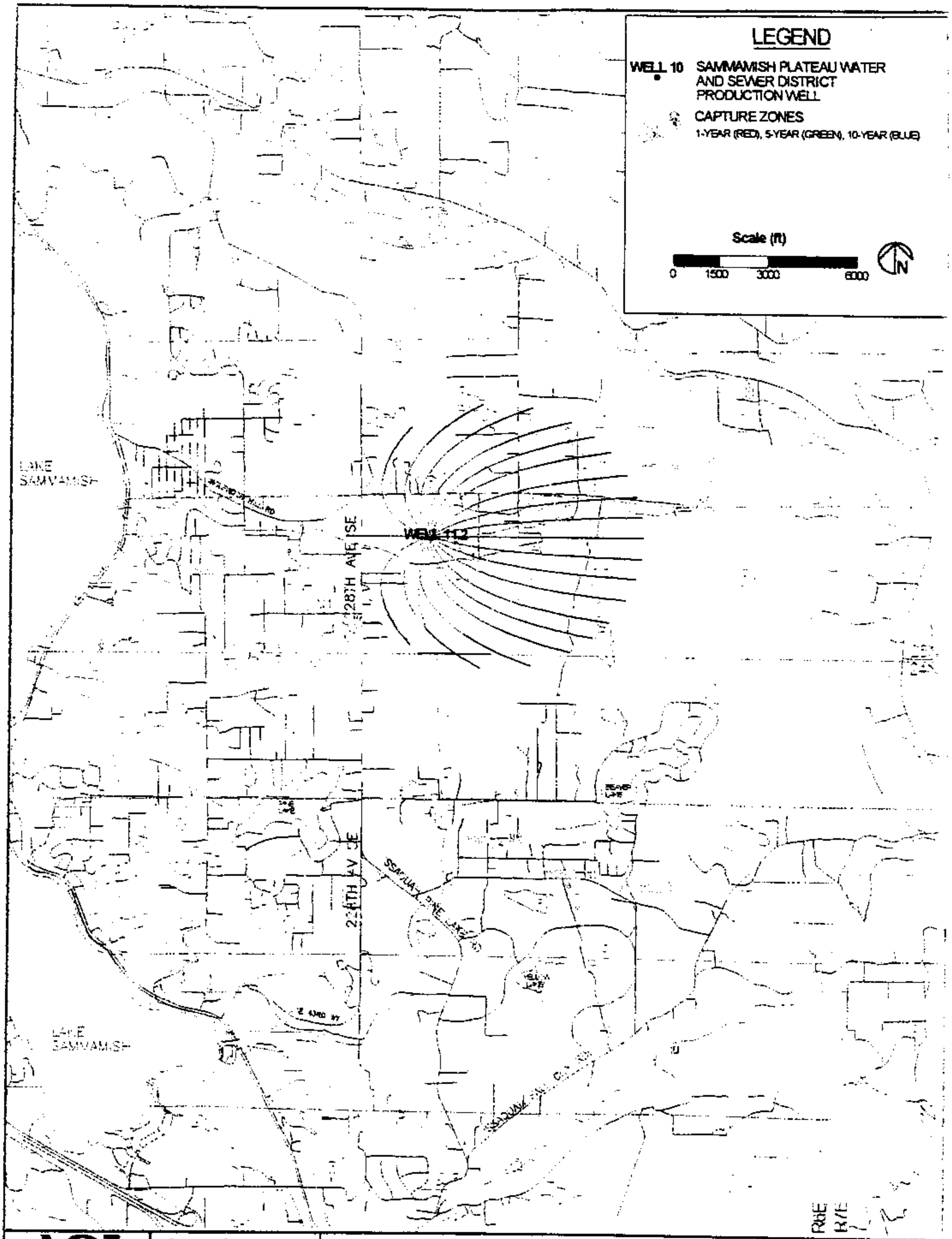


AGI TECHNOLOGIES

Sammamish Plateau Water
and Sewer District
Well 11.2 Development/Testing
Project #- 15,287.008

Location Map

Figure 1

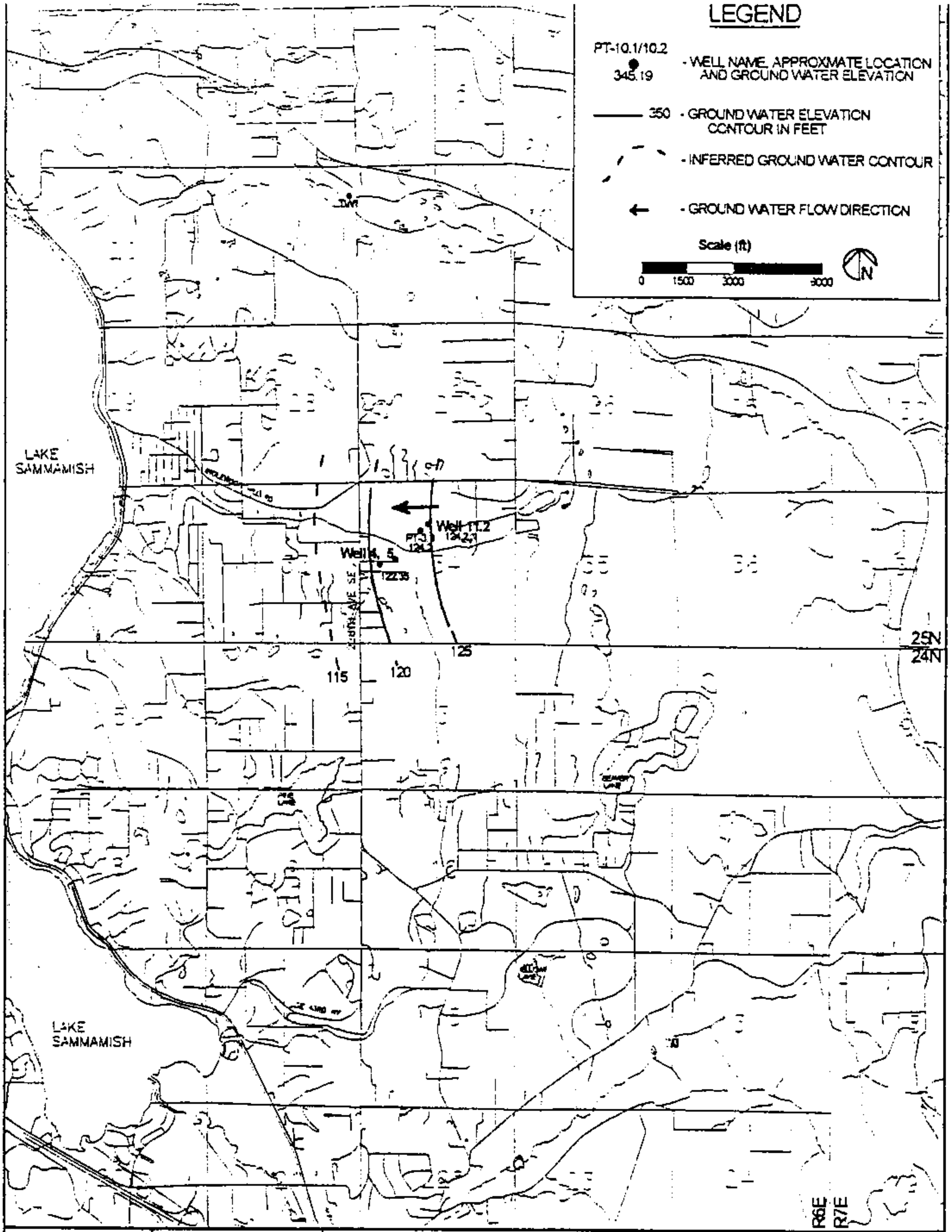


AGI TECHNOLOGIES

Sammamish Plateau Water and Sewer District
Well 11.2 Development/Testing
Project # 15,287.008

Well 11.2 Wellhead Protection Area

Figure 9

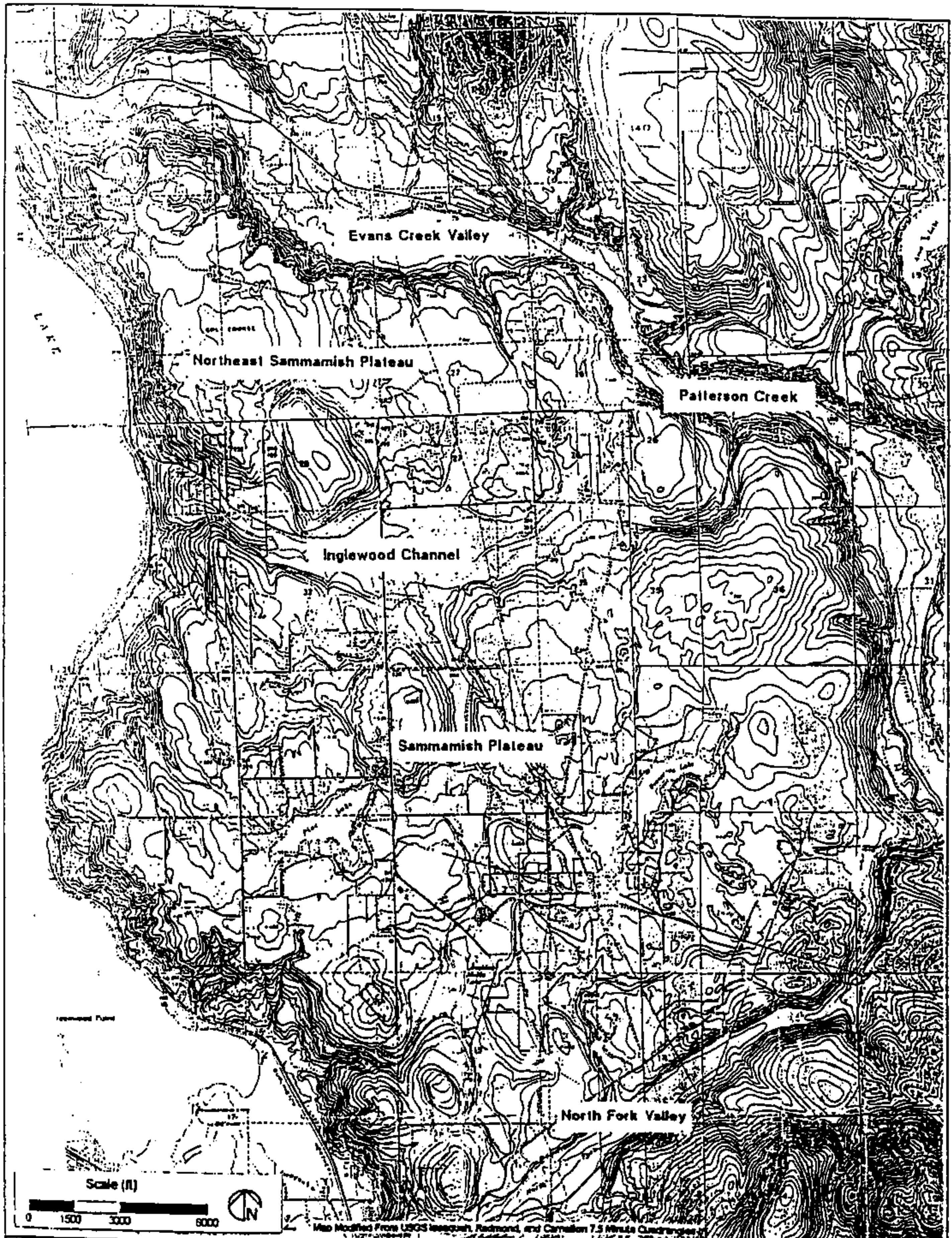


AGI TECHNOLOGIES

Sammamish Plateau Water
and Sewer District
Well 11.2 Development/Testing
Project # 15,287.006

Aquifer Zone IV Potentiometric Surface Map

Figure 8



Map Modified From USGS Issaquah, Redmond, and Carnation 7.5 Minute Quadrangles

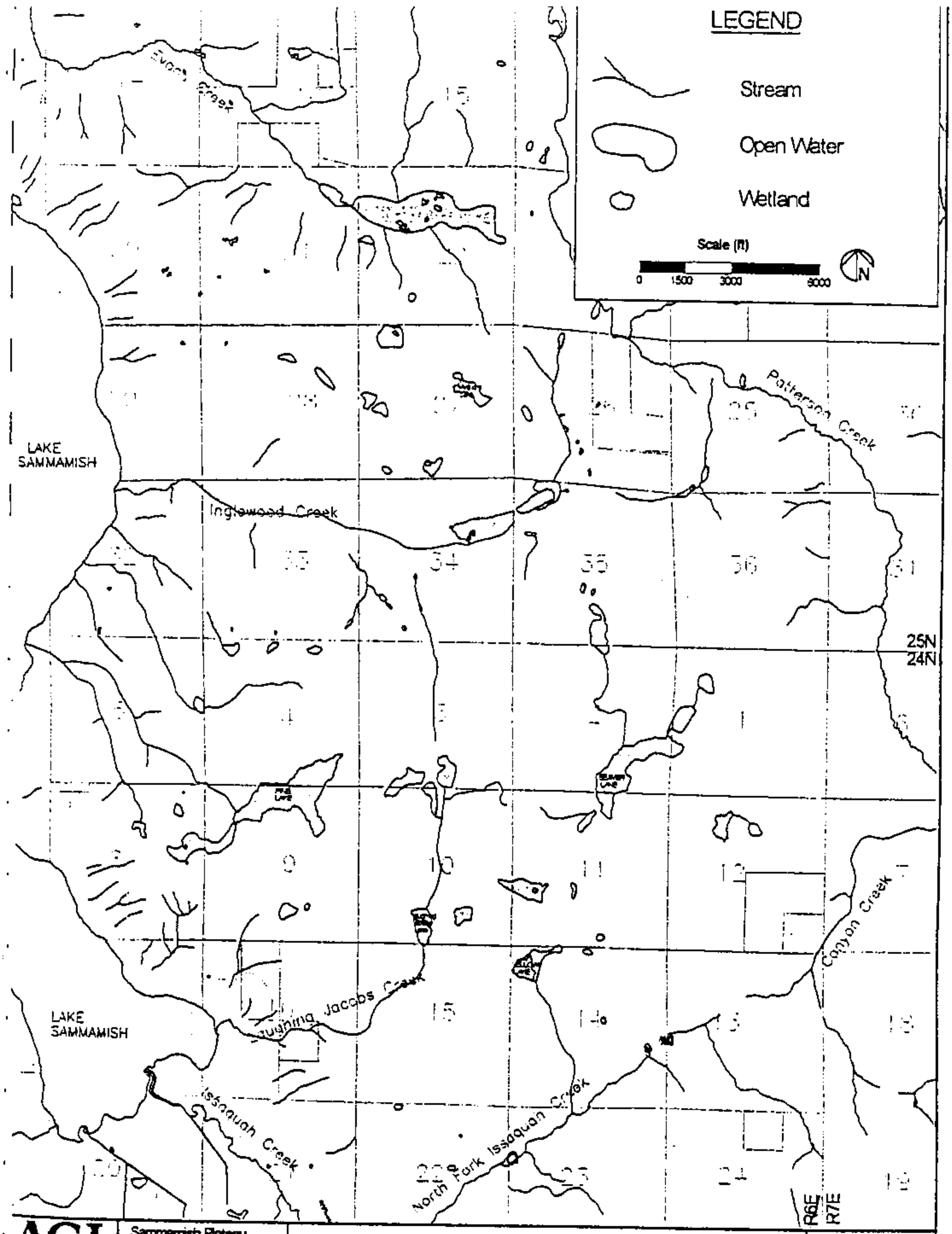
AGI TECHNOLOGIES

Sammamish Plateau
Water and Sewer District
Wellhead Protection
Project No. - 15,287 015

Topography - Plateau Area

Figure 2.3

[illegible]



AGI TECHNOLOGIES

Sammamish Plateau
Water and Sewer District
Wellhead Protection
Project No. - 15,257 015

Surface Water Features - Plateau Area

Figure 3.1

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File Original and First Copy with
Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W-16284
UNIQUE WELL I.D. # AAD382
Water Right Permit No. G1-26572

1) OWNER: Name Sammamish Plateau Water and Sewer District Address 1510 228th Ave SE, Issaquah, WA 98027

(2) LOCATION OF WELL: County King NW ¼ NW ¼ Sec. 34 T. 25 N., R. 6E W.M.

2a) STREET ADDRESS OF WELL (or nearest address) Lake Washington School Dist. No. 414, Redmond, WA

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

4) TYPE OF WORK: Owner's number of well (If more than one) 11.2

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☒ Rotary ☒ Bored ☐ Driven ☐ Jetted ☐

5) DIMENSIONS: Diameter of well 16 inches.
Drilled 885 feet. Depth of completed well 884 ft.

6) CONSTRUCTION DETAILS:

Casing installed: 24 " Diam. from 0 ft. to 352 ft.
Welded ☒ 20 " Diam. from 0 ft. to 630 ft.
Liner installed ☐
Threaded ☐ 16 " Diam. from +2.0 ft. to 705 ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type 304 Stainless Model No. PS
Diam. 8 inch Slot size .030 from 785 ft. to 821 ft.
Diam. 8 inch Slot size .030 from 839 ft. to 880 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel CSS 8-12
Gravel placed from 648 ft. to 884 ft.

Surface seal: Yes ☒ No ☐ To what depth? 43 ft.
Material used in seal Cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

) PUMP: Manufacturer's Name
Type: H.P.

) WATER LEVELS: Land-surface elevation above mean sea level 360 ft.
Static level 235 ft. below top of well Date 8/6/93
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Hardpan	0	4
Siltbound Gravels, Brown	41	6
Siltbound Sands and Gravels, Brown	61	8
Siltbound Sands and Gravels, Redish-Brown	82	11
Siltbound Sands and Gravels, Brown	112	170
Siltbound Sands and Gravels, Brown; WB	170	185
Loose Sands and Gravels, WB	185	200
Sands and Gravels with trace Silt	200	205
Sands and Gravels with Silt	205	212
Sands, Gravels, and Cobbles	212	219
Silty Clay with Peat and Gravels	219	228
Siltbound Sands	228	233
Siltbound Sands and Gravels	233	278
Siltbound Gravels and Cobbles	278	296
Siltbound Sands, Gravels and Cobbles	296	323
Siltbound Sands and Gravels	323	358
Siltbound Sands, Gravels and Cobbles	358	369
Siltbound Sands and Gravels	369	394
Silty Sands, Gravels and Cobbles	394	417
Sands and Gravels with trace of Silt	417	434
Silty Sands, Gravels and Cobbles	434	465
Sands and Gravels	465	471
Siltbound Sands and Gravels	471	475
Loose Sands with trace Gravels	475	494
Fine Sands with Trace Gravels and Cobbles	494	505
Fine Silty Sands with trace Gravels and Cobbles	505	520
Siltbound Sands, Grey	520	560
Continued on next form pages		
Note: Final development and testing has not been done as of completion date.		

Work started 4/7/93, 19. Completed 8/6/93, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10621 Todd Road East, Puyallup, WA 98372

(Signed) (WELL DRILLER) License No. 1094

Contractor's Registration No. [illegible]*13506 Date [illegible]

USE ADDITIONAL SHEETS IF NECESSARY

File Original and First Copy with
Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. ~~[illegible]~~ W-16284
UNIQUE WELL I.D. # AAD382
Water Right Permit No. G1-26572

(1) OWNER: Name Sammamish Plateau Water and Sewer District Address 1510 228th Ave SE, Issaquah, WA 98027

(2) LOCATION OF WELL: County King NW ¼ NW ¼ Sec 34 T 25 N., R 6E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Lake Washington School District No. 414, Redmond, Washington

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 11.2

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☒ Rotary ☒ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches.

Drilled 885 feet. Depth of completed well 884 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ____" Diam. from ____ ft. to ____ ft.
Welded ☐ ____" Diam. from ____ ft. to ____ ft.
Liner installed ☐ ____" Diam. from ____ ft. to ____ ft.
Threaded ☐

Perforations: Yes ☐ No ☐
Type of perforator used ____
SIZE of perforations ____ in. by ____ in.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: Yes ☐ No ☐
Manufacturer's Name ____
Type ____ Model No. ____
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel packed: Yes ☐ No ☐ Size of gravel ____
Gravel placed from ____ ft. to ____ ft.

Surface seal: Yes ☐ No ☐ To what depth? ____ ft.
Material used in seal ____
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

(7) PUMP: Manufacturer's Name ____
Type: ____ H.P. ____

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level ____ ft. below top of well Date ____
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Continued from previous form		
~~Silty, Clay Grey~~	~~560~~	~~620~~
~~Sands, WB~~	~~620~~	~~624~~
Silty, Clay, Gray	624	654
Sandy Silt, Gray	654	661
Silty Sands with trace Wood	661	680
Silt, Gray	680	688
Sandy Silt, some Gravels and wood, Gray	688	709
Silty Sands and Gravels, some Cobbles, Gray	709	729
Silty sands and Gravels, Gray	729	740
Silty Sands, some Gravels and wood, Gray	740	749
Silty Sands, and Grav els, Gray	749	781
Sands and Gravels, Gray	781	790
Sands, Gravels and Cobbles, Gray	790	814
Clay, few Gravels, Gray	814	819
Silty sands, some Gravels and wood, Gray	819	825
Silty Sands and Gravels, Gray	825	845
S ands, Gravels and Cobbles, Gray	845	884

Work started 4/7/93, 19 . Completed 8/6/93, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

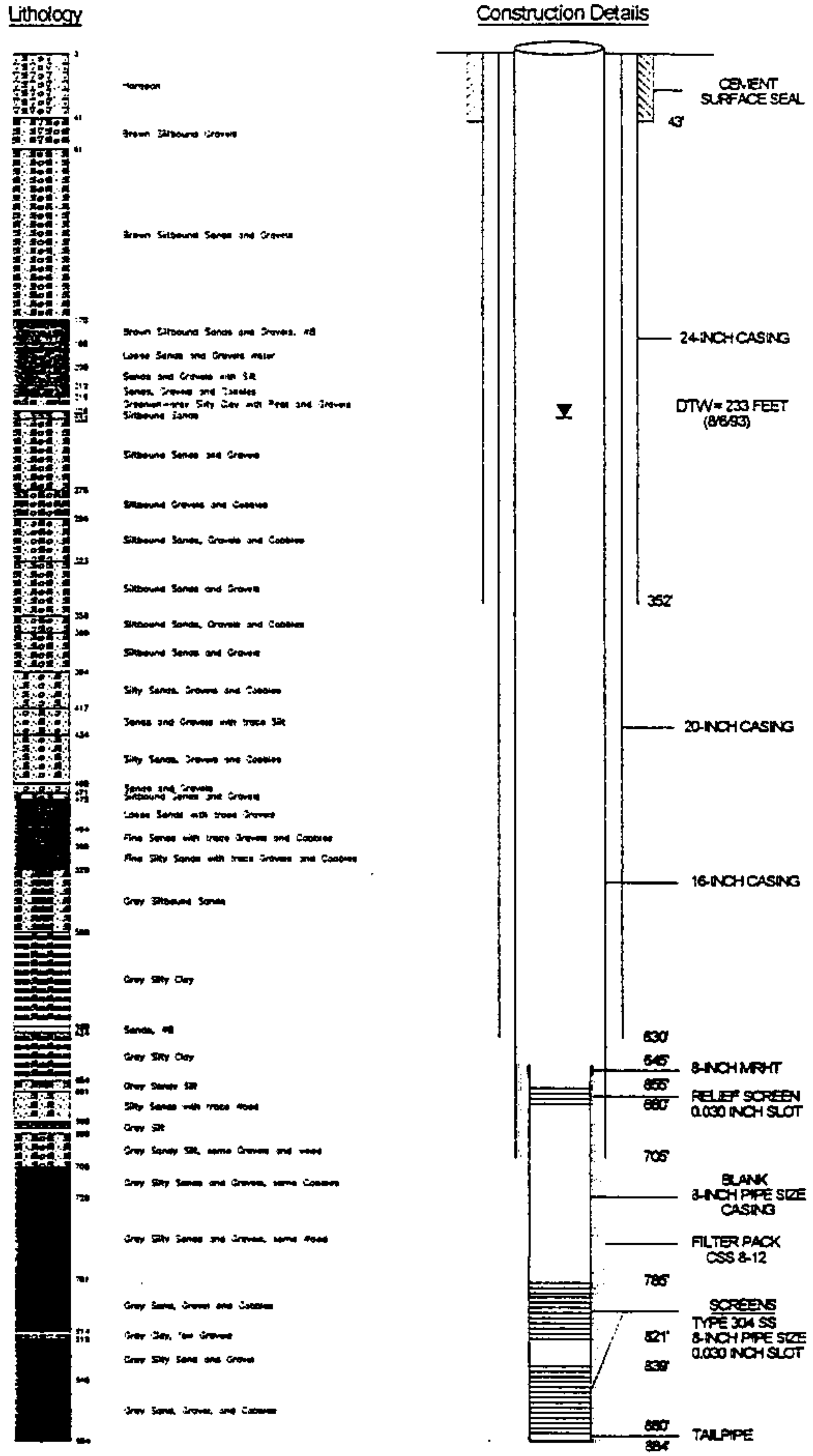
NAME Holt Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 10621 Todd Road East, Puyallup, 98372

(Signed) R Holt (WELL DRILLER) License No. 1099

Contractor's Registration No. HOLTDI*13606 HOLT [illegible] Date 4-20 19

USE ADDITIONAL SHEETS IF NECESSARY



AGI TECHNOLOGIES	Sammamish Plateau Water and Sewer District Well 11.2 Development/Testing Project # 15,287.008	Lithologic Log and Construction Details	Figure 2

PRODUCTION WELL 11.2
CONSTRUCTION AND TESTING REPORT
SAMMAMISH PLATEAU WATER AND SEWER DISTRICT

SUMMARY

Well 11.2 is located on the north side of the Eastlake High School campus, approximately 25 feet from Sammamish Plateau Water and Sewer District (District) Well 11.1. It is completed at a depth of 884 feet in a sand and gravel aquifer designated Zone IV of the Plateau Aquifer System. Water quality is excellent and meets all Washington State Department of Health (DOH) requirements for a potable water source.

Test pumping results indicate Well 11.2 is capable of producing 2,000 gallons per minute (gpm). At a pumping rate of 973 gpm for 24 hours, the drawdown was 51 feet for a specific capacity of 19 gallons per minute per foot (gpm/ft). The aquifer transmissivity is about 38,000 gallons per day per foot (gpd/ft).

Water level monitoring during the 24-hour pumping test showed no interference on water levels in monitoring Wells PT-3.1 and 3.2, Well 11.1, or other nearby wells completed in zones above the Zone IV Aquifer. The Washington State Department of Ecology (Ecology) has issued a permit for 500 gpm and 565 acre feet per year (af/yr) from this well. Currently, the District is monitoring water levels to record possible interference from other wells and the seasonal water level changes in this aquifer.

BACKGROUND

Property owner:	Lake Washington School District
Well owner:	Sammamish Plateau Water and Sewer District
Hydrogeologist:	AGI Water Resources Group, Scott Coffey
Drilling contractors:	Holt Drilling, Inc.; Schneider Drilling Co., Inc.
Drilling method:	Cable-tool, fluid-rotary
Start date:	April 7, 1993
Completion date:	August 6, 1993
Pumping test date:	August 30, 1995

PERMITS AND APPLICATIONS

Copies of the water right application and preliminary permit are included in the **Appendix.**

Unique Well ID number: AAD382

Start card number: 16284

Water right permit number: G1-26572P

Instantaneous: 500 gpm

Annual: 565 af/yr

Continuous equivalent: 350 gpm

OBJECTIVES

The objectives of constructing this well were to:

- Create additional supply for the District with a 16-inch production well capable of sustained yields of 500 gpm or more from the deep aquifer identified during the drilling of Test Well PT-3.
- Characterize the deep aquifer and aquitard zones encountered and determine potential interference with other District production wells.

Desired yield: 500 gpm or more

Target aquifer: Plateau Aquifer Zone IV

Required quality: Potable

WELL SITE

The well site, illustrated in **Figure 1**, is located 50 feet south of the dead end on 233rd Avenue NE. Access to the site is through the Eastlake High School parking lot to the baseball fields.

Map location/coordinates:	T25N/R6E/NW4NW4/Section 34
County:	King
Ground surface elevation:	355.86 ft. msl

COMPLETION RECORD

Well 11.2 is completed in accordance with WAC 173-160, effective May 5, 1988, and meets all requirements for a State of Washington Group A public supply well. The well completion record is illustrated in **Figure 2** and described on the Water Well Report (Form ECY 050-1-20) in the **Appendix.**

Total depth drilled:	885 ft.
Completion depth:	884 ft.

Surface Seal

Depth of seal:	43 ft.
Type of seal:	Cement

Casing Record

Cable-tool drilling began in April, 1993 with a temporary 30-inch surface seal casing to a depth of 43 feet. Drilling continued with 24-inch casing to 352 feet, 20-inch casing to 630 feet, and 16-inch casing to 705 feet. Below 705 feet, 16-inch drilling advanced to a total depth of 885 feet using fluid-rotary drilling methods. An 8-inch pipe-size, 0.030-inch slot, stainless-steel screen assembly was sand packed into position adjacent to water-bearing sediments encountered between depths of 785 and 880 feet.

Casing Depth	Diameter	Description
0 to 352 ft.	24-inch	mild-steel
0 to 630 ft.	20-inch	mild-steel
+2.0 to 705 ft.	16-inch	mild-steel

Screen Assembly

A continuous wrap, wire-wound, welded well screen manufactured by Johnson Division of Wheelabrator Corporation was installed as listed below:

Screen Depth	Diameter	Description
645 to 646 ft.	8-inch, PS	right-hand threaded nipple
646 to 655 ft.	8-inch, PS	blank, mild-steel casing
655 to 660 ft.	8-inch, PS	type 304, 0.030-inch slot, stainless-steel relief screen
660 to 785 ft.	8-inch, PS	blank, mild-steel casing
785 to 821 ft.	8-inch, PS	type 304, 0.030-inch slot, stainless-steel well screen
821 to 839 ft.	8-inch, PS	blank, mild-steel casing
839 to 880 ft.	8-inch, PS	type 304, 0.030-inch slot, stainless-steel well screen
880 to 884 ft.	8-inch, PS	blank, mild-steel casing with plate bottom

Filter Media

Filter pack: Colorado Silica Sand (CSS) 8-12 placed from 645 to 884 ft.

HYDROGEOLOGIC LOG

The hydrogeologic log is illustrated in **Figure 3** and described in the Water Well Report in the **Appendix**. Three significant water-bearing zones were encountered at Well 11.2.

The shallowest water-bearing zone encountered is at a depth of 170 feet, where tight sand and gravel grades to loose, clean sand and gravel at 185 feet. These clean sands and gravels persist to a depth of 200 feet, where they become slightly silty with increased cobble content. Between 219 and 394 feet, the sediments are not water-bearing. They consist primarily of silt-bound sand and gravel. A layer of thin, silty clay with peat is found between depths of 219 and 228 feet.

At 394 feet, another water-bearing sand, gravel, and cobble zone is present to a depth of 520 feet. One thin, silt-bound layer is present from 471 to 475 feet. Well 11.1 is 25 feet east of Well 11.2 and is completed between depths of 409 and 489 feet in that zone.

The third, most significant water-bearing zone was encountered between depths of 709 and 884 feet. This zone consists of sand, gravel, and cobbles with varying amounts of silt content.

GEOPHYSICAL LOG(S)

Geophysical logs are a useful tool for indicating potential water-bearing zones. However, they neither assure the presence of water or quantify the amount of water available. The electric log, illustrated in **Figure 3**, shows the measured amount of electrical resistance caused by various strata as electrical current passes through them. This log is a useful tool for comparison with the lithologic log and field notes in determining screen placement. Resistivity values greater than 1,000 ohm-feet generally indicate good aquifer material. In Well 11.2, electrical resistance was measured at 2.5-foot intervals in the lower water-bearing zone found between depths of 709 to 885 feet. Resistivity values averaging 1,000 ohm-feet indicated potentially good water-bearing materials between depths of 790 and 813 feet. From 840 to 873 feet, the resistivity values increased to an average of 1,200 ohm feet, indicating greater water-bearing potential.

STATIC WATER LEVELS

Static water level data from Zone IV wells indicate a ground water gradient of about 0.002 to the west. The static water level is measured below ground surface (bgs) and shown in **Table 1** below:

Screen depth:	785 to 880 ft.
Measuring point stickup:	2.15 ft.
Measuring point elevation:	358.01 ft. (TOC 16")

Table 1
Measured Static Water Levels at Well 11.2

Date	Static Water Level (ft. bgs)	Water Level Elevation (ft. msl)
August 24, 1995	234.42	123.59
August 25, 1995	237.72	120.29
August 28, 1995	236.65	121.36
August 29, 1995	232.85	125.16

PUMPING TEST

A pumping test was conducted at Well 11.2 on August 29 and 30, 1995. The purposes of this test were to:

- Determine the performance characteristics and optimum yield of the well.
- Confirm the well completion in Aquifer Zone IV by noting interference to pumping in nearby wells in the same aquifer.
- Determine the water quality and evaluate the lateral extent of Aquifer Zone IV by monitoring water level changes in the Plateau wells.

Pre-test Development

After the completion of Well 11.2 in August 1993, final development was delayed due to the start of the school year. Because of the short period of time allotted for final development and the long period since the completion of the well, the entire screen section of Well 11.2 was water jet developed prior to testing.

Two days of water jet/pump development accompanied by short pumping tests did not significantly increase the well's specific capacity of 22 gpm/ft of drawdown (gpm/ft-dd). The following day a line-shaft turbine pump was installed in Well 11.2 for a 24-hour pumping test. The results of this test are shown below.

Pumping Test Results

Results of the pumping test in Aquifer Zone IV at Well 11.2 are illustrated in **Figures 4, 5, 6, and 7**. To conduct the test, a line shaft turbine pump was installed in the well to a depth of 343 feet. The results of this 24-hour pumping test are:

Screened zone: *785 to 880 ft.*

Test date: August 29-30, 1995

Initial water level: 232.85 ft. below measuring point

Discharge rate (Q): 973 gpm

Pumping duration: 24 hrs

Drawdown: 51.01 ft.

Specific capacity: 19 gpm/ft.-dd

Transmissivity

Transmissivity is a measure of permeability for the full aquifer thickness. It is the amount of water that flows through a vertical, one-foot wide strip of the aquifer in one day (under unit gradient). The average transmissivity can be calculated from the drawdown, recovery, T/t', and distance drawdown data shown in **Figures 4** and 5. Aquifer Zone IV at Well 11.2 has an average transmissivity of 38,000 gpd/ft.

Interference

To note interference with nearby production and monitoring wells, Production Well 5 (Zone IV) and the three completions in Well PT-3 (Zones I, II, and IV) were monitored during the 24-hour test.

Figures 6 and 7 show hydrographs of the nearby wells during and after the 24-hour pumping test at Well 11.2. The hydrographs in **Figure 6** indicate no interference in Aquifer Zones I, II, and III at PT-3.1, PT-3.2, and Well 11.1 during the 24-hour test. The lack of response in any of these wells during the test indicates Well 11.2 is hydraulically isolated from water-bearing Zones II and III monitored during the test at PT-3.1, PT-3.2, and Well 11.1.

Wells whose water levels were impacted by pumping are shown in **Figure 7**. Well 5, approximately 4,000 feet to the southwest in Aquifer Zone IV, responded to the test with a total of 16 feet of drawdown. PT-3.3, 180 feet to the south and also completed in Aquifer Zone IV, responded to the test with a total of 27.5 feet of drawdown. The response at the observation wells in Zone IV suggests Well 11.2 is completed in Zone IV.

WATER QUALITY

During testing, water pumped from Well 11.2 was sand free, clear, odorless, and tasteless. Water samples were collected for both field and laboratory analyses.

Field Analyses

Field analyses of selected water quality parameters were performed during the 24-hour pumping test. These results are summarized below:

Date	Specific Conductance (µmhos/cm)	pH (°F)	Temperature (NTU)	Turbidity (mg/L)	Hardness (mg/L)	Iron
8/30/95	156.6	7.15	53.6	0.45	65	0.02

Laboratory Analyses

Samples for laboratory analysis were collected after pumping 23 hours at 973 gpm. Laboratory reports are included in the **Appendix**.

Inorganic Test Results

A sample for inorganic chemical analysis was collected August 30, 1995 after pumping 23 hours. The analysis, performed by Water Management Laboratories Inc., shows all primary and secondary parameters to be under maximum contaminant levels.

The complete results are summarized on **Table 2. Table 2** compares the inorganic results with those of Wells 4 and 5, completed in Aquifer Zone IV. The comparison shows the water quality results from the three wells to be nearly identical, suggesting Well 11.2 is completed in Aquifer Zone IV.

Volatile Organic Test Results

The results of the volatile organic analysis, completed by Water Management Laboratories Inc., revealed no detectable levels of either regulated or non-regulated volatile organic compounds.

Bacteriological Test Results

The bacteriological test, completed by Water Management Laboratories Inc., showed coliform bacteria present. The bacteria sample was taken at the open discharge orifice at the end of approximately 1,000 feet of lay-flat pipe. The lay-flat pipe was not sterilized before testing and most likely caused the sample to become contaminated.

Table 2
Comparison of Inorganic Test Results

Parameter	Well 4	Well 5	Well 11.2
Date Received	3/2/93	3/2/93	8/30/95
Arsenic mg/L	<0.01	<0.01	<0.01
Barium mg/L	<.10	<.10	<.10
Cadmium mg/L	<0.002	<0.002	<0.002
Chromium mg/L	<0.05	<0.05	<0.01
Iron mg/L	<0.05	<0.05	<0.03
Lead mg/L	<0.002	<0.002	<0.002
Manganese mg/L	<0.043	<0.041	<0.036
Mercury mg/L	<0.0002	<0.0002	<0.0005
Selenium mg/L	<0.005	<0.005	<0.005
Silver mg/L	<0.01	<0.01	<0.01
Sodium mg/L	9	7.7	6
Hardness mg/L as $CaCo^3$	65	65	70
Conductivity μmhos	160	150	147
Turbidity NTU	0.17	0.15	0.4
Color Units	5	5	<5
Fluoride mg/L	<0.50	<0.50	<0.02
Nitrate mg/L	<1.0	<1.0	.20
Chloride mg/L	<20	<20	2
Sulfate mg/L	<10	<13	1
TDS mg/L	–	–	105
Copper mg/L	<0.02	<0.02	<0.02
Zinc mg/L	<0.05	<0.05	<.05

Radionuclide Test Results

Analysis of radionuclides by the State of Washington Department of Health Radiation Laboratories shows the radiation and radon levels are well below the maximum contaminant levels (mcls).

Parameter	Level	MCL
Gross Alpha:	<3.0 pCi/L	none
Gross Beta:	<4.0 pCi/L	50 pCi/L
Radon-222:	115 +/- 20 pCi/L	300 pCi/L (recommended mcl)

OPTIMUM YIELD

Optimum yield is the maximum amount of water a well can safely produce. It is the product of the long-term specific capacity and safe drawdown. Safe drawdown allows for pump submergence requirements and seasonal and other natural water level changes, including interference from other sources.

Details of the optimum yield calculation for Well 11.2 are included in the **Appendix.**

Safe drawdown:	105 ft.
Long-term specific capacity (SC):	19 gpm/ft-dd
Safe yield (s x SC):	2,000 gpm

CAPTURE ZONE

Wellhead Protection Area (WHPA)

A WHPA is defined as the surface and subsurface area surrounding a public water supply well through which potential contaminants are likely to pass before reaching a production well. In Washington, WHPAs are defined by the time of travel (TOT) for ground water to move from its point of infiltration to its point of discharge at the well. The 10-year TOT boundary forms the boundary of the WHPA and defines the area to be inventoried and managed to reduce the risk of potential contamination.

The purpose of a WHPA delineation is to describe the size and shape of that portion of the aquifer contributing ground water to the well. This area is known as the well's **Capture Zone.** Data are usually insufficient to completely and accurately define the exact size and shape of the capture zone. The Washington State Department of Health (DOH) has adopted four methods to delineate a WHPA. In order of increasing complexity, they are:

- Calculated Fixed Radius
- Analytical Models
- Hydrogeologic Mapping
- Numerical Flow/Transport Models

A preliminary delineation is now required for all new public water supply wells. The calculated fixed radius method is normally used before the well is constructed and tested.

Because it has more than 1,000 service connections, the District must use an analytical model or better to delineate its WHPA. Data are available to the District to allow this level of delineation for Well 11.2.

Capture Zone Analysis

The EPA has developed a set of analytical models that utilize aquifer properties to calculate the boundaries of the capture zones for a well based on continuous pumping at a particular rate. The pumping rate input to the model is reduced from Well 11.2's instantaneous rate of 2,000 gpm to the continuous rate required (350 gpm) to pump the annual water right of 565 acre feet. DOH requires determination of capture zones for 1-, 5-, and 10-year TOT for each well. The EPA WHPA analytical model GPTRAC was used to calculate the capture zones for Well 11.2.

The shape of the capture zone is determined by the aquifer's hydrologic properties and the direction and gradient of the ground water flow in the aquifer. The flow direction in aquifer Zone IV at Well 11.2 is to the west, as shown on **Figure 8**. The gradient of 0.002 in the Zone IV aquifer is estimated from limited water level data. The 1-, 5-, and 10-year TOT capture zones for Well 11.2 are illustrated on **Figure 9**. The capture zone is elongated to the east, indicating that the well draws its water primarily from the upgradient direction.

Although the capture zone covers a significant area around Well 11.2, its susceptibility to contamination is very low due to its depth and the low permeability sediments overlying the aquifer (see **Figure 2**).

Health

Environmental Health

ˈATER FACILITIES INVENTORY (W

Read Instructions on back before completing

SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
409909	KING	A	COMM	

1. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER

STREET ADDRESS: 1510 228TH AVE SE

P.O. BOX (IF APPLICABLE):

CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

OWNER'S NAME (LAST, FIRST): SAMMAMISH PLATEAU WATER & OWNER NO.: 3007

STREET ADDRESS: 1510 228TH AVE SE

P.O. BOX (IF APPLICABLE):

CITY: ISSAQUAH STATE: WA ZIP CODE: 98027

SYSTEM CONTACT PERSON: RONALD E. LITTLE - MANAGER TITLE:

DAY TELEPHONE: 425-392-6256 EVENING TELEPHONE:

WFI COMPLETED BY TITLE

DAY TELEPHONE DATE

SUBMITTED FOR ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS: 11080

10. NUMBER ACTIVE RESIDENTIAL POPULATION: 33.240

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS:

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN		APR		JULY		OCT	
FEB		MAY		AUG		NOV	
MAR		JUNE		SEP		DEC	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED: 11.080

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY: 13.125.000 GALLONS

6. OWNERSHIP (CHECK ONE ONLY)
- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☒ LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)
- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- ☐ LODGING / FOOD SERVICE
- ☐ SCHOOL / DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

16. DOH SOURCE NUMBER	17. SOURCE NAME	18. SOURCE CATEGORY								19. USE			20.	21. TREATMENT					22. WELL DEPTH	23. SOURCE CAPACITY	24. SOURCE LOCATION				SWTR EVALUATION	VOC EVALUATION
	LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME EXAMPLE: 77050Y / SEATTLE	WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL.	INTERTIE	PURCHASE-TREATED	PURCHASE UNTREATED	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	(FEET)	(GPM)	1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.		
S01	WELL 1	N								N			Y					X	[illegible]	500	SW/NE	10	24N	06E		
S02	WELL 2	N									N		Y					X	132	360	NW/SE	11	24N	06E		
S03	WELL # 3	N										X	Y		N				715		NW/SW	34	25N	06E		
S04	WELL # 4	N								N			Y		N				714	750	SW/NW	34	25N	06E		
S05	WELL 6	N										X	Y		N				366		NE/SE	32	25N	06E		
S06	WELL #7	N								N			Y					X	150	2.000	SE/SE	21	24N	06E		
S07	WELL #8	N								N			Y					X	150	3.200	SE/SE	21	24N	06E		
S08	WELL #12	N								N			Y	N					100	200	NW/SW	13	25N	07E		
S09	WELL #13	N								N			Y			N			955	200	SW/NW	12	25N	06E		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25. ★Note Increase in Coliform Samples Required

26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	40	40	40	40	40	40	40	40	40	40	40	40

APPROVED SERVICES (PER PLANS)

DATE OF LAST SANITARY SURVEY BY DOH ☐ UHO ☐

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? ☒ YES ☐ NO GW MGMT AREA? ☐ YES ☐ NO FOR UHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES

SIGNATURE OF DOH REVIEWER

DATE

331-011 Rev. 2/95)

WATER SYSTEM

Health
Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

1. SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
[illegible]	KING	A	COMM	[illegible]

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER

STREET ADDRESS

P.O. BOX (IF APPLICABLE)

CITY | STATE | ZIP CODE

OWNER'S NAME (LAST, FIRST) | OWNER NO.

STREET ADDRESS

P.O. BOX (IF APPLICABLE)

CITY | STATE | ZIP CODE

5. SYSTEM CONTACT PERSON | TITLE

DAY TELEPHONE | EVENING TELEPHONE

6. OWNERSHIP (CHECK ONE ONLY)

- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☐ LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- ☐ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- ☐ LODGING / FOOD SERVICE
- ☐ SCHOOL / DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY | TITLE

DAY TELEPHONE | DATE

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL **CONNECTIONS**

10. NUMBER ACTIVE RESIDENTIAL **POPULATION**

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS

12. ENTER **AVERAGE DAILY** NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN.		APR.		JULY		OCT.	
FEB.		MAY		AUG.		NOV.	
MAR.		JUNE		SEP.		DEC.	

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR?

☐ YES ☐ NO

14. TOTAL NUMBER CONNECTIONS METERED

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME EXAMPLE: 77050Y / SEATTLE	18. SOURCE CATEGORY: WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE: PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT: NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION: 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION	VOC EVALUATION
S10	WELL #14	X										X	[illegible]	X					[illegible]	[illegible]	NE/NW	[illegible]	25N	06E		
S11	WELL #10	X								X			Y					X	193	600	NE/SW	11	24N	06E		
S12	WELL #11.2	X								X				X					300	2.000	NE/NW	34	25N	06E		

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

27. APPROVED SERVICES (PER PLANS) | DATE OF LAST SANITARY SURVEY BY DOH | LHD

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? ☐ YES ☐ NO | GW MGMT AREA? ☐ YES ☐ NO | FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES | SIGNATURE OF DOH REVIEWER | DATE

Please Print Plainly

E HEAVY PENCIL

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORIES
OFFICE OF RADIATION LABORATORIES
1610 N.E. 150TH ST., SEATTLE, WA 98155-7224

WATER SAMPLE INFORMATION FOR RADIATION ANALYSES

. NUMBER	SYSTEM NAME:	SYSTEM I.D. NO.	SYSTEM CLASS (circle one)	SOURCE NUMBER
1 0 1 05137	SAMMAMISH PLATEAU WTR.	409009	A B	~~well #~~ (i well 11, 2 ↳ changed by Vic Fisher ... H

I is follow up of a previous out of compliance sample? Yes ☐ No ☐

If yes, what was the laboratory number of the previous sample? _ _ _ _ _ _ _ _

COUNTY: KING

S RCE T E: ___ 1. SURFACE ___ 3. WELL ___ 2. SPRING ___ 4. PURCHASE

IF SOURCE IS LAKE OR STREAM, ENTER NAME

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (ADDRESS)

DATE OF FINAL REPORT: 09/14/95

	DATE COLLECTED	DATE RECEIVED
1	08 /30 /95	09 /01 /95

SEND REPORT TO: (PRINT FULL NAME & ADDRESS)

RON LITTLE
SAMMAMISH PLATEAU WATER
NAME
1510 - 228TH AVE. S.E.
STREET
ISSAQUAH, WA 98027
CITY ZIP CODE
TELEPHONE ( ) AREA CODE

LABORATORY REPORT
(DO NOT WRITE BELOW THIS LINE)

NALYSES	LESS THAN	RESULTS pCi/L	*MCL pCi/L	COMPLIANCE YES	COMPLIANCE NO	CHEMIST INITIALS
(ss Alpha	<	3.0		✓		
U ilum		.				
(s Alpha ue Uranium		.	15			
Radium-226		.	3			
F ium-228		.				
Radium-226 Plus Radium-228		.	5			
F on-222		115 ± 20 pCi/L				JBR
G ss Beta	<	4.0	50	✓		
St ilum-89		.	80			
St ilum-90		.	8			
Ce ium-134		.	80			
Io -131		.	3			
Tritium		.	20,000			

MCL - the maximum contaminant Level Allowed

LABORATORY SUPERVISOR (Name or initials): JBR

QUALITY ASSURANCE SUPERVISOR (Name or initials): Merville Silvestone

CHARGE: $120.00

REMARKS:

SEND COPY TO:
AGI WATER RESOURCES
P.O. BOX 1158
GIG HARBOR, WA 98335

WATER
MANAGEMENT
LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
531-3121

September 21, 1995

AGI Technologies
PO Box 1158
Gig Harbor, WA 98335
Attn: Scott Coffee

Dear Sir:

Results of analysis of one ground water engineering sample taken by yourself on 08-30-95 at 10:26 a.m. and received 08-31-95 at 9:45 a.m. are as follows:

Sample Identification: Sammamish Plateau Water and Sewer District Well 11.2

Test	Result
Antimony	< 0.002*
Arsenic	< 0.01*
Barium	< 0.1*
Beryllium	< 0.002*
Bicarbonate	75
Cadmium	< 0.002*
Calcium	18
Carbonate	0
Chloride	2
Chromium	< 0.01*
Color	< 5*
Copper	< 0.02*
Cyanide	< 0.1*
Fluoride	< 0.2*

Test	Result
Iron	< 0.03*
Lead	< 0.002*
Magnesium	6
Manganese	0.036
Mercury	< 0.0005*
Nickel	< 0.04*
Nitrate Nitrogen	< 0.2*
Nitrite Nitrogen	< 0.2*
Potassium	2.0
Selenium	< 0.005*
Silica	35
Silver	< 0.01*
Sodium	6
Specific Conductivity	147
pH	8.1
Sulfate	1
Thallium	< 0.001*
Total Dissolved Solids	105
Total Hardness	70
Turbidity	0.4
Zinc	< 0.05*
Total Coliform	Present
E. Coli	Absent

* < is less than

All results are in milligrams per liter except color which is in color units, pH which is in pH units, specific conductivity which is in micro-mho per cm and turbidity which is in nephelometric turbidity units. Bicarbonate, carbonate and total hardness are in milligrams per liter as calcium carbonate. Total Coliform results are per 100 mls.

Microbiology Lab Number: 08997646
Chemistry Lab Number: 08922385

Sample was analyzed according to Standard Methods for the Examination of Water and Wastewater, 18th Edition.

Chain of Custody record and results of Voc analysis are enclosed.

Sincerely,

Diane DuMond

Diane DuMond
Lab Coordinator

DD:jlp
enclosure

cc: Ron Little, SPWSD

c:\comm\agi8-31

WATER
MANAGEMENT
LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
531-3121

VOLATILE ORGANIC CHEMICAL REPORT

Results by Analysis by EPA Method 524.2
Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry

Send Report To:
Scott Coffey
P.O. Box 1158
Gig Harbor, WA 98335

Bill: Ron Little
Sammamish Plateau Water and Sewer District
1510 228th Ave. SE
Issaquah, WA 98027

COUNTY : King
SYSTEM NAME : Sammamish Plateau Water and Sewer District; Well 11.2
SYSTEM ID NO. : New
DATE COLLECTED: 08/30/95
DATE ANALYZED : 09/05/95
SOURCE NUMBER : S01
SOURCE TYPE : Well

LABORATORY NO. : 089
DATA FILE : 08972539
ANALYST : William Adams
DATE OF REPORT : September 7, 1995
SUPERVISOR'S INITIALS : WMP

EPA CODE	NAME OF COMPOUND	MCL* ug/L	AMOUNT ug/L
	REGULATED COMPOUNDS		
2976	VINYL CHLORIDE	2	ND
2977	1,1-DICHLOROETHYLENE	7	ND
2981	1,1,1-TRICHLOROETHANE	200	ND
2982	CARBON TETRACHLORIDE	5	ND
2990	BENZENE	5	ND
2980	1,2-DICHLOROETHANE	5	ND
2984	TRICHLOROETHYLENE	5	ND
2969	p-DICHLOROBENZENE	75	ND
2979	t-1,2-DICHLOROETHYLENE	100	ND
2380	c-1,2-DICHLOROETHYLENE	70	ND
2983	1,2-DICHLOROPROPANE	5	ND
2991	TOLUENE	1000	ND
2987	TETRACHLOROETHYLENE	5	ND
2989	CHLOROBENZENE	100	ND
2992	ETHYL BENZENE	700	ND
2995	m/p-XYLENES		ND
2997	o-XYLENE (total xylene MCL) =	10000	ND
2996	STYRENE	100	ND
2968	o-DICHLOROBENZENE	600	ND
2964	METHYLENE CHLORIDE	5	ND
2985	1,1,2-TRICHLOROETHANE	5	ND
2418	1,2,4-TRIMETHYLBENZENE	70	ND
	TRIHALOMETHANES (THM total) =	100	
2941	CHLOROFORM		ND
2943	BROMODICHLOROMETHANE		ND
2944	CHLORODIBROMOMETHANE		ND
2942	BROMOFORM		ND

* MCL: Maximum Contaminant Level
NOTE: An amount of ND indicates that the true concentration is less than the method detection limit of 0.5 ug/L.

EPA CODE	NAME OF COMPOUND	A AMOUNT ug/L
	UNREGULATED COMPOUNDS	
2210	CHLOROMETHANE	ND
2214	BROMOMETHANE	ND
2216	CHLOROETHANE	ND
2978	1,1-DICHLOROETHANE	ND
2416	2,2,-DICHLOROPROPANE	ND
2410	1,1-DICHLOROPROPANE	ND
2408	DIBROMOMETHANE	ND
2412	1,3-DICHLOROPROPANE	ND
2986	1,1,1,2-TETRACHLOROETHAN	ND
2993	BROMOBENZENE	ND
2414	1,2,3-TRICHLOROPROPANE	ND
2988	1,1,2,2-TETRACHLOROETHAN	ND
2965	o-CHLOROTOLUENE	ND
2966	p-CHLOROTOLUENE	ND
2967	m-DICHLOROBENZENE	ND
2212	DICHLORODIFLUOROMETHANE	ND
2218	TRICHLOROFLUOROMETHANE	ND
2430	BROMOCHLOROMETHANE	ND
2994	ISOPROPYLBENZENE	ND
2998	N-PROPYLBENZENE	ND
2424	1,3,5-TRIMETHYLBENZENE	ND
2426	TERT-BUTYLBENZENE	ND
2428	SEC-BUTYLBENZENE	ND
2030	p-ISOPROPYLTOLUENE	ND
2422	n-BUTYLBENZENE	ND
2378	1,2,4-TRICHLOROBENZENE	ND
2248	NAPTHALENE	ND
2246	HEXACHLOROBUTADIENE	ND
2420	1,2,3-TRICHLOROBENZENE	ND
2228	cis-1,3-DICHLOROPROPENE	ND
2224	trans-1,3-DICHLOROPROPENE	ND

NOTE: DIBROMOETHANE(EDB) AND DIBROMOCHLOROPROPANE(DBCP) WERE ALSO ANALYZED FOR AND WERE AT CONCENTRATIONS BELOW DETECTION LIMITS. THIS DOES NOT CONSTITUTE AN ADEQUATE ANALYSIS FOR THESE COMPOUNDS. **Composite results are totals

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

SAMMAMISH PLATEAU WATER & SEWER DISTRICT
1510 228TH Avenue S.E.
Issaquah, Washington

(206) 392-6256

WELL 12

GROUND WATER CONTAMINATION
Susceptibility Assessment Survey Form

TABLE OF CONTENTS

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager : SAMMAMISH PLATEAU WATER & SEWER DISTRICT

Water system name : SAMMAMISH PLATEAU WATER & SEWER DISTRICT

County: KING

Water system number: A09009 Source number: ______

Well depth: 100' (ft.) (*From WFI form*)

Source name: CASCADE VIEW WELL S08 (ORIGINALLY CASCADE VIEW DISTRICT - WELL #1) WELL #12

WA well identification tag number: ___ ___ ___-___ ___ ___

X well not tagged

Number of connections: 10,050★ Population served: 26 000

Township: 25N Range: 07E

Section: 13 1/4 1/4 Section: NW/SW

Latitude/longitude (if available): ______/______

How was lat./long. determined?

___ global positioning device ___ survey ___ topographic map

___ other: ______

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 3/27/61 month/day/year

last reconstruction: 6/30/94 month/day/year

______ information unavailable

★ PLEASE NOTE: UNTIL JUNE 1995 THIS WELL — MERGED
WAS [illegible] DISTRICT OF LESS THAN 500 CUSTOMERS — [illegible]
ALSO THIS WELL HAS BEEN [illegible] BEFORE FOR
[illegible]

2) Well driller: H.C. Meyer Drilling Co

___ well driller unknown

3) Type of well:

___ **Drilled:** ___ rotary ___ bored ___ cable (percussion) ___ **Dug**

___ **Other:** ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: ___

Additional comments: ___

4) Well report available? ___ YES (attach copy to form) X NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 160 (gallons/min)

Source of information: Water Facilities Inventory

If not documented, how was pumping rate determined? ___

___ Pumping rate unknown

6) Is this source treated? ___ YES X NO

If so, what type of treatment:

___ disinfection ___ filtration ___ carbon filter ___ air stripper ___ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

7) If source is chlorinated, is a chlorine residual maintained: ___ YES X NO

Residual level: ___ *(At the point closest to the source.)*

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

[✓ ___ (less than) 20 ft] ___ 20-50 ft ___ 50-100 ft ___ 100-200 ft ___ (greater than) 200 ft

___ information unavailable

2) Depth to ground water (static water level):

___ (less than) 20 ft ___ 20-50 ft ___ 50-100 ft [✓ ___ (greater than) 100 ft]

___ flowing well/spring (artesian)

How was water level determined?

___ well log ___ other: Adapted in 1082 FRM 1961 H_2O METER Well Log

___ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

N/A psi (pounds per square inch)
or
N/A feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: ___ YES ___ NO N/A

5) Wellhead elevation (height above mean sea level): ______ (ft)

How was elevation determined? ___ topographic map ___ Drilling/Well Log ___ altimeter

___ other: ____________________

[✓ ___ information unavailable]

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

___ evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer? ___ YES ___ NO

[✓ ___ information unavailable]

7) Sanitary setback:

X (less than) 100 ft* ___ 100–120 ft ___ 120–200 ft ___ (greater than) 200 ft

* if less than 100 ft describe the site conditions:

WELL IS LOCATED AT ORIGINAL OFFICE SITE WITH DISTRICT FACILITIES ADJACENT - OFFICE IS NOW USED SPORADICALLY FOR PICK UP OF TOOLS & MAINTENANCE PURPOSES

8) Wellhead construction:

X wellhead enclosed in a wellhouse

X controlled access (describe): locked

___ other uses for wellhouse (describe): ___

___ no wellhead control

9) Surface seal:

___ 18 ft

___ (less than) 18 ft (no Department of Ecology approval)

___ (less than) 18 ft (Approved by Ecology, include documentation)

___ (greater than) 18 ft

X depth of seal unknown

___ no surface seal

10) Annual rainfall (inches per year):

___ (less than) 10 in/yr ___ 10–25 in/yr X (greater than) 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 52,560,000 (gallons)

How was this determined?

___ meter

X estimated: ___ pumping rate (100 GPM)

___ pump capacity (____________)

___ other: ____________

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 700 (ft)

1 year ground water travel time : 980 (ft)

5 year ground water travel time: 2200 (ft)

10 year ground water travel time: 3110 (ft)

THESE ARE THE CFR'S FOR THIS PACKAGE.

Information available on length of screened/open interval?

___ YES X NO

Length of screened/open interval: ____________(ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? ___ YES ___ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? ___ YES X NO (mark and identify on map).

Comments: ____________

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application				X
stormwater injection wells	No	No	No	
other injection wells	No	No	No	
abandoned ground water well				X
landfills, dumps, disposal areas	No	No	No	
known hazardous materials clean-up site	No	No	No	
water system(s) with known quality problems				X
population density (greater than) 1 house/acre	AREA IS ZONED RURAL			
residences commonly have septic tanks	YES	YES	YES	
Wastewater treatment lagoons	No	No	No	
sites used for land application of waste	No	No	No	

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? *(Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)*

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

AREA IS ZONED RESIDENTIAL/RURAL -
EXCEPT FOR FIRE STATION LOCATED
ACROSS STREET FROM WELL.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions: (Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	
Results greater than MCL		☆
(less than) 2 mg/liter nitrate	X	
2-5 mg/liter nitrate		
(greater than) 5 mg/liter nitrate		
Nitrate sampling records unavailable		

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES
Results greater than MCL or SAL	
VOCs detected at least once	
VOC test performed but never detected	
VOC sampling records unavailable	

INFORMATION UNAVAILABLE

C. EDB/DBCP: (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)	YES
EDB/DBCP detected below MCL at least once	
EDB/DBCP detected above MCL at least once	
EDB/DBCP never detected	
EDB/DBCP tests required but not yet completed	
EDB/DBCP tests not required	

INFORMATION UNAVAILABLE

D. Other SOCs (pesticides and other synthetic organic chemicals):	YES
Other SOCs detected	
Other SOC tests performed but none detected *	
Other SOC tests not performed	

INFORMATION UNAVAILABLE

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ______________________

____

____

____

☆ PLEASE NOTE: IN GOING THROUGH THE CASCADE VIEW FILES, WE WERE ONLY ABLE TO LOCATE A 1988 TEST, AT THIS TIME. (THE TEST RESULTS ARE ENCLOSED).

E. Bacterial contamination:

	YES
Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).	___
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.	___
Source sampling records for bacteria unavailable	X

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1)Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

X YES ___ NO (STREAMS)

Describe with references to map produced in Part IV:

____

____

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

___ YES ___ NO (UNKNOWN)

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

X YES ___ NO EVALUATION & REHABILITATION REPORT, 1/27/47

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

___ YES ___ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
6 month travel time	___	___	___
6 month–1 year travel time	___	___	___
1–5 year travel time	___	___	___
5–10 year travel time	___	___	___

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
1 year travel time	___	___	___
1–5 year travel time	___	___	___
5–10 year travel time	___	___	___

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Suggestions and Comments

Did you attend one of the susceptibility workshops? ___ YES ___ NO

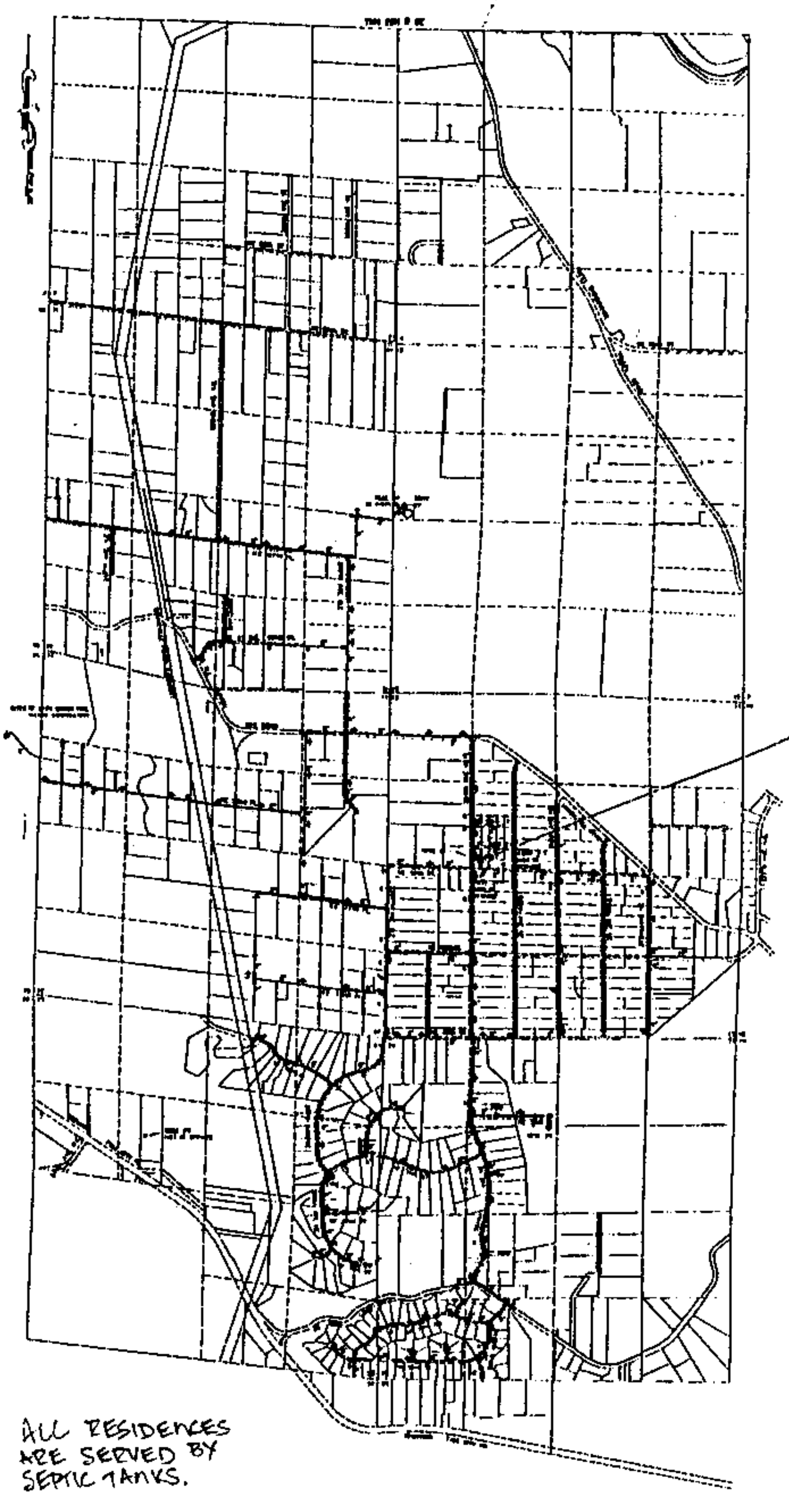
Did you find it useful? ___ YES ___ NO

Did you seek outside assistance to complete the assessment? ___ YES ___ NO

- -

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

CASCADE VIEW WATER DISTRICT



WELL 12
CV LOCATION
508

ALL RESIDENCES
ARE SERVED BY
SEPTIC TANKS.

EVALUATION AND REHABILITATION OF CASCADE VIEW WELL 1

INTRODUCTION

Cascade View Water District Well 1 was drilled and completed in 1961. The well penetrates a very permeable sand and gravel aquifer, but its yield is limited by the relatively low water level. Since 1982, the well has been operated with the aid of a vacuum pump to increase production.

Recently, the District has been forced to reduce the pumping rate from Well 1 to prevent air entrainment in the discharged water. Since the well's flow meter has not worked for some time, its actual pumping rates are unknown. This report describes AGI's evaluation of the current condition of the well and provides recommendations for continued operation.

FINDINGS

Static Water Level Decline

Static water levels measured in Well 1 have shown a decline of approximately 10 feet since 1961. The water levels shown on **Figure 1** were measured at approximately the same time of year and therefore suggest long-term water level decline rather than seasonal fluctuations. In similar local aquifers, high water levels generally occur in the spring when winter precipitation reaches the aquifer. **Table 1** shows a seasonal rise in water level of 1.67 feet between the time the pump was removed in mid-April until testing was completed at the end of June.

Table 1

Measured Water Levels	
Date	**Depth to Water**
3/27/61	120.00 ft
4/30/82	122.82 ft
4/18/94	130.35 ft
5/12/94	129.57 ft
6/30/94	128.68 ft

More extensive water level records are needed to chart the actual seasonal change of water levels in this aquifer. **Figure 1** shows an increased rate of water level decline between 1982 and 1994. This decline may be caused by any or all of the following factors:

- Lower than normal precipitation, resulting in reduced recharge to the aquifer
- Increased pumping from the aquifer
- Decreased recharge area from local development

If the indicated rate of decline is constant, the static water level could reach the pump intake of 134.5 feet in about six years. Use of the well may have to be curtailed before then.

A current yield of about 200 gpm is dependent on the vacuum system, used to maintain a higher than natural pumping level in the well. Without the vacuum, the long-term pumping yield would be less than 100 gpm.

Well Performance

Since the well was drilled, AGI Technologies (Carr/Associates Inc.) has conducted two pumping tests of Well 1 for Cascade View (King County Water District 122). As shown on **Figure 2**, the 8-inch well was completed in 1961 by H.O. Meyer Drilling Company with 10 feet of 0.040-inch slot Cook well screen, set between depths of 135 and 145 feet. **Table 2** compares the results of the original 1961 test to the more recent tests.

Table 2

Well Test Data Comparison

Date	Pumping Rate (gpm)	Drawdown (ft)	Specific Capacity (gpm/ft)
3/27/61	258	5	51.6
4/30/82	104.5	1.11	94
6/30/94	103.5	1.31	79

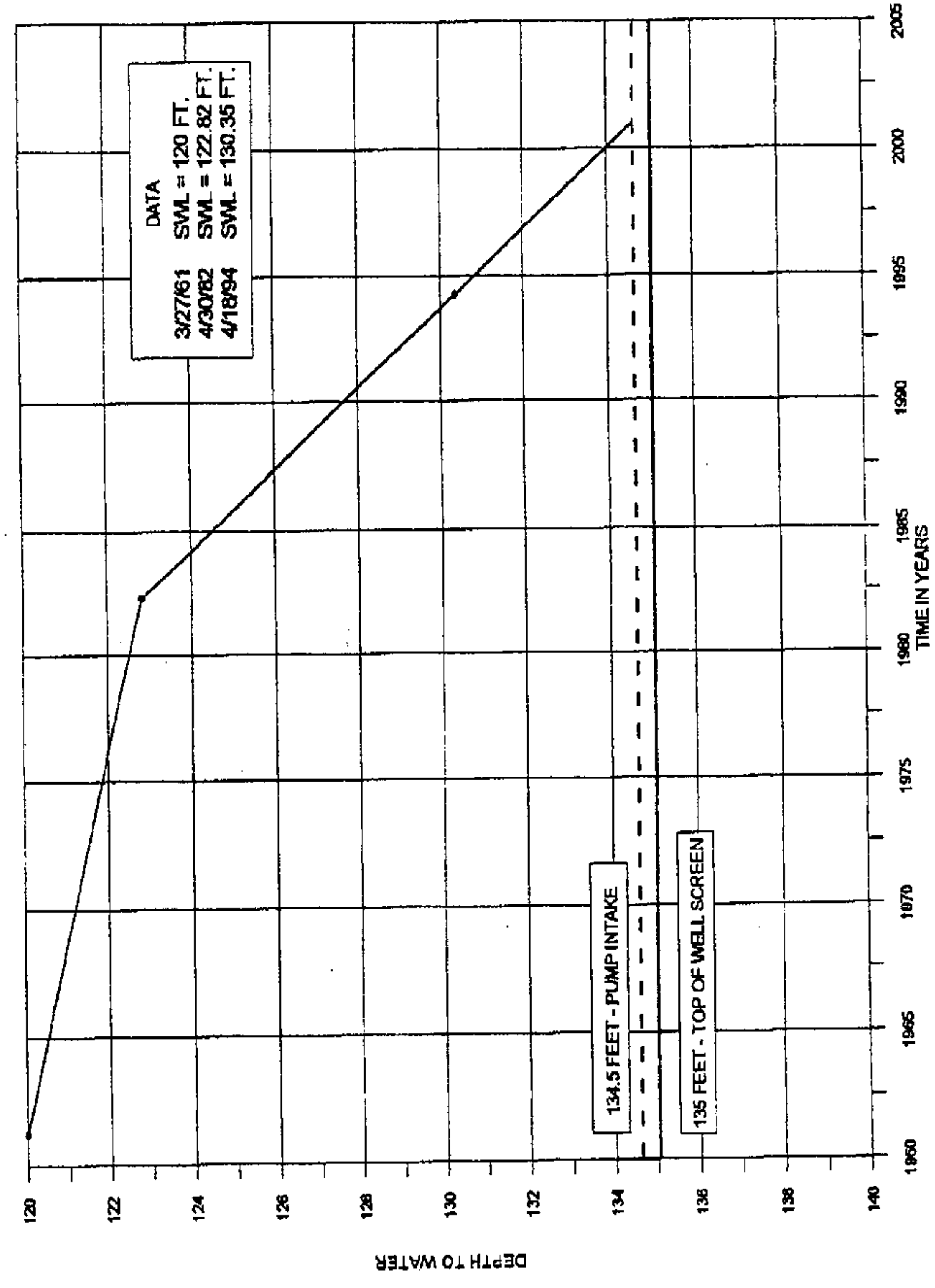
The original 1961 test showed a lower specific capacity than later tests, because it was conducted at a much higher pumping rate.

- Resealed the wellhead for vacuum pump operation.
- Installed a new well seal that allows access for periodic water level measurements without vacuum and maintains an airtight seal for the vacuum pump.

OTHER RECOMMENDATIONS

For the District to receive the maximum benefit from Well 1, we recommend:

- Measuring static water levels monthly and recording the results
- Conserving the good quality water found in this aquifer by pumping only the amount required for blending with other District water of lessor quality
- Recording the quantities pumped
- Pumping Well 1 only with the vacuum pump in operation
- Exploring for this shallow aquifer in other parts of the service area
- Reevaluating the monthly water level data within two years



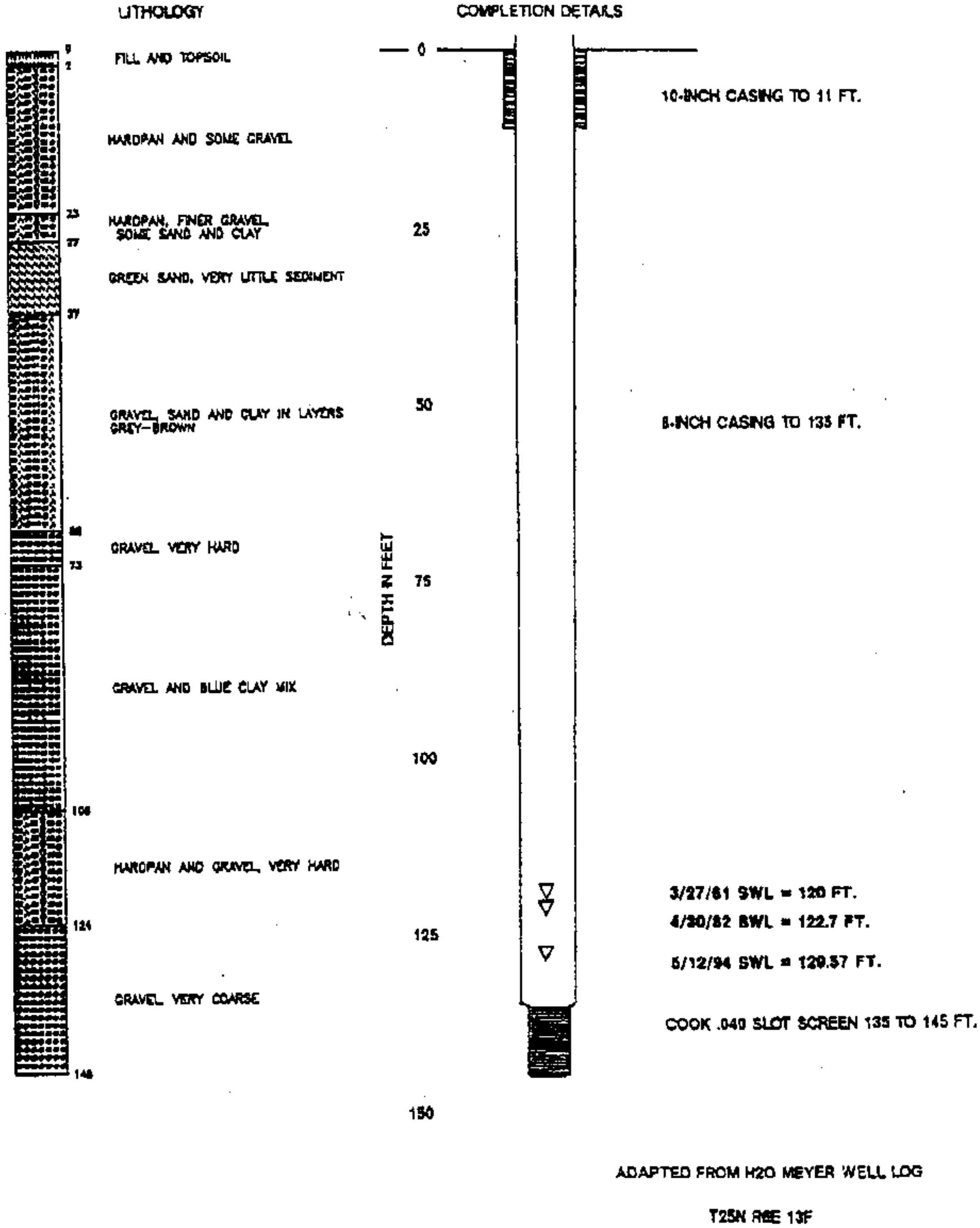
AGI TECHNOLOGIES

CASCADE VIEW - WELL 1

STATIC WATER LEVEL DECLINE

FIGURE 1

PROJECT # [illegible]
DATE: [illegible]



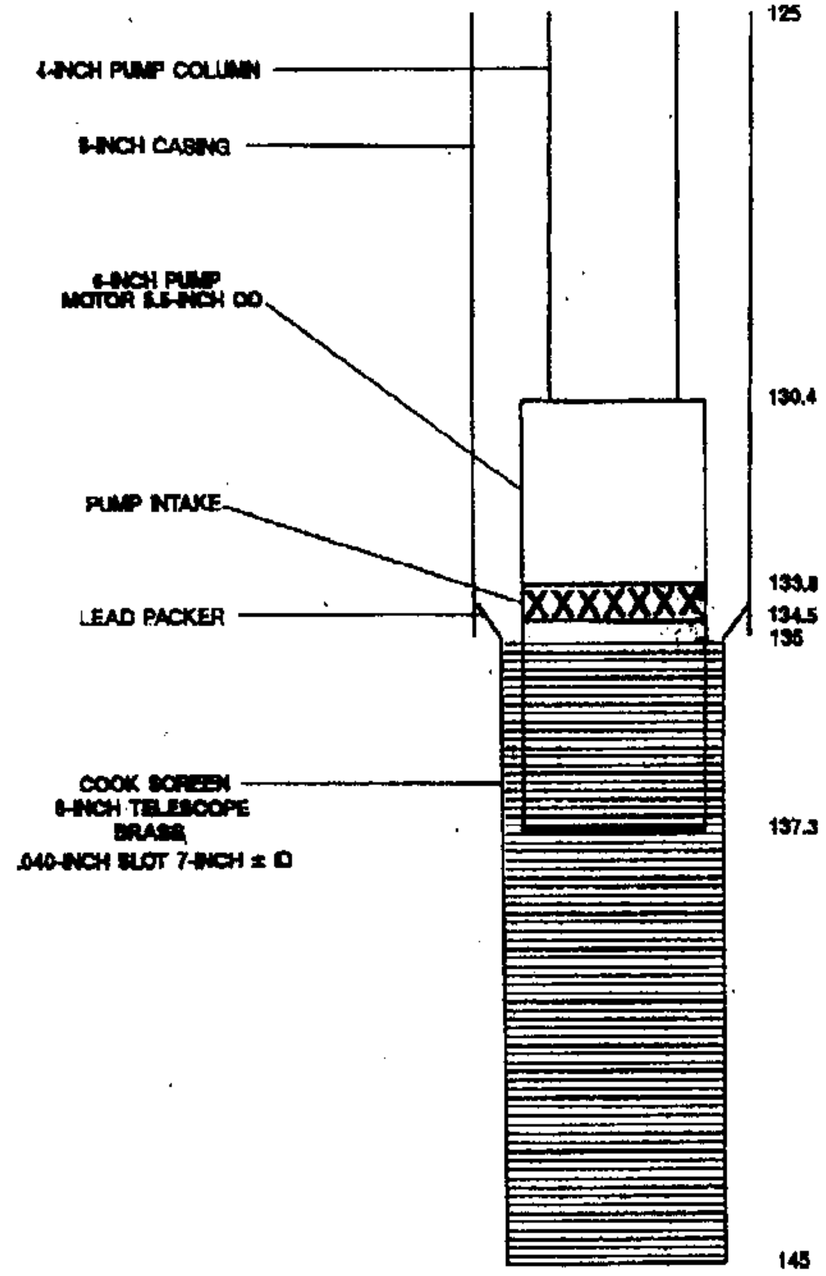
AGI TECHNOLOGIES

CASCADE VIEW - WELL 1

LITHOLOGIC LOG AND COMPLETION DETAILS

FIGURE 2

PROJECT # [illegible]
DATE: [illegible]

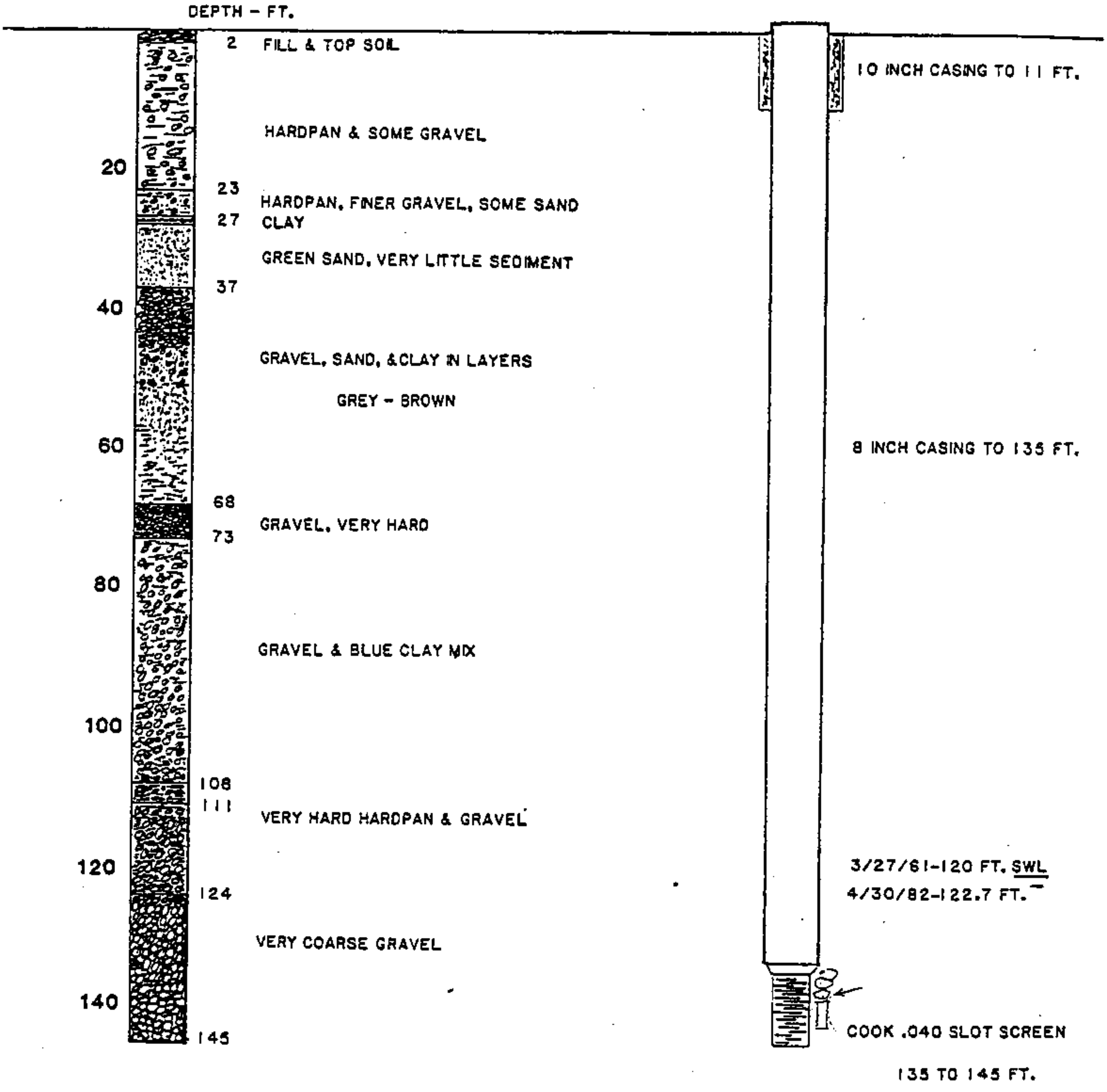


AGI
TECHNOLOGIES

CASCADE VIEW - WELL 1
PUMP INSTALLATION

FIGURE 3
PROJECT # [illegible]
DATE [illegible]

Well # 1



J.R. CARR / ASSOCIATES APRIL 1982 PROJ. # 254 – 2	K. C. W. D. 122 WELL 1	ADAPTED FROM, H2O MEYER WELL LOG 1961 T25N R6E 13F

Environmental Health

AUG 2 1 1995

WATER FACILITIES INVENTORY (WFI)

Read Instructions on back before completing

1. [illegible] 2. COUNTY [illegible] GROUP A TYPE COMM WRIA -

3. SYSTEM NAME
[illegible]MAMISH PLATEAU WATER & SEWER

STREET ADDRESS
1510 228Th AVE SE.

P.O. BOX (IF APPLICABLE)

CITY ISSAQUAH STATE WA ZIP CODE 98027

4. OWNER'S NAME (LAST, FIRST) SAMMAMISH PLATEAU WATER & OWNER NO 30?7

STREET ADDRESS
1510 228Th AVE. S.E.

P.O. BOX (IF APPLICABLE)

CITY ISSAQUAH STATE WA ZIP CODE 98027

5. SYSTEM CONTACT PERSON RONALD E. LITTLE - MANAGER TITLE

DAY TELEPHONE 206-392-6256 EVENING TELEPHONE

6. OWNERSHIP (CHECK ONE ONLY)

- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☒ LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- ☒ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- ☐ LODGING / FOOD SERVICE
- ☐ SCHOOL / DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY TITLE

DAY TELEPHONE DATE

8. SUBMITTED FOR ☐ NEW SYSTEM ☐ NO CHANGE ☐ REACTIVATE ☐ SYSTEM NAME CHANGE* ☐ UPDATE ☐ DELETE

* OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH THIS WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL CONNECTIONS 9641

10. NUMBER ACTIVE RESIDENTIAL POPULATION 27.898

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS

12. ENTER AVERAGE DAILY NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH. MAKE ENTRY FOR EACH MONTH

JAN	APR	JULY	OCT
FEB	MAY	AUG	NOV
MAR	JUNE	SEP	DEC

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☒ NO

14. TOTAL NUMBER CONNECTIONS METERED 9.641

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY 12.850.000 GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME EXAMPLE: 77050Y / SEATTLE	18. SOURCE CATEGORY WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL.	INTERTIE	PURCHASE-TREATED	PURCHASE-UNTREATED	19. USE PERMANENT	SEASONAL	EMERGENCY	20. SOURCE METERED	21. TREATMENT NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	22. WELL DEPTH (FEET)	23. SOURCE CAPACITY (GPM)	24. SOURCE LOCATION 1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	SWTR EVALUATION VOC EVALUATION
S01	WELL 1	X								X			Y	X					154	500	SW/NE	10	24N	06E	
S02	WELL 2	X									X		Y	X					132	360	NW/SE	11	24N	06E	
S03	WELL # 5	X								X			Y		X				716	450	NW/SW	34	25N	06E	
S04	WELL # 4	X								X			Y		X				714	625	SW/NW	34	25N	06E	
S05	WELL 6	X									X		Y		X				366	600	NE/SE	32	25N	06E	
S06	WELL #7	X									X		Y					X	150	2.000	SE/SE	21	24N	06E	
S07	WELL #8	X								X			Y					X	150	3.500	SE/SE	21	24N	06E	
S08	CASCADE VIEW WELL	X								X			Y	X					100	100	NW/SW	13	25N	07E	
S09	CASCADE VIEW WELL	X								X			Y			X			955	200	SW/NW	12	25N	06E	

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25	26.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
		30	30	30	30	30	30	30	30	30	30	30	30

NO. APPROVED SERVICES (PER PLANS) 0

DATE OF LAST SANITARY SURVEY 00 00 0000 BY DOH ☐ LHD ☐

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? X YES ☐ NO GW MGMT AREA? ☐ YES ☐ NO FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES SIGNATURE OF DOH REVIEWER DATE

WATER SYSTEM

DOH [illegible] Rev. 2 95

Health

Environmental Health

WATER FACILITIES INVENTORY (WFI)

Read instructions on back before completing

DATE UPDATED: 08/08/

SYSTEM ID NO.	2. COUNTY	GROUP	TYPE	WRIA
409009	KING	A	COMM	9

3. SYSTEM NAME: SAMMAMISH PLATEAU WATER & SEWER

STREET ADDRESS

P.O. BOX (IF APPLICABLE)

CITY | STATE | ZIP CODE

4. OWNER'S NAME (LAST, FIRST) | OWNER NO.

STREET ADDRESS

P.O. BOX (IF APPLICABLE)

CITY | STATE | ZIP CODE

5. SYSTEM CONTACT PERSON | TITLE

DAY TELEPHONE | EVENING TELEPHONE

6. OWNERSHIP (CHECK ONE ONLY)

- ☐ PRIVATE: NON-PROFIT
- ☐ PRIVATE: FOR-PROFIT
- ☐ LOCAL GOVERNMENT (COUNTY / CITY / PUD / WATER DISTRICT)
- ☐ STATE
- ☐ FEDERAL

7. PREDOMINANT CHARACTERISTIC (CHECK ONE ONLY)

- ☐ RESIDENTIAL
- ☐ RECREATIONAL
- ☐ BUSINESS / INDUSTRIAL / AGRICULTURAL / COMMERCIAL
- ☐ LODGING / FOOD SERVICE
- ☐ SCHOOL / DAY CARE
- ☐ OTHER (CHURCHES, ETC.)

WFI COMPLETED BY | TITLE

DAY TELEPHONE | DATE

8. SUBMITTED FOR: ☐ NEW SYSTEM ☐ SYSTEM NAME CHANGE* ☐ NO CHANGE ☐ UPDATE ☐ REACTIVATE ☐ DELETE

*OLD SYSTEM NAME - ENTER ONLY IF CHANGING WITH **THIS** WFI

SYSTEMS SERVING ANY RESIDENTS (PEOPLE LIVING IN A DWELLING SERVED BY THE SYSTEM), COMPLETE THIS SECTION

9. NUMBER ACTIVE RESIDENTIAL **CONNECTIONS**

10. NUMBER ACTIVE RESIDENTIAL **POPULATION**

SYSTEMS SERVING ANY NON-RESIDENTS (I.E., TRAVELERS, EMPLOYEES, STUDENTS, ETC.), COMPLETE THIS SECTION

11. NUMBER NON-RESIDENTIAL CONNECTIONS

12. ENTER **AVERAGE DAILY** NON-RESIDENTIAL POPULATION SERVED FOR EACH MONTH, MAKE ENTRY FOR EACH MONTH

JAN.	APR.	JULY	OCT.
FEB.	MAY	AUG.	NOV.
MAR.	JUNE	SEP.	DEC.

13. DOES THE SYSTEM SERVE AT LEAST 25 OF THE SAME NON-RESIDENTS FOR 4 OR MORE DAYS PER WEEK FOR AT LEAST 180 DAYS PER YEAR? ☐ YES ☐ NO

14. TOTAL NUMBER CONNECTIONS METERED

15. DISTRIBUTION RESERVOIR(S) TOTAL CAPACITY ______ GALLONS

16. DOH SOURCE NUMBER	17. SOURCE NAME	18. SOURCE CATEGORY								19. USE			20.	21. TREATMENT					22. WELL DEPTH	23. SOURCE CAPACITY	24. SOURCE LOCATION				SWTR EVALUATION VOC EVALUATION
	LIST UTILITY'S NAME FOR SOURCE. IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S ID# AND NAME USING FOLLOWING FORMAT: XXXXXX / NAME EXAMPLE: 77050Y / SEATTLE	WELL	WELL FIELD	SURFACE	SPRING	RANNEY / INF. GAL.	INTERTIE	PURCHASE TREATED	PURCHASE UNTREATED	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	OTHER	(FEET)	(GPM)	1/4, 1/4 SEC.	SEC. NO.	TWP	RNG.	
S10	CASCADE VIEW WELL	X								X			Y	X					540	110	NE/NW	24	25N	06E	

MINIMUM REQUIRED BACTERIOLOGICAL SAMPLING SCHEDULE

25.	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

APPROVED SERVICES (PER PLANS) | DATE OF LAST SANITARY SURVEY | BY DOH | LHD

SYSTEM IN CRITICAL WATER SUPPLY SERVICE AREA? YES NO | GW MGMT AREA? YES NO | FOR LHD USE ONLY

EFFECTIVE DATE RETRO. CHANGES | SIGNATURE OF DOH REVIEWER | DATE

* USE HEAVY PENCIL
DO NOT WRITE IN SHADED AREAS

AM Test
14603 NE 37th St
Redmond WA 98052

Department of Social and Health Services
Division of Health
PUBLIC HEALTH LABORATORIES
1610 N.E. 150th St., Seattle WA 98155

(FILE)

SEE BACK
FOR INSTRUCTIONS

WATER SAMPLE INFORMATION FOR INORGANIC CHEMICAL ANALYSES

USE THIS FORM FOR THE COMPLETE CHEMICAL ANALYSIS ONLY

38294

LAB. NUMBER	DATE RECEIVED	DATE COLLECTED	COLLECTED BY:
5 1B472	[illegible] 88	08 19 88	R. LILLEJORD 9- Telephone (206) 222-7003

SYSTEM I.D. NO.	SYSTEM NAME	SYSTEM CLASS (circle one)	COUNTY
419958	CASCADE VIEW WATER DISTR	[✓ 1] 2 3 4	KING

SOURCE TYPE
___ 1. Surface X 3. Well
___ 2. Spring ___ 4. Purchase

SOURCE NO. (Well No.) 01

IF SOURCE IS LAKE OR STREAM ENTER NAME N/A

THIS SAMPLE WAS TAKEN
☑ Before Treatment
☐ After Treatment

IF SAMPLE WAS DRAWN FROM DISTRIBUTION SYSTEM IT WAS COLLECTED FROM SYSTEM AT: (Address) N/A

IF TAKEN AFTER TREATMENT WAS IT ___ FILTERED ___ FLUORIDATED
___ CHLORINATED ___ WATER SOFTENER: TYPE USED ___

REMARKS: (Water quality problems, address for additional copies, etc.)

SEND REPORT TO

L & R SYSTEMS, INC.
~~P. O. BOX 1027~~
FALL CITY, WA 98024

FEES ARE CHARGED FOR CHEMICAL TESTING
A fee schedule is available from this department.

PARTY TO PAY FOR FEE FOR SERVICE TESTING

Denny Lillejord
Signature (Required) (Print Full Name & Address)

CASCADE VIEW WATER DIS.
Name
P.O. Box 97
Street
FALL CITY WA. 98024
City Zip Code
Telephone: (206) 222-7003
Area Code

LABORATORY REPORT

(DO NOT WRITE BELOW THIS LINE)

TESTS		*MCL	LESS THAN <	RESULTS	UNITS	Compliance YES	Compliance NO	CHEMIST INITIALS
rsenic	As	0.05*		0.011	mg/l	✓		JR
ium	Ba	1.0*	<	0.25	mg/l	✓		KF
admium	Cd	0.01*	<	0.002	mg/l	✓		KF
omium	Cr	0.05*	<	0.010	mg/l	✓		KF
	Fe	0.3	<	0.25	mg/l	✓		KF
Lead	Pb	0.05*	<	0.010	mg/l	✓		JR
nganese	Mn	0.05	<	0.010	mg/l	✓		KF
Mercury	Hg	0.002*	<	0.010	mg/l	✓		KF
enium	Se	0.01*	<	0.005	mg/l	✓		KF
ilver	Ag	0.05*	<	0.010	mg/l	✓		KF
lium	Na		<	10	mg/l	✓		KF
ardness				67	mg/l AS CaCo3	✓		KF
nductivity		700		170	Micromhos/cm 25° C	✓		KT
bidity		1.0*		0.1	NTU	✓		KT
Color		15.0	<	5.0	Color Units	✓		KT
oride	F	2.0*		0.9	mg/l	✓		EL
Nitrate	N	10.0*	<	0.2	mg/l	✓		EL
oride	Cl	250	<	10	mg/l	✓		EL
ulfate	SO4	250			mg/l			
		500			mg/l			
opper	Cu	1.0		.	mg/l			
	Zn	5.0		.	mg/l			

DATE OF FINAL REPORT: 8-31-88

LABORATORY SUPERVISOR
(Name or Initials)
GLT Dail

CHARGE: C

REMARKS:
pH = 8.17

*MCL is the Maximum Contaminant Level Allowed * Primary Standard

Ground Water Contamination Susceptibility Assessment Survey Form

Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system.
Photocopy as necessary.

PART I: System Information

Well owner/manager : Sammamish Plateau Water & Sewer District

Water system name : Sammamish Plateau Water & Sewer District

County: King

Water system number: 409009

Source number: New Replacement Well (Replaces Original Well 13 source number SO9

Well depth: 949 (ft.) (*From WFI form*)

Source name: Well 13R

WA well identification tag number: AAS–174

Number of connections: 14358

Population served: 48,036

Township: 25N

Range: 06E

Section: 12

1/4 1/4 Section: SW1/4 of the NW1/4

Latitude/longitude (if available): 47.667 / -121.990
How was lat./long. determined?

______ global positioning device ________ survey _____ topographic map
x other: Online King County imap - http://www.metrokc.gov/gis/mapportal/iMAP_main.htm

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 01 / 31 / 06 month/day/year

last reconstruction: __ / __ / __ month/day/year

______ information unavailable

2) Well driller: Stephen J Schneider – Schneider Equipment Inc.

21881 River Road NE

St. Paul, Oregon 97137

__ well driller unknown

3) Type of well:

_x_ Drilled: _x_ rotary __ bored __ cable (percussion) _ Dug

__ Other: __ spring(s) __ lateral collector (Ranney)

__ driven __ jetted __ other:

Additional comments: ______

4) Well report available? _x_ YES (attach copy to form) __ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: 750 (limited to 200 gpm by current water right) (gallons/min)

Source of information: Replacement Well 13R Construction and Testing Report (CDM, 2006)

If not documented, how was pumping rate determined? ______

_ Pumping rate unknown

6) Is this source treated?

If so, what type of treatment:

_x_ disinfection _x_ filtration __ carbon filter __ air stripper __ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

Water is chlorinated and filtered to remove Manganese and Arsenic

7) If source is chlorinated, is a chlorine residual maintained: _X_ YES __ NO

Residual level: minimum 0.3 ppm free after the filters (*At the point closest to the source.*)

PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

__ < 20 ft __ 20–50 ft __ 50–100 ft __ 100–200 ft _X_ >200 ft

__ information unavailable ('<' *means less than;* '>' *means greater than*)

2) Depth to ground water (static water level):

__ < 20 ft __ 20–50 ft __ 50–100 ft _X_ >100 ft

__ flowing well/spring (artesian)

How was water level determined?

__ well log _X_ other: Measured to within 0.01 ft with electronic sounding device

_ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

_______ psi (pounds per square inch)
or
_______ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source: __ YES __ NO

5) Wellhead elevation (height above mean sea level): 640 (ft)

How was elevation determined? _X_ topographic map __ Drilling/Well Log __ altimeter

__ other: ____

___ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

_X_ evidence of a confining layer in well log

___ no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the **bottom** of the **lowest confining layer**? _X_ YES __ NO

__ information unavailable

7) Sanitary setback:

_X_ < 100 ft* __ 100–120 ft __ 120–200 ft __ > 200 ft

* if less than 100 ft describe the site conditions:

Well site is about 90 feet from the north fence line that is 10 feet within the property boundary. The proposed 90 ft protective radius was allowed by King County Health Department due to the deep (810 ft) surface seal

8) Wellhead construction:

_X_ wellhead enclosed in a wellhouse

_X_ controlled access (describe): The well will be locked in a wellhouse that is monitored via telemetered security systems. The wellhouse will be inside a locked fence.

__ other uses for wellhouse (describe):

__ no wellhead control

9) Surface seal:

__ 18 ft

__ < 18 ft (no Department of Ecology approval) (*'<' means less than*)

__ < 18 ft (Approved by Ecology, include documentation)(*'<' means less than*)

_X_ > 18 ft ('>' *means greater than*)

__ depth of seal unknown

__ no surface seal

10) Annual rainfall (inches per year):

__ < 10 in/yr __ 10–25 in/yr _X_ > 25 in/yr

PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: 73,000,000 (gallons)

How was this determined?

__ meter

__ estimated: __ pumping rate (______________________)

__ pump capacity (______________________)

X other: Water Right

2) "Calculated Fixed Radius" estimate of ground water movement:
(see Instruction Packet)

6 month ground water travel time : 332 (ft)

1 year ground water travel time : 470 (ft)

5 year ground water travel time: 809 (ft)

10 year ground water travel time: 1,144 (ft)

Information available on length of screened/open interval?

X YES __ NO

Length of screened/open interval: 95 (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary? __YES X NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary? __ YES X NO (mark and identify on map).

Comments: ____

____

____

PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

	6 month	1 year	5 year	unknown
likely pesticide application				X
stormwater injection wells				
other injection wells (See Comments)	X			
abandoned ground water well				
landfills, dumps, disposal areas				
known hazardous materials clean-up site				
water system(s) with known quality problems				
population density > 1 house/acre				
residences commonly have septic tanks			X	
Wastewater treatment lagoons				
sites used for land application of waste				

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (*Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.*)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

The Wellhead Protection Program for Plateau and Cascade View wells Report prepared in June 24, 1998

for the Sammamish Plateau Water & Sewer District discussed the ground water flow for the Plateau area wells

which includes original Well 13 in Zone IV. The top of Zone IV occurs at elevations of approximately 340 to 500 feet below sea level.

The Risk assessment for Well 13 in this report was identified as low due to the depth of the aquifer and the thickness of the confining layers above the top of this aquifer (>500 ft).

The District may pursue UIC registration for original Well 13 to be used as a recharge well as

part of the Cascade View Aquifer System ASR project. Potable system groundwater is used for the injection source.

2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions:
(Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l)	YES	NO
Results greater than MCL		X
< 2 mg/liter nitrate	X	
2–5 mg/liter nitrate		
> 5 mg/liter nitrate		
Nitrate sampling records unavailable		

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)	YES	NO
Results greater than MCL or SAL		X
VOCs detected at least once		X
VOCs never detected	X	
VOC sampling records unavailable		X

C. EDB/DBCP:	YES	NO
(EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)		
EDB/DBCP detected below MCL at least once		
EDB/DBCP detected above MCL at least once		
EDB/DBCP never detected		
EDB/DBCP tests required but not yet completed		
EDB/DBCP tests not required	X	

D. Other SOCs (Pesticides):	YES
Other SOCs detected (pesticides and other synthetic organic chemicals)	
Other SOC tests performed but none detected (list test methods in comments)	
Other SOC tests not performed	X

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ____________________________________

____

____

____

E. Bacterial contamination: YES NO

Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records)..____ __X_

Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.......____ __X__

Source sampling records for bacteria unavailable ____

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for theses sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

__ YES _X_ NO

Describe with references to map produced in Part IV:

____

____

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

__ YES _X_ NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

_X_ YES __ NO

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

__ YES _X_ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs? YES

a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...

	YES	NO	unknown
< 6 month travel time	___	_X_	____
6 month–1 year travel time	___	_X_	____
1–5 year travel time	__	_X_	____
5–10 year travel time	___	_X_	____

b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...

	YES	NO	unknown
< 1 year travel time	_X__	___	____
1–5 year travel time	___	___	____
5–10 year travel time	___	___	____

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

____

____

Suggestions and Comments

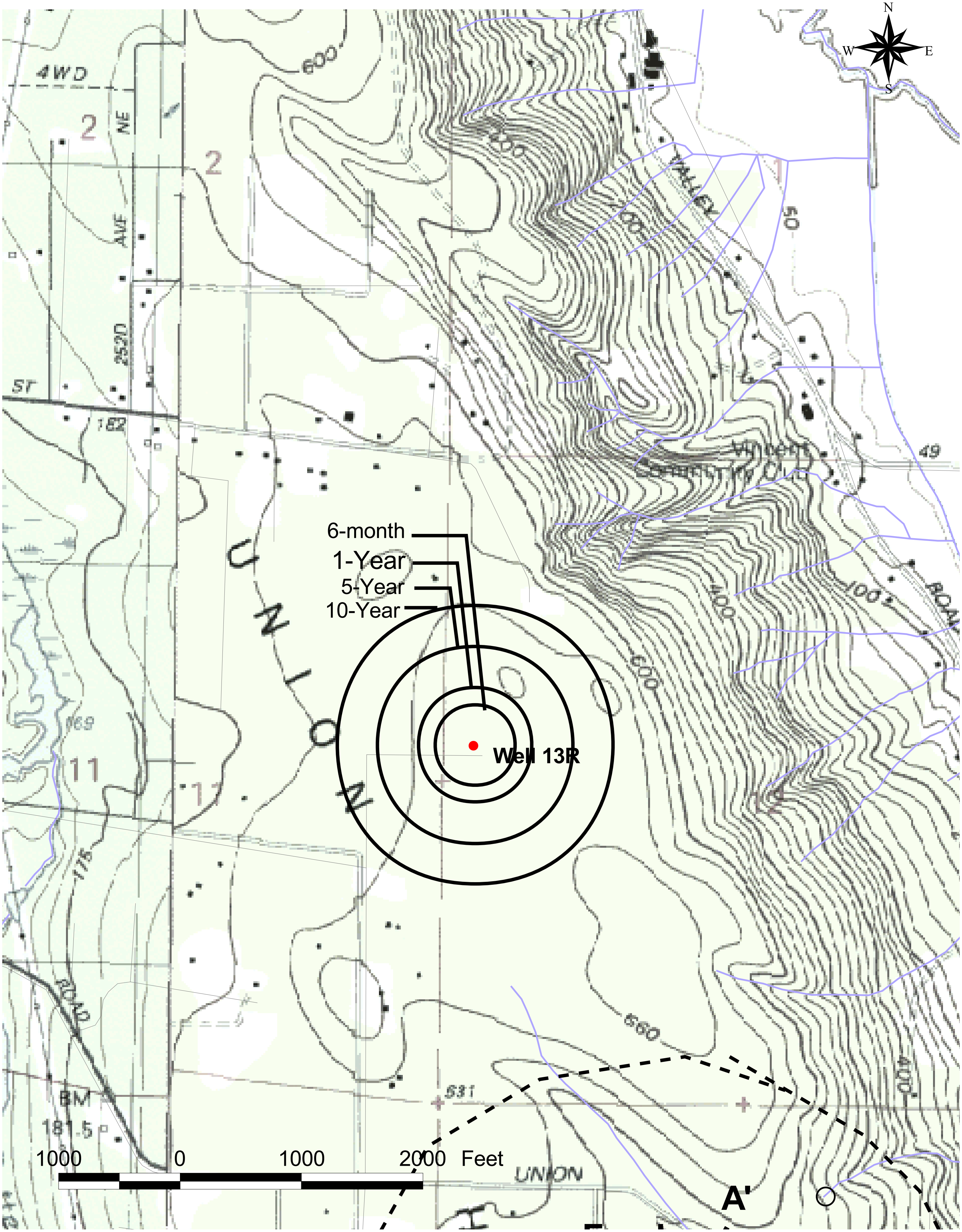
Did you attend one of the susceptibility workshops? __ YES _X_ NO

Did you find it useful? __ YES __ NO

Did you seek outside assistance to complete the assessment? _X_ YES __ NO

- -

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.



CDM

Sammamish Plateau Water and Sewer District
Well 13R Calculated Fixed Radius Map

Figure A-1