



August 16, 2022

Bruce White  
D.R. Horton  
11241 Slater Avenue Northeast, Suite 200  
Kirkland, Washington 98034

**RE: Groundwater Level Monitoring  
McAllister Springs  
2402 Marvin Road Southwest  
Lacey, Thurston County, Washington  
RGI Job No. 2022-004-2**

The Riley Group, Inc. (RGI) is pleased to present this report documenting groundwater level monitoring at the proposed McAllister Springs Site located at 2402 Marvin Road Southeast in Lacey, Washington as shown on Figure 1.

RGI oversaw the installation of monitoring wells MW-1, MW-2, MW-3, and WP-1 at the Site. Monitoring well locations are shown on Figure 2.

#### **Groundwater Level Monitoring**

Groundwater levels were monitored in monitoring wells MW-1, MW-2, MW-3, and WP-1 from January 2022 through April 2022 wet season. The highest/shallowest depth to groundwater levels are presented in Table 1 below:

**Table 1: Groundwater Levels**

Well	Seasonal High Depth to Groundwater Below grade (feet)
MW-1	5.75
MW-2	12.81
MW-3	16.26
WP-1	9.19

#### **Limitations**

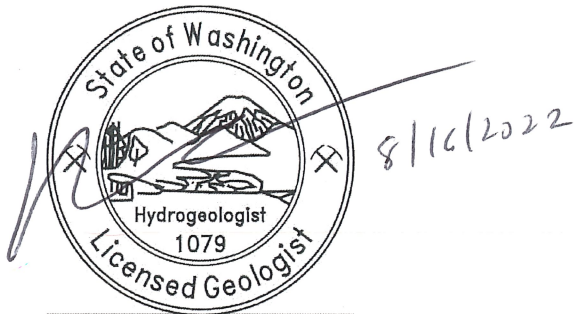
This report is the property of RGI, DR Horton, and its designated agents. Within the limits of the scope and budget, the groundwater monitoring was completed in accordance with generally accepted geotechnical engineering practices in the area at the time this report was issued. This groundwater level monitoring is intended for specific application to the proposed McAllister Springs development in Lacey, Washington, and for the exclusive use of DR Horton and its authorized representatives.

Please call us at (425) 415-0551 if you have any questions or need additional information.

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Respectfully submitted,

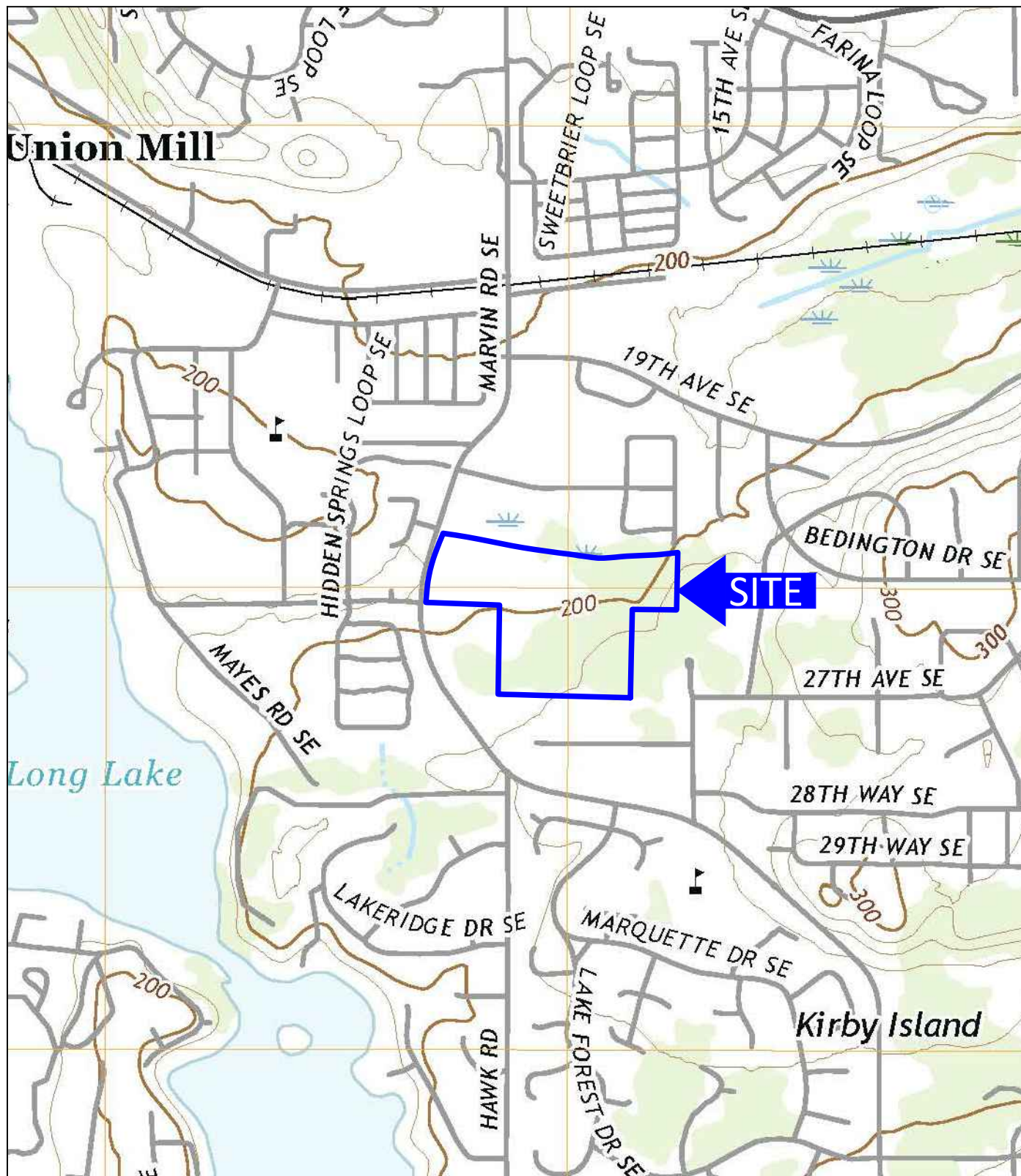
THE RILEY GROUP, INC.



David John Baumgarten

David J. Baumgarten, LHG  
Associate Hydrogeologist

Attachments:      Figure 1 Site Vicinity Map  
                            Figure 2 Geotechnical Exploration Plan  
                            Monitoring Well Logs (MW-1, MW-2, MW-3, WP-1)



USGS, 2020, Lacey, Washington  
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'



Corporate Office  
17522 Bothell Way Northeast  
Bothell, Washington 98011  
Phone: 425.415.0551  
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McAllister Springs

RGI Project Number:  
2022-004-1

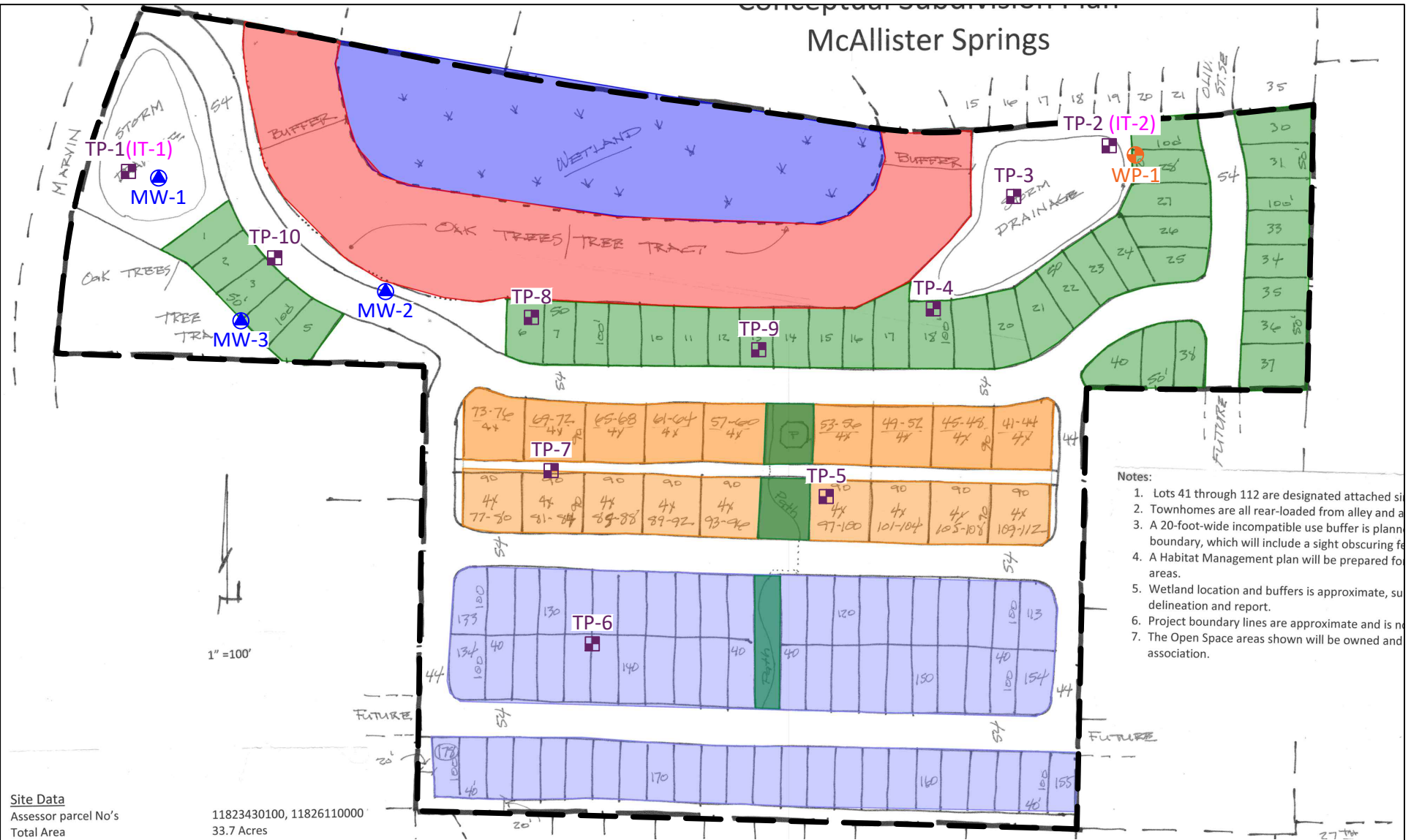
Site Vicinity Map

Figure 1

Date Drawn:  
03/2022

Address: 2402 Marvin Road Southeast, Lacey, Washington 98513

# McAllister Springs



- Notes:
1. Lots 41 through 112 are designated attached site.
  2. Townhomes are all rear-loaded from alley and a
  3. A 20-foot-wide incompatible use buffer is planned boundary, which will include a sight obscuring fence.
  4. A Habitat Management plan will be prepared for areas.
  5. Wetland location and buffers is approximate, see delineation and report.
  6. Project boundary lines are approximate and is not
  7. The Open Space areas shown will be owned and association.

- = Well point by RGI, 02/08/22
- = Test pit/Infiltration test (in magenta) by RGI, 02/01/22
- = Monitoring well by RGI, 01/19/22
- = Site boundary

Approximate Scale: 1"=200'



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McAllister Springs

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Geotechnical Exploration Plan

Figure 2

Date Drawn:  
 03/2022

Address: 2402 Marvin Road Southeast, Lacey, Washington 98513



Project Name: **McAllister Springs**Project Number: **2022-004-1**Client: **D.R. Horton**Boring No.: **MW-1**

Sheet 1 of 1

Date(s) Drilled: <b>1/19/2022</b>	Logged By: <b>JH</b>	Surface Conditions: <b>Grass, Scotch Broom</b>
Drilling Method(s): <b>Direct Push</b>	Drill Bit Size/Type: <b>2.25"</b>	Total Depth of Borehole: <b>12 feet bgs</b>
Drill Rig Type: <b>Track Rig</b>	Drilling Contractor: <b>Riley Group, Inc.</b>	Approximate Surface Elevation: <b>N/A</b>
Groundwater Level: <b>5.82 on 3/11/2022</b>	Sampling Method(s):	Hammer Data : <b>N/A</b>
Borehole Backfill: <b>Well Installed</b>	Location: <b>2402 Marvin Road Southeast, Lacey, Thurston County, Washington</b>	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	Moisture (%)
	0					TPSL		6" topsoil		
						GP		Tan to gray sandy GRAVEL with trace silt, medium dense, moist		
	5							Becomes water bearing		
	10							Becomes gray		
	15							Boring terminated at 12'		
	20									

Project Name: **McAllister Springs**Project Number: **2022-004-1**Client: **D.R. Horton**Boring No.: **MW-2**

Sheet 1 of 1

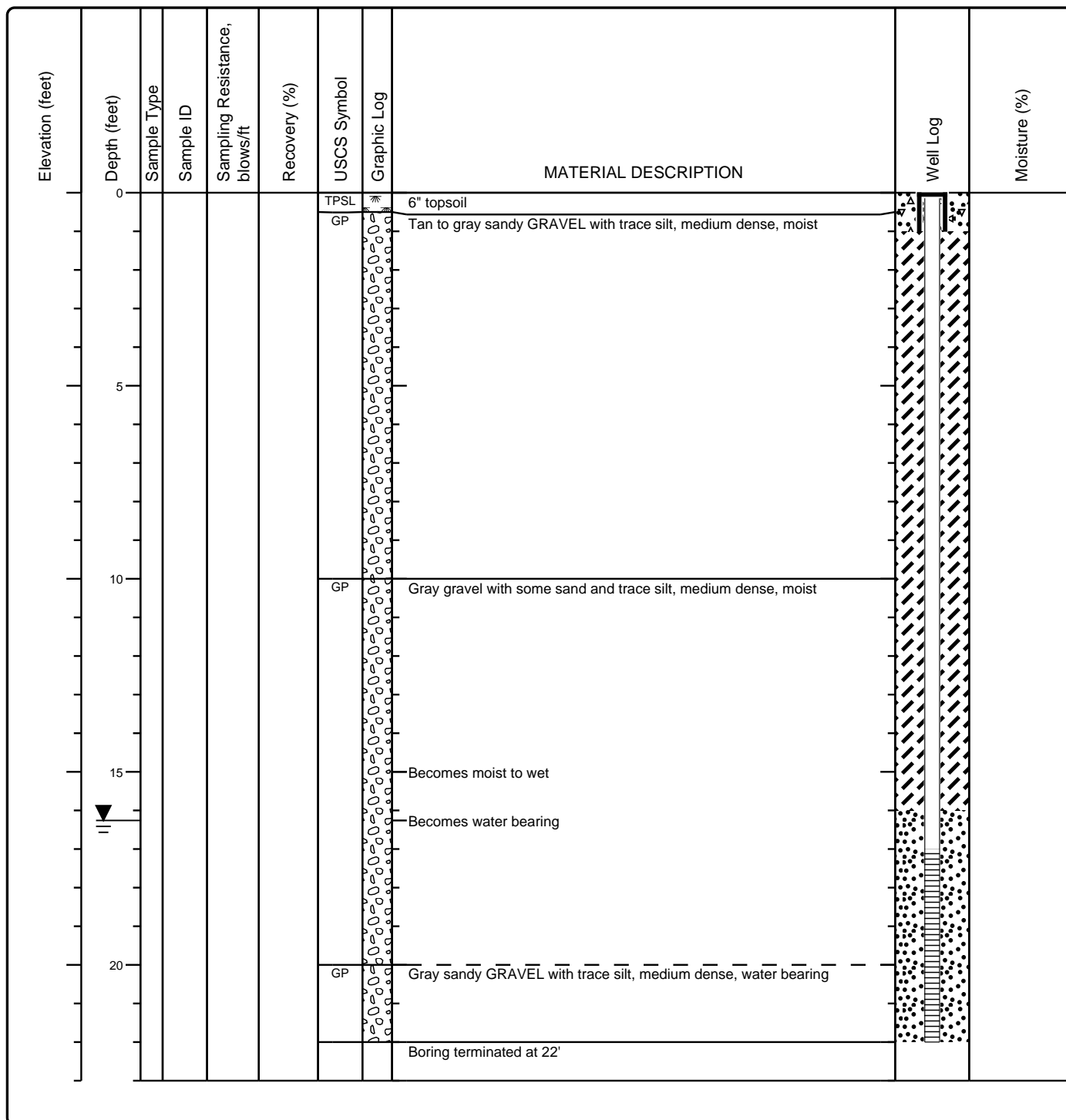
Date(s) Drilled: <b>1/19/2022</b>	Logged By: <b>JH</b>	Surface Conditions: <b>Grass, Scotch Broom</b>
Drilling Method(s): <b>Direct Push</b>	Drill Bit Size/Type: <b>2.25"</b>	Total Depth of Borehole: <b>20 feet bgs</b>
Drill Rig Type: <b>Track Rig</b>	Drilling Contractor: <b>Riley Group, Inc.</b>	Approximate Surface Elevation: <b>N/A</b>
Groundwater Level: <b>12.85 on 3/11/2022</b>	Sampling Method(s):	Hammer Data : <b>N/A</b>
Borehole Backfill: <b>Well Installed</b>	Location: <b>2402 Marvin Road Southeast, Lacey, Thurston County, Washington</b>	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	Moisture (%)
	0					TPSL		6" topsoil		
						GP		Tan to gray sandy GRAVEL with trace silt, medium dense, moist		
	5									
	10					GP		Gray GRAVEL with some sand and trace silt, medium dense, moist		
								Becomes water bearing		
	15									
	20							Boring terminated at 20'		

Project Name: **McAllister Springs**Project Number: **2022-004-1**Client: **D.R. Horton**Boring No.: **MW-3**

Sheet 1 of 1

Date(s) Drilled: <b>1/19/2022</b>	Logged By: <b>JH</b>	Surface Conditions: <b>Grass, Scotch Broom</b>
Drilling Method(s): <b>Direct Push</b>	Drill Bit Size/Type: <b>2.25"</b>	Total Depth of Borehole: <b>22 feet bgs</b>
Drill Rig Type: <b>Track Rig</b>	Drilling Contractor: <b>Riley Group, Inc.</b>	Approximate Surface Elevation: <b>N/A</b>
Groundwater Level: <b>16.26 on 3/11/2022</b>	Sampling Method(s):	Hammer Data : <b>N/A</b>
Borehole Backfill: <b>Well Installed</b>	Location: <b>2402 Marvin Road Southeast, Lacey, Thurston County, Washington</b>	



Project Name: **McAllister Springs**Project Number: **2022-004-1**Client: **D.R. Horton**Boring No.: **WP-1**

Sheet 1 of 1

Date(s) Drilled: <b>2/8/2022</b>	Logged By: <b>CN</b>	Surface Conditions: <b>Mixed Brush</b>
Drilling Method(s): <b>Test Pit</b>	Drill Bit Size/Type: <b>N/A</b>	Total Depth of Borehole: <b>10.5 feet bgs</b>
Drill Rig Type: <b>Mini Excavator</b>	Drilling Contractor: <b>Kelly's Excavating</b>	Approximate Surface Elevation: <b>N/A</b>
Groundwater Level: <b>9.19 on 3/11/2022</b>	Sampling Method(s):	Hammer Data : <b>N/A</b>
Borehole Backfill: <b>Well Installed</b>	Location: <b>2402 Marvin Road Southeast, Lacey, Thurston County, Washington</b>	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Moisture (%)
	0					TPSL		12" topsoil	
						SP		Light brown SAND with trace silt, medium dense, moist	
	5								
	10							Becomes water bearing	
	15							Test pit terminated at 10.5'	
	20								



Project Name: **McAllister Springs**

Project Number: **2022-004-1**

Client: **D.R. Horton**



## Key to Log of Boring Sheet 1 of 1

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	Moisture (%)
1	2	3	4	5	6	7	8	9	10	11

### COLUMN DESCRIPTIONS

- |  |   |
|--|---|
| <p><b>1</b> Elevation (feet): Elevation (MSL, feet).</p> <p><b>2</b> Depth (feet): Depth in feet below the ground surface.</p> <p><b>3</b> Sample Type: Type of soil sample collected at the depth interval shown.</p> <p><b>4</b> Sample ID: Sample identification number.</p> <p><b>5</b> Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.</p> <p><b>6</b> Recovery (%): Core Recovery Percentage is determined based on a ratio of the length of core sample recovered compared to the cored interval length.</p> | <p><b>7</b> USCS Symbol: USCS symbol of the subsurface material.</p> <p><b>8</b> Graphic Log: Graphic depiction of the subsurface material encountered.</p> <p><b>9</b> MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.</p> <p><b>10</b> Well Log: Graphical representation of well installed upon completion of drilling and sampling.</p> <p><b>11</b> Moisture (%): Moisture, expressed as a water content.</p> |
|--|---|

### FIELD AND LABORATORY TEST ABBREVIATIONS

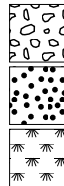
CHEM: Chemical tests to assess corrosivity  
 COMP: Compaction test  
 CONS: One-dimensional consolidation test  
 LL: Liquid Limit, percent

PI: Plasticity Index, percent  
 SA: Sieve analysis (percent passing No. 200 Sieve)  
 UC: Unconfined compressive strength test, Qu, in ksf  
 WA: Wash sieve (percent passing No. 200 Sieve)

### MATERIAL GRAPHIC SYMBOLS



Bentonite chips  
 Portland Cement Concrete



Poorly graded GRAVEL (GP)  
 Poorly graded SAND (SP)  
 Topsoil

### TYPICAL SAMPLER GRAPHIC SYMBOLS



Auger sampler  
 Bulk Sample  
 3-inch-OD California w/ brass rings



CME Sampler  
 Grab Sample  
 2.5-inch-OD Modified California w/ brass liners



Pitcher Sample  
 2-inch-OD unlined split spoon (SPT)  
 Shelby Tube (Thin-walled, fixed head)

### OTHER GRAPHIC SYMBOLS

- ▽ Water level (at time of drilling, ATD)  
 —▽ Water level (after waiting)  
 ↓ Minor change in material properties within a stratum  
 — — Inferred/gradational contact between strata  
 — ? — Queried contact between strata

### GENERAL NOTES

- Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.