DRAINAGE ANALYSIS
FOR

Anthony's Place
5775 Commercial Street
Salem, Oregon

April 5, 2022

MULTI/TECH
ENGINEERING SERVICES, INC.

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INTRODUCTION

Anthony's Place is a proposed development located on Wiltsey Road at 5775 Commercial Street in Salem, Oregon. The property is bound on the west side by Waln Creek, on the north and east side by existing commercial development, and on the south side by Wiltsey Road. The total property is approximately 2.93 acres in size and drains to Waln Creek, which flows along the west and south sides of the property. A smaller portion of the property is to be developed. The area shown in in aerial in ORANGE is the portion of the property with no previous development and is approximately 2.09 acres.

Figure 1: Aerial image of the property with the portion of the property that will contain the new development shown in ORANGE.

Of the 2.09 acres, approximately 1.39 acres of it will be developed. The proposal is for the construction of a building, 108 parking stalls, 2 trash compactors, and associated drive aisles and sidewalks. The remaining approximate 0.70 acres contains Waln Creek and the area adjacent which is not planned to be developed. The areas previously developed and not proposed for development are not included in the analysis, since the stormwater is not directed to the proposed stormwater system.

The area for the development is currently covered in gravel.

EXISTING CONDITIONS

The existing property is surrounded by commercial development to the north and east, Waln Creek to the west, and Wiltsey Road to the south. Vegetation exists along the creek, along the west and south border. The remaining property is covered with gravel. No offsite stormwater flows onto the proposed property.

The portion of the site that is to be developed is flat, with an existing ground elevation of 397 around the footprint of the proposed building. All of the topography for the site occurs towards the creek, with about 8 feet of elevation difference between the top of bank and the bottom of the channel.

Preliminary soils information was obtained from the Natural Resource Conservation Services Web Soil Survey (WSS) (shown in Figure 2). The WSS shows two types of soil on the property: McAlpin silty clay and Waldo silty clay. The majority of the property is Waldo silty clay, with most of the McAlpin silty clay towards the creek. Waldo silty clay is designated Hydrologic Soil Group (HSG) C/D and McAlpin silty clay is HSG C. For the purposes of the design, HSG C will be used, as that will give a more conservative predeveloped rate.

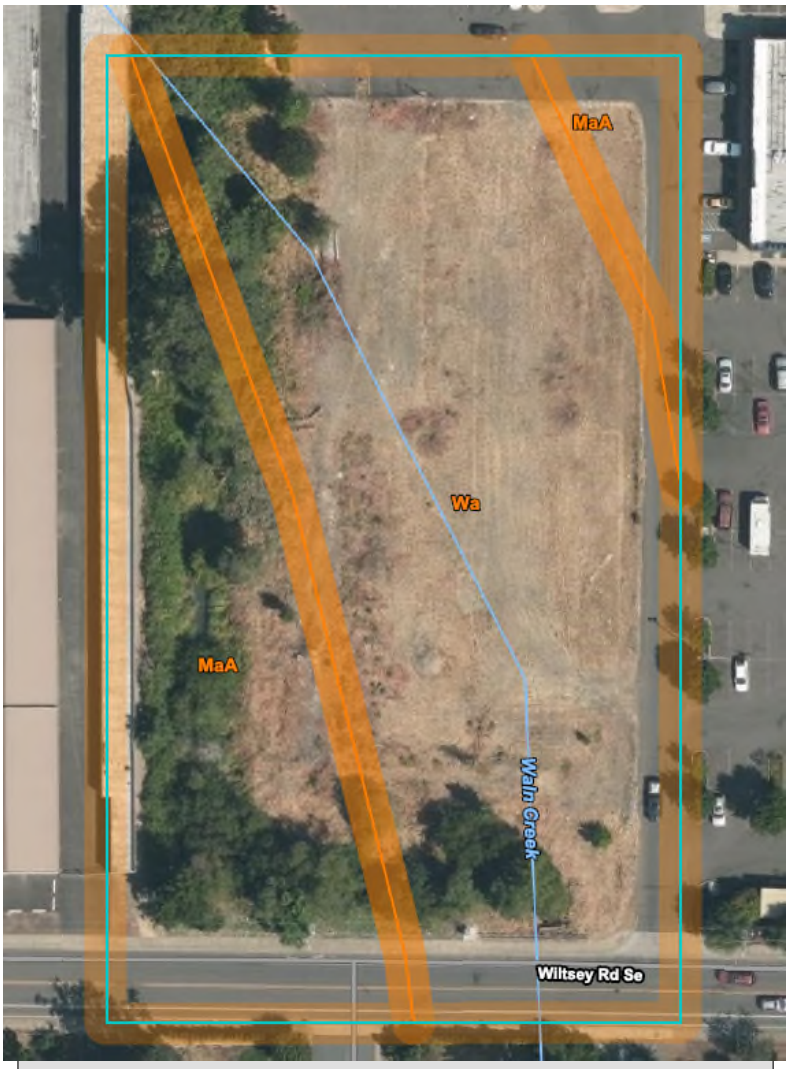
There are twenty existing trees on the property. All of them are proposed to be saved. There are no White Oaks within the project boundary. Existing vegetation along the creek is to be maintained. No development is proposed to cross Waln Creek.

Stormwater from this site will drain to Waln Creek, in the same manner it currently drains.

Water quality and quantity are not required, as the existing ground under the proposed development will not go down to native soil for more than 10,000 square feet.

Well Logs obtained from the Oregon Water Resources Department Well Report Query located along Woodside Drive recorded static water levels over 60 feet below the ground surface. The wells are attached in Appendix A. The location of these wells is immediately adjacent to Waln Creek, similar in proximity to the creek as the subject property. Based on this information, groundwater is not expected to be a concern in this area.

The small parcel size, location of Waln Creek through the site on the west and south side, as well as limited access (partially due to Waln Creek) are significant site constraints for the project. Given that the majority of the developable area is currently covered in gravel and will not be grading down to native soil for more than 10,000 square feet, no water quality or detetion is required. Even if water quality were required, GSI would not be feasible.



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MaA	McAlpin silty clay loam, 0 to 3 percent slopes	1.0	36.8%
Wa	Waldo silty clay loam	1.8	63.2%
Totals for Area of Interest		**2.8**	**100.0%**

Figure 2: NRCS WSS results for property

EXPLANATION OF DESIGN

Section 4.2(a)(2) specifies that "…Non-SFR [Single Family Residential] projects consisting of less than 10,000 square feet of new or replaced impervious surface to provide stormwater flow control or general stormwater treatment."

Figure 3 below shows the project site in 2005, prior to any development at or adjacent to the site (The T-Mobile building was not there, that was added by Google Earth). In 2008, the site was prepared for development, as can be seen in Figure 4. The site was prepped and rocked, with a building pad prepared. The 2008 recession halted the final construction for the site.

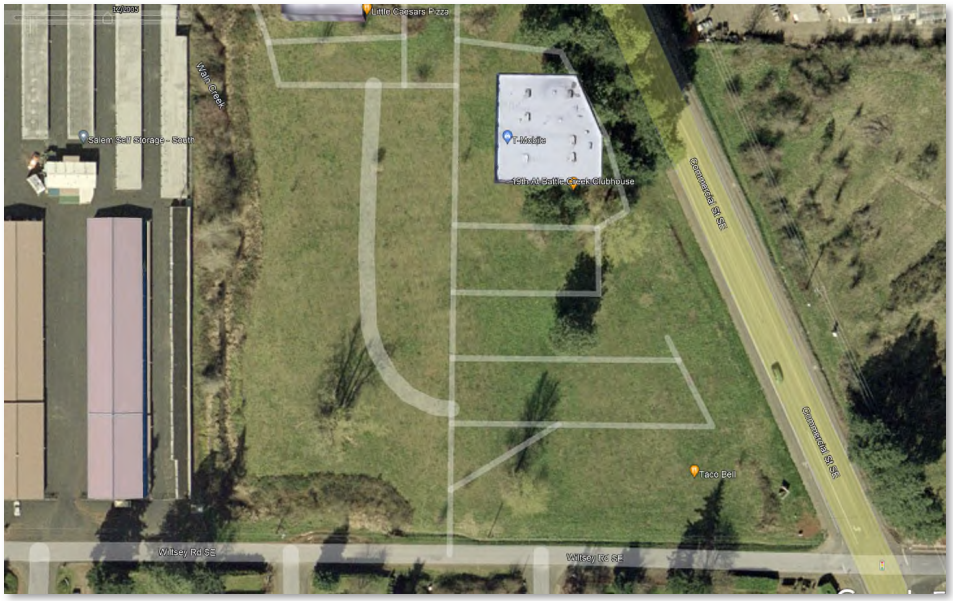


Figure 3: Aerial picture of project site in 2005

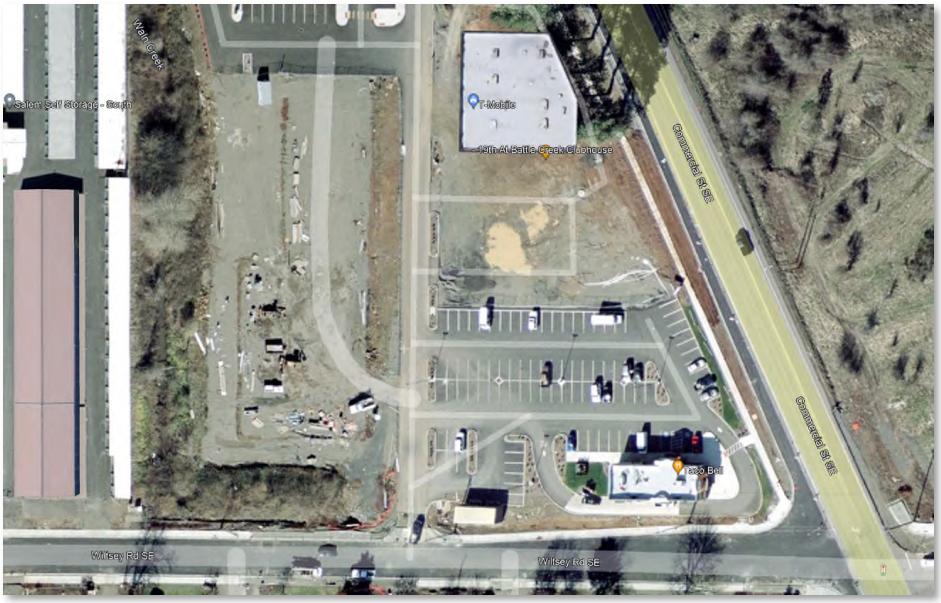


Figure 4: Aerial picture of project site in 2008.

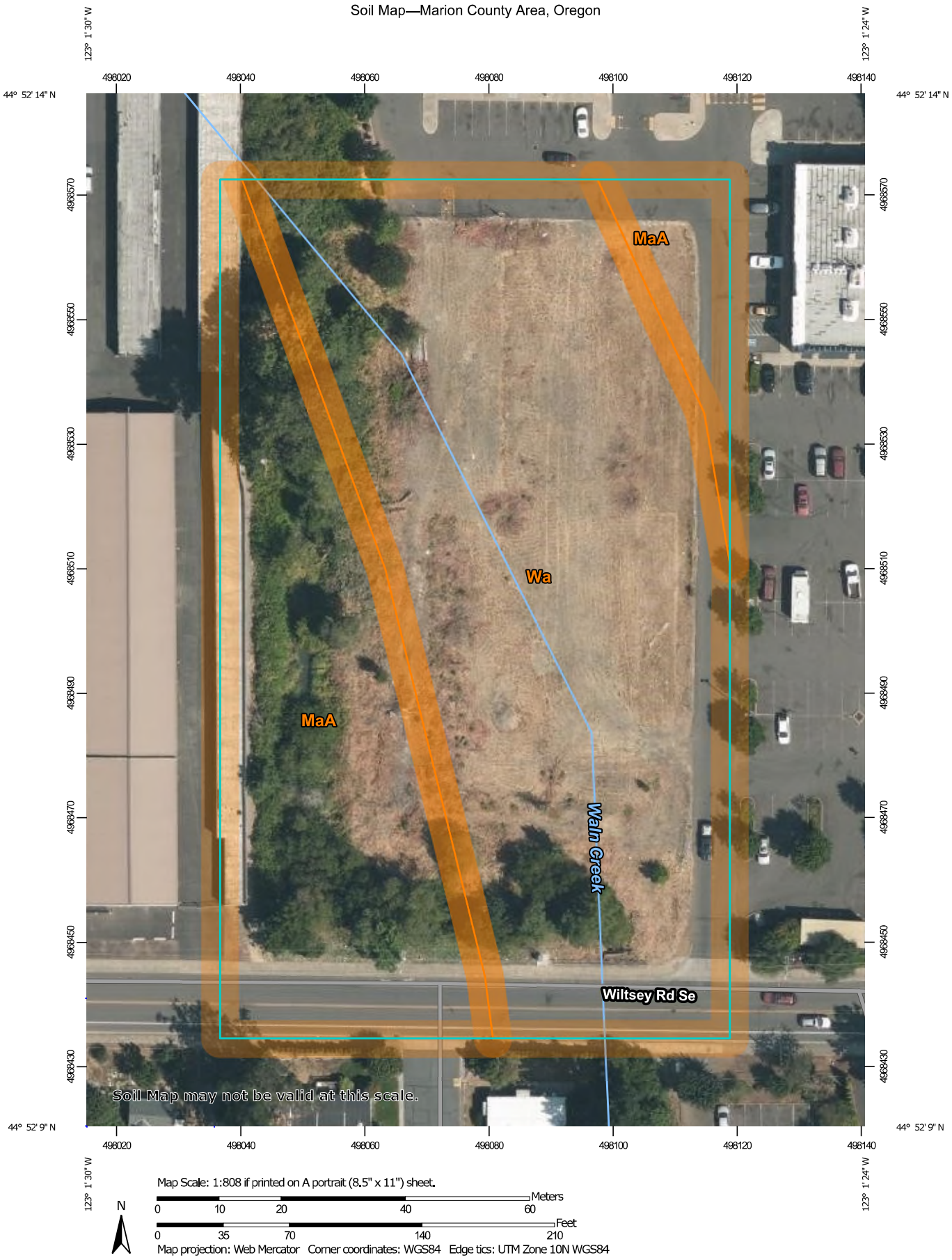
When Kuebler Boulevard between Commercial Street and Skyline was constructed in the late 1970's, extra fill material was placed on this site. The creek was also relocated at the same time. Aerial images are not available, but Mark Grenz with Multi/Tech was one of the civil engineers for that project.

These aerial images along with the personal knowledge of the historical construction activity illustrate that the site, for all intents and purposes, has been developed. As of today, it is not in its undeveloped state. Infiltration facilities would be unsuitable. Stormwater has been flowing over compacted fill material for over forty years.

The proposed grading will not go down to “native” soil in an area greater than 10,000 square feet. To be more clear, grading activities will not go below the existing crushed aggregate. The site will be built at or above the existing grade.

CONCLUSION

Based on the presented information, the design falls under the “Non-SFR < 10,000 Square Feet” provision of the City of Salem Stormwater Design Standards. If there are any questions regarding this analysis or the design, please contact Natalie Janney at Multi/Tech Engineering by phone at (503) 363-9227 or via e-amil at NJanney@mtengineering.net.



Map Scale: 1:808 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Marion County Area, Oregon
Survey Area Data: Version 19, Oct 27, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 1, 2018—Aug 31, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MaA	McAlpin silty clay loam, 0 to 3 percent slopes	1.0	36.8%
Wa	Waldo silty clay loam	1.8	63.2%
Totals for Area of Interest		**2.8**	**100.0%**

Marion County Area, Oregon

MaA—McAlpin silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 24qd
Elevation: 250 to 1,000 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 190 to 210 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mcalpin and similar soils: 95 percent
Minor components: 2 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcalpin

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

H1 - 0 to 23 inches: silty clay loam
H2 - 23 to 65 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R002XC006OR - Stream Terrace Group
Forage suitability group: Moderately Well Drained < 15% Slopes (G002XY004OR)
Other vegetative classification: Moderately Well Drained < 15% Slopes (G002XY004OR)
Hydric soil rating: No

Minor Components

Waldo

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Marion County Area, Oregon
Survey Area Data: Version 19, Oct 27, 2021

Marion County Area, Oregon

Wa—Waldo silty clay loam

Map Unit Setting

National map unit symbol: 24rv
Elevation: 250 to 1,000 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 190 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Waldo and similar soils: 90 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Waldo

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: silty clay loam
H2 - 10 to 60 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: R002XC005OR - High Floodplain Group
Forage suitability group: Poorly Drained (G002XY006OR)
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Minor Components

Aquolls, very poorly drained
Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Marion County Area, Oregon
Survey Area Data: Version 19, Oct 27, 2021

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STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL I.D. # L N/A
START CARD # 125987

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number
Name Paul Pronenko
Address 5722 Woodside Dr SE
City Salem State OR Zip 97306

(2) TYPE OF WORK
☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☒ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☒ Other

(4) PROPOSED USE:
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 0 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE Diameter	From	To	Material	SEAL From	To	Sacks or pounds
			See # 12			

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	See # 12				☐	☐	☐	☐
Liner:					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
	See # 12					☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
	N/A		1 hr.

Temperature of water N/A Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By wh
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

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WATER RESOURCES DEPT.
SALEM, OREGON

(9) LOCATION OF WELL by legal description:
County Marion Latitude Longitude
Township 8-S N or S Range 3-W E or W. WM.
Section 14 NE 1/4 NW 1/4
Tax Lot 800 Lot Block Subdivision
Street Address of Well (or nearest address) 1588 Baxter Rd SE Salem OR 97306

(10) STATIC WATER LEVEL:
69 ft. below land surface. Date 6-7-00
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found N/A

From	To	Estimated Flow Rate	SWL
	N/A		

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
This 6 inch well was 124 ft Deep with a 69 foot Static water level. There was 20 ft. 4 inches of 6-inch Casing. The casing was perforated and cement pumped to fill Well 20 Sack Cement + 5% bentonite was used to Abandon this well			

Date started 6-7-00 Completed 6-7-00

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number 1703
Signed M. A. Amero Date 6-7-00

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1273
Signed Floyd G Sapp Date 6-7-00

ORIGINAL – WATER RESOURCES DEPARTMENT, SALEM, OREGON COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

MARI 58760

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL I.D. # L N/A

START CARD # 155936

Instructions for completing this report are on the last page of this form.

(1) LAND OWNER Well Number _____
Name Mark Rose
Address PO Box 4255
City Salem State OR Zip 97302

(2) TYPE OF WORK ☐ New Well
☐ Deepening ☐ Alteration (repair/recondition) ☒ Abandonment ☐ Conversion

(3) DRILL METHOD
☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud
☒ Other Pump hoist

(4) PROPOSED USE
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other _____

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☒ No
Depth of Completed Well 0 ft.
Explosives used: ☐ Yes ☒ No Type _____ Amount _____

BORE HOLE Diameter	From	To	SEAL Material	From	To	Sacks or Pounds
6 in	0	172	Cement	6	172	55
			Bentonite	2	6	2
			Soil	0	2	

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☒ Other Bentonite placed dry
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6 in	-2	52	.25	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s) unknown

(7) PERFORATIONS/SCREENS
☒ Perforations Method Mills knife
☐ Screens Type _____ Material _____

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
2	48	3/8 x 1 1/4	4 per ft			☒	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
	N/A		

Temperature of water N/A Depth Artesian Flow Found _____
Was a water analysis done? ☐ Yes By whom _____
Did any strata contain water not suitable for intended use? Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

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MAR 09 2005
WATER RESOURCES DEPT
SALEM, OREGON

(9) LOCATION OF WELL (legal description)
County Marion
Tax Lot 201 Lot _____
Township 8-S N or S Range 3-W E or W WM
Section 14 SW 1/4 SW 1/4
Lat ___ ° ___ ' ___ " or _____ (degrees or decimal)
Long ___ ° ___ ' ___ " or _____ (degrees or decimal)
Street Address of Well (or nearest address) 5851 Woodside Drive S Salem, OR. 97306

(10) STATIC WATER LEVEL
72 ft. below land surface. Date 2/23/05
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES
Depth at which water was first found N/A

From	To	Estimated Flow Rate	SWL
	N/A		

(12) WELL LOG Ground Elevation _____

Material	From	To	SWL
Pump was broke off from Top. Pump & Pipe fished out. Casing was perforated and Cement pumped in filling hole to -6 ft. Bentonite placed from 2 to 6 ft Casing cut off 2 ft below ground level.			

Date Started 2/23/05 Completed 2/25/03

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number 1629 Date 2-26-05
Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1273 Date 2/26/05
Signed Floyd Sippe

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER 06/16/2004