

**A HYDROGEOLOGY REVIEW OF PRIVATE PROPERTY
AT**

**7085 BATTLE CREEK ROAD
SALEM, OREGON 97317**

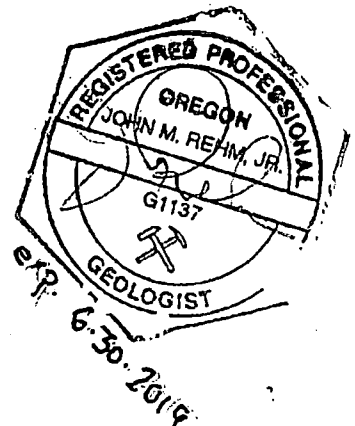
**YOUTH WITH A MISSION CAMPUS
T.8S/R3W- SECTION 25 NW/4 NE/4
Tax Lots 083W25B 00100, 00300, 00400, 00500
00600, 00700, 00800, 01000
MARION COUNTY**

**Prepared by REHM GEOLOGICAL
Salem, Oregon**

For

**Marion County Planning Department
Salem, Oregon**

June 21, 2018



**The YWAM Hydrogeology Review
7085 Battle Creek Road SE Salem, OR 97317
T.8S/R3W- SECTION 25 NW/4 NE/4**

Tax Lots 083W25B 00100, 00300, 00400, 00500
00600, 00700, 00800, 01000

EXECUTIVE SUMMARY

A Christian evangelical outreach training organization, Youth With A Mission, International seeks to increase residential use of its campus in the rural Salem Hills, south of Salem, Oregon. The campus population is mobile, with groups of students and some additional staff coming to the campus for months of classroom training and local church involvement and then going around the world for international outreach missions. The campus was a children's home before a 1978 purchase by YWAM. Water wells that provide water for the present use by the campus have been in operation since 1964. The children's home had few rural neighbors, as did YWAM for several years until development of Fir Tree Drive and then Deer Lake Court. The area may seem to be a competitive place for water, except for the existence of fortuitous and separate sources of groundwater. Geologic cross-sections show a large rock fold in a lower unit, the Marine Shale that separates the groundwater source areas. The major source of water for the YWAM campus is the split crest of the Battle Creek Anticline. Abundantly dependable water comes from a confined sandstone source that supplies shallow wells. A lifted Basalt aquifer lies above the valley on the west side of Battle Creek. It supplies the second YWAM water well and a vineyard irrigation well. A vertically-separated and very deep source supplies water to residents of residential areas near Deer Lake Court. It is in this setting that Youth With A Mission seeks more well water for expanding its outreach program.

John M. Rehm
Consulting Hydrogeologist
Rehm Geological
Salem, Oregon
Wednesday, June 21, 2018

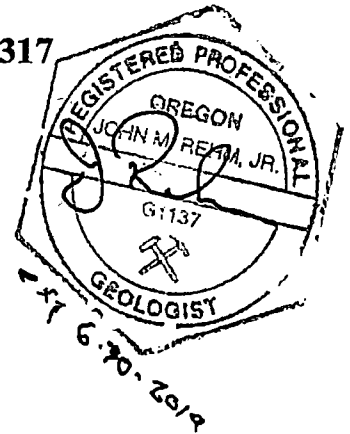


A HYDROGEOLOGY REVIEW OF PRIVATE PROPERTY FOR YOUTH WITH A MISSION

**7085 Battle Creek Road SE SALEM, OREGON 97317
T.8S/R3W- SECTION 25 NW/4 NE/4**

**Tax Lots 083W25B 00100, 00300, 00400, 00500
00600, 00700, 00800, 01000. Marion County**

**By REHM GEOLOGICAL, Salem, Oregon
June 21, 2018**



INTRODUCTION

This is a hydrogeology review for subdivision of private property in the Salem Hills, approximately five miles south of Salem, Oregon. The site is located south of the intersection of Battle Creek Road and Kuebler Boulevard where Battle Creek Road joins the open valley of Battle Creek. The aquifers that supply water for residential and irrigation use are basalt and shale bedrock. Since this is a rural area, the Marion County Planning Department requires a hydrogeology review, based on a rural zoning ordinance. The ordinance has been in effect for twenty years to prevent excessive residential development and to preserve groundwater supplies. The subject property is located at 7085 Battle Creek Road SE and is shown on Marion County Tax Map 083W25 in a collection of eight tax lots. The total parcel area is 681.42 acres. The campus owners and board of trustees plan to increase the temporary student population size from 130 to 450 students and to increase the proportionate use of the two water supply wells, accordingly. The population increases will be raised in steps, with living in double-wide temporary dorm buildings over a ten year period.

GEOGRAPHY

The Youth With A Mission campus is located in the Salem Hills in the center of the Willamette Basin between Salem and Turner, Oregon (Figure 1). The site is on the east side of the Salem Hills, near Battle Creek Road. The YWAM campus is

in the valley of Battle Creek after it joins Battle Creek Road and is divided by the creek. The area to the west is a tall ridge that is wooded with fir trees. The valley floor has a grove of oak trees and recreation fields. Tree cover begins again at Battle Creek Road and extends upward along gently sloping countryside into the Fir Tree Lane and Deer Lake Court residential areas.

Photographs from an automobile reconnaissance on May 24, 2018 show the physical features of the property and its surroundings (Figure 2). The inspection route is partially marked by arrows along the roadways of Figure 1. The day was clear and warm and visibility was excellent. Photograph No. 1 shows the shape of the valley of Battle Creek from the center of the open land on the east side of the YWAM campus. Photograph No. 2 shows the main YWAM well (right) and the center of the campus beyond the bridge over Battle Creek. A ledge of hard basalt is so hard that Battle Creek Road has to turn over and around it. Photograph No. 3 shows a sample of the chipped rock from the roadside. Three-quarter inch diameter blast holes were noticed in the east wall of the turn over the basalt outcropping. Photograph No. 4 shows a small well house in the northern neighborhood of Deer Lake Court.

Other observations during the May 24th field trip are that the route of Battle Creek Road turns around higher parts of rocky (basalt) ridges and then straightens out as it joins the open land on the east side of the creek valley between Valley Ridge Farm and the YWAM Campus. A general reconnaissance of the area revealed that the southern part of the hill on the east side of Battle Creek Road is raised the way that the higher south end of the Salem Hills rises above the Santiam River valley. This topographic similarity is because both hills are structurally lifted in the same tectonic manner.

WATER USE HISTORY

A review of located drilling logs indicates water use history (Table 1). The logs are collected in Appendix I. The first two wells were drilled in the area in 1959. One was a domestic well. The other was the first water well for a children's home, composed of small buildings and a pony stable. The Baby Louise Children's home would later become the YWAM campus. The second water supply well was

drilled for the children's home in 1964, up on the hill, across Battle Creek from the first well. A half- dozen domestic wells were drilled in the area. All the wells were shallow, averaging 150 feet deep and most were completed by a cable tool method. This method provided detailed information, but was slow. In 1974, the arrival of the air rotary drilling made it possible to have a deeper well in a few days of work. This kind of drilling provided the deep water wells for the houses along Fir Tree Road. It probably made housing on Deer Lake Court possible. The sixteen wells in that area produced more water than other water wells, averaging 10 or 15 gallons per minute versus 3 to 6 gallons per minute. After development of Deer Lake Court ended in 1986, new wells and homes filled in wooded lots. The last large scale development was a vineyard on the side of the weathered basalt hill, facing Interstate 5.

GENERAL GEOLOGY

The local landscape and other uplands surrounding the Willamette Valley are largely covered by Columbia River Basalt with patches of Marine Shale poking up through it (Thayer, 1934). There are touches of Willamette Silt, from the Recent Missoula Floods below the high water elevation of 400 feet. The first rock is Basalt of the Columbia River Basalt Formation. It is composed of six layers in the Salem Hills (NGS, 1997). Where the layers are 150 to 200 feet thick, water from the basalt is reliable for domestic use. Below the Basalt, is the Oligocene-aged fossiliferous Marine Shale. The Marine Shale was once the Pacific Ocean shoreline with extensive muddy bays and thin barrier beaches (Orr, Orr and Baldwin, 1992). In contrast to the Basalt, this formation is fairly stingy with groundwater, except in random places. Clams, sea snails, cockle shells and razor clams can be found among several small rock outcroppings and appear in water wells around Salem.

The land surface of the Salem Hills rises from an elevation of 200 feet in downtown Salem to 1000 feet above mean sea level at Prospect Hill on the southwest end. This sequence dips toward the northeast (Foxworthy, 1970). In more recent work, Rick Kienle noticed that the rock attitudes vary. Rock layering is flat, inclined or folded and broken with faults (NGS, 1997).

THE SPECIFIC GEOLOGY OF THE BATTLE CREEK VALLEY AREA

The Marion County Commission approved a manual to be used by licensed geologists, engineers or planners to evaluate if local aquifers can support additional development (Marion County Planning Division, 1998, revised 2005).

The elements of this method in applying Keinle's Sensitive Groundwater Overlay Method (NGS, 1997) are geological literature review, located water wells on a topographic map base, geological cross-sections, a review of groundwater water supply problems and a calculated water budget. The literature search and related efforts such as an area reconnaissance are described above this section.

Research is done with U.S. Geological Survey topographic map coverage, available from Cooke's Stationary Store in Salem, Oregon. Marion County documents assist in pinpointing water wells. These resources include on-line tax lot maps (Appendix II) and owner address information (Appendix III). Many water wells can be spotted from on-line Google Aerial photography that is updated often. Some well locations were observed during the site reconnaissance. Water well locations on the topographic map (Figure 1) indicate that there are two main water-bearing formations, the basalt (east side of Battle Creek) and the Marine Shale (east side of Battle Creek). Basalt wells are single spots on the west side of the Creek. Wells in Deer Lake Court are completed in the Marine Shale as indicated by the well spot being circled.

Geologic cross-sections show a fold; a peaked fold, called an anticline (Figure 3) and faults (Figure 4). The anticline is apparent on both figures. Figure 3 shows a massive sandstone unit in the Marine Shale. The top of the sandstone is 220 feet below the surface alongside Deer Lake Court in Well No. 15 and is sixty feet below the surface near Battle Creek. There are two causes; the rise of the top of the anticline and the drop in surface elevation between upper Deer Lake Court and the bottom of the valley.

WELL DEEPENINGS, WELL REPLACEMENTS AND OTHER CONDITIONS

Table 1 gives summary information of water well performances and well changes. A large group of deepened wells and deeper replacement wells can be an indication of a dropping water level and water-supply problems. The table should be used in combination with the location map (Figure 1). Geologic cross-sections show from where the well water is coming (termed, water-bearing zones). Drilling records (well logs), catalogued by number, corresponding to the map are in Appendix I.

There were four water well deepenings and one well abandonment. The first three water wells are located at Fir Tree Lane and the east side of Battle Creek Road. Well No. 3 was drilled deeper in 1987 and Well No. 5 was deepened in 1989. Well No. 19, about 600 feet southeast of Well No. 5 and nearer Battle Creek Road was deepened in 1982.

Well No 3, at the bottom of Fir Tree Drive, was deepened from 170 to 515 feet. Water discharges in the original well and the deepening were small, with the water-bearing zone being shifted from the shale unit of the Marine Shale Formation into the massive sandstone unit. The top of the massive sandstone is at 170 feet below the surface in that well and the water-bearing zone is between 476 to 491 feet. The driller gained a longer water column to provide security of maintaining the well yield.

Well No. 5, about 500 feet southeast of Well No. 3, was deepened to 475 feet from 310 feet. The original well produced four gallons per minute, and the second drilled identified the specific water bearing zone at a one foot thick interval in a larger five foot thick "rough spot in bore". He perforated his newly installed liner from 350 feet to 475 feet in "blue sandstone". As in Well No. 3, the driller of Well No. 5 gained a longer water column in the deepening to provide 20 gallons per minute and maintain the water well yield.

Well No. 19, near the east side of Battle Creek Road and 1000 feet south of Fir Tree Drive, was deepened from 133 feet to 338 feet in 1982. This was a shale well that was deepened for a new owner.

Well No. 57, on the hill on the other side of Battle Creek and on the north side of Delaney Road, was deepened from 145 feet to 205 feet. This was a basalt well that was deepened for a new homeowner in 1998.

The original well log is Well No. 63 that was drilled by Harlan Miller in 1966. It was filled in by Sippel Well Drilling in May of 2014 . Reports of the well abandonment are clearly recorded with OWRD (Well Nos. 63a and 63b). This uncased well was abandoned to seal off a potential vertical drain way from the basalt into the shale and to protect the shallower Basalt well. Sippel Well Drilling found 50 gallons per minute from the basalt in Well No. 35 in the same year on the same property. Local residents were very impressed with the high discharge of the well.

Well No. 16 was drilled for Ray Pierpoint before the 1982 partitioning and development of the Deer Lake Court modern subdivision. The well location was specifically noted on the log by Duffield Brothers drilling and by the coordinates, can be located in the back of 3411 Deer Lake Court. The coordinates are imprecise. It was drilled in 1950 to an original unrecorded depth of 90 feet and may have been completed into the thin and weathered Basalt cover that has been only useful for domestic water in very few places. Upon going dry in 1967, the well was deepened by Duffield Brothers into claystone.

There are small three to five acre pockets of wells that were drilled and no water was found. The dry well clusters are due to geological conditions there the massive sandstone is too tight to deliver water. The dry wells were drilled at the beginning of development of the lower (south) and upper (north) ends of Deer Lake Court.

In 2015, Rehm Geological was called to measure late summer water levels by the Rural Battle Creek Road Association (RBCRA), the homeowners association that manages road repair and environmental issues among residents on the east side of Battle Creek Road and along Delaney Road, east of Battle Creek. A bad drought was in effect and the RBCRA was concerned about planned water use by Mandava Family Vineyards, east of the residential areas. Water level measurements were taken, the paperwork checked by RBCRA and forwarded to the Oregon Water Resources Department for review and posting in their interactive monitoring well network. Water levels were measured in wells at eighty homes around the RBCRA area between August and October of that year. Some of the water levels were deeper in the northern part of Deer Lake Court and OWRD installed an experimental automatic, internet- accessible recording device in Well No. 43. The agency recorded resting and pumping water levels and followed the water level changes with their computers for a few months.

The water level in Well No. 43 was very deep, being recorded at and below the deep static level on Figure 3. The wells along Fir Tree Drive and Deer Lake Court

have been in use since 1983. Upper Fir Tree Drive has the advantage of wells producing from basalt which stores and yields water three times better than the Marine Shale (NGS, 1997). The water wells on lower Fir Tree Drive and Deer Lake Court have water wells that draw only from the Marine Shale except in two or three cases. Water levels dropped five or ten feet per year as evidenced by initial static water levels in Well Nos. 15, 43 and 45 on Figure 3.

The winter and summer of 2015 was a time of very low precipitation and lack of snowpack in 2015. Hoodoo Ski Area was open that year for only part of the regular winter recreation season. As a result of the lack of annual precipitation and the very hot summer, local water levels in the RCRA area were drawn down more deeply and several areas of water level decline occurred on Fir Tree Drive, Deer Lake Court and on the north side of Delaney Road. By April of 2016, a wet winter caused a significant rebounding in local well water levels.

WATER BUDGET

The water budget is Table 2 and the study area covers 681.42 acres, per the Water Use Inventory (Figure 5). The proportions of geologic formation coverage in the study area are measured with a compensating polar planimeter on Figure 1 and calculations on Table 2a. There are 293 acres of Marine Shale, 387 acres of Basalt and 1 acre of Alluvium. The alluvium is assigned the same recharge number with the basalt and its coverage is rolled into the total Basalt area. Mean annual precipitation is 48 inches (Woodward and Gannett, 1998). Annual recharge for the Marine Shale is 10 percent, owing to the Marion County deepening threshold not being exceeded (Marion County Planning, 1999, 2005). Basalt recharge is 22% of annual precipitation for a rural residential area.

The water use inventory indicates that there are 86 tax lots in the area. Domestic use of 525 gallons per day is assigned to each of these lots, however YWAM has been among the higher capacity water users since 1959, when the campus was a children's home. The campus also distributes piped water to four homes on the east side of Battle Creek. YWAM's water use has been metered and recorded for many years. The representative metering period is 2012 to 2017 that spans the 2015 drought year. YWAM used 19.35 acre feet of water in 2012. In 2015 to 2017 its development department traced and fixed water leakage from pipes and above-ground utilities. 2016 useage was measured at 8.67 Acre Feet, but we recall from memory that that was a year of much precipitation, therefore a median value of 14.01 well be used. Permitted water use for drip irrigation of the Winemakers

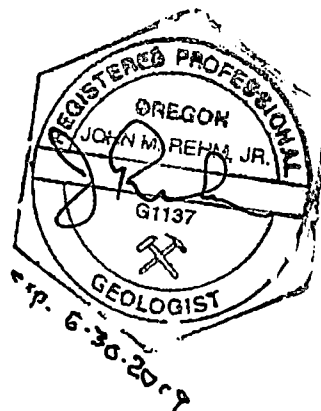
LLC vineyard is 1.0 Acre Foot of water per acre per year. The water budget uses that rate, although the metered and annually reported rate is closer to one half of an acre foot per year.

The YWAM plan is to increase resident use from 130 students to 461 residents. Water use will increase by 342%. Presently the water system is operating the main well in three one hour cycles at 100 gallons per minute to pump water up to a water tank on the ridge above the campus buildings on the west side of Battle Creek. The well is rested for two hours. The main well, Well No. 54, runs year round and the second well, Well No. 55, joins the water supply system in the summer. Use of Well No. 54 will be incrementally increased as the resident population grows in the campus area. A new water supply well is being considered to contribute to the campus water supply. The STOP value of a water budget in a Marion County Hydrogeology Review is 10 per cent of remaining water in a water budget. The water budget passes with 43.4 % of available annual groundwater recharge remaining per year.

CONCLUSIONS

The findings of this report indicate that there is enough information to obtain a clear picture of the hydrogeologic setting and available groundwater supply. The area is now well developed enough around the YWAM campus that a clear picture is presentable from available drilling and monitoring information. The area opposite of the campus has been developed for more than 35 years and smaller parcels are being filled in with new homes. Competition from a highly articulate homeowners organization is determined, but there are three physical aspects of the local geology that are advantageous for YWAM to complete its plans and to share the groundwater resources with its neighbors. First, the Battle Creek valley is cut into a fractured structure, an anticline, where abundant groundwater to the campus and to present neighbors from shallow wells. This water is restricted to a fairway under the valley. This restriction in white sandstone is parallel to the anticline crest. Second, residents on Deer Lake Court have been getting their water from a very deep zone of a massive sandstone layer for more than thirty years. A long-term water level decline in the deep sandstone is in the process of being cured with monitoring and supervision by the Oregon Water Resources Department. Third, the basalt aquifer on the west side of Battle Creek is hydraulically separated from the valley and from homes on the east side of the valley, because it appears to have been lifted or tilted away from the valley floor. Hence, interference between the Winemakers LLC irrigation well and the main YWAM well is not possible, they are in different aquifers. Water well deepening is not significant in number. A water budget shows that there is enough annual recharge to the natural hydraulic system for YWAM to go ahead carefully with present development plans and share the groundwater system with its neighbors.

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Conlon, Terrence D., Karl C Wozniak, Douglas Woodcock, Nora Herrara, Bruce Fisher, David S Morgan, Karl K. Lee and Stephen R. Hinkle, 2005 Ground-Water Hydrology of the Willamette Basin, Oregon, Scientific Investigations Report 2005-5168. U.S Department of the Interior, U.S. Geological Survey. with Cooperation of the Oregon Water Resources Department. U.S. Geological Survey, Reston, Virginia, 83 p, 31 figures, 6 tables, 3 technical appendices (Well Identifiers, Ground-Water Age Dating Method, Seepage Estimation).

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(<http://resolver.caltech.edu/CaltechTHESIS:01242011-115153952> and maps (West portion, <https://doi.org/10.22002/D1.573>, East portion, <https://doi.org/10.22002/D1.574> .)

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Woodward, Dennis G., Marshall W. Gannett and John J. Vaccaro, 1998. Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington (Regional Aquifer System Analysis- Puget-Willamette Lowland, 82 p., 2 plates. U.S. Government Printing Office, Washington, D.C.

FIGURES

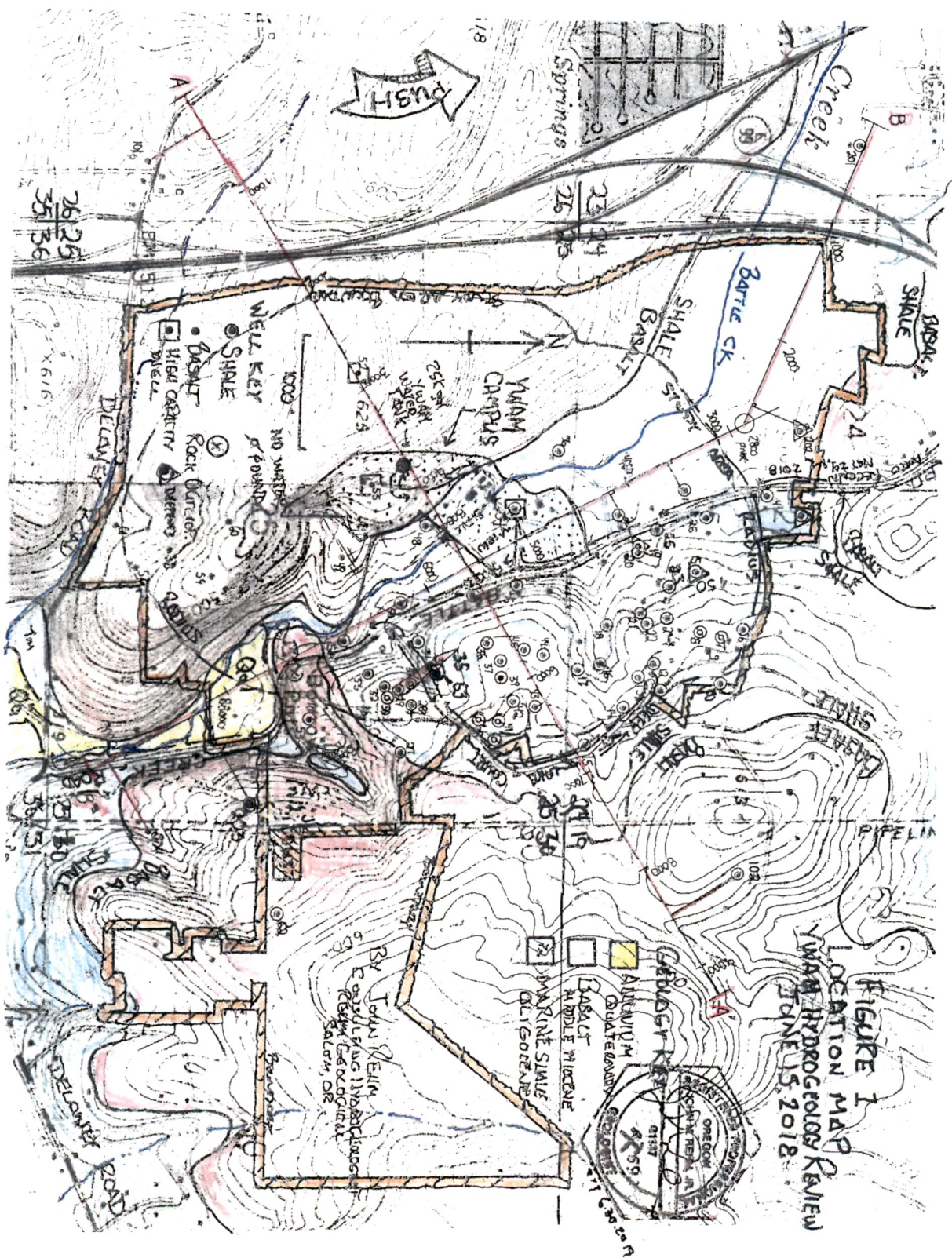
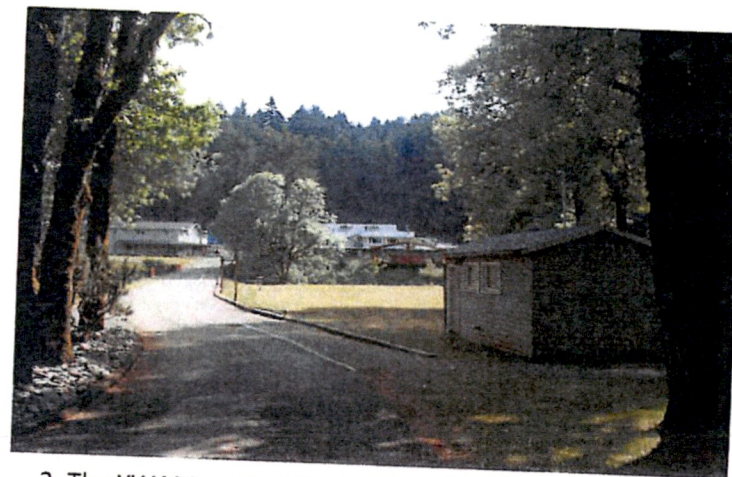


FIGURE 2
Site Photographs (May 24, 2018) , YWAM Hydrogeology Review



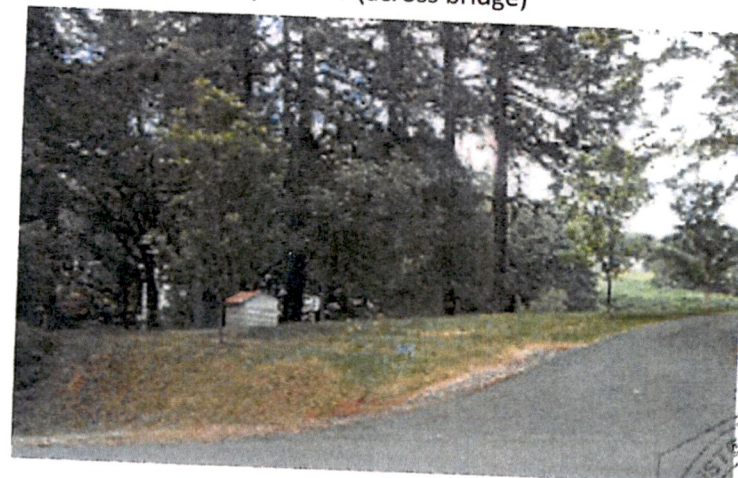
1. Looking south in the valley of Battle Creek
from the YWAM well house in the field



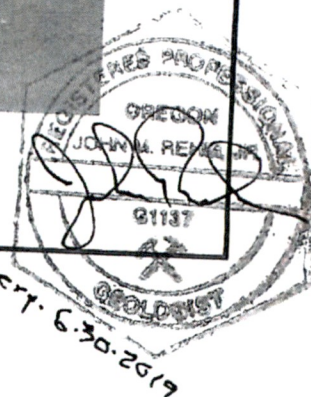
2. The YWAM well, drilled 1959 (right) and the main
YWAM campus area (across bridge)



3. A Piece of very hard Basalt from a roadside rock
ledge on Battle Creek Road near the old quarry.



4. A deep water well in Dear Lake Court



TECHNICAL DRILLING TERMS:

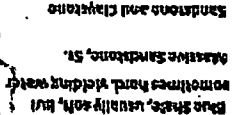
Total Depth (T.D.) in feet,
to bottom of the water well.

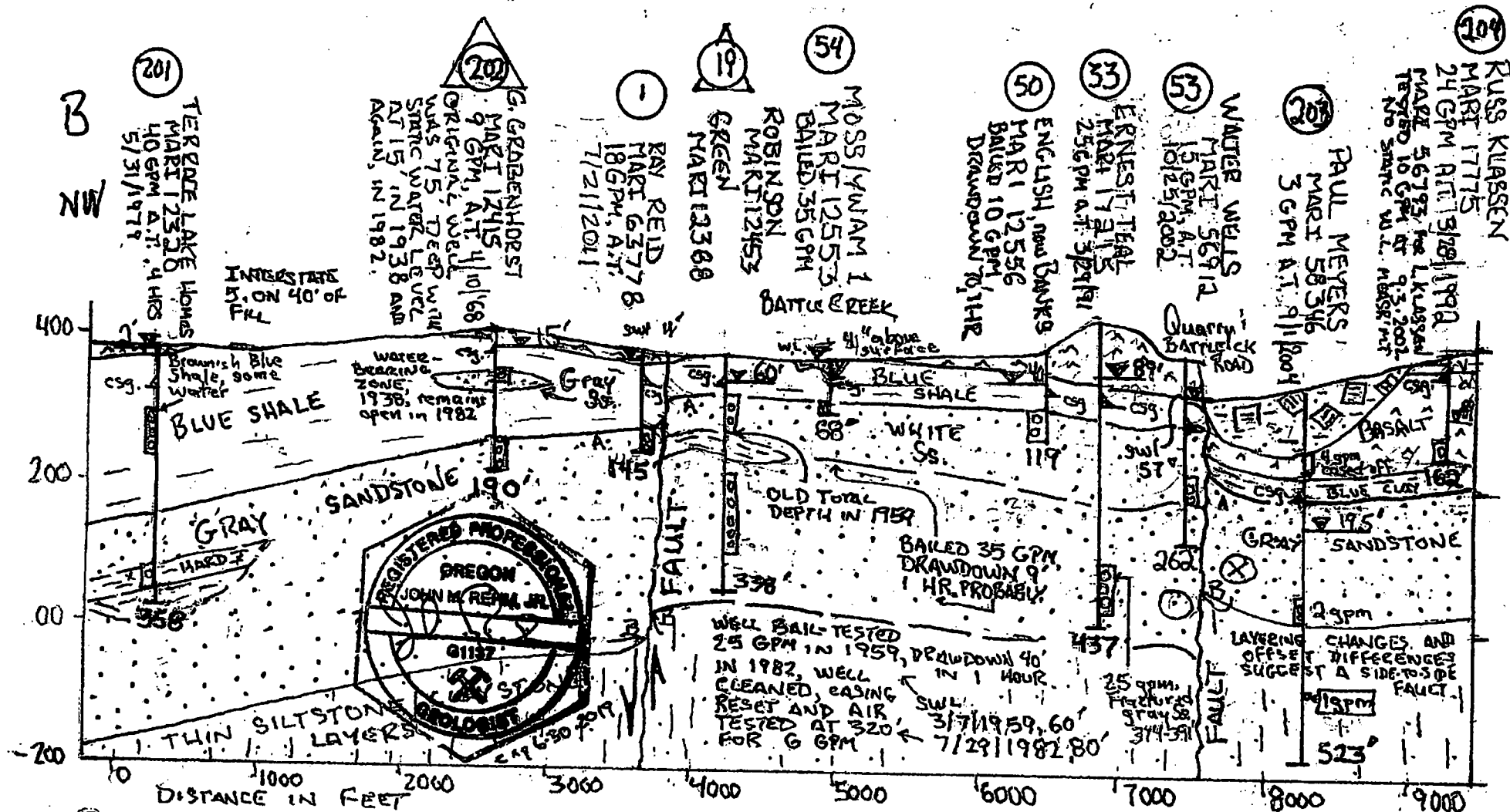


A tall, narrow triangle with a small base and a very sharp, pointed apex, representing an older person.

Coastal Pacific Ocean quiet water offshore muds and clay offshore environments, in part fossiliferous clams, forams, scold shells and snails.

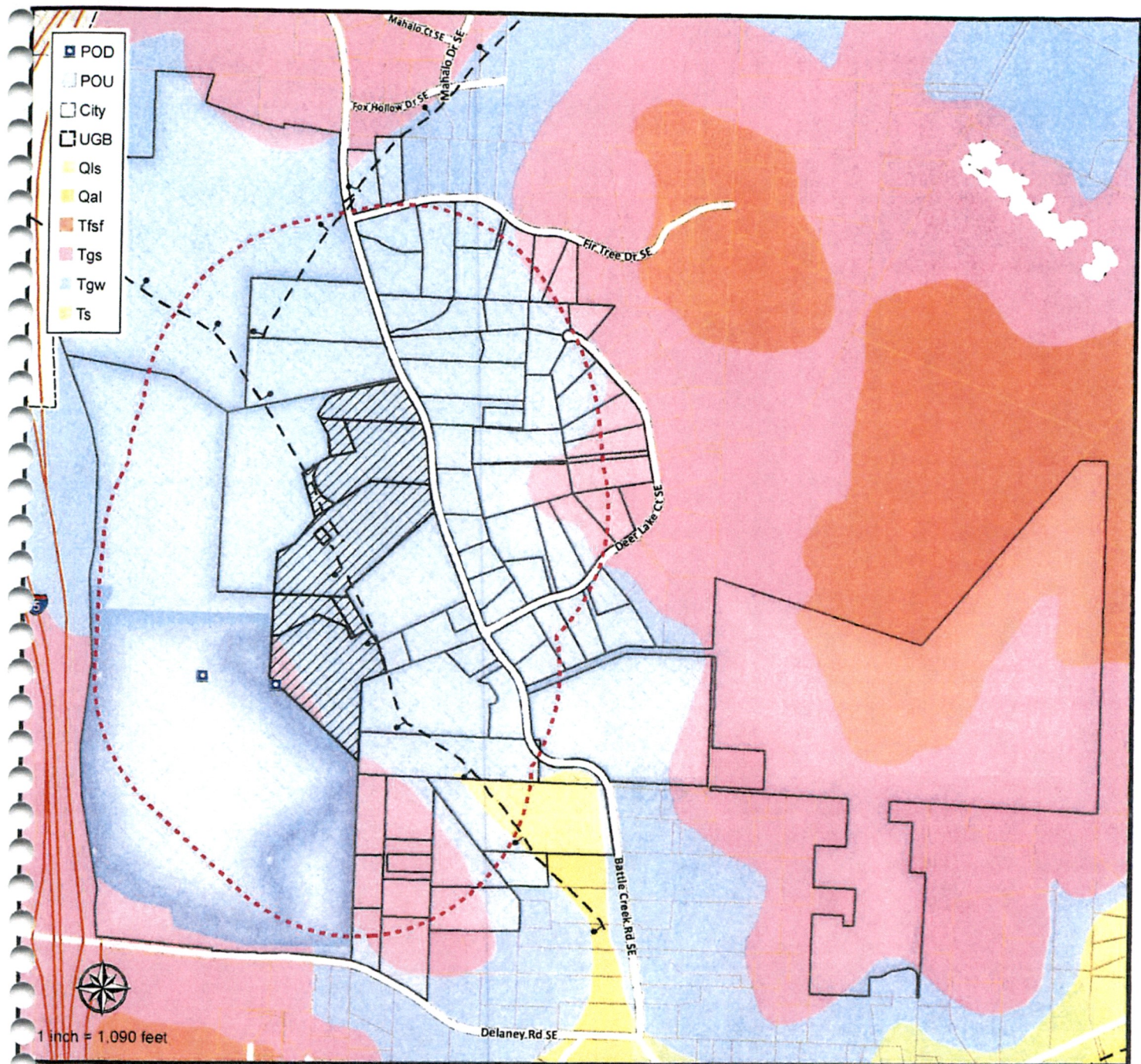
YOUNG
☒ Fresh, Hard Result
☐ Decomposed Result





POINT-TO-POINT GEOLOGIC STRIKE CROSS-SECTION DOWN THE VALLEY OF BATTLE CREEK SALEM-TURNER, OR
IN THE VICINITY OF INTERSTATE 5 - YOUTH WITH A MISSION CAMPUS - DEER LAKE COURT - DELANEY ROAD
MARION COUNTY, OREGON T8S/3W, SECTIONS 23, 24 AND 25
by JOHN M. REHM CONSULTING HYDROGEOLOGIST
REHM GEOLOGICAL, SALEM, OR
JUNE 5, 2018

FIGURE 4



Water Use Inventory

FIGURE 5

Parcel Characteristics

Owner Name: Youth With A Mission
 Situs Address: 0
 Zoning:
 SGO Class: SGO-5
 Parcel Count (existing, new, proposed): 9, 0, 9
 Map Number(s): 083W25B00100 083W25B00300
 083W25B00400 083W25B00500
 083W25B00600 083W25B00700
 083W25B00800 083W25B01000

Groundwater Budget for Proposed Change

Number of Parcels Analyzed: 86
 Total Acreage of Parcels: 681.42 acres
 Average 6% Recharge Rate: 188.46 acre-ft
 Total Existing Exempt Use: 50.57 acre-ft
 Total Proposed New Use: 0.00 acre-ft
 Total Permitted GW Use: 570.00 acre-ft
 Total Proposed Water Use: 620.57 acre-ft

Proposed density is: 7.92 acres per lot.

Percentage of Recharge Used: 329.29



Marion County Planning Division
 515 Silverton Rd NE, Salem, OR
 503-588-5038

Prepared: 11/17/2017
 water rights data (11/14)

These maps made available to the public by Marion County are not legally recorded maps nor surveys and are not intended to be used as such. Nor should they be used for navigational, tracking or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The data provided herein may be out of date and any person or entity who relies on said information for any purpose whatsoever does so solely at his or her own risk. In no way does Marion County warrant the accuracy, reliability or timeliness of any of the data provided on these maps. To report any errors or discrepancies or if additional information is desired please contact: GIS@co.marion.or.us

TABLES

Table 1: Located Water Wells in the Vicinity of the YVAM Study Area in Twp. 8S / Rng. 2-3W, Marion County, Oregon. Rehm Geological, June 21, 2018

Well ID	Owner	Depth (ft)	Water Level (ft)	Flow (gpm)	Notes
1	Raymond Red	240d	12370	240d	
2	Zoo Zeller	240d	12370	240d	
3	G. Gabelmeyer	240d	12448	240d	
3a	Greg Humm	240d	12373	240d	
4	James Glickson	240d	12403	240d	
5	Ron Hudson	240d	12403	240d	
5a	Darwin Hegen	240d	12474	240d	
6	Bert Jones	240d	12383	240d	
7	Clarence Jeffers	240d	12382	240d	
8	Clarence Jeffers	240d	12382	240d	
9	Clarence Jeffers	240d	12395	240d	
10	Clarence Jeffers	240d	12395	240d	
11	Clarence Jeffers	240d	12469	240d	
12	Clarence Jeffers	240d	12487	240d	
13	Clarence Jeffers	240d	12488	240d	
14	Clarence Jeffers	240d	12488	240d	
15	Clarence Jeffers	240d	12485	240d	
16	Clarence Jeffers	240d	12451	240d	
17	Clarence Jeffers	240d	17048	240d	
18	Clarence Jeffers	240d	12372	240d	
19	Clarence Jeffers	240d	12433	240d	
20	Clarence Jeffers	240d	12389	240d	
21	Clarence Jeffers	240d	61594	240d	
22	Clarence Jeffers	240d	61594	240d	
23	Clarence Jeffers	240d	12378	240d	
24	Clarence Jeffers	240d	12344	240d	
25	Clarence Jeffers	240d	12343	240d	
26	Clarence Jeffers	240d	12344	240d	
27	Clarence Jeffers	240d	12344	240d	
28	Clarence Jeffers	240d	12344	240d	
29	Clarence Jeffers	240d	12344	240d	
30	Clarence Jeffers	240d	12344	240d	
31	Clarence Jeffers	240d	12344	240d	
32	Clarence Jeffers	240d	12344	240d	
33	Clarence Jeffers	240d	12344	240d	
34	Clarence Jeffers	240d	12344	240d	
35	Clarence Jeffers	240d	12344	240d	
36	Clarence Jeffers	240d	12344	240d	
37	Clarence Jeffers	240d	12344	240d	
38	Clarence Jeffers	240d	12344	240d	
39	Clarence Jeffers	240d	12344	240d	
40	Clarence Jeffers	240d	12344	240d	
41	Clarence Jeffers	240d	12344	240d	
42	Clarence Jeffers	240d	12344	240d	

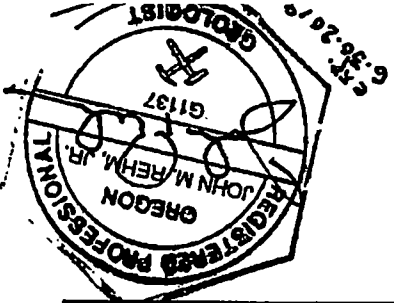


Table 1(cont.) : Table 1: Located Water Wells in the Vicinity of the YWAM Study Area in Twp. 8S / Rng. 2-3W, Marion County, Oregon. Rehm Geological, June 21, 2018

Revised Reclamation of the Willamette River Area in 1992, 637 July, 2-30, Marion County, Oregon. Reim Geological, June 21, 2018																			
Well No.	OWRD No.	Locality (Twp. 8S / Rng. 2-3W)	Drilled for Owner	Driller	Address	Plot Parcel No.	UTM Zone	Elevation (feet, m)	Comments	Geology (S)	Formation (Zone)	Date	Water Level (feet)	Water Temp. (°F)	Water Quality (NTU)	Notes	Spec. Cont.		
43	12497	25aab	Steve Tate	JD Monders	3375 Deer Lake Ct. SE	43	25A - 2200	512		Shale	Ss	4/21/1983	498	Tm	115	397	6	AT	
43a	58875	25aab	Ken Vancosdel	Ron Robinson	3375 Deer Lake Ct. SE	43	25A - 2200	512	Alteration	Shale	Ss	9/28/2002	432	Tm	338	176	3	AT	
44	12481	25aba	Roth Land Dvlp	JD Monders	3399 Deer Lake Ct. SE	45	25A - 2403	493		Shale	Ss	5/18/1986	535	Tm	140	353	8	AT	
45	12489	25aba	Roth Land Dvlp	JD Monders	3395 Deer Lake Ct. SE	46	25A - 2404	495		Shale	Ss	6/14/1984	500	Tm	130	365	10	AT	
46	56944	25aba	Clarence Wolf	Eugene Mack	7056 Battlecreek Rd. SE	48	25A - 2800	425		Shale	Ss	11/8/2002	281	Tm	143	282	15	AT	
47	58163	25aba	David Stewart	Eugene Mack	7184 Battlecreek Rd. SE	49	25A - 2700	395		Shale	Ss	6/16/2004	232	Tm	85	310	6	AT	
48	54419	25abc	Jennie Cookson	Floyd Sippel	7087 Battlecreek Rd. SE	52	25A - 3000	390		Shale	Sh	9/20/1999	85	Tm	38	352	45	AT	
49	12546	25acc	Dan Joymt	RF Sneed	7099 Battlecreek Rd. SE	53	25A - 3200	412		Basalt	Tgw1	7/15/1974	181	Bst	124	288	21	AT	
50	12556	25aca	Joan English	RF Sneed	7255 Battlecreek Rd. SE	54	25A - 3300	392	Ballot test	Shale	Ss	5/21/1980	119	Tm	40	352	10	70	0.14
51	12512	25acb	Roy Kruttsch	G. Richardson	7355 Battlecreek Rd. SE	58	25A - 3700	352		Shale	Sh	11/24/1980	57	Tm	4	348	30	5	6.00
52	18140	25bdc	John Miller	Floyd Sippel	1410 Lakeside Ct. Yekima	73	25B - 1300	623		Basalt	Tgo	9/30/1992	303	Tm	158	467	20	AT	
53	56912	25adc	Wall Wells	Eugene Mack	7474 Battlecreek Rd. SE	61	25A - 4000	378		Shale	Ss	10/25/2002	262	Tm	57	321	15	AT	
54	12553	25baa	A.R. Moss	Marlon West	6855 Battlecreek Rd. SE	64	25B - 400	378		Shale	Ss	3/25/1959	60	Tm	5	373	35	9	3.89
55	12555	25bda	Eamest Wall	G. Richardson	7089 Battlecreek Rd. SE	69	25B - 1000	481		Basalt	Sh	7/1/1984	112	Tm	30	451	AT		
56	59254	25baa	Douglas Spruiell	Dallas Beler	6935 Battlecreek Rd. SE	72	25B - 1100	382		Shale	Ss	8/8/2004	480	Tm	81	301	10	AT	
57	12554	25dcc	Don Sommer	William Long	7784 Shady Way SE	78	25D - 2700	478		Basalt	Tgw2	11/12/1997	145	Bst	60	418	30	AT	
57a	52899	25dca	Mark Hunt	Rodney Erler	7784 Shady Way SE	78	25D - 2700	478	Deepening	Basalt	Tgw1	4/14/1999	205	Bst	60	418	35	AT	
58	58034	25dcd	Randall Boese	Casey Jones	7744 Shady Way SE	79	25D - 2800	468		Basalt	Tgw2	4/30/2004	112	Bst	60	428	70	AT	
59	12507	25dba	Scott Lund	G. Richardson	7634 Shady Way SE	81	25D - 3000	535	Pump test	Basalt	Ss	10/23/1980	122	Tm	28	509	20	79	0.25
60	12548	25dbb	Dan Joymt	RF Sneed	7835 Shady Way SE	83	25D - 3200	532		Basalt	Tgw2	7/15/1974	161	Bst	124	408	21	AT	
60a	58868	25dbb	Ken Souders	Eugene Mack	7835 Shady Way SE	83	25D - 3200	532	Alteration/Pump T.	Basalt	Tgw2	1/8/2005	161	Bst	85	437	7	45	0.18
61	12549	25dca	Ray Keyzers	Marlon West	3001 Delaney Road SE	85	25D - 3400	428		Basalt	Tgw2	3/15/1974	133	Bst	35	393	18	AT	
62	61021	30bbcd	Carl Schmidt	Eugene Mack	3702 Bergman Pl. SE	88	30-400	621		Shale	Ss	10/1/2007	355	Tm	320	201	40	AT	
63	12534	25adb	E. Kitchen	Harlan Miller	3205 Deer Lake Ct. SE	38	25A - 1800	455		Shale	Sh	6/4/1966	200	Tm	78	379	3	AT	
63a	65214	25adb	Josh Boyd	Floyd Sippel	3205 Deer Lake Ct. SE	38	25A - 1800	455	Abandonment	Basalt	Ss	5/5/2014	120	Bst	203	262	NT	AT	

Wells outside the YWAM Study Area for Geologic Cross-Sections

101	53158	28dad	Dale Goerke	Eugene Mack	2348 Delaney Rd. S		Outside	540		Basalt	Tgo	7/8/1998	345	Bst	174		60	AT
102	55216	18dbb	Ann Beaver	Dallas Beller	3400 Deer Lake Creek SE			570	Coarse SS at 432'	Shale	Ss	9/19/2000	520	Tm	251		20	AT
201	12320	23abd	Terrace Lk MPk	Dallas Beller	5355 River Rd. N.		of	387		Shale	Sh2	5/31/1979	358	Tm	2		40	AT
202	12415	24cad	G. Grabenhorst	RF Sneed	180 Liberty St. SE			413	deepen 1938 well	Shale	Ss	4/10/1988	190	Tm	15		9	AT
203	58348	25dad	Paul Meyers	Eugene Mack	3450 Bergman Pl.		Study	410		Shale	Sh2	9/7/2004	523	Tm	195		3	AT
204	17775	30ccb	Russ Klassen	Floyd Sippel	3401 Mudpuppy Lane			395		Basalt	Tgw1	3/28/1992	162	Bst	89		24	AT
204a	58783	30ccb	Lloyd Klassen	Rodney Erler	3401 Mudpuppy Lane		Area	395	Alteration	Basalt	Tgw1	9/3/2002	162	Bst	NR		10	AT

Column Notes:

- Well numbers with a following letter ("a") have been deepened ("b") have been deepened, again.
- Sometimes, only repair work has been done to a well and it has not been deepened, see Comment section
- Addresses are current addresses from the Marion County Tax Assessor's Office On-line Property Records
- Project Parcel are numbered on the Tax Lot Certification List (Appendix III) in the order that they appear on the Cart List within the 1/4 mile study area.
- Bottom formation: Abbreviations are for geologic formations Alluv. - Quaternary Gravel Terrace or Glacial Kame, Bst - Basalt, Tm - Illahe Formation (Tertiary Marine sedimentary rock).
- Specific Capacity cannot be calculated without knowing how far a static water level has been drawn down (hence, Drawdown, abbreviated "Drawdn") by constant test pumping. Air tests where the produced well water is blown out by air through the
- Aquifer Geology is order of vertical order from youngest at the surface to oldest, which is deeply buried: Qt - Quaternary Terrace (sand and gravel); in the Basalt (Miocene) section: Ttsh - Sand Hollow Flow, Ttst - Silver Falls Flow, Tgvm - Vantage Member (no water, directly), Tgw2 - Upper Winter Water Flow, Tgw1 - Lower Winter Water Flow, Tgo - Orday Flow, Tm - Marine Shale (Oligocene).

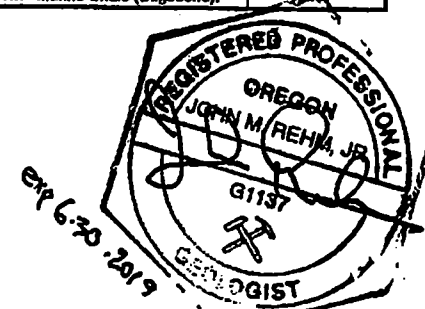


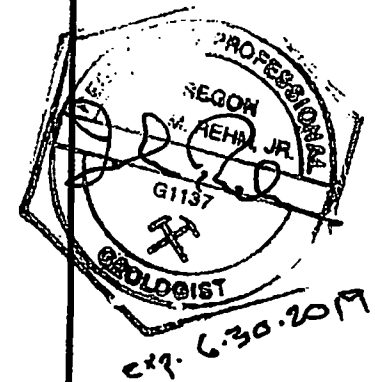
TABLE 2:									
Water Budget for the YWAM Hydrogeology Review. June 21, 2018 T8S/R3W - Section 25 NE/4 Marion County Oregon									
Planimeter Calculations					Water Budget				
with Keuffel & Esser Co. 4242 1/2 Compensating Polar Planimeter, Serial# 1504					TOTAL RECHARGE (AF/year):				
Total Acres (per WUL, Nov 17, 2017)					BASALT + SHALE 459.0				
Total Lots before Report 86					WATER USE (AF/year)				
Total Lots After Report 86					Exempt Use: Total Lots 86				
					less YWAM Lots 8				
					SubTotal lots 78				
					less YWAM served 4				
Rationale: Community Water Supply well to increase discharge to serve 2to 3 fold planned increase in campus student population.					74				
There will be no subdividing or partitioning.					Dom. Water Used @ 0.588 43.51				
Measured Area Pieces on Figure 1: Location Map YWAM, June 15, 2018					Permitted Use:				
8 1/2" x 11" paper map, fixed into Hydrogeology Review Report by Rehm Geological Salem, Oregon, June 2018. See also Table 2: (Average of two close measurement trials per piece inside area)					Winemakers LLC 70.00				
(see worksheet, Table 2a)					Pmt G-17738 Acres 30.00				
					Pmt G-17739 Acres 100.00				
					Total 100.00				
					Pmt'd AF/yr @1AF/Ac				
Area Planimeter Rdg. % Area Acres					YWAM Community Well Use				
Shale (Upper Valley) 0.585 25.4 173.08					Six year record 2012 - 2017 Present				
Shale (Lower Valley) 0.405 17.6 119.93					(2012) (2016)				
Basalt (West Piece) 0.715 31.1 211.92					High Median Low				
Basalt (SE Piece) 0.565 24.6 167.63					19.35 14.01 8.67				
Qal (downstream of Basalt) 0.030 1.3 8.86									
Line of Totals 2.30 100.0 681.42					Projected Campus Growth (residents) % increase				
Total Shale Acres: 293.01					Present Projected 342				
Total Basalt Acres: 388.41					135 461				
Total Alluvium Acres: in Basalt total					Calculation: %Increase x Median				
					47.91 AF/yr rounded 50.00				
					Total Water Used				
					Domestic + Vineyard +YWAM (proj'd) 193.51				
Annual Recharge to Marine Shale					Percent of Recharge Used 56.6				
Acres 293.01 Acres					100 X (Used/Recharge)				
Annual Rainfall 48					Remaining % 43.4				
Acre Feet/Ac (10%) 0.400									
Total Acres x Ac. Ft/Acre 117.2 Acre Feet/Year									
Annual Recharge to Basalt					by Rehm Geological, Salem, Oregon				
Acres 388.41 Acres									
Annual Rainfall 48									
Acre Feet/Ac (22%) 0.880									
Total Acres x Ac. Ft/Acre 341.8 Acre Feet/Year									

Table 2a. Planimeter Measurement and Checked Area Calculations: YWAM
by Rehm Geological Salem, Oregon (June 15, 2018)

<u>Area</u>	<u>Trial 1</u>	<u>Trial 2</u>	<u>Sum</u>	<u>Average</u>	<u>% Area</u>	<u>Acres</u>
Shale Upper Valley	0.59	0.58	1.17	0.585	25.4	173.08
Shale Lower Valley	0.40	0.41	0.81	0.405	17.6	119.93
Basalt West Piece	0.71	0.72	1.43	0.715	31.1	211.92
Basalt SE Piece	0.55	0.58	1.13	0.565	24.6	167.63
Qal dwnstrm of Basalt	0.03	0.03	0.06	0.030	1.3	8.86
Total Area Constant				2.300	100.0	681.42

Total Acres (WUI) 681.42

Total Shale Acres	Upper 173.08	Lower 119.93	Sum 293.01	Total % 43.0
Total Basalt Acres	West 211.92	SouthEast 167.63	379.55	55.7
Total Qal Acres	Lwr Valley 8.86		<u>8.86</u>	<u>1.3</u>
Check row:		Total Acres	681.42	100.0 %



APPENDICES

2

APPENDIX I
WELL LOGS

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.763 & OAR 690-205-0210)

MARI 63778

07-25-2011

Page 1 of 1

WELL LABEL # L 106657

START CARD # 205829

(1) LAND OWNER Owner Well I.D. 106657
First Name RAYMOND Last Name REID
Company REID JANICE
Address 6845 BATTLE CREEK RD SE
City SALEM State OR Zip 97317

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

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

(4) PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Community
☐ Industrial/ Commercial ☐ Livestock ☐ Dewatering
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION Special Standard ☐ (Attach copy)
Depth of Completed Well 145.00 ft.

BORE HOLE			SEAL			Amt	sacks/ lbs
Dia	From	To	Material	From	To		
10	0	46	Bentonite Chips	0	36	21	S
6.25	46	145					

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other POURED & PROBED

Backfill placed from 36 ft. to 46 ft. Material BENTONITE

Filter pack from ft. to ft. Material Size

Explosives used: ☐ Yes Type Amount

(6) CASING/LINER		Casing - Liner		Dia		From		To		Gauge		Stl		Plstc		Wld		Thrd	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	1	47	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	4.5	<input checked="" type="checkbox"/>	5	145	160	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shoe ☐ Inside ☐ Outside ☐ Other Location of shoe(s)

Temp casing ☒ Yes Dia 10 From 0 To 4

(7) PERFORATIONS/SCREENS

Perforations Method ELECTRIC SAW

Screens Type Material

Perf/S	Casing/	Screen	Dia		From		To		Scr/slot		Slot		# of		Tele/	
Perf	Liner								width	length			slots		pipe	size
			114	144	125	7	50									

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
18		145	1

Temperature 54 °F Lab analysis ☐ Yes By

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County Marion Twp 8.00 S N/S Range 3.00 W E/W WM

Sec 24 SW 1/4 of the SE 1/4 Tax Lot 700

Tax Map Number Lot

Lat " or " DMS or DD

Long " or " DMS or DD

☒ Street address of well ☐ Nearest address

6845 BATTLE CREEK RD SE

(10) STATIC WATER LEVEL

Date SWL(psi) + SWL(R)

Existing Well / Predeepening
Completed Well 07-21-2011 11

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found 11

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(R)
07-20-2011	11	26	5		4
07-20-2011	60	65	6		11
07-20-2011	88	108	5		11
07-20-2011	108	130	7		11

(11) WELL LOG

Ground Elevation

Material	From	To
CLAY BR SOFT	0	8
CLAY GRAY SOFT STICKY	8	11
CLAY RUSTY BR SOFT STICKY	11	16
CLAYSTONE GRAY M-HARD SEAMY	16	27
CLAYSTONE GRAY & BR	27	30
CLAYSTONE LIGHT BLUE HARD	30	39
CLAYSTONE GRAY W/HARD LAYERS	39	50
SILTSTONE GRAY W/SHELLS	50	64
SILTSTONE GRAY M-HARD	64	71
SILTSTONE PURPLE & GRAY HARD	71	80
SILTSTONE BR. & GRAY W/SHELLS	80	84
SILTSTONE GRAY	84	108
CLAYSTONE LIGHT BLUE HARD	108	112
SANDSTONE GRAY FINE HARD	112	120
SANDSTONE GRAY SOFT TO MED	120	130
SANDSTONE GRAY W/HARD STREAKS	130	145

Date Started 07-20-2011 Completed 07-21-2011

(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.

License Number Date

Electronically Filed

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.

License Number 1394 Date 07-25-2011

Electronically Filed

Signed EUGENE MACK (E-filed)

Contact Info (optional) MACK DRILLING COMPANY

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK

Form Version: 0.95

**STATE OF OREGON
EXEMPT USE WELL MAP**

(as required by ORS 537.545 & OAR 690.190)

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department

725 Summer St NE, Salem, OR 97301

(503)986-0900



LOCATION OF WELL

Latitude: 44.856243

Longitude: -123.001970

Datum: WGS84

Township/Range/Section/Quarter-Quarter Section: 8S 3W 24 SESW

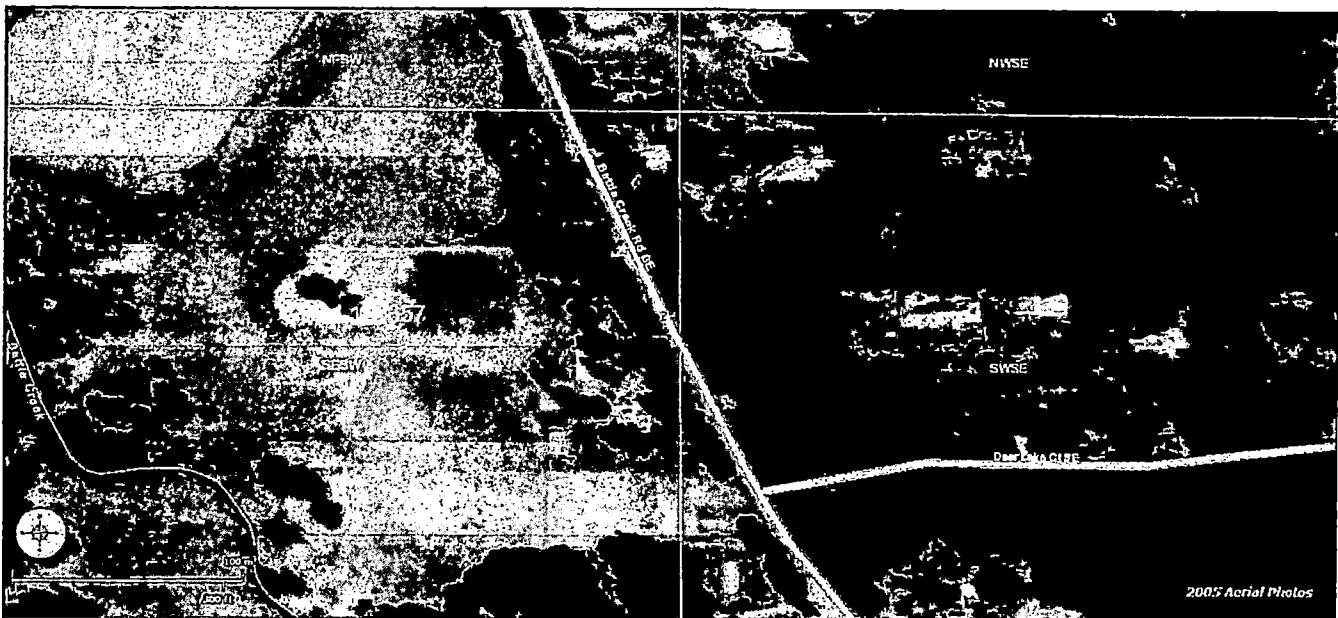
Address of Well: 6845 BATTLE CREEK RD SE

Well Label #: L106657

Well Log: MARI 63778

Printed: Sep 14, 2011

DISCLAIMER: This map is intended to represent the approximate location of the exempt use well provided by the land owner. It is not intended to be construed as survey accurate in any manner.



WATER WELL REPORT
STATE OF OREGON

RECEIVED

AUG 28 1981

State Well No.

85/30-24d

WATER RESOURCES DEPT
SALEM, OREGON

Permit No.

(1) OWNER:

Name ZOE ZEITLER
Address 6915 BATTLE GREEK RD SE 97301
City SALEM State ORE

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dig ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal ☐ Withdrawal ☐ ReInjection ☐

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam from 1' ft. to 24' ft. Gauge 7
" Diam from " ft. to " ft. Gauge

LINER INSTALLED:

4" Diam from 4' ft. to 131' ft. Gauge 160# PSI

(6) PERFORATIONS:

LINEAR Perforated? ☒ Yes ☐ No
Type of perforator used SKIL SAW
Size of perforations 4" in. by 10" in.
12 perforations from 112' ft. to 130' ft.
perforations from " ft. to " ft.
perforations from " ft. to " ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot Size Set from " ft. to " ft.
Diam. Slot Size Set from " ft. to " ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? R. J. SNEED
gal/min with " ft. drawdown after hrs.

Air test 1060 gal/min with drill stem at 130 ft. 1 hrs.

Boiler test gal/min with " ft. drawdown after hrs.

Artesian flow g.p.m.

Temperature of water 51 Depth artesian flow encountered " ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒

Well seal—Material used CEMENT

Well sealed from land surface to " ft.

Diameter of well bore to bottom of seal 10" in.

Diameter of well bore below seal 6" in.

Number of sacks of cement used in well seal 8 sacks

How was cement grout placed? THROUGH CONDUCTOR

PIPE BY CEMENT PUMP

Was pump installed? Type HP Depth " ft.

Was a drive shoe used? ☐ Yes ☒ No Plugs NO Size location " ft.

Did any strata contain unsealable water? ☐ Yes ☒ No

Type of Water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel: "

Gravel placed from " ft. to " ft.

(10) LOCATION OF WELL:

County MARION Driller's well number
" SE " Section 24 T. 8S R. 3W WM.
Tax Lot # Lot E8a Subdivision

Address at well location: 6915 BATTLE CREEK RD S.E.
SALEM ORE

(11) WATER LEVEL: Completed well.

Depth at which water was first found 52' 85' + 102' ft.
Static level 44 ft. below land surface. Date 8-26-81
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 131 ft. Depth of completed well 131 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
TOPSOIL	0	1	
CLAY YELLOW STICKY	1	12	
CLAY BLUE STICKY	12	15	
CLAYSTONE GRAY FIRM	15	52	
SANDSTONE GRAY HARD	52	81	44
CLAYSTONE GRAY FIRM	81	86	44
SANDSTONE GRAY HARD	86	131	44

1 G.P.M. @ 52'
8 G.P.M. @ 84'
2 G.P.M. @ 104'

Work started 8-25-1981 Completed 8-26-1981
Date well drilling machine moved off of well 8-26-1981

Drilling Machine Operator's Certification

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

(Signed) R. J. SNEED Date 8-26-1981

(Drilling Machine Operator)

Drilling Machine Operator's License No. 187

Water Well Contractor's Certification

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

Name SNEED WELL DRILLING INC. (Type or print)

Address 4750 ELIZABETH N. SALEM ORE

(Signed) R. J. SNEED

(Water Well Contractor)

Contractor's License No. 6 Date 8-26-1981

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report
are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 80 days from the date of well completion.

SP-10555-630

File Original and
First Copy with the
STATE ENGINEER
SALEM, OREGON

RECEIVED
AUG 28 1960
STATE ENGINEER
WATER WELL REPORT
STATE OF OREGON

State Well No. 9/3W-2461
State Permit No. _____

(1) OWNER:

Name GEORGE CRABENHORST
Address 1655 9th St
SALEM, OR

(2) LOCATION OF WELL:

County Marion Owner's number, if any—
24 T. 8 R. S 34 W. 4
Bearing and distance from section or subdivision corner
Approximately 1250 feet Southerly from the most
Westerly S.W. corner of the D.L.C. of F. L.
Raymond, being Claim No. 52 in Township 8 South,
Range 3 West of W.M. in Marion County, Oregon.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☐ Welded ☐
" Diam. from " ft. to " ft. Gage
" Diam. from " ft. to " ft. Gage
" Diam. from " ft. to " ft. Gage

(7) PERFORATIONS:

Perforated? ☐ 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.
perforations from " ft. to " ft.
perforations from " ft. to " ft.

(8) SCREENS:

Well screen installed ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from " ft. to " ft.
Diam. _____ Slot size _____ Set from " ft. to " ft.

(9) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from " ft. to " ft.
Was a surface seal provided? ☒ Yes ☐ No To what depth? 6" ft.
Material used in seal—CEMENT CAPPED
Did any strata contain unsuitable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level 15' ft. below land surface Date 8-15-60
Artesian pressure _____ lbs. per square inch Date _____

Log Accepted by: George Crabenhurst
[Signed] _____ Date August 22, 1960
(Owner)

(11) 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.

" " " " " "

" " " " " "

Ball test 2 gal./min. with 155 ft. drawdown after hrs.

Artesian flow g.p.m. Date _____

Temperature of water 55 Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well 6" inches.

Depth drilled 170 ft. Depth of completed well 170 ft.

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
DUG HOLE	0'	38'
ORIGINAL DEPTH	38'	38'
BLUE SHALE	38'	81'
WHITE SANDSTONE	81'	87'
BLUE SHALE	87'	97'
WHITE SANDSTONE	97'	115'
BLUE SHALE	115'	117'
WHITE SANDSTONE	117'	165'
BLUE SHALE	165'	170'

2 B. PM. @ 165' TO 166'

Work started 8-12-60 Completed 8-15-60

(13) PUMP:

Manufacturer's Name NONE
Type: _____ H.P. _____

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 J.A. SHEED & SONS
(Person, firm, or corporation) (Type or print)

Address 2505 BROOKS ST. SALEM, OR

Driller's well number _____

[Signed] J.A. Sheed
(Well Driller)

License No. 6 Date 8-15-60

88353 10/82

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report
are to be filed with the

STATE OF OREGON
WATER WELL REPORT

WATER RESOURCES DEPARTMENT
SALMON, OREGON 97130
within 30 days from the date
of well completion.
(Do not write above this line)

State Well No. 85340-24C
State Permit No.

(1) OWNER:

Name JAMES GILKINSON
Address 3025 N. 10th St.
SALMON, OREGON 97130

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

(3) TYPE OF WELL:

Notary ☒ Driven ☐ Bored ☐ Cased ☐ Cable ☐ Other ☐

(5) CASING INSTALLED:

6" Diam. from 1' to 20' Gage
Threaded ☐ Welded ☐

(6) PERFORATIONS:

Type of perforator used In. by
Size of perforations
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is
lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? SLED
D: 25 gal./min. with 120 ft. drawdown after 2 hrs.

(9) CONSTRUCTION:

Well seal—Material used
Diam. of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 6 sacks
How was cement grout placed? Cement Pump.

Was a drive shoe used? ☒ Yes ☐ No Plug ☒ Yes ☐ No
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No
Gravel placed from ft. to ft.

(USE ADDITIONAL SHEETS IF NECESSARY)

Contractor's License No. 6 Date 2-1-80
CP-1000-115

[Signed] 037 J. J. J.
Address 4750 ELIZABETH AVE. SALMON, ORE.
Name J. J. J. WELL DRILLING
(Type or print)
(Person, firm or corporation)
This well was drilled under my jurisdiction and this report is
true to the best of my knowledge and belief.

Water Well Contractor's Certification:
Drilling Machine Operator's Certification:
This well was constructed under my direct supervision.
Materials used and information reported above are true to my
best knowledge and belief.
[Signed] J. J. J.
Drilling Machine Operator's License No. 940
Date 2-20-80

Work started 2-11-80 Completed 2-12-80
Date well drilling machine moved off of well 2-12-80

WATER RESOURCES DEPT FEB 25 1980 RECEIVED			
SALEM, OREGON			
MATERIAL			
From	To	SWL	
0	2		TOP SOIL
2	7		GRAVELLY SILT
7	12		CLAY SILT
12	27		SHALLOWS WHITE
27	51		CLAYSTONE BLUE FROM
51	93		SHALLOWS WHITE
93	110		SHALLOWS WHITE
110	150		CLAYSTONE BLUE FROM
150	191		SHALLOWS WHITE

(12) WELL LOG:
Diameter of well below casing 6"
Depth drilled 191 ft. Depth of completed well 191 ft.
Formation: Describe color, texture, grain size and structure of materials;
and show thickness and nature of each stratum and aquifer penetrated;
with at least one entry for each change of formation. Report each change in
position of static water level and indicate principal water-bearing strata.

(11) WATER LEVEL: Completed well.
Depth at which water was first found 96"
Static level 21' ft. below land surface. Date 2-18-80
Artesian pressure lbs. per square inch. Date

(10) LOCATION OF WELL:
County Marion
Driller's well number 85340-24C
Bearing and distance from section or subdivision corner
% S 44° E Section 24 T. 85 S. R. 34 W. M.

5

NOTICE TO WATER WELL CONTRACTOR
The original and first copy
of this report are to be
filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date
of well completion.

WATER WELL REPORT

STATE OF OREGON

(Please type or print)

(Do not write above this line)

RECEIVED

SEP 24 1976

State Well No. 8s BW 24

State Permit No.

WATER RESOURCES DEPT.

(1) OWNER:

Name Ron Judson
Address Rt 2 Box 19902
Newberg, Ore. 97132

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Threaded ☐ Welded ☒

6" Diam. from 0 ft. to 26 ft. Gage 250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:

Perforated? ☐ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is
lowered below static level

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

Id: gal./min. with ft. drawdown after hrs.

" " " " " "

" " " " " "

Water test 4 gal./min. with 235 ft. drawdown after 1 hrs.

Artesian flow g.p.m.

Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Cement

Well sealed from land surface to 26 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 4 sacks

Number of sacks of bentonite used in well seal sacks

Brand name of bentonite

Number of pounds of bentonite per 100 gallons

of water lbs./100 gals.

Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Marion Driller's well number

1/4 1/4 Section 24 T. 8S R. 3W W.M.

Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found ft.

Static level 75' ft. below land surface. Date 9-4-76

Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"

Depth drilled 310 ft. Depth of completed well 310 ft.

Formation: Describe color, texture, grain size and structure of materials;
and show thickness and nature of each stratum and aquifer penetrated,
with at least one entry for each change of formation. Report each change in
position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top soil	0	1	
Brown clay	1	5	
Blue shale claystone	5	12	
Blue claystone	12	20	
White shale	20	28	
White sandstone	28	30	
Blue shale	30	75	
Grey sandstone	75	102	
Shale	102	140	
Sandstone	140	225	
White shale	225	285	
Grey shale	285	310	75'

Work started 9-1-76 Completed 9-4-76

Date well drilling machine moved off of well 9-5-76

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision.
Materials used and information reported above are true to my
best knowledge and belief.

[Signed] Harry Manders Date 9-15-76

(Drilling Machine Operator)

Drilling Machine Operator's License No. 1033

Water Well Contractor's Certification:

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

Name MILLER & WEST DRILLING

(Person, firm or corporation)

(Type or print)

Address 5875 GASTIN RD. SE

[Signed] Michael Waldman

Contractor's License No. 1114 K

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON

within 30 days from the date of well completion.

(1) OWNER
Name CLARENCE J. FARRIS
Address 1200 S. 10th St. Salem, Ore.

(2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

(3) TYPE OF WELL (check):
Domestic ☒ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:
Diam. from 12 ft. to 12 ft. Gage 12
Diam. from 12 ft. to 12 ft. Gage 12
Diam. from 12 ft. to 12 ft. Gage 12

PERFORATIONS:
Type of perforator used _____
Size of perforations _____
In. by _____
No. of perforations _____
From _____ ft. to _____ ft.
To _____ ft. to _____ ft.

(7) SCREENS:
Well screen installed? ☒ Yes ☐ No

(8) 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.

Artesian flow _____ g.p.m.
Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:
Well sealed—Material used _____
Well sealed from land surface to _____ ft.
Diameter of well bore to bottom of seal _____ in.
Diameter of well bore below seal _____ in.
Number of sacks of cement used in well seal _____ sacks
Number of sacks of bentonite used in well seal _____ sacks
Brand name of bentonite _____
Number of pounds of bentonite per 100 gallons _____
of water _____ lbs./100 gals.
Was a drive shoe used? ☒ Yes ☐ No Flugs _____ Size: Location _____ ft.
Did any strata contain undesirable water? ☒ Yes ☐ No
Type of water _____
Depth of strata off _____
Method of sealing strata off _____
Was well gravel packed? ☒ Yes ☐ No
Size of gravel: _____ ft. to _____ ft.
Gravel placed from _____ ft. to _____ ft.

WATER WELL REPORT
STATE OF OREGON
08114874
STATE ENGINEER
SALEM, OREGON
Tax 10 + 3500
RECEIVED
5/31/24

(10) LOCATION OF WELL:
County Washington
Driller's well number 24
Section 24 T. 8 S. R. 3 W.
Range and distance from section or subdivision corner _____
Bearing _____

(11) WATER LEVEL: Completed well.
Depth at which water was first found _____ ft.
Static level _____ ft. below land surface. Date 9-16-24
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:
Diameter of well below casing _____ ft.
Depth drilled _____ ft.
Depth of completed well _____ ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated; with at least one entry for each change of formation. Report each change in position of Static Water Level and indicates principal water-bearing strata.

MATERIAL	From	To	SWL
Gravel + Sand	10	15	
Gravel + Sand	15	20	
Gravel + Sand	20	25	
Gravel + Sand	25	30	
Gravel + Sand	30	35	
Gravel + Sand	35	40	
Gravel + Sand	40	45	
Gravel + Sand	45	50	
Gravel + Sand	50	55	
Gravel + Sand	55	60	
Gravel + Sand	60	65	
Gravel + Sand	65	70	
Gravel + Sand	70	75	
Gravel + Sand	75	80	
Gravel + Sand	80	85	
Gravel + Sand	85	90	
Gravel + Sand	90	95	
Gravel + Sand	95	100	

Date well drilling machine moved off of well _____
Work started _____
Completed _____
1924

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

(Signed) _____
Date 9-12-24
Drilling Machine Operator's License No. 158

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name _____
Address _____
(Signed) _____
Date 9-12-24
Contractor's License No. 37
1924

NOTICE TO WATER WELL CONTRACTOR
The original and final copy
of this report are to be
filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date
of well completion.

WATER WELL REPORT
STATE OF OREGON OCT 14 1974
STATE ENGINEER
SALEM, OREGON

Well No. **85/3W-24**

Permit No. _____

(1) OWNER:

Name **CLARENCE GAFFNEY**
Address **BATTLE CREEK RD. S.E. SALEM, OREGON**

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 40 ft. Gage 350
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? ☐ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) 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.

Flow test 0 gal./min. with ft. drawdown after 1 hrs.

Artesian flow g.p.m.

Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used **CEMENT**

Well sealed from land surface to 40 ft.

Diameter of well bore to bottom of seal 6 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 2 sacks

Number of sacks of bentonite used in well seal 0 sacks

Brand name of bentonite _____

Number of pounds of bentonite per 100 gallons
of water lbs./100 gals.

Was a drive shoe used? ☐ Yes ☒ No Plugs Size location ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County **CLATSOP** Driller's well number

1/4 1/4 Section **24 T. 8 S. R. 3 W.** W.M.

Bearing and distance from section or subdivision corner

Well No. 1 Lot 4 - Block 2

(11) WATER LEVEL: Completed well.

Depth at which water was first found **NO WATER**

Static level 0 ft. below land surface. Date

Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 510 ft. Depth of completed well 510 ft.

Formation: Describe color, texture, grain size and structure of materials;
and show thickness and nature of each stratum and aquifer penetrated,
with at least one entry for each change of formation. Report each change in
position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
TOP SOIL	0	40	
BROWN CLAY	40	68	
WHITE BUFF GRAY	68	510	
BLUISH GRAY	68	510	
SAND STONE & CLAY			
STONE			

Work started 9-3-1974 Completed 9-6-74 19

Date well drilling machine moved off of well 9-6-74 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision.
Materials used and information reported above are true to my
best knowledge and belief.

[Signed] **Harold K. Miller** Date 10-12-1974

(Drilling Machine Operator)

Drilling Machine Operator's License No. 188

Water Well Contractor's Certification:

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

Name **CLARENCE GAFFNEY**

(Contractor, firm or corporation) (Type or print)

Address **5805 GAFFNEY RD. S.E.**

[Signed] **Harold K. Miller**

(Water Well Contractor)

Contractor's License No. 37 Date 10-12-1974

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALTM. OREGON STATE within 30 days from the date of well completion.

STATE OF OREGON
PLATE NO. 1976
AUG 1976

State Well No. 85/3W24

State Permit No. 2500

RECEIVED

(10) LOCATION OF WELL:

County Harney
Driller's well number 24 T. 35 R. 3W
Bearing and distance from section or subdivision corner W.M.

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

(3) TYPE OF WELL:

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Dig ☐ Bored ☐ Jetted ☐ Driven ☐ Rotary ☐ Cable ☐

CASING INSTALLED:

Threaded ☐ Welded ☒ 4" Dia. from 0 to 40 ft. gage

PERFORATIONS:

Perforated? ☐ Yes ☒ No

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

(9) CONSTRUCTION:

Well seal material used Cement

Well sealed from land surface to 40 ft.

Diameter of well bore to bottom of seal 4 10 in.

Number of sacks of cement used in well seal 3 sacks

Number of sacks of bentonite used in well seal

Brand name of bentonite

Number of pounds of bentonite per 100 gallons

at water lbs./100 gals.

Was a drive shoe used? ☐ Yes ☒ No

Did any struts contain unstable water? ☐ Yes ☒ No

Type of water depth of struts

Method of sealing struts off

Was well gravel packed? ☐ Yes ☒ No

Gravel placed from ft. to

(USE ADDITIONAL SHEETS IF NECESSARY)

Contractor's License No. 633 Date July 20, 1976
(Water Well Contractor)
[Signed] Michael W. Miller

Address 5875 CHRYN RD. SE.
Name MILLER DRILLING
(City or town)
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Water Well Contractor's Certification:

Drilling Machine Operator's License No. 1033 Date 7-20-76
(Drilling Machine Operator)
[Signed] Dr. M. Miller
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

Drilling Machine Operator's Certification:

Work started 7-1- 1976 Completed 7-3- 1976
Date well drilling machine moved off of well 7-5- 1976

MATERIAL	From	To	SWL
Top soil	0	1	
Blue shale - (firm)	1	10	
Blue shale - (soft)	10	65	
Blue shale - (soft)	65	130	
White sandstone with gray shale	130	250	
Traces of limestone	250	360	
Gray sandstone	360	400	

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated; with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

(12) WELL LOG:

Diameter of well below casing 6"

Depth of completed well 400 ft.

Position of Static Water Level and indicates principal water-bearing strata.

Artesian pressure 44 lbs. per square inch. Date 7-5-76

(11) WATER LEVEL: Completed well

Depth at which water was first found 80 ft. below land surface. Date 7-5-76

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97301
within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON

(Please type or print)

(Do not write above this line)

RECEIVED
OCT 14 1974

State Well No.

State Permit No.

SALEM, OREGON

85/3W-24

(1) OWNER:

Name CLARK & SUTHERS
Address BATHING CREEK RD. SE
SALEM, OR 97301

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dig ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:

Threaded ☐ Welded ☒
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

(6) PERFORATIONS:

Perforated? ☐ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____ Model No. _____
Type _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

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

_____ gal./min. with _____ ft. drawdown after _____ hrs.

_____ gal./min. with _____ ft. drawdown after _____ hrs.

_____ gal./min. with _____ ft. drawdown after _____ hrs.

_____ gal./min. with _____ ft. drawdown after _____ hrs.

_____ gal./min. with _____ ft. drawdown after _____ hrs.

_____ gal./min. with _____ ft. drawdown after _____ hrs.

_____ gal./min. with _____ ft. drawdown after _____ hrs.

(9) CONSTRUCTION:

Well seal—Material used _____

Well sealed from land surface to _____ ft.

Diameter of well bore to bottom of seal _____ in.

Diameter of well bore below seal _____ in.

Number of sacks of cement used in well seal _____ sacks

Number of sacks of bentonite used in well seal _____ sacks

Brand name of bentonite _____

Number of pounds of bentonite per 100 gallons _____

of water _____ lbs./100 gals.

Was a drive shoe used? ☐ Yes ☒ No Flange _____ Size: location _____ ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ depth of strata _____

Method of sealing strata off _____

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County CLATSOP Driller's well number _____
1/4 1/4 Section 24 T. 8 S. R. 3 W. W.M.

Bearing and distance from section corner subdivision corner

Well No. 2 - Lot 5 - Block 2

(11) WATER LEVEL: Completed well.

Depth at which water was first found 200 ft.

Static level 200 ft. below land surface. Date 9-7-74

Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing _____

Depth drilled 340 ft. Depth of completed well 300 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
RED + TAN - TOP	0	27	
SOIL + Decomposed			
BLACK - BASALT	27	31	
BOULDER			
BROWN + Decomposed	31	62	
BASALT			
BLACK - BASALT	62	64	
TAN + Blue	64	78	
CLAY STONE			
Blue - GRAY	78	300	
CLAY STONE +			
SAND			
WELL ABANDONED			
BACK FILLED			
WITH CEMENT			

Work started 9-6- 1974 Completed 9-7- 1974

Date well drilling machine moved off of well 9-8- 1974

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] William W. Wast Date 10-12-1974

(Drilling Machine Operator)

Drilling Machine Operator's License No. 188

Water Well Contractor's Certification:

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

Name William W. Wast (Type or print)

Address 5475 BAKER RD. S.E.

[Signed] William W. Wast

(Water Well Contractor)

Contractor's License No. 32 Date 10-12-1974

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON
within 30 days from the date of well completion.

STATE OF OREGON
WATER WELL REPORT
OCT 14 1974
REGISTRATION NO. 24-25
SALEM, OREGON

(1) OWNER:
Name: CLARKSON, J. F. JR.
Address: 5011 N. 10th St.
City: SALEM, OREGON

(2) TYPE OF WORK (check):
☒ New Well ☐ Deepening ☐ Reconditioning ☐ Abandon

(3) TYPE OF WELL:
Residential ☒ Industrial ☐ Municipal ☐
Domestic ☒ Test Well ☐ Other ☐
Dig ☐ Bored ☐ Jetted ☐ Driven ☐
Rotary ☐ Cable ☐ Other ☐

(4) PROPOSED USE (check):
☒ Irrigation ☐ Test Well ☐ Other ☐

(5) CASING INSTALLED:
Diam. from 4 1/2 ft. to 5 1/2 ft. Gage 350
Diam. from 4 1/2 ft. to 5 1/2 ft. Gage 350
Diam. from 4 1/2 ft. to 5 1/2 ft. Gage 350
Threaded ☐ Welded ☒

(6) PERFORATIONS:
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.
Well screen installed? ☒ Yes ☐ No

(7) SCREENS:
Manufacturer's Name _____
Model No. _____
Diam. _____ ft. to _____ ft.
Diam. _____ ft. to _____ ft.
Diam. _____ ft. to _____ ft.
Well screen installed? ☒ Yes ☐ No

(8) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? _____
Static _____ gal./min. with _____ ft. drawdown after _____ hrs.
Flow test _____ gal./min. with _____ ft. drawdown after _____ hrs.

(9) CONSTRUCTION:
Well seal—Material used _____
Well sealed from land surface to _____ ft.
Diameter of well bore to bottom of seal _____ in.
Diameter of well bore below seal _____ in.
Number of sacks of cement used in well seal _____ sacks
Number of sacks of bentonite used in well seal _____ sacks
Brand name of bentonite _____
Number of pounds of bentonite per 100 gallons _____
of water _____ lbs./100 gals.
Was a drive shoe used? ☒ Yes ☐ No If yes, location _____ ft.
Did any struts contain removable water? ☒ Yes ☐ No
Type of water? _____ depth of struts _____
Method of sealing struts off _____
Was well gravel packed? ☒ Yes ☐ No
Gravel placed from _____ ft. to _____ ft.

(12) WELL LOG:
Diameter of well below casing _____ ft.
Depth drilled _____ ft. Depth of completed well _____ ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated; with at least one entry for each change of formation. Report each change in position of static water level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
BROWN + RED	0	9	
2nd Soil + Clay	9	16	
STAIN - DRUM - 16	16	28	
Light Brown - 28	28	38	
Light + Red - 38	38	41	
Blue - Clay - 41	41	46	
Light + Red - 46	46	50	
Light + Red - 50	50	59	
Light + Red - 59	59	60	

(11) WATER LEVEL: Completed well.
Depth at which water was first found _____ ft.
Static level _____ ft.
Artesian pressure _____ lbs. per square inch. Date _____

(10) LOCATION OF WELL:
County _____
Driller's well number _____
Section _____ T. _____ S. _____ R. _____
Bearing and distance from section or subdivision corner _____

(9) CONSTRUCTION:
This well was constructed under my direct supervision.
Materials used and information reported above are true to my best knowledge and belief.
(Signed) _____
Date _____ 1974

Drilling Machine Operator's Certification:
This well was constructed under my jurisdiction and this report is true to the best of my knowledge and belief.
(Signed) _____
Date _____ 1974

Water Well Contractor's Certification:
This well was constructed under my jurisdiction and this report is true to the best of my knowledge and belief.
(Signed) _____
Date _____ 1974

Contractor's License No. 37 Date 10-12-1974
(Water Well Contractor)
(Signed) _____
Address _____
Name _____
This well was constructed under my jurisdiction and this report is true to the best of my knowledge and belief.

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

RECEIVED
MAY 19 1986

WATER RESOURCES DEPT.

SALEM, OREGON

(1) OWNER:

Name **ROTH LAND AND BUILDING DEVELOPMENT**
Address **4196 81st Street N.E.**
City **Salem** State **Oregon** Zip **97305**

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

535 ft.

Depth of Completed Well
Special Standards date of approval

HOLE		SEAL		Amount	
Diameter	From To	Material	From To	sacks	or pounds
10"	0' 80'	Cement	0 80	24	Sacks
6"	80' 535'				

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		6"	+1	80	.250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Liner		4"	0	535	160	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s)

PERFORATIONS/SCREENS:

☒ Perforations Method **Electric Saw**
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
245	265	1/8	36			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
475	515	1/8	72			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing
Yield gal/min Pumping level Drill stem at Time 1/4 hr

12 532 1 hr

Temperature of water 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

(9) LOCATION OF WELL by legal description:

County **Marion** Latitude Longitude
Township **8 South** N or S, Range **3 West** E or W, WM.
Section **25** Block
Tax Lot Lot # **8** Subdivision **Deerlake**
Street Address of Well (or nearest address)
Deerlake Estates Phase 11 Lot # 8

(10) STATIC WATER LEVEL:

118 ft. below land surface.

Date 5-8-86

Artesian pressure lb. per square inch. Date

(11) WELL LOG:

Ground elevation

Material	From	To	WB?	SWL
Soil	0	1		
Dark Brown Clay	1	10		
Tan Clay Sticky	10	23		
Gray Clay Sticky	23	29		
Gray Sandy Clay	29	41		
Tan Claystone With				
Tan Clay	41	58		
Gray Claystone	58	231		
Light Gray Sandstone	231	292	XX	
Gray Sandstone	292	470		
Light Gray Sandstone	470	502	XX	
Gray Sandstone	502	512		
Gray Claystone	512	535		118'

Driller Recommended
Pump Be Set Between
475' To 515'

Date started 5-6 Completed 5-8

(unbonded) Water Well Constructor Certification:

I constructed this well in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for construction of this well and its compliance with all Oregon water well standards. This report is true to the best of my knowledge and belief.

Signed **J. D. Monders** Date 5-8-86

Company **MONDERS DRILLING, INC** Job No.

RECEIVED

JUL 16 1984

8/3W-25-12

240

STATE OF OREGON WATER WELL REPORT (as required by ORS 537.785)

WATER RESOURCES DEPT
SALEM, OREGON

(for official use only)

(1) OWNER:

Name ROTH LAND AND BUILDING DEVELOPMENT
Address 4196 81st Street N.E.
City Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Rotary Mud ☐ Dig ☐ Irrigation ☐ Thermal ☐ Withdrawal ☐ Rejection ☐
☐ Bored ☐ Piezometric ☐ Grounding ☐ Test ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam. from +1 ft. to 50 ft. Gauge 250
" Diam. from ft. to ft. Gauge

LINER INSTALLED:

Steel ☐ Plastic ☒
Threaded ☐ Welded ☐
4" Diam. from 0 ft. to 465 ft. Gauge 160 PST PVC

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No
Size of perforations 1/8 in. by 9 in.
54 perforations from 385 ft. to 445 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____ Model No. _____
Type _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
gal./min. with ft. drawdown after hrs.
Air Test May Fluctuate
Air test 18 gal./min. with drill stem at 460 ft. 1 hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water _____ Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒
Well seal—Material used Cement
Well sealed from land surface to 50 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Amount of sealing material 16 sacks ☒ pounds ☐
How was cement grout placed? Air Grout Pump

Was pump installed? No Type _____ HP _____ Depth _____ ft.
Was a drive shoe used? ☐ Yes ☒ No Pugs _____ Size; location _____ ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the

(10) LOCATION OF WELL by legal description:

County Marion 1/4 1/4 of Section 25 of
Township 8 South Range 3 West WM.
(Township is North or South) (Range is East or West)
Trs. Lot 3629 Lot 10 Block _____ Subdivision Phase 2

MAILING ADDRESS OF WELL (or nearest address):

Deerlake Estates
Battlecreek Rd. Salem, Ore.

(11) WATER LEVEL of COMPLETED WELL:

Depth at which water was first found 203 ft.
Static level 128 ft. below land surface. Date 5-24-84
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 465 ft. Depth of completed well 465 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil	0	1	
Brown Clay	1	8	
Tan Clay	8	17	
Gray Claystone	17	28	
Gray Clay	28	35	
Gray Claystone	35	68	
Brown Claystone	68	71	
Gray Claystone	71	203	
Light Gray Sandstone	203	226	
Gray Sandstone	226	305	
Gray Course Sandstone	305	340	
Gray Sandstone	340	465	128'

Driller Recommended Pump

Be Set At 415'

Date work started 5-21 /completed 5-24
Date well drilling machine moved off of well 5-24 19 84

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] _____ Date _____, 19 _____

(bonded) Water Well Constructor Certification:

Bond _____ Issued by: _____ (Surety Company Name)
(number)
On behalf of MONDERS DRILLING INC.
(type or print name of Water Well Constructor)

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

(Signed) J. D. Monders
(Water Well Constructor)
(Dated) 5-27-84

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-45555-630

RECEIVED

JUL 16 1984

WATER RESOURCES DEPT

SALEM OREGON PRINT IN INK

(For official use only)

85/3W-25
242

(10) LOCATION OF WELL BY LEGAL DESCRIPTION:

County: Marion Township: 8 South Range: 3 West
1/4 of Section: 25
Sub-section: Phase 2

MAILING ADDRESS OF WELL (For nearest address):
Deerlake Estates
Battle Creek Rd. Salem, Ore.

(11) WATER LEVEL OF COMPLETED WELL:

Static level: 110 ft. below land surface. Date: 6-1-84
Depth at which water was first found: 205 ft.

(12) WELL LOG:

Diameter of well below casing: 450 ft.
Depth drilled: 450 ft.
Depth of completed well: 450 ft.

Formation: Describe color, texture, grain size and structure of materials and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL

From To

Soil

Brown Clay

1 7

Tan Clay

7 11

Brown Sandy Clay

11 19

Reddish Brown Clay

19 34

Brown Clay

34 53

Gray Claystone

53 205

Light Gray Sandstone

205 290

Gray Sandstone

290 325

Greenish Gray Sandstone

325 340

Coarse Gray Sandstone

340 372

Gray Sandstone

372 450

110'

Driller Recommended Pump

Be Set At 400'

Date work started: 6-1-84

Completed: 6-1-84

(unbonded) Water Well Constructor Certification (If applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

(unbonded) Water Well Constructor Certification (If applicable):

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

(unbonded) Water Well Constructor Certification (If applicable):

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

(unbonded) Water Well Constructor Certification (If applicable):

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

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Date: 1984

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(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

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(Signed) _____

Date: 1984

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(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

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(Signed) _____

Date: 1984

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(Signed) _____

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(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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

(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

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(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

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(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

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(Signed) _____

Date: 1984

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Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

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(Signed) _____

Date: 1984

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(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

(unbonded) Water Well Constructor Certification (If applicable):

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

(unbonded) Water Well Constructor Certification (If applicable):

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

(Signed) _____

Date: 1984

(bonded) Water Well Constructor Certification:

Bond: _____

Issued by: _____

(Number) _____

On behalf of: _____

(Type or print name of Water Well Constructor)

(Signed) _____

Date: 1984

(unbonded) Water Well Constructor Certification (If applicable):

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.785)

RECEIVED

JUL 16 1984

WATER RESOURCES DEPT.
PLEASE TYPE OR PRINT IN INK
SALEM, OREGON

85/3W-25-

24 D

(for official use only)

(1) OWNER:

Name ROTH LAND AND BUILDING DEVELOPMENT
Address 4196 81st Street N.E.
City Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Rotary Mud ☐ Dug ☐ Irrigation ☐ Thermal ☐ Rejection ☐
Other ☐ Bored ☐ Piezometric ☐ Grounding ☐ Test ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED: Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam. from +1 ft. to 50 ft. Gauge .250
" Diam. from ft. to ft. Gauge

LINER INSTALLED: Steel ☐ Plastic ☒
Threaded ☐ Welded ☐
4" Diam. from 0 ft. to 500 ft. Gauge 160 PST PVC

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No
Size of perforations 1/8 in. by 9 in.
52 perforations from 220 ft. to 480 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____ Model No. _____
Type _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
ft. gal./min. with ft. drawdown after hrs.
Air Test May Fluctuate
Air test 8 gal./min. with drill stem at 497 ft. 1 hr.
Boiler test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water _____ Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒
Well seal—Material used Cement
Well sealed from land surface to _____ 50 ft.
Diameter of well bore to bottom of seal _____ 10 in.
Diameter of well bore below seal _____ 6 in.
Amount of sealing material _____ 15 sack ☒ pounds ☐
How was cement grout placed? Air Grout Pump

Was pump installed? No Type _____ HP _____ Depth _____ ft.
Was a drive shoe used? ☐ Yes ☒ No Plug _____ Size location _____ ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? _____ depth of strata _____

Method of sealing strata off _____
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report
are to be filed with the

(10) LOCATION OF WELL by legal description:

County Marion M. of Section 25 of
Township 8 South Range 3 West WM.
(Township is North or South) (Range is East or West)
Tax Lot 3612 Lot 13 Block _____ Subdivision Phase 2

MAILING ADDRESS OF WELL (or nearest address)

Deerlake Estates
Battlecreek Rd. Salem, Ore.

(11) WATER LEVEL OF COMPLETED WELL:

Depth at which water was first found 205 ft.
Static level 112 ft. below land surface. Date 7-12-84
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 500 ft. Depth of completed well 500 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil	0	1	
Brown Clay	1	7	
Tan Clay	7	19	
Decomposed Rock	19	21	
Gray Clay	21	23	
Gray Claystone	23	205	
Light Gray Claystone	205	242	
Gray Sandstone	242	320	
Light Gray Sandstone	320	460	
Gray Sandstone	460	500	112'

Driller Recommended Pump
Be Set At 470'

Date work started 7-10 /completed 7-12
Date well drilling machine moved off of well 7-12 19 84

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

(Signed) _____ Date _____, 19 _____

(bonded) Water Well Constructor Certification:

Bond _____ Issued by: _____ (Surety Company Name)
On behalf of MONDERS DRILLING INC.
(type or print name of Water Well Constructor)

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

(Signed) J. D. Monders
(Water Well Constructor)

(Dated) 7-16-84

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-68828-030

(15)

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

RECEIVED
JUL 16 1984
PLEASE TYPE OR PRINT IN INK
WATER RESOURCES DEPT
SALEM, OREGON

(for official use only)

(1) OWNER:

Name ROTH LAND AND BUILDING DEVELOPMENT
Address 4196 81st Street N.E.
City Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dig ☐
☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Thermal ☐ Withpawel ☐ ReInjection ☐
Other ☐ Piezometric ☐ Grounding ☐ Test ☐

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☒ Welded ☒
6" Diam. from +1 ft. to 69 ft. Gauge 250
" Diam. from _____ ft. to _____ ft. Gauge _____

LINER INSTALLED:

Steel ☐ Plastic ☒
Threaded ☐ Welded ☒
4" Diam. from 0 ft. to 500 ft. Gauge 160 PSI PVC

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No
Size of perforations 1/8 in. by 9 in.
48 perforations from 440 ft. to 480 ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____ Model No. _____
Type _____ Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____
Air Test May Fluctuate
Air test 22 gal./min. with drill stem at 496 ft. 1 hr.
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hr.
Artesian flow _____ g.p.m.
Temperature of water _____ Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒
Well seal—Material used Cement
Well sealed from land surface to _____ ft.
Amount of confining material 16 sacks 300 pounds ☐
How was cement grout placed? ALL SCOUT PUMP

Was pump installed? _____ Type _____ HP _____ Depth _____ ft.
Type of Water? _____ depth of static _____
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL by legal description:

County Marion 34 14 of Section 25 of
Township 8 South Range 3 West WM.
(Township is North or South) (Range is East or West)
Tax Lot _____ Lot 14 Block _____ Subdivision Phase 2

MAILING ADDRESS OF WELL (or nearest address):
Deerlake Estates
Battlecreek Rd. Salem, Ore.

(11) WATER LEVEL of COMPLETED WELL:

Depth at which water was first found 443 ft.
Static level 110 ft. below land surface. Date 7-14-84
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 500 ft. Depth of completed well 500 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil	0	1	
Brown Clay	1	6	
Tan Clay	6	13	
Red Clay	13	27	
White Clay	27	32	
Gray Clay	32	58	
Gray Claystone	58	220	
Light Gray Sandstone	220	261	
Gray Sandstone	261	315	
Gray Claystone	315	334	
Gray Sandstone	334	443	
Coarse Gray Sandstone	443	455	
Gray Sandstone	455	500	110'

Driller Recommended Pump
Be Set At 460'

Date work started 7-12 /completed 7-14
Date well drilling machine moved off of well 7-17 19 84

(unbonded) Water Well Constructor Certification (if applicable):
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
(Signed) _____ Date _____, 19 _____

(bonded) Water Well Constructor Certification:
Bond _____ Issued by: _____ (Surety Company Name)
On behalf of MONDERS DRILLING INC.
Type or print name of Water Well Constructor

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

(Signed) M. D. Monders
(Water Well Constructor)
(Dated) 7-17-84

The original and first copy of this report
are to be filed with the

SALEM, OREGON 97310
within 30 days from the date of well completion.

NOTICE TO WATER WELL CONTRACTOR
The original and first copy
of this report are to be
filed with the

STATE ENGINEER, SALEM, OREGON
within 30 days from the date
of well completion.

RECEIVED MAR 11 1967
SEP 18 1967
STATE OF OREGON
STATE ENGINEER
SALEM, OREGON

State Well No. 8/342-24 Q

State Permit No. _____

(1) OWNER:

Name RAY E. PIERPOINT
Address RT 4, Box 86, SALEM, OREGON

(2) TYPE OF WORK (check):

New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Original only

Threaded ☐ Welded ☐

" Diam. from _____ ft. to _____ ft. Gage _____

" Diam. from _____ ft. to _____ ft. Gage _____

" Diam. from _____ ft. to _____ ft. Gage _____

PERFORATIONS:

Perforated? ☐ 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.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WATER LEVEL: Completed well.

Static level 78 ft. below land surface Date 8/24/67

_____ pressure _____ lbs. per square inch Date _____

(9) WELL TESTS:

Drawdown is amount water level is
lowered below static level

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

Field: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " " " "

" " " " " "

Ball test 10 gal./min. with 50 ft. drawdown after 1 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(10) CONSTRUCTION: Original only

Well seal—Material used _____

Depth of seal _____ ft.

Diameter of well bore to bottom of seal _____ in.

Were any loose strata cemented off? ☐ Yes ☒ No Depth _____

Was a drive shoe used? ☐ Yes ☐ No Original only

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ depth of strata _____

Method of sealing strata off _____

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

(11) LOCATION OF WELL:

County MARION Driller's well number _____

SW 1/4 SE 1/4 Section 24 T.8 S. R. 3 W. W.M.

Bearing and distance from section or subdivision corner

1200' W and 600' N SE Cor Sec. 24

Rt. 4, Box 86 Battle Creek Rd.

Salem, Ore.

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 53 ft. Depth of completed well 143 ft.

Formation: Describe color, texture, grain size and structure of materials;
and show thickness and nature of each stratum and aquifer penetrated,
with at least one entry for each change of formation. Report each change
in position of Static Water Level as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Original Well (1949-50)	0	90	
Claystone-hard	90	132	
Claystone-sandy streaks	132	138	
Claystone-soft	138	143	

Well used constantly
from 1950 to Aug. 18, 67
Went completely dry.

Aquifer-sandy claystone
132/138

Work started 8/22/67 19 Completed 8/24/67 19

Date well drilling machine moved off of well 8/24/67 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Howard Ruffield Date 8/25/67 19
(Drilling Machine Operator)

Drilling Machine Operator's License No. 46

Water Well Contractor's Certification:

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

NAME DUFFIELD BROS

(Person, firm or corporation)

(Type or print)

Address 4123 BLUFF AVE S.E. SALEM, ORE.

[Signed] Howard Ruffield
(Water Well Contractor)

Contractor's License No. 15 Date Aug 25 1967

USE ADDITIONAL SHEETS IF NECESSARY

#16
STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.785)

(START CARD) # 23094

(1) OWNER: KEN STONEMAN Well Number _____
Name KEN STONEMAN
Address 1986 Fir Street South
City Salem State Oregon Zip 97302

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

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

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes ☐ No ☒ Depth of Completed Well 502 ft.
Explosives used ☐ Yes ☒ No ☐ Type _____ Amount _____

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
10"	0'	59'	Cement	0'	59'	22
6"	59'	502'				

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: 6"	+1	59'	.250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4"	0'	502'	PVC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		160	PSI	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) _____ - 59 Feet

(7) PERFORATIONS/SCREENS:
☒ Perforations Method Electric Saw
☐ Screens Type _____ Material _____

From	To	Slot also	Number	Diameter also	Tube/pipe also	Casing	Liner
360'	460'		150	1/8 x	5 1/2 Inch	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailor ☒ Air ☐ Flowing
Yield gal/min _____ Drawdown _____ Drill stem at _____ Time _____
14 _____ 500 Ft. _____ 1 hr.
Air Test GPM May Fluctuate.

Temperature of water 50° 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 _____

(9) LOCATION OF WELL by legal description:
County Marion Latitude _____ Longitude _____
Township 8 South N or S, Range 3 West E or W, WM.
Section 24 SE 1/4 SE 1/4
Tax Lot 3614 Lot 11 Block _____ Subdivision _____
Street Address of Well (or nearest address) Lot 11, Phase Two
Deer Lake Estates, 3400 Blk. Deerlake Ct.

(10) STATIC WATER LEVEL:
132 ft. below land surface. Date 10-20-90
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 202 Feet

From	To	Estimated Flow Rate	SWL
202 Ft	499 Ft	14 GPM	132'

(12) WELL LOG: Ground elevation _____

Material	From	To	SWL
Soil	0	1	
Brown Clay	1	3	
Red Clay	3	26	
Tan Clay Sticky	26	41	
Gray Clay Sandy	41	49	
Gray Claystone	49	202	
Coarse Gray Sandstone	202	244	
Gray Sandy Claystone	244	267	
Gray Sandstone	267	321	
Gray Sandy Claystone	321	352	
Gray Sandstone	352	431	
Light Gray Sandstone	431	491	
Gray Sandy Claystone	491	499	
Gray Clay Soft	499	502	132'

Driller Recommended Pump Be
Set Between 425 and 460 Ft.
11-15-90
NOV 15 1990
WATER RESOURCES DEPT.
741 PM OREGON
Date started 10-17-90 Completed 10-20-90

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number _____
Signed _____ Date _____

(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 well construction standards. This report is true to the best of my knowledge and belief.

MONDERS DRILLING, INC. WWC Number 1325
Signed J.D. Monders Date 10-21-90

WATER WELL REPORT
STATE OF OREGON

RECEIVED
SEP 30 1980
WATER RESOURCES DEPT
SALEM, OREGON

State Well No. 853W-248

State Permit No. _____

(1) OWNER:

Name Jack Evans Jr. & Della M. Evans
Address 6946 Battle Creek Road S.
City Salem 97302 State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

☒ Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
☐ Rotary Mud ☐ Dug ☐ Irrigation ☐ Test Well ☐ Other ☐
☐ Cable ☐ Bored ☐ Thermal: Withdrawal ☐ ReInjection ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☒

6" Diam. from 1 1/2 ft. to 27 ft. Gauge 1/2
" Diam. from _____ ft. to _____ ft. Gauge _____

LINER INSTALLED:

" Diam. from _____ ft. to _____ ft. Gauge _____

(6) PERFORATIONS:

Perforated? ☐ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____ Model No. _____

Type _____

Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? B. J. SNEED
Yield: 5 gal/min. with 200 ft. drawdown after 1 hrs.

Air test _____ gal/min. with drill stem at 270 ft. 1 hrs.

Test _____ gal/min. with _____ ft. drawdown after _____ hrs.

Artesian flow _____ g.p.m.

Temperature of water 53 Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒

Well seal—Material used CEMENT

Well sealed from land surface to 36 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 7.5 sacks

How was cement grout placed? CONDUCTOR PIPE

PLACED FROM 0' TO 25' CEMENT

PUMPED BY CEMENT PUMP

Was pump installed? ☒ No Type _____ HP Depth _____ ft.

Was a drive shoe used? ☐ Yes ☒ No Plugs NO Size: location _____ ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of Water? _____ depth of strata _____

Method of sealing strata off _____

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County Marion Driller's well number _____
S.E. 1/4 Section 24 T. 6S R. 3W W.M.
Tax Lot # _____ Lot _____ Blk _____ Subdivision _____
Address at well location: 6946 BATTLE CREEK RD S
SALEM OR. 97302

(11) WATER LEVEL: Completed well.

Depth at which water was first found 78 ft.
Static level 71 ft. below land surface. Date 9-26-80
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"

Depth drilled 271 ft. Depth of completed well 271 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Topsoil	0	3	
Clay yellow color	3	12	
Basalt weathered	12	18	
Claystone firm gray	18	78	
Sandstone hard	78	92	71
Claystone Med. hard gray	92	138	
Sandstone light gray hard	138	160	
Claystone gray firm	160	251	
Sandstone light gray hard	251	264	71
Claystone gray firm	264	271	

Work started 9-24 19 80 Completed 9-26 19 80
Date well drilling machine moved off of well 9-26 19 80

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
(Signed) B. J. SNEED Date 9-26, 1980
(Drilling Machine Operator)

Drilling Machine Operator's License No. 187

Water Well Contractor's Certification:

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

Name SNEED WELL DRILLING INC. (Type or print)

Address 4750 ELIZABETH N. SALEM, OR.

(Signed) B. J. SNEED (Water Well Contractor)

Contractor's License No. 6 Date 9-26, 1980

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report
are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days of the date of completion of the well.

SP-12883-650

File Original and
State Engineer
SALEM, OREGON

RECEIVED
MAR 27 1959

STATE ENGINEER WATER WELL REPORT

SALEM, OREGON

State Well No.

State Permit No.

8/30-24 @

(19)

(1) OWNER:

Don Robinson
Address Route 4, SALEM, Oregon.

(2) LOCATION OF WELL:

County Marion
Bearing and distance from section or subdivision corner Well 18
1515.66' N 89°35'W and S10.11' N. 0°25'E and
508 ft. N 89°49'W and 120.0 ft. N. 0°25'E. from
the S.E. cor of Sec. 24 T8S, R3W of the W.M.
Marion County, Oregon.

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Redrilling ☐ Abandon ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐ Other ☐
☐ Irrigation ☐ Test Well ☐ Other ☐
☐ Dug ☐ Cable ☐ Bored ☐
☐ Jetted ☐ Driven ☐

(5) CASING INSTALLED:

Threading ☒ Welded ☐
6" diam. from 1 ft. to 39 ft. gage
" diam. from 1 ft. to 39 ft. gage
" diam. from 1 ft. to 39 ft. gage

(6) PERFORATIONS:

Type of perforator used _____ in. by _____
Size of perforations _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed ☐ Yes ☒ No
Manufacturer's Name _____
Type _____ Model No. _____
Slot size _____ ft. to _____ ft.
Set from _____ ft. to _____ ft.
Diam. _____ ft. to _____ ft.

(8) CONSTRUCTION:

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.
Was a surface seal provided? ☐ Yes ☒ No To what depth? _____ ft.
Material used in seal: _____
Did any strata contain undesirable water? ☐ Yes ☒ No
Type of water? _____
Depth of strata _____
Method of sealing strata off _____

(9) WATER LEVELS:

Static level _____ ft. below land surface Date 3-7-59
Artesian pressure _____ lbs. per square inch Date _____

Log accepted by: _____ (Signed) _____
Date Mar. 26th, 1959

(11) 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.
Butter test: _____ gal./min. with _____ ft. drawdown after _____ hrs.

(12) WELL LOG:

Diameter of well _____ ft.
Depth defined _____ ft. Depth of completed well _____ ft.
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.
TO. _____
FROM _____
MATERIAL _____
3-6 P.M. @ 118'
4-6 P.M. @ 118'
18 P.M. @ 130'

(13) PUMP:

Manufacturer's Name _____
Type: _____ d Submergible
H.P. 1

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 J.B. SHEED & SONS
Address 2505 BRADLEY ST. SALEM
(Person, firm, or corporation)
(Type or print)

Driller's well number _____

(Signed) _____

License No. _____
Date 3-10-59

(USE ADDITIONAL SHEETS IF NECESSARY)

WATER WELL REPORT
STATE OF OREGON

RECEIVED

AUG 6 1982

WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 88/340-24

State Permit No.

(1) OWNER:

Name Randy Green
Address 6906 Battle Creek Road
City South Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Rotary Mud ☐ Dug ☐ Irrigation ☐ Test Well ☐ Other ☐
Cable ☐ Bored ☐ Thermal ☐ Withdrawal ☐ ReInjection ☐

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☐
..... ft. Gauge
..... ft. Gauge

LINER INSTALLED:

..... ft. Gauge

(6) PERFORATIONS:

Perforated? ☐ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name
Type Model No.
Diam. Slot Size Set from ft. to ft.
Diam. Slot Size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
..... gal/min with ft. drawdown after hrs.
Air test 6 gal/min with drill stem at 320 ft. 2hrs.
Beller test gal/min with ft. drawdown after hrs.
Artesian flow g.p.m.

..... temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒

Well seal—Material used cement grout
Well sealed from land surface to 36 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 10 sacks
How was cement grout placed? pumped

Was pump installed? YES Type Sub. HP 1 1/2 Depth 320 ft.

Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of Water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Marion Driller's well number
Sec 4 SE 1/4 Section 24 T 8 S R 3 W W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.

Depth at which water was first found ft.
Static level 80 ft. below land surface, Date 7-29-80
Artesian pressure lbs. per square inch, Date

(12) WELL LOG:

Diameter of well below casing 6 ft.

Depth drilled 338 ft. Depth of completed well 338 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Deepened this well			
Pulled casing and reamed too.			
36' to 10" Reinstalled 6" casing			
to code. Drilled from 133' to 338'			
Hard clay stone (grey)	133	160	
Rock (hard)	160	170	
Sand Stone (blue grey)	170	276	
Sand stone (green grey)	276	338	

Work started 7 - 27 19 82 Completed 7 - 29 19 82
Date well drilling machine moved off of well 7 - 29 19 82

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
(Signed) George Robinson Date 8-3, 19 82
(Drilling Machine Operator)

Drilling Machine Operator's License No. 69

Water Well Contractor's Certification:

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

Name George Robinson Drilling
(Firm, firm or corporation) (Type or print)

Address 1037 Crescent Drive W. Salem

(Signed) George Robinson
(Water Well Contractor)

Contractor's License No. 8 - 3, 19 82

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report
are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 90 days from the date of well completion.

SP-19688-630

WATER WELL REPORT
STATE OF OREGON

RECEIVED

SEP 15 1982
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 85/3W-24 (20)

State Permit No. _____

(1) OWNER:

Name Randy Green
Address 69061 Battle Creek Road
City Salem State Ore.

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Battery Mud ☐ Dig ☐ Irrigation ☐ Test Well ☐ Other ☐
☐ Bored ☐ Thermal ☐ Withdrawal ☐ ReInjection ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☐

6" Diam. from 0+1 ft. to 457 ft. Gauge 160# P.V.C.
250

LINER INSTALLED:

4" Diam. from 4 ft. to 457 ft. Gauge 160# P.V.C.

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No

Type of perforator used Saw in liner

Size of perforations 1/8 in. by 6" in.

138 in. liner perforations from 335 ft. to 455 ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown to amount water level is lowered below static level

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

Test: _____ gal/min. with _____ ft. drawdown after _____ hrs.

Air test 20 gal/min. with drill stem at 440 ft. 2 hrs.

Boiler test _____ gal/min. with _____ ft. drawdown after _____ hrs.

Artesian flow _____ g.p.m.

Temperature of water _____ Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒

Well seal—Material used Cement grout

Well sealed from land surface to _____ ft.

Diameter of well bore to bottom of seal _____ in.

Diameter of well bore below seal _____ in.

Number of sacks of cement used in well seal _____ sacks

How was cement grout placed? Pumped

Was pump installed? HP Type _____ HP _____ Depth _____ ft.

Was a drive shoe used? ☐ Yes ☒ No Pings _____ Size: location _____ ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of Water? _____ depth of strata _____

Method of sealing strata off _____

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County Marion Driller's well number _____
T. 8 S R. 3 W W.M.
Tax Lot # _____ Lot _____ Blk _____ Subdivision _____

Address at well location: _____

(11) WATER LEVEL: Completed well.

Depth at which water was first found 140 ft.

Static level 36 ft. below land surface. Date 8-12

Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 457 ft. Depth of completed well 457 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
soil	0	1	
clay (orange)	1	13	
hard sand stone (gray)	13	32	
clay stone (gray)	32	47	
lime stone (hard)	47	55	
clay stone (dk. gray)	55	70	
sand stone (gray)	70	82	
clay stone (dk. gray)	82	125	
lime stone (hard)	125	128	
sand stone (lt. gray)	128	232	
sand stone (green gray)	232	288	
sand stone (lt. gray)	288	353	
sand stone (green gray)	353	363	
sand stone (gray)	363	457	

Work started 8/2 1982 Completed 8/12 1982

Date well drilling machine moved off of well 8/2 1982

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

(Signed) George Robinson Date 8/20, 1982
(Drilling Machine Operator)

Drilling Machine Operator's License No. 64

Water Well Contractor's Certification:

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

Name GEORGE ROBINSON DRILLING
(Person, firm or corporation) (Type or print)

Address 1050 Crescent Dr. N.W. Salem, Ore.

(Signed) George Robinson
(Water Well Contractor)

Contractor's License No. 13 Date 8/20, 1982

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-12634-630

MAR 5 1958

40283

(9) LOCATION OF WELL by legal description:

County Marion Latitude _____ Longitude _____

Township 8S N or S. Range 3W E or W. WM. _____

Section 25 NW ¼ NE ¼ _____

Tax Lot _____ Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) _____

3137 Battlecreek Hollow S.E.

(10) STATIC WATER LEVEL:

203 ft. below land surface. Date 8/19/82

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 465

From	To	Estimated Flow Rate	SWL
465	465	5	203

(12) WELL LOG: Ground elevation _____

[illegible]

Date started 8/17/92 Completed 8/19/92
(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed Mal D Bein WWC Number 753
Date 8/19/92

(banded) 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 well construction standards. This report is true to the best of my knowledge and belief.

WILLAMETTE DRILLING CO., INC. WWC Number 753
Signed [Signature] Date 8/19/92

1ST COPY - CONSTRUCTOR 2ND COPY - ARCHITECT 3RD COPY - CUSTOMER 4TH COPY - RECORDS 5TH COPY - CITY

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

START CARD# 5510

RECEIVED

DEC 21 1988

8/30/24/88

23

(1) OWNER:

Name Randall & Connie Green
Address 6906 Battle Cr. Rd. S.E.
City Salem State Ore. Zip 97301

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Infection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 498 ft.

Explosives used ☐ Yes ☒ No ☐ Type _____ Amount _____

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
6"	19	498	cement	0	19	6

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: 6"	0	19	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4"	5	498	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

☐ Perforations Method Saw cut

☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Telephone size	Casing	Liner
460	497	6"	60	1/8		<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing ☐ Artesian

Yield gal/min	Drawdown	Drill stem at	Time
11 gpm		490	1 hr.

Temperature of water _____ 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 ☐ Murky ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County Marion Oregon
Township 8 S Range 3 W E or W, W.M.
Section 24 S W 1/4 S E 1/4
Tax Lot 04202 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 6838 Battle Cr.
Rd. Salem Ore.

(10) STATIC WATER LEVEL:

78' 10" ft. below land surface.

Date 12-16-88

Artesian pressure _____ lb. per square inch.

Date _____

(11) WATER BEARING ZONES:

180'

Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL
180	200	2 1/2 gpm	
360	380	2 1/2 gpm	
480	490	6 gpm	

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL
Soil	0	1	
Yellow Clay	1	13	
Gray Claystone	13	80	
Light Gray Claystone	80	98	
Dark Gray Claystone	98	102	
Brownish Gray	102	114	
Light Gray (vary hard)	114	168	
Gray Sandstone (clam - shells)	168	172	
Light Gray Sandstone	172	190	
Greenish Sandstone	190	198	
Gray Sandstone	198	265	
Brownish Gray	265	285	
Greenish Gray	285	289	
Dark Green Sandstone	289	294	
Dark Gray Sandstone	294	302	
Greenish Gray	302	323	
Gray Sandstone	323	470	
Gray Sandstone/w Fractures	470	490	
Gray Claystone	490	498	

Date started 12-6-88

Completed 12-19-88

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed George Robinson WWC Number 13
Date 12-20-88

(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 well construction standards. This report is true to the best of my knowledge and belief.

Signed George Robinson WWC Number 13
Date 12-20-88

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

MIRI.....

RECEIVED

85/3W-26 (24)

(1) OWNER: ROTH LAND AND BUILDING DEVELOPMENT
Name: ROTH LAND AND BUILDING DEVELOPMENT
Address: 4196 81st Ave. N.E.
City: Salem State Oregon Zip: SALEM, OREGON 97301

Well Number: 1234

(9) LOCATION OF WELL by legal description:

County: Marion Latitude: Longitude:
Section: 36 Range: 3 West E or W, WM.
Twp: 24

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes No
Yes No ☒ Depth of Completed Well: 535 ft.
Explosives used ☒ Type: Amount:

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
10"	0'	100'	Cement	0'	100'	36 Sacks
6"	100'	535'				

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:

Casing:	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
	6"	+1	100'	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:	4"	0'	535'	PVC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				SDR-26	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s):

(7) PERFORATIONS/SCREENS:

☒ Perforations Method: Electric Saw

☐ Screens Type: Material:

From	To	Slot size	Number	Diameter	Tel./pipe size	Casing	Liner
255'	295'		45	1/8 x 6 In.		<input type="checkbox"/>	<input checked="" type="checkbox"/>
475'	515'		75	1/8 x 6 In.		<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing ☐ Artesian

Yield gal/min	Drawdown	Drill stem at	Time
25		535 Ft	1 hr.

Temperature of water: 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:

Tax Lot: Lot: Block: Subdivision:

Street Address of Well (or nearest address):
6838 Battlecreek Road South Salem, Oregon

(10) STATIC WATER LEVEL:

135 ft. below land surface. Date: 11-25-87

Artesian pressure: lb. per square inch. Date:

(11) WATER BEARING ZONES:

Depth at which water was first found: 244 Feet

From	To	Estimated Flow Rate	SWL
244 Ft	273 Ft	4 GPM	
476 Ft	521 Ft	21 GPM	135'

(12) WELL LOG:

Ground elevation:

Material	From	To	SWL
Soil	0	1	
Brown Clay	1	7	
Tan Clay Sticky	7	22	
Brown Clay	22	81	
Gray Clay	81	85	
Gray Claystone	85	244	
Multi-Colored Sandstone WB	244	273	
Gray Sandstone	273	312	
Green & Gray Sandstone	312	352	
Dark Gray Sandstone	352	476	
Multi-Colored Sandstones WB	476	521	
Gray Sandstone	521	535	135'
5% Bentonite Used To Seal Well.			
Air Test May Fluctuate.			
Driller Recommended Pump Be			
Set Between 475' - 515'			

Date started: 11-24-87 Completed: 11-28-87

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number:

Signed: Date:

(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 well construction standards. This report is true to the best of my knowledge and belief.

MONDERS DRILLING, INC. WWC Number 1325

Signed: D. Monders Date: 12-4-87

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

(1) OWNER: ROTH LAND AND BUILDING DEVELOPMENT
Name: ROTH LAND AND BUILDING DEVELOPMENT
Address: 4196 81st Ave. N.E.
City: Salem State: Oregon Zip: SALEM

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

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

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 490 ft.
Yes No ☒ EK
Explosives used ☐ EK Type Amount

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
10"	0'	40'	Cement	0'	40'	16 Sacks
6"	40'	490'				

How was seal placed: Method ☐ A ☐ B ☒ EK ☒ KD ☐ 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:	6"	+1	40'	250		<input checked="" type="checkbox"/> EK	<input type="checkbox"/>	<input checked="" type="checkbox"/> EK	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:	4"	0'	490'	PVC		<input type="checkbox"/>	<input checked="" type="checkbox"/> EK	<input checked="" type="checkbox"/> EK	<input type="checkbox"/>
				SDR-26		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Electric Saw
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
370'	470'		120	1/8 x 9	In.	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing
Yield gal/min Drawdown Drill stem at Time

17		490 Ft.	1 hr.

Temperature of water 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

WHITE COPIES - WATER RESOURCES DEPARTMENT

(9) LOCATION OF WELL by legal description:

County Marion Latitude Longitude
Township 35 South Nor S. Range 3 West E or W. WM.
Section 24
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)
6838 Battlecreek Road South, Salem, Oregon

(10) STATIC WATER LEVEL:
210 ft. below land surface. Date 12-3-87
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 462 Feet

From	To	Estimated Flow Rate	SWL
462 Ft.	485 Ft.	17 GPM	210'

(12) WELL LOG: Ground elevation

Material	From	To	SWL
Soil	0'	1	
Brown Clay	1	5	
Light Tan Clay	5	25	
Gray Clay	25	27	
Gray Claystone	27	136	
Gray Sandy Claystone	136	143	
Gray Sandstone	143	224	
Light Gray Sandstone	224	256	
Gray Sandstone	256	315	
Dark Gray Sandstone	315	332	
Green & Gray Sandstone	332	351	
Gray Sandstone	351	462	
Light Colored Coarse, And Multi-Colored Limestones,			
And Sandstones	462	485	
Gray Sandstone	485	490	210'
5% Bentonite Used To Seal Well.			
Air Test May Fluctuate.			
Driller Recommended Pump Be. Set In Perforated Zone.			

Date started 12-1-87 Completed 12-3-87

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed Date

(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 well construction standards. This report is true to the best of my knowledge and belief.

MONDERS DRILLING, INC. WWC Number 1325
Signed D. Monders Date 12-4-87

YELLOW COPY - CONSTRUCTOR

PINK COPY - CUSTOMER

9/25/82 10/2/82

WATER WELL REPORT
STATE OF OREGON

RECEIVED

AUG 27 1981

State Well No.

85/3W-25

(27)

WATER RESOURCES DEPT
SALEM, OREGON

State Permit No.

(1) OWNER:

Name Vic Town
Address 3266 Deer Lake Ct. S.E.
City Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dig ☐
Cable ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐
Thermal ☐ Withdrawal ☐ ReInjection ☐

CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam. from 1" ft. to 100" ft. Gauge 250
" Diam. from " ft. to " ft. Gauge

LINER INSTALLED:

0" Diam. from 525" ft. to " ft. Gauge SDR-26

(6) PERFORATIONS:

Perforated ☒ Yes ☐ No
Type of perforator used Electric Saw
Size of perforations 1/8 in. by 8 in.
70" perforations from 465" ft. to 515" ft.
" perforations from " ft. to " ft.
" perforations from " ft. to " ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____ Model No. _____
Type _____
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) 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.
Air Test May Fluctuate
Air test 5 gal/min with drill stem at 530 ft. 1 hr.
Bailer test _____ gal/min with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m.

CONSTRUCTION:

Special standards: Yes ☒ No ☐
Well seal—Material used Cement Bentonite
Well sealed from land surface to _____ 100" ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 31 sacks
How was cement grout placed? Air Grout Pump
8 Sacks Bentonite

Was pump installed? No Type _____ HP _____ Depth _____ ft.
Was a drive shoe used? ☐ Yes ☒ No Flange _____ Size: location _____ ft.
Did any strata contain questionable water? ☐ Yes ☒ No
Type of Water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County Marion Driller's well number _____
K _____ N Section 25 T. 8S R. 3W W.M. _____
Tax Lot # _____ Lot _____ Blk _____ Subdivision _____
Address at well location: 3266 Deer Lake Ct. S.E.
Salem, Oregon

(11) WATER LEVEL: Completed well.

Depth at which water was first found _____ 390" ft.
Static level _____ 75" ft. below land surface. Date 7-13-81
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing _____ 6" ft.
Depth drilled _____ 530" ft. Depth of completed well 525 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil	0	2	
Dark Brown Clay	2	6	
Tan Clay	6	12	
Blue Sticky Clay	12	36	
Decomposed Wood	36	41	
Brown Sticky Clay	41	45	
Gray Siltstone	45	54	
Tan Sticky Clay	54	72	
Blue Sticky Clay	72	81	
Tan Sticky Clay	81	90	
Gray Shale	90	130	
Gray Sandstone	130	395	
Blue Gray Sticky Clay	395	415	
Gray Sandstone	415	505	
Gray Sticky Clay	505	518	
Gray Sandstone	518	530	75'

Work started 7-7 19 81 Completed 7-13 19 81
Date well drilling machine moved off of well 7-13 19 81

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
(Signed) J. P. Mordue Date 8-11, 1981
(Drilling Machine Operator) 1195

Drilling Machine Operator's License No.

Water Well Contractor's Certification:

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

Name Miller, West Well Drilling
(Person, firm or corporation) (Type or print)
Address 5875 Gaffin Rd. Salem, Oregon
(Signed) Gary Mordue
(Water Well Contractor)

Contractor's License No. 722 Date 8-11 19 81

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-12689-280

WATER WELL REPORT
STATE OF OREGON
12/1/83
WATER RESOURCES DEPT.
PLASTERED IN INK

RECEIVED
MAR 28 1983

State Well No. 8513W-25
State Permit No.

(28)

(1) OWNER:

Name BOB RAY
Address 3533 Stanley Ln South
City Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL: (4) PROPOSED USE (check):

Battery Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Battery Lead ☐ Dig ☐ Irrigation ☐ Other ☐
Cased ☐ Bored ☐ Thermal ☐ Withdrawal ☐ Rejection ☐

(6) CASING INSTALLED:

5. Diam. from +1 ft. to .97 ft. Gauge 250.
Diam. from ft. to ft. Gauge

LINER INSTALLED:

4. Diam. from -8 ft. to 510 ft. Gauge 160 PSI PVC

(6) PERFORATIONS:

Type of perforator used Electric Saw
Size of perforations 1/8 in. by 10 in.
perforations from 460 ft. to 500 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screens installed? ☐ Yes ☒ No
Manufacturer's Name
Type Slit Size Set from ft. to ft.
Diam. Slit Size Set from ft. to ft.

(8) WELL TESTS:

Drill bit recommended pump be set at 480'
When a pump test made? ☐ Yes ☒ No If yes, by whom?
Air Test Max Fluctuate
Air test 18 gal/min. with drill stem at 510 ft. 1 1/2 hrs.
Ball test gal/min. with ft. drawdown after hrs.
Production flow ft. per min.

(9) CONSTRUCTION:

Well seal - Material used Cement
Well sealed from land surface to 97 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sections of casing used in well seal 28 sections
How was cement grout placed? Air Grout Pump

(10) LOCATION OF WELL:

County Marion
Twp. 25 S. R. 85 E. 3W
Sec. 4 Subdivision
Address at well location: DeerLake Estates
Battlecreek Rd. Salem, Oregon

(11) WATER LEVEL: Completed well.

Depth at which water was first found 175 ft.
Static level 75 ft. below land surface. Date 3-24-83
Atmospheric pressure lbs. per square inch. Date

(12) WELL LOG:

Depth drilled 510 ft. Depth of completed well 510 ft.
Formation Describe color, texture, grain size and structure of materials and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.
MATERIAL From To SWL
Soil 0 1
Dark Brown Clay 1 4
Red Clay 4 9
Tan Clay 9 38
Blue Sticky Clay 38 55
Decomposed Wood 55 62
Brown Sticky Clay 62 70
Gray Siltstone 70 81
Blue Sticky Clay 81 84
Gray Clay 84 91
Gray Claystone 91 95
Dark Gray Claystone 95 102
Blue Gray Shale 102 111
Gray Claystone 111 149
Gray Sticky Clay 149 155
Gray Sandstone 155 175
Light Gray Sandstone 175 181
Gray Claystone 181 246
Gray Sandstone 246 390
Gray Claystone 390 430
Gray Sandstone 430 510
Work started 3-18 1983 Completed 3-24 1983
Date well drilling machine moved off of well 3-24 1983

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] _____ Date _____ 1983
Bonded Water Well Constructor Certification:
Bond _____ Issued by: _____
(unbonded) _____ Bureau Company Name
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name MONDERS DRILLING INC. (Type or print)
Address P.O. Box 15087 Salem, Oregon
[Signed] J.P. Monders Water Well Constructor
Date 3-25-1983

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310
SP-40202-600
within 30 days from the date of well completion.

RECEIVED
MAY 19 1986

12408 82/34-25
M 12408 82/34-25

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.785)

WATER RESOURCES DEPT.

SALEM, OREGON

(1) OWNER: Dave Rosling
Name: DAVE ROSLING
Address: 5336 Pike Ct. South
City: Salem State: Oregon Zip: 97306

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

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

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

(5) BORE HOLE CONSTRUCTION:
Depth of Completed Well: 520 ft.
Special Standards date of approval:

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
6"	0	80	Cement	0	80	27
	80	520				

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:	6"	+1	80	.250		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:	4"	0	520	160		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Location of shoe(s)
(7) PERFORATIONS/SCREENS:

Perforations		Method		Material	
<input checked="" type="checkbox"/>	Electric Saw				
<input type="checkbox"/>	Screens	Type			
From	To	Slot size	Number	Diameter	Tele/pipe size
0	500	1/8	66		

(8) WELL TESTS: Minimum testing time is 1 hour			
<input type="checkbox"/> Pump	<input type="checkbox"/> Bailor	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Flowing
Yield gal/min	Pumping level	Drill stem at	Time 1/2 hr
6		518'	1 hr
6		518'	2 HR

Temperature of water: 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:

(9) LOCATION OF WELL by legal description:

County: Marion Latitude: Longitude:
Township: 8 South Range: 3 West Sec. W, WM:
Section: 25
Tax Lot: Lot: #3 Block: I Subdivision: Deerlake Estates
Street Address of Well (or nearest address):
3266 Deerlake ct. S.E. Salem

(10) STATIC WATER LEVEL:

110 ft. below land surface. Date: 4-14-86
Artesian pressure: lb. per square inch. Date:

(11) WELL LOG:

Material	From	To	WB?	SWL
Fill	0	1		
Dark Brown Clay	1	11		
Tan Clay	11	26		
Gray Clay Sticky	26	38		
Gray Sandy Clay	38	54		
Dark Gray Claystone	54	75		
Black Basalt	75	130		
Blue Green Clay	130	133		
Gray Sandy Claystone	133	150		
Gray Sandstone	150	183		
Light Gray Sandstone	183	205		
Gray Sandstone	205	357		
Gray Claystone	357	378		
Gray Sandstone	378	412		
Gray Claystone	412	432		
Gray Sandstone	432	485		
Light Gray Sandstone	485	502	XX	
Gray Sandstone	502	520		110'

Date started: 5-13-86 Completed: 5-14-86

(unbonded) Water Well Constructor Certification:

I constructed this well in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed: Date:

(bonded) Water Well Constructor Certification:

I accept responsibility for construction of this well and its compliance with all Oregon water well standards. This report is true to the best of my knowledge and belief.

Signed: Date: 5-15-86

Company: MONDERS DRILLING, INC. Job No.:

Mari⁶²
17727

80/3w/25aa

(2) TYPE OF WORK: ☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Community	<input type="checkbox"/> Industrial	<input type="checkbox"/> Irrigation
<input type="checkbox"/> Thermal	<input type="checkbox"/> Injection	<input type="checkbox"/> Other _____	

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 620 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE			Material	SEAL		Amount sacks or pounds
Diameter	From	To		From	To	
10"	0'	22'	Cement	0'	22'	11
8 3/4"	22'	125'	Bentonite	22'	125'	34
8 3/4"	125'	140'	Cement	125'	140'	8
6"	140'	620'				

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:				Steel	Plastic	Welded	Threaded
	Diameter	From	To	Gauge			
Casing:	6"	+1	140'	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

140 Feet

(7) PERFORATIONS/SCREENS:

<input type="checkbox"/> Perforations	Method	
<input type="checkbox"/> Screens	Type	Material

From	To	Slot size	Number	Diameter	Tide/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Baller ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1/3		620 Ft	1 hr.
Air Test GPM May Fluctuate.			

Temperature of Water 49° 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: _____

(9) LOCATION OF WELL by legal description:
 County Marion Latitude _____ Longitude _____
 Township 8 South N or S. Range 3 West E or W. WM.
 Section 25 NE 4 NE 4
 Tax Lot _____ Lot #3 Block #1 Subdivision _____
 Street Address of Well (or nearest address) Deer Lake Estates
3206 Deer Lake Ct SE Salem, Oregon 97301

(10) **STATIC WATER LEVEL:**
232 ft. below land surface. Date 3-12-92
 Artesian pressure _____ lb. per square inch. Date _____

(1) WATER BEARING ZONES:

Depth at which water was first found 431 Ft ..

From	To	Estimated Flow Rate	SWL
431 Ft	445 Ft	1/3 GPM	232'

(12) WELL LOG: _____
Ground elevation _____

Material	From	To	SWL
Brown Clay	0	5	
Multi-Colored Clays	5	9	
Medium Boulder	9	13	
Multi-Colored Clays	13	22	
Light Tan Sticky Clay	22	41	
Gray Sticky Clay	41	65	
Dark Gray Sandy Clay	65	81	
Black Basalt	81	126	
Gray Sandy Clay	126	131	
Gray Claystone	131	366	
Gray Clay Soft	366	384	
Gray Sandy Claystone	384	431	
Gray Sandstone	431	609	
Gray Sandy Claystone	609	616	
Gray Clay Soft	616	620	232'

RECEIVED

~~MAR 19 1992~~

~~WATER RESOURCES DEPT~~
~~SALEM, OREGON~~

Date started 3-11-92 Completed 3-13-92

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WVC Number _____
Signed _____ Date _____

(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 well construction standards. This report is true to the best of my knowledge and belief.

is true to the best of my knowledge and belief.

MONDERS, DRILLING, INC. WWC Number 1325

Signed D. Monders Date 3-15-92

MARK 51154

(START CARD) # 39175

(1) OWNER: DAVID ROSLING
Well Number: 3073

Name: DAVID ROSLING
Address: 3206 Deer Lake Crt. S.E.
City: Salem, Oregon 97304
Zip:

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

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

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☒ Yes ☐ No
Explosives used ☐ Yes ☒ No Type _____ Amount _____ ft.

HOLE SEAL	Amount	To	Material	From	Amount
	10	0.25	betonite	0	25
	7.5	25	Cement	25	80
	8 sacks				

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

(6) CASING/LINER:
Casing Diameter From To Gauge
+1 80 .250
Liner: ☐ Steel ☒ Plastic ☐ Welded ☐ Threaded

(7) PERFORATIONS/SCREENS:
Final location of shoe(s) Tubex shoe at 80'
Method Perforations Screens
Type _____ Material _____
Tel/type size Diameter size Casing Liner

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian
Yield gal/min Drawdown Drill stem at Time
5 598 1 hr.
Temperature of Water 53°F Depth Artesian Flow Found
Was a water analysis done? ☐ Yes ☐ No By whom _____
Did any strata contain water not suitable for intended use? ☐ Too little ☐ Other _____
Depth of strain: _____

(9) LOCATION OF WELL by legal description:

County Marion Longitude Township 8S N or S. Range 3W R or W. 4M. Section 25 NE ¼ NE ¼

Block Subdivision

Street Address of Well (or nearest address) 3206 Deer Lake Crt.

(10) STATIC WATER LEVEL:

118 ft. below land surface. Artesian pressure lb. per square inch. Date 10/26/93

(11) WATER BEARING ZONES:

Depth at which water was first found 295

(12) WELL LOG:

From	To	Estimated Flow Rate	SWL
295	301	2 1/2	118
437	441	1 1/2	118
575	578	1	118

Ground elevation

Material	From	To	SWL
Topsoil	0	2	
Brown sticky Clay	2	19	
Dark Brown Rock	19	31	
Black Broken Rock	31	35	
Brown Broken Rock	35	47	
Black Broken Rock	47	61	
Blue Clay	61	64	
Gray Sandstone	64	195	
Light Brown Sandstone	195	295	
Dark Brown Sandstone	295	301	
Gray Sandstone	301	437	
Light Gray Hard Sandstone	437	441	
Gray Sandstone	441	574	
Light Gray Hard Sandstone	574	578	
Gray Sandstone	578	598	

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MAR 27 1997

WATER RESOURCES DEPT.

10/21/97 SALEM, OREGON

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WVC Number 753 Date 10/25/93

Signed

(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 well construction standards. This report is true to the best of my knowledge and belief.

WILLIAMSBURG DRILLING CO. INC. 753 Date 10/25/93

THIRD COPY CIRCUMFER

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 897.785)

MAKED
17305

JUN 21 1991

85/36/50C

(1) OWNER: ERNEST K. TRAL
Name: Ernest K. Tral
Address: 4936 Shoreline Ln N
City: Klamath, Oregon
State: 97303 Zip

(2) TYPE OF WORK:
☒ New Well ☐ Deepen ☐ Rehabilitation ☐ Abandon

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

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval: ☒ Yes ☐ No
Depth of Completed Well: 437 ft.

(6) CASING/LINER:
Gravel placed from: ft. to ft. Size of gravel: _____
Backfill placed from: ft. to ft. Material: _____
How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E ☐ Other

(7) PERFORATIONS/SCREENS:
Method: SK18AW (1/8" X 8")
☒ Perforations ☐ Screens

(8) WELL TESTS: Minimum testing time is 1 hour
From: 344 To: 404
Flow rate: 25 gpm
Drawdown: 437
Depth of water: 532

(9) LOCATION OF WELL by legal description:
County: Marion Township: 8S Range: 3E
Section: 25 NE 1/4
Block: _____ Subdivision: _____
Street Address of Well (or nearest address): 7336 Battleground Rd.
City: Klamath, Oregon

(10) STATIC WATER LEVEL:
Artesian pressure: _____ ft. below land surface.
Date: 3/29/91

(11) WATER BEARING ZONES:
Depth at which water was first found: 92

(12) WELL LOG:
Ground elevation: _____

Material	From	To	SWL
Topsoil	0	2	
Brown Clay	2	5	
Brown Broken Rock	5	11	
Black Basalt	11	64	
Soft Black Basalt	64	71	
Black Basalt	71	92	
Cumby Rock and Sandstone	92	94	
Greenish Gray Sandstone	94	96	
Fractured Gray Sandstone	96	374	
Greenish Gray Sandstone	374	391	
Greenish Gray Sandstone	391	437	

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed: [Signature] Date: 3/29/91
WVC Number: 753

(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 construction standards. This report is true to the best of my knowledge and belief.
Signed: [Signature] Date: 3/29/91
WVC Number: 753

(1) OWNER:

Name WILLIAM R HACK Jr.
Address 8330 KUREKA ST.
City VENTURA

Well No. 09-95

St CA Zip 93004

(2) TYPE OF WORK: NEW WELL

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: DOMESTIC

(5) BORE HOLE CONSTRUCTION:

Special Construction Approval: NO Depth of Compl. Well 540 ft
Explosives used NO Type Amount

HOLE			SEAL			Amount
Diam.	From	To	Material	From	To	
10"	0'	50'	BENTONITE	0'	50'	24 SACKS
6"	50'	540'				

Seal placement method POURED DRY

Backfill: from ft to ft Material
Gravel: from ft to ft Size

(6) CASING/LINER:

	Diam.	From	To	Gauge	Material	Connection
Casing	6"	+2'	50'	.250	STEEL	WELDED
Liner	4"	0'	540'	PVC	PLASTIC	WELDED

Final Location of shoe(s) 50'

(7) PERFORATIONS/SCREENS:

[X] Perforations Method ELECTRIC SAW

Screens		Type	Material	Casing/liner	
From	To	Slot Size	Number	Diam. size	LINE
400'	520'	90	1/8" X	5"	

(8) WELL TESTS: Minimum testing time is 1 hour

Test type AIR

Yield GPM	Draw-down	Drill stem at	Time
5.5		515'	1 hr.

Temperature of water 51 F Depth Artesian Flow Found

Was water analysis done? NO By whom
Reason for water not suitable for use
Depth of strata 0

(9) LOCATION OF WELL by legal description:

County MARION Lat. . . . Long. . . .
Township 8 S Range 3 W W. 1/4
Section 25 NW 1/4 NE 1/4
Tax Lot Lot 1 Block 2 Subdivision
Street Address of Well (or nearest Address)
3175 DEER LAKE CT. SALEM, OR 97301

(10) STATIC WATER LEVEL:

120' ft. below land surface. Date 07/08/95
Artesian pressure lb per square in. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 285'
From To Est Flow Rate SWL
285' 460' 5.5 GPM 120'

(12) WELL LOG:

Material	Ground elevation		SWL
	From	To	
BROWN CLAY	0	12	
TAN CLAY	12	18	
BROWN CLAY (STICKY)	18	32	
BROWN & GRAY CLAY (STICKY)	32	44	
GRAY CLAYSTONE	44	204	
LIGHT GRAY CLAYSTONE	204	342	120'
GRAY CLAYSTONE	342	540	120'

AIR TEST GPM MAY FLUCTUATE

Date started 07/06/95

Completed 07/08/95

(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 my best knowledge and belief.

Signed _____ WWC Number _____
Date _____

(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.
MONDERS DRILLING, INC. WWC Number 746
Signed _____ Date 07/09/95

--

Contact Info (optional)

STATE OF OREGON EXEMPT USE WELL MAP

(as required by ORS 537.545 & OAR 690.190)

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department

725 Summer St NE, Salem, OR 97301

(503)986-0900



LOCATION OF WELL

Latitude: 44.85054692

Longitude: -122.99491363

Datum: WGS84

Township/Range/Section/Quarter-Quarter Section:

WM 8.00S 3.00W 25 NENE

Address of Well:

3205 DEER LAKE COURT S.E. SALEM, OREGON 97317

Revised: 3295 Deer Lake Ct SE salem Oregon 97317

Well Label: L112137

Well Log: MARI 65215

Printed: Jun 02, 2014

DISCLAIMER: This map is intended to represent the approximate location of the exempt use well provided by the land owner. It is not intended to be construed as survey accurate in any manner.



36

MARI 62027

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

WELL I.D. # L 88373

START CARD # 1004973

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

(1) LAND OWNER Well Number NW
Name John Powell
Address 3225 Deer Lake Ct SE
City Salem State Or Zip 97304

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

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

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

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☒ No
Depth of Completed Well 520 ft.
Explosives used: ☐ Yes ☒ No Type _____ Amount _____

BORE HOLE			SEAL		
Diameter	From	To	Material	From	To
10"	0	79	bentonite	0	50
6"	79	520			

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other bentonite poured dry and hydrated

Backfill placed from 50 ft. to 79 ft. Material 18 sacks
Gravel placed from 440 ft. to 520 ft. Size of gravel 6/9 silica sand

Casing/Liner			Gauge	Steel	Plastic	Welded	Threaded
Casing: 6"	+1	79	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4"	42	480	#160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used ☐ Inside ☒ Outside ☐ None
Final location of shoe(s) 79

(7) PERFORATIONS/SCREENS
☐ Perforations Method _____
☒ Screens Type Johnson Material PVC

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
480	520	.030			4"	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Time
11		520'	1hr

Temperature of water 52 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: H2o 1377 us

(9) LOCATION OF WELL (legal description)

County Marion
Tax Lot 1800 Lot _____
Township 8 S Range 3 W WM
Section 25 NE 1/4 NE 1/4
Lat _____ or _____ (degrees or decimal)
Long _____ or _____ (degrees or decimal)
Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL

189' ft. below land surface. Date 9-23-08
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES

From		To	Estimated Flow Rate	SWL
43	45	1/4		N/A
493	498	11 gpm		189'

(12) WELL LOG

Material	From	To	SWL
Topsoil	0	2	
Shale, brown/orange	2	19	
Shale, light brown/weathered	19	51	
Claystone, grey, weathered fract	51	53	
Sandstone, grey, hard, weathered	53	59	
Sandstone, grey, med/hard	59	96	
Sandstone, grey, med	96	188	
Sandstone, lt grey, med	188	232	
Sandstone, grey, med	232	295	
Sandstone, lt grey, med	295	363	
Sandstone, lt grey, w/hard layers	363	377	
Sandstone, lt grey, med/soft	377	406	
Sandstone, drk grey, med/hard	406	439	
Sandstone, drk grey, hard	439	520	189'

Dickerson Well Drilling, Inc.

Date Started 9-17-08 Completed 9-23-08

(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 1574 Date 9-24-08

Signed Robert E. Hildebrand

(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 1571 Date 9-24-08

Signed William J. Blair

WATER WELL REPORT

STATE OF OREGON

RECEIVED

SEP 20 1983

WATER RESOURCES DEPT
SALEM, OREGON

State Well No.

85/3W-25a

State Permit No.

(1) OWNER:

Name **ROTH LAND AND BUILDING DEVELOPMENT**
Address **4196 81st Street N.E.**
City **Salem** State **Oregon**

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Rotary Mud ☐ Dug ☐ Irrigation ☐ Test Well ☐ Other ☐
✓ ☐ Bored ☐ Thermal ☐ Withdrawal ☐ ReInjection ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED: Steel ☒ Plastic ☐
Threated ☒ Welded ☒

6" Diam. from 1 ft. to 59 ft. Gauge 250

LINER INSTALLED:

4" Diam. from 0 ft. to 503 ft. Gauge 160 PSI PVC

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No

Type of perforator used **Electric Saw**

Size of perforations **1/8** in. by **10** in.
220 perforations from 443 ft. to 483 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____ Model No. _____
Type _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

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

1" Air Test May Fluctuate

Air test 25 gal/min. with drill stem at 500 ft. 1 hr.

Boiler test gal/min. with ft. drawdown after hr.

Artesian flow gpm.

Temperature of water Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION: Special standards Yes ☐ No ☒

Well seal—Material used **Cement - Bentonite**

Well sealed from land surface to 59 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 16 sacks

How was cement grout placed? **Air Grout Pump**

1 Sack Bentonite Used

Was pump installed? ☒ No _____ Type _____ HP _____ Depth _____ ft.

Was a drive shoe used? ☐ Yes ☒ No Flugs _____ Size location _____ ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of Water? _____ depth of strata _____

Method of sealing strata off _____

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the

(10) LOCATION OF WELL:

County **Marion** Driller's well number _____
T. **8S** R. **3W** W.M. _____
Tax Lot # **180D** Lot **4** Blk **2** Subdivision _____
Address at well location: **Deerlake Estates**
Battlecreek Rd. Salem

(11) WATER LEVEL: Completed well.

Depth at which water was first found **330** ft.

Static level **110** ft. below land surface. Date **7-5-83**

Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing **6"**

Depth drilled **503** ft. Depth of completed well **503** ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	BWL
Soil	0	1	
Dark Brown Clay	1	6	
Tan Clay	6	13	
Red Clay Sticky	13	26	
Tan Clay Sticky	26	53	
Gray Claystone	53	71	
Light Gray Claystone	71	157	
Dark Gray Claystone	157	200	
Gray Sandstone	200	330	
Light Gray Sandstone	330	394	
Gray Sandstone	394	452	
Light Gray Sandstone	452	470	
Gray Sandstone	470	503	110'

Work started **7-1** **19 83** Completed **7-5** **19 83**

Date well drilling machine moved off of well **7-6** **19 83**

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] _____ Date _____, 19 _____

Bonded Water Well Constructor Certification:

Bond _____ Issued by: _____

(number) _____ Surety Company Name _____

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

Name **MONDERS DRILLING INC.**

(Person, firm or corporation) _____ (Type or print)

Address **P.O. Box 15087 Salem, Oregon 97309**

[Signed] **J. P. Monders**

Water Well Constructor

Date **7-7**, 19 **83**

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-4522-650

WATER WELL REPORT
STATE OF OREGON

RECEIVED

MAY 24 1983

State Well No.

8S/3W-25 38

State Permit No.

PLEASE TYPE OR PRINT IN INK
WATER RESOURCES DEPT.

SALEM, OREGON

(10) LOCATION OF WELL:

County Marion Driller's well number
1/4 Section 25 T. 8S R. 3W W.M.
Tax Lot # Lot Blk Subdivision
Address at well location: Deerlake Estates
Battlecreek Rd., Salem

(11) WATER LEVEL: Completed well.

Depth at which water was first found 65 ft.
Static level 90 ft. below land surface. Date 4-15-83
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 496 ft. Depth of completed well 496 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil	0	2	
Brown Clay	2	5	
Red Clay	5	11	
Tan Clay	11	22	
Gray Clay Sticky	22	33	
Gray Claystone	33	55	
Light Gray Claystone	55	76	
Gray Claystone	76	178	
Gray Sandstone	178	343	
Gray Clay Sticky	343	349	
Gray Sandstone	349	381	
Light Gray Sandstone	381	392	
Gray Sandstone	392	475	
Gray Claystone	475	487	
Gray Sandstone	487	496	90'

Work started 4-14 1983 Completed 4-15 1983
Date well drilling machine moved off of well 4-16 1983

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] _____ Date _____, 19____

Bonded Water Well Constructor Certification:

Bond _____ Issued by: _____
(number) Surety Company Name

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

Name MONDERS DRILLING INC.
(Person, firm or corporation) (Type or print)

Address P.O. Box 15087 Salem, Oregon

[Signed] J.D. Monders
Water Well Constructor

Date 4-22, 1983

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report
are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-45292-630

10
19758

39

(1) OWNER:

Name S. KEFF & JULIE K. IRVING
Address 3285 DEER LAKE CT. S.E.
City SALEM

Well No. 10-95

St OR Zip 97301

(2) TYPE OF WORK: NEW WELL

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: DOMESTIC

(5) BORE HOLE CONSTRUCTION:

Special Construction Approval: NO Depth of Compl. Well 470 ft
Explosives used NO Type Amount

Diam.	From	To	Material	From	To	Amount
10"	0'	50'	HEMTONITE	0'	50'	20 BAGS
6"	50'	470'				

Seal placement method POURED DRY

Backfill: from ft to ft Material
Gravel: from ft to ft Size

(6) CASING/LINER:

Casing	Diam.	From	To	Gauge	Material	Connection
	6"	+1'	50'	.250	STEEL	WELDED
Liner	4"	0'	470'	PVC	PLASTIC	WELDED

Final Location of shoe(s) 50'

(7) PERFORATIONS/SCREENS:

[X] Perforations Method ELECTRIC SAW

From	To	Type	Slot	Number	Diam.	Material	Tele/pipe	Casing/liner
350'	450'			75	1/8" X	5"		LINER

(8) WELL TESTS: Minimum testing time is 1 hour

Test type AIR

Yield GPM	Draw-down	Drill stem at	Time
20		465'	1 hr.

Temperature of water 51 F Depth Artesian Flow Found

Was water analysis done? NO By whom
Reason for water not suitable for use
Depth of strata 0

(9) LOCATION OF WELL by legal description:

County MARION Lat. . . . Long. . . .
Township 8 S Range 3 W WH.
Section 25 NE 1/4 NE 1/4
Tax Lot 1900 Lot 5 Block Subdivision
Street Address of Well (or nearest Address)
3285 DEER LAKE CT. S.E. SALEM, OR 97301

(10) STATIC WATER LEVEL:

150 ft. below land surface. Date 07/13/95
Artesian pressure lb per square in. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 410'
From To Est Flow Rate SWL
410' 445' 20 GPM 150'

(12) WELL LOG:

Material	Ground elevation	From	To	SWL
TOP SOIL		0	1	
REDISH BROWN CLAY		1	8	
BROWN CLAY		8	37	
PAN CLAY (STICKY)		37	45	
GRAY CLAYSTONE		45	198	
GRAY SANDY CLAYSTONE		198	274	
GRAY CLAYSTONE		274	368	
GRAY SANDY CLAYSTONE		368	382	
GRAY CLAYSTONE		382	410	
MULTY-COLORED SANDSTONE		410	423	150'
GRAY SANDY CLAYSTONE		423	467	
GRAY CLAYSTONE (STICKY)		467	470	

AIR TEST GPM MAY FLUCTUATE

Date started 07/11/95

Completed 07/13/95

(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 my best knowledge and belief.

Signed _____ WWC Number _____
Date _____

(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.
MONDERS DRILLING, INC. WWC Number 746
Signed *Mark Monders* Date 07/14/95

WATER WELL REPORT
STATE OF OREGON

RECEIVED

State Well No.

8s/3w-25a

PLEASE TYPE or PRINT IN INK
MAY 24 1983

State Permit No.

WATER RESOURCES DEPT.

VAN OSDOL TOP
Part 2015

(1) OWNER:

Name STEVE TATONE
Address 4711 Shire Ct. S.E.
City Salem State Oregon

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Rotary Mud ☐ Dug ☐ Irrigation ☐ Test Well ☐ Other ☐
Cased ☐ Bored ☐ Thermal ☐ Withdrawal ☐ Reinjection ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED: Steel ☒ Plastic ☐
Threaded ☒ Welded ☒
6" Diam. from +1 ft. to 79 ft. Gauge 250

LINER INSTALLED:

4" Diam. from -5 ft. to 496 ft. Gauge 160 PSI PVC

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No
Type of perforator used Electric Saw
Size of perforations 1/8 in. by 10 in.
108 perforations from 436 ft. to 476 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Driller Recommended Pump Be Set At 466'
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Air Test May Fluctuate
Air test 6 gal./min. with ft. drawdown after hrs.
Boiler test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒
Well seal—Material used Cement
Well sealed from land surface to 79 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 24 sacks
How was cement grout placed? Air Grout Pump
Was pump installed? No Type _____ HP _____ Depth _____ ft.
Was a drive shoe used? ☒ Yes ☐ No Flings _____ Size location _____ ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? ☐ Yes ☒ No Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

LOCATION OF WELL:

County Marion Driller's well number _____
1/4 Section 25 T. 8S R. 3W W.M.
Tax Lot # 2202 Lot 8 Blk 2 Subdivision _____
Address at well location: Deerlake Estates
Battlecreek Rd., Salem

(11) WATER LEVEL: Completed well.

Depth at which water was first found 110 ft.
Static level 115 ft. below land surface. Date 4-21-83
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 496 ft. Depth of completed well 496 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil	0	2	
Brown Clay	2	7	
Tan Clay	7	13	
Red Clay	13	24	
Gray Sticky Clay	24	33	
Multi-Colored Clay	33	74	
Gray Claystone	74	107	
White Sandy Clay	107	112	
Gray Claystone	112	208	
Gray Sandstone	208	335	
Gray Sticky Clay	335	351	
Gray Claystone	351	362	
Gray Sandstone	362	496	115'

12 Hour Pump Test 4-29-83

10.3 GPM After 1 Hour
6.0 GPM After 4 Hours
6.0 GPM after 12 Hours

Work started 4-19 1983 Completed 4-21 1983
Date well drilling machine moved off of well 4-24 1983

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] _____ Date _____, 19____

Bonded Water Well Constructor Certification:

Bond _____ Issued by: _____ Surety Company Name _____

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

Name MONDERS DRILLING INC. (Type or print)

Address P.O. Box 15087 Salem Oregon 97309

[Signed] J.D. Monders Water Well Constructor

Date 4-22 1983

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-45392-690

(43a)

WELL ID. # L 57198
START CARD # 415250

(9) LOCATION OF WELL by legal description:
County MARION Latitude _____ Longitude _____
Township 8.3 N or S Range 3.4 E or W. WM.
Section 25 SW 1/4 NE 1/4
T~~14~~ Lot 2200 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) SAME AS #1

(10) **STATIC WATER LEVEL:**
3310 ft. below land surface. Date 7/24/02
 Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found EXISTING

From	To	Estimated Flow Rate	SWL
420	432	3 gpm	334

(12) WELL LOG:

Ground Elevation

[illegible]

Date started 7/23/02 Completed 9/29/02

(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.

Signed [Signature] WWC Number 1750
Date 9/8/07

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.

Signed _____ WWC Number _____
Date _____

Signed _____ Date _____

Signed _____ Date _____

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

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

RECEIVED
JUL 16 1984
WATER RESOURCES DEPT
SALEM, OREGON
or PRINT IN INK

(for official use only)

(1) OWNER:

Name **ROTH LAND AND BUILDING DEVELOPMENT**
Address **4196 81st Street N.E.**
City **Salem** State **Oregon**

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Rotary Mud ☐ Dig ☐ Irrigation ☐ Thermal ☐ Rejection ☐
☐ Bored ☐ Other ☐ Piezometric ☐ Grounding ☐ Test ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED:

Steel Threaded ☒ Plastic Welded ☒
6" Diam. from +1 ft. to 59 ft. Gauge 250
" Diam. from ft. to ft. Gauge

LINER INSTALLED:

Steel Threaded ☐ Plastic Welded ☒
4" Diam. from 0 ft. to 500 ft. Gauge 160 PST PVC

(6) PERFORATIONS:

Perforated? ☒ Yes ☐ No
Size of perforations **1/8** in. by **9** in.
39 perforations from 240 ft. to 480 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____ Model No. _____
Type _____ Slot Size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____
Air Test May Fluctuate
Air test **10** gal./min. with drill stem at **498** ft. **1** hr.
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hr.
Artesian flow _____ g.p.m.
Temperature of water _____ Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Special standards: Yes ☐ No ☒
Well seal—Material used **Cement**
Well sealed from land surface to **59** ft.
Diameter of well bore to bottom of seal **10** in.
Diameter of well bore below seal **6** in.
Amount of peeling material **15** sacks ☒ pounds ☐
How was cement grout placed? **Air Grout Pump**

Was pump installed? **No** Type _____ HP _____ Depth _____ ft.

Was a drive shoe used? ☐ Yes ☒ No Plugs _____ Size: location _____ ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of Water? _____ depth of strata _____

Method of sealing strata off _____

Was well gravel packed? ☐ Yes ☒ No Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

NOTICE TO WATER WELL CONSTRUCTOR.
The original and first copy of this report
are to be filed with the

(10) LOCATION OF WELL by legal description:

County **Marion** M of Section **25** of
Township **8 South** Range **3 West** WM.
(Township is North or South) (Range is East or West)
Tax Lot **2404** Lot **17** Block _____ Subdivision **Phase 2**

MAILING ADDRESS OF WELL (or nearest address)
Deerlake Estates
Battlecreek Rd. Salem, Ore.

(11) WATER LEVEL OF COMPLETED WELL:

Depth at which water was first found **207** ft.
Static level **130** ft. below land surface. Date **6-14-84**
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing **6"**
Depth drilled **500** ft. Depth of completed well **500** ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Soil m	0	2	
Brown Clay	2	17	
Red Clay	17	28	
Light Tan Clay Sticky	28	35	
Gray Clay	35	52	
Gray Claystone	52	207	
Coarse Gray Sandstone	207	235	
Gray Sandstone	235	420	
Gray Claystone	420	455	
Light Gray Sandstone	455	476	
Gray Sandstone	476	500	130'

Driller Recommended Pump
Be Set At **470'**

Date work started **6-13** /completed **6-14**
Date well drilling machine moved off of well **6-14** 19 **84**

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] _____ Date _____, 19 _____

(bonded) Water Well Constructor Certification:

Bond _____ Issued by: _____ (Surety Company Name)
On behalf of **MONDERS DRILLING INC.**
(Type or print name of Water Well Constructor)

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

(Signed) **M. D. Monders**
(Water Well Constructor)

(Dated) **6-16-84**

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-48260-630

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.755)
Instructions for completing this report are on the back of this form

RECEIVED

DEC 18 2002

MARI
MAKI

56944
56944

WELL ID # 1 61283

DEC 07 2002 (START CARD) # 144205

46

(1) OWNER:

Name **Clarence & Betty Wolf**
Address **4739 Auburn Rd NE #84**
City **Salem, Oregon** State **OR** Zip **97301**

(2) TYPE OF WORK:

X: New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

X: Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐
Other ☐

(4) PROPOSED USE:

X: Domestic ☐ Community ☐ Industrial ☐ Irrigation ☐
Thermal ☐ Injection ☐ Livestock ☐ Other ☐

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes X No Depth of Completed Well **281** ft.
Explosives used Yes X No Type Amount

HOLE		SEAL		Amount	
Diameter	From To	Material	From To	sacks or pounds	
10	0	69	Bentonite	0	50
6	54	281		21	sacks

How was seal placed: Method A B C D E
X: Other poured and probed
Backfill placed from **50** ft. to **59** ft. Material **Bentonite**
Gravel placed from **ft.** to **ft.** Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+1	59	250	X		X	
Liner:	4	-1	281	160		X	X	

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

X: Perforations		Method		Electric Saw		Material		PVC	
From	To	Slot size	Number	Diameter	Telephone size	Casing	Liner		
202	280	1/8	60	6 in			X		

(8) WELL TESTS: Minimum testing time is 1 hour

Pump	Basin	X: Air	Flowing Artesian
Yield gal/min	Drawdown	Drill stem at	Time
15		280	1 hr.

Temperature of Water **58** Depth Artesian Flow found
Was a water analysis done? Yes By whom
Did any strata contain water not suitable for intended use? Too little
Is Salty Muddy Odor Colored Other
Depth of strata:

(9) LOCATION AND DESCRIPTION:

County **Salem, Oregon** Latitude Longitude
Township **8/S** N or S. Range **3/W** E or W. of WM.
Section **24.5A** NW 1/4 NE 1/4
Tax lot **2600** Lot Block Subdivision
Street Address of Well (or nearest address) **7036 Battle Creek Rd, Salem, OR**

(10) STATIC WATER LEVEL:

143 ft. below land surface. Date **11/8/1902**
Artesian pressure (b. per square inch.) Date

(11) WATER BEARING ZONES:

Depth at which water was first found		180
From	To	Estimated Flow Rate SWL
170	180	3 143
230	248	12 143

(12) WELL LOG:

Ground elevation		
Material	From To	SWL
Clay brown fill	0 8	
Clay brown med	8 17	
Claystone green & brn rusty sandy	17 33	
Claystone white silty hard	33 35	
Siltstone brown tan hard	35 37	
Siltstone gray med-hard	37 42	
Siltstone gray & black hard	42 47	
Sandstone fine grained drk grey	47 52	
hard	52 59	
Siltstone grey hard	59 72	
Claystone light gray hard	72 85	
Claystone drk gray whells hard	85 87	
Claystone grey silty hard	87 99	
Sandstone grey & purple hard	99 120	
Siltstone grey whells hard	120 144	
Sandstone grey med hard	144 183	143
Sandstone fine blue grey soft	183 206	
Sandstone m-hard blue grey	206 220	
Sandstone soft brownish grey	220 235	143
Sandstone m-hard	235 281	143
Sandstone hard brownish grey		

Date started **11/8/1902**

Completed **11/6/2002**

(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 my best knowledge and belief.

Signed *Eugene T. Mack* WWWC Number **1394**
Date **11/7/2002**
Mack Drilling Company, Inc.

(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.

Signed *Eugene T. Mack* WWWC Number **1394**
Date **11/7/2002**
Mack Drilling Company, Inc.

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ORIGINAL - WATER RESOURCES DEPARTMENT

FIRST COPY - CONSTRUCTOR

SECOND COPY - CUSTOMER

NOV 21 2002

WATER RESOURCES DEPT.
SALEM, OREGON

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

MARI 58163

(WELL I.D.)# L 70508 (page one of two)
(START CARD) # 165598

47

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

(1) OWNER: Well Number 70508
Name David Stewart & Jean Castillo
Address 7184 Battlecreek Rd S
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 283 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
10	0	59	Bentonite	0	50	28 sacks
6 1/8	59	283				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other poured & probed

Backfill placed from 50 ft. to 59 ft. Material Bentonite
Gravel placed from ft. to ft. Size of gravel

Diameter		From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 6"		+1	59	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4		-3	283	180	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) 59'

From		To	Slot size	Number	Diameter	Telepipe size	Casing	Liner
283		283	1/8	38	6"		<input type="checkbox"/>	<input checked="" type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>
							<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem at	Flowing Time
5		280	1 hr.

Temperature of water 53 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:

(9) LOCATION OF WELL by legal description:
County Marion Latitude 122 59.856' Longitude 44 51.084'
Township 8 S Range 3 W WM.
Section 28a NW 1/4 NE 1/4
Tax Lot 2700 Lot Block Subdivision
Street Address of Well (or nearest address) 7184 Battle Creek Rd. S, Salem OR, 97308

(10) STATIC WATER LEVEL:
85 ft. below land surface. Date 06-16-04
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 130

From	To	Estimated Flow Rate	SWL
130	140	1/2	85
150	160	3	85
207	224	1.5	85

RECEIVED

(12) WELL LOG: JUN 28 2004
Ground Elevation

Material	From	To	SWL
Top soil	0	1	
Clay & Clay stone br	1	8	
Clay br sticky	8	15	
Boulder	15	17	
Clay stone tan sandy	17	25	
Clay stone light gray hard	25	31	
Clay stone gray m-hard	31	57	
Silt stone dark gray m-hard	57	68	
Silt stone light gray, hard	68	73	
Silt stone gray w/shells	73	88	
Sand stone gray dark w/shells	88	93	
Silt stone light gray	93	96	
Clay stone light gray hard	96	100	
Sand stone gray m-hard	100	105	
Sand stone layered blue & gray	105	108	
Sand stone light gray soft w/hard layers	108	154	85
Sand stone gray & br m-hard	154	207	85
Sand stone light gray w/hard layers	207	224	85
Silt stone gray	224	232	85

*****continued on page two*****

Date started 06-14-04 Completed 06-16-04

(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 1394
Signed Date 06-16-04

(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 1394
Signed Date 06-16-04

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

JUN 28 2004

**WATER RESOURCES DEPT
SALEM, OREGON**

Mack Drilling Company, Inc.

Domestic ♦ Commercial ♦ Environmental ♦ Geotechnical Drilling & Well Services

70508

165598

Site

7184 Battle Creek Rd, S

Salem, Or 97308

Salem, OR 97306

Page two of two

[illegible]

**STATE OF OREGON
WELL LOCATION MAP**

This map is supplemental to the WATER SUPPLY WELL REPORT

Oregon Water Resources Department
725 Summer St NE, Salem OR 97301
(503)986-0900



LOCATION OF WELL

Latitude: 44.85138888 Datum: WGS84

Longitude: -122.9975

Township/Range/Section/Quarter-Quarter Section:

WM 8.0S 3.0W 25 NWNE

Address of Well:

7184 BATTLECREEK RD S, SALEM, OR 97306

Well Label: L70508

Well Log: MARI 58163

Printed: November 4, 2014

DISCLAIMER: This map is intended to represent the approximate location of the well location. It is not intended to be construed as survey accurate in any manner.

Generated by OWRD



48.

WELL I.D.# L 33121
START CARD# 125962

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

(1) OWNER: _____ Well Number _____
 Name Jennie D. Cookson
 Address 2649 47th Ave NE
 City Salem State OR Zip 97305

2) TYPE OF WORK

☒ New Wall ☐ Deepening ☐ Alteration (repair/reconfiguration) **RECEIVED**

3) DRILL METHOD:-

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Intake
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(9) BOREHOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well 85 ft
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE

Diameter	From	To	Material	From	To	Sacks or pounds
10	0	52	Cement	-3	52	9 + bags
			Bentonite	0	-3	1 sack
6	52	83				

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 _____

16 CASING/LINER

	Diameter	From	To	Gauge Steel	Plastic	Welded	Threaded
Casing:	6-in	+1.5	53	.250	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Line:	4-in	+1	85	.160	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) Casing Ring 52 ft

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Saw

☐ Screens Type _____ Material _____

From	To	Slot Size	Number	Diameter	Telephone size	Casting	Linear
48	81	2x6	44			<input type="checkbox"/>	80
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	
						<input type="checkbox"/>	

(8) WELL TESTS: Minimum testing time is 1 hour

<input type="checkbox"/> Pump	<input type="checkbox"/> Bailor	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Flowing Artesian
Yield gpm/min	Drawdown	Drill stem set	Time
45		83	1 hr.
2			

Temperature of water 54 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: _____

(9) LOCATION OF WELL by legal description:

County Marion Latitude _____ Longitude _____
Township 8-5 N or S Range 3-4 E or W. WM.
Section 25 SW 1/4 NE 1/4
Tax Lot 3000 Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) 7087 Battle Creek
Rel S Salem

9.0 STATIC WATER LEVEL:

38 ft. below land surface. Date 9-20-99

(11) WATER BEARING ZONES:

Depth at which water was first found 54

From	To	Estimated Flow Rate	SWI
54	80	45	38

(12) WELL LOG:

Ground Elevation

[illegible]

Date started 9-17-99 Completed 9-20-99
(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.

Signed WDC WWC Number 1703
Date 9/21/99

(banded) 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.

Signed Flora J. Joo WWC Number 1273
Date 9-21-99

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

WATER WELL REPORT

STATE OF OREGON

(Please type or print)

STATE ENGINEER

(Do not write above this line) SALEM, OREGON

RECEIVED

JUL 22 1974

State Well No.

85/3W-25db

State Permit No.

(1) OWNER:

Name

DAN JOYNT

Address

3944 SENECA

SALEM, ORE

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

 Rotary ☒ Driven ☐
 Cable ☐ Jetted ☐
 Dug ☐ Bored ☐

(4) PROPOSED USE (check):

 Domestic ☒ Industrial ☐ Municipal ☐
 Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒
 6" Diam. from 0 ft. to 117 ft. Gage 4
 4500: Diam. from 99 ft. to 161 ft. Gage 4
 " Diam. from ft. to ft. Gage

PERFORATIONS:

LINER

Perforated? ☒ Yes ☐ No.

Type of perforator used TORCH

Size of perforations 4 in. by 8" in.

16 perforations from 126 ft. to 159 ft.

perforations from ft. to ft.

perforations from ft. to ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level

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

Yield: 21 gal./min. with 37 ft. drawdown after 1 hrs.

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

Artesian flow g.p.m.

Temperature of water 50 Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used WELL SEAL

Well sealed from land surface to 116" ft.

Diameter of well bore to bottom of seal 10" in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal NONE sacks

Number of sacks of bentonite used in well seal 34 sacks

Brand name of bentonite WELL SEAL

Number of pounds of bentonite per 100 gallons of water 100 lbs./100 gals.

Was a drive shoe used? ☐ Yes ☒ No Flange NO Size: location ft.Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County MARION Driller's well number

NW 1/4 SE 1/4 Section 25 T. 85 R. 3W W.M.

Bearing and distance from section or subdivision corner

K+PAIR M58668

7099 BATTLE CREEK

(11) WATER LEVEL: Completed well.

Depth at which water was first found 126' ft.

Static level 124 ft. below land surface. Date 7-15-74

Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"

Depth drilled 161 ft. Depth of completed well 161 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
TOPSOIL	0	9	
CLAY YELLOW COLOR	3	8	
BASALT WEATHERED	8	53	
BASALT FRACTURED	53	102	
BASALT DENSE	102	124	
BASALT SPARSE	124	132	124
BASALT WEATHERED	132	151	124
BASALT FRACTURED	151	161	124

Work started 7-13 1974 Completed 7-15 1974

Date well drilling machine moved off of well 7-15 1974

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] M. F. Sneed Date 7-15, 1974

(Drilling Machine Operator)

Drilling Machine Operator's License No. 187

Water Well Contractor's Certification:

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

Name J. A. SNEED & SONS

(Person, firm or corporation)

(Type or print)

Address 3910 SILVERTON RD SALEM, ORE.

[Signed] J. A. SNEED

(Water Well Contractor)

Contractor's License No. 6 Date 7-15, 1974

ORIGINAL
Original and
uplicate with the
ATE ENGINEER,
ALEM, OREGON

RECEIVED
JAN 4 1961

WATER WELL REPORT
STATE OF OREGON

State Well No.

8/3W-2561

State Permit No.

(1) OWNER:

STATE ENGINEER

Name J. C. H. ENGLISH

Address 185 SONORA WAY
SALEM ORE

(2) LOCATION OF WELL:

County Marion

Owner's number, if any—

1/4 Section 25 T. 8S R. 3 W.M.

Bearing and distance from section or subdivision corner Beginning at an

irregular intersection W line of the NE 1/4 of S 25, T8, R3W
March 1961, the plat is attached to the E 1/2 of the NW 1/4 of S 25, T8, R3W
SW corner of said NW 1/4 of S 25, T8, R3W, thence N 60° 00' E 90.82
ft to a point, thence N 43° 30' W 115 ft to well.

(3) TYPE OF WORK (check):

New Well ☒ Despensing ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☐ Welded ☒

6" Diam. from 0 ft. to 68' ft. Gage 154
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

(7) PERFORATIONS:

Perforated? ☐ 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.		
perforations from _____ ft. to _____ ft.		
perforations from _____ ft. to _____ ft.		

(8) SCREENS:

Well screen installed ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

CONSTRUCTION:

Well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.
Was a surface seal provided? ☒ Yes ☐ No To what depth? 10" ft.
Material used in seal—SANITARY SEAL
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off CASED + BACK FILLED

(10) WATER LEVELS:

Static level 40 ft. below land surface Date 5-21-60
Artesian pressure _____ lbs. per square inch Date _____

Log Accepted by:

[Signed] Jean English Date 5-21, 1960
(Owner)

(11) 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.

Bailer test 10 gal./min. with 70 ft. drawdown after 1 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water 56° Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well 6" inches.

Depth drilled 119' ft. Depth of completed well 119' ft.

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
TOPSOIL	0	2
RED CLAY	2	6
WEATHERED BASALT	6	26
BLUE CLAY	25	31
BOULDERS	31	34
BLUE SHALE FIRM	34	75
WHITE SANDSTONE	75	119

1 G.P.M. @ 71'
8 G.P.M. @ 92'
1 G.P.M. @ 115'

Work started 5-20, 1960 Completed 5-21, 1960

(13) PUMP:

Manufacturer's Name Meyer Submersible
Type Pump H.P. 1/4 HP

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 J. H. Sneed + Sons

(Person, firm, or corporation)

(Type or print)

Address 2505 BROOKS ST SALEM O

Driller's well number _____

[Signed] A. F. Sneed

(Well Driller)

License No. 6 Date 5-21, 1960

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 837.785)

RECEIVED
OCT - 8 1992
WATER RESOURCES DEPT.
SALEM, OREGON

(START CARD) # 145897

(1) OWNER:

Name John Miller
Address 2537 Landau St SE
City Salem State OR Zip 97306

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 300 ft.
Explosives used ☐ ☒ Type _____ Amount _____

HOLE		SEAL		Amount	
Diameter	From To	Material	From To	sacks or pounds	
10	0 108	Cement	0 108	30 Sacks	
6	108 300				

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	6 in	1 1/8	108	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner	4 1/2 in	0	300	7/60	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of sheets:

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Saw
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tels/pipe size	Casing	Liner
180	200	1/4 in	34			<input type="checkbox"/>	<input checked="" type="checkbox"/>
240	300	1/4 in	102			<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Boiler ☒ Air ☐ Flowing ☐ Artesian

Yield gal/min	Drawdown	Drill stem at	Time
20		300	1 hr.
Pump - 35	59'		4 hrs

Temperature of water 59 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: _____

(9) LOCATION OF WELL by legal description:

County Marion Latitude _____ Longitude _____
Township 8-S Nor S. Range 3-W E or W. W.M.
Section 25 SE 4 NW
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) None

(10) STATIC WATER LEVEL:

156 ft. below land surface. Date 9-30-92
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 174

From	To	Estimated Flow Rate	SWL
174	280	20	156

(12) WELL LOG:

Material	From	To	SWL
Soil	0	2	
Light brown clay	2	68	
Dark brown clay	58	75	
Red clay	75	92	
Brown clay, stone	92	174	
Weathered rock	174	194	156
Weathered rock & brown clay	194	226	
Blue claystone	226	234	
Gray claystone	234	238	
Broken rock	238	240	156
Black basalt	240	254	
Broken rock	254	255	156
Black basalt	255	274	
Gray basalt	274	279	
Broken basalt	279	280	156
Gray basalt	280	298	
Blue clay	298	303	

4 1/2 x 6 Packer Set at 160 ft.

Date started 9-25-92 Completed 9-30-92

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number 1227
Signed Edward A. Schmid Date 10-1-92

(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 well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1273
Signed Floyd Sippe Date 10-1-92

(52)

FLOYD SIPPEL WELL DRILLING
1865 Manzanita Street N.E.
Keizer, Oregon 97303
390-2841

RECEIVED

OCT - 8 1992

WATER RESOURCES DEPT.
SALEM, OREGON

October 3, 1992

State of Oregon
Water Resources Department
3850 Portland Road N.E.
Salem, OR 97310

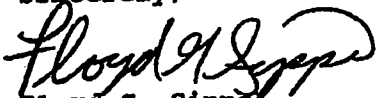
RE: Attached Well Report/Start Card No. 45897

On September 28, 1992 there were questions raised about the construction of this well. Richard Edwards informed me that the Ground Water Division might question the seal location and using the water found below the 238 foot depth.

After the Ground Water Division reviewed the rough field log, I was told by Richard Edwards that Don Miller okayed sealing the well in the upper claystone formation and using all the formation below to the 300 foot depth.

I appreciate the prompt decision made on this matter and would like to thank Richard Edwards for his help and concern. If there are any more questions regarding the construction of this well, please contact me.

Sincerely,



Floyd G. Sippe
FLOYD SIPPEL WELL DRILLING

cc: John Miller (Landowner)

STATE OF OREGON

MARI 56912
****Revised****

WELL ID # L 61281

53

WATER SUPPLY WELL REPORT

(as required by ORS 537.750) (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)
Instructions for completing this report are on the last page of this form

(1) OWNER: WATER RESOURCES DEPT.
SALEM, OREGON
Name Walt Wells
Address 6895 Third St
City Turner State OR Zip 97392

(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 261 ft.
Explosives used Yes ☒ No ☐ Type Amount

HOLE		SEAL		Amount	
Diameter	From To	Material	From To	sacks or pounds	
10	0 60	Bentonite	0 6	3 sacks	
8	60 100	Cement	6 100	12 sacks w/bent	
6	100 261				

How was seal placed: Method A B ☒ C D E
☒ Other poured & probed
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 +1 100 250 ☒ ☐ ☒ ☐
Liner: 4 -1 261 160 ☐ ☒ ☒ ☐

(7) PERFORATIONS/SCREENS:
☒ Perforations Method electric saw
Screens Type slots Material PVC
From To Slot size Number Diameter Tele/pipe size Casing Liner
180 220 1/8 80 6 ☒ ☒
220 260 1/8 40 6 ☐ ☒

(8) WELL TESTS: Minimum testing time is 1 hour
Pump Bailer ☒ Air Flowing Artesian
Yield gal/min Drawdown Drill stem at Time
15 204 260 1 hr.

Temperature of Water 58 Depth Artesian Flow found
Was a water analysis done? ☒ Yes By whom Mack Drilling
Did any strata contain water not suitable for intended use? Too little
Salty Muddy Odor Colored Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Marion Latitude Longitude
Township 8/S N or S. Range 3/W E or W. of WM.
Section 25 A NE 1/4 SE 1/4
Tax lot 1000 Lot Block Subdivision
Street Address of Well (or nearest address) Barber Lane, off
Battlecreek 7474 BATTLE CK

(10) STATIC WATER LEVEL:
57 ft. below land surface. Date 10/25/1992
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 50

From	To	Estimated Flow Rate	SWL
<u>50</u>	<u>53</u>	<u>2</u>	<u>1</u>
<u>145</u>	<u>150</u>	<u>3</u>	<u>57</u>
<u>174</u>	<u>179</u>	<u>7</u>	<u>57</u>
<u>211</u>	<u>228</u>	<u>5</u>	<u>57</u>

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Basalt blk broken	0	6	
Basalt gray hard w/frax	6	14	
Basalt blk vesicular some br & blue claystone	14	36	
Basalt br & gray w/claystone br & blue	36	53	
Claystone blue	53	61	1
Claystone br sandy	61	80	
Claystone sandy blue some hard	80	92	
Claystone sandy blue some hard	92	97	
Sandstone gray hard	97	110	
Sandstone drk gray hard	110	122	57
Sandstone blue gray w/shells	122	150	57
Sandstone fine grained m/hard br seams	150	174	57
Sandstone light gray w/gravel	174	179	57
Sandstone white med to soft	179	211	57
Sandstone gray m-hard to hard	211	228	57
Siltstone gray	228	253	
Claystone gray hard	253	282	

Hardness 3 GPG
Iron 1.2 PPM
PH 7.5
WATER RESOURCES DEPT.
SALEM, OREGON
Date started 10/24/2002 SALEM, OREGON 10/25/2002

(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 my best knowledge and belief.

Signed [Signature] WWC Number 1394
Date 10/30/2002
Mack Drilling Company, Inc.

(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.
Signed [Signature] WWC Number 1394
Date 10/30/2002
Mack Drilling Company, Inc.

ORIGINAL - WATER RESOURCES DEPARTMENT FIRST COPY - CONSTRUCTOR SECOND COPY - CUSTOMER

ORIGINAL
 This Original and
 Duplicate with the
 STATE ENGINEER,
 NORTHERN TERRITORY

(2) LOCATION OF WELL
 1000 ft. deep
 1000 ft. deep

R. R. D. or Street No. _____
 County _____
 Owner's number, if any — _____
 Reading and distance from section or subdivision corner
 N.W. 1/4 Sec 26, T. 8 S., R. 3 E.
 N.E. 1/4 NW 1/4

☐ well ☐ deteriorating ☐ Reconditioning ☐ Abandon
 If abandonment describe material and procedure in Item 11.

(4) PROPOSED USE (check):
☒ Domestic ☐ Industrial ☐ Municipal

(5) EQUIPMENT:
☐ Rotary ☐ Cable

Gage	11 in to 35 in 8" Diam., 1.50	Diameter	from	to
101	6	33	11	11

No.	Type of perforator used	Inches of perforations	Lt. to	Lt. per foot	No. of rows
01					
02					
03					
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10					
11					
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99					
100					

(3) CONSTRUCTION:

Does a surface sanitary seal provided in Yes ☐ No ☐ To what depth 3.5 ft

Does any drain leaded against pollutants? Yes ☐ No ☐ If yes, with length of depth

1. ☐ Yes, more depth of strata
 2. ☐ No
 3. ☐ Yes
 4. ☐ No
 5. ☐ Yes
 6. ☐ No
 7. ☐ Yes
 8. ☐ No
 9. ☐ Yes
 10. ☐ No
 11. ☐ Yes
 12. ☐ No
 13. ☐ Yes
 14. ☐ No
 15. ☐ Yes
 16. ☐ No
 17. ☐ Yes
 18. ☐ No
 19. ☐ Yes
 20. ☐ No
 21. ☐ Yes
 22. ☐ No
 23. ☐ Yes
 24. ☐ No
 25. ☐ Yes
 26. ☐ No
 27. ☐ Yes
 28. ☐ No
 29. ☐ Yes
 30. ☐ No
 31. ☐ Yes
 32. ☐ No
 33. ☐ Yes
 34. ☐ No
 35. ☐ Yes
 36. ☐ No
 37. ☐ Yes
 38. ☐ No
 39. ☐ Yes
 40. ☐ No
 41. ☐ Yes
 42. ☐ No
 43. ☐ Yes
 44. ☐ No
 45. ☐ Yes
 46. ☐ No
 47. ☐ Yes
 48. ☐ No
 49. ☐ Yes
 50. ☐ No
 51. ☐ Yes
 52. ☐ No
 53. ☐ Yes
 54. ☐ No
 55. ☐ Yes
 56. ☐ No
 57. ☐ Yes
 58. ☐ No
 59. ☐ Yes
 60. ☐ No
 61. ☐ Yes
 62. ☐ No
 63. ☐ Yes
 64. ☐ No
 65. ☐ Yes
 66. ☐ No
 67. ☐ Yes
 68. ☐ No
 69. ☐ Yes
 70. ☐ No
 71. ☐ Yes
 72. ☐ No
 73. ☐ Yes
 74. ☐ No
 75. ☐ Yes
 76. ☐ No
 77. ☐ Yes
 78. ☐ No
 79. ☐ Yes
 80. ☐ No
 81. ☐ Yes
 82. ☐ No
 83. ☐ Yes
 84. ☐ No
 85. ☐ Yes
 86. ☐ No
 87. ☐ Yes
 88. ☐ No
 89. ☐ Yes
 90. ☐ No
 91. ☐ Yes
 92. ☐ No
 93. ☐ Yes
 94. ☐ No
 95. ☐ Yes
 96. ☐ No
 97. ☐ Yes
 98. ☐ No
 99. ☐ Yes
 100. ☐ No

[illegible]

(11) WELL LOG:

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

Yield: gal./min. with ft. draw down after hrs.

Artesian flow none g.p.m.

Sub-in pressure _____ lbs. per square inch

Seller test _____ g.p.m. with _____ ft. drawdown

Temperature of water _____

Was a chemical analysis made? ☐ Yes ☐ No

Was electric log made of well? ☐ Yes ☐ No

Diameter of well, 8 inches.
 Total depth 68 ft. Depth of completed well 68 ft.
 Formations: Described by color, character, size of material, and structure, and nature of the material in each stratum penetrated, with at least one entry for each change of formation.
 8 ft to 12 ft.

13 28 8-7 New - my days
at (Hilton)
at (Hilton) 2-11-1946

Gray James Watson

	00	00
	00	00
	00	00
(spinal)	00	00
	00	00

1	00	00
2	01	00
3	02	00
4	03	00
5	04	00
6	05	00

Work started 3/28/1957 Completed 3/25/1957

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

ALVIN WEST DRILLING
(Person, firm, or corporation)
(Type or print)

Address 4098 MARKET ST. SE
SALEM

[Signed] Myron E. West
 (Print Name)
 License No. 30
 Dated 3/26/1959

1

NOTICE TO WATER WELL CONTRACTOR
The original and first copy
of this report are to be
filed with the
STATE ENGINEER, SALEM 10, OREGON
within 30 days from the date
of well completion.

RECEIVED
JUL 20 1964

WATER WELL REPORT

STATE OF OREGON
(Please type or print)

STATE ENGINEER
SALEM, OREGON

State Well No. 8/3W-25F

State Permit No. _____

(1) OWNER:

Name Ernest G. Wall
Address Box Louise Harsh
Rattle Creek Rd. S.E.

(2) LOCATION OF WELL:

County Marietta Driller's well number
SE 1/4 NW 1/4 Section 25 T. 2S. R. 3W. W.M.
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐ Rotary ☒ Driven ☐
Irrigation ☐ Test Well ☐ Other ☐ Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(5) TYPE OF WELL:

(6) CASING INSTALLED:

Threaded ☐ Welded ☒
Diam. from 0 1/2 ft. to 1 1/2 ft. Gage 250
Diam. from _____ ft. to _____ ft. Gage _____
Diam. from _____ ft. to _____ ft. Gage _____

(7) PERFORATIONS:

Perforated? ☒ Yes ☐ No

Type of perforator used

Size of perforations 1/8 in. by 8 in.
_____ perforations from 90 ft. to 110 ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(8) SCREENS:

Well screen installed ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
In. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(9) CONSTRUCTION:

Well seal—Material used in seal clayish & clay
Depth of seal _____ ft. Was a packer used? yes
Diameter of well bore to bottom of seal 10 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth _____
Was a drive shoe used? ☐ Yes ☒ No
Was well gravel packed? ☒ Yes ☐ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level 30 ft. below land surface Date 7/1/64
Artesian pressure _____ lbs. per square inch Date _____

(11) WELL TESTS:

Drawdown is amount water level is

lowered below static level

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

Yield: 30 gal./min. with _____ ft. drawdown after 1 hrs.

" " " "

" " " "

Ballor test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 112 ft. Depth of completed well 112 ft.

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
Soil	0	2
Orange Clay (Decomposed)	2	12
Basalt (Fresh & Hard)	12	19
Decomposed Basalt	19	39
Basalt (Fresh & Hard)	39	45
Decomposed Basalt	45	108
Shale (Blue)	108	112

Work started June 30 1964 Completed July 1 1964
Date well drilling machine moved off of well 7/1 1964

(13) PUMP:

Manufacturer's Name Goold UEX
Type: Submersible H.P. 1 1/2

Water Well Contractor's Certification:

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

NAME George H. Robinson
(Sign, firm or corporation) (Type or print)

Address 3965 Hayesville Dr. Salem

Drilling Machine Operator's License No. 64

[Signed] George H. Robinson
(Water Well Contractor)

Contractor's License No. 13 Date 7/8 1964

RECEIVED

58254

56

STATE OF OREGON

AUG 11 2004

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

WATER RESOURCES DEPT

Instructions for completing this report are on the back of this form.

(1) LANDOWNER

Name Douglas Sprau Well Number 21
 Address 6938 Battle Creek Rd SE
 City Salem State OR Zip 97301

(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 480 ft.
 Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE				SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds	
10"	0	68	Coarse	0			
8"	68	79			79	35 Sacks	

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other

Backfill placed from 0 to 68 ft. Material Coarse
 Gravel placed from 68 to 79 ft. Size of gravel 3/4"

(6) CASING/LINER:

Diameter	From	To	Gauge Steel	Plastic	Welded	Threaded
Casing: 6"	71	80	2350	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used ☐ Inside ☒ Outside ☐ None

Final location of shoe(s) 80 ft

(7) PERFORATIONS/SCREENS:

		Method		Material	
		Type			
From	To	Size	Number	Telephone size	Casing
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Baller ☒ Air ☐ Artesian
 Yield gal/min _____ Drawdown _____ Drill stem at _____ Time _____
10 _____ 480 _____ 1 hr.

Temperature of water 53 Depth Artesian Flow Found _____

Was a water analysis done? No ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☒ Too little

☐ Salty ☒ Muddy ☐ Odor ☒ Colored ☐ Other _____

Depth of strata: 36-61

MIREI
58254WELL ID.# L 71409
START CARD # 166687

(9) LOCATION OF WELL by legal description:

County Maryland Latitude _____ Longitude _____
 Township 80 N or S Range 3 E or W W.M.
 Section 25 NE 1/4 SW 1/4
 Tax Lot 1100 Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL:

81 ft. below land surface. Date 08/06/04
 Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:

From	To	Estimated Flow Rate	SWL
36	61	5	21
143	157	5	81
360	460	5	81

(12) WELL LOG:

Ground Elevation _____

Material	From	To	SWL
Top Soil	0	4	
Red Clay	4	36	
Weathered Basalt	36	61	21
Hard Basalt	61	63	
Green-Grey Sandstone	63	69	
Green Sandstone	69	143	8
Slightly broken sandstone	143	157	81
Grey Sandstone	157	360	
Slightly broken sandstone	360	460	81

Date started 07/19/04 Completed 08/06/04

(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.

Signed Tray Boer WWC Number 1793
 Date _____

(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.

Signed Dallas R. Davis WWC Number 166687
 Date 08/07/04

ORIGINAL - WATER RESOURCES DEPARTMENT FIRST COPY - CONSTRUCTOR SECOND COPY - CUSTOMER

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report
are to be filed with the

WATER RESOURCES DEPARTMENT
SALEM, OREGON 97310
within 30 days from the date
of well completion.

WATER WELL REPORT RECEIVED

STATE OF OREGON
(Please type or print)

JAN 31 1978

State Well No. 88/3W-25cc

State Permit No. _____

WATER RESOURCES DEPT.

(1) OWNER:

Name Don Sammons
Address 4528 24 Way S.E.
Salem Oregon 97302

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☒
Cable ☐
Dug ☐

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 25 ft. Gage 250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? ☒ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) 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.

Flow test 30 gal./min. with ft. drawdown after 1 hrs.

Artesian flow g.p.m.

Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Cement

Well sealed from land surface to 25 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 3 sacks

How was cement grout placed? POURED

Was a drive shoe used? ☐ Yes ☒ No Plugs Size: location ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Marion Driller's well number 647-77
S.W. 1/4 S.W. 1/4 Section 25 T. 25 S. R. 3 W. W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 80 ft.
Static level 60 ft. below land surface. Date Nov 14/77
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 145 ft. Depth of completed well 145 ft.

Formation: Describe color, texture, grain size and structure of materials;
and show thickness and nature of each stratum and aquifer penetrated,
with at least one entry for each change of formation. Report each change in
position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top Soil	0	5	
Red Clay	5	10	
Brown Clay	10	15	
Basalt Rock	15	75	
Basalt Rock + holes	75	65	
Rock			
Basalt Rock Hard	65	145	60

Work started Nov 10 1977 Completed Nov 12 1977

Date well drilling machine moved off of well Nov 13 1977

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision.
Materials used and information reported above are true to my
best knowledge and belief.

[Signed] Thomas J. Long Date Nov 14, 1977

(Drilling Machine Operator)

Drilling Machine Operator's License No. 846

Water Well Contractor's Certification:

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

Name Long Drilling (Type or print)

Address 11401 Steinhilber Rd. S.E. Anacortes, Wa.

[Signed] Thomas J. Long

(Water Well Contractor)

Contractor's License No. 75 Date Nov 15 1977

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.265)

Instructions for completing this report are on the first page.

MAR 1
52999
L18382

(START CARD) # 101969

(1) OWNER: Well Number 502
Name Mark Hunt
Address 3011 Delaney Rd. SE
City Turner State OR Zip 97392

(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 205 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE			SEAL		
Diameter	From	To	Material	From	To
6"	145	205			

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other Didn't change seal

Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

Casing/Liner		Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:	4"	45	160	1/2		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:		Method	Material
<input checked="" type="checkbox"/> Perforations		Saw	
<input type="checkbox"/> Screens		Type	
From	To	Slot size	Number
160	205	6x3	30

(8) WELL TESTS: Minimum testing time is 1 hour

<input type="checkbox"/> Pump	<input type="checkbox"/> Bailor	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Flowing
Yield gal/min	Drawdown	Drill stem at	Time
35		200'	1 hr

Temperature of water 56 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:

(9) LOCATION OF WELL by legal description:
County Marion Latitude Longitude
Township 8S N or S Range 3W E or W. WM
Section 25 SW 1/4 SW 1/4
Tax Lot 59604- Lot Block Subdivision
Street Address of Well (or nearest address) Same as above

(10) STATIC WATER LEVEL:
60 ft. below land surface. Date 4/14/98
Artesian pressure ft. per square inch. Dam

(11) WATER BEARING ZONES:

Depth at which water was first found 168'

From	To	Estimated Flow Rate	SWL
168	195	30	68

(12) WELL LOG:

Material	From	To	SWL
Basalt Gray	145	168	
Basalt Gray Brown	168	195	68
Basalt Black	195	205	

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WATER RESOURCES DEPT.
SALEM, OREGON

Date started 4/13/98 Completed 4/14/98

(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.

Signed _____ WWC Number _____ Date _____

(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.
AMERICAN WELL DRILLING WWC Number 663 Date 5/1/98

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

579

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

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

(WELL I.D.)# L 71377

(START CARD) # 165531

(1) OWNER: Well Number _____
Name: Randall J. Boese
Address: 7477 Terry Ct SE
City: Salem State: OR Zip: 97301

(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 112 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE			SEAL				
Diameter	From	To	Material	From	To	Sacks or pounds	
10"	0	41	Bentonite	0	41	17 sacks	
6"	41	112					

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Poured and tamped
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"	+1	63	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: 4 1/2"	0	112	pvc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) Outside shoe 63'

(7) PERFORATIONS/SCREENS:

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
58	112	1/8 x 2	600	4 1/2"		<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem at	Flowing Artesian
70	52	112	Time

Temperature of water 58 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: _____

(9) LOCATION OF WELL by legal description:

County Marion Latitude _____ Longitude _____
Township 6S Range 3W W. W. M.
Section 25 NE 1/4 NE 1/4
Tax Lot 2800 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) Next to 3011 Delaney Road SE

(10) STATIC WATER LEVEL:
60 ft. below land surface. Date 4-30-04
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 60'

From	To	Estimated Flow Rate	SWL
72	112	70	60

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
topsoil	0	3	
brown clay	3	23	
shale yellow & brown	23	30	
gray brown sandstone	30	48	
shale brown with yellow clay	48	58	
basalt brown with clay	58	112	60

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MAY 03 2004

WATER RESOURCES DEPT
SALEM, OREGON

Date started _____ Completed _____
(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.

Signed _____ WWC Number 1541
Date 4/30/04

(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.

Signed _____ WWC Number 1541
Date 4/30/04

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WATER WELL REPORT STATE OF OREGON

NOV 13 1980
WATER RESOURCES DEPT
SALEM, OREGON

State Well No.

State Permit No.

59

85/300-25 da

(1) OWNER:

Name Scott Lund
Address 517 S.E. 110th. Ave.
City Vancouver, Washington

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Art ☒ Driven ☐ Domestic ☒ Industrial ☐ Municipal ☐
Bore ☐ Dig ☐ Irrigation ☐ Test Well ☐ Other ☐
Cable ☐ Bored ☐ Thermal ☐ Withdrawal ☐ Reinjection ☐

(4) PROPOSED USE (check):

(5) CASING INSTALLED:

Steel ☒ Plastic ☐
Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 90 ft. Gauge 250
" Diam. from ft. to ft. Gauge

LINER INSTALLED:

" Diam. from ft. to ft. Gauge

(6) PERFORATIONS:

Perforated? ☐ 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.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Diam. Slot Size Set from ft. to ft.

Diam. Slot Size Set from ft. to ft.

WELL TESTS:

Drawdown is amount water level is lowered below static level

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

Yield 20 gal/min. with 79 ft. drawdown after 2 hrs.

Art test gal/min. with drill stem at ft. hrs.

Test gal/min. with ft. drawdown after hrs.

Artisan flow g.p.m.

Temperature of water Depth artesian flow encountered ft.

(8) CONSTRUCTION:

Special standards Yes ☐ No ☒

Well seal—Material used cement

Well sealed from land surface to 25 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 10 in.

Number of sacks of cement used in well seal 7 sacks

How was cement grout placed? pumped

Was pump installed? YES Type SUB HP 1 Depth 105 ft.

Was a drive shoe used? ☐ Yes ☒ No Pins Size location

Did any strata contain unusable water? ☐ Yes ☒ No

Type of Water? depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel

Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Marion Driller's well number
N.E. 4 S.E. 4 Section 25 T. 85 R. 3 W. WM
Tax Lot # Lot Blk Sub-division

Address at well location:

(11) WATER LEVEL: Completed well.

Depth at which water was first found 25 ft.

Static level 26 ft. below land surface. Date 10-27

Artisan pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"

Depth drilled 122 ft. Depth of completed well 122 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
soil	0	1	
clay (orange)	1	20	
weathered out rock	20	25	
rock (basalt)	20	72	
sand-stone (green)	72	87	
sand-stone (grey)	87	122	

Work started 10-20 19 80 Completed 10-23 19 80
Date well drilling machine moved off of well 10-23 19

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

(Signed) George Robinson Date 10-20 19 80

(Drilling Machine Operator)

Drilling Machine Operator's License No. 64

Water Well Contractor's Certification:

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

Name George Robinson Drilling (Type or print)

Address 1050 Crescent Drive W. Salem

(Signed) George Robinson (Water Well Contractor)

Contractor's License No. 13 Date 10-23 19 80

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310
within 30 days from the date of well completion.

SP-19039-030

NOTICE TO WATER WELL CONTRACTOR:
The original and first copy
of this report are to be
filed with the

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date
of well completion.

WATER WELL REPORT

STATE OF OREGON
(Please type or print)

(Do not write above this line) SALEM, OREGON

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JUL 22 1974

State Well No.

85/3W-25db (bc)

STATE ENGINEER

State Permit No.

(1) OWNER:

Name DAN JOYNT
Address 3944 SENECA
SALEM, ORE

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒
6" Diam. from 0 ft. to 117 ft. Gage 4
4500" Diam. from 99 ft. to 161 ft. Gage 8
" Diam. from _____ ft. to _____ ft. Gage _____

PERFORATIONS:

LINER

Perforated? ☒ Yes ☐ No.

Type of perforator used TORCH
Size of perforations 1/4 in. by 8" in.
16 perforations from 126 ft. to 159 ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

AIR Drawdown is amount water level is lowered below static level.

Was a pump test made? ☒ Yes ☐ No If yes, by whom? SNED
Yield: 21 gal./min. with 37 ft. drawdown after 1 hrs.

Ball test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m.

Temperature of water 50 Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Well seal—Material used WELL SEAL
Well sealed from land surface to 116' ft.
Diameter of well bore to bottom of seal 10" in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal NONE sacks
Number of sacks of bentonite used in well seal 34 sacks
Brand name of bentonite WELL SEAL
Number of pounds of bentonite per 100 gallons of water 100 lbs./100 gals.
Was a drive shoe used? ☐ Yes ☒ No Flange NO Size: location _____ ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County MARION Driller's well number _____
NW 1/4 SE 1/4 Section 25 T. 85 R. 3W W.M.
Bearing and distance from section or subdivision corner _____

(11) WATER LEVEL: Completed well.

Depth at which water was first found 126' ft.
Static level 124 ft. below land surface. Date 7-15-74
Artesian pressure _____ lbs. per square inch. Date _____

(12) WELL LOG:

Diameter of well below casing 6"

Depth drilled 161 ft. Depth of completed well 161 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
<u>TOPSOIL</u>	<u>0</u>	<u>3</u>	
<u>CLAY YELLOW COLOR</u>	<u>3</u>	<u>8</u>	
<u>BASALT WEATHERED</u>	<u>8</u>	<u>53</u>	
<u>BASALT FRACTURED</u>	<u>53</u>	<u>102</u>	
<u>BASALT DENSE</u>	<u>102</u>	<u>124</u>	
<u>BASALT SPAMY</u>	<u>124</u>	<u>132</u>	<u>124'</u>
<u>BASALT WEATHERED</u>	<u>132</u>	<u>151</u>	<u>124'</u>
<u>BASALT FRACTURED</u>	<u>151</u>	<u>161</u>	<u>124'</u>

Work started 7-13 1974 Completed 7-15 1974
Date well drilling machine moved off of well 7-15 1974

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] H. F. Sneed Date 7-15 1974
(Drilling Machine Operator)

Drilling Machine Operator's License No. 187

Water Well Contractor's Certification:

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

Name J. A. SNEED & SONS
(Person, firm or corporation) (Type or print)

Address 3910 SILVERTON RD SALEM, ORE

[Signed] R. F. Sneed
(Water Well Contractor)

Contractor's License No. 6 Date 7-15 1974

MARI 58668

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

Mack Drilling Company, Inc.
PO Box 12067
Salem, OR 97309

WELL I.D. # L 75010

START CARD # 171374

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

(1) LAND OWNER Well Number 171374
Name Ken Souders
Address 7635 Shady Way SE
City Turner, State OR Zip 97392

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

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

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

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☒ No
Depth of Completed Well 150 ft.
Explosives used: ☐ Yes ☒ No Type Amount

BORE HOLE				SEAL			
Diameter	From	To	Material	From	To	Sacks or Pounds	
6	0	161	cement	150	156	1 sack	
existing	did not	disturb					

How was seal placed: Method ☐ A ☒ B ☐ C ☐ D ☐ E
☐ Other

Backfill placed from ft. to ft. Material
Gravel placed from 166 ft. to 161 ft. Size of gravel 1" crushed

(6) CASING/LINER

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4	0	150	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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

(7) PERFORATIONS/SCREENS
☒ Perforations Method Electric Saw
☐ Screens Type slot Material PVC

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
130	150	1/8	30	6	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Time
7	45		1 hour

Temperature of water 54 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:

(9) LOCATION OF WELL (legal description)

County Marion
Tax Lot 3200 Lot
Township 8 S Range 3 W WM
Section 25d NW 1/4 SE 1/4

Lat ° ' " or (degrees or decimal)
Long ° ' " or (degrees or decimal)

Street Address of Well (or nearest address) 7635 Shady Way SE, Turner, OR 97392

(10) STATIC WATER LEVEL

95 ft. below land surface. Date 01-06-05
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES

Depth at which water was first found

From	To	Estimated Flow Rate	SWL
127	150	5	95

(12) WELL LOG

Ground Elevation

Material	From	To	SWL
See original MARI 12546**			
Prior to working on the well the			
SWL was 156'. You could hear			
water cascading. The 4" steel			
liner was pulled with a taper tap.			
Ran camera down, at 127' to 134'.			
water was running in. The area			
was well weathered and enlarged			
bore hole. Place crushed rock on			
the bottom, then 6" of cement.			
No leakage of water from the			
bottom of casing during the			
camera inspection.			

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JAN 2 E 2005
WATER RESOURCES DEPT
SALEM, OREGON

Date Started 01-05-015 Completed 01-05-05

(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 1394 Date 01-07-05

Signed *James P. Clark*

(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 1394 Date 01-07-05

Signed *James P. Clark*

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

MARI 61021

10-09-2007

Page 1 of 2

WELL LABEL # L 92877

START CARD # 195046

(1) LAND OWNER Owner Well ID. _____
First Name Carl Last Name Schmidt
Company _____
Address P.O. Box 294
City Turner State OR Zip 97392

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

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

(4) PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Community
☐ Industrial/ Commercial ☐ Livestock ☐ Dewatering
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION Special Standard ☐ (Attach copy)
Depth of Completed Well 523.00 ft.

BORE HOLE			SEAL			sacks/	
Dia	From	To	Material	From	To	Amt	lbs
10	0	99	Bentonite	0	10	6	S
6.13	99	523	Cement	10	99	20	S

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from _____ ft. to _____ ft. Material _____

Filter pack from _____ ft. to _____ ft. Material _____ Size _____

Explosives used: ☐ Yes Type _____ Amount _____

(6) CASING/LINER		Casing		Liner		Dia		+ From To Gauge		Stl Plstc Wld		Thrd	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6	1	99	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	0	523	160	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shoe ☐ Inside ☒ Outside ☐ Other Location of shoe(s) 99

Temp casing ☒ Yes Dia 10 From 0 To 6

(7) PERFORATIONS/SCREENS
Perforations Method Saw Cut
Screens Type _____ Material _____

Perf/S	Casing/Screen	green	Liner	Dia	From	To	Scr/slot width	Slot length	# of slots	Tele/ pipe size
Perf	Liner				480	520	188	6	40	4

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
40		520	1

Temperature 56 °F Lab analysis ☐ Yes By

Water quality concerns? ☐ Yes (describe below)

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County Marion Twp 8.00 S N/S Range 3.00 W E/W WM
Sec 25 NE 1/4 of the SE 1/4 Tax Lot 400
Tax Map Number _____ Lot _____

Lat _____ " or _____ DMS or DD
Long _____ " or _____ DMS or DD

☒ Street address of well ☐ Nearest address

PT of 400 Bergman Pl. Rd Turner, OR 97392

(10) STATIC WATER LEVEL

Existing Well / Predeepening	Date	SWL(psi)	+ SWL(ft)
Completed Well	09-27-2007		320

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
09-26-2007	90	93	1		320
09-27-2007	420	430	2		320
09-27-2007	505	510	40		320

(11) WELL LOG

Ground Elevation

Material	From	To
Top soil	0	1
Clay Brown	1	77
Basalt Decomposed	77	79
Clay light Brown sticky	79	90
Claystone grey firm	90	93
Sandstone grey firm	93	95
Sandstone grey dark firm	95	142
Sandstone grey light firm	142	150
Sandstone grey dark firm	150	172
Siltstone light grey firm	172	181
Sandstone grey dark firm	181	215
Sandstone grey dark firm w/ Sea shells	215	230
Sandstone grey light firm Fractures	230	245
Sandstone grey & green coarse firm	245	254
Sandstone med. soft	254	265
Sandstone grey coarse med. soft	265	300
Sandstone grey soft coarse	300	340
Sandstone grey med coarse w/ black sand traces	340	352
Sandstone greyish turquoise med. & firm	352	355

Date Started 09-26-2007 Completed 10-01-2007

(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.

License Number 1856 Date 10-09-2007

Electronically Filed

Signed MICHAEL K YACKEY (E-filed)

(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.

License Number 1394

Date 10-09-2007

Electronically Filed

Signed EUGENE MACK (E-filed)

Contact Info (optional)

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON within 30 days from the date of well completion.

JUN 21 1966

WATER WELL REPORT

STATE OF OREGON (Please type or print)

State Well No. 8/36-25

State Permit No. _____

(1) OWNER:

Name E. Kitchen
Address P.O. Box 475 Salem, OR

(2) LOCATION OF WELL:

County Washington Driller's well number _____
1/4 Section 25 T. 8, S. R. 3, W. W.M.
Bearing and distance from section or subdivision corner
Well No. 1

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
Remediation, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐ Rotary ☐ Driven ☐
Irrigation ☐ Test Well ☐ Other ☐ Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(5) TYPE OF WELL:

(6) CASING INSTALLED:

Threaded ☐ Welded ☒
6" Diam. from 1 ft. to 7 1/2 ft. Gage 250
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

(7) PERFORATIONS:

Perforated? ☐ 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.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(8) SCREENS:

Well screen installed? ☐ Yes ☒ No
Manufacturer's Name _____ Model No. _____
_____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(9) CONSTRUCTION:

Well seal—Material used in seal Portland Cement & Rock Concrete
Depth of seal 7 1/2 ft. Was a packer used? No
Diameter of well bore to bottom of seal 10 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth _____
Was a drive shoe used? ☐ Yes ☒ No
Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level 76 ft. below land surface Date 6-11-66
Artesian pressure _____ lbs. per square inch Date _____

(USE ADDITIONAL SHEETS IF NECESSARY)

(11) 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.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 210 ft. Depth of completed well 200 ft.

Formation: Describe by color, character, size of material and structure, and show thickness of layers 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
Soil	0	1
ORANGE - CLAY	1	11
BROWN - ORANGE SAND	11	56
" - CLAY	56	61
" - ORANGE SAND	61	65
RED - ROCK	65	76
BROWN ROCK - BROWN	76	92
WEATHERED ROCK	92	106
BROWN ROCK - ORANGE SAND	106	133
BROWN CLAY	133	139
ORANGE - CLAY	139	135
BROWN - PARTLY WEATHERED	135	148
" - SAND & GRAVEL	148	150
BROWN - CLAY - BLUE	150	163
BROWN - CLAY	163	173
BROWN - "	173	180
CLAY - "	180	200

Work started 6-3-66 19 _____ Completed 6-4-66 19 _____

Date well drilling machine moved off of well 11-11-66 19 _____

(13) PUMP:

Manufacturer's Name _____ Type: _____ H.P. _____

Water Well Contractor's Certification:

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

NAME Miller - Adams & Co. (Type or print)

Address 5545 Jasper St. S.E. Salem, OR

Drilling Machine Operator's License No. 57

[Signed] Miller - Adams & Co. (Water Well Contractor)

Contractor's License No. 37 Date 6-11-66 19 _____

After removing the well liner and screen, well was pumped full of cement. 69 sacks of cement mixed with bentonite were used to abandon this well. The casing was cut off 1 ft. below ground level and soil was placed from 1 ft. to ground level.

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the reverse side of this form.

RECEIVED

JUL 10 1998

WATER RESOURCES DEPT.

WELL ID # 19819
(START CARD) # 113149

(1) OWNER:

Name Dale Goerke
Address P.O. Box 3648
City Salem State OR Zip 97302

(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 345 ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE			SEAL			Amount	
Diameter	From	To	Material	From	To	sacks or pounds	
10"	0	75	Bentonite	0	80	18 Sacks	
8"	75	110	Cement	90	110	3 Sacks	
6"	110	345					

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other Casing lowered into cement

Backfill placed from 50 ft. to 90 ft. Material Bent. 20 sbs

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

Casing/Liner	Diameter	From To		Gauge	Steel	Plastic	Welded	Threaded
		From	To					
Casing: 8"		+2	110	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: 4"		5	345	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) 110'

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Electric Saw
☐ Screens Type Slots Material SDR 20

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
305	345	1/8	64	6 1/2	4"	<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Baler ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
60		345	1 hr.

Temperature of Water 52 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:

(9) LOCATION OF WELL by legal description:

County Marion Latitude Longitude
Township 8/S N or S. Range 3/W E or W. of WM.
Section 28 SE 1/4 SE 1/4
Tax Lot 2400 Lot Block Subdivision
Street Address of Well (or nearest address)
2348 Delaney Road S Salem, Oregon 97308

(10) STATIC WATER LEVEL:

174 ft. below land surface. Date 7/2/98
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 37

From	To	Estimated Flow Rate	SWL
37	85	20	45
177	187	5	174
312	328	20	174
328	345	80	174

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
Topsoil	0	1	
Clay red dense	1	9	
Clay red & brown	9	12	
Clay tan sticky	12	22	
Clay brown sandy	22	37	
Decomposed basalt brown	37	70	
Basalt black broken	70	75	
See next line	75	95	
Blt gray, blk, brn, brkn some vasc. w/red cast sms			
Basalt black broken	95	100	
Basalt black	100	117	
See next line	117	127	
Basalt gray broken w/brn & gm seams			
Basalt weathered broken brwn & blk	127	135	
Basalt gray w/brown streaks	135	145	
Basalt gray & black broken	145	155	
Basalt gray w/seams	155	164	
Basalt brwn & blk weathered broken	164	168	
See next line	168	177	
Basalt varieg. w/yellow/orange claystone			
See next line	177	187	
Basalt clay w/yw w/cinders br & ylw inter beds			
Basalt blk vesicular	187	193	
Basalt black fractured	193	207	

Continued on next page

Date started 7/1/98 Completed 7/2/98

(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 my best knowledge and belief.

Signed [Signature] WWC Number 1454
Date 7-2-98

(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.

Signed [Signature] WWC Number 1384
Date 7-3-98
Mack Drilling Company, Inc.

STATE OF OREGON
WATER SUPPLY WELL REPORT
 (as required by ORS 537.750)

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

WELL I.D. #1 42451

START CARD # 133931

(1) OWNER: Well Number 3537
 Name Daniel + Ann Beaver
 Address 3490 Deer Lake Cr SE
 City Salem State OR Zip 97301

(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 520 ft.
 Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE SEAL
 Diameter From To Material From To Sacks or pounds
10 0 150 Concrete 0 150 0.59 sacks
6" 150 520 open hole

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: 6" 0 150 0.20 ☒ ☐ ☒ ☐
 Liner: _____ ☐ ☐ ☐ ☐

Final location of shoe(s) 150

(7) PERFORATIONS/SCREENS:
☐ Perforations Method _____
☐ Screens Type _____ Material _____
 From To Slot size Strainer Diameter Tube/pipe size Casing Liner
150 0 150 0.20 ☒ ☐ ☐ ☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailor ☒ Air ☐ Flowing
 Yield gallons Drawdown Drift down at Time
20 _____ 520 1 hr.

Temperature of water 53 Depth Artesian Flow Found _____
 Was a water analysis done? ☒ No ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☒ Too little
☐ Salty ☒ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: 135-146

(9) LOCATION OF WELL by legal description:

County Marion Latitude _____ Longitude _____
 Township 9S N or S Range 2W E or W. WM.
 Section 19 SW 1/4 SW 1/4
 Tax Lot 01400 Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) _____

Same as #1

(10) STATIC WATER LEVEL:
2.51 ft. below land surface. Date 9/16/00
 Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 135

From	To	Estimated Flow Rate	SWL
<u>135</u>	<u>146</u>	<u>5</u>	<u>63</u>
<u>432</u>	<u>520</u>	<u>20</u>	<u>251</u>

(12) WELL LOG:
 Ground Elevation _____

Material	From	To	SWL
<u>Top Soil</u>	<u>0</u>	<u>3</u>	
<u>Brown Clay</u>	<u>3</u>	<u>37</u>	
<u>Red sticky clay</u>	<u>37</u>	<u>69</u>	
<u>light brown claystone</u>	<u>69</u>	<u>97</u>	
<u>Green sandstone</u>	<u>97</u>	<u>128</u>	
<u>broken brown claystone</u>	<u>128</u>	<u>135</u>	
<u>very broken brown claystone</u>	<u>135</u>	<u>146</u>	<u>63</u>
<u>Blue claystone</u>	<u>146</u>	<u>231</u>	
<u>Greenish claystone</u>	<u>231</u>	<u>432</u>	
<u>Coarse white sandstone</u>	<u>432</u>	<u>520</u>	<u>251</u>

RECEIVED

SEP 29 2000

WATER RESOURCES DEPT
 SALEM, OREGON

Date started 9/14/00 Completed 9/16/00

(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.

Signed David L. Ben WWC Number 1733 Date 9/16/00

(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.

Signed Dallas L. Davis WWC Number 561 Date 9/16/00

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date
APR 27 1968
WATER WELL REPORT
12418
M131...

#1 JOB
#1308
State Well No. 0/34-24
State Permit No.

(1) OWNER: **George GEBBENHART JR.**
Address: **180 Liberty St. Salem, Ore 97301**

(2) TYPE OF WORK (check):
☒ New Well ☐ Reopening ☐ Abandon

(3) TYPE OF WELL:
If abandonment, describe material and procedure in item 18.
☐ Domestic ☒ Industrial ☐ Municipal ☐ Other

(4) CASING INSTALLED:
Type of perforator used: ☒ Threaded ☐ Welded
Diam. from: 8" to 8" Gage: 16.92"

PERFORATIONS:
Type of perforator used: ☐ Perforated ☒ Yes ☐ No
Diam. from: 8" to 8" Gage: 16.92"

(7) SCREENS:
Well screen installed? ☐ Yes ☒ No

(8) WATER LEVEL, Completed well.
Level: 15 ft. below land surface Date: 4-10-68
Atmospheric pressure: lbs. per square inch Date: 4-10-68

(9) WELL TESTS:
Drawdown in amount water level is lowered below static level: **CHANGED**
Was a pump test made? ☒ Yes ☐ No If yes, by whom? **CHANGED**
gal/min. with 175 ft. drawdown after 1 1/2 hrs.

Boiler test: gal/min. with ft. drawdown after hrs.
Artesian flow: gpm. Date: 4-10-68
Temperature of water: 52° Was a chemical analysis made? ☐ Yes ☒ No

(10) CONSTRUCTION:
Well seal material used: **puddled clay**
Depth of seal: 80"
Diameter of well bore to bottom of seal: 10"
Were any loose struts cemented off? ☐ Yes ☒ No Depth: 10"
Was a drive shoe used? ☒ Yes ☐ No
Did any struts contain unusable water? ☐ Yes ☒ No
Depth of struts: ft.

Method of sealing struts off:
Was well gravel packed? ☐ Yes ☒ No Size of gravel: ft. to ft.
Gravel placed from: ft.

(USE ADDITIONAL SHEETS IF NECESSARY)
Contractor's License No. 6 Date 4-10-68
(Water Well Contractor)
[Signed] **H.T. Dwyer**
Address: **3910 SILVERTON RD. SALEM, ORE**
(Person, firm or corporation)
NAME: **H.T. Dwyer**
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Water Well Contractor's Certification:
Drilling Machine Operator's License No. 187 Date 4-10-68
[Signed] **H.T. Dwyer**
(Drilling Machine Operator)
This well was constructed under my direct supervision. Plans used and information reported above are true to my best knowledge and belief.
Date well drilling machine moved off of well: 4-10-68
Work started 4-10-68 Completed 4-10-68
Date well drilling machine moved off of well: 4-10-68

FORMATION: Describe color, texture, grain size and structure of material; and show thickness and nature of each stratum and aquifer penetrated. Report each change with at least one entry for each change of formation.	Depth drilled ft.	Diameter of well below casing ft.	Depth of completed well ft.
TOPSOIL	0	8"	15'
CLAY RED COLOR	8"	8"	15'
CLAYSTONE GRY HARD	16	8"	15'
CLAYSTONE GRY HARD	63	8"	15'
CLAYSTONE GRY HARD	86	8"	15'
CLAYSTONE GRY HARD	143	8"	15'
SANDSTONE GRY HARD	143	8"	15'

THIS WELL DRILLED BY J.N. SNEED TO DEPTH OF 75' YEAR 1938. NOTHING CHANGED BUT CLEAN BOT + DEEPEN FROM 75' TO 190'.
Date well drilling machine moved off of well: 4-10-68
Work started 4-10-68 Completed 4-10-68
Date well drilling machine moved off of well: 4-10-68

(11) LOCATION OF WELL:
County: **Marion**
Bearing and distance from section or subdivision corner: **1/4 Sec 24 T. 8 S. R. 34 W. 1 E.**

(12) WELL LOG:
Diameter of well below casing: 6"
Depth drilled: 190'
Formation: Describe color, texture, grain size and structure of material; and show thickness and nature of each stratum and aquifer penetrated. Report each change with at least one entry for each change of formation. Note drilling rates.
In position of Static Water Level as drilling proceeds. Note drilling rates.

MARI 58346

203

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

Mack Drilling Company, Inc.
PO Box 12067
Salem, OR 97309

WELL I.D. # L 72881 (page one)

START CARD # 169276

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

MARI 58346

(1) LAND OWNER Well Number 72881
Name Paul Meyers
Address 6955 Barcelona Dr SE
City Salem State OR Zip 97301

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

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

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

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☒ No
Depth of Completed Well 523 ft.
Explosives used: ☐ Yes ☒ No Type _____ Amount _____

BORE HOLE				SEAL			
Diameter	From	To	Material	From	To	Sacks or Pounds	
10	0	158	Bentonite	0	37	13 sacks	
8	158	159	Cement	37	158	35 sbs w/bent	
6	159	523					

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E☒ Other Poured and Probed Bentonite

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	+1	160	.250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4	-3	523	160	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used ☐ Inside ☒ Outside ☐ NoneFinal location of shoe(s) 159

(7) PERFORATIONS/SCREENS
☒ Perforations Method Electric Saw
☐ Screens Type Slots Material PVC

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
482	522	1/8	40	6		<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Time
3		328	1 HR

Temperature of water 58 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 ☐ Mottled ☐ Colored ☐ Other _____
Depth of _____

(9) LOCATION OF WELL (legal description)
County Marion
Tax Lot 100 Lot _____
Township 8 S Range 3 W WM
Section 25 D NE 1/4 SE 1/4
Lat _____ " or _____ (degrees or decimal)
Long _____ " or _____ (degrees or decimal)

Street Address of Well (or nearest address) 3450 Bergman Place, Salem, OR
(next door to Wall Wells 2nd property on the right)

(10) STATIC WATER LEVEL
195 ft. below land surface. Date 09-01-04
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES			
From	To	Estimated Flow Rate	SWL
94	108	4	57
286	323	2	185
428	429	1	185
429	440	.5	185

(12) WELL LOG			
Material	From	To	SWL
Top Soil br	0	1	
Clay red & br some firm	1	18	
Clay red & br & yellow soft	18	23	
Clay stone br & red to yellow	23	31	
Clay stone br Frx & weathered	31	38	
Clay stone br to gray sandy	38		
m-hard some weathered		47	
Clay stone br & yellow some	47		
soft clay		57	
Clay light br sticky	57	71	
Clay grey sticky	71	73	
Clay stone br sandy m-hard	73	75	
Basalt br & grey m-hard Frx	75	84	
Basalt blk & grey Frx	84	108	57
Basalt grey hard	108	110	

Date Started 08-31-04 Completed 09-07-04

(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 1394

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 1394

Signed _____

Eugene Mack

OCT 01 2004

WATER RESOURCES DEPT
SALEM, OREGONWATER RESOURCES DEPT
SALEM, OREGON

06/16/2004

MAR 58346

RECEIVED

203

SEP 10 2004

Mack Drilling Company, Inc.

Domestic • Commercial • Environmental • Geotechnical Drilling & Well Services

WATER RESOURCES DEPT
SALEM, OREGON

RECEIVED

(1) OWNER: Paul Meyers

Well Number:
Start Card #

72861
169276

OCT 01 2004

WATER RESOURCES DEPT
SALEM, OREGON

Site

SAME

Address:

5955 Barcelona Dr SE

City:

Salem, OR 97301

Page two of two

(12) WELL LOG:

Material	From	To	SWL
*****continued from page one*****			
Basalt w/Clay stone green	110	118	
Basalt grey m-hard few seams	118	130	
Basalt blk hard	130	136	
Clay blue	136	147	
Clay blue sandy	147	149	
Clay stone blue m-hard	149	152	
Clay stone grey silty	152	158	
Silt stone blue green	158	162	
Sand stone grey	162	165	
Clay stone green & br	165	168	
Sandstone green & br	168	173	
Sandstone green & blk	173	176	
Sandstone grey	176	187	
Sandstone greyish br	187	198	
Sandstone grey hard	198	207	
Sandstone grey m-hard	207	212	
Sandstone silty hard	212	223	
Sandstone grey hard layers	223	240	
Sandstone dark grey sandy blk	240	253	
Silt stone grey	253	266	
Silt stone Sand stone fine grained	266	275	
Silt stone grey	275	296	
Sand stone light grey soft	296	323	195
Sand stone light grey coarse soft	323	334	195
Clay stone br & grey silty	334	338	195
Silt stone grey hard to m-hard	338	347	195
Silt stone dark grey m-hard to hard	347	445	195
Clay stone maroon & green w/gravel	445	448	
Silt stone grey sandy	448	449	
Mud stone light br	449	491	
Silt stone grey	491	504	
Silt stone blk & grey w/hard layers	504	523	

204

Well Number

City Salem State OR Zip 97302

9809C 10/91

STATE OF OREGON
Water Supply Well Report

(as required by ORS 637.765)

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

MARI 56793

MARI

56793

Received Date:

Well ID Tag # L 69671

Start Card # 151785

(1) Owner

Name: LLOYD KLASSEN

Well Number: 1

Street: 3733 ECHO DR N.W.

City: SALEM

State: OR Zip Code: 97304

(2) Type of Work

☐ New ☒ Alter (Recondition) ☐ Alter (Repair)
☐ Deepening ☐ Abandonment

(3) Drill Method

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
Other:

(4) Proposed Use

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation ☐ Injection
☐ Livestock ☐ Thermal Other:

(5) Bore Hole Construction

☐ Special Standards: Depth of completed well: 165.00 ft.
☐ Explosives Used: Amount: Type: Seal

Diameter	From	To	Min	From	To	Sacks/lbs

How was seal placed?
Back fill placed from:
Filter pack from:

Other:

(6) Casing / Liner

Casing/ Liner	Diameter	From	To	Gauge	Min	Weld	Thrd	at used

(7) Perforation / Screens

Perforations:	Min	From	To	Width Height	#Slots	Dia.	Up/Size	Lin	Method

Screens:

Min	From	To	S Size	#Slots	Dia.	Up/Size	Type	Gauge

(8) Well Tests (Minimum testing time is one hour)

Type	Yield	Units	Drawdown	Stem at	Duration
A	10.00	G		165.00	1.00

Temperature of Water: 56 F

Was water analysis done? ☐ by whom?

Depth of artesian flow:

Did any strata contain water unsuitable for use? ☐ Too Little ☐ Salty

☐ Muddy ☐ Odor ☐ Colored other:

Depth of strata:

(9) Location of Hole by legal description

County: MARI Latitude: Longitude:
Township: 9.00 S Range: 3.00 W
Section: 26 SESE Lot: Block:
Tax Lot: 0891 Subdivision:
Street Address of Well (or nearest address):
3401 MIDPUPPY LANE SALEM, OR
MAP, with location identified, must be attached.

(10) Static Water Level

Feet below land surface: Date:
Atmospheric Pressure: Date:

(11) Water Bearing Zones

Depth at which water was first found:
From To seal Flow and

(12) Well Log

Material: Ground Elevation:
From To and

Cleaned out well
put a tag on well.

RECEIVED

JAN 02 2004

WATER RESOURCES DEPT
SALEM, OREGON

RECEIVED

SEP 09 2002

WATER RESOURCES DEPT.
SALEM, OREGON

Date Started: 09 / 09 / 2002 Date Completed: 09 / 09 / 2002

(unbonded) Water Well Constructor Certification:

I certify that the work performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to the best knowledge and belief.
Signed by: RODNEY C ERLER WWC # 183

(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 well construction standards. This report is true to the best of my knowledge and belief.
Signed by: CASEY JONES JR WWC # 1841

Page 1 of 1 CASEY JONES WELL DRILLING Phone: 541-747-2898

APPENDIX II
MARION COUNTY TAX LOT MAPS

08 3W 24D


005 00 19 0

WELL KEY:

Ø NO WATER

- **BASALT WELL**

⑥ Shale w/v



DESTINED
WELL

08 3W 24D

MARION COUNTY, OREGON
SE1/4 SEC24 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Debt Boundary

Road Right-of-Way

Refined Right-of-Way

Right Hand Row

•

Historical Boundary

Experiments

Railroad Corporation

Encodation

• • • • •

Map boundary

SYMBOL TYPES

- Survey Monument

~ Road Station

© ULC Corner

+ 2/1571 Section Cor.

2/4 Section Cnr.

18 15
-# Service Charge

NUMBERS

Ex Code Number

000 00 00 0

Average All acres based on Net Acres excluding any
0.29 AD portions of the parcel within public ROWs

NOTE5

Tick Marks: If a tick mark is indicated on the end of a line, then the dimension goes to the tick mark. This is used when dimensions extend into public right-of-ways.

CANCELED NUMBERS

**DISCLAIMER: THIS MAP WAS PREPARED
FOR ASSESSMENT PURPOSES ONLY**



Assessor's Office
Cartagena, Nariño

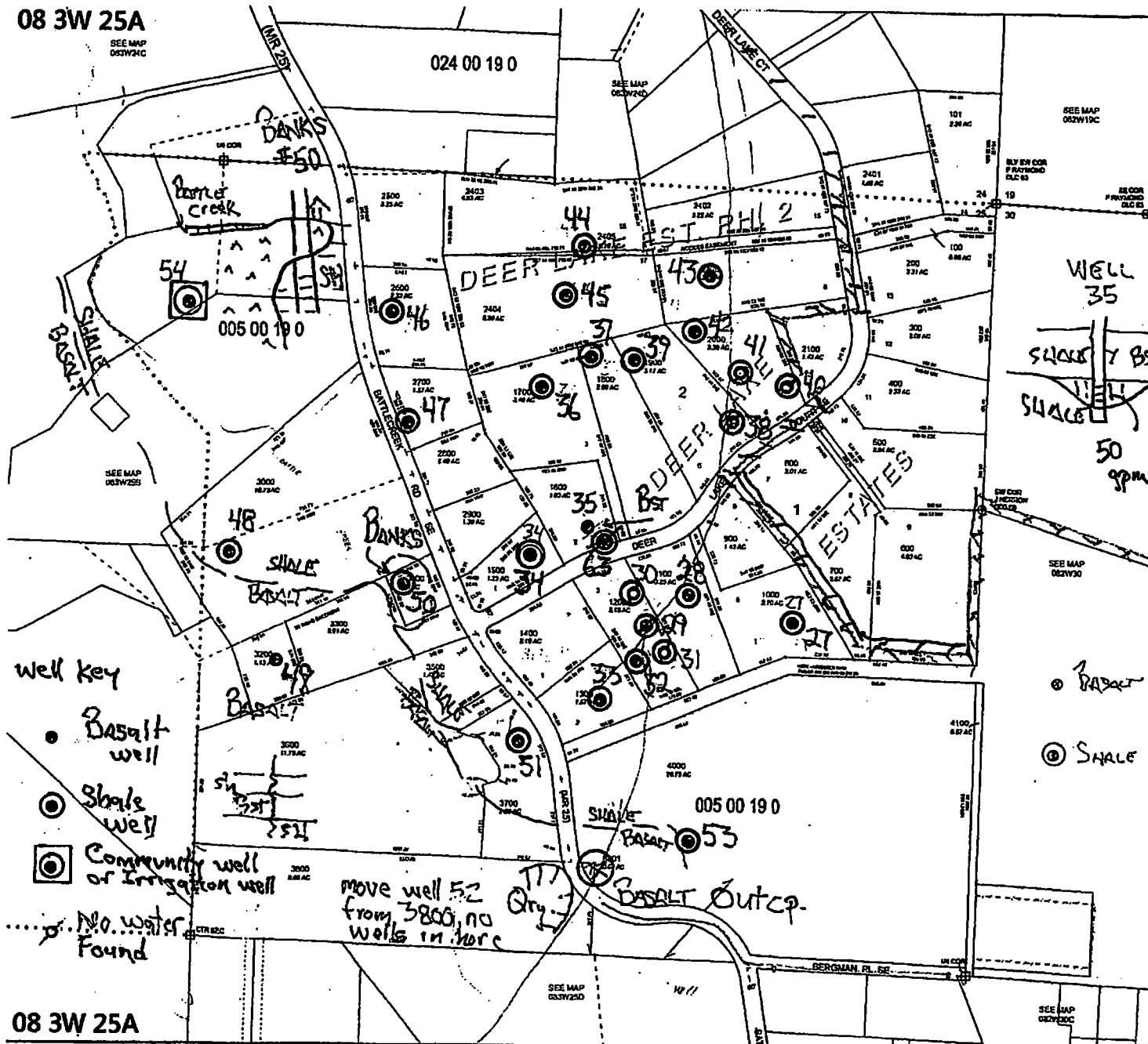
FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
WWW.COLUMBIACOLLEGE.COM

PLOT DATE: 7/7/2016

08 3W 24D

08 3W 25A

SEE MAP
052W19C



08 3W 25A

MARION COUNTY, OREGON
NE1/4 SEC25 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES	
Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Easement Line
Subdivision/Plat Boundary	Map Boundary
Waterline - Taxlot Boundary	Waterline - Non Boundary
SYMBOL TYPES	
Survey Monument	1/16th Section Cor.
Road Station	1/4 Section Cor.
DLC Corner	1/8 Section Cor.
	1/16 Section Cor.

NUMBERS

Tax Code Number
000 00 00 0

Acresage All areas listed are not areas including any portions of the tract within public ROWs.

NOTES

Look Marker: If a tick mark is indicated on the end of a line, then the dimension goes to the tick mark. If a word or a dimension extends into public right-of-way.

CANCELLED NUMBERS

3000	4100
3200	4300
3400	4500
3600	4700

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY

ASSOCIATED
Cartography

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
www.co.marion.or.us

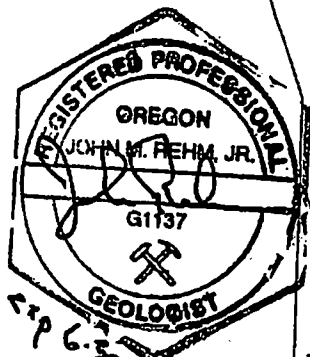
PLOT DATE: 7/7/2016

08 3W 25A

08 3W 25B

SEE MAP
003W24C

INTERSTATE 5 HIGHWAY



08 3W 25B

SEE MAP
003W24C1300
107.30 AC

63' @ 56'
basalt weathered
53pm above
but at base
cased
off.

40K
Tank

YWAM 1
LIMESTONE
IN SHALE

005 00 19 0

PUMP
SWITCH
Post
FOR WATER
LINES

52 Miller for
well

024 00 19 0

Water running
on top of
shale (108')

55

YWAM 2
Basalt

024 0

08 3W 25B
SALEM

MARION COUNTY, OREGON
NW1/4 SEC25 T8S R3W W.M.
SCALE 1" = 200'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Eastern
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Deed Line
Subdivision/Plat Boundary	Map Boundary
Waterline - Taxlot Boundary	Waterline - Non Boundary

SYMBOL TYPES

Survey Monument	1/16th Section Cor.
Road Station	1/4 Section Cor.
DLC Corner	16, 32 21' 22' Section Corner

NUMBERS

For Code Number
000 00 00 0

Acres: 4.22 AC All acres listed are Net Acres, excluding any portion of the lot within public ROWs.

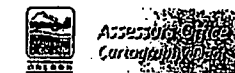
NOTES

Tick Marks: If a tick mark is indicated on the end of a line, then the dimension goes to the tick mark. It is used when dimensions extend into public right-of-ways.

CANCELLED NUMBERS

200
100A1
100A2
100A3
100A4
100A5
100A6
100A7
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100A10
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DISCLAIMER: THIS MAP WAS PREPARED
FOR ASSESSMENT PURPOSES ONLY



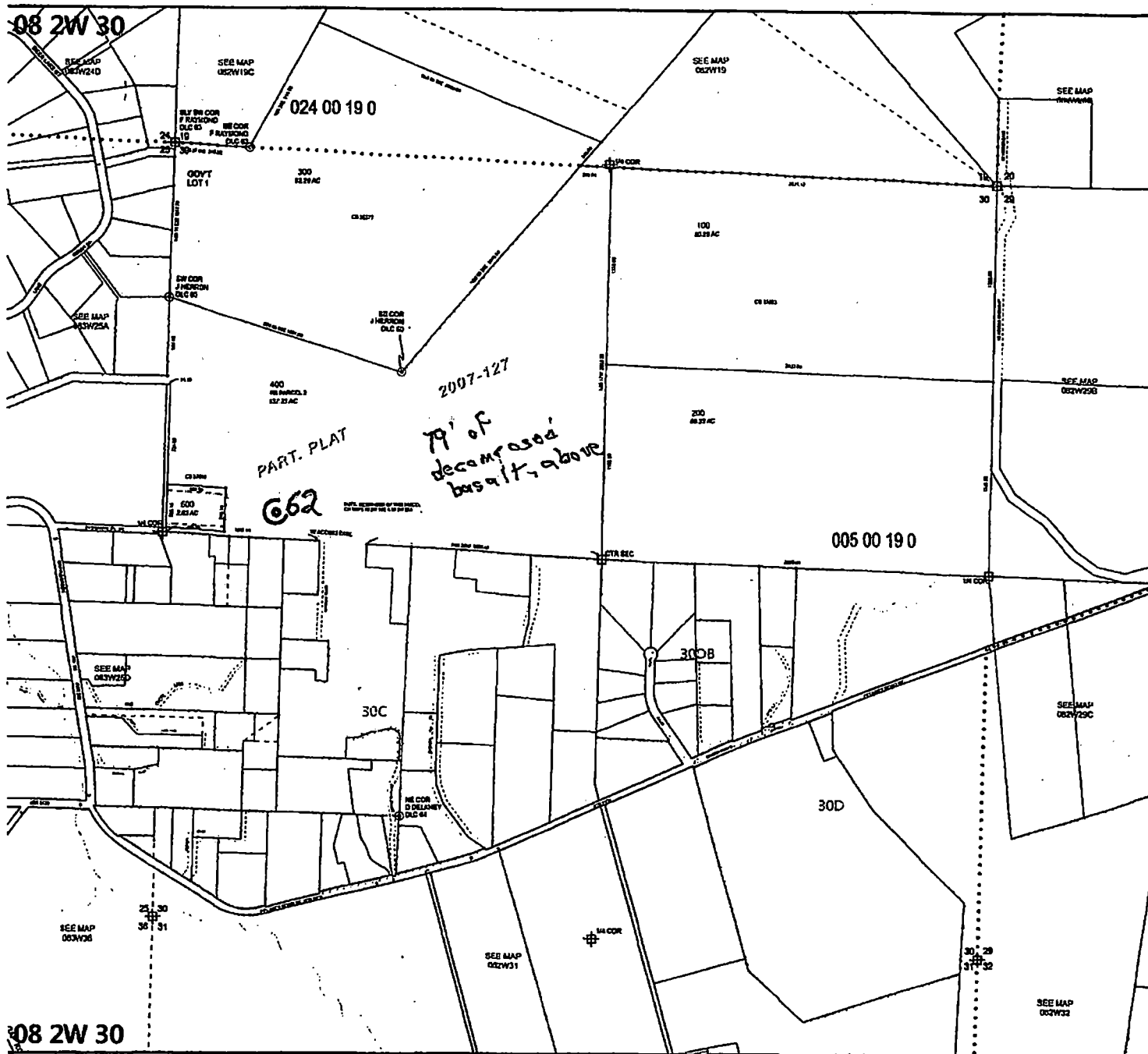
FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT
www.assessment-services.com

PLOT DATE: 7/7/2016

SALEM
08 3W 25B

08 3W 25D

08 3W 25D



08 2W 30

MARION COUNTY, OREGON
SEC 30 T8S R2W WM.
SCALE 1" = 400'

LEGEND

LINE TYPES

Taxlot Boundary	Historical Boundary
Road Right-of-Way	Easement
Railroad Right-of-Way	Railroad Centerline
Private Road ROW	Isolate Line
Subdivision/Plot Boundary	Map Boundary
Waterline - Taxlot Boundary	Waterline - Non Boundary

SYMBOL TYPES

• Survey Monument	+ 1/4111 Section Cor
- Road Station	1/4 Section Cor
⊙ L&L Corner	15, 15 Section Corner
	21, 22

NUMBERS

Tax Code Number

000 00 00 0

Acres: 0.01 AC All acres listed are Net Acres, including any portions of the lot(s) within public ROW(s).

NOTES

Tick Marks: If a tick mark is indicated on the end of a line, then the dimension goes to the tick mark. Use is used when dimensions extend into public right-of-way.

CANCELLED NUMBERS

DISCLAIMER: THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY



FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.marion.or.us

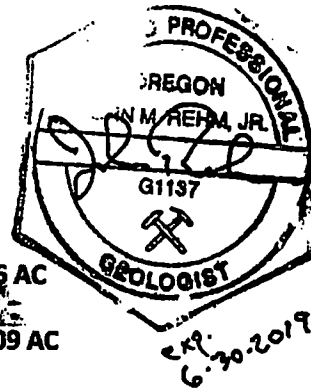
PLOT DATE: 7/7/2016

08 2W 30

APPENDIX III
CERT LIST
(OWNERS' NAMES, ADDRESSES, ACREAGE)

YWAM Cert List

1	083W24C00600	Janice Reid Family Tr.	6845 Battlecreek Rd., Salem, 97317	9.76 AC
2	083W24C00700	Ray Reid Properties	6915 Battlecreek Rd., Salem, 97317	10.09 AC
3	083W24C00800	Valley Hill Ranch	1665 Liberty St. SE, Salem, 97302	94.53 AC
4	083W24D01700	Charles Redon	3045 Fir Tree Dr. SE, Salem, 97317	2.32 AC
5	083W24D01900	James Gilkinson Tr.	3025 Fir Tree Dr. SE, Salem, 97317	2.41 AC
6	083W24D02000	Marion Co./Finance	P.O.Box 14500, Salem, 97309	0.04AC
7	083W24D02200	Darwin Hagen	3076 Fir Tree Dr. SE, Salem, 97317	4.27AC
8	083W24D02300	Andrew Nelson	3166 Fir Tree Dr. SE, Salem, 97317	2.53AC
9	083W24D02400	Merill Halfman	3186 Fir Tree Dr. SE, Salem, 97317	2.66 AC
10	083W24D02500	Joan Jeffers Trust	3226 Fir Tree Dr. SE, Salem, 97317	3.56AC
11	083W24D02600	Dale Alan Yost Tr.	3256 Fir Tree Dr. SE, Salem, 97317	2.06 AC
12	083W24D02700	John Hammitt	3286 Fir Tree Dr. SE, Salem, 97317	1.88 AC
13	083W24D03607	Steven Nelson	3574 Deer Lake Ct. SE, Salem, 97317	1.36AC
14	083W24D03608	Scott Ross	3594 Deer Lake Ct. SE, Salem, 97317	1.57AC
15	083W24D03609	Duane Cunningham	3585 Deer Lake Ct. SE, Salem, 97317	1.86AC
16	083W24D03611	Steven Marvel Tr.	3555 Deer Lake Ct. SE, Salem, 97317	1.81AC
17	083W24D03612	Luis Martinez	3515 Deer Lake Ct. SE, Salem, 97317	2.92AC
18	083W24D03613	Erik Kokkonen	3455 Deer Lake Ct. SE, Salem, 97317	2.69AC
19	083W24D03614	Kenneth Stoneman	3411 Deer Lake Ct. SE, Salem, 97317	2.67AC
20	083W24D03700	Walter Heinle	6996 Battlecreek Rd. SE, Salem, 97317	1.01AC
21	083W24D03800	Walter Heinle	6996 Battlecreek Rd. SE, Salem, 97317	0.09AC
22	083W24D03900	Walter Heinle	6996 Battlecreek Rd. SE, Salem, 97317	2.49AC
23	083W24D04000	YWAM Slavic Mins.	6946 Battlecreek Rd. SE, Salem, 97317	5.71AC



24	083W/24D04100	Robert Pollman	6906 Battlecreek Rd. SE, Salem, 97317	3.03AC
25	083W/24D04101	Dana Papritz	3137 Battlecreek Rd. SE, Salem, 97317	1.89AC
26	083W/24D04200	Max Chancellor Tr.	3070 Battlecreek Rd. SE, Salem, 97317	2.47AC
27	083W/24D04202	Max Chancellor Tr.	3102 Battlecreek Rd. SE, Salem, 97317	2.42AC
28	083W/24D04203	Ella Finnegan Tr.	3117 Battlecreek Rd. SE, Salem, 97317	1.61AC
29	083W/24D04300	David Adams	3044 Fir Tree Dr. SE, Salem, 97317	2.72AC
30	083W/24D04301	Erik Fast	6746 Battlecreek Rd. SE, Salem, 97317	3.37AC
31	083W/25A00900	Igor Foksha	3910 Deer Lake Ct. SE, Salem, 97317	1.43AC
32	083W/25A01000	Mindy Minarik	3266 Deer Lake Ct. SE, Salem, 97317	2.69AC
33	083W/25A01100	Sean Armstrong	3246 Deer Lake Ct. SE, Salem, 97317	2.24AC
34	083W/25A01200	David Rosling	3206 Deer Lake Ct. SE, Salem, 97317	2.19AC
35	083W/25A01300	Theodore Nicholas	7336 Battlecreek Rd. SE, Salem, 97317	1.67AC
36	083W/25A01400	Joshua Massie	3176 Deer Lake Ct. SE, Salem, 97317	2.11AC
37	083W/25A01500	William Mack Tr.	3175 Deer Lake Ct. SE, Salem, 97317	1.28AC
38	083W/25A01600	Joshua Boyd	3205 Deer Lake Ct. SE, Salem, 97317	1.80AC
39	083W/25A01700	Carl Sanders LT	3225 Deer Lake Ct. SE, Salem, 97317	3.46AC
40	083W/25A01800	James Bausch	3255 Deer Lake Ct. SE, Salem, 97317	2.88AC
41	083W/25A01900	S. Kent Irving Tr.	3285 Deer Lake Ct. SE, Salem, 97317	3.17AC
42	083W/25A02000	Todd Holcomb	3315 Deer Lake Ct. SE, Salem, 97317	2.41AC
43	083W/25A02200	Kenneth VanOsdol Lt	3375 Deer Lake Ct. SE, Salem, 97317	3.13AC
44	083W/25A02402	Kelly Conover	3415 Deer Lake Ct. SE, Salem, 97317	2.25AC
45	083W/25A02403	Spencer Rockwell	3399 Deer Lake Ct. SE, Salem, 97317	4.55AC
46	083W/25A02404	Suppressed Owner	3395 Deer Lake Ct. SE, Salem, 97317	5.26AC
47	083W/25A02500	Alex A. Kimoff	7026 Battlecreek Rd. SE, Salem, 97317	2.25AC
48	083W/25A02600	Chris Turrey	7056 Battlecreek Rd. SE, Salem, 97317	2.32AC

49	083W25A02700	Darlene Godfrey RT	7184 Battlecreek Rd. SE, Salem, 97317 1.57AC
50	083W25A02800	Steven Eiding	7198 Battlecreek Rd. SE, Salem, 97317 1.40AC
51	083W25A02900	William Bledsoe	7250 Battlecreek Rd. SE, Salem, 97317 1.38AC
52	083W25A03000	MaryLynn White	7087 Battlecreek Rd. SE, Salem, 97317 10.73AC
53	083W25A03200	Lucinda Brammer	7099 Battlecreek Rd. SE, Salem, 97317 1.13AC
54	083W25A03300	Roger Banks	7255 Battlecreek Rd. SE, Salem, 97317 2.90AC
55	083W25A03400	Roger Banks	7255 Battlecreek Rd. SE, Salem, 97317 0.74AC
56	083W25A03500	Timothy Garrison	7315 Battlecreek Rd. SE, Salem, 97317 1.42AC
57	083W25A03600	Robert Schmid	7345 Battlecreek Rd. SE, Salem, 97317 11.78AC
58	083W25A03700	Richard Schmid	7355 Battlecreek Rd. SE, Salem, 97317 2.68AC
59	083W25A03800	Robert Schmid	7345 Battlecreek Rd. SE, Salem, 97317 9.69AC
60	083W25A03801	Robert Schmid	7345 Battlecreek Rd. SE, Salem, 97317 0.04AC
61	083W25A04000	Walter B. Wells Lt.	7474 Battlecreek Rd. SE, Salem, 97317 26.75AC
62	083W25B00100	YWAM	7085 Battlecreek Rd. SE, Salem, 97317 3.91 AC
63	083W25B00300	YWAM	6955 Battlecreek Rd. SE, Salem, 97317 1.04AC
64	083W25B00400	YWAM	6955 Battlecreek Rd. SE, Salem, 97317 8.21AC
65	083W25B00500	YWAM	7085 Battlecreek Rd. SE, Salem, 97317 0.81AC
66	083W25B00600	YWAM	7085 Battlecreek Rd. SE, Salem, 97317 13.90AC
67	083W25B00700	YWAM	7085 Battlecreek Rd. SE, Salem, 97317 0.19AC
68	083W25B00800	YWAM	7085 Battlecreek Rd. SE, Salem, 97317 0.84AC
69	083W25B01000	Edward Mingo	7089 Battlecreek Rd. SE, Salem, 97317 12.22AC
70	083W25B01000A1	Edward Mingo	7085 Battlecreek Rd. SE, Salem, 97317 10
71	083W25B01001	YWAM	7085 Battlecreek Rd. SE, Salem, 97317 2.82AC
72	083W25B01100	Douglas Sproul	6935 Battlecreek Rd. SE, Salem, 97317 21.00AC
73	083W25B01300	WIPBCA	1410 Lakeside Ct., Yakima, WA 98902 147.39AC

74	083W25D02000	David Lawrence Tr.	7595 Battlecreek Rd. SE, Salem, 97317	2.30AC
75	083W25D02100	Mark Pollard	7495 Battlecreek Rd. SE, Salem, 97317	14.39AC
76	083W25D02200	Marcela Chiappini	P.O.Box 1157, Turner, 97392	5.10AC
77	083W25D02201	Marcela Chiappini	P.O.Box 1157, Turner, 97392	5.09AC
78	083W25D02700	Joshua Martin	7794 Shady Way SE, Turner, 97392	4.34AC
79	083W25D02800	Randall Boese	7744 Shady Way SE, Turner, 97392	2.36AC
80	083W25D02900	Donna Canning	7634 Shady Way SE, Turner, 97392	1.00AC
81	083W25D03000	Donna Canning	7634 Shady Way SE, Turner, 97392	1.53AC
82	083W25D03100	Benjamin Hardwick	7624 Shady Way SE, Turner, 97392	3.91AC
83	083W25D03200	Kenneth Souders	7635 Shady Way SE, Turner, 97392	3.02AC
84	083W25D03300	Roy L. Simmons Tr.	7725 Shady Way SE, Turner, 97392	2.01AC
85	083W25D03400	Raymond Keyzers Tr.	3001 Delaney Rd. SE, Turner, 97392	2.17AC
86	083W30 00400	Carl Schmidt	3702 Bergman Pl. SE, Salem, 97317	137.33AC

APPENDIX IV
WATER RIGHT PERMIT

STATE OF OREGON

COUNTY OF MARION

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

WINEMAKERS, LLC
1410 LAKESIDE COURT SUITE 109
YAKIMA, WA 98902

The specific limits and conditions of the use are listed below.

APPLICATION FILE NUMBER: G-15071

SOURCE OF WATER: WELL 1 AND WELL 2 WITHIN THE BATTLE CREEK BASIN

PURPOSE OR USE: IRRIGATION OF 70.0 ACRES + 30ac in Ant. G-17739

MAXIMUM RATE: THE USE OF WATER UNDER THIS PERMIT SHALL BE LIMITED TO A TOTAL COMBINED CUMULATIVE DIVERSION WITH THE WATER RIGHTS ISSUED UNDER PERMITS G-17738 AND G-17739 OF NOT MORE THAN 0.134 CUBIC FOOT PER SECOND AT ANY ONE TIME

PERIOD OF USE: MARCH 1 THROUGH OCTOBER 31

DATE OF PRIORITY: DECEMBER 14, 1999

WELL LOCATIONS:

WELL 1: SE 1/4 NW 1/4, SECTION 25, T8S, R3W, W.M.; 620 FEET SOUTH & 1230 FEET WEST FROM C-N 1/16 CORNER, SECTION 25

WELL 2: SE 1/4 NW 1/4, SECTION 25, T8S, R3W, W.M.; 620 FEET SOUTH & 615 FEET WEST FROM C-N 1/16 CORNER, SECTION 25

Appeal Rights

This is a Final Order in, other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

The use of water under this permit will expire on October 1, 2020. The permit may be renewed for additional periods of time, not to exceed five years each, if the Director finds that the groundwater resource can support the continued use.

The amount of water used for irrigation under this right, together with the amount secured under any other right existing for the same lands, is limited to a diversion of ONE-EIGHTIETH of one cubic foot per second (or its equivalent) and 1.0 acre-foot for each acre irrigated during the irrigation season of each year.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW 1/4 NW 1/4 18.4 ACRES
SE 1/4 NW 1/4 16.8 ACRES
NE 1/4 SW 1/4 20.8 ACRES
NW 1/4 SW 1/4 14.0 ACRES
SECTION 25

TOWNSHIP 8 SOUTH, RANGE 3 WEST, W.M.

Measurement devices, and recording/reporting of annual water use conditions:

- A. Before water use may begin under this permit, the permittee shall install a totalizing flow meter at each point of appropriation. The permittee shall maintain the device in good working order.
- B. The permittee shall allow the watermaster access to the device; provided however, where any device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the permittee to keep and maintain a record of the volume of water diverted, and may require the permittee to report water-use on a periodic schedule as established by the Director. In addition, the Director may require the permittee to report general water-use information, the periods of water use and the place and nature of use of water under the permit.
- D. The Director may provide an opportunity for the permittee to submit alternative measuring and reporting procedures for review and approval.

Failure to provide March static water level measurements will likely result in suspension of water use from the well(s) authorized under this permit, until compliance with the annual measurement requirement is met.

EXHIBIT 105

MAR 29 2019 PM 2:17

wood.

Wood Environment & Infrastructure Solutions, Inc.
7376 SW Durham Road
Portland, Oregon
USA 97224
T: 503-639-3400
www.woodplc.com

3/26/2019
Project # 8-61M-112028

Lisa Milliman
Associate Planner
Marion County Planning Division
5155 Silverton Road
Salem, OR 97305

Subject: Wood Peer Review of "A Hydrogeology Review of Private Property at 7085 Battle Creek Road, Salem, Oregon 97317, Youth with a Mission Campus, T.8S/R3W- Section 25 NW/4 NE/4, Tax Lots 08325B 00100, 00300, 00400, 00500, 00600, 00700, 00800, 01000, Marion County" by Rehm Geological

Dear Ms. Milliman:

At the request of Marion County, Wood Environment & Infrastructure Solutions, Inc. (Wood) reviewed the referenced report dated June 21, 2018 (received June 27) and supplemental information received on February 4, 20, and 25, 2019 pertaining to estimates of groundwater usage and recharge. The report was submitted by Rehm Geological (Rehm) to Marion County to meet the requirements of the County's sensitive groundwater overlay (SGO) ordinance.

Wood's review of the report was based on the SGO ordinance and on Marion County's October 2005 manual for completing hydrogeology reviews and studies in compliance with the SGO ordinance. Specifically, Wood verified that the report contained the information required by Section 181.100(A) of the SGO ordinance and that it sufficiently demonstrated all items required by Section 181.100(B) in order to conduct an independent peer review.

Report Summary

The proposed Youth with a Mission (YWAM) development is not a partition of an existing lot, but instead is more intensive use of the existing property comprised of eight tax lots. Usage will intensify due to increased numbers of students living in on-site residences. The report reviewed the geologic and hydrogeologic setting in the study area, previous investigations, long-term water level data, water rights, well deepenings and replacement wells, and provided a water budget.

The facility is served by two wells, MARI 12553 and MARI 12555. Both wells terminate in the marine sediments aquifer (although the upper part of MARI 12555 also penetrated basalt). The report states that MARI 12555 is the main well; the second well is used in summer.

Both wells are part of a Public Water System regulated by the Oregon Health Authority, Drinking Water Services (DWS); however, the DWS well log records do not match the logs in the Rehm report. The DWS records list only one well (MARI 17665) instead of MARI 12553 and 12555.

The planned future usage is 20,000 gallons per day, as allowed as exempt use for a single system as clarified by an email (dated February 14, 2019) from J. Eastman, Oregon Water Resources Department, to J. Matthias, YWAM. Exempt usage cannot be increased by adding wells.



The target aquifer for the proposed development is the marine sediments aquifer. The revised water balance estimated that 22 percent of the available groundwater recharge would be used after the proposed development is completed, below the County cut-off threshold of 90 percent.

The report found no evidence of presently declining water level trends over time or excessive and recent numbers of well deepening or replacements in the aquifer within the study area.

Peer Review Findings

The above-referenced report included the sufficient elements required by Marion County's Chapter 181 SGO ordinance in order for peer independent review to be conducted by Wood.

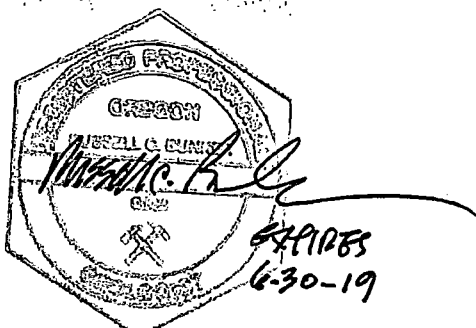
Considering all the information submitted in the original report, Rehm's conclusions are supported by the report. If, however, additional information not available at the time this peer review was completed should become available later, the findings of this peer review may need to be updated. Procedures and assumptions used in the report are consistent with generally accepted professional consulting practices and principles in effect at the time and location the work was completed.

Finally, the mismatch in well log records between the information submitted to the County and that on record with DWS should be reconciled.

Please contact the undersigned at (503) 639-3400 if you have any questions.

Sincerely,

**Wood Environment & Infrastructure
Solutions, Inc.**



Russ Bunker, RG
Associate Senior Geologist



3511 Pacific Boulevard SW
Albany, OR 97321-7727 USA
P: 541.926.7737 | cascade-earth.com

January 12, 2021

Joe Fennimore
Marion County Planning Director
3180 Center ST NE, #1106
Salem, Oregon 97301

SUBJECT: Sewage Treatment at Youth with a Mission

Dear Mr. Fennimore:

Cascade Earth Sciences (CES) has been retained to assist Youth with a Mission (YWAM) with an assessment of their existing sewage treatment system infrastructure and work with their team on a master plan to accommodate a phased expansion of facilities at their campus on Battle Creek Road south of Salem, Oregon (Site).

The existing septic tank and drainfield systems for sanitary waste at the Site were installed under permits issued by Marion County. The proposed expansion of the facilities will require a Water Pollution Controls Facilities (WPCF) permit issued by the Oregon Department of Environmental Quality (DEQ). In October of 2020, DEQ personnel performed a site evaluation and found the soils suitable for the installation of an onsite wastewater treatment system with projected flows of up to 24,400 gallons per day based on 461 occupants and 90 day-users. A site evaluation report was issued by DEQ on December 7, 2020 outlining the findings and design considerations for the onsite wastewater treatment system. Design of such a system must provide for a minimum septic tank volume that is twice the projected daily sewage flow. Large systems (systems or facilities with design flows greater than 2,500 gallons per day) are required to follow the design requirements in OAR 340-071-0520, which include a written assessment of the impact of the proposed system on the quality of public waters and public health, prepared by a registered geologist, or a certified engineering geologist qualified as a hydrogeologist.

CES worked with YWAM to develop a conceptual design to serve the proposed facilities. The size of system is based on the maximum design flow of 24,400 gallons per day submitted to the DEQ for the site evaluation and reflected in their approval. The type of system is based on a preliminary assessment of groundwater impacts and includes advanced treatment with features to enhance nitrogen removal for better protection of water quality. The area evaluated during the DEQ site evaluation appears large enough to accommodate the design flow at full build-out. CES anticipates working with YWAM (after receipt of the conditional use permit) to refine the conceptual design and develop detailed plans and specifications, a formal groundwater impact assessment, and the WPCF permit application for submission to the DEQ for their review and approval. CES will be required by the WPCF permit to inspect the system as it is installed and certify to the DEQ that it is

Joe Fennimore – Marion County Planning Director
Sewage Treatment at Youth with a Mission (YWAM)
January 12, 2021
Page 2



installed in accordance with the permit and the approved plans. Upon completion, the system will be required to be operated by a certified operations and maintenance service provider with annual reporting to the DEQ regarding system performance. Based on the preliminary data gathered to date, the sewage treatment system is not expected to have a significant adverse impact on watersheds, groundwater, fish and wildlife habitat, soil and slope stability, air and water quality.

If you have any questions, please do not hesitate to contact me by e-mail (brian.rabe@valmont.com) or phone at (541) 812-6639.

Sincerely,
CASCADE EARTH SCIENCES

Brian T. Rabe, CPSS, WWS
Managing Soil Scientist

BTR/mjb

c: Donavan Wadsworth – YWAM
Margaret Y. Gander-Vo – Saafeld Griggs, PC



Certified Professional
Soil Scientist
BRIAN T. RABE
15239 Exp. 31DEC20

Registered Wastewater Specialist
No. EII-W-448430 Exp. 30SEP21

Youth With a Mission

Facility Impacts Assessment

January 20th, 2021

The proposed expansion of the current facility at the Battle Creek Road Campus of Youth With a Mission (YWAM) will involve the expansion of some of the existing facilities on site along with the creation of some new facilities. As part of those expansion efforts, the current wastewater disposal system will be modified and upgraded. A new wastewater disposal system will be created on the project site to accommodate the additional facilities.

In addition, improved and new hard surface areas will be created that will generate surface water runoff that will be treated and subsequently directed to Battle Creek.

The project site has been evaluated by DEQ personnel just this last October. That evaluation found that the site was suitable for the installation of a new onsite wastewater treatment and disposal system. The facilities will include an advanced treatment system that will discharge the effluent into the disposal area through a drip system.

The proposed disposal area is located in the northeast portion of the site that is more than 400 feet away and up gradient from Battle Creek. There are two proposed future replacement areas: one in the north portion of the site, still over 300 feet from Battle Creek and one in the southeast portion of the site, also over 300 feet from Battle Creek, in excess of the required 50 feet.

The DEQ site assessment and approval for the new disposal system was based on the review of the soils present in the areas of the proposed drip facilities. The soils were identified as Silty Clay Loam material, with depths that ranged from 42 to 72 inches. Below that, was a dense hard clay above fractured weathered basalt.

The purpose of the wastewater disposal system is to make sure that the effluent can be treated sufficiently before it moves away from the treatment zone of the system. There two points of concern for negative effects from the waste facility discharge: (1) the impact on the ground water source and (2) the effectiveness of the surface water conveyance facilities.

The proposed wastewater disposal system is a drip discharge system. This type of facility discharges the effluent flow over a large treatment area at a slow rate. Such a system provides a longer time-period for the effluent to be treated before it moves into the adjoining soils. The hard, dense layer that exists below the loam soils is a barrier that blocks the ability for the wastewater to make its way into the ground water supply.

The proposed facilities are going to be located well away from Battle Creek, such that lateral movement of the treated wastewater will not be able to make its way to the surface source without having to travel through a substantial distance of soils. This greatly enhances the cleaning effects that naturally occurs via soil filtration.

The site test pits demonstrated that while there is water present in the soil approximately 46 to 48 inches below the ground surface near Battle Creek, that water is not part of the groundwater supply. The water present comes from the flows within Battle Creek. Again, the design has the facilities located several hundred feet away from this area and the water table and is not anticipated to impact the groundwater.

The proposed wastewater disposal system will be permitted by the Oregon Department of Environmental Quality. The system will be required to maintain detailed records of the facilities and monitor the wastewater to make sure that the treatment required is achieved.

It is our professional opinion that the proposed system, constructed and operated as the design intends will not have any negative impact on the water quality of both the ground water and surface water supplies.

A site Geological and Geotechnical Assessment has been completed for the project site and no slope stability or landside hazards have been identified. The proposed locations for the wastewater disposal facilities are within areas that are flatter than 10% slopes and will not have a negative impact on the stability of these areas or those adjacent to the systems.

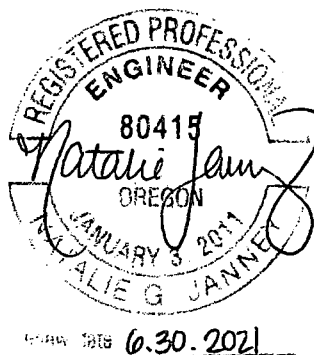
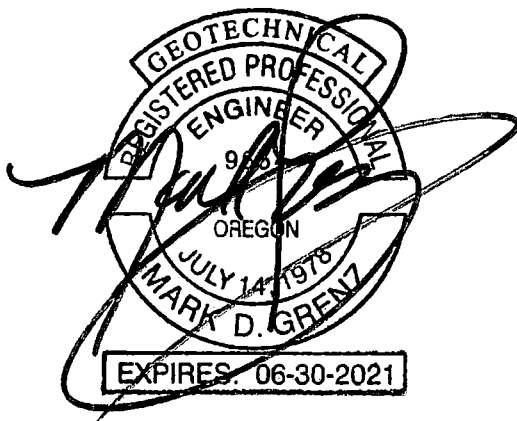
The second area of concern is with the surface runoff from the existing and proposed new hard surface areas. Concerns have been raised by neighbors in the past regarding the impacts of stormwater generated from the YWAM project on both the environment and during periods of flooding. In an effort to mitigate any impacts from stormwater generated as part of the YWAM development, the project will be designed to provide both water quality treatment and water quantity control.

Water quality treatment will use green stormwater infrastructure to remove pollutants traditionally associated with this type of development, such as hydrocarbons, heavy metals, suspended solids, and nutrients (largely nitrogen and phosphorus). Stormwater is routed to special vegetated facilities located onsite that will allow the water to filter through growing media, which will remove the pollutants through filtration, sedimentation, and biological uptake from vegetation. The stormwater will then be picked up through an underdrain and taken to a permitted outlet location. These facilities would also work to provide stormwater detention and flow control.

Water quality control will also be provided for the entire YWAM development. It is our assumption that detention systems are not currently in place for the existing YWAM property. In an effort to provide more extensive water quantity control, detention and flow control would be proposed for the entire development. To achieve the best flood-control protection, stormwater would be released at the predeveloped rate for the ½ the projected 2, 10, and 100-year storm events. This would likely provide improved flood protection than what currently exists and mitigate any downstream impacts from the proposed development. Detention could be provided through the use of one or more of the following options: underground pipe storage, surface storage in parking areas, detention ponds, etc. Due to the size of the project, there would likely be more than one facility to achieve the stormwater flow control goals.

Again, it is our professional opinion that the facilities and systems that collect and treat both the surface water and wastewater generated, will be adequate to mitigate any potential adverse impacts on the surrounding area. As the project moves forward, detailed designs and analysis will be prepared and reviewed by Marion County and DEQ to insure that intended standards have been met. The YWAM site

will have full-time management and maintenance staff on site at all times. The Wastewater Permit will set out requirements for certified operations and maintenance personal to be involved in the ongoing system operations.





REDMOND GEOTECHNICAL SERVICES

Exhibit 108

Geotechnical Investigation

and

Geologic Hazard Evaluation Services

Youth With a Mission Site

Tax Lot No's. 100, 300, 400, 500, 600, 700, 800 and 1001

7085 Battle Creek Road SE

Salem (Marion County), Oregon

for

Youth With a Mission

**Project No. 1842.001.G
September 11, 2020**

REDMOND GEOTECHNICAL SERVICES

September 11, 2020

Mr. Rob Simpson
Youth With a Mission
7085 Battle Creek Road SE
Salem, Oregon 97317

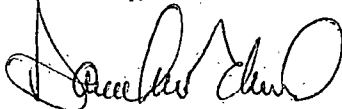
Dear Mr. Simpson:

**Re: Geotechnical Investigation and Geologic Hazard Evaluation Services,
Existing Youth With a Mission Site, Tax Lot No's. 100/300/400/500/600/700/800, & 1001.
Battle Creek Road SE, Salem (Marion County), Oregon**

Submitted herewith is our report entitled "Geotechnical Investigation and Geologic Hazard Evaluation Services, Existing Youth With a Mission Site, Tax Lot No's. 100/300/400/500/600/800 & 1001, 7085 Battle Creek Road SE, Salem (Marion County), Oregon". The scope of our services was outlined in our formal proposal to Mr. Rob Simpson of Youth With a Mission dated July 6, 2020. Written authorization of our services was provided by Mr. Donovan Wadsworth of Youth With a Mission on July 16, 2020.

During the course of our investigation, we have kept you and/or others advised of our schedule and preliminary findings. We appreciate the opportunity to assist you with this phase of the project. Should you have any questions regarding this report, please do not hesitate to call.

Sincerely,



Daniel M. Redmond, P.E., G.E.
President/Principal Engineer



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**GEOTECHNICAL INVESTIGATION AND GEOLOGIC HAZARD EVALUATION
EXISTING YOUTH WITH A MISSION SITE
TAX LOT NO'S. 100/300/400/500/600/700/800 AND 1001
7085 BATTLE CREEK ROAD SE
SALEM (MARION COUNTY) OREGON**

INTRODUCTION

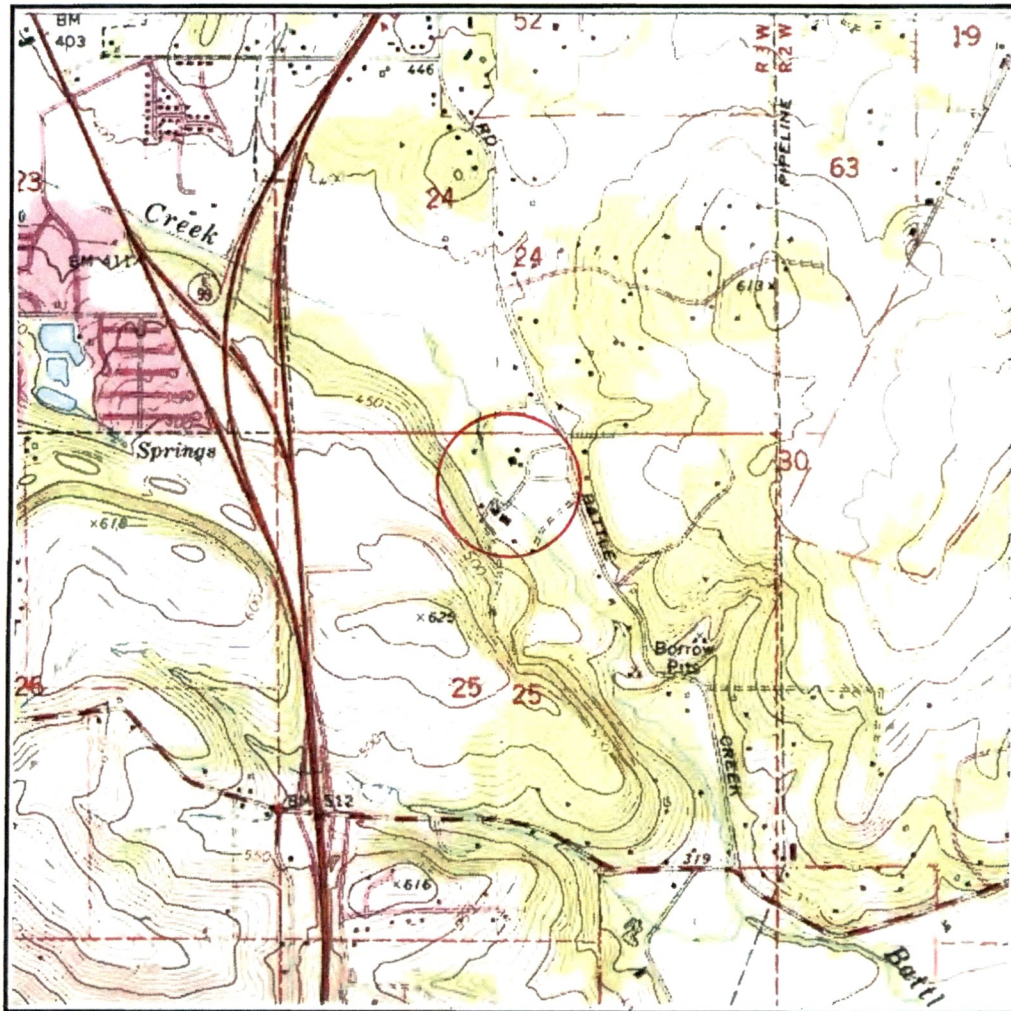
Redmond Geotechnical Services, LLC is please to submit to you the results of our Geotechnical Investigation and Geologic Hazard Evaluation at the site of the existing Youth With a Mission property located to the west of Battle Creek Road SE and to the north of the intersection with Deer Lake Court SE in Salem (Marion County), Oregon. The general location of the subject site is shown on the Site Vicinity Map, Figure No. 1. The purpose of our geotechnical investigation and geologic hazard study services at this time was to explore the existing subsurface soils and/or groundwater conditions across the subject site and to evaluate any potential concerns with regard to potential slope failure at the site as well as to develop and/or provide appropriate geotechnical design and construction recommendations for various proposed new site improvements.

PROJECT DESCRIPTION

We understand that present plans for the existing Youth With a Mission property is to construct a new above ground water tank and/or reservoir at the site. Additionally, we understand that the construction of various new dorm buildings and/or staff housing as well as new classrooms and a new assembly hall are also planned for the existing Youth With a Mission property.

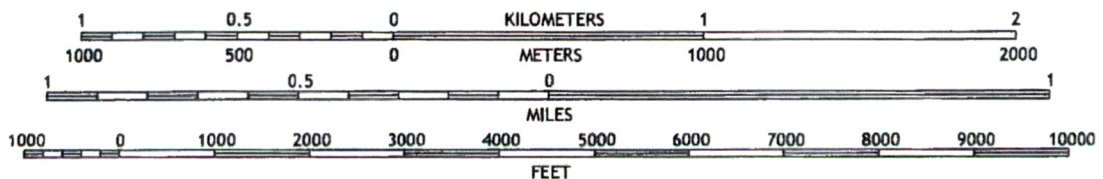
Whole specific building plans and/or materials are unknown at this time, we envision that the new dorm, housing, classrooms and assemble hall structures will be one- and/or two-story buildings constructed with wood framing and will likely include concrete slab-on-grade floors. Support of the new structures is anticipated to consist primarily of conventional shallow strip (continuous) footings although some individual (column) footings may also be required. Structural loading information, although unavailable at this time, is anticipated to be fairly typical and light for these types of single- and/or two-story wood-frame structures and is expected to result in maximum dead plus live continuous (strip) and individual (column) footing loads on the order of about 1.5 to 4.0 kips per lineal foot (klf) and 10 to 50 kips, respectively.

Although a site grading plan is not available at this time, we understand that both cuts and fills are possible for the residential project. In general, cuts and/or fills of less than five (5) feet are generally anticipated for the project. In this regard, due to the existing and/or finish grade sloping site conditions, some of the proposed new structures may also include the construction of a partial below grade floor(s) and/or the use of concrete retaining walls.



**TURNER QUADRANGLE
OREGON
7.5-MINUTE SERIES**

SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

SITE VICINITY MAP

**YOUTH WITH A MISSION
7085 BATTLE CREEK ROAD SE**

Project No. 1842.001.G

Figure No. 1

Other associated site improvements for the project will include construction of new paved parking lots and drive areas. Additionally, the project will include the construction of new underground utility services as well as new concrete curbs and sidewalks.

SCOPE OF WORK

The purpose of our geotechnical and/or geologic studies was to evaluate the overall subsurface soil and/or groundwater conditions underlying the subject site with regard to the proposed new development and construction at the site and any associated impacts or concerns with respect to potential slope failure at the site as well as provide appropriate geotechnical design and construction recommendations for the project. Specifically, our geotechnical investigation and landslide hazard study performed as a collaboration with Northwest Geological Services, Inc. (NWGS, Inc.) included the following scope of work items:

1. Review of available and relevant geologic and/or geotechnical investigation reports for the subject site and/or area.
2. A detailed field reconnaissance and subsurface exploration program of the soil and ground water conditions underlying the site by means of eight (8) exploratory test pit excavations. The exploratory test pits were excavated to depths ranging from about six (6) to seven (7) feet beneath existing site grades at the approximate locations as shown on the Site Exploration Plan, Figure No. 2. Additionally, field infiltration testing was also performed within various test pits excavated across the subject site.
3. Laboratory testing to evaluate and identify pertinent physical and engineering properties of the subsurface soils encountered relative to the planned site development and construction at the site. The laboratory testing program included tests to help evaluate the natural (field) moisture content and dry density, maximum dry density and optimum moisture content, Atterberg Limits and gradational characteristics, consolidation and direct shear strength tests as well as "R"-value tests.
4. A literature review and engineering evaluation and assessment of the regional seismicity to evaluate the potential ground motion hazard(s) at the subject site. The evaluation and assessment included a review of the regional earthquake history and sources such as potential seismic sources, maximum credible earthquakes, and reoccurrence intervals as well as a discussion of the possible ground response to the selected design earthquake(s), fault rupture, landsliding, liquefaction, and tsunami and seiche flooding.

5. Engineering analyses utilizing the field and laboratory data as a basis for furnishing recommendations for foundation support of the proposed new structures. Recommendations include maximum design allowable contact bearing pressure(s), depth of footing embedment, estimates of foundation settlement, lateral soil resistance, and foundation subgrade preparation. Additionally, construction and/or permanent subsurface water drainage considerations have also been prepared. Further, our report includes recommendations regarding site preparation, placement and compaction of structural fill materials, suitability of the on-site soils for use as structural fill, criteria for import fill materials, and preparation of foundation, pavement and/or floor slab subgrades.
6. Flexible pavement design and construction recommendations for the proposed new parking lot and drive area improvements.

SITE CONDITIONS

Site Geology

The subject site and/or area is underlain by highly weathered Basalt bedrock deposits and/or residual soils of the Columbia River Basalt formation. A more detailed description of the site geology across and/or beneath the site is presented in the Geologic Hazard Study in Appendix B.

Surface Conditions

The subject existing Youth With a Mission property consists of eight (8) rectangular to irregular shaped tax lots (TL's 100, 300, 400, 500, 600, 700, 800, and 1001) which encompass a total plan area of approximately 31.72 acres. The subject Youth With a Mission property is roughly located to the west of Battle Creek Road SE and north of the intersection with Deer Lake Court SE. The subject site is presently improved and contains several existing single- and/or two-story wood-frame structures as well as existing paved parking and drive areas. Surface vegetation across the improved portions of the site generally consists of existing landscaping composed of surface grass, shrubs and trees while the unimproved areas generally consist of a moderate growth of grass, weeds and brush as well as numerous small to large sized trees. Additionally, the easterly portion of the subject property is generally low lying and contains the existing Battle Creek drainage basin.

Topographically, the low lying easterly portion of the site is characterized as relatively flat-lying terrain (i.e., less than 5 percent) while the westerly portion of the site is characterized as gently to moderately sloping terrain (10 to 50 percent) descending upward towards the west/southwest with overall topographic relief estimated at about one hundred and twenty-five (125) feet and ranges from a low about Elevation 370 feet along Battle Creek to a high of about Elevation 500 near the southwesterly portion of the site.

Subsurface Soil Conditions

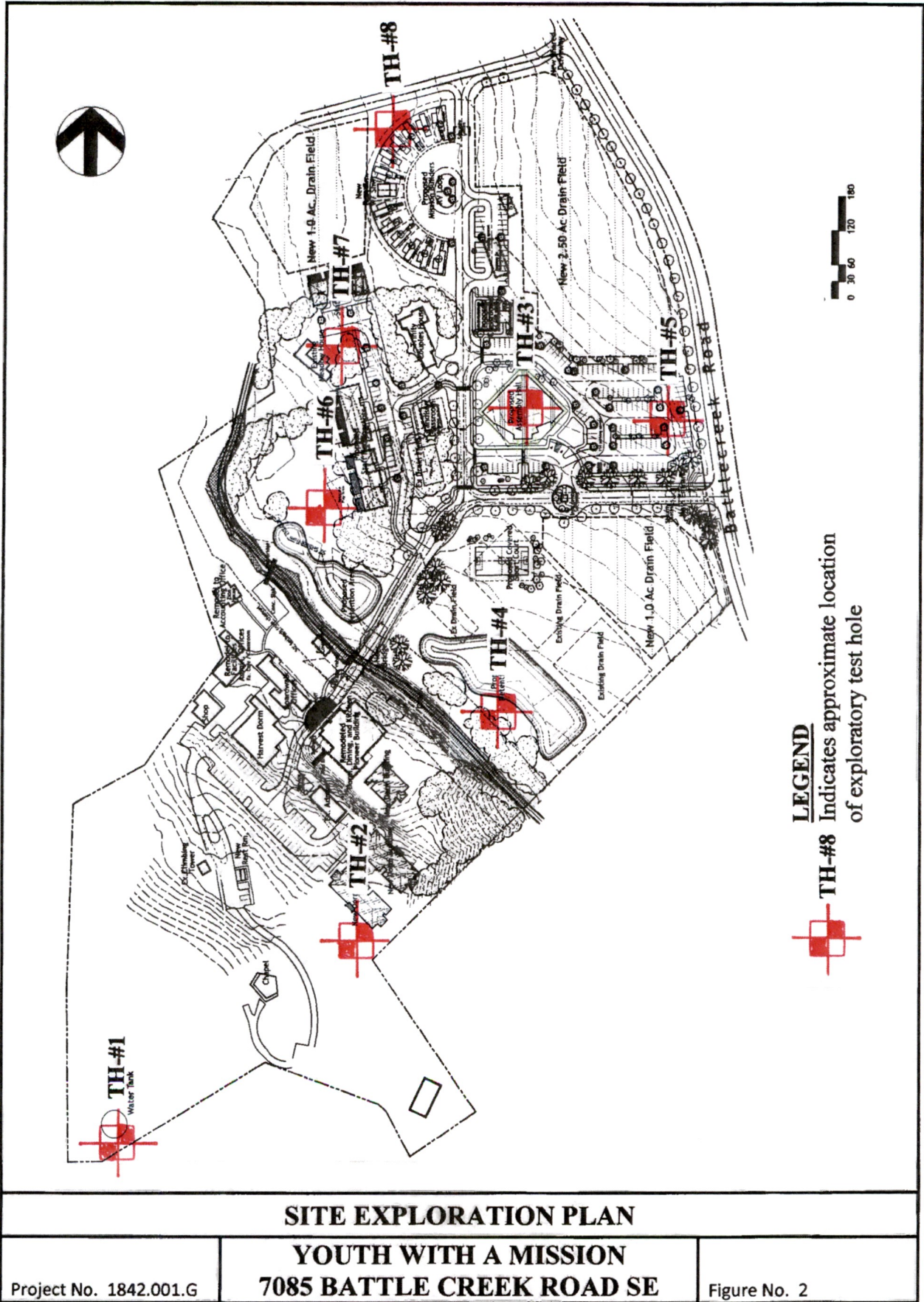
Our understanding of the subsurface soil conditions underlying the site was developed by means of eight (8) exploratory test pits excavated to depths ranging from about six (6) to seven (7) feet beneath existing site grades on July 24, 2020 with a John Deere 200C track-mounted excavator. The location of the exploratory test pits were located in the field by marking off distances from existing and/or known site features and are shown in relation to the proposed new residential structures and/or site improvements on the Site Exploration Plan, Figure No. 2. Detailed logs of the test pit explorations, presenting conditions encountered at each location explored, are presented in the Appendix, Figure No's. A-5 through A-8.

The exploratory test pit excavations were observed by staff from Redmond Geotechnical Services, LLC who logged each of the test pit explorations and obtained representative samples of the subsurface soils encountered across the site. Additionally, the elevation of the exploratory test pit excavations were referenced from the proposed Site Development Plan prepared by Project Delivery Group. and should be considered as approximate. All subsurface soils encountered at the site and/or within the exploratory test pit excavations were logged and classified in general conformance with the Unified Soil Classification System (USCS) which is outlined on Figure No. A-4.

The test pit explorations revealed that the subject site is underlain by native soil deposits. Specifically, the upper westerly portion of the site is comprised of highly weathered bedrock and/or residual soils composed of a surficial layer of dark brown, moist to very moist, soft to very soft, organic to highly organic, sandy, clayey silt topsoil materials to depths of about 8 to 12 inches. These surficial topsoil materials were in turn underlain by medium to reddish-brown, very moist, medium stiff to stiff and/or medium dense, sandy, clayey silt (residual soil) to clayey, silty sand (highly weathered bedrock deposits) to a depth of at least seven (7) feet beneath the existing site and/or surface grades. These sandy, clayey silt (residual) subgrade soils and/or clayey, silty sand (highly weathered bedrock deposits) are best characterized by relatively low to moderate strength and moderate compressibility. In addition, the lower easterly portion of the site was found to be underlain by an approximate 8- to 12-inch layer of topsoil materials in turn by alternating layers of multi-colored and/or dark gray brown, very moist, medium stiff to medium dense, clayey, sandy silt to clayey, silty sand with occasional gravel to the maximum depth explored of seven (7) feet beneath the existing site and/or surface grades. These clayey, sandy silt to clayey, silty sand subgrade soil deposits are generally alluvial in nature and are best characterized by relatively low to moderate strength and moderate compressibility.

Groundwater

Groundwater was not encountered within any of the exploratory test pit explorations (TH-#1 through TH-#8) at the time of excavation to depths of at least seven (7) feet beneath existing surface grades except. However, Battle Creek traverses the central portion of the subject property. In this regard, groundwater elevations at the site may fluctuate seasonally in accordance with rainfall conditions and/or flows within Battle Creek as well as changes in site utilization and may temporarily pond and/or perch near the ground surface during periods of heavy rainfall.



INFILTRATION TESTING

We performed two (2) field infiltration tests at the site on July 24, 2020. The infiltration tests were performed in test holes TH-#4 and TH-#6 at depths of between three (3) and four (4) feet beneath the existing site and/or surface grades. The subgrade soils encountered in the infiltration test hole consisted of clayey, sandy silt. The infiltration testing was performed in general conformance with current EPA and/or the City of Salem Encased Falling Head test method which consisted of advancing a 6-inch diameter PVC pipe approximately 6 inches into the exposed soil horizon at each test location. Using a steady water flow, water was discharged into the pipe and allowed to penetrate and saturate the subgrade soils. The water level was adjusted over a two (2) hour period and allowed to achieve a saturated subgrade soil condition consistent with the bottom elevation of the surrounding test pit excavation. Following the required saturating period, water was again added into the PVC pipe and the time and/or rate at which the water level dropped was monitored and recorded. Each measurable drop in the water level was recorded until a consistent infiltration rate was observed and/or repeated.

Based on the results of the field infiltration testing at the site, we have found that the native sandy, clayey silt subgrade soil deposits possess an ultimate infiltration rate on the order of about 0.8 to 1.2 inches per hour (in/hr).

LABORATORY TESTING

Representative samples of the on-site subsurface soils were collected at selected depths and intervals from various test pit excavations and returned to our laboratory for further examination and testing and/or to aid in the classification of the subsurface soils as well as to help evaluate and identify their engineering strength and compressibility characteristics. The laboratory testing consisted of visual and textural sample inspection, moisture content and dry density determinations, maximum dry density and optimum moisture content, Atterberg Limits and gradation analyses as well as consolidation, direct shear strength and "R"-value tests. Results of the various laboratory tests are presented in the Appendix, Figure No's. A-9 through A-14.

SEISMICITY AND EARTHQUAKE SOURCES

The seismicity of the southwest Washington and northwest Oregon area, and hence the potential for ground shaking, is controlled by three separate fault mechanisms. These include the Cascadia Subduction Zone (CSZ), the mid-depth intraplate zone, and the relatively shallow crustal zone. Descriptions of these potential earthquake sources are presented below.

The CSZ is located offshore and extends from northern California to British Columbia. Within this zone, the oceanic Juan de Fuca Plate is being subducted beneath the continental North American Plate to the east. The interface between these two plates is located at a depth of approximately 15 to 20 kilometers (km). The seismicity of the CSZ is subject to several uncertainties, including the maximum earthquake magnitude and the recurrence intervals associated with various magnitude earthquakes.

Anecdotal evidence of previous CSZ earthquakes has been observed within coastal marshes along the Washington and Oregon coastlines. Sequences of interlayered peat and sands have been interpreted to be the result of large Subduction zone earthquakes occurring at intervals on the order of 300 to 500 years, with the most recent event taking place approximately 300 years ago. A study by Geomatrix (1995) and/or USGS (2008) suggests that the maximum earthquake associated with the CSZ is moment magnitude (Mw) 8 to 9. This is based on an empirical expression relating moment magnitude to the area of fault rupture derived from earthquakes that have occurred within Subduction zones in other parts of the world. An Mw 9 earthquake would involve a rupture of the entire CSZ. As discussed by Geomatrix (1995) this has not occurred in other subduction zones that have exhibited much higher levels of historical seismicity than the CSZ. However, the 2008 USGS report has assigned a probability of 0.67 for a Mw 9 earthquake and a probability of 0.33 for a Mw 8.3 earthquake. For the purpose of this study an earthquake of Mw 9.0 was assumed to occur within the CSZ.

The intraplate zone encompasses the portion of the subducting Juan de Fuca Plate located at a depth of approximately 30 to 50 km below western Washington and western Oregon. Very low levels of seismicity have been observed within the intraplate zone in western Oregon and western Washington. However, much higher levels of seismicity within this zone have been recorded in Washington and California. Several reasons for this seismic quiescence were suggested in the Geomatrix (1995) study and include changes in the direction of Subduction between Oregon, Washington, and British Columbia as well as the effects of volcanic activity along the Cascade Range. Historical activity associated with the intraplate zone includes the 1949 Olympia magnitude 7.1 and the 1965 Puget Sound magnitude 6.5 earthquakes. Based on the data presented within the Geomatrix (1995) report, an earthquake of magnitude 7.25 has been chosen to represent the seismic potential of the intraplate zone.

The third source of seismicity that can result in ground shaking within the Vancouver and southwest Washington area is near-surface crustal earthquakes occurring within the North American Plate. The historical seismicity of crustal earthquakes in this area is higher than the seismicity associated with the CSZ and the intraplate zone. The 1993 Scotts Mills (magnitude 5.6) and Klamath Falls (magnitude 6.0), Oregon earthquakes were crustal earthquakes.

Liquefaction

Seismic induced soil liquefaction is a phenomenon in which loose, granular soils and some silty soils, located below the water table, develop high pore water pressures and lose strength due to ground vibrations induced by earthquakes. Soil liquefaction can result in lateral flow of material into river channels, ground settlements and increased lateral and uplift pressures on underground structures. Buildings supported on soils that have liquefied often settle and tilt and may displace laterally. Soils located above the ground water table cannot liquefy, but granular soils located above the water table may settle during the earthquake shaking.

Our review of the subsurface soil test pit logs from our exploratory field explorations (TH-#1 through TH-#8) and laboratory test results indicate that the upper westerly portion of the site is generally underlain by medium stiff to stiff and/or medium dense, sandy, clayey silt soils and/or highly weathered bedrock deposits to depths of at least 7.0 feet beneath existing site grades. Additionally, the lower easterly portion of the site is generally underlain by soft to medium stiff and/or loose, clayey, sandy silt to clayey, silty sand. Further, groundwater was generally not encountered within any of the exploratory test pit excavations (TH-#1 through TH-#8) at the site during our field exploration work to depths of at least 7.0 feet. As such, due to the medium stiff and/or cohesive nature of the sandy, clayey silt subgrade soils as well as the relative density of the sandy subgrade soil deposits beneath the site, it is our opinion that the native subgrade soils and/or highly weathered bedrock deposits located beneath the subject site have a low to very low potential for liquefaction during the design earthquake motions previously described.

Landslides

No ancient and/or active landslides were observed or are known to be present on the subject site. Additionally, development of the subject site with the proposed new dorms, staff housing, classrooms and assembly hall does not appear to present a potential geologic and/or landslide hazard provided that the site grading and development activities conform with the recommendations presented within this report. A more detailed assessment of the potential landslide hazard of the subject site is presented in the Geologic Hazard Study in Appendix B.

Surface Rupture

Although the site is generally located within a region of the country known for seismic activity, no known faults exist on and/or immediately adjacent to the subject site. As such, the risk of surface rupture due to faulting is considered negligible.

Tsunami and Seiche

A tsunami, or seismic sea wave, is produced when a major fault under the ocean floor moves vertically and shifts the water column above it. A seiche is a periodic oscillation of a body of water resulting in changing water levels, sometimes caused by an earthquake. Tsunami and seiche are not considered a potential hazard at this site because the site is not near to the coast and/or there are no adjacent significant bodies of water.

Flooding and Erosion

Stream flooding is a potential hazard that should be considered in lowland areas of Marion County and Salem. The FEMA (Federal Emergency Management Agency) flood maps should be reviewed as part of the design for the proposed new Youth With a Mission structures and site improvements. Elevations of structures on the site should be designed based upon consultants reports, FEMA (Federal Emergency Management Agency), and Marion County requirements for the 100-year flood levels of any nearby creeks, streams and/or drainage basins such as Battle Creek.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the results of our field explorations, laboratory testing, and engineering analyses, it is our opinion that the site is presently stable and suitable for the proposed new Youth With a Mission structures and their associated site improvements provided that the recommendations contained within this report are properly incorporated into the design and construction of the project.

The primary features of concern at the site are 1) the presence of highly moisture sensitive clayey and silty subgrade soils across the site, 2) the presence of gently to moderately sloping site conditions across the westerly portion of the site, and 3) the relatively low infiltration rates anticipated within the low lying easterly near surface clayey and silty subgrade soils.

With regard to the moisture sensitive clayey and silty subgrade soils, we are generally of the opinion that all site grading and earthwork activities be scheduled for the drier summer months which is typically June through September. In regards to the gently to moderately sloping site conditions across the westerly portion of the site, we are of the opinion that site grading and/or structural fill placement should be minimized where possible and should generally limit cuts and/or fills to about five (5) feet. Additionally, where existing site slopes and/or surface grades exceed about 20 percent (1V:5H) and in order to construct the proposed new site improvements, benching and keying of all fills into the natural site slopes may be required. With regard to the relatively low infiltration rates within the low lying easterly near surface clayey and silty subgrade soils beneath the site, storm water infiltration may be feasible within a depth of about four (4) to five (5) feet of the existing surface grades and/or elevations. However, due to the presence of slightly cemented subgrade soils beneath a depth of about four (4) to five (5) feet as well as the presence of Battle Creek, groundwater mounding should be anticipated. In this regard, we recommend that all proposed storm water detention and/or infiltration systems for the project be reviewed and approved by Redmond Geotechnical Services, LLC.

The following sections of this report provide specific recommendations regarding subgrade preparation and grading as well as foundation and floor slab design and construction for the Youth With a Mission project.

Site Preparation

As an initial step in site preparation, we recommend that the proposed new Youth With a Mission building sites as well as their associated structural and/or site improvement area(s) be stripped and cleared of all existing improvements, any existing unsuitable fill materials, surface debris, existing vegetation, topsoil materials, and/or any other deleterious materials present at the time of construction. In general, we envision that the site stripping to remove existing vegetation and topsoil materials will generally be about 8 to 12 inches.

However, localized areas requiring deeper removals, such as any existing undocumented and/or unsuitable fill materials as well as old foundation remnants, will likely be encountered and should be evaluated at the time of construction by the Geotechnical Engineer. The stripped and cleared materials should be properly disposed of as they are generally considered unsuitable for use/reuse as fill materials.

Following the completion of the site stripping and clearing work and prior to the placement of any required structural fill materials and/or structural improvements, the exposed subgrade soils within the planned structural improvement area(s) should be inspected and approved by the Geotechnical Engineer and possibly proof-rolled with a half and/or fully loaded dump truck. Areas found to be soft or otherwise unsuitable should be over-excavated and removed or scarified and recompacted as structural fill. During wet and/or inclement weather conditions, proof rolling and/or scarification and recompaction as noted above may not be appropriate.

The on-site native sandy, clayey silt and/or clayey, silty sand subgrade soil materials are generally considered suitable for use/reuse as structural fill materials provided that they are free of organic materials, debris, and rock fragments in excess of about 6 inches in dimension. However, if site grading is performed during wet or inclement weather conditions, the use of some of the on-site native soil materials which contain significant silt and clay sized particles will be difficult at best. In this regard, during wet or inclement weather conditions, we recommend that an import structural fill material be utilized which should consist of a free-draining (clean) granular fill (sand & gravel) containing no more than about 5 percent fines. Representative samples of the materials which are to be used as structural fill materials should be submitted to the Geotechnical Engineer and/or laboratory for approval and determination of the maximum dry density and optimum moisture content for compaction.

In general, all site earthwork and grading activities should be scheduled for the drier summer months (June through September) if possible. However, if wet weather site preparation and grading is required, it is generally recommended that the stripping of topsoil materials be accomplished with a tracked excavator utilizing a large smooth-toothed bucket working from areas yet to be excavated. Additionally, the loading of strippings into trucks and/or protection of moisture sensitive subgrade soils will also be required during wet weather grading and construction. In this regard, we recommend that areas in which construction equipment will be traveling be protected by covering the exposed subgrade soils with a woven geotextile fabric such as Mirafi FW404 followed by at least 12 inches or more of crushed aggregate base rock. Further, the geotextile fabric should have a minimum Mullen burst strength of at least 250 pounds per square inch for puncture resistance and an apparent opening size (AOS) between the U.S. Standard No. 70 and No. 100 sieves.

All structural fill materials placed within the new building and/or pavement areas should be moistened or dried as necessary to near (within 3 percent) optimum moisture conditions and compacted by mechanical means to a minimum of 92 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Structural fill materials should be placed in lifts (layers) such that when compacted do not exceed about 8 inches.

Additionally, all fill materials placed within about three (3) to five (5) lineal feet of the perimeter (limits) of the proposed structures and/or pavements should be considered structural fill. Additionally, due to the sloping site conditions, we recommend that all structural fill materials planned in areas where existing surface and/or slope gradients exceed about 20 percent (1V:5H) be properly benched and/or keyed into the native (natural) slope subgrade soils. In general, a bench width of at least eight (8) feet and a keyway depth of at least one (1) foot is recommended. A typical key and bench fill slope detail is presented on Figure No. 3. However, the actual bench width and keyway depth should be determined at the time of construction by the Geotechnical Engineer. Further, all fill slopes should be constructed with a finish slope surface gradient no steeper than about 2H:1V.

Foundation Support

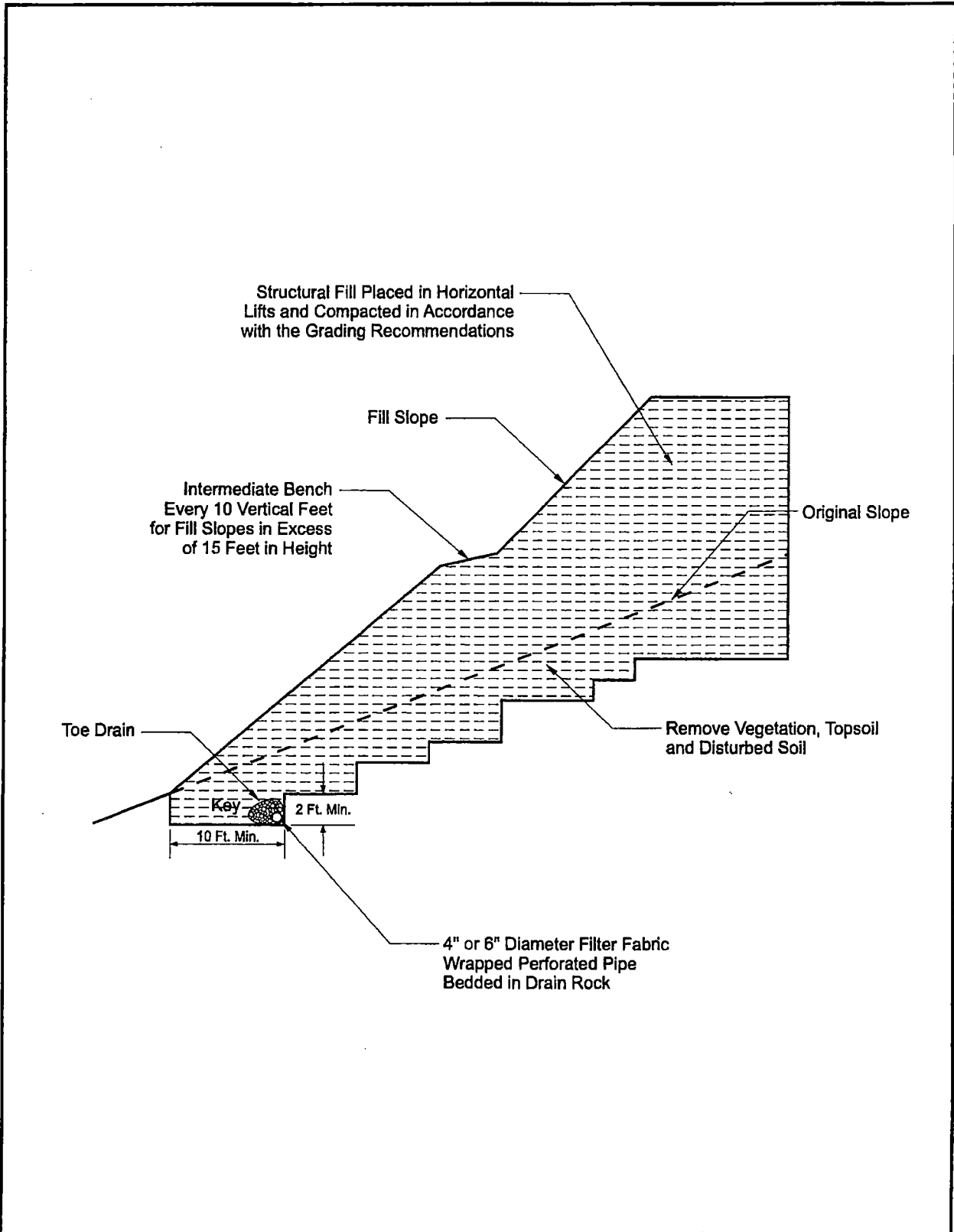
Based on the results of our investigation, it is our opinion that the site of the proposed new Youth With a Mission structures is suitable for support of the proposed new reservoir as well as the proposed new one- and/or two-story wood-frame dorm, staff housing, classroom and assemble hall structures provided that the following foundation design recommendations are followed. The following sections of this report present specific foundation design and construction recommendations for the planned new Youth With a Mission structures.

Shallow Foundations

In general, conventional shallow continuous (strip) footings and individual (spread) column footings may be supported by approved native (untreated) subgrade soil materials and/or silty sand structural fill soils based on an allowable contact bearing pressure of about 2,000 pounds per square foot (psf). This recommended allowable contact bearing pressure is intended for dead loads and sustained live loads and may be increased by one-third for the total of all loads including short-term wind or seismic loads. In general, continuous strip footings should have a minimum width of at least 16 inches and be embedded at least 18 inches below the lowest adjacent finish grade (includes frost protection). Individual column footings (where required) should be embedded at least 18 inches below grade and have a minimum width of at least 24 inches. Additionally, if foundation excavation and construction work is planned to be performed during wet and/or inclement weather conditions, we recommend that a 3- to 4-inch layer of compacted crushed rock be used to help protect the exposed foundation bearing surfaces until the placement of concrete.

Total and differential settlements of foundations constructed as recommended above and supported by approved native subgrade soils or by properly compacted structural fill materials are expected to be well within the tolerable limits for these types of lightly loaded wood-frame structures and should generally be less than about 1-inch and 1/2-inch, respectively.

Allowable lateral frictional resistance between the base of the footing element and the supporting subgrade bearing soil can be expressed as the applied vertical load multiplied by a coefficient of friction of 0.30 and 0.45 for native silty subgrade soils and/or import gravel fill materials, respectively.



TYPICAL KEY AND BENCH FILL SLOPE DETAIL

Project No. 1842.001.G

**YOUTH WITH A MISSION
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Figure No. 3

In addition, lateral loads may be resisted by passive earth pressures on footings poured "neat" against in-situ (native) subgrade soils or properly backfilled with structural fill materials based on an equivalent fluid density of 300 pounds per cubic foot (pcf). This recommended value includes a factor of safety of approximately 1.5 which is appropriate due to the amount of movement required to develop full passive resistance.

Large Spread (Pad) and/or Mat Foundations

In general, large concrete mat and/or spread foundations used for support of the proposed new reservoir structure may be supported by approximately 6 inches of well compacted (structural) crushed aggregate base rock placed and compacted directly above approved native (undisturbed) medium stiff to stiff, sandy, clayey silt subgrade soil deposits based on an allowable contact bearing pressure of about 2,500 pounds per square foot (psf). This recommended allowable contact bearing pressure is intended for dead loads and sustained live loads and may be increased by one-third for the total of all loads including short-term wind and/or seismic loads. In general, large spread and/or mat type footings should extend at least two (2) feet beneath existing and/or the lowest adjacent finish grade(s). Additionally, all large spread and/or mat foundations should be constructed no closer than about eight (8) feet from the top of any existing and/or permanent slopes.

Floor Slab Support

In order to provide uniform subgrade reaction beneath concrete slab-on-grade floors, we recommend that the floor slab area be underlain by a minimum of 6 inches of free-draining (less than 5 percent passing the No. 200 sieve), well-graded, crushed rock. The crushed rock should help provide a capillary break to prevent migration of moisture through the slab. However, additional moisture protection can be provided by using a 10-mil polyolefin geo-membrane sheet such as StegoWrap.

The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Where floor slab subgrade materials are undisturbed, firm and stable and where the underslab aggregate base rock section has been prepared and compacted as recommended above, we recommend that a modulus of subgrade reaction of 150 pci be used for design.

Retaining/Below Grade Walls

Retaining and/or below grade walls should be designed to resist lateral earth pressures imposed by native soils or granular backfill materials as well as any adjacent surcharge loads. For walls which are unrestrained at the top and free to rotate about their base, we recommend that active earth pressures be computed on the basis of the following equivalent fluid densities:

Non-Restrained Retaining Wall Pressure Design Recommendations

Slope Backfill (Horizontal/Vertical)	Equivalent Fluid Density/Silt (pcf)	Equivalent Fluid Density/Gravel (pcf)
Level	35	30
3H:1V	60	50
2H:1V	90	80

For walls which are fully restrained at the top and prevented from rotation about their base, we recommend that at-rest earth pressures be computed on the basis of the following equivalent fluid densities:

Restrained Retaining Wall Pressure Design Recommendations

Slope Backfill (Horizontal/Vertical)	Equivalent Fluid Density/Silt (pcf)	Equivalent Fluid Density/Gravel (pcf)
Level	45	35
3H:1V	65	60
2H:1V	95	90

The above recommended values assume that the walls will be adequately drained to prevent the buildup of hydrostatic pressures. Where wall drainage will not be present and/or if adjacent surcharge loading is present, the above recommended values will be significantly higher. For seismic loading, we recommend an additional uniform pressure of $6H$ where H is the height of the wall in feet.

Backfill materials behind walls should be compacted to 90 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Special care should be taken to avoid over-compaction near the walls which could result in higher lateral earth pressures than those indicated herein. In areas within three (3) to five (5) feet behind walls, we recommend the use of hand-operated compaction equipment.

Pavements

Flexible pavement design for the proposed site improvements associated with the Youth With a Mission project was determined in accordance with the City of Salem Department of Public Works Administrative Rules Chapter 109-006 (Street Design Standards) Section 6 dated January 1, 2014. Flexible pavement design for the project was determined on the basis of projected (anticipated) traffic volume and loading conditions relative to laboratory subgrade soil strength ("R"-value) characteristics. Based on a laboratory subgrade "R"-value of 30 (Resilient Modulus = 5,000 to 10,000) and utilizing the Asphalt Institute Flexible Pavement Design Procedures and/or the American Association of State Highway and Transportation Officials (AASHTO) 1993 "Design of Pavement Structures" manual, we recommend that the asphaltic concrete pavement section(s) for the new Youth With a Mission development areas at the site consist of the following:

	<u>Asphaltic Concrete Thickness (inches)</u>	<u>Crushed Base Rock Thickness (inches)</u>
Automobile Parking Areas	3.0	8.0
Automobile Drive Areas	3.5	10.0

Note: Where heavy vehicle traffic is anticipated such as those required for fire and/or garbage trucks, we recommend that the automobile drive area pavement section be increased by adding 0.5 inches of asphaltic concrete and 2.0 inches of aggregate base rock. Additionally, the above recommended flexible pavement section(s) assumes a design life of 20 years.

Pavement Subgrade, Base Course & Asphalt Materials

The above recommended pavement section(s) were based on the design assumptions listed herein and on the assumption that construction of the pavement section(s) will be completed during an extended period of reasonably dry weather. All thicknesses given are intended to be the minimum acceptable. Increased base rock sections and the use of a woven geotextile fabric may be required during wet and/or inclement weather conditions and/or in order to adequately support construction traffic and protect the subgrade during construction. Additionally, the above recommended pavement section(s) assume that the subgrade will be prepared as recommended herein, that the exposed subgrade soils will be properly protected from rain and construction traffic, and that the subgrade is firm and unyielding at the time of paving. Further, it assumes that the subgrade is graded to prevent any ponding of water which may tend to accumulate in the base course.

Pavement base course materials should consist of well-graded 1-1/2 inch and/or 3/4-inch minus crushed base rock having less than 5 percent fine materials passing the No. 200 sieve. The base course and asphaltic concrete materials should conform to the requirements set forth in the latest edition of the Oregon Department of Transportation, Standard Specifications for Highway Construction. The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. The asphaltic concrete paving materials should be compacted to at least 92 percent of the theoretical maximum density as determined by the ASTM D-2041 (Rice Gravity) test method.

Wet Weather Grading and Soft Spot Mitigation

Construction of the proposed new public street improvements is generally recommended during dry weather. However, during wet weather grading and construction, excavation to subgrade can proceed during periods of light to moderate rainfall provided that the subgrade remains covered with aggregate. A total aggregate thickness of 8-inches may be necessary to protect the subgrade soils from heavy construction traffic. Construction traffic should not be allowed directly on the exposed subgrade but only atop a sufficient compacted base rock thickness to help mitigate subgrade pumping. If the subgrade becomes wet and pumps, no construction traffic shall be allowed on the road alignment. Positive site drainage away from the street shall be maintained if site paving will not occur before the on-set of the wet season.

Depending on the timing for the project, any soft subgrade found during proof-rolling or by visual observations can either be removed and replaced with properly dried and compacted fill soils or removed and replaced with compacted crushed aggregate. However, and where approved by the Geotechnical Engineer, the soft area may be covered with a bi-axial geogrid and covered with compacted crushed aggregate.

Soil Shrink-Swell and Frost Heave

The results of the laboratory "R"-value tests indicate that the native subgrade soils possess a low to moderate expansion potential. As such, the exposed subgrade soils should not be allowed to completely dry and should be moistened to near optimum moisture content (plus or minus 3 percent) at the time of the placement of the crushed aggregate base rock materials. Additionally, exposure of the subgrade soils to freezing weather may result in frost heave and softening of the subgrade. As such, all subgrade soils exposed to freezing weather should be evaluated and approved by the Geotechnical Engineer prior to the placement of the crushed aggregate base rock materials.

Excavation/Slopes

Temporary excavations of up to about four (4) feet in depth may be constructed with near vertical inclinations. Temporary excavations greater than about four (4) feet but less than eight (8) feet should be excavated with inclinations of at least 1 to 1 (horizontal to vertical) or properly braced/shored. Where excavations are planned to exceed about eight (8) feet, this office should be consulted. All shoring systems and/or temporary excavation bracing for the project should be the responsibility of the excavation contractor. Permanent slopes should be constructed no steeper than about 2H to 1V unless approved by the Geotechnical Engineer.

Depending on the time of year in which trench excavations occur, trench dewatering may be required in order to maintain dry working conditions if the invert elevations of the proposed utilities are located at and/or below the groundwater level. If groundwater is encountered during utility excavation work, we recommend placing trench stabilization materials along the base of the excavation.

Trench stabilization materials should consist of 1-foot of well-graded gravel, crushed gravel, or crushed rock with a maximum particle size of 4 inches and less than 5 percent fines passing the No. 200 sieve. The material should be free of organic matter and other deleterious material and placed in a single lift and compacted until well keyed.

Surface Drainage/Groundwater

We recommend that positive measures be taken to properly finish grade the site so that drainage waters from the structures and landscaping areas as well as adjacent properties or buildings are directed away from the new structures foundations and/or floor slabs. All roof drainage should be directed into conduits that carry runoff water away from the structures to a suitable outfall. Roof downspouts should not be connected to foundation drains.

A minimum ground slope of about 2 percent is generally recommended in unpaved areas around the proposed new structures.

Groundwater was not encountered at the site in any of the exploratory test pits (TH-#1 through TH-#8) at the time of excavation to depths of at least seven (7) feet beneath existing site grades. However, the central portion of the site contains an existing drainage basin feature (Battle Creek). Additionally, groundwater elevations in the area and/or across the subject property may fluctuate seasonally and may temporarily pond/perch near the ground surface during periods of prolonged rainfall.

As such, based on our current understand of the possible site grading required to bring the subject site to finish design grade(s), we are of the opinion that an underslab drainage system is not required for the proposed Youth With a Mission structures. However, a perimeter foundation drain is recommended for any perimeter footings and/or below grade retaining walls. A typical recommended perimeter footing/retaining wall drain detail is shown on Figure No. 4.

Design Infiltration Rates

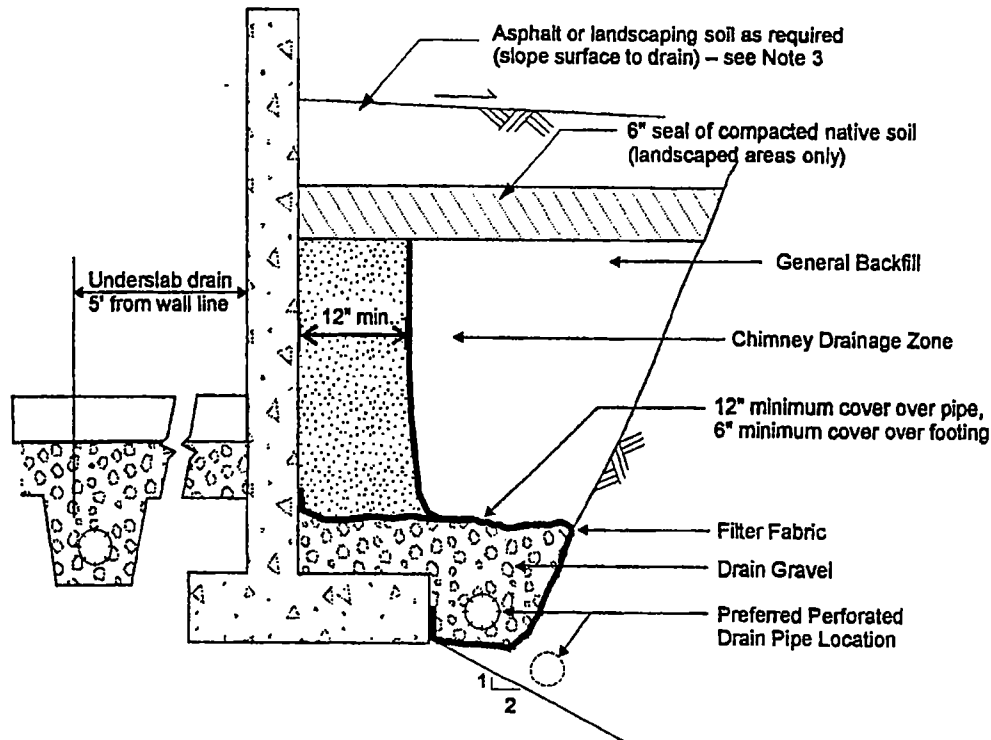
Based on the results of our field infiltration testing, we recommend using the following infiltration rate to design any on-site near surface storm water infiltration and/or disposal systems for the project:

Subgrade Soil Type	Recommended Infiltration Rate
clayey, sandy SILT (ML)	0.4 to 0.6 inches per hour (in/hr)

Note: A safety factor of two (2) was used to calculate the above recommended design infiltration rate. Additionally, given the gradational variability of the on-site clayey, sandy sit subgrade soils beneath the site as well as the anticipation of some site grading for the project, it is generally recommended that field testing be performed during and/or following construction of any on-site storm water infiltration system(s) in order to confirm that the above recommended design infiltration rates are appropriate.

Seismic Design Considerations

Structures at the site should be designed to resist earthquake loading in accordance with the methodology described in the 2019 and/or latest edition of the State of Oregon Structural Specialty Code (OSSC), ASCE 7-16 and/or Amendments to the 2018 International Building Code (IBC). The maximum considered earthquake ground motion for short period and 1.0 period spectral response may be determined from the 2015 National Earthquake Hazard Reduction Program (NEHRP) "Recommended Provisions for Seismic Regulations for New Buildings and Other Structures" published by the Building Seismic Safety Council. We recommend Site Class "D" be used for design.



SCHEMATIC - NOT TO SCALE

NOTES:

1. Filter Fabric to be non-woven geotextile (Amoco 4545, Mirafi 140N, or equivalent)
2. Lay perforated drain pipe on minimum 0.5% gradient, widening excavation as required. Maintain pipe above 2:1 slope, as shown.
3. All-granular backfill is recommended for support of slabs, pavements, etc. (see text for structural fill).
4. Drain gravel to be clean, washed $\frac{3}{4}$ " to $1\frac{1}{2}$ " gravel.
5. General backfill to be on-site gravels, or $\frac{3}{4}$ "-0 or $1\frac{1}{2}$ "-0 crushed rock compacted to 92% Modified Proctor (AASHTO T-180).
6. Chimney drainage zone to be 12" wide (minimum) zone of clean washed, medium to coarse sand or drain gravel if protected with filter fabric. Alternatively, prefabricated drainage structures (Miradrain 6000 or similar) may be used.

PERIMETER FOOTING/RETAINING WALL DRAIN DETAIL

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Figure No. 4

Using this information, the structural engineer can select the appropriate site coefficient values (F_a and F_v) to determine the maximum considered earthquake spectral response acceleration for the project. However, we have assumed the following response spectrum for the project:

Table 1. Recommended Seismic Design Parameters

Site Class	S_s	S_1	F_a	F_v	S_{MS}	S_{M1}	S_{D5}	S_{D1}
D	0.802	0.406	1.200	1.894	0.962	0.769	0.641	0.513

Notes: 1. S_s and S_1 were established based on the USGS 2015 mapped maximum considered earthquake spectral acceleration maps for 2% probability of exceedence in 50 years.

2. F_a and F_v were established from ASCE 7-16 using the selected S_s and S_1 values.

CONSTRUCTION MONITORING AND TESTING

We recommend that **Redmond Geotechnical Services, LLC** be retained to provide construction monitoring and testing services during all earthwork operations for the proposed new Youth With a Mission development. The purpose of our monitoring services would be to confirm that the site conditions reported herein are as anticipated, provide field recommendations as required based on the actual conditions encountered, document the activities of the grading contractor and assess his/her compliance with the project specifications and recommendations. It is important that our representative meet with the contractor prior to any site grading to help establish a plan that will minimize costly over-excavation and site preparation work. Of primary importance will be observations made during site preparation and stripping, structural fill placement, footing excavations and construction as well as retaining wall backfill.

CLOSURE AND LIMITATIONS

This report is intended for the exclusive use of the addressee and/or their representative(s) to use to design and construct the proposed new Youth With a Mission structures and their associated site improvements described herein as well as to prepare any related construction documents. The conclusions and recommendations contained in this report are based on site conditions as they presently exist and assume that the explorations are representative of the subsurface conditions between the explorations and/or at other locations across the study area. The data, analyses, and recommendations herein may not be appropriate for other structures and/or purposes. We recommend that parties contemplating other structures and/or purposes contact our office. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report.

Additionally, the above recommendations are contingent on Redmond Geotechnical Services, LLC being retained to provide all site inspections and construction monitoring services for this project. Redmond Geotechnical Services, LLC will not assume any responsibility and/or liability for any engineering judgment, inspection and/or testing services performed by others.

It is the owners/developers responsibility for insuring that the project designers and/or contractors involved with this project implement our recommendations into the final design plans, specifications and/or construction activities for the project. Further, in order to avoid delays during construction, we recommend that the final design plans and specifications for the project be reviewed by our office to evaluate as to whether our recommendations have been properly interpreted and incorporated into the project.

If during any future site grading and construction, subsurface conditions different from those encountered in the explorations are observed or appear to be present beneath excavations, we should be advised immediately so that we may review these conditions and evaluate whether modifications of the design criteria are required. We also should be advised if significant modifications of the proposed site development are anticipated so that we may review our conclusions and recommendations.

LEVEL OF CARE

The services performed by the Geotechnical Engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in the area under similar budget and time restraints. No warranty or other conditions, either expressed or implied, is made.

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Appendix "A"

Test Pit Logs and Laboratory Test Data

APPENDIX

FIELD EXPLORATIONS AND LABORATORY TESTING

FIELD EXPLORATION

Subsurface conditions at the site were explored by excavating eight (8) exploratory test pits (TH-#1 through TH-#8) on July 24, 2020. The approximate location of the test pit explorations are shown in relation to the proposed new residential lots and the associated site improvements on the Site Exploration Plan, Figure No. 2.

The test pits were excavated using track-mounted excavating equipment in general conformance with ASTM Methods in Vol. 4.08, D-1586-94 and D-1587-83. The test pits were excavated to depths ranging from about 6.0 to 7.0 feet beneath existing site grades. Detailed logs of the test pits are presented on the Log of Test Pits, Figure No's. A-5 through A-8. The soils were classified in accordance with the Unified Soil Classification System (USCS), which is outlined on Figure No. A-4.

The exploration program was coordinated by a field engineer who monitored the excavating and exploration activity, obtained representative samples of the subsurface soils encountered, classified the soils by visual and textural examination, and maintained continuous logs of the subsurface conditions. Disturbed and/or undisturbed samples of the subsurface soils were obtained at appropriate depths and/or intervals and placed in plastic bags and/or with a thin walled ring sample.

Groundwater was not encountered in any of the exploratory test pits (TH-#1 through TH-#8) at the time of excavating to depths of at least 7.0 feet beneath existing surface grades.

LABORATORY TESTING

Pertinent physical and engineering characteristics of the soils encountered during our subsurface investigation were evaluated by a laboratory testing program to be used as a basis for selection of soil design parameters and for correlation purposes. Selected tests were conducted on representative soil samples. The program consisted of tests to evaluate the existing (in-situ) moisture-density, maximum dry density and optimum moisture content, Atterberg Limits and gradational characteristics as well as consolidation, direct shear strength and "R"-value tests.

Dry Density and Moisture Content Determinations

Density and moisture content determinations were performed on both disturbed and relatively undisturbed samples from the test pit explorations in general conformance with ASTM Vol. 4.08 Part D-216. The results of these tests were used to calculate existing overburden pressures and to correlate strength and compressibility characteristics of the soils. Test results are shown on the test pit logs at the appropriate sample depths.

Maximum Dry Density

Two (2) Maximum Dry Density and Optimum Moisture Content tests were performed on representative samples of the on-site sandy, clayey silt subgrade soils in accordance with ASTM Vol. 4.08 Part D-1557. This test was conducted to help establish various engineering properties for use as structural fill. The test results are presented on Figure No. A-9.

Atterberg Limits

Two (2) Liquid Limit (LL) and Plastic Limit (PL) tests were performed on representative samples of the sandy, clayey silt subgrade soils in accordance with ASTM Vol. 4.08 Part D-4318-85. These tests were conducted to facilitate classification of the soils and for correlation purposes. The test results appear on Figure No. A-10.

Gradation Analysis

Two (2) Gradation analyses were performed on representative samples of the sandy, clayey silt subsurface soils in accordance with ASTM Vol. 4.08 Part D-422. The test results were used to classify the soil in accordance with the Unified Soil Classification System (USCS). The test results are shown graphically on Figure No. A-11.

Consolidation Test

One (1) Consolidation test was performed on a representative sample of the sandy, clayey silt subgrade soil to assess the compressibility characteristics of the underlying subgrade soils in accordance with ASTM Vol. 4.08 Part D-2435-80.

Conventional loading increments of 100, 200, 400, ... 12,800 psf were applied after the 100 percent time of primary consolidation was identified for each loading increment. The samples were unloaded and allowed to rebound after the completion of the loading sequence. Deflection versus time readings were recorded for all load increments from 100 through 12,800 psf. The deflection corresponding to 100 percent primary consolidation was plotted on the consolidation strain versus consolidation pressure curve, which is presented on Figure No. A-12.

Direct Shear Strength Test

One (1) Direct Shear Strength test was performed on undisturbed and/or remolded sample of the sandy, clayey silt subgrade soils at a continuous rate of shearing deflection (0.02 inches per minute) in accordance with ASTM Vol. 4.08 Part D-3080-79. The test results were used to determine engineering strength properties and are shown graphically on Figure No. A-13.

"R"-Value Tests

One (1) "R"-value tests were performed on a remolded subgrade soil sample of the sandy, clayey silt subgrade soils in accordance with ASTM Vol. 4.08 Part D-2844. The test results were used to help evaluate the subgrade soils supporting and performance capabilities when subjected to traffic loading. The test results are shown on Figure No. A-14.

The following figures are attached and complete the Appendix:

Figure No. A-4	Key To Exploratory Test Pit Logs
Figure No's. A-5 through A-8	Log of Test Pits/Dynamic Cone
Figure No. A-9	Maximum Dry Density
Figure No. A-10	Atterberg Limits Test Results
Figure No. A-11	Gradation Test Results
Figure No. A-12	Consolidation Test Results
Figure No. A-13	Direct Shear Strength Test Results
Figure No. A-14	Results of "R"-Value Tests
Figure No's. A-15 and A-16	Field Infiltration Test Results

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

DEFINITION OF TERMS

U.S. STANDARD SERIES SIEVE					CLEAR SQUARE SIEVE OPENINGS			
200	40	10	4	3/4"	3"	12"		
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	FINE	MEDIUM	COARSE	FINE	COARSE			

GRAIN SIZES

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/FOOT [†]
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

CLAYS AND PLASTIC SILTS	STRENGTH [‡]	BLOWS/FOOT [†]
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

RELATIVE DENSITY

CONSISTENCY

[†] Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

[‡] Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.



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KEY TO EXPLORATORY TEST PIT LOGS Unified Soil Classification System (ASTM D-2487)

YOUTH WITH A MISSION
7085 BATTLE CREEK ROAD SE

PROJECT NO.	DATE	Figure A-4
1842.001.G	9/11/20	

BACKHOE COMPANY: Gene S. McMurrin

BUCKET SIZE: 24 inches

DATE: 7/24/20

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#1 ELEVATION
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
X				29.9	ML/ MH	Reddish-brown, very moist, medium stiff to stiff, sandy, clayey SILT (Residual Soil)
5						
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						

TEST PIT NO. TH-#2 ELEVATION						
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
X				27.7	ML/ MH	Medium to reddish-brown, very moist, medium stiff sandy, clayey SILT (Residual Soil)
X				30.4		
5						
X				26.8	ML/ SM	Orangish-brown, very moist, medium stiff to medium dense, clayey, sandy SILT to clayey, silty SAND (Highly Weathered Bedrock)
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1842.001.G

YOUTH WITH A MISSION

FIGURE NO. A-5

BACKHOE COMPANY: Gene S. McMurrin

BUCKET SIZE: 24 inches

DATE: 7/24/20

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#3 ELEVATION
0					ML	Dark brown, moist, soft, organic, sandy, clayey SILT (Topsoil)
	X			16.6	ML	
					ML	Dark gray to olive-brown, moist to very moist, soft, slightly organic, sandy, clayey SILT
	X			22.5	ML	
5					ML	Medium to orangish-brown, very moist, soft to medium stiff, clayey, sandy SILT
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						

TEST PIT NO. TH-#4 ELEVATION						
0					ML	Dark brown, very moist, soft, organic, sandy, clayey SILT (Topsoil)
					ML	
	X			23.4	ML	Multi-colored, very moist, soft, slightly organic, clayey, sandy SILT
					ML / SM	
5	X			22.1	SM	Orangish-brown, very moist, soft to loose, clayey, sandy SILT to clayey, silty SAND
					SM	Dark gray-brown with bluish-mottling, very moist, medium dense to dense, clayey, silty SAND with occasional small gravel and slightly cemented
						Total Depth = 7.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1842.001.G

YOUTH WITH A MISSION

FIGURE NO. A-6

BACKHOE COMPANY: Gene S. McMurrin BUCKET SIZE: 24 inches DATE: 7/24/20

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION TEST PIT NO. TH-#5 ELEVATION
0					ML	Dark brown, moist, soft, organic, sandy, clayey SILT (Topsoil)
	X			14.4	ML	
					ML	Dark gray to olive-brown, moist to very moist, soft, slightly organic, sandy, clayey SILT
	X			21.7	ML	
5					ML	Medium to orangish-brown, very moist, soft to medium stiff, clayey, sandy SILT
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						

TEST PIT NO. TH-#6 ELEVATION						
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
					ML	Multi-colored, very moist, soft, slightly organic, clayey, sandy SILT
					ML/SM	Orangish-brown, very moist soft to loose, clayey, sandy SILT to clayey, silty SAND
5					SM	Dark gray-brown with bluish-mottling, very moist, medium dense to dense, clayey, silty SAND with occasional small gravel and slightly cemented
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1842.001.G

YOUTH WITH A MISSION

FIGURE NO. A-7

BACKHOE COMPANY: Gene S. McMurrin

BUCKET SIZE: 24 inches

DATE: 7/24/20

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#7 ELEVATION
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
					ML	Multi-colored, very moist, soft, slightly organic, clayey, sandy SILT
5					ML SM	Orangish-brown, very moist, soft to loose, clayey, sandy SILT to clayey, silty SAND
					SM	Dark gray-brown with bluish-mottling, very moist, medium dense to dense, clayey, silty SAND with occasional small gravel and slightly cemented
10						Total Depth = 6.0 feet No groundwater encountered at time of exploration
15						

TEST PIT NO. TH-#8 ELEVATION						
0					ML	Dark brown, moist to very moist, soft, organic, sandy, clayey SILT (Topsoil)
					ML	Dark gray to olive-brown, moist to very moist, soft, slightly organic, sandy, clayey SILT
5					ML	Medium to orangish-brown, very moist, soft to medium stiff, clayey, sandy SILT
						Total Depth = 6.0 feet No groundwater encountered at time of exploration
10						
15						

LOG OF TEST PITS

PROJECT NO. 1842.001 G

YOUTH WITH A MISSION

FIGURE NO. A-8

MAXIMUM DENSITY TEST RESULTS

SAMPLE LOCATION	SOIL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)
TH-#1 @ 4.0'	Reddish-brown, sandy, clayey SILT	104.0	28.0
TH-#3 @ 1.5'	Dark gray to olive-brown, sandy, clayey SILT	110.0	18.0

EXPANSION INDEX TEST RESULTS

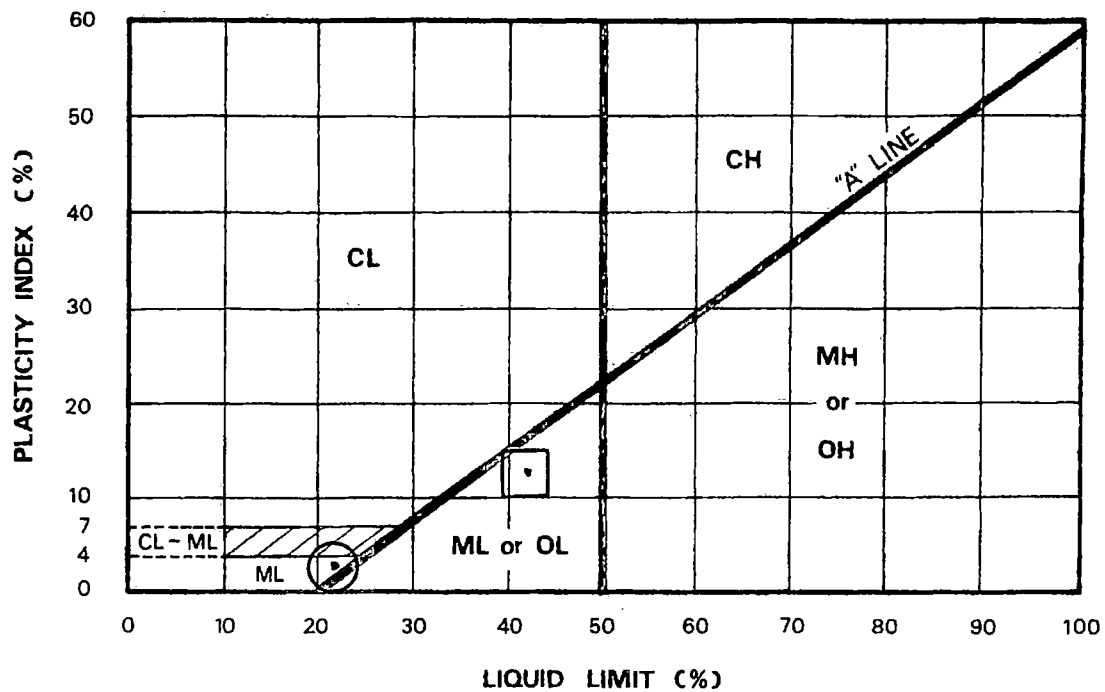
SAMPLE LOCATION	INITIAL MOISTURE (%)	COMPACTED DRY DENSITY (pcf)	FINAL MOISTURE (%)	VOLUMETRIC SWELL (%)	EXPANSION INDEX	EXPANSIVE CLASS.

MAXIMUM DENSITY & EXPANSION INDEX TEST RESULTS

PROJECT NO.: 1842.001.G

YOUTH WITH A MISSION

FIGURE NO.: A-9



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
□	TH-#1	4.0	29.9	42.3	12.6	90.3		ML
○	TH-#3	1.5	16.6	21.8	3.6	80.1		ML

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PLASTICITY CHART AND DATA

**YOUTH WITH A MISSION
7085 BATTLE CREEK ROAD SE**

PROJECT NO.

DATE

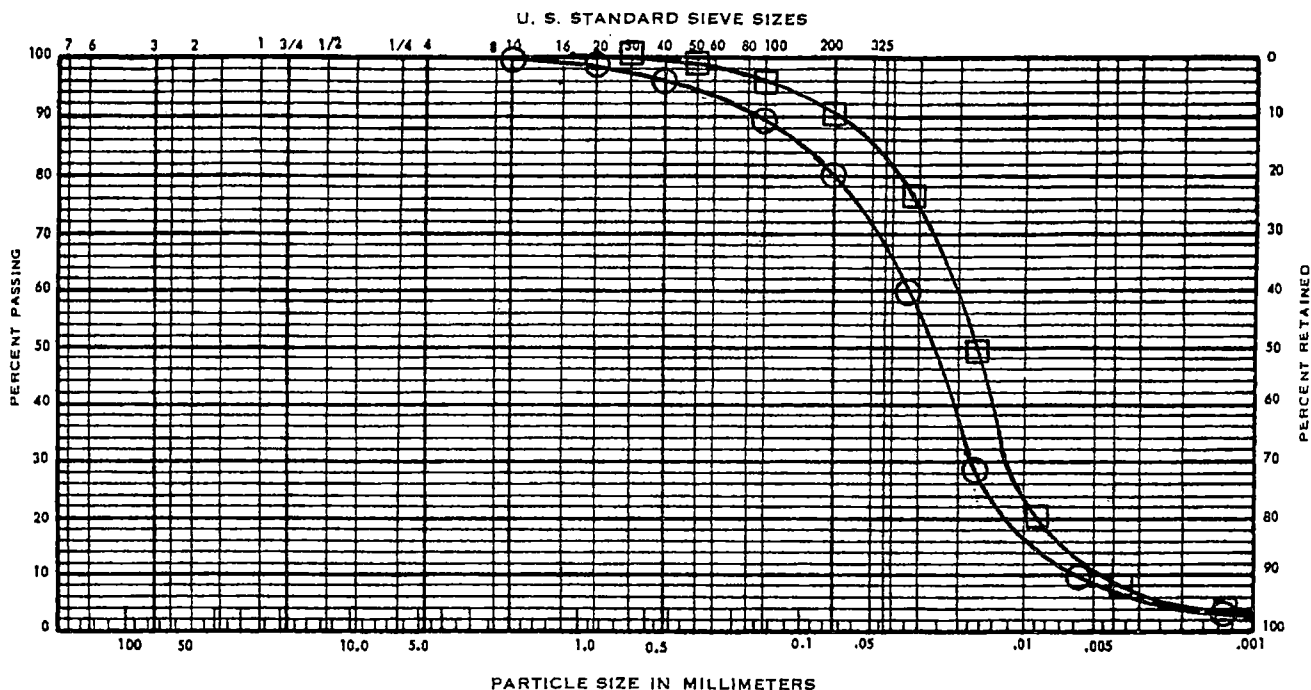
1842.001.G

9/11/20

Figure A-10

UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM D 422-72)



COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	ELEV. (feet)	UNIFIED SOIL CLASSIFICATION SYMBOL	SAMPLE DESCRIPTION
⊞	TH-#1	4.0		ML	Reddish-brown, sandy, clayey SILT
⊙	TH-#3	1.5		ML	Dark gray-brown to olive-brown, sandy, clayey SILT



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GRADATION TEST DATA

YOUTH WITH A MISSION
7085 BATTLE CREEK ROAD SE

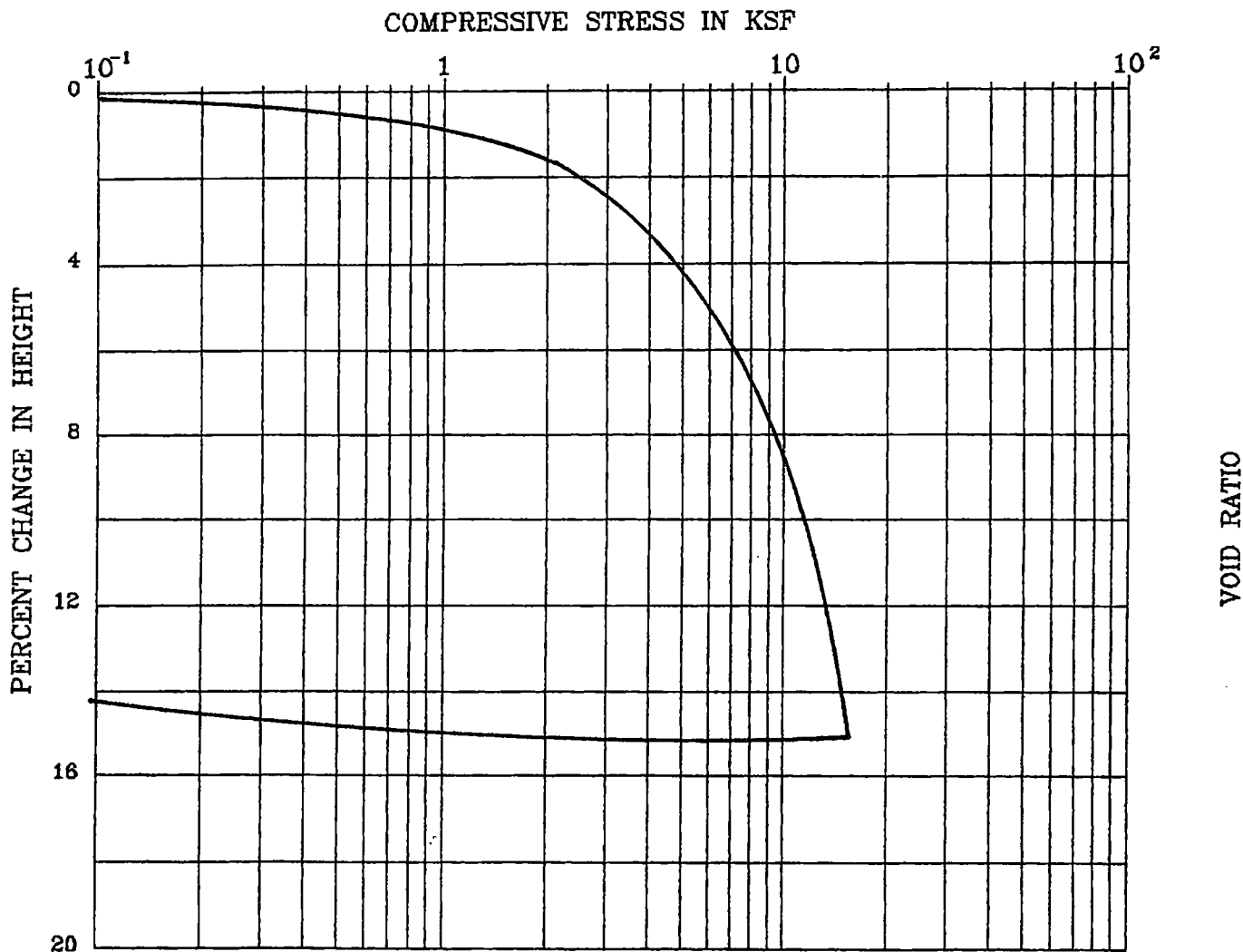
PROJECT NO.

DATE

FIGURE A-11

1842.001.G

9/11/20



BORING : TH-#3 DESCRIPTION : sandy, clayey SILT (ML)
 DEPTH (ft) : 1.5 LIQUID LIMIT : 21.8
 SPEC. GRAVITY : 2.5 (assumed) PLASTIC LIMIT : 18.2

	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	PERCENT SATURATION	VOID RATIO
INITIAL	16.6	89.9	84.4	
FINAL	8.8	97.4	93.7	



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CONSOLIDATION TEST DATA

YOUTH WITH A MISSION
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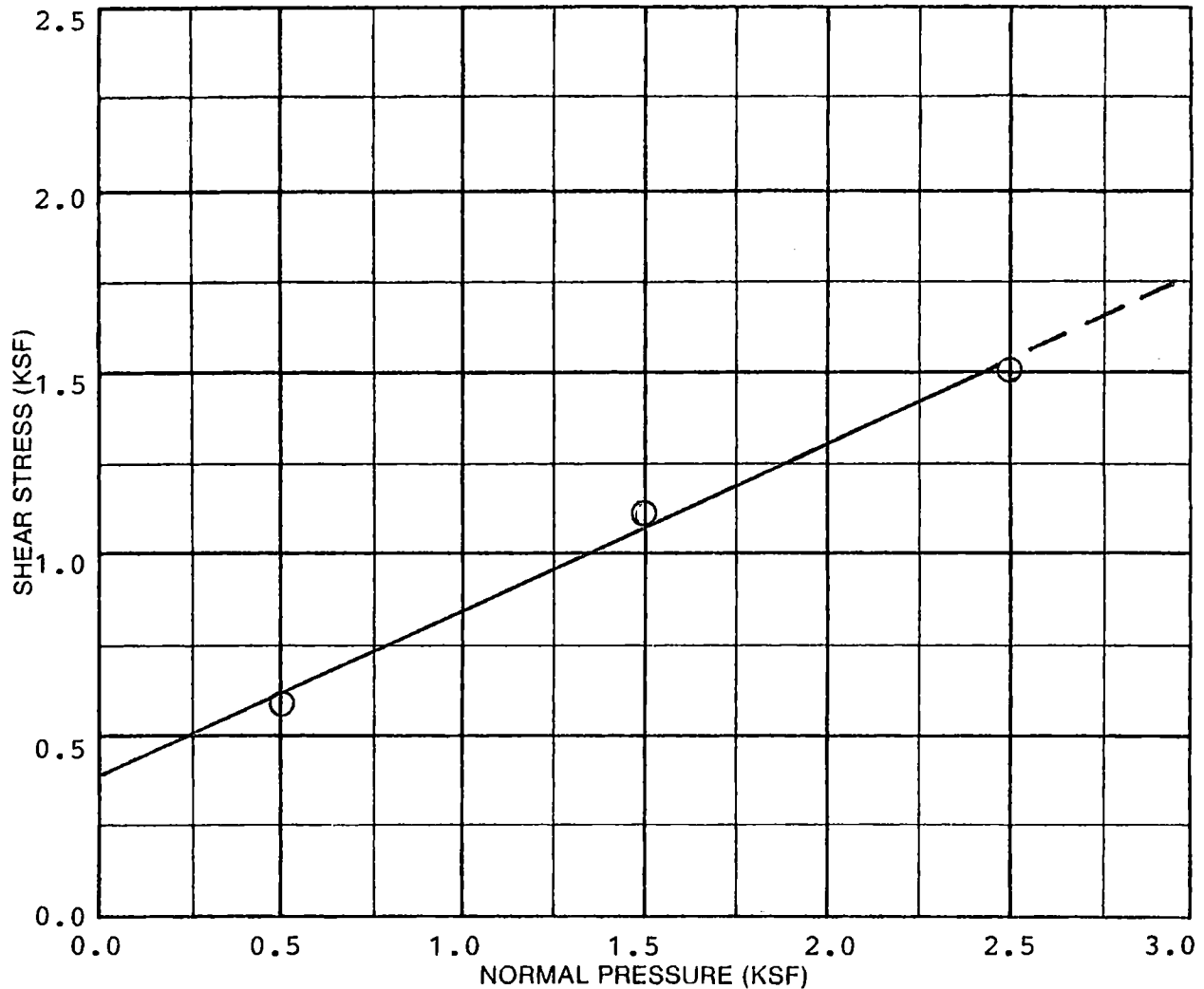
PROJECT NO.

DATE

1842.001.G

9/11/20

Figure A-12



SAMPLE DATA	
DESCRIPTION: Reddish-brown, sandy, clayey SILT (ML) (Remolded)	
BORING NO.: TH-#1	
DEPTH (ft.): 4.0	ELEVATION (ft.):
TEST RESULTS	
APPARENT COHESION (C): 400 psf	
APPARENT ANGLE OF INTERNAL FRICTION (ϕ): 24°	

TEST DATA				
TEST NUMBER	1	2	3	4
NORMAL PRESSURE (KSF)	0.5	1.5	2.5	
SHEAR STRENGTH (KSF)	0.6	1.1	1.5	
INITIAL H ₂ O CONTENT (%)	28.0	28.0	28.0	
FINAL H ₂ O CONTENT (%)	28.7	20.2	14.3	
INITIAL DRY DENSITY (PCF)	92.0	92.0	92.0	
FINAL DRY DENSITY (PCF)	92.8	671	103.3	
STRAIN RATE: 0.02 inches per minute				



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DIRECT SHEAR TEST DATA

YOUTH WITH A MISSION
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PROJECT NO.	DATE	Figure A-13
1842.001.G	9/11/20	

RESULTS OF R (RESISTANCE) VALUE TESTS

SAMPLE LOCATION: TH-#5

SAMPLE DEPTH: 1.5 feet bgs

Specimen	A	B	C
Exudation Pressure (psi)	221	328	429
Expansion Dial (0.0001")	0	0	1
Expansion Pressure (psf)	0	0	2
Moisture Content (%)	20.6	17.4	13.1
Dry Density (pcf)	99.4	104.2	109.6
Resistance Value, "R"	18	31	43
"R"-Value at 300 psi Exudation Pressure = 30			

SAMPLE LOCATION:

SAMPLE DEPTH:

Specimen	A	B	C
Exudation Pressure (psi)			
Expansion Dial (0.0001")			
Expansion Pressure (psf)			
Moisture Content (%)			
Dry Density (pcf)			
Resistance Value "R"			
"R"-Value at 300 psi Exudation Pressure =			

Division 004 Appendix C - Infiltration Testing

Location: Youth With a Mission	Date: July 24, 2020	Test Hole: TH-#4
Depth to Bottom of Hole: 3.0 feet	Hole Diameter: 6 inches	Test Method: Encased Falling Head
Tester's Name: Daniel M. Redmond, P.E., G.E.		
Tester's Company: Redmond Geotechnical Services, LLC		Tester's Contact Number: 503-285-0598
Depth (feet)	Soil Characteristics	
0-1.0	Dark brown Topsoil	
1.0-2.0	Multi-colored, clayey, sandy SILT (ML)	
2.0-3.0	Orangish-brown, clayey, sandy SILT (ML)	

Time	Time Interval (Minutes)	Measurement (inches)	Drop in Water (inches)	Infiltration Rate (inches/hour)	Remarks
11:00	0	24.00	----		Filled w/12" water
11:20	20	24.50	0.50	1.50	
11:40	20	24.95	0.45	1.35	
12:00	20	25.38	0.43	1.29	
12:20	20	25.80	0.42	1.26	
12:40	20	26.21	0.41	1.23	
1:00	20	26.62	0.41	1.23	
1:20	20	27.02	0.40	1.20	
1:40	20	27.42	0.40	1.20	

Infiltration Test Data Table

Division 004 Appendix C - Infiltration Testing

Location: Youth With a Mission	Date: July 24, 2020	Test Hole: TH-#6
Depth to Bottom of Hole: 4.0 feet	Hole Diameter: 6 inches	Test Method: Encased Falling Head
Tester's Name: Daniel M. Redmond, P.E., G.E.		
Tester's Company: Redmond Geotechnical Services, LLC		Tester's Contact Number: 503-285-0598
Depth (feet)	Soil Characteristics	
0-1.0	Dark brown Topsoil	
1.0-2.5	Multi-colored, clayey, sandy SILT (ML)	
2.5-4.0	Orangish-brown, clayey, sandy SILT (ML)	

Time	Time Interval (Minutes)	Measurement (inches)	Drop in Water (inches)	Infiltration Rate (inches/hour)	Remarks
11:10	0	36.00	----		Filled w/12" water
11:30	20	36.34	0.34	1.02	
11:50	20	36.65	0.31	0.93	
12:10	20	36.94	0.29	0.87	
12:30	20	37.22	0.28	0.84	
12:50	20	37.49	0.27	0.81	
1:10	20	37.76	0.27	0.81	
1:30	20	38.02	0.26	0.78	
1:50	20	38.28	0.26	0.78	

Infiltration Test Data Table

Appendix "B"

Geologic Hazard Assessment