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LEVEL I NUTRIENT PATHOGEN EVALUATION

JC RANCHES SUBDIVISION

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INTRODUCTION

The purpose of this document is to fulfill the requirements of a Level I Nutrient Pathogen Study to investigate the potential impacts on groundwater and surface water from on-site wastewater treatment systems. The project site is called JC Ranches Subdivision, owned by JD ID WY LLC. It is located in the northeast of the northeast and the northwest of the northeast quarter quarters of section 10 of T. 5 N. and R. 45 E., B.M. in Teton County Idaho and the parcel ID is RP05N45E101000.

The proposed project is for the subdivision of a 79.1-acre parcel of land. The parcel zoning at the time of the concept plan approval is "Agriculture/Rural Residential-2.5-Acre Min. Lot Size". The project as proposed is to subdivide the parcel into 18 sellable lots and an open space lot consisting of 10.87 acres. The parcel is bisected by Leigh Creek Canal. According to the Teton County GIS, irrigation in the parcel area is controlled by the Grand Teton Canal Company. Eight lots are located on parcel acreage on the west side of the canal. This area comprises 25.0 acres. Lot areas range from 2.51 to 5.88 acres with an average size of 3.12 acres. The other 10 sellable lots and open space lot are located on the east side of the irrigation canal. The sellable lots range in size from 2.78 to 6.40 acres. The average lot size is 4.32 acres with a total area of 43.2 acres plus the 10.87-acre open space lot. Please see the following figures for the vicinity map and proposed subdivision layout.

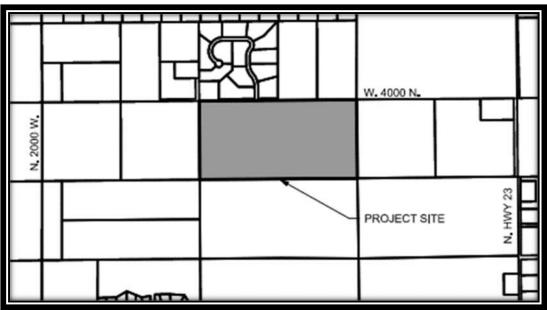
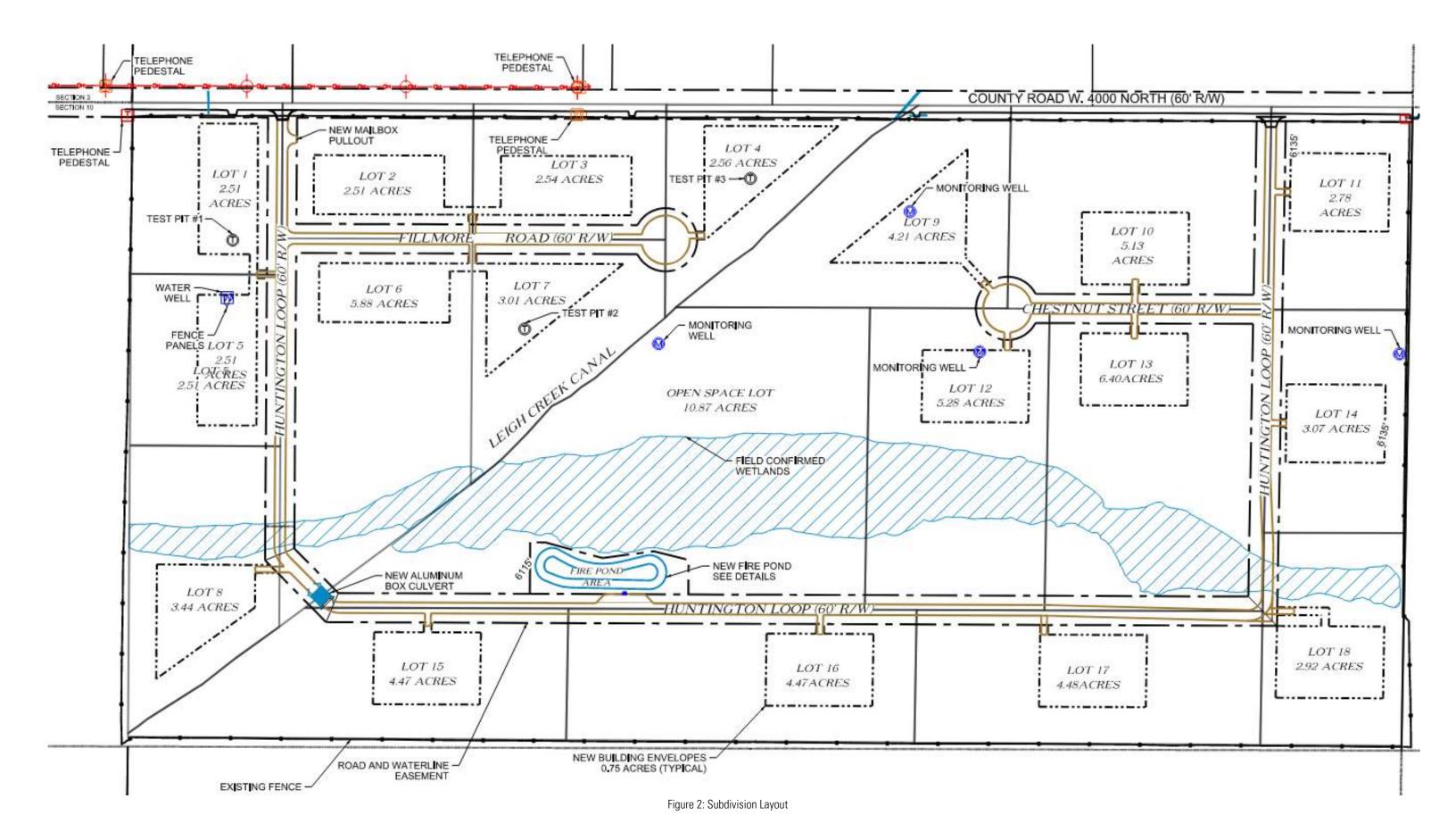


Figure 1: Subdivision Vicinity Map



To start the subdivision process, Y2 on behalf of JD ID WY LLC, had a pre-application meeting in December of 2021. A concept plan for the subdivision was submitted in February of 2022. A concept plan review was prepared by Teton County and a public hearing was held on April 12, 2022. Eastern Idaho Public Health (EIPH) completed field observations of test holes and provided a preliminary approval letter of the subdivision dated June 28, 2022.

The EIPH preliminary approval also summarized on site soil findings from three test pits excavated on site. Recommendations for the types of septic systems for the three different test pit areas were provided as well. The test pit locations are shown in Figure 2. Test pits were only completed on the west portion of the property due to the canal flowing and inaccessibility to the eastern portion. However, the EIPH letter did not express concern over this since the soil conditions do not change across the site significantly.

There was no groundwater or bedrock encountered in any of the test pits. Test pit #1 had fine sandy loam that varied in thickness and then transitioned to gravelly sandy loam down to 10 feet below the ground surface (bgs). Test pit #2 was excavated down to 120" and comprised of sandy silty loam. Past the 36" depth, the soil was more of sandy gravel with 40-50% rock content. Test pit #3 was mostly sandy silty loam down to 10" bgs and then more gravel and fine sand were encountered. Leach fields are to be sized according to a B1 soil type due to the presence of rocks in lower layers and a loamy sand soil type. The report from EIPH is included in Appendix A in its entirety of this report.

The proposed site lies partially within the Wetland Overlay area and therefore a Level I Nutrient Pathogen (NP) Evaluation is required Per Subdivision Regulations of Teton County, Idaho, Title 9, Section 9-3-2-C-3-b-i-a. The following sections provide information to meet the minimum required elements for an NP evaluation.

Well Driller Reports

Per Appendix A of Title 09, Nutrient-Pathogen Evaluation Technical Guide for On-Site Wastewater Treatment Systems in Teton County, Idaho (referred to as Guide from now on in this submittal), the first of the minimum requirements is to provide well driller reports within ½ mile of the project site. See Figure 3 for the area for which well driller reports were researched and cataloged.

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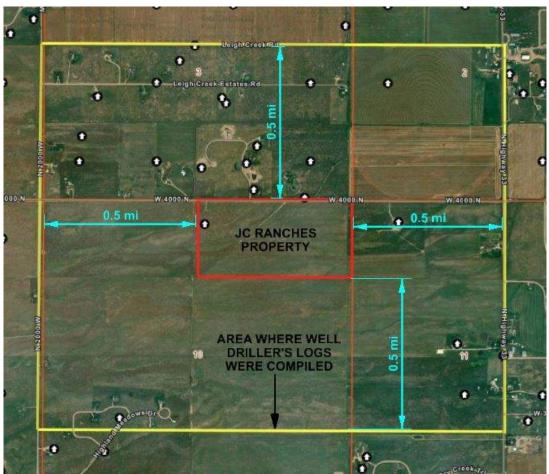


Figure 3: Area of Well Driller Report Compilation

The search area was all within T. 05 N. and R. 45 E. B.M. in Teton County. All of section 10 was included except for the southernmost row of quarter-quarters. The Northwest quarter of section 11 was included as well as the north half of the Southwest quarter. The south half of section 3 and the southwest quarter of section 2 was included in the search area.

A total of 29 wells were found within the area of review. Where well use was listed, it was for domestic, most of which were listed as a single residence.

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Permit ID	Metal Tag #	Construction Date	Section	Quarter - Quarter	Production Rate (gpm)	Static Water Level (ft bgs)	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)		
	Section 2 Wells										
772451	D0021957 12/21/2001 2 NWSW						6	180	184		
837999	D0037968	1/5/2006	2	NWSW	20	46	6	99	100		
				Section	3 Wells						
769608	D0021179	6/24/2001	3	NESE	30	17	6	79	80		
703066	D0004108	8/7/1997	3	NESE	30	8	6	80			
702564		9/30/1994	3	NESE	30	25	6	80			
800174		5/31/1962	3	NESW		11	16	139	142		
895620	D0083626	8/30/2020	3	NESW	35	10	6	100	100		
780854	D0024649	7/16/2002	3	NESW	20	73	6	120	120		
703039		7/6/1997	3	NESW	30	60	6	100	100		
897398	D0084046	1/28/2021	3	NWSE	20	38	6	118	120		
894735	D0081943	7/6/2020	3	NWSE	15	28	6	120	120		
887264	D0075647	8/23/2018	3	NWSW		10	6	98	98		
769242	D0021012	5/29/2001	3	SESE		35	6	84	84		
878801	D0068770	5/23/2016	3	SESE		24	6	98	100		
701985		8/20/1991	3	SESW	50	15	6		85		
702847		5/13/1996	3	SESW	30	64	6	100	100		
702556		9/17/1994	3	SESW	35	15	6	60	60		
897773	D0084048	3/9/2021	3	SWSE	15	40	6	98	100		
886148	D0075610	5/30/2018	3	SWSE		30	6	98	100		

Table 1: Result Summary from IDWR Find a Well Map in the Area of Review

Permit ID	Metal Tag #	Construction Date	Section	Quarter - Quarter	Production Rate (gpm)	Static Water Level (ft bgs)	Casing Diameter (in)	Casing Depth (ft)	Total Depth (ft)
Section 3 Wells Continued									
838116	D0037981	1/23/2006	3	SWSE	20	46	6	99	100
702232		4/28/1993	3	SWSW	50	105	6	152	152
822910		3/14/1977	3	SWSW		23	6	60	60
702846		5/12/1996	3	SWSW	40	32	6	100	100
				Section	10 Wells				
849279	D0048827	10/1/2007	10	NWNE		20	6	100	100
826174	D0035757	4/27/2005	10	NWSW		35	16	116	140
				Section	11 Wells				
833585	D0035642	5/26/2005	11	NESW		35	6	100	100
814333		3/27/1982	11	NESW		80			95
840958	D0044152	7/17/2006	11	SENW	30	56	6	100	100
901596	D0089363	8/19/2021	11	NWNW	15	40	6	115	115

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SECTION 2 WELL SUMMARY

There are two wells listed in section 2. They both have drilling logs associated with them. One well was constructed in 2001 and was drilled down to 184 feet and had a static water level of 80 feet. The other well was constructed in 2006 and was drilled to 100 feet with a static water level of 46 feet. There is mixed clay, gravel, and sand in the soil profile. The deeper well encountered broken ryolite mixed with clay at 170' bgs.

SECTION 3 WELL SUMMARY

There are 21 wells within this section, which makes up the majority of the wells within the area of review. The shallowest static water level was at 8 feet and the deepest was at 105 feet below the ground surface. These wells show the general lithology in the area is mostly made up of sand, gravel, and clay.

SECTION 10 WELL SUMMARY

Section 10 has two wells located in the area of review, one was drilled in 2005 and the other in 2007. The 2007 well appears to be installed on the project property. One of the logs encountered mainly clay and gravel with some sand mixed in throughout the middle of the log. The other log encountered gravel and sand in the shallower depths and then started to encounter some larger gravels from 100 to 140 feet bags. One well had a static water level of 20 feet and the other was 40 feet.

SECTION 11 WELL SUMMARY

This section has four wells. One of the wells does not have a drilling log associated with it and it was constructed in August 2021. The other three wells have drilling logs associated with them. The static water level of these three wells ranges from 35 feet to 80 feet. All of these wells were drilled to a total depth of around 100 feet. Each lithologic log encounters some gravel, sand, and clay, with the gravel being encountered at the beginning and end, and the clay and sand being encountered around the middle of the log.

OVERALL WELL LOG AND TOPOGRAPHY OBSERVATIONS

Figure 4: Topographic Map of Area of Review

The general topography in the project site area is sloping down from east to west and slightly south. The project site slopes at approximately 1 to 2%. The eastern side of the project property has an elevation of a little less than 6140 feet and the western end has an elevation ranging from about 6110 down to 6105 feet. There is also a canal that runs diagonally from the northeast corner to the southwest corner of the property.

There is only one well that is downgradient of most of the site and it is on the property itself. The well is located in the NWNE, is 100 feet deep, and the static water level is 20 feet bags.

Soil and Surface Geologic Conditions

The United States Department of Agriculture (USDA) Natural Resources Conservation District (NRCS) soil survey for the project area was utilized to supplement the information on soils in the area. A summary of site soil is presented below. The entire soil survey is included in Appendix C



Figure 5: Project Site Soil Survey Excerpt

Table 2: Soil Characteristic Summary

Soil Map Unit Number	Soil Group Name	Soil Description						
13101	Redfish-Foxcreek complex, 0 to 2 percent slopes	Mucky peat on the surface underlain by loam progressing to extremely gravelly coarse sand. Soil Group C/D.						
		Mucky peat on the surface underlain by loam progressing to extremely gravelly coarse sand. Soil Group C/D.						
13430	Alpine – St. Anthony complex, 0 to 2 percent slopes	Gravelly loams progressing to gravel. Well Drained. Soil Group B.						
		Loam, progressing to a very gravelly loamy sand. Well Drained. Soil Group B/C.						

According to the area geologic map, the project is located in the East Teton Basin, which is influenced by Leigh Creek and Tributaries. The project area map unit is QI/Qf which are alluvial fan deposits from the Holocene to Late Pliestocene area. The specific map unit means it is overlain by loess. This is a gravel and silt mixture said to be formed by a large flood of Leigh Creek. Please see the excerpt below. The entire geologic map is included in Appendix C.

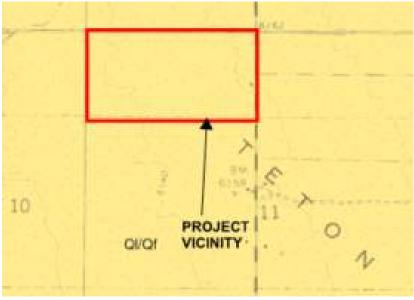
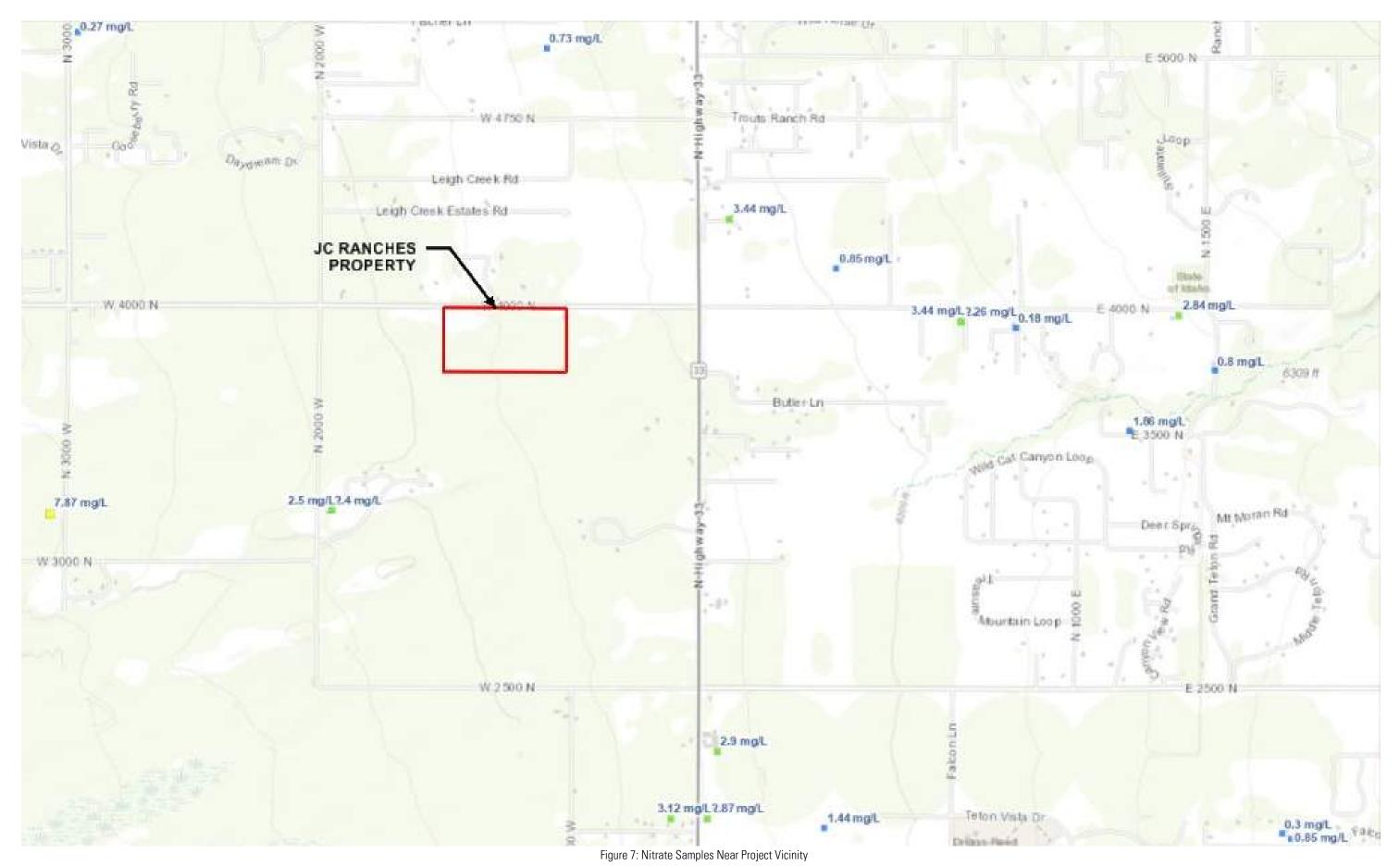


Figure 6: Surface Geology

BACKGROUND NITRATE CONCENTRATION

The Idaho Department of Environmental Quality (IDEQ) 2020 Nitrate Priority Area GIS server was used to determine nearby background nitrate concentrations. The figure below illustrates the nearby sample points. To the north, there are two sample points which are 0.27 and 0.73 mg/L. There are many sample points to the east of the project site, and they have a wide range of values, ranging from 0.18 to 3.44 mg/L Nitrate. The samples located south of the project site have a range from 1.44 to 3.12 mg/L of Nitrate. There is one sample point that is located southwest of the project site, and it has the highest value of 7.87 mg/L.

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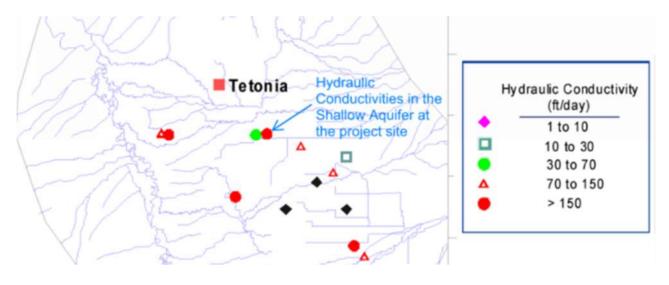
Y2 CONSULTANTS NUTRIENT PATHOGEN STUDY LEVEL I

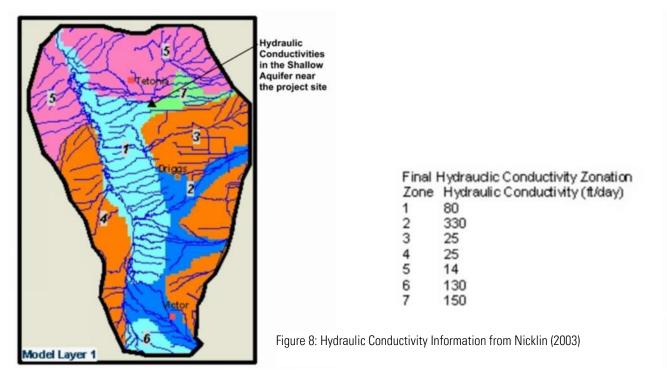
NITROGEN MASS BALANCE SPREADSHEET

Different combinations of lots were analyzed in order to see if the Nitrogen Mass Balance Spreadsheet exhibits an increase of 1 mg/L Nitrate. The subdivision has Leigh Creek, field confirmed wetlands, and the lots as compliance boundaries within the subdivision. Each individual lot was run. Then combinations of lots within the canal and wetland areas were ran. These were broken down into smaller two to four parcel combinations that are contiguous within the canal and wetland boundaries. Please see the Lot Layout Parameters and Mass Balance Spreadsheet Result sections for more information.

Hydraulic Conductivity

The onsite test pits excavated exhibit a soil classification of poorly sorted sand (SP). Some gravel and very few fines were observed in the proposed leachfield areas. This on-site excavation indicates a relatively permeable soil. Drilling logs, soil survey, and geology for the project site all demonstrate sand and gravel with some silts and clays. Per the Nicklin (2003) report assigned shallow hydraulic conductivity, we have used 80 feet per day in this analysis. In the same report in the project area, there was also an assignment of over150 feet per day, but the lower, more conservative value was used for this analysis.





HYDRAULIC GRADIENT

The final report: <u>Ground-Water Model for the Upper Teton Watershed</u> by Nicklin Earth & Water, Inc. dated March of 2003 has often been used for this parameter. This is an excellent study of the groundwater system for the entire Upper Teton Watershed. However, this study was not designed to provide site specific data for NP Evaluations. Y2 feels that it is appropriate to use this document as a general guideline for the direction of groundwater flow as well as the general magnitude of the slope of the groundwater surface. However, groundwater models, especially of the size of this one, can only be calibrated and expected to operate within an order of magnitude of accuracy.

In order to take a closer look at the hydraulic gradient, we have taken the groundwater levels that were used in the report to set up a general area for study. We created a potentiometric map of the groundwater in the subdivision area. This map was to go as far west as the Teton River to see how groundwater levels are trending in that direction. Water levels were utilized from the Idaho Department of Water Resources (IDWR) well database.

It is recognized that this data source has its limitations. Drillers do not log static water level data with the purpose of using that data for future groundwater modeling efforts in mind. Also, these wells are drilled at different times of the year, throughout different years. Finally, the NP Evaluation is assessing impacts on the shallow aquifer because this is where degradation to groundwater would first occur. Many of the wells are focused on deeper aquifer units so the well reliably productive over a long period of time and not subject to the variability that can be seen in a very shallow aquifer.

To help balance these imperfections of the data, parameters for well selection were limited to try and create a more uniform and reasonable potentiometric surface that has additional detail over what as in the Nicklin report:

1. Like the Nicklin report, wells drilled prior to 1990 were not used.

- 2. IDWR has a lot of data and wells in the project vicinity. Many of the newer wells are within subdivisions. Well parameters had patterns in these subdivisions that led to water level mapping that was based on several data points (instead of one) and an average of those water levels were used in the potentiometric map.
- 3. In areas with groups of wells, there would be some with shallow groundwater levels (30 feet below ground surface or less), and those that were relatively deep (over 60 feet deep). Since the shallow aquifer is of interest, shallower groundwater levels were utilized. This keeps in line with the 15-foot mixing zone thickness in the mass balance spreadsheet and is more conservative.

It was found in this exercise that shallow groundwater levels very closely parallel the slope of the ground surface. This is to be expected and the topographic slope was used in the first iteration of the study. The shallow groundwater levels range from 10 to 20 feet bgs in most areas. When a groundwater well is located adjacent to a surface water feature, the water level dropped below 10 feet to as shallow as 4 feet bgs. The following images from the Teton County GIS system with contours and measurements show the change in ground slope as we proceed west of the site toward the Teton River. At the project site the topographic slope is approximately 1%, which has been confirmed by our onsite survey. As we proceed about a mile west, the slope decreases to about 0.7%. The groundwater surface followed this same general trend but is sloping a little less steep than the ground and continues to get less steep the closer and closer we get to the River. One USGS well elevation from the Nicklin report, which is west of the river, shows that the groundwater slope likely changes direction at the River.

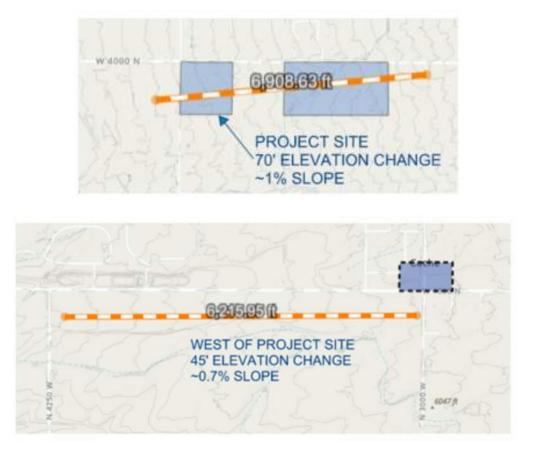


Figure 9: Area Topography from Teton County GIS

The results from the potentiometric mapping are shown below. Individual well points around the project site result in slopes varying from 0.8% to just shy of 2.0%. Averaging these slopes up and down gradient of the site result in a hydraulic gradient of 0.9%.

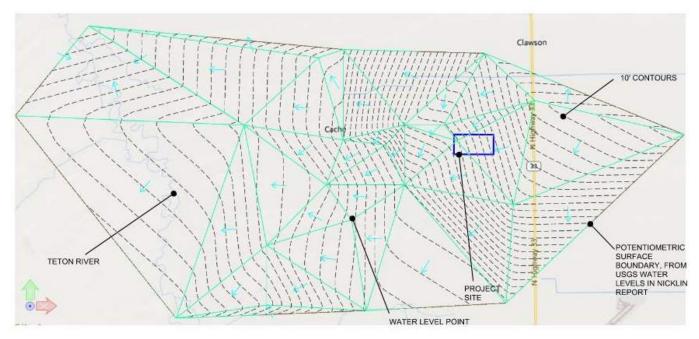


Figure 10: Hydraulic Gradient of 0.9% Estimate from nearby Well Logs

Y2 proposes to use a groundwater slope of 0.9% for the mass-balance spreadsheets. Additional information showing how the average slope across the site was estimated, along with notes and the drilling logs used to map the groundwater surface are provided in Appendix E.

DESIGN FLOW

Each developable lot will allow up to 5 bedrooms. Therefore 350 gallons per day per developable lot was used for the design flow. Per Idaho Administrative Procedures Act (IDAPA) 58.01.03.007.08 the following table was used to develop the design flow:

ESTABLISHMENTS						
Single Family Dwelling and Mobile Homes, 3 bedroom. Add/subtract 50 gallons/bedroom	250/Unit					

MIXING ZONE THICKNESS

The default mixing zone thickness was used for all the lots.

LOT LAYOUT PARAMETERS

The site flows from east to west, with a slight tilt towards the south. For each lot and combination of lots laid out above, the distance perpendicular to flow was measured using the lot lines and the gradient depicted in Figure 10. Please see Figure 12 for a dimensioned drawing for the lot layout parameters used in the mass balance spreadsheets.

PARCEL IMPERVIOUSNESS

The west half of the development has an average lot size of 3.12 acres. The east half has an average lot size of 4.32 acres. A relatively large house, outbuildings, and an access drive are assumed to use a maximum of 6,000 square feet for each lot. This results in an imperviousness of between 3 and 4%. A value of 4% was used in the spreadsheets.

NATURAL RECHARGE RATE

The natural recharge rate was calculated as 1.65 inches per year from the natural recharge rate calculation in the spreadsheet. The average annual precipitation amount according to the Tetonia Experiment Station is 18.96 inches per year.

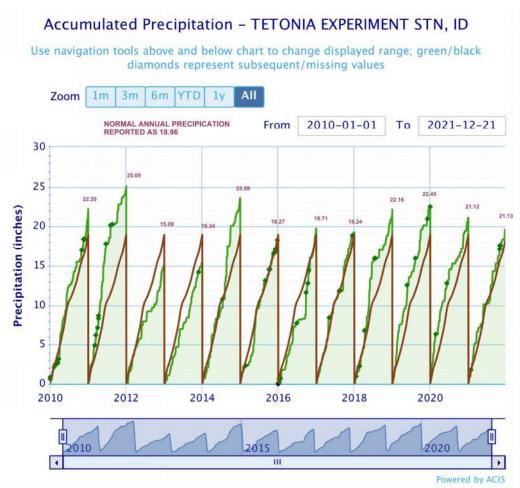


Figure 11: Annual Precipitation Information

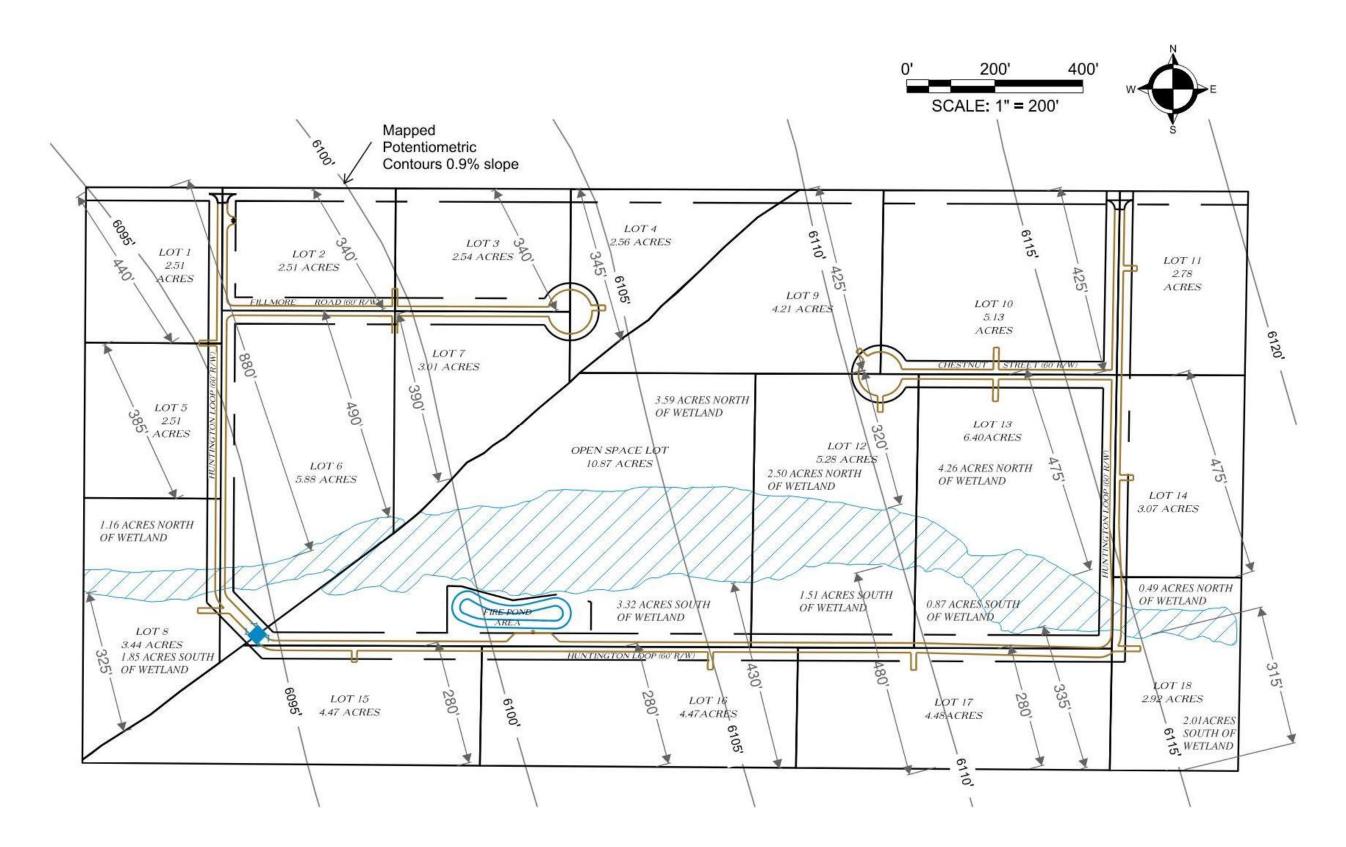


Figure 12: Lot Layout for Mass Balance Spreadsheet

BACKGROUND NITRATE CONCENTRATION

The background nitrate concentration of 3.4 mg/L was used from the data point east of the site from the IDEQ 2020 Nitrate Priority Area GIS server. This was the highest value from the upgradient sample points.

SEPTIC TANK EFFLUENT CONCENTRATION

The density and layout of the proposed subdivision does not lend itself well to a conventional septic system and still meet nitrogen loading criteria. It is therefore proposed that each lot have an Advanced Septic System installed to reduce nitrate loading on the groundwater. Extended Treatment Package Systems (ETPS) manufacturer's report have nitrogen tank effluent concentrations ranging from under 10 up to 20 mg/L. This is a vast improvement over the typical septic tank nitrogen treatment, which only reduces nitrogen by 2-10% down to around 45 mg/L, mostly by trapping it in the scum and solids that are removed when a tank is pumped (Washing DOH 2014). Advanced Septic Systems will be required in the subdivision to ensure protection of groundwater.

While these systems can attain 20 mg/L or better effluent quality, the purpose of the Level I study is to provide a conservative screening to ensure that nitrate concentration increases are limited to 1 mg/L at the study area boundary. Therefore, an effluent limit of 32 mg/L was used in the mass balance spreadsheets. This value is supported by the IDEQ <u>Nutrient-Pathogen Evaluation Program for On-Site Wastewater Treatment Systems</u> modeling default parameters for enhanced nutrient treatment systems.

MASS BALANCE SPREADSHEET RESULTS

The summary of the downgradient nitrate concentration of each lot is shown in the table below. Individual mass balance spreadsheets are in Appendix D.

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Lot #	Downgradient Nitrate Concentration (mg/L)	≤1 mg/L Nitrate Increase?	Lo	ıt #	Downgradient Nitrate Concentration (mg/L)	≤1 mg/L Nitrate Increase?
1	3.7	Yes	1	1	3.7	Yes
2	3.8	Yes	9-	11	4.1	Yes
3	3.8	Yes	1	2	3.8	Yes
4	3.8	Yes	1	3	3.7	Yes
5	3.7	Yes	1	4	3.7	Yes
6	3.6	Yes	9-	14	4.1	Yes
7	3.7	Yes	12 [.]	-14	4.0	Yes
1-7	4.2	Yes	1	5	3.8	Yes
1-3, 5-7	4.1	Yes	1	6	3.8	Yes
1,2,5,6	3.9	Yes	15 [.]	-16	3.9	Ye
5,6	3.8	Yes	1	7	3.8	Yes
5-7	4.0	Yes	15 [.]	-17	4.0	Yes
8	3.8	Yes	16	-17	4.0	Yes
9	3.7	Yes	1	8	3.8	Yes
10	3.7	Yes	15	-18	4.2	Yes

Table 3: Nitrate Concentration Results

PATHOGEN TRANSPORT ANALYSIS

According to Appendix A, Nutrient-Pathogen Evaluation Technical Guide for On-Site Wastewater Treatment Systems in Teton County, Idaho "pathogen transport modeling cannot be done with enough certainty to be useful". However, septic systems, by design are very effective at removing pathogens from the wastewater stream prior to water migrating into the aquifer. A properly maintained system will develop a biomat in the leachfield which prevents migration of pathogens off site.

PHOSPHOROUS TRANSPORT ANALYSIS

Phosphorus is the chemical of concern when assessing impacts to surface water bodies. Additional phosphorus can lead to excessive vegetation and algae growth that lowers the oxygen in the surface water body. This leads to fish die-off and an overall decrease in water quality. The irrigation canal bisecting the subdivision would be the nearest water body that could be affected by Phosphorus concentrations. However, being that it is an irrigation canal for water crops, Phosphorus is less of a concern than if it were a stream that housed aquatic life. The Nitrogen analysis demonstrates that nitrate increases from the development will be held to less than 1 mg/L increase. Phosphorus, even assuming no treatment from the septic system, will be similarly diluted and not decrease groundwater or surface water quality.

CONCLUSION

The proposed layout of the JC Ranches Subdivision will not degrade groundwater utilizing the proposed Advanced/Extended Treatment Package Systems (ETPS). The ETPS must be approved for reductions in nitrate as ETPS that are not rated for nutrient reduction will be allowed. The outcome of the mass balance spreadsheets is limited to 5 bedrooms per developable lot. The site layout with nutrient reducing ETPS and limiting to 5-bedroom single family house per lot will protect groundwater from degradation due to the development of the JC Ranches Subdivision.

REFERENCES

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- United States Department of Agriculture, Natural Resources Conservation District. <u>Custom Soil Resource Report for</u> <u>Teton Area, Idaho, and Wyoming JC Ranches Subdivision.</u> Downloaded September 6, 2022.

Washington Department of Health. <u>How Nitrogen from Septic Systems Can Harm Water Quality.</u> August 2014.

Appendix A: EIPH LETTER REPORT



TETON COUNTY 820 Valley Centre Drive Driggs, ID 83422 OFFICE (208) 354-2220 FAX (208) 354-2224

06/28/2022 Teton County Planning and Zoning 89 North Main Suite 6 Driggs, Idaho 83422

Jim Herbert 4750 S Cortland Drive Jackson, WY 83001

Re: JC Ranches Subdivision

I have reviewed the application to have RP05N45E101000 subdivided into twenty-five (25)) lots to be known as JC Ranches Subdivision and determined the parcel and proposed lots are suitable for subsurface waste disposal systems to serve residences.

Soil information observed is consistent across the parcel and is as follows:

0-48 inches of fine sandy loam topsoil with minor rock content. B1 Soil Type. The thickness of this layer varies across the property ranging from 10 inches up to 48 inches. Minor rock content. Below the top soil layer to depth of 120 inches lies very gravelly fine to medium sandy loam with up to 65% rock content. Rock content has slight increase with depth. Rounded clasts range from .5 to 5 inches diameter. A2b Soil Type.

No groundwater evidence was seen any test hole. No bedrock was encountered to a depth of 120 inches.

The parcel is cut diagonally by an irrigation canal/ditch. Due to deep fast water the eastern portion was not accessible. The soil horizon and rock content will not change from that observed in the western portion of the property. Adjacent properties to the south and east have been evaluated and have the same soil types and horizons. All areas of the parcel are suitable for sub-surface wastewater disposal systems. All drainfields should be sized using B1 application rate of 0.6 gpd/sq ft due to the rock content in the lower layer.

The parcel has a very minor slope from the Northeast to the southwest.

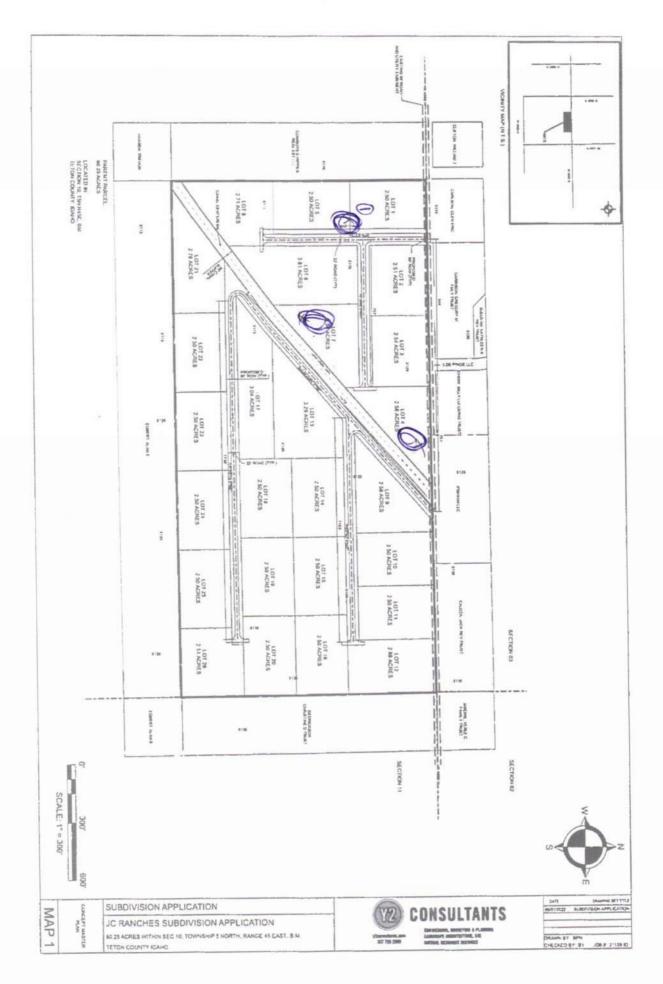
Eastern Idaho Public Health gives preliminary approval of the application to divide RP05N45E101000 creating the JC Ranches Subdivision. The site is suitable for residential sub-surface waste disposal. Individual subsurface sewage disposal systems may be allowed in accordance with IDAPA 58.01.03 and the Technical Guidance Manual for Individual Subsurface Waste Disposal. All current Idaho Rules must be met. Suitability criteria and required separation distances are to be maintained.

A copy of the final plat is to be provided to the Health District at the time the Health Certificate is signed. The application fee balance if any will also be collected prior to signing the Health Certificate. If this application /plan changes for any reason, please coordinate those changes in advance, with this office.

Kapplein

Kathleen Price REHS/MSG Eastern Idaho Public Health District kprice@eiph.idaho.gov 208-354-2220





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*



ENVIRONMENTAL HEALTH 1250 Hollipark Drive Idaho Fails, ID 83401 OFFICE (208) 523-5382 FAX (208) 528-0857

SUBDIVISION ON-SITE

Conducte	ed on: June 2027 Time: Travel On-site										
I. N	I. NAME OF SUBDIVISION: JC KAUCHES										
II. L	LOCATION (COUNTY): Tetow										
III. G	SENERAL INFORMATION:										
A	. Current Land Use: Ag Pastelle.										
В	Adjoining Property Use: <u>Same as above</u> Kesidential										
С	: Surface Water (on or near development): Isrigstion Canal Ditch -										
	. Slope: MILDR to None										
E	. Drainage Areas Present: No										
F	Rock Outcrop Present: No										
G	B. Wetland Indications: No County has designated griall amount										
IV. E	VALUATION: of property as welland, but this is Ag welland/flood										
A	 Individual water and sewer: Does each lot appear to have sufficient area to install proposed system and to meet minimum separation requirements? Yes X 										
В	 Individual water and central sewer: Does there appear to be sufficient area for central system and replacement area? Yes No 										
C	 Individual sewer and central water system: Does each lot appear to have sufficient area to install proposed system and to meet minimum separation requirements? Yes No 										
D	 Individual sewer and public water system: Does each lot have sufficient area to install proposed system and to meet minimum separation requirements? Yes No 										
COMMEN	NTS:										
No from	proplem w/ suitabilty for septic systems. 50' separation irrigation Ditch Required from any portion of septic										

EHS: Tuce

TEST HOLE INFORMATION

	SUBDIVISION_JCRAuches	DATE	
		~ 60 'from canal/ditch	
	Test Hole #	Test Hole #	Test Hole # 3
	Location: Between Lot 1+5	Location: Lot 7	Location: NE CONNEL LEB3
	Depth:_120"	Depth: 120 "	Depth: 120 "
36"	finie sendy laent Varies in thickness B1 Very grewelly Sandy loan A2b meducin to coarse send 50% rack content .5" to 3" chameter Rounded No GW/ No Bedpock	Sandy suby 100 m. Menor Rock content 10 B2 5 andy gravel. 40-50% Rock content 1-5" clasts chameter Rounded. gravel wereceses w/depth 65% A2b. No 60 / No Bodeale	" Suety 10 com B, Very chavely loom Sand Perie sand Grewel, 5-3" Diameter 50%. A 2b. No 600/NoBao Earle
	_ Uual	Test Hole # portion of si	CASTERN test Hole #
	Location:	Location:	Location:
	Depth:	Depth:	Depth:

Appendix B: WELL DRILLER REPORTS

IDAHO DEPARTMENT OF WATE	ER RESOUF	RCES			Office Use Only]
WELL DRILLER'S R	EPORT				ted by			
1. WELL TAG NO. D <u>(1957</u>)					Rge			
	11. WELL	TES	TS		1/4 1/4 : : Long:			
DRILLING PERMIT NO7773451	D Pu		🗆 Bailer		□ Flowing			J
2. OWNER:	Yield gal./i	min.	Drawdown		Pumping Level	T	ime	
Name Sean & Lori Collins						-l		
Address PO Box 589 City Driggs State Id Zip 83422	· · · · · ·					+		
City Driggs State 12 21p 037 22	Water Temp				Pottom	1 hole temp.		
3. LOCATION OF WELL by legal description:	Water Quality					iole terrip.		
Sketch map location must agree with written location.					Depth first Wate			
N	12. LITHO	LOGI	C LOG: (De	scribe r	epairs or aband	lonment)	Wa	ter
	Bore Dia. From	To	Remarks: Litho	logy, Wat	ter Quality & Terr	perature	Y	N
Twp. <u>5</u> North S or South □ Rge. <u>45</u> East S or West □	10" 0'	3'	Top Soi		-			┢
$W \bullet E^{E} Sec. 2, NW 1/4 SW 1/4 1/4$	3'	20			ravel			
W Sec. 2, $\underline{\mathcal{N}}W$ 1/4 $\underline{\mathcal{S}}W$	6" 20'	170	Brown Cla	y \$ Gra	wel			
L L Lat: : : Long: : :	170'	184'	Broken Ry	julite =	Gravel		X	⊢
Address of Well Site							<u> </u>	┢
(4 PCAKS) (Give at least name of road + Distance to Road or Landmark) City Driggs							-	┢
LtBikSub. Name_ <u>Packsaddle</u>								\square
Estates								
4. USE:								
N Domestic □ Municipal □ Monitor □ Irrigation							<u> </u>	┢
Thermal Injection Other TYPE OF WORK shark all that apply (Repleasement atc)								1
5. TYPE OF WORK check all that apply (Replacement etc.)								
6. DRILL METHOD							 	
🕅 Air Rotary 📋 Cable 🛛 Mud Rotary 🗌 Other							<u> </u>	⊢
7. SEALING PROCEDURES		CE	IVED				╎	-
SEAL/FILTER PACK AMOUNT METHOD								
Material From To Sacks or Pounds	A	PR 1	0 2002					
Bentonite d' 20 600165 aven Boke							–	┢
	Departm	entolV	later Resources	<u>`</u>			+	
Was drive shoe used?							<u> </u>	-
Was drive shoe seal tested? \Box Yr N How?			RE	CET	VED			
8. CASING/LINER:				<u></u>	0000			_
Diameter From To Gauge Material Casing Liner Welded Threaded				326				
6" +18" 180' 250 steel N N			Departmen	ni of Wate astern Re	n Resources		+	╞
			E8	istern He	Giru:			\top
Length of Headpipe Length of Tailpipe		ļ						
9. PERFORATIONS/SCREENS							–	┢
Perforations Method				D / <	2/1 / 1-		<u> </u>	
Screens Screen Type	Completed				Completed			ole)
From To Slot Size Numeror Diameter Material Casing Liner	Date. Sta		12-17-01		Completed	1004	01	
	13. DRIL	LER'S	CERTIFIC	ATION				
				ruction sta	indards were compl	lied with at	t	
	the time the ri	•						
-	Company Nar	пе <u>///а</u>	rtins Well	Servi	CeFirm Firm Firm	No. 4/	78	
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	/	1.1.	+2.	. D	111	7/20.		
ft. below ground Artesian pressureIb. Depth flow encounteredft. Describe access port or	Firm Officiaí⊈ and	400	4 Juli	111-	Date <u>//-</u>	<u>-01</u>		
control devices: well Cap	and Driller or Ope	rator			Date			
					-			

FORWARD WHITE COPY TO WATER RESOURCES

\sim					[Office Use (Only		1
Form 238-7 IDAHO DEPARTMENT OF WATER RES	OUR	CES	<i>V</i>	a 🛆	Well II	D No.			
WELL DRILLER'S REPOR	T			くえ		cted by			
1. WELL TAG NO. D 0037465			<u>C</u>	101	Iwp	Rge 1/41/4	_Sec 1/		
DRILLING PERMIT NO.	12 \		ESTS:		Lat:	: : Long		+ :	
Water Right or Injection Well No.	1		ump	🗋 Bailer	Air				1
2. OWNER:		Yield gal.		Drawdov		Pumping Level		îime 7	
2. OWNER: Name <u>Autolity Construction</u> Address <u>3780 taylor Uitew</u> City <u>Iditho Frans</u> State Id Zip - 93401		20	Y	450	a	1250	11	e K	
Address 3120 EAYlor Uiter City Idatho Frans State Id Zip 73401									
City <u>Latthe Frans</u> State <u>La</u> Zip <u>3401</u>	Wate	r Temp.	$\overline{\mathcal{O}}$	001	I	Botto	i om hole ter	np. de	al
3. LOCATION OF WELL by legal description:		,	and the second second	comments:				ملي ١٠	~ ~ ~~
You must provide address or Lot, Blk, Sub. or Directions to well. Twp North K or South 🗆						Depth first W	ater Encou	inter 🟒	00
Rge. <u>∠∠.5</u> East <i>S</i> Z or West □	13. L	ITHOL	OGIC I	OG: (Descr	ribe repai	rs or abandonmer			ater
Sec. 2 , 1/4 /2011/4 Jul 1/4	Bore Dia,	From	То	Remarks:	Lithology,	Water Quality & Ter	nperature	Y	N
	5	0	20	Sand	a ga	AUPI		_	t
Lat: : : Long: : : Address of Well Site <u>407</u> 405 Pinos	Ğ	20	70	CLAY	$\alpha \vee q$	NAU el		1	
Give Distance of road + Distance to Road or Landmark)	Ķ	70	Ø	Blow	m O	CLAY	Lanconca		ļ
Lt. Bik Sub. Name Los Piros	1	20	100	C/4,	XQZ	3/14vel		1	
· · · · · · · · · · · · · · · · · · ·								-	
4. UŞE:									
A Domestic Aunicipal Monitor I trigation									
□ Thermal □ Injection □ Other									
	<u> </u>								
5. TYPE OF WORK check all that apply (Replacement etc.)									
(
6. DRILL METHOD:									
Air Rotary Cable Mud Rotary Other									
7. SEALING PROCEDURES						1999 ba bi ana 1 an 1 an 1 bi a			
Seal Material From To Weight / Volume Seal Placement Method									
Berkenite O do 450 OVERBORE									
Was drive shoe used?									
Was drive shoe seal tested? Y N How?					· · · ·				
B. CASING/LINER: Diameter From To Gauge Material Casing Liner Welded Threaded	.	-			RFO	DEIVED			
6 +1 99 230 5teel & - & -							}		
					JAN	2 6 2006			
				Der	oanma ni .				
Length of Headpipe Length of Tailpipe Packer					East	of Water Resource am Region	<u>e</u>		
 						T			
9. PERFORATIONS/SCREENS PACKER TYPE									
Perforation Method									
From To Slot Size Number Diamater Material Casing Liner					-				
	Con	npleted	Depth		10			easural ~	
	Date	e: Star	ted	1-4-0	06	Completed	1-0	6-0	26
				RTIFICATIO					
OCELLTER PACK			nat all mi ras remo		onstruction	standards were co	omplied wit	h at the	Ð
Filter Material From To Weight / Volume Placement Method					mal	lell.	10	2	1-
	Comp	any Na	me 🧾	-11102 T	N/ 1707	Well a	Kirm N	0. <u>@1</u>	\sim
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Princi	pal Drill	er Z	2 feeld	Tulo	hell well d.	te <u>/ a</u>	<u>Z-</u>	04
tt. below ground Artesian pressurelb.	and	· or Ope		/	-		te		
Depth flow encounteredft. Describe access port or control devices:	DUIIAL	u upe	au II_			Ua	ເຜ		
	Opera	ator I		Drinoinal Duill	nr and Div	Da Operator <i>Required</i>	te		
						ure of Driller/Opera			
FORWARD WHITE COPY	TO W	ATER F	RESOU	RCES					

Form 238-7 IDAHO DEPARTMENT OF WATE	ER RESOURCES	Office Use Only
V'(I, M) Well DRILLER'S R	EPORT	Inspected by
		Twp RgeSec
1. WELL TAG NO. D 002/179		1/41/41/4
DRILLING PERMIT NO	11. WELL TESTS:	Lat: : : Long: : : — Air □ Flowing Artesian
	Yield gal./min. Orawdo	
2. OWNER: Name Christian Anufer	30 t	
2. OWNER: NameChristian Onufer Address_P.O. Box 3724 City_JackSonStateWyZip_83001		
City Juck Son State Wy Zip 83001		
	Water Temp.	Bottom hole temp.
3. LOCATION OF WELL by legal description:	Water Quality test or comments:	
Sketch map location must agree with written location.		Depth first Water Encounter
N	12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water
Twp. 5 North South 🗆	Bore Oia, From To Remarks: Lli	hology, Water Quality & Temperature Y N
X Roe 45 Fast or West	8" 0 20 Sar	1 + Gravel X
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		16 Gravel X
Gov't Lot County Teton 160 acres		
Lat: : Long: : :		
S Address of Well Site		
(Give at least name of road + Distance to Road or Landmark)		
LtSub. Name		[
4. USE:		
Domestic Invicipal Monitor Irrigation		
☐ Thermal ☐ Injection ☐ Other		
5. TYPE OF WORK check all that apply (Replacement etc.)		
🖉 New Well 🗆 Modify 🗆 Abandonment 🔲 Other		
6. DRILL METHOD		
Air Rotary 🗌 Cable 🗌 Mud Rotary 🗌 Other		
7. SEALING PROCEDURES		
SEAL/FILTER PACK AMOUNT METHOD		
Material From To Sacks or Pounds		
Bentonite 0 20 5 Sacks Annular		
	RECEIVED	
Was drive shoe used? \blacksquare N Shoe Depth(s) 79 Was drive shoe seal tested? \blacksquare Y \square N How? A		
8. CASING/LINER:	AUG - 6 2001	
Diameter From To Gauge Material Casing Liner Welded Threaded	AUG O COU	RECEIVED
6" +1 -79 .25 STELL .	Department of Water Resources	JUL 2 6 2001
	Department of video field	
Length of Headpipe Length of Tailpipe		Eastern Region
9. PERFORATIONS/SCREENS		
Perforations Method		80' (Measurable)
Screens Screen Type	Completed Depth	<u>80'</u> (Measurable) 2001 Completed 6 - 25 - 200
From To Slot Size Number Diameter Material Casing Liner	Date: Started 0-01-	
	13. DRILLER'S CERTIF	ICATION
	I/We certify that all minimum well co	nstruction standards were complied with at
	the time the rig was removed.	
	Company Name Trade Sou	A ant Pr'11 30 Firm No. 343
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	1 1	1 1 1 2
17 ft. below ground Artesian pressureIb.	Firm Official	idon Pr. 11 mo im No. 343
Depth flow encounteredft. Describe access port or	and	
control devices:	Driller or Operator	Date

FORWARD	WHITE	COPY	ΤO	WATER	RESOURCI

(Sign once if Firm Official & Operator) ES

Porm 238-7 309 DMD IDAHO DEPARTMENT OF WELL DRILLEF Use Typewriter or	SREPOR Ballpoint Pen	6	8044	Twp.	Office Use C ected by Rge 1/41/4	_Sec_		
1. DRILLING PERMIT NO	<u>∽§</u> 11. WELL ⊐ Pu	TES [*]	TS: □ Bailer	Lat:	: : Long:	. :	:	
2. OWNER: Name Larry Repnolds Address P. O Box 527	Yield gal./r		Drawdown	<u> </u>	Pumping Level	Ēź	Time h	2
Address P. O Box 327 City DRIGGS State D Zip 834:	2					<u> </u>		
3. LOCATION OF WELL by legal description:	Water Temp Water Quali	ty test o			Bottom			
Sketch map location <u>must</u> agree with written location.	12. LITHO	LOGI			pth first Water End repairs or abande			
Twp North Z or South Rge East Z or West	Bore Dia. From	™ 3	Remarks: Lith	ology, W	/ater Quality & Temj	perature	Y	N
E Rge. 4/5 East Ø or West □ E Sec. 3 NE 1/4 SE 1/4 1/4 SE 1/4 Gov't Lot County Tefen 160 acc	-1/4 3 	(2) [4]	Sun	ul	1 Gran	e/	X X	
Lat: : Long: : : S Address of Well Site <u>135 LEigh CR</u> <u>Estates</u> <u>City</u>	ek	<i>rc</i>		<u> </u>				
(Give at least name of road + Distance to Road or Landmark) LtBlkSub. Name								
4. USE: Z Domestic □ Municipal □ Monitor □ Irrigation □ Thermal □ Injection □ Other						· · ·		
 5. TYPE OF WORK check all that apply (Replacement New Well Modify Abandonment Other 6. DRILL METHOD Air Rotary Cable Mud Rotary Other 7. SEALING PROCEDURES 			R	ECI	EIVED			
SEAL/FILTER PACK AMOUNT METHOD Material From To Sacks or Pounds					0 1997			
Centonite 0 20 200 occubo			Depart	Easter	<u>Water Resource</u> n Regio			
Was drive shoe used? □: Y □(N Shoe Depth(s) Was drive shoe seal tested? □:Y □:N How?								
8. CASING/LINER: Diameter From To Gauge Material Casing Liner Welded Th CT + I + C + FO + CEEF + C	eaded							
<u>C'FIYO</u> FO <u>Steef</u> A = A 			EIVE				-	
Length of Headpipe Length of Tailpipe 9. PERFORATIONS/SCREENS		<u>5.19</u>						
Perforations Method Screens Screen Type	Completed	Depth						
From Yo Slot Size Number Diameter Material Casing Line				4_/ ATION	_ Completed	- 8-	71	<u> </u>
	IAMe certify	hat all	minimum well	construct WATE	tion standards we			
10. STATIC WATER LEVEL OR ARTESIAN PRESSURI	Firm Name_ : Firm Officia(P.O. B(0X 502 10 83274	Firm No	<u>5</u> 11	DG - 9 j
Depth flow encounteredft. Describe access port control devices:	or and Supervisor o	or Opera	<u>\</u>	· Le if Firm Off		-8/	[[]	147

FORWARD WHITE COPY TO WATER RESOURCES

Former238-7 1/94 WWW V C IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT PERMIT ID 702564 Use Typewrite or Ball Point Pe							
1. DRILLING PERMIT NO. 22-94-E-175-000 Other IDWR No		ГS: □ Bailer → ir	55	5 900 sian			
2. OWNER: Name	Yield gal./min.	Drawdown 7.0	Pumping Level 75	Time 2 Nr			
City <u>Mur.p.h.p</u> State <u>Ca</u> Zip <u>95247</u> 3. LOCATION OF WELL by legal description:	Water Temp		hole temp] /			
Sketch map location <u>must</u> agree with written location.		r comments: <u>C.C.</u>		ent) _{Water}			
W S Twp. <u>5</u> North $\overrightarrow{\Delta}$ or South East $\overrightarrow{\Delta}$ or West Sec. <u>3</u> , <u>NE</u> 1/4 <u>5E</u> 1/4 <u>1/4</u> 1/4 Gov't Lot <u>3</u> 2 County <u>7 E 7 O N</u> 100 acres	Bore Dia. From To 4 O 20 (20 33 35 46 45 60	Remarks: Lithology, Wa Dard + gri Dand Warled Clay + grb	·····				
Address of Well SiteCity	660 80	grow 0					
LtBlkSub. Name_Reigh Creek							
4. PROPOSED USE: Domestic Municipal Monitor Irrigation Thermal Injection Other		DE					
Mud Rotary Air Rotary Cable Other 7. SEALING PROCEDURES SEAL/FILTER PACK AMOUNT METHOD Material From To Sacks or Oentmite O 20 2 Orm Bone			t of Water Resources				
Was drive shoe used? Y O N How?		0	CT 1 4 1994				
Diameter From To Gauge Material Casing Liner Welded Threaded Image: Constraint of the state o	RECEIV DEC 719	94 1	ent of Water Resourc				
Length of Headpipe Length of Tailpipe 9. PERFORATIONS/SCREENS © Perforations Method © Screens Screen Type	Completed Depth		MAY 0 8 1995	Measurable)			
From To Slot Size Number Diameter Material Casing Liner	Date: Started 13. DRILLER'S I/We certify that all r the time the rig was Firm Name/ e	CERTIFICATION	ion standards were co	<u>-1-94</u>			
<u>25</u> ft. below ground Artesian pressurelb. Depth flow encounteredft. Describe access port or control devices:	Firm Official and Supervisor or Opera	(Sign once if Firm Office	fue Date				

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Diameter, length and	location of casing	139 ft. of 16" O.D. (CASING 12" IN DIAMETER C CASING OVER 12" IN DIAM	DR LESS, GIVE INSIDE DIAN IETER, GIVE OUTSIDE DIAME	METER; Eter)	-
Thickness of casing_	<u>‡ in.</u> Casing ma		CONCRETE, WOOD, ETC.)		-
Water will be used (for Irrigation	Weight of casi	ng per lineal foot		-
		(TYPE AND SI			
_			-		-
-		g.p.m. and of shut off	Processo		
	thours				
		.m. orc.f.s. Drawdowr			
		Total depth of well142			-
Size of drilled hole_		143			
	•	, T. <u>5</u> N/s, R. 45	- SW 1/2	4 SE 1/4	
,				· · · · · · · · · · · · · · · · · · ·	
			NW1	/4 NE 1/4	
	ho Falls, Idaho]
		<u> </u>		te well in section	
	147-11 Br. 1	Permit ID 800174		•. • • • • • •	· · · · · ·
025222	STATE RECLA	MATION ENGINEE	R OF IDAHO		2842 C164
60-	WELL LO	OG AND REPORT	OF THE	was contract of Boolan	a de l e
			i		
			T		

بالمراجع فتيت

a ja maj

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
	<u> </u>	· · · ·		
				usels

Number and size of perforations		located	_feet to	_feet from ground
	Perfor	ated 133 ft.		
_		• • • • • • • • • • • • • • • • • • • •		-
Date of commencement of well	May 1962	Date of completion	of well <u>M ay 1962</u>	2
				(4585)
5N-	- 4SE	3	د ^ر نہ د ^ر s	•

025223

From Feet	To Feet	Type of Material	Formation Ans. Yes or No	Caning Perforated Ans. Yes or No
0	15	Coarse gravel and clay		-
15	25	Coarse gravel and clay	F	
25	31	Coarse gravel and clay		
31	45	Sand and gravel- some water		
45	62	Sand and gravel		
62	90	Sand and gravel		
90	116	Clay and gravel		
116	120	Sand and gravel		
120	126	Sand and gravel-more water		
126	142	Clay and gravel		
			. [
				· ·
	· .			
				•
	<u> </u>	······································		
<u> </u>	<u>+</u>			
	†			
		If more space is required use Sheet No. 2		

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is true and correct to the best of my knowledge and belief.

_, 1963__.

Signed R. P. Cope

By____Rhea_Cope__

Dated April 15

License No. 28

Form	238-7
6/07	

0

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Flowing

artesian

Water Y Ν X

1. WELL TAG NO. D. 20083626							
1. WELL TAG NO. D 200 3 36 20 Drilling Permit No.				LEVEL and WELL TEST			
Water right or injection well #	Dept			untered (ft) <u>()</u> Sta			
Water right or injection well # 2. OWNER: Scott Barlow	- vvate			Bottom hole	temp. ("F)		
Name	18/-11	test:	ss por		Test method:		
Address 27614 Robillard Springs In. City Katy State TX Zip 77494	Dra	wdown (fee		scharge or Test duration	Pump Bailer	Air	Flowin
CityKatiStateTxZip77494			· y.	ield (gpm) (minutes) ろち えい			artesia
3.WELL LOCATION:							ō
Twp. <u>5</u> North 🗰 or South 🗖 Rge. <u>45</u> East 📈 or West [Wate			omments:			
Sec. 3 $1/4 - \frac{1}{40 \text{ acres}} \frac{1}{4} \frac{1}{40 \text{ acres}} \frac{1}{100 \text{ acres}} \frac{1}{$	13. LI Bore	THOLOG	SIC LOO	G and/or repairs or aband	donment:		
	Dla.	From (ft)	To (ft)	Remarks, lithology or desc abandonment, wa		Y	Water
Gov't Lot County County	(In) (0	0	10	Clay & gravel		T	×
Lat. <u>43</u> <u>47.263</u> (Deg. and Decimal minutes) Long <u>111</u> <u>67.46</u> (Deg. and Decimal minutes)	10	10	38	Clay & Carrivel		- V	+*
Long (Deg. and Decimal minutes)	6	38	100	clay & atoriel		Ý	+
Address of Well Site 1530 Leigh Creek Estates Rd	-			1 10 - 1			
(Give at least name of road + Distance to Road or Landmark) City Tetonia	-						
Lot Blk Sub. Name	_					_	_
4. USE: Domestic I Municipal Monitor I Irrigation I Thermal I Inject Other	on						_
5. TYPE OF WORK:	-)						
New well Replacement well Modify existing well Abandonment Other	_						
6. DRILL METHOD: A Air Rotary I Mud Rotary I Cable I Other						_	
7. SEALING PROCEDURES:	_						_
Seaf material From (ft) To (ft) Quantity (lbs or ft) Placement method/procedure Benton/Le 0 38 (100 465 (6" from a cash 20							+
Bentonite 0 38 1100 405 10" temp casing		1				-	+
8. CASING/LINER:							
Diameter From (#) To (#) Gauge/ Motorial Constant Lines Threaded Molda	d						
	u						
6 +1 100 250 Stacl 0 0 0			<u> </u>			_	_
	1					-	
							+-
		1					+
Was drive shoe used? MY 🔲 N Shoe Depth(s) 🔢 🖓	-				the second second	-D	
9. PERFORATIONS/SCREENS:				R	ECEIVI	Ęυ	
Perforations 🔲 Y 🖉 N Method	_			0	CO 2 8 202	0	
Manufactured screen 🔲 Y 🖉 N Type	_	-		<u>```</u>	LI LU LUL		0
Method of installation	_			Espain	rent of Water Re		2
From (ft) To (ft) Slot size Number/ft Diameter Material Gauge or Schedule					Eastern Hestern	_	
(nominal) Waterial Gauge of schedule			1 /	urable): 100°	2/1/		
	1 / 1	Started: 2			pleted: 8/31/2	0	
				TIFICATION: imum well construction stand			
Length of Headpipe Length of Tailpipe	the tir	ne the rig	was rer	noved.	bards were comp	nied witr	at
Packer 🖸 Y 🎇 N Type	Comp	any Nam	n	lel Annias Drillin	G Co. No	518	
	- 001110	any wan	e trut	ier renthing an invi	<u>g</u> Co. No	2.0	
10.FILTER PACK: Filter Material From (tt) To (tt) Quantity (lbs or tt ³) Placement method	"Princ	ipal Drille	er	A	Date	1.1	
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	Drille	· De	el!	DO	Date	11/20	>
	*Oper	atorII	0	10	Date	18	
		6	2 1	<u>o'</u>	0	1.100	
11. FLOWING ARTESIAN:	Opera	tor I	Gand	piquet	Date	1/20	
Flowing Artesian? 🔲 Y 🛛 🖉 N Artesian Pressure (PSIG)	- * Sigr	ature of	Princip	al Driller and rig operator a	are required.		

Describe control device ____

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control

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Form 278-1 MIN IDAHO DEPARTMENT OF WAT	Office Use Office
1. WELL TAG NO. D UD24444 DRILLING PERMIT NO	EPORT inspected by
Other IDWIR No V 2. OWNER: Runbend Construction	□ Pump □ Bailer Air □ Flowing Artesian <u>Yield gal/min</u> Drawdown Pumping Level Time <u>C</u>
Address P.O. 604 588 City_VictorState_01.zip_83465	Water Temp. Bottom hole temp
3. LOCATION OF WELL by legal description: Sketch map location must agree with written location.	Water Quality test or comments: Depth first Water Encounter 77
Twp North & or South	12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water Bore Dia From To Remarks: Lithology, Water Quality & Temperature Y N
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3" 0 / dirt 1 76 bravel & Sund 76 11 Band & bravel
(Give of least name of road + Distance to Road or Landmark) City Tetonic	li 120 bravel
LtBikSub. Name	
4. USE: Domestic I Municipal I Monitor I Irrigation Thermal I Injection I Other	
5. TYPE OF WORK check all that apply (Replacement etc.) New Welt Modify Abandonment Other 6. DRILL METHOD	Image: Second
7. SEALING PROCEDURES	
SEAL/FILTER PACK AMOUNT METHOD Naterial From to Sacks or Pounda Bentoucter 0 20 200 Outrobort	
Was drive shoe used? Y N Shoe Depth(s)	NOV 1 2 2002
Was drive shoe seal tested?	Department of Water Resources
6' +2 120 22 Steel 2 2 2	
Length of Headpipe Length of Tailpipe 9. PERFORATIONS/SCREENS	
Perforations Method Screens Screen Type	Completed Depth(Measurabje)
	Date: StartedCompleted 13. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Company Name_Teton Lopter Worlds 500
Depth flow encounteredft. Describe access port or	Firm Official

Form 238-7 . IDAHO DEPARTMENT OF WA	TER RESOURCES Office Use Only
VINT WELL DRILLER'S Permit ID 703039	REPORT oint Pen 68043 Inspected by 1/4 1/4 1/4
1. DRILLING PERMIT NO. <u>22 - 47 - E - 0055 - 000</u> Dther IDWR No	11. WELL TESTS: Lat: : Long: : : □ Pump □ Bailer
2. OWNER: NameAurAddressAddressAC83	Yield gal./min. Drawdown Pumping Level Time 30 + / h.v.
Dity CascadeState_ID_Zip_8.36[]	Water Temp Bottom hole temp
B. LOCATION OF WELL by legal description: Sketch map location <u>must</u> agree with written location.	Water Quality test or comments: Depth first Water Encountered 12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water
	Bore Dia. From To Remarks: Lithology, Water Quality & Temperature Y N
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	6 0 6 TOP Sort 6 40 Sund Strewel conv Clar X 40 87 Clay & Gravel J # X
Lat: : Long: : : Address of Well Site	40 87 Clay 2 Ghavel 7 7 × 87 50 Clay 7 Ghavel 7 7 ×
(Give at least name of road + Distance to Road or Landmark)	
tBlkSub. Name	
USE:	
CTYPE OF WORK check all that apply (Replacement etc.) New Well Modify Abandonment Other	
Air Rotary Cable Mud Rotary Other	RECEIVED
SEAL/FILTER PACK AMOUNT METHOD Material From To Sacks or	JUL 3 0 1997
Bentinité à 20,100 Direibere	
Vas drive shoe used?	
Vas drive shoe seal tested?	RECEIVED
6" to1 100 250 Stref × 0 × 0	MICROFILMED AUG 0 8 1997
ength of Headpipe Length of Tailpipe	CT 1-5 1997 Department of Water Resources
PERFORATIONS/SCREENS Perforations Method	Completed Depth
From To Slot Size Number Diameter Material Casing Liner	Date: Started 7/7/47Completed 7/7/47
	13. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with a the time the rig was removed.
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Firm Name Teton Ubter Ubrks LLC Firm No. 500
<u>VO</u> _ft. below ground Artesian pressurelb. Depth flow encounteredft. Describe access port or control devices:	Firm Official Date
	(Sign once if Firm Official & Operator)

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FORWARD WHITE COPY TO WATER RESOURCES

Form	238-7
6/07	

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0084046	12. S ⁻		VATER	LEVEL and WELL TESTS:				
Drilling Permit No.	Depth first water encountered (ft) 38' Static water level (ft) 38'							
Water right or injection well #	Water temp. (⁰ F) 58* Bottom hole temp. (⁰ F) 58*							
2. OWNER:								
Name Randy Dawson	Well t				est method:			
Address PO, BOX 1535 City Driggs State ID Zip 83422	Draw	down (feet		charge or Test duration P ald (gpm) (minutes)	ump Baller		owing tesian	
city Driggs State ID Zip 83422	110		20					
3.WELL LOCATION:								
Twp. ⁵ North 🖾 or South 🗖 Rge. ⁴⁵ East 🖾 or West 🗂	Water	quality to	est or co	mments:				
Twp. 5 North IX or South II Rge. 45 East IX or West II Sec. 3 1/4 NW 1/4 SE 1/4 1/4		HOLOG	IC LOG	and/or repairs or abandon	ment:			
	Bore Dia.	From (ft)	To (ft)	Remarks, lithology or descripti abandonment, water		Wa	-	
Gov't Lot County teton	(In) 10"	0'	1.2	clay gravel		Y X	N	
Lat. 43 0 47.160 (Deg. and Decimal minutes)	6"	44'		clay gravel		X		
Long. 111 007.747 (Deg. and Decimal minutes) Address of Well Site 40.83 66 11106				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Address of Well Site MILOS LUG JIL								
(Give at least name of road + Distance to Road or Landmark) City								
Lot Blk Sub. Name								
4. USE:	-							
Domestic Municipal Monitor Irrigation Thermal Injection								
Other				· · · · · · · · · · · · · · · · · · ·		-		
5. TYPE OF WORK:								
Abandonment Other								
6. DRILL METHOD:								
🔀 Air Rotary 🔲 Mud Rotary 🔲 Cable 🔲 Other								
7. SEALING PROCEDURES:								
Seal material From (ft) To (ft) Quantity (lbs or ft') Placement method/procedure bentonite 0' 40' 1150 lbs overbore								
						\vdash		
	-							
8. CASING/LINER:								
(nominal) From (ii) Schedule Material Casing Liner I hreaded Welded								
6" +1 118' .250 steel								
				1-11 +				
Was drive shoe used? 🛛 Y 🔲 N Shoe Depth(s) 118'					V	=0		
9. PERFORATIONS/SCREENS:					12 n 1 sar	1		
Perforations 🔲 Y 🕱 N Method								
Manufactured screen Y X N Type					nego regornas			
Method of installation		_		1	ਹਵਾਰ । ਜਿਸ ਨੇ ਇਸ			
Dismoster				(00)				
From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule	Comple	ted Dept	h (Meası	urable): 120'				
	Date St	arted: Ja	n 25, 2	.021 Date Complete	_{ed:} Jan 29, 202	21		
				FIFICATION:				
				mum well construction standar	ds were complie	ed with a	it	
Length of Headpipe Length of Tailpipe		e the rig			70	_		
Packer 🔲 Y 🗵 N Type	Compa	ny Nam	e Denr	ning Well Drilling	Co. No. <u>/0</u> 2	2		
10.FILTER PACK:	*Princi	oal Drille	r Sta	ven Justin Farmer	Date Feb 1	I, 2021		
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	<u>12</u> .00	54		Justin Farms	Feb (1 2024		
	*Driller	Ja	ven	Jusun Farme	∠ Date	., 2021	_	
	*Opera	tor II	_	0	Date			
11. FLOWING ARTESIAN:	Operat	orl			Date			
Flowing Artesian?							-	
Describe control device	" Signa	ature of	Principa	al Driller and rig operator are	required.			

Form	238-7
6/07	

Describe control device

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 00 81943	12 S		NATER	LEVEL a		re.		
Drilling Permit No								
Water right or injection well #								
2. OWNER:						stemp (1)		_
Name Riverbend Builders	Well t		oo port_			Test metho	d.	_
Address 2810 Wood bridge City Idaho Falls State ID Zip 83402		/down (fee		charge or	Test duration	Pump Bail		r I
City Idaho Falls State ID Zip \$3402	10	n'		eld (opm)	(minutes)			è
3.WELL LOCATION:		<u> </u>	- 1-	<i></i>	WC MIN			
Twp. <u>5</u> North X or South Rge. <u>45</u> East X or West	Water	quality t	est or co	omments:		-		
	13. LIT	HOLOG		and/or r	epairs or aban	donment:		
Sec. 3 1/4 1/4 1/4 1/4 1/4	Bore Dia.	From	To	Remark	s, lithology or desc	ription of repairs	sor	W
Gov't Lot County _ Tetor	(in)	(ft)	(ft)		abandonment, w	ater temp.		γ
Lat43(Deg. and Decimal minutes)	10"	0	20	topsoil	grant			5.
Long. /// 07.73/ (Deg. and Decimal minutes)	6"	30'	40'	gravel	Sand			¥,
Address of Well Site 1901 Leigh Greek Estate	6	40'	60'		, einy			7
(Give at least name of road + Distance to Road or Landmark) City TERONIC		80'	108'		gravel			4
(Geve at least name of road + Distance to Road or Landmark)		1001	120'	grave				Ý
Lot Blk Sub. Name		1.00	1000	11000				-
4. USE: Domestic Municipal Monitor Irrigation Thermal Injection Other								
5. TYPE OF WORK:								
Abandonment Other Other Other								
🖬 Air Rotary 🔲 Mud Rotary 🔲 Cable 🔲 Other								
7. SEALING PROCEDURES:								
Seal material From (ft) To (ft) Quantily (lbs or ft ²) Placement methor//grocedure								
Betonite O 40' 1100165 Temp Costing								
Querburden								_
8. CASING/LINER:								_
(nominal) From (ii) Fo (ii) Schedule Material Casing Liner Threaded Welded								
6 12 120 250 Steel								
							1	-
Was drive shoe used? 🗗 Y 🔲 N Shoe Depth(s) 120'					1. A	2 - 1 - A - F	· tal	
9. PERFORATIONS/SCREENS:					1.1.5	03 Zuzd		_
Perforations 🔲 Y 🗴 N Method								_
Manufactured screen I Y 🖾 N Type					Capartment o	Water Meso	unces	
					East	em Region		
Method of installation								_
From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule	Comple	eted Dept	th (Measu	urable):	120'			
	Date S	arted	7/6/	2.0	Date Com	nlatadi 71	5/20	,
						pleted: //	1100	
					construction star	idards were co	beilam	with
Length of Headpipe Length of Tailpipe	the tim	e the rig	was ren	noved.				
Packer 🔲 Y 🕅 N Type	Compa	anv Nam	e Dei	ming	Drilling	Co. No	518	\$
10.FILTER PACK:				1 1	1			
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	*Princi	pal Drille	-10	Assel	Summing	Date _	7-2	4 -
	*Driller	The	- 0	Soh	1	Date	7/8	120
	*Opera	itor II				Dete		
		6	21	11.62		Date _	~1.1	
11. FLOWING ARTESIAN:	Operat	or Ik	iley	H:11		Date	1/8/2	0
Flowing Artesian? 🔲 Y 🛛 🛱 N Artesian Pressure (PSIG)	* Sign	aturo of	Princip	al Drillor a	nd sig operator	are required		

Bore Dia.	From	То		pairs or aband s, lithology or desci	ption of repairs or	W	ater
(in)	(ft)	(ft)		abandonment, wa		Y	
10"	20'	20	topson ,	grant		V	1
6"	40'	40'	gravel	Sand		15	-
ω	60'	80'	grovel	alou		Ý	-
	80'	108'	Clay.	gravel		Ý	
_	100'	120'	grave	/		Ý	
_							-
							_
							_
						1	
							_
							_
						-	-
					EL/ED		
				(115	0.3 2021		_
				1400	U J ZUZU		
				Capariment of	Welsr Resource m Region	5	
				Edste	III IIAAnoli		
				1201			
Comple	eted Dept	7/1	1 - 10	120'			_
Date St		116/2	-	Date Comp	leted: 7/7/2	0	
We ce		t all minii	TFICATIO mum well c noved.		ards were complie	ed with a	at
	iny Name	5	ning	Drilling	Co. No. <u>5</u>	18	
	oal Drille	- 11	and	Humans	Date 7	-21-2	20
Princip			allas Al	1 Junang	Date		-

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WEL	L TAG	NO. D	0075	647						
-	Permit						_		_	
Water r	ight or in	jection w	ell #	1 4 -		- 11:00				
2. OWN		enjam	in & F	leath	er B	ollin	ger			
Name	s_P.C	Box	2/1							
				_			n		8346	52
	Tetor				Sta	te		Zip	0040	
3.WELL			_			_	45	🖂		
Twp Sec	3No	rth 🔀	or So	1/4	40 ac	Rge 100_1/ 785	4 <u>5</u> 4	±ast ⊠ W_1/4 ^{cres}	or V	Vest 🛄
Gov't Lo	t		County_	Teto	n					
Lat	4	13 0	47	166			(De	eg. and D	ecimal mi	nutes)
Long.	1	11 0	8.2	232			(De	g and D	ecimal mi	nutes)
Address	of Well	Site	1827 L	eigh	Cre	ekE	states	Rd.	_	
(Cive at least	name of road	+ Distance Io	Road or Lan	dmark)	City	_Te	tonia			
Lot	BI	k	Sub.	Name						
4. USE:			_					-	_	
Dom Other				Monito	or [_] Irriga	tion] Thern	nal 门	Injection
5. TYPE			cement v	vell		odify e	xisting w	/ell		
🗍 Aban	donment	ο⊡	ther							
6. DRIL X Air R			Rotary		able		Other_			
7. SEAL				(h) 10.0	antih (lba an fi	Die		- Al	
	material tonite		and and any surrow of some			Ibs or n			etnoa/pro). Casi	
							1			
8. CASI							1.			
Diameter (nominal)	From (fl)	To (ft)	Gauge/ Schedule		Male	rial	Casing	Liner 1	Threaded	Welded
6"	+2'	98'	.250	s	teel					\boxtimes
			-	1						
				-						
Was driv	e shoe i	Leod2 D	av 🗆	N Sh		anth(e)	 98'			
9. PERF						spar(s)				
Perforatio										
Manufac										
Method o			_	чтуре		_				
			1	Dia	meler				_	
From (ft)	To (ft)	Slot size	Number		minal)	M	aterial	Gau	uge or Sc	hedule
				_				-		
	-	_		_				-	_	
L								1		
Length of					Lengt	h of T	ailpipe			
Packer [e							
10.FILTI				_	1	_				
Filter	Material	Fro	m (ft)	To (ft)	Qua	antity (Ib	is or ft ^a)	Plac	ement me	elhod
					-					
11. FLO	WING A	RTESI	AN:							

Flowing Artesian? 🗋 Y 🛛 N Artesian Pressure (PSIG)____ Describe control device

12.	STATIC	WATER	LEVEL	and	WELL	TESTS:

Depth first water encountered (ft)	10'	Static water level (ft)	10'
Water temp. (⁰ F)	Bottom	hole temp. (⁰ F)	

Describe a	access	port
------------	--------	------

Well test:			Test m	ethod:		
Drawdown (feet)	Discharge or yield (gom)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
80'	25 +	30 min.			\boxtimes	

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia.	From	То	Remarks, lithology or description of repairs or	Wa	ter
(in)	(ft)	(ft)	abandonment, water temp.	Y	N
10"	0'	38'	clay & gravel	X	
6"	38'	78'	sand & gravel	X	
	78'	98'	sand & gravel	x	
	· · · · · · · · · · · · · · · · · · ·				
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			L		
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1					
			RECEIVED		_
			AUG 3 1 2018		
			Department of Water Recources		
			Eastern Flagton		
-					_
omple	ted Dept				
ate St	arted:	8-24	4-18 Date Completed: 8-24-18	i	

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

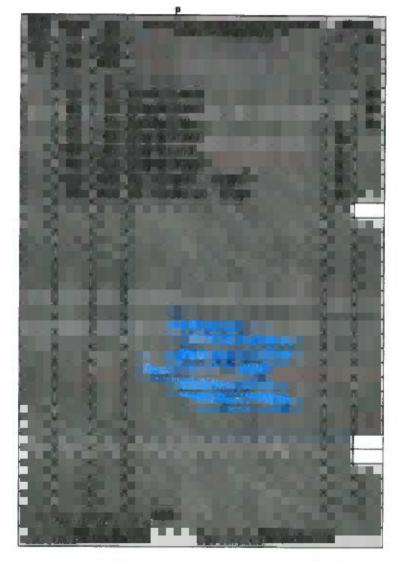
Company Name Dapiel Deaning Drilling inc.	Co. No. 518
*Principal Driller	Date 8-24-18
*Driller Jela Deums	Date 8-24-18
*Operator II	Date
Operator I	Date 8-24-18

* Signature of Principal Driller and rig operator are required.

Form 238-7 11/97		RTMENT OF WATE			RCES		Inspec Twp	Office Use Only ted by Rge		_	
1. WELL TAG NO. D 00210	12						· • • • • -	1/4 1/4	1/4		
			11 1		. TES	те		: : Long:			
DRILLING PERMIT NO	7940		11.		JMp			□ Flowing			l.
Other IDWR No	,	<u>-</u>				Drawdown		Pumping Level		me	
2. OWNER: Name <u>Cleve</u> & Angela Address 2066 <u>Sherweerd</u> City Orange City	Du			ield gal.		Drawdown		rumping cover	1		
Name Cleve & Angela	Jooker	· · · · · · · · · · · · · · · · · · ·						<u> </u>			
Address 2066 Sherweed	Forest DI	eive							+ ·		
City Orange City	State	FL Zip 3276	L			<u> </u>	L				
			Water	Temp.				Bottom h	nole temp.		
3. LOCATION OF WELL by	legal descrip	tion:	Water	Quality	test or	comments:					
	-							Depth first Wate	er Encounte	r	
Sketch map location must agree with	i willen location.		12. I	ITHO	LOGI		escribe i	repairs or aband	onment)	Wat	tar
N					1			· · · · · · · · · · · · · · · · · · ·			
	North 🕅	or South 🗆	Bore Dia.	From	Тο	Remarks: Lithe	ology, Wa	iter Quality & Tem	perature	Y	N
	North 🕰	or West	8n	0'	18'	SANd	fra	vel Class			x
w	East.450		14	101	35'	Sauch					K
Sec. 3	,1/4	or West [] <u>5</u> <u>1</u> /4 <u>5</u> <u>1</u> /4 <u>160 acres</u> 1/4 <u>160 acres</u>	111	201	84		Grau			K	
	CountyZ	ston	6	52	107	JANC	CRUU	a cing_		~~	
	: Long:				┣			V			
Address of V	Vell Site_ [72	Leyh Creek Drugs		·	<u> </u>						
(Give at least name of road + Distance to Road or	City_	DRUGS			.						├{
(Give at least name of road + Distance to Hoad or	Landmark)	* 1			_					-	
Lt BlkS	Sub. Name										\vdash
							··				Ŀ
4. USE:								·······			
4. USE.	Monitor										
🗌 Thermal 🛛 Injection	Other										
5. TYPE OF WORK check all 1					1						
🝂 New Well 🗆 Modify 🗔	Abandonment	Other			-			<u> </u>			
6. DRILL METHOD											
🛛 🖾 Air Rotary 🗆 Cable	Mud Rotary	Other				·······					\vdash
											
7. SEALING PROCEDURES			-								\vdash
SEAL/FILTER PACK	AMOUNT Sacks or	METHOD			+	ECELV	LED				
Material From T	Pounds		ļ		11				-		\vdash
Bentonite 0 18	21 200 LBS	aver Bore				4.6	2001				<u> </u>
						NIL I C					
Was drive shoe used?	Shoe Depth(s)				17	anti di Alta				 	L-
Was drive shoe seal tested?	N How?					l					
8. CASING/LINER:					1			RECEIV			
	Material Casing	Liner Welded Threaded						TLUEIV	E.D		
Oiameter From To Gauge $6^{\prime\prime}$ 1^{\prime} 84^{\prime} $250^{\prime\prime}$				<u> </u>		1			0.04	Γ	\square
6 1 07 650	steel a							JUL 0 2 2	.001		
				ł			Der	artment of Water F	20000		
				<u>†</u>	+	1		Eastern Regio	NU NUCES		
Length of Headpipe	Length of Tailp	ipe								F	
9. PERFORATIONS/SCRE	ENS									<u> </u>	┟─┤
Perforations Metho				1		I		<u> </u>		L	L
Screens Scree	n Type		Co	mplete		epth_ <u>84</u> '				surat	ile)
			Dat	te: St	arted	5-30-0	l	Completed	5-30	-01	
From To Slot Size Numbe	r Oiameter Material	Casing Liner				······					
						S CERTIFI					
							struction s	tandards were comp	lied with a	t	
	-+ +				- \	removed.	< N	11.			
	<u> </u>		_		~		Noi	Iline -	. Nr. 57	18	
			Comp	bany Na	ame 1	Enning -	Jer	Date 5-3	1 NO		
10. STATIC WATER LEVE	L OR ARTES	IAN PRESSURE:						· _ ~ ·	20-0	1	
ft. below ground Artes	sian pressure _	lb.	Firm	Official	[sh	und / Mill	ung	Date	0.01		
Depth flow encountered			and		-	-	A				
control devices:		· · · · · · · · · · · · · · · · · · ·	Drille	r or Op	erator		<u> </u>	_ Date			

FORWARD WHITE COPY TO WATER RESOURCES

(Sign once if Firm Official & Operator)



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ho

Form 238-7 6/89

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

DM ELL DRILLE State law requires that this report be filed wit within 30 days after the complete	h the [Directo	r, De <mark>pa</mark>	rtme	nt of W		5		
1. WELL OWNER Permit ID 701985	7.	WATI		VEL				<u>.</u>	
Name Don Dabel		Static	water	level	F	feet below	w land surface.		
Address Star Route Box 343 Wilson	1	Artesi	an clos	ed-in	pressur	re i			-
Owner's Permit No. 22-91-E-087WYDM	ing		erature	·	°F.	ve □ Cap Quality or temperature z			_
2. NATURE OF WORK	8.	WELL	. TEST	DAT	A				
New well Deepened Replacement Well diameter increase							D Other		
Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)		Discharg 5				Pumping Level	Hour	s Pumped	
3. PROPOSED USE			19.4						
→ Domestic □ Irrigation □ Test □ Municipal □ Industrial □ Stock □ Waste Disposal or Injection	9.	LITH	OLOG		G				
Other (specify type)	Bore Diam.	De From				Materia	al	Wa Yes	ter No
4. METHOD DRILLED	\mathcal{O}^{T}				nd-	Gravel			Ž
		<u>56</u> 59	59	l Sr	<u>ave</u> l	+ Gravel + Brows + Grave	i clay		M
Rotary Air 🗆 Hydraulic 🗆 Reverse rotary 🗆 Cable 🛛 Dug 🗂 Other		-		\square		· · · · · · · ·	· · ·		
5. WELL CONSTRUCTION									
Casing schedule: Steel Concrete Other		-			. .				
Thickness Diameter From To									
inches feet feet									
inches inches feet feet feet		· · · · ·							
Was casing drive shoe used? XYes									
Was a packer or seal used? \Box Yes ∇ No		•. •				<u>-</u> .			~
Perforated? 🗆 Yes 🕱 No									
How perforated?		. <u>.</u>							
Size of perforation inches by inches									
Number From To feet feet									
perforations feet feet feet									
feet feet									
Well screen installed? 🗆 Yes 🛛 🛣 No		-			······································				
Manufacturer's name Type Model No Diameter Slot sizeSet fromfeet tofeet									
Diameter Slot size Set from feet to feet									
Gravel packed? Yes No Size of gravel							_		
Placed from feet to feet Surface seal depth Material used in seal: Cement grout									
□ Bentonite									
Overbore to seal depth									
Method of joining casing: 🗆 Threaded 🛛 X Welded 🗆 Solvent Weld					_				
Cemented between strata Describe access port	10.			ad	51-	$1/a_1$	shed 8/2	1a1	r -
	<u> </u>					1			
6. LOCATION OF WELL Sketch map location must agree with written to ation	11.							JJ	
N						the rig was re	nstruction stan moved.	dards we	ere
Subdivision Name		Firm N	lame ()	halo	mind	ont Aille		HZ	
W E E MAY 0 5 1992			ىرى 1 ر ر ا				$\prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j=1}^{n} \prod_{i=1}^{n} \prod_{j=1}^{n} \prod_{j$		-
Lot No Block No		Addres	s 664	W.	aw	N. Blu	FDate <u>81</u> 3	6141	-
		Signed	by (Fi	rm Of	ficial)	Bunt	Hendre	1/	_ [
County 16ton				and		K	1	2.1	
5E 14 5W4 Sec. 3, T. 5 NX R. 45 W		_	((opera		Kip_		<u>khm</u>	lej-

WELL DRILLER'S REPORT 0.936.4.9 Inspected by Inspected by Permit ID 702847 Inspected by Inspected by Ins		DEPARTMENT OF WA	TER RESOL			ı
1. DRILLING PERNIT NO.22.94-E.0037.000 II. WELL TESTS: III. WELL TESTS: C PURP ID C PURP ID III. WELL TESTS: III. WELL TESTS: Name: Tod J. e. C'in dy FRIPAL Address P.0. Dax 540 Purp ID Purp ID Chy Driggs State ID State ID Purp ID	C OM	WELL DRILLER'S	REPORT	0936 <u>49</u> In	spected by vp Rge	
2. OWNER: Name. Dol. or C'in dy FRIPNEL Name. Dol. or C'in d	1. DRILLING PERMIT NO.		11. WELL TE			
Name Tol.d. c. Cin.d.y. FR120.d. Ciry = Dr. 19 Corrections States TD 21p, 8342.2 3. LOCATION OF WELL by legal description: Water Temp. States TD 21p, 8342.2 Water Temp. Water Temp. States TD 21p, 8342.2						
City _ D2rtg g.s	Name <u>Todd or Cindy F</u> Address P.O. Box 590	Right				2Hrs
3. LOCATION OF WELL by legal description: Sketch map location must agree with written location. N N <td>City Drugs</td> <td>State ID Zip 83422</td> <td></td> <td></td> <td></td> <td></td>	City Drugs	State ID Zip 83422				
Skotch map location must agree with written location. Dopth first Water Encountered N Twp	3. LOCATION OF WELL by legal	description:			Port Bottom	hole temp.
Image: H		_			Depth first Water En	countered 80
Two				GIC LOG: (Descri	be repairs or aband	onment) Wate
Image: Sec. 3 Sec. 1/4 SUB 1/4 1/4 Govt Lot Counting: Tetra tree 1/2 Society of grant Govt Lot Counting: Tetra tree 1/2 Society of grant Address of Well Site Image: 1/2 Society of grant 1/2 Image: Society of grant Govt Lot: Society of grant 1/2 Society of grant Image: Sub. Name Image: 1/2 Society of grant 1/2 Society of grant Image: Sub. Name Image: 1/2 Society of grant 1/2 Society of grant 1/2 Society of grant 1/2 <			Dia. From To		, Water Quality & Tem	perature Y
Sort Lot Could yet and the serve of Lag yet and th	E Sec. 3	5E'1/4SW1/4 1/4	142		arout	
S Address of Well Site 100 we have read of load of Looman City 100 we have read of load of Looman City 11 Bit Sub. Name 12 Bit Sub. Name 13. USE: Nonitor Irrigation 100 moment Injection Other 11. TYPE OF WORK check all that appy (Replacement etc.) 12. Name Municipal Municipal 13. DBILL METHOD Mud Rotary Other 2. SAILING PROCEDURES Mud Rotary Other 3. CASING/LINER: Macount Method 14. 6 4 2 100 2C State New Weeked Treeded 15. OFFORATIONS/SCREENS Screen S Screen Type 10. Static WATER LEVEL OR ARTESIAN PRESSURE: Completed Depth TOO 10. Static WATER LEVEL OR ARTESIAN PRESSURE: Market Market Level Lora Artesian pressure b.	Gov't Lot Cour		2127	Jane B	A A A I	+ clay
City	S	Ç	27 40) larg gru	welt clay	
Image: Sub. Name A. USE: X.Domestic Municipal Monitor Irrigation Thermal Injection Other Structure S. TYPE OF WORK check all that apply (Replacement etc.) X. New Well Modify A bandonment Other S. TYPE OF WORK check all that apply (Replacement etc.) X.Air Rolary Cable Mass drive shoe used? Municipal Mass drive shoe used? AdoUNT Mass drive shoe used? AdoUNT Was drive shoe used? Method S. CASINGLINER: Cable Demonstre Method Screen S Screen Type PerfORATIONS/SCREENS (Method Perforations Method Screen S Screen Type Perforations Method Struct WATER LEVEL OR ARTESIAN PRESSURE: Mathom groupstoped Ibout flow encountered Method Ibout flow encountered Method In Ontical Method In Ontical Ibout flow encountered			55 8	O Chy	frand +00	J X
4. USE: Domestic Municipal Inrigation S. TYPE OF WORk check all that apply (Replacement etc.) S. TYPE OF WORK check all that apply (Replacement etc.) S. DRILL METHOD Abardonment Other S. ALING PROCEDURES Mud Rotary Other Statistic Report Material From To Statistic Report Statistic Report METHOD Was drive shoe used? Y N Shoe Depth(s) Was drive shoe used? Y N How? Bereforations Method Material Casing Liner Perforations Method Monetal Casing Liner Prom To Stot Size Numeter Casing Liner Screens Screen Type Inner Inner Inner Inner Bereforations Method Method Screen Type Inner					mal que	ref X
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S. TYPE OF WORK check all that apply (Replacement etc.) New Well Modify Abandonment Other S. TYPE OF WORK check all that apply (Replacement etc.) New Well Other S. TyPE OF WORK check all that apply (Replacement etc.) Call of Calle Call of	4. USE;					
Wew Well Modify Abandonment Other 3. DRILL METHOD Mud Rotary Other XAIR Rotary Cable Mud Rotary Other 7. SEALING PROCEDURES Status Material From To Status From To Stacks of METHOD Material From To Stacks of METHOD Was drive shoe used? Y N Shoe Depth(s) Bagartmant of Water Resources Vas drive shoe used? Y N Shoe Depth(s) Bagartmant of Water Resources Vas drive shoe used? Y N Shoe Depth(s) Bagartmant of Water Resources Vas drive shoe used? Y N Shoe Depth(s) Bagartmant of Water Vas drive shoe used? Y N Shoe Depth(s) Bagartmant of Water Vas drive shoe used? Y N No Shoe Depth(s) Bagartmant of Water S. CASING/LINER: Length of Tailpipe Casing Casing Casing Casing Casing Casing Casing Completed Depth DOO (Measur Screens						
6. DRILL METHOD Air Rotary Cable Mud Rotary Other 7. SEALING PROCEDURES SEAL/FILTER PACK AMOUNT METHOD MILL METHOD Staturit 0 20 O.M.M. Bank Method Magentimal Cases Addit Rotary 0 20 O.M.M. Bank Method Method Method Mase drive shoe used? 7 N. Shoe Depth(s) Makerial Casing Uner Method Method 3. CASING/LINER: Demeter Makerial Casing Uner Method	5. TYPE OF WORK check all that app	ly (Replacement etc.)				
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SEAL/FILTER PACK AMOUNT METHOD Material From To Secks or Beneficial O O Socks or Beneficial O O Socks or Beneficial O O Socks or Was drive shoe used? Y N Shoe Depth(s) Mas drive shoe seal tested? M How? Beneficial Casing Incr Weided Threaded Immeter From To Gauge Material Casing Incr Beneficial Casing Incr Incr Incr Incr Incr Beneficial From To Gauge Material Casing Incr Beneficial Material Casing Incr Incr Incr Incr <td></td> <td>Rotary 🗆 Other</td> <td></td> <td>DEC</td> <td>SUN SIII</td> <td></td>		Rotary 🗆 Other		DEC	SUN SIII	
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Bendania Pounds Bendania O <td></td> <td>DUNT METHOD</td> <td> </td> <td></td> <td>17 1996</td> <td></td>		DUNT METHOD			17 1996	
Was drive shoe used? Y N Shoe Depth(s) Was drive shoe seal tested? Y N How? 3. CASING/LINER: Diameter From 100 250 250 Statul 260 100 250 Statul 260 100 250 Statul 260 250	Pou	inds				
Was drive shoe used? Y N Shoe Depth(s) Was drive shoe seal tested? Y N How? B. CASING/LINER: Diameter From To Gauge Material Casing Liner Welded Threaded Image Material Casing Length of Headpipe Length of Tailpipe B. PERFORATIONS/SCREENS Image Material Perforations Method Screens Screen Type From To Stot Size Number Diameter Material Casing Prom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing Image Trom To Stot Size Number Diameter Material Casing	Bentinite 0 20 20	00 over Bare		Department	of Water Resource	
Was drive shoe seal tested? Y N How? B. CASING/LINER: Dameter To Gauge Material Casing Liner Weided Threaded (e + 2 10.0 252 Statul X Image: Casing					a District Office	
B. CASING/LINER: Diameter From To Gauge Material Casing Liner Weided Threaded (a + 2 100 257 Strue) ength of HeadpipeLength of Tailpipe ength of HeadpipeLength of Tailpipe P. PERFORATIONS/SCREENS Perforations Method Completed Depth Completed Depth Completed Depth Date: Stated 5-14-94 Completed Depth Date: Stated 5-14-	Nas drive shoe used? Y X N Shoe Dep	oth(s)			·····	
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Image: Construction of the state of the		Casing Liner Weided Threaded				
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ength of Headpipe Length of Tailpipe D. PERFORATIONS/SCREENS NON Perforations Method Screens Screen Type From To Stores Screen Type From To Stores Screen Type Completed Depth 100 Date: Started 5-14-94 Completed Depth Completed Depth Date: Started 5-14-94 Completed Depth 13. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied The below ground Artesian pressure Math flow encountored ft		- $ -$				
Perforations Method Method Perforations Method Screens Screen Type From To Slot Size Number Diameter Material Gasing Liner To Slot Size Number Diameter Material To Slot Size Number Dis Number Diameter Material To Slot Size Number Dis Number Dis	I		₩ 6211996			
Perforations Method NOV2 Image: Screen Streen Type Image: Screen Type	PERFORATIONS/SCREENS					
From To Slot Size Number Diameter Material Casing Liner Date: Started 5-14-94 Completed 5-14-94 Completed 5-14-94 Date: Started 5-14-94 Completed 5-14-94 Completed 5-14-94 Date: Started 5-14-94 Completed 5-14-94 Completed 5-14-94 O. STATIC WATER LEVEL OR ARTESIAN PRESSURE: Image: Started 13. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied the time the rig was removed. Firm Name Te to n I/Arter I/arks I/eirm No. Startic WATER LEVEL OR ARTESIAN PRESSURE: Ib. Firm Official I/Interval I/arks I/eirm No. Startic fit below ground Artesian pressure Ib. Ib. Firm Official I/Interval I/arks I/eirm No.	Perforations Method	ONL				
From To Slot Size Number Diameter Material Casing Liner Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction standards Image: Construction s	Screens Screen Type			oth	1001	(Measurable)
0. STATIC WATER LEVEL OR ARTESIAN PRESSURE: I/We certify that all minimum well construction standards were complied the time the rig was removed. Image: Static water in the state in pressure	From To Slot Size Number Diameter	r Material Casing Liner				-1976
0. STATIC WATER LEVEL OR ARTESIAN PRESSURE: Firm Name_Teton UAtor lorks (Lirm No.) Image: Artesian pressureIb. Firm Official (Muchanal Control of C	<u> </u>					
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:			the time the rig w	ai minimum well constr as removed.	ruction standards wer	re complied with
The below ground Artesian pressureIb. Firm Official			-		p Illarke 1.	F
Penth flow encountered ft Departies and a state of the second stat					11/ /	The second se
peptit now encounteredtt. Describe access port or and	ft. below ground Artesian pre	essurelb.	Firm Official	2/uchus	Lttop	5-15-0
	Depth flow encounteredfl control devices:	t. Describe access port or	13	1.1	M V	5-15-
Supervisor or Operator Date Date			Supervisor or Op			<u></u>

FORWARD WHITE COPY TO WATER RESOURCES

	F WATER RESOURCES Use Typewriter or
Permit ID	-0000
1. DRILLING PERMIT NO. 22-94-5-147	11. WELL TESTS:
2. OWNER: Kent Hale	Yield gal./min, Drawdown Pumping Level Time 3.5 5.5 5.5 1 N/~
Address P. O. BOX 117 City Tetonia State State 83432	
	Water TempBottom hole temp
3. LOCATION OF WELL by legal description: Sketch map location <u>must</u> agree with written location.	Water Quality test or comments: <u>Clean + geod</u>
	12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water
wFRge45_ East or South □	Dia. From To Remarks: Lithology, Water Quality & Temperature Y N 6 0.20 Draw L around (12 H To)X
W E Sec. 3, 5 € 1/4 0 1/4 1/4 Gov't Lot County 7€ 7€ 1/4 1/4 1/4	3040 Washed Curren X
Pucksaddle Ra. City Ditoria	4 40 60 sand t glavel
(Give at least name of road + Distance to Road or Landmark) CityConta	
LtBlkSub. Name	
4. PROPOSED USE:	
Thermal Injection Other	
5. TYPE OF WORK	RECE DECENTRES
6. DRILL METHOD	AECE, VED DECENVED
7. SEALING PROCEDURES	Parton
SEAL/FILTER PACK AMOUNT METHOD Material From To Sacks or Pounds	Partment of Water Resources
Borlonete 0 20 3 Ontone	Restern District Office
Was drive shoe used? Y I N	
Was drive shoe seal tested? Y I N How?	
Diameter From To Gauge Material Casing Liner Welded Threaded	OCT 14 1994
	Eastern District Office
Length of Headpipe Length of Tailpipe	MAY 08 1995
Perforations Method	
Screen Screen Type From To Slot Size Number Diameter Material Casing Liner	Date: Started <u>9-18-94</u> Completed <u>9-18-94</u>
	13. DRILLER'S CERTIFICATION
	I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Firm Name Telon Water Works Firm No 506
ft. below ground Artesian pressurelb. Depth flow encounteredft. Describe access port or	Firm Official Date Date Date Date
control devices:	Supervisor or Operator Sign once it Firm Official & Operator)

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FORWARD WHITE COPY TO WATER RESOURCES

Form	238-7
6/07	

Describe control device _____

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0084048	12 51			LEVEL and WELL TESTS:			
Drilling Permit No.				Intered (ft) <u>40'</u> Static wa	ter level (ft)	40'	
Water right or Injection well #	Water	temp (⁰	F) 58*	Bottom hole temp.	⁰ E) 58*		
2. OWNER:				Bottom noie temp.	, (†) <u> </u>		
{Name} Bob Fylling	Well to		o pon		method:		
Address 1020 Cresent Lane _{City} Bismark State ND Zip 58501		down (feel		charge or Test duration Dum			Flowing
City Bismark State ND Zip 58501	90'		/ yie	eia (gom) (minutes)		X	artesian
3.WELL LOCATION:				45 🛛		ā	
Two 5 North X or South T Base 45 Fast X or West T	Water	quality t	est or co	omments:			
Twp. 5 North 🗵 or South 🗖 Rge. 45 East 🗵 or West 🗍 Sec. 3 1/4 SW 1/4 SE 1/4		HOLOG		and/or repairs or abandonm	ent:		
	Bore Dla.	From (ft)	To (ft)	Remarks, lithology or description abandonment, water tem			/ater
Gov't Lot County Teton	(in) 10"	0'			ip.	X	N
Gover Lot County Forth Lat. 43 0 43 0 46.962 (Deg. and Decimal minutes) Long. -111 07.827 Address of Well Site 4433 Los Pinos	6"	40'		clay gravel clay gravel		$+\hat{\mathbf{x}}$	
Long, -111 007.827 (Deg, and Decimal minutes)	-	75'		mostly clay few gravel			+
Address of Well Site 4433 LOS PINOS		90'		clay gravel		X	+
(Give al least name of road + Distance to Road or Landmark) City Tetonia	·						
Lot Blk Sub. Name							
4. USE:							-
Domestic Municipal Monitor Irrigation Thermal Injection							-
						+	+
5. TYPE OF WORK: New well Replacement well Modify existing well							+
Abandonment Other							1
6. DRILL METHOD:							
🗙 Air Rotary 🔲 Mud Rotary 🔲 Cable 🔲 Other			_				
7. SEALING PROCEDURES:						_	-
Seal material From (ft) To (ft) Quantity (lbs or ft ²) Placement method/procedure bentonite 0' 40' 1050 lbs overbore							
						+	+
						-	+
8. CASING/LINER: Diameter (romina) From (ft) To (ft) Gauge/ Material Casing Liner Threaded Welded							1
				DECENTE			
					:D		
				n			
Was drive shoe used? 🛛 Y 🔲 N Shoe Depth(s) 98'				MAR 2 6 2021		-	-
9. PERFORATIONS/SCREENS:							
Perforations 🗖 Y 🗷 N Method				Department of Water	ésoure		C
Manufactured screen 🔲 Y 🕱 N Type				Eastern Regior	2	-	
Method of installation							-
Dismeter				0.01			
From (ft) To (ft) Slot size Number/ft (nominal) Material Gauge or Schedule	Comple	ted Dept	h (Measu	urable): 98'			
	Date St	_{arted:} M	ar 5, 20	Date Completed:	Mar 10, 2	021	
				IFICATION:			
		ertify that e the rig		mum well construction standards	were comp	ied with	at
Length of Headpipe Length of Tailpipe		-			7	റാ	
Packer 🗖 Y 🗵 N Type				ning Well Drilling			
10.FILTER PACK:	*Princip	al Drille	Ste	ven Justin Farmer	Date Mar	12, 20	21
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	< Driller	Stev	en (Justin Farmer	Date Mar	· 12, 20	21
			1	1			
	*Opera	tor II	0		Date		
11. FLOWING ARTESIAN:	Operate	or I			Date		_
Flowing Artesian? 🔲 Y 🕱 N Artesian Pressure (PSIG)	* Signa	ture of	Principa	al Driller and rig operator are re	quired		

Form	238-7
6/07	

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 00 751010	12 S			LEVEL and WELL TESTS:		
Drilling Permit No				ntered (ft) Static water level (ft) _	30	/
Water right or injection well #				Bottom hole temp. (⁰ F)		
2. OWNER: Darren Enrico						
	Well t		as port_	Test method:	-	<u> </u>
Name Address 548 Cobblecrost Rd.	-	down (fee		charge or Test duration Duran Dellas		Flowing
	-		yie	Id (gpm) (minutes) Pump Baller	n '	artesian
3.WELL LOCATION:						Ē
Twp. 5 North 🔯 or South 🔲 Rge. 46 East 🖾 or West 🗌	Water	quality t	test or co	mments:		
Sec. 31/41/41/41/4	13. LIT	HOLOG	IC LOG	and/or repairs or abandonment:		
া বিদ্যালয় মন্দ্রন্থন	Bore Dia.	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.		Vater
Gov't Lot County Teton	(in)		40'		Y	N
Lat. <u>43</u> <u>47.033</u> (Deg. and Decimal minutes) Long. <u>111</u> <u>7.610</u> (Deg. and Decimal minutes)	LA	040	65'	Clay Grove	K	K
Long (Deg. and Decimal minutes)	64	65'	68'	Clay Grade J	-5-	K
Address of Well Site 4183 Los Pinos Dr.	6"	68	100'	Clay + Geard	K	
(Give at least name of road + Distance to Road or Landmark) City Tctonia		2	1	0		
Lot Blk Sub. Name					_	
4. USE:						
Domestic I Municipal Monitor Irrigation Thermal Injection	-					
5. TYPE OF WORK:						
New well Replacement well Modify existing well						
Abandonment Other						
6. DRILL METHOD:						
Air Rotary Mud Rotary Cable Other		-	1			
7. SEALING PROCEDURES: Seal material From (ft) To (ft) Quantity (lbs or ft ³) Placement method/procedure					-	
Benjamite O 41' 20 Bass overbore				DECEMEN		
				13 har had har 1 V har had		
8. CASING/LINER:				<u>AUG 1 3 2018</u>		-
Diameter (nominal) From (ft) To (ft) Gauge/ Schedule Material Casing Liner Threaded Welded		_		Department of Water Resources		
1" +2 98' 230' Steel E				Eastern Megion		
Was drive shoe used?						
9. PERFORATIONS/SCREENS:						
Perforations TY						
Manufactured screen						
Method of installation	_					
Diameter						
From (ft) To (ft) Slot size Number/ft Unameler (nominal) Material Gauge or Schedule	Comple	ted Dept	h (Measu	rable): 78		
	Date St	arted:	5-30	-18 Date Completed: 5-34-	12	
				FICATION:		
	I/We ce	ortify that	t all minin was rem	num well construction standards were complie	d with a	at
Length of Headpipe Length of Tailpipe		-	0	5. VI 20222-1		
Packer 🔲 Y 🙀 N Type	Compa	ny Name		nning Dulling CO. NO. 9	210	
10.FILTER PACK:	*Princip	al Drille	AVa	and alenning Date 6	12-	18
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	*Driller	D	and	Denning Date 6	-12-	18
	1		inga_	Date_	10	-0
	*Operat	tor II	2	Date	,	
11. FLOWING ARTESIAN:	Operato	or I	My a	Date _ 6/10	2/18	
Flowing Artesian? TY R Artesian Pressure (PSIG)	* Siɑna	ture of I	Principal	Driller and rig operator are required.		
Describe control device				and ing operator are required.		

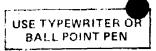
						Office Use	Only		
Form 238 IDAHO DEPARTMENT OF WATER RESC)UR(CES			Well ID				
WELL DRILLER'S REPORT	-			77	1	ted by			
1. WELL TAG NO. D 09.37981			at the second	\mathbf{A}		Rge			
DRILLING PERMIT NO.			Estater (1/4 1/4		1	
Water Right or Injection Well No.	12. V		TESTS:		Lat:	: : Lon		:	
			Pump	Bailer		Flowing			
2. OWNER: Day I Day I Day		Yield gal.	./min.	Drawdow	1	Pumping Level		ime	
Name Brite h. Telsevi	\propto	$\mathcal{O}I_{-}$		450	4	<u>250</u>	1000	have	
2. OWNER: BRAd R. Nelsen Name BRAd R. Nelsen Address P.O. BOX 187 City Letonia State Id Zip 83452									
City		r Tomp		2000/	1	Bott	om holo ton	nda	
3. LOCATION OF WELL by legal description:								чÇД	ø_
You must provide address or Lot, Blk, Sub. or Directions to well.	vvater	Quanty	y test or	comments: _					~~ (
Twp North 🗟 or South 🗌	40.4	TUO	0.010			Depth first W		nter 4	e 0
Rge East 🕏 🚽 West 🗆	·	IIHOL	JUGIC	LOG: (Descri	ibe repair	s or abandonmer	nt)	Wa	ter
Sec.	Bore Dia.	From	То	Remarks: I	_ithology, V	Nater Quality & Ter	mperature	Y	N
Gov't Lot County	8	en en	2	Sand	Q 21	RAVÍ			Ś
Lat: :: Long: :: : Address of Well Site Lot / Los Pillos Sub Pill. (Give gl less name of road + Distance to Read or Landmark) City	6	20	70			GRAVEL		}	
City	19	70	82	BRAM	7 (10/AY		\square	
(Give at least name of road + Distance to Road or Landmark)	\square	30	100	Clark					
Lt Blk Sub. Name_605 Pi 1105					0				
		·······							
4. USE:									
Domestic Municipal Monitor Irrigation									
Thermal Injection Other									
5. TYPE OF WORK check all that apply (Replacement etc.)									
New Well 🗌 Modify 🗌 Abandonment 🗍 Other									
6. DRILL METHOD:									
Air Rotary Cable Mud Rotary Other									
7. SEALING PROCEDURES				······································					
Seal Material From To Weight / Volume Seal Placement Method									
BEAtomite O 20 450 OUMBORC									
Was drive shoe used? AY IN Shoe Depth(s) 77 Was drive shoe seal tested? Y N How?									
Was drive shoe seal tested? Y N How?				,					
8. CASING/LINER:									
Diameter From To Gauge Material Casing Liner Welded Threaded				RECE	IVE	D			
6 - FI 99 252 Stoel & D									
				JAN 2	<u>6 200</u>	6			
				248.584	Naras Bre	AH7085			
Length of Headpipe Length of Tailpipe			F	epartment of h	ngier nes Region	ources			
Packer Y N Type	ļļ							 	
9. PERFORATIONS/SCREENS PACKER TYPE									
Perioration Method									
Screen Type & Method of Installation	\vdash						·····		
From To Slot Size Number Diameter Material Casing Liner				100	/		<i>(</i>) •	Ļ	
		pleted (100				asurat	pie)
	Date	: Start	ted	199-0	6	Completed	10	14	Ó
	14. D	RILLE	R'S CE	RTIFICATIO	V				f
					nstruction	standards were co	omplied with	n at the	9
Filter Material From to Weight / Volume Placement Method			as remo		10				
	Comp	any Nar	me N	AAK m	Ache	Hweildr	Firm No	6	12
	P			200 11		Ilweilde Da		 ر ر چہ	/
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Princip	oat Drille	er 🖊	<u>r / all-</u>	17	Da	te	14-	-00
Y 12 II. DEIOW GROUND ALTERSIAN DRESSURE IN	a		rator II _				te		
Depth flow encounteredft. Describe access port or control devices:	11111	or obei							
	Operat	tor I		Defendent D. W	· · · · · · · · · · · · · · · · · · ·	Da	te		

Principal Driller and Rig Operator Required. Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

•	- *						ίπ.		
_	38.7 Permit ID STATE C					Location Corre	ected by IDW	/R To	:
Form 2 479	2 DEPARTMENT OF V			SOUF	RCES	T05N R45E S	-		
	WELL DRILL	ER'	SF	REP	OR1				
	$\mathcal{KC}^{\mathcal{V}}$ State law requires that this report be filed within 30 days after the completion within 30 days after the completion of the state of	th the	Directo	or. Der	bartmer	nt by merseen	2012-12-13		
	Nell OWNER Name Monte Whittler Address P.O. Box 4833 Pocotello, Id Drilling Permit No. 22-93E-023-000 Water Right Permit No. A22-02161F A22-02151F	7. V S F A	ATER tatic w lowing rtesian	LEVE	- Vel/ Yes d-in pre □ Va	teet below la	P.M. flow .i.] Plug		
	NATURE OF WORK		VELL 1 Q Pum	r est c Ip		ler 🗆 Air	Other		
	 Well diameter increase Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.) 		ilscharge 5()	ə G.P.M.		Pumping Level	Hours F	oumpec	I
	PROPOSED USE Domestic Irrigation Monitor Industrial Stock Waste Disposal or Injection Other (specify type)	Bore	De	.OGIC pth	LOG	1 Material	07138	Wa	ater
		Diam.	From	To 30	Aictu	claymixed w/c	ravel	Yes	No X
4.	METHOD DRILLED	L	30	46	real	fine sandmilled	Wirlan		X.
	□ Rotary □ Air □ Auger □ Reverse rotary		46 56 108	56 108 150	100100F	Water, gravel, W/1/2"to 2' gravel Wgravel & Fine sau	Verton P4	X	X
- 5.	WELL CONSTRUCTION		150	152	grau	rel-good Flou	0	X.	
	Casing schedule: Steel Concrete Other Trickness Diameter From To								
	inches inches feet feetfeet feet								<u> </u>
	Was a packer or seal used? □ Yes 🗙 No Perforated? □ Yes 🕺 No								
	How perforated? Factory Knife Torch Gun Size of perforation? inches by inches Number From To					DECE	PYE		+
	perforations feet feet feet								
	perforations feet feet						2 9 1993		
	Well screen installed? 🗀 Yes 🌠 No Manufacturer Type					Department of	Water Resource	5	<u> </u>
	Top Packer or Headpipe Bottom of Tailpipe					Eastern C	District Office		<u> </u>
	Diameter Slot size Set from feet to feet								+
	Diameter Slot size Set from feet to feet Gravel packed? Yes No Size of gravel								†
	Placed from feet to feet								
	Surface seal depth 22 Material used in seal:			R to s					
	Temp. surface casing X Overbore to seal depth			f:		9 1004		: -	1
	Method of joining casing: Threaded Welded Solvent Weld Cemented between strata	10.	1	L		1004			 >
	Describe access port		Work s	tarted	_3^	<u>30-9.3</u> finishe	ed9	-6 5	•
•	LOCATION OF WELL Sketch map location must agree with written location. W U U U U U U U U U U U U U U U U U U		l/We c compli	ertify t ed with ame	hat all at the	CATION minimum well const time the rig was rem Wutt- Firm Firm Date	noved. n No. <u>50</u>	<u>56</u>	<u>. </u>
	Address of Well Site $Pack S add le radius and le road) (give at least name of road) T. 5 N Ø or S \Box5W 1/4 NW 1/4 Sec. 3, R. 45 E Ø or W \Box$		Signed		illing Su and erator)	Ipervisor			

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT



State of daho Department of Water Resources



WELL DRILLER'S REPORT

State law requires that this report be filed with the Permit ID 822910 days after the completion or	abando	inment	of the w	JUN 3 (<u>1977</u>	/
1. WELL OWNER		ATER		Cepartment of V	Water Resources	;
Name Floyd Baler	St	atic wa	ter level	asiern Die feet below land su	strict Office rface	A
Address Rt. #1 Tetonia, Idaho 83452] т	emperat	ure	es 🙀 No G.P.M. flow ° F. Qualityp.s.i, n.pressurep.s.i,		
Owner's Permit No	1				C) Plug	
2. NATURE OF WORK	8. W	ELLT	EST DA	ТА		
🛱 New well 🔲 Deepened 🔲 Replacement		Pump		🗆 Bailer 🗖 Other		
Abandoned (describe method of abandoning)	D	ischarge (G.P.M.	Draw Down	Hours Put	mped
3. PROPOSED USE		·····			<u> </u>	
E Domestic 🔲 Irrigation 🗌 Test 🔲 Other (specify type)	9. L	.ITHOL	OGIC L	.0G 4	46363	
🗋 Municipal 🔲 Industrial 🔲 Stock 🔲 Waste Disposal or	Hole Diam.	·	oth To	Material	 	Water Yes i No
Injection	6"	0	6'	Clay and cobbe		X
4. METHOD DRILLED	ļ	b '	23	Clay and gra	sel	
🗆 Cable 🛛 Rotory 🗖 Dug 🗖 Other	<u> </u>	23'	60'	colles back	<u> </u>	
5. WELL CONSTRUCTION						
Diameter of hole <u>6</u> inches Total depth <u>60</u> feet					·····	
Casing schedule: 🖾 Steel 🗆 Concrete						
inches inches feet feet feet feet			-			<u> </u>
inches feet feet feet						<u> </u>
inches inches feet feet		· · · · · · · · · · · · · · · · · · ·				
Was casing drive shoe used ? XD Yes No Was a packer or seal used? Image: Yes XIII No		<u> </u>				
Perforated? Yes R No						┟──┼──
How perforated? Factory Knife Torch Size of perforation inches by inches						
Number From To	Ì			····-···	<u></u>	┝╍╍┝╌╴
perforations feet feet	<u> </u>					
perforations feet feet feet						
		<u> </u>		[┝┉┉┝╼╸
Well screen installed?						
Manufacturer's name Model No	ļ					
Diameter Slot size Set from feet to feet		<u> </u>				<u>├</u>
Diameter Slot size Set from feet to feet		t				
Gravel packed? 🖸 Yes 🙀 No Size of gravel	<u> </u>					
Placed from feet to feet	<u> </u>				<u> </u>	
Surface seal depth. 21t., Material used in seat 🗇 Cement grout						
□ Puddling clay □ Well cuttings					¥	k + -
Sealing procedure used 🛄 Starry pit 🖾 Temporary surface casing	}	<u>+</u>				┝╋╍╌┼╌╌╸
🖾 Overbore to seel depth		•	<u> </u>			
6. LOCATION OF WELL	10.	lork eta	rted	March 15, 1977 inished	March 15,	1977
staten map location must agree with written location.	<u> </u>					
	H. C	RILLER	S CERT	IFICATION		
Subdivision Name		Firm Na	me <u>D</u> .	Denning Well Drill	ing Firm N	<u>.10</u>
E		Address .	Box 6	4 Ucon. Idaho 83454	Dote Marc	h 1817
Lot No Block No	•			Official)		
S County Teton			C		- maria	7
SW 1/2 SW 1/2 Sec. 3 T. 5 N/85, R. 45 E/W			(Ор	erotor) Vanut Vin	nun	<u>/</u>
L	1				5	

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

	FER RESOUR	CES	Office Use On	
WELL DRILLER'S F	REPORT	Ins	pected by	
Use Typewriter or Ballpo	int Don		p RgeS	Sec
			1/41/4	-
1. DRILLING PERMIT NO. 22 - 96 - 5-0036 - 000 Other IDWR No.		TS: Lat: □ Bailer XA	: : Long: ir □ Flowing Art	<u>:</u> ::
2 OWNED.	Yield gal./min.	Drawdown	Pumping Level	Time
Name Don Delaume Address 174 Yellow Creek Roms, Apt P City EVANSten State Uly Zip 83930	40	100	10.0	2Hrs
Address 174 Vellow Creek Rons, Apt +				
City EVanstrnState 4/1/Zip_83930				
3. LOCATION OF WELL by legal description:	Water Temp Water Quality test of		Bottom hol	e temp
Sketch map location <u>must</u> agree with written location.	water Quality test (epth first Water Encou	
N	12. LITHOLOGI	C LOG: (Describe	e repairs or abandon	ment) _{Water}
	Bore		Water Quality & Temper	Traici
	Dia. From Io	The A		ature Y N
$V = \begin{bmatrix} \text{rige.} & \text{Last} & \text{of } & \text{vest} \\ \text{Sec.} & \underline{3} \\ \text{orth Last} & \text{orth Last} \\ \end{bmatrix} 1/4 = \underbrace{50}_{40 \text{ acres}} 1/4 \underbrace{50}_{10 acres$	9 4 25	Chine Fo		
Gov't Lot County 10 acres 40 acres 160 acres	2540	ground of		
Lat: : Long: : :	4059	Oclass		
Address of Well Site	- 63 80	- clougt	grand	
(Give at least name of road + Distance to Road or Landmark)	12 100 100	Cloyt	grand	
Lt BlkSub. Name		V		
			· · · · · · · · · · · · · · · · · · ·	
4. USE:				
Z Domestic □ Municipal □ Monitor □ Irrigation				·
			·····	
5. TYPE OF WORK check all that apply (Replacement etc.) New Well Modify Abandonment Other				
6. DRILL METHOD		DRA	20W2EIDI	
Air Rotary Cable Mud Rotary Other		1026	SUUS	
V		ND		
7. SEALING PROCEDURES SEAL/FILTER PACK AMOUNT METHOD			1 7 1996	
Material From To Sacks or Pounds			• • •	
Bentinite 0 20 300 Overbore		Department of	Water Resources	
		Eastern	District Office	
		·····	·	
Was drive shoe used? Y				
8. CASING/LINER:				
Diameter From To Gauge Material Casing Liner Welded Threaded				
6 +2 100 per Stru & B K B				
Length of Headpipe Length of Tailpipe	AUG21	1996		
9. PERFORATIONS/SCREENS No N-C				
Perforations Method				
Screen Type	Completed Depth	100	/	(Measurable)
From To Slot Size Number Diameter Material Casing Liner	Date: Started	5-13-91	Completed <u>5</u>	13-96
	13. DRILLER'S	CERTIFICATIO	N	
	I/We certify that all r	minimum well constru	ction standards were o	complied with at
	the time the rig was	removed.		
	Firm Name	WATER U	orks ccc.A	m No. <u>306</u>
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:		2-1-	71+-st/	
32 ft. below ground Artesian pressurelb.		1.schart	1 Marte Bare_	5-15-96
Depth flow encounteredft. Describe access port or control devices:	and Supervisor of Orac	7,11	I HKV	5-15-61
	Supervisor or Opera	(Sign once if Firm C	Date	- 11 79
FORWARD WHITE COPY T	O WATER RESOUR		· ·····	
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Part 2007 DAHO DEPARTMENT OF WATER RESOURCES Veil Dolo. Weil DRU Weil DRU Weil DRU DAHO DEPARTMENT OF WATER RESOURCES Weil DRU Weil DRU Weil DRU DAHO DEPARTMENT OF WATER RESOURCES Water Right Run Dru DAHO DEPARTMENT OF WATER RESOURCES Water Right Run Drug DAHO DEPARTMENT OF WATER RESOURCES Compart Data Strain St	the approximation	0								r		~ .		i
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1. WELL TAG NO. D 1.14 14	Ŷ			ller's f	REPORT	ľ		/	10					
DBILLIN SERVICE DBILLIN SERVICE The object of the Number of the Num	1. WELL TAG NO. D	0048	\$27					C		limb —				
Purper light of tegling of tegli	DRILLING PERMIT NO.					12. \	VELLI	ESTS:		Lat:				
Number of the second	water Hight or injection	Weil No								🗌 Air		Artesian		
3. LOCATION OF WELL by logal description: Description: <t< td=""><td>2. OWNER:</td><td></td><td></td><td></td><td></td><td></td><td>Yield gal.</td><td>/min.</td><td>Drawdor</td><td>wn</td><td>Pumping Level</td><td></td><td>ime</td><td></td></t<>	2. OWNER:						Yield gal.	/min.	Drawdor	wn	Pumping Level		ime	
3. LOCATION OF WELL by logal description: Description: <t< td=""><td>Name Shach F</td><td>erkins</td><td>. 77</td><td></td><td></td><td></td><td>,</td><td></td><td></td><td></td><td>,</td><td></td><td></td><td></td></t<>	Name Shach F	erkins	. 77				,				,			
3. LOCATION OF WELL by logal description: Description: <t< td=""><td>City Drides</td><td>of in py</td><td>st</td><td>ate デカ Zip</td><td>834,55</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	City Drides	of in py	st	ate デカ Zip	834,55									
Way						Wate	r Temp.				Botto	om hole ter	пр	
Wpp				o well		Wate	r Quality	y test or	comments:					
Bit: 10 11 <	Twp5							~~~~					nter _	
Lat: V3: V6: SUD V6: V6: V6: V6: V6: V7:	Rge. <u>45</u>								LOG: (Desci	ribe repair	's or abandonmen	t)	Wa	ter
Lat: V3: V6: SUD V6: V6: V6: V6: V6: V7:	Gov't Lot	1/4 County	$\frac{100}{40}$ acres	1/4		Dia.	From	Ļ	Remarks:	Lithology,	Water Quality & Tem	perature	Y	
Address of Well Site 4/20 /k. 95 /k. State 4/20 /k. 95 /k. State 4/20 /k. 95 /k. X Deriver werdnet bernen internen City Drigs X X Image: State 4/20 /k. State 4/20 /k. State 4/20 /k. State 4/20 /k. X AUSE: Minimum (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X X AUSE: Minimum (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X X Charles Method: Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X X State 4/20 /k. Monitor (Image: State 4/20 /k. X X X Method: Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X X Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X X Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X X Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k. X Monitor (Image: State 4/20 /k. Monitor (Image: State 4/20 /k.<	Lat: 43:46:8	۲۶ Long	: 111 : 07 :	809		8'	0	18	clay-	ranc/	Ś		<u> </u>	x
III	Address of Well Site	400 N.	95 West	<u>د.</u>		67	18		clay-gi	ranels		.,,	1	
LL Bik Sub Name 4. USE: Yobonesic Municipal Implement Yobonesic Municipal Other Implement S. TYPE OF WORK check all that apply (Replacement etc.) Replacement etc.) R. NYPE OF WORK check all that apply (Replacement etc.) R. NYPE OF WORK check all that apply (Replacement etc.) R. NYPE OF WORK check all that apply (Replacement etc.) R. NAR Datay Cobin Statistical form Said More Mud Rolary Other Said More Mud Rolary Demoter The Tomation form Statistical form Said Statistical form Statistical form The Origin of Mud Rolary Other The Origin of Mud Rolary Statistical form The Origin of Mud Rolary Statis form The Origin of Tall pi				1995		6"	60	95						
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				-										
K New Well Modify Abandonment Other 6. DRILL METHOD: X Ar Rotary Cable Mud Rotary Other X Ar Rotary Cable Mud Rotary Other Image: Cable Image: Cable Stati Material From To Weight / Value Stati Material Stati Material Image: Cable Image: Cable Was drive shoe used? Y N Shoe Depth(s) Image: Cable		u njecton								A.F. 1992 A.F				
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Form 138-7 WELL DRILLER'S REPOR	DUR(T	CES		22	Inspe	ected by			
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Address HARDY LODB									
City Dricias State Id Zip 83422									
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3. LOCATION OF WELL by legal description:									
You must provide address or Lot, Blk, Sub. or Directions to well.			•	-		Depth first V	lator Enco	untor 4	Ľ
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Operator I must have signature of Driller/Operator II. FORWARD WHITE COPY TO WATER RESOURCES

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FORWARD WHITE COPY TO WATER RESOURCES

1 Form 238-7 1/78 . 2

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STATE OF IDAHO DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR ALL POINT REN Ą

State law requires that this report be filed with within 30 days after the comple					R 27 1982	No.	1
WELL OWNER 7. WATER LEVEL Department of Water Name Calue Kate Eastern District Address Static water level So feet below land surface Address Static water level So feet below land surface Owner's Permit No. Owner's Permit No. So G.P.M. flow					ern District Offi nd surface. ow i. ⊒ Plug	ce	
2. NATURE OF WORK Q-New well Deepened Replacement Abandoned (describe method of abandoning)		🗆 Pu	- TEST mp e G.P.M		Other		
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B. PROPOSED USE							
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. WELL CONSTRUCTION							-
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USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

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FORWARD WHITE COPY TO WATER RESOURCES

Appendix C: SOIL RESOURCES



United States Department of Agriculture



Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for **Teton Area**, Idaho and Wyoming

JC Ranches Subdivision



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/? cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

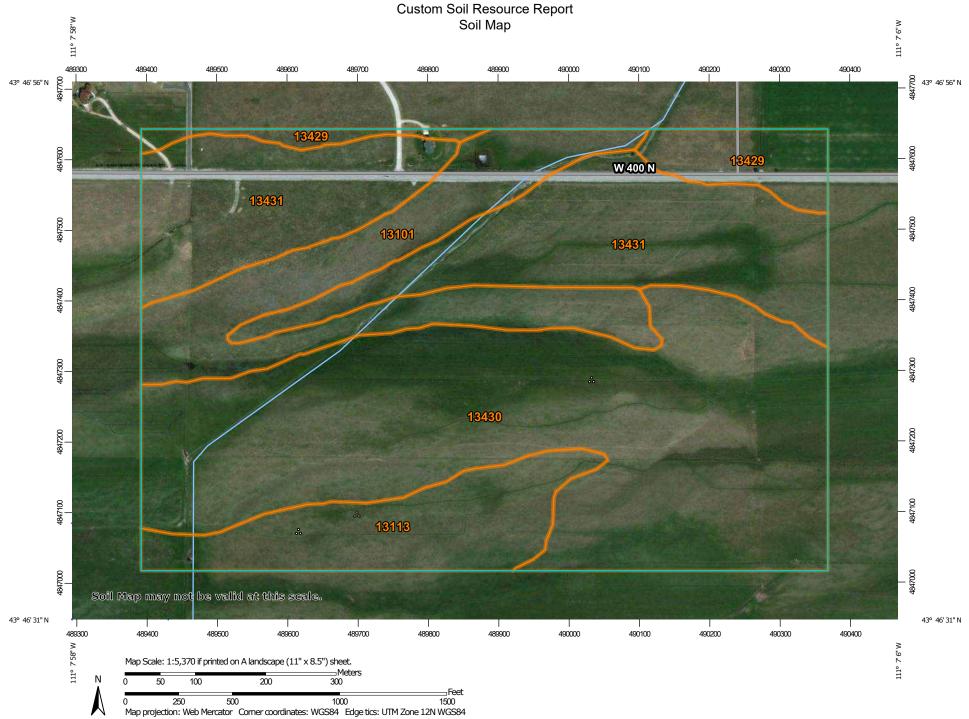
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



A				MAP INFORMATION			
	rea of Interest (AOI) Area of Interest (AOI)	8	Spoil Area Stony Spot	The soil surveys that comprise your AOI were mapped at 1:24,000.			
Si	Soils Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points		Very Stony Spot Wet Spot Other Special Line Features	Warning: Soil Map may not be valid at this scale. Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of			
	Special Point Features Blowout Borrow Pit Clay Spot	Water Fea	Streams and Canals	contrasting soils that could have been shown at a more detailed scale. Please rely on the bar scale on each map sheet for map			
	Closed Depression Gravel Pit Gravelly Spot	¥ 	Rails Interstate Highways US Routes Major Roads	measurements. Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)			
	 Landfill Lava Flow Marsh or swamp Mine or Quarry 	Rackgrou	Local Roads Ind Aerial Photography	Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.			
	 Miscellaneous Water Perennial Water Rock Outcrop 			This product is generated from the USDA-NRCS certified data as of the version date(s) listed below. Soil Survey Area: Teton Area, Idaho and Wyoming			
	 Saline Spot Sandy Spot Severely Eroded Spot 			Survey Area Data: Version 10, Sep 9, 2021 Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.			
	 Sinkhole Slide or Slip Sodic Spot 			Date(s) aerial images were photographed: Sep 24, 2011—Oct 25, 2016 The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor			

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI		
13101	Redfish-Foxcreek complex, 0 to 2 percent slopes	22.9	15.1%		
13113	Foxcreek mucky peat, 0 to 2 percent slopes	15.0	9.9%		
13429	Alpine gravelly loam, 0 to 2 percent slopes	7.5	4.9%		
13430	Alpine-St. Anthony complex, 0 to 2 percent slopes	65.5	43.2%		
13431	Feltonia-Arimo complex, 0 to 2 percent slopes	40.8	26.9%		
Totals for Area of Interest		151.6	100.0%		

Map Unit Legend

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Teton Area, Idaho and Wyoming

13101—Redfish-Foxcreek complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1qmkh Elevation: 5,920 to 6,230 feet Mean annual precipitation: 16 to 18 inches Mean annual air temperature: 38 to 44 degrees F Frost-free period: 20 to 50 days Farmland classification: Not prime farmland

Map Unit Composition

Redfish and similar soils: 70 percent Foxcreek and similar soils: 30 percent Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Redfish

Setting

Landform: Flood plains, fan remnants Down-slope shape: Linear Across-slope shape: Linear Parent material: Mixed alluvium

Typical profile

Oe - 0 to 2 inches: mucky peat A - 2 to 10 inches: loam AB - 10 to 13 inches: gravelly loam 2BC - 13 to 16 inches: very gravelly loamy sand 2C - 16 to 43 inches: extremely gravelly sand 2Cg - 43 to 60 inches: extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 4 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 6c Land capability classification (nonirrigated): 6c Hydrologic Soil Group: C/D Ecological site: R013XY050ID - RIPARIAN WET MEADOW SALIX/CAREX Hydric soil rating: Yes

Description of Foxcreek

Setting

Landform: Drainageways, flood plains Down-slope shape: Linear Across-slope shape: Concave, linear Parent material: Mixed alluvium

Typical profile

Oe - 0 to 2 inches: mucky peat *Ag - 2 to 8 inches:* loam *ABg - 8 to 15 inches:* loam *Bg1 - 15 to 21 inches:* loam *2Bg2 - 21 to 26 inches:* very gravelly coarse sandy loam *2Bkg - 26 to 42 inches:* very gravelly loamy sand *2Cg - 42 to 60 inches:* extremely gravelly coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 0.57 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): 6c Land capability classification (nonirrigated): 6c Hydrologic Soil Group: C/D Ecological site: R013XY050ID - RIPARIAN WET MEADOW SALIX/CAREX Hydric soil rating: Yes

13113—Foxcreek mucky peat, 0 to 2 percent slopes

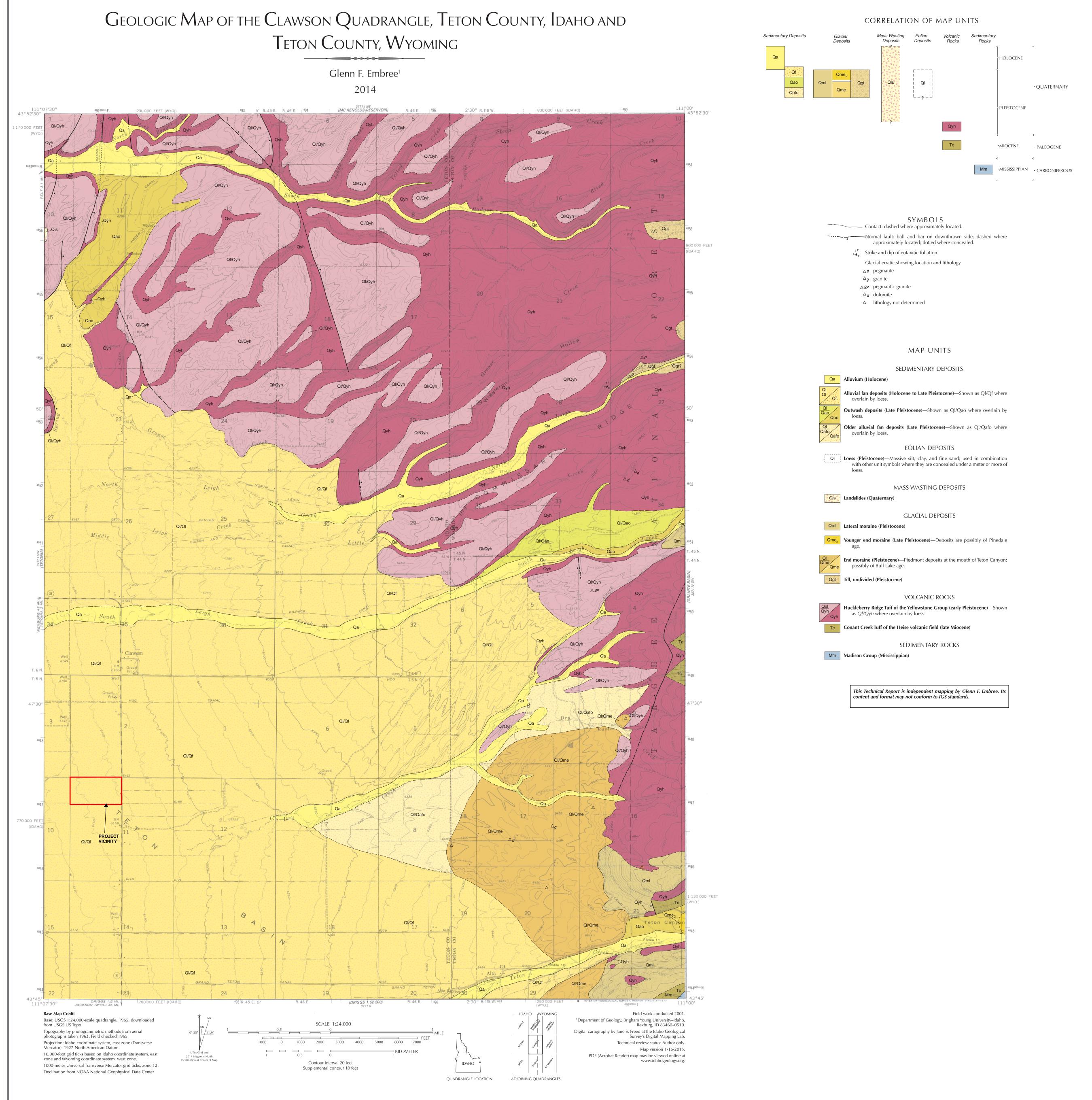
Map Unit Setting

National map unit symbol: 1qmks Elevation: 5,920 to 6,520 feet Mean annual precipitation: 16 to 18 inches Mean annual air temperature: 38 to 44 degrees F Frost-free period: 20 to 50 days Farmland classification: Not prime farmland

Map Unit Composition

Foxcreek and similar soils: 90 percent

IDAHO GEOLOGICAL SURVEY MOSCOW-BOISE-POCATELLO



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Appendix D: NUTRIENT MASS BALANCE SPREADSHEETS

In Proceedings of 5th Northwest On-Site Wastewater 1	reatment Shortco	ourse. September	10-11, 1985, University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below.		
INPUT				OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.92E+04	98.2	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.0	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.04E+02	0.8	
Aquifer Width Perpendicular to Flow (ft)	440	Site-specific		Total Water Volume	5.00E+04		
	0.54	Oite en esifie					
Parcel Area (acres)	2.51	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.5		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
· ·					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.69E+08	91.6	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	8.4	
	52.0	43.0	Trovide oustilication		1.002.107	0.4	
Denitrification Rate (decimal fraction)	_	0	Default	Recharge Nitrate Mass	1.21E+05	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.85E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lot 1	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(\pi + \mu + \mu) = (T + D)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	is software.
Well-sorted sands and glacial outwash	3 to 300	TAP is input in inches/yr.	However, the Idaho Department of Environmental Quality ma	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dan	nages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

	reatment Shortco	ourse, September	10-11, 1985. University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r use delow.		
INPUT	•		, j	OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.80E+04	97.7	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.2	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.04E+02	1.0	
Aquifer Width Perpendicular to Flow (ft)	340	Site-specific		Total Water Volume	3.89E+04		
Parcel Area (acres)	2.51	Site-specific					
Percent of Parcel That Is Impervious (Percent)	2.51	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	1	
Current/Acceptable Number of Homes in Parcel	 	Site-specific			7.7		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8	I	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.5		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget			
· ·	,				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.31E+08	89.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	10.6	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.21E+05	0.1	
		<u> </u>	Doraan		1.212.00	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.46E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lot 2	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(\pi + \mu + \mu) = (T + D)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	is software.
Well-sorted sands and glacial outwash	3 to 300	TAP is input in inches/yr.	However, the Idaho Department of Environmental Quality ma	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dan	nages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

In Proceedings of 5th Northwest On-Site Wastewater T	reatment Shortco	urse September	10-11 1985 University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r lise below		
INPUT			10 1., 10001 01				
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.80E+04	97.7	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.2	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.04E+02	1.0	
Aquifer Width Perpendicular to Flow (ft)	340	Site-specific		Total Water Volume	3.89E+04		
	0.54						
Parcel Area (acres)	2.51	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific				l	
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.5		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
· ·	j ,				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.31E+08	89.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	10.6	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.21E+05	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.46E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION			
		JC Ranches Subdivision	Site Name		
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lot 3	Parcel Identification		
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(\pi + \mu + \mu) = (T + D)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	is software.	
Well-sorted sands and glacial outwash	3 to 300	TAP is input in inches/yr.	However, the Idaho Department of Environmental Quality ma	makes no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dan	nages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

	alment Shortco	burse, September	10-11, 1985. University o	of Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below.		
INPUT			, <u>,</u>	OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.85E+04	97.7	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.2	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.12E+02	1.0	
Aquifer Width Perpendicular to Flow (ft)	345	Site-specific		Total Water Volume	3.94E+04		
Parcel Area (acres)	2.56	Site-specific					
Percent of Parcel That Is Impervious (Percent)	2.50	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	4 1.0	Site-specific			7.7		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.6		
Nitrogen Budget (all concentrations represent nitrate ni	trogen)			Yearly Nitrogen Budget		<u> </u>	
	0 /				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.33E+08	89.5	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	10.4	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.24E+05	0.1	
Denitrification Rate (decimal fraction) Nitrate in Natural Recharge (mg/l)	0.3	0	Default Default	Recharge Nitrate Mass Total Nitrate Mass	1.24E+05		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION			
		JC Ranches Subdivision	Site Name		
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lot 4	Parcel Identification		
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(\pi + \mu + \mu) = (T + D)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	s software.	
Well-sorted sands and glacial outwash	3 to 300	TAP is input in inches/yr.	However, the Idaho Department of Environmental Quality make	makes no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

				f Washington, Seattle, WA. Pages 23-41. See Instructions fo				
INPUT	1	T		OUTPUT				
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total		
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.30E+04	98.0		
Hydraulic Gradient	0.009	Site-specific		Efluent	4.84E+02	1.1		
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.04E+02	0.9		
Aquifer Width Perpendicular to Flow (ft)	385	Site-specific		Total Water Volume	4.39E+04	ļ		
	0.54	Oite en esifie				. <u> </u>		
Parcel Area (acres)	2.51	Site-specific		Deint of Compliance Nitrate Concentration Cool (mg/l)				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	1		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific	Descripter to still a still a			1		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7			
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.5			
Nitrogen Budget (all concentrations represent nitrate r	nitrogen)			Yearly Nitrogen Budget				
,,					Mass (mg)	% of Total		
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.48E+08	90.5		
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	9.5		
· · · · · · · · · · · · · · · · · · ·	1							
Denitrification Rate (decimal fraction)	-	0	Default	Recharge Nitrate Mass	1.21E+05	0.1		
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.64E+08			

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lot 5	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 = 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing	this software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality n	akes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any d	amages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

In Proceedings of 5th Northwest On-Site Wastewater Tre	eatment Shortco	ourse. September	10-11, 1985, University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below.		
INPUT		. , ,	- , ,	OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.47E+04	97.5	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	0.9	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	9.47E+02	1.7	
Aquifer Width Perpendicular to Flow (ft)	490	Site-specific		Total Water Volume	5.62E+04		
Parcel Area (acres)	5.88	Site-specific					
Percent of Parcel That Is Impervious (Percent)	5.00	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		Form of compliance witrate concentration Goal (mg/l)	4.4		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.6		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	5.9		
	1.00	One-speeme			0.0		
Nitrogen Budget (all concentrations represent nitrate n	itrogen)			Yearly Nitrogen Budget			
					Mass (mg)	<u>% of Total</u>	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.88E+08	92.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	7.6	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	2.84E+05	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.04E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lot 6	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(\pi + \mu + \mu) = (T + D)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	is software.
Well-sorted sands and glacial outwash	3 to 300	TAP is input in inches/yr.	However, the Idaho Department of Environmental Quality ma	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dan	ages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT				of Washington, Seattle, WA. Pages 23-41. See Instructions for Use below. OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.36E+04	97.8	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.1	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.85E+02	1.1	
Aquifer Width Perpendicular to Flow (ft)	390	Site-specific		Total Water Volume	4.45E+04		
Parcel Area (acres)	3.01	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·			
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	3.0		
Nitrogen Budget (all concentrations represent nitrat	e nitrogen)			Yearly Nitrogen Budget		<u> </u>	
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.50E+08	90.6	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	9.3	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.45E+05	0.1	
· · · · · · · · · · · · · · · · · · ·		-					
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.65E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments Natural Recharge Rate (NRR) can be			Lot 7	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality make	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dama	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

	reatment Shorter	urca Santambar	10 11 1085 University o	t Washington Seattle W/A Dages 23 /1 See Instructions to	r lleo bolow	
INPUT		Juise, September	10-11, 1905. Oniversity 0	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	I USE DEIOW.	
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	9.83E+04	93.3
Hydraulic Gradient	0.009	Site-specific		Eflluent	3.38E+03	3.2
Mixing Zone Thickness (ft)	15	15	Default	Recharge	3.66E+03	3.5
Aquifer Width Perpendicular to Flow (ft)	880	Site-specific		Total Water Volume	1.05E+05	
						·
Parcel Area (acres)	22.46	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
Current/Acceptable Number of Homes in Parcel	7.0	Site-specific				
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.2	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	3.2	
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>
· ·					Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	3.38E+08	75.6
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.08E+08	24.2
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.10E+06	0.2
		5	Deidult		1.102100	0.2
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	4.48E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 1-7	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 = 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing t	his software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality ma	akes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any da	mages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

In Proceedings of 5th Northwest On-Site Wastewater T	reatment Shortco	ourse, September	10-11, 1985. University o	if Washington, Seattle, WA. Pages 23-41. See Instructions to	r use below.		
INPUT	•	•	· · · · · · · · · · · · · · · · · · ·	OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	9.83E+04	94.1	
Hydraulic Gradient	0.009	Site-specific		Eflluent	2.90E+03	2.8	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	3.28E+03	3.1	
Aquifer Width Perpendicular to Flow (ft)	880	Site-specific		Total Water Volume	1.04E+05		
Parcel Area (acres)	20.12	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	6.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.1		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	3.4		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
· ·	,				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	3.38E+08	78.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	9.28E+07	21.5	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	9.83E+05	0.2	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	4.32E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 1-3, 5-7	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 \neq 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing th		
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality make		
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

This spreadsheet is based on the mass balance approa	ch documented i	n: 1985.Bauman,	B.J. and W.M. Schaefer.	Estimating Ground-Water Quality Impacts From On-Site Sewa	ge Treatment Sys	stems.	
In Proceedings of 5th Northwest On-Site Wastewater T	reatment Shortco	ourse, September	10-11, 1985. University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below.		
INPUT	-			OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	9.83E+04	95.8	
Hydraulic Gradient	0.009	Site-specific		Eflluent	1.93E+03	1.9	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	2.37E+03	2.3	
Aquifer Width Perpendicular to Flow (ft)	880	Site-specific		Total Water Volume	1.03E+05		
Parcel Area (acres)	14.57	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	4.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.9		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	3.6		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget			
· · · · ·					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	3.38E+08	84.4	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	6.19E+07	15.4	
						80	
Denitrification Rate (decimal fraction)	-	0	Default	Recharge Nitrate Mass	7.12E+05	0.2	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	4.01E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 1,2,5,6	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 \neq 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in develop	ng this software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Qualit	/ makes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for an	/ damages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

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				Estimating Ground-Water Quality Impacts From On-Site Sewa f Washington, Seattle, WA. Pages 23-41. See Instructions fo		stems.
INPUT		uise, September	10-11, 1965. Oniversity C		I USE DEIOW.	
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.47E+04	95.6
Hydraulic Gradient	0.009	Site-specific		Eflluent	9.67E+02	1.7
Mixing Zone Thickness (ft)	15	15	Default	Recharge	1.55E+03	2.7
Aquifer Width Perpendicular to Flow (ft)	490	Site-specific		Total Water Volume	5.73E+04	
						-
Parcel Area (acres)	9.55	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
Current/Acceptable Number of Homes in Parcel	2.0	Site-specific				
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.8	
Nitrogen Budget (all concentrations represent nitrate)	nitrogen)			Yearly Nitrogen Budget		
					Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.88E+08	85.7
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	3.09E+07	14.1
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	4.66E+05	0.2
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.20E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION			
		JC Ranches Subdivision	Site Name		
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lots 5,6	Parcel Identification		
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing th	s software.	
Well-sorted sands and glacial outwash	3 to 300	AP is input in incres/yr.	However, the Idaho Department of Environmental Quality make	makes no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

This spreadsheet is based on the mass balance approa	ach documented	in: 1985.Bauman,	B.J. and W.M. Schaefer.	Estimating Ground-Water Quality Impacts From On-Site Sewa	ge Treatment Sys	stems.	
				f Washington, Seattle, WA. Pages 23-41. See Instructions fo			
INPUT	-			OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.47E+04	94.0	
Hydraulic Gradient	0.009	Site-specific		Eflluent	1.45E+03	2.5	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	2.05E+03	3.5	
Aquifer Width Perpendicular to Flow (ft)	490	Site-specific		Total Water Volume	5.82E+04		
Parcel Area (acres)	12.56	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	3.0	Site-specific				l	
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.0		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.2		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
	- , , , , , , , , , , , , , , , , , , ,				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.88E+08	80.0	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	4.64E+07	19.7	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	6.14E+05	0.3	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.35E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolid		Lots 5-7	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(\pi + \mu + \mu) = (T + D)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands	0.03 to 3	(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing th	s software.
Well-sorted sands and glacial outwash	3 to 300	AP is input in incres/yr.	However, the Idaho Department of Environmental Quality make	tes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT				OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.63E+04	97.7	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.3	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	3.71E+02	1.0	
Aquifer Width Perpendicular to Flow (ft)	325	Site-specific		Total Water Volume	3.72E+04		
Parcel Area (acres)	1.85	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·			
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.3		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.25E+08	88.9	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	11.0	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.11E+05	0.1	
		Ŭ,	Bondan			0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.40E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 8	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(inch a + b + b) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality make	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dama	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

In Proceedings of 5th Northwest Un-Site Wastewater 1	reatment Shortco	ourse Sentember	10-11 1985 University o	of Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below		
INPUT							
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.75E+04	97.6	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.0	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	6.85E+02	1.4	
Aquifer Width Perpendicular to Flow (ft)	425	Site-specific		Total Water Volume	4.86E+04		
		011 15					
Parcel Area (acres)	4.21	Site-specific		Deint of Oceanities on Nitrate Oceanometrics Oceal (www.l)			
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.2		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
	U V				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.63E+08	91.2	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	8.6	
	02.0	10.0			1.002 - 01	0.0	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	2.06E+05	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.79E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 9	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality make	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dama	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

In Proceedings of 5th Northwest On-Site Wastewater T	reatment Shortco	ourse September	10-11 1985 University o	of washington Seattle wa Pages 23-41 See instructions to	r use below			
INPUT				OUTPUT				
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total		
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.75E+04	97.3		
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.0		
Mixing Zone Thickness (ft)	15	15	Default	Recharge	8.35E+02	1.7		
Aquifer Width Perpendicular to Flow (ft)	425	Site-specific		Total Water Volume	4.88E+04			
Parcel Area (acres)	5.13	Site-specific						
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	I		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific				I		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7			
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	5.1			
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget				
· ·	Ŭ,				Mass (mg)	% of Total		
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.63E+08	91.2		
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	8.6		
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	2.51E+05	0.1		
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.79E+08			

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t			SITE INFORMATION		
	0.1	· · ·	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 10	Parcel Identifie	cation
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(in a b a c (m) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LL	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in develo	ping this software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Qua	lity makes no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for a	ny damages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		WENTL

INPUT				OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.75E+04	98.1	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.0	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.53E+02	0.9	
Aquifer Width Perpendicular to Flow (ft)	425	Site-specific		Total Water Volume	4.84E+04		
Parcel Area (acres)	2.78	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	l	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·		l	
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.8		
Nitrogen Budget (all concentrations represent nitrat	e nitrogen)			Yearly Nitrogen Budget		<u></u>	
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.63E+08	91.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	8.6	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.36E+05	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.79E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 11	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developin	g this software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality	makes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any	damages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT				OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.75E+04	93.3	
Hydraulic Gradient	0.009	Site-specific		Eflluent	1.45E+03	2.8	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	1.97E+03	3.9	
Aquifer Width Perpendicular to Flow (ft)	425	Site-specific		Total Water Volume	5.09E+04		
Parcel Area (acres)	12.12	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	l	
Current/Acceptable Number of Homes in Parcel	3.0	Site-specific		· · · · · · · · · · · · · · · · · · ·			
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.1		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.0		
Nitrogen Budget (all concentrations represent nitrate	e nitrogen)			Yearly Nitrogen Budget			
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.63E+08	77.6	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	4.64E+07	22.1	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	5.92E+05	0.3	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.10E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 9-11	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(in chi chi chi chi chi chi chi chi chi chi$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing th	is software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality mal	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT	1	· · · · · · · · · · · · · · · · · · ·	10-11, 1985. University o	OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.57E+04	97.6	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.3	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.07E+02	1.1	
Aquifer Width Perpendicular to Flow (ft)	320	Site-specific		Total Water Volume	3.66E+04		
Parcel Area (acres)	2.5	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	l	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·			
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.5		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u></u>	
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.23E+08	88.7	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	11.2	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.22E+05	0.1	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.39E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 12	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(inches here) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality mak	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

ault Value e-specific e-specific 15 e-specific e-specific e-specific a00	Default Provide Justification	Yearly Water Budget Ground Water Efluent Recharge Total Water Volume Point of Compliance Nitrate Concentration Goal (mg/l) Avg. Downgradient Nitrate Concentration in GW (mg/l)	Volume (m ³) 5.31E+04 4.84E+02 6.94E+02 5.42E+04 4.4 3.7	<u>% of Total</u> 97.8 0.9 1.3
e-specific 15 e-specific e-specific e-specific e-specific 300		Eflluent Recharge Total Water Volume Point of Compliance Nitrate Concentration Goal (mg/l)	4.84E+02 6.94E+02 5.42E+04 4.4	0.9
15 e-specific e-specific e-specific e-specific 300		Recharge Total Water Volume Point of Compliance Nitrate Concentration Goal (mg/l)	6.94E+02 5.42E+04 4.4	
e-specific e-specific e-specific e-specific 300		Total Water Volume Point of Compliance Nitrate Concentration Goal (mg/l)	5.42E+04 4.4	1.3
e-specific e-specific e-specific 300	Provide Justification	Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
e-specific e-specific 300	Provide Justification	· · · · · · · · · · · · · · · · · · ·		
e-specific e-specific 300	Provide Justification	· · · · · · · · · · · · · · · · · · ·		
300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7	
	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7	
e-specific		Current/Acceptable Lot Size (Acres)	4.3	
		Yearly Nitrogen Budget		
			Mass (mg)	% of Total
e-specific		Background GW Nitrate Mass	1.83E+08	92.1
45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	7.8
0	Default	Recharge Nitrate Mass	2.08E+05	0.1
			4.005.00	
	45.0	45.0 Provide Justification 0 Default	-specific -spec	Mass (mg) -specific Background GW Nitrate Mass 1.83E+08 45.0 Provide Justification Septic Tank Effluent Nitrate Mass 1.55E+07 0 Default Recharge Nitrate Mass 2.08E+05

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments Natural Recharge Rate (NRR) can be			Lots 13	Parcel Identification
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 = 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing	this software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality r	nakes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any d	amages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT				v of Washington, Seattle, WA. Pages 23-41. See Instructions for Use below.		
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.31E+04	98.2
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	0.9
Mixing Zone Thickness (ft)	15	15	Default	Recharge	5.00E+02	0.9
Aquifer Width Perpendicular to Flow (ft)	475	Site-specific		Total Water Volume	5.40E+04	
Parcel Area (acres)	3.07	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.7	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	3.1	
Nitrogen Budget (all concentrations represent nitrate n	itrogen)			Yearly Nitrogen Budget		<u> </u>
					Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.83E+08	92.1
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	7.8
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.50E+05	0.1
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.98E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 14	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developin	g this software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality	makes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any	damages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT		• •	*	y of Washington, Seattle, WA. Pages 23-41. See Instructions for Use below.		
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	1.01E+05	93.4
Hydraulic Gradient	0.009	Site-specific		Eflluent	2.90E+03	2.7
Mixing Zone Thickness (ft)	15	15	Default	Recharge	4.16E+03	3.9
Aquifer Width Perpendicular to Flow (ft)	900	Site-specific		Total Water Volume	1.08E+05	
Parcel Area (acres)	25.54	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
Current/Acceptable Number of Homes in Parcel	6.0	Site-specific				
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.1	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.3	
Nitrogen Budget (all concentrations represent nitrate r	nitrogen)			Yearly Nitrogen Budget		<u> </u>
					Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	3.46E+08	78.6
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	9.28E+07	21.1
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.25E+06	0.3
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	4.40E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments Natural Recharge Rate (NRR) can be			Lots 9-14	Parcel Identification
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(in chi chi chi chi chi chi chi chi chi chi$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	is software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality ma	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dan	nages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

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				Estimating Ground-Water Quality Impacts From On-Site Sewa f Washington, Seattle, WA. Pages 23-41. See Instructions fo		stems.
INPUT				OUTPUT		
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.31E+04	93.5
Hydraulic Gradient	0.009	Site-specific		Eflluent	1.45E+03	2.6
Mixing Zone Thickness (ft)	15	15	Default	Recharge	2.26E+03	4.0
Aquifer Width Perpendicular to Flow (ft)	475	Site-specific		Total Water Volume	5.68E+04	
Parcel Area (acres)	13.91	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
Current/Acceptable Number of Homes in Parcel	3.0	Site-specific		Fort of compliance with all concentration soar (mg/)	4.4	
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.0	
		0.11				
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.6	
Nitrogen Budget (all concentrations represent nitrate r	nitrogen)			Yearly Nitrogen Budget		
· ·					Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.83E+08	79.5
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	4.64E+07	20.2
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	6.79E+05	0.3
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.30E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the		SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name
Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments Natural Recharge Rate (NRR) can be			Lots 12-14	Parcel Identification
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 = 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	A CONTRACTOR OF A
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality make	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

In Proceedings of 5th Northwest Un-Site Wastewater 1	reatment Shortco	ourse September	10-11 1985 University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below	
INPUT	-		10 1., 10001 01	OUTPUT		
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.13E+04	96.3
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.5
Mixing Zone Thickness (ft)	15	15	Default	Recharge	7.28E+02	2.2
Aquifer Width Perpendicular to Flow (ft)	280	Site-specific		Total Water Volume	3.25E+04	
Parcel Area (acres)	4.47	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4.47	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific				
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.5	
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>
	Ŭ /				Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.08E+08	87.3
Septic Tank Effluent Concentration (mg/I)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	12.6
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	2.18E+05	0.2
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.23E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments Natural Recharge Rate (NRR) can be			Lots 15	Parcel Identification
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 \neq 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing t	his software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality ma	akes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any da	mages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT		•		f Washington, Seattle, WA. Pages 23-41. See Instructions for Use below.		
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.13E+04	96.3
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.5
Mixing Zone Thickness (ft)	15	15	Default	Recharge	7.28E+02	2.2
Aquifer Width Perpendicular to Flow (ft)	280	Site-specific		Total Water Volume	3.25E+04	
Parcel Area (acres)	4.47	Site-specific				
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	l
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8	
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.5	
Nitrogen Budget (all concentrations represent nitrat	e nitrogen)			Yearly Nitrogen Budget		
					Mass (mg)	% of Total
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.08E+08	87.3
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	12.6
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	2.18E+05	0.2
		-				
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.23E+08	

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments Natural Recharge Rate (NRR) can be			Lots 16	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(inches here) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality mak	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

IDEQ LEVEL 1 NUTRIENT-PATHOGE					V. 1.3	5/2/2002	
				Estimating Ground-Water Quality Impacts From On-Site Sewa f Washington, Seattle, WA. Pages 23-41. See Instructions fo		stems.	
INPUT			10-11, 1909. Oniversity o	OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	4.80E+04	94.2	
Hydraulic Gradient	0.009	Site-specific		Eflluent	9.67E+02	1.9	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	2.00E+03	3.9	
Aquifer Width Perpendicular to Flow (ft)	430	Site-specific		Total Water Volume	5.10E+04		
Parcel Area (acres)	12.26	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	2.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.9		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	6.1		
Nitrogen Budget (all concentrations represent nitrate r	itrogen)			Yearly Nitrogen Budget			
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.65E+08	84.0	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	3.09E+07	15.7	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	5.99E+05	0.3	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.97E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 15-16	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(inches here) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality mak	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

INPUT				of Washington, Seattle, WA. Pages 23-41. See Instructions for Use below.			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.13E+04	96.3	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.5	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	7.29E+02	2.2	
Aquifer Width Perpendicular to Flow (ft)	280	Site-specific		Total Water Volume	3.25E+04		
Parcel Area (acres)	4.48	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4	1	
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific				1	
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	4.5		
Nitrogen Budget (all concentrations represent nitrate n	itrogen)			Yearly Nitrogen Budget			
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.08E+08	87.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	12.5	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	2.19E+05	0.2	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.23E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	U		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 17	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300	TAP is input in inches/yr.	However, the Idaho Department of Environmental Quality mak	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

	reatment Shortco	ourse September	10-11 1985 University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below		
INPUT			10 1., 10001 01				
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.36E+04	92.2	
Hydraulic Gradient	0.009	Site-specific		Eflluent	1.45E+03	2.5	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	3.11E+03	5.4	
Aquifer Width Perpendicular to Flow (ft)	480	Site-specific		Total Water Volume	5.82E+04		
Parcel Area (acres)	19.12	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	3.0	Site-specific		Form of compliance witrate concentration Goal (mg/l)	4.4		
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.0		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	6.4		
Nitrogen Budget (all concentrations represent nitrate	nitrogen)			Yearly Nitrogen Budget		<u> </u>	
· · ·					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.84E+08	79.6	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	4.64E+07	20.0	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	9.34E+05	0.4	
		0	Deidult		9.34ET00	0.4	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.32E+08	 I	

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 15-17	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 = 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing the	nis software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality ma	kes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any da	nages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

In Proceedings of 5th Northwest On-Site Wastewater Tre	eatment Shortco	ourse, September	10-11, 1985. University o	f Washington, Seattle, WA. Pages 23-41. See Instructions fo	r Use below.		
INPUT		· · · · · · · · · · · · · · · · · · ·		OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.74E+04	93.0	
Hydraulic Gradient	0.009	Site-specific		Eflluent	9.67E+02	2.4	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	1.84E+03	4.6	
Aquifer Width Perpendicular to Flow (ft)	335	Site-specific		Total Water Volume	4.02E+04		
Parcel Area (acres)	11.33	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	2.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.0		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	5.7		
Nitrogen Budget (all concentrations represent nitrate n	itrogen)			Yearly Nitrogen Budget			
	Ŭ,				Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.29E+08	80.3	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	3.09E+07	19.3	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	5.53E+05	0.3	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.60E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t		SITE INFORMATION		
	0.1	JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida		Lots 16-17	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(TAP)^2 = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing	this software.
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality m	akes no warranty
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any da	amages resulting
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.	

INPUT		· · · · · · · · · · · · · · · · · · ·		of Washington, Seattle, WA. Pages 23-41. See Instructions for Use below.			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	3.52E+04	97.7	
Hydraulic Gradient	0.009	Site-specific		Eflluent	4.84E+02	1.3	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	3.27E+02	0.9	
Aquifer Width Perpendicular to Flow (ft)	315	Site-specific		Total Water Volume	3.60E+04		
Parcel Area (acres)	2.01	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	1.0	Site-specific		· · · · · · · · · · · · · · · · · · ·			
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	3.8		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	2.0		
Nitrogen Budget (all concentrations represent nitrat	e nitrogen)			Yearly Nitrogen Budget		<u> </u>	
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.21E+08	88.6	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	1.55E+07	11.3	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	9.82E+04	0.1	
				<u> </u>			
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.37E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using t			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 18	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(inches here) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality mak	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dam	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

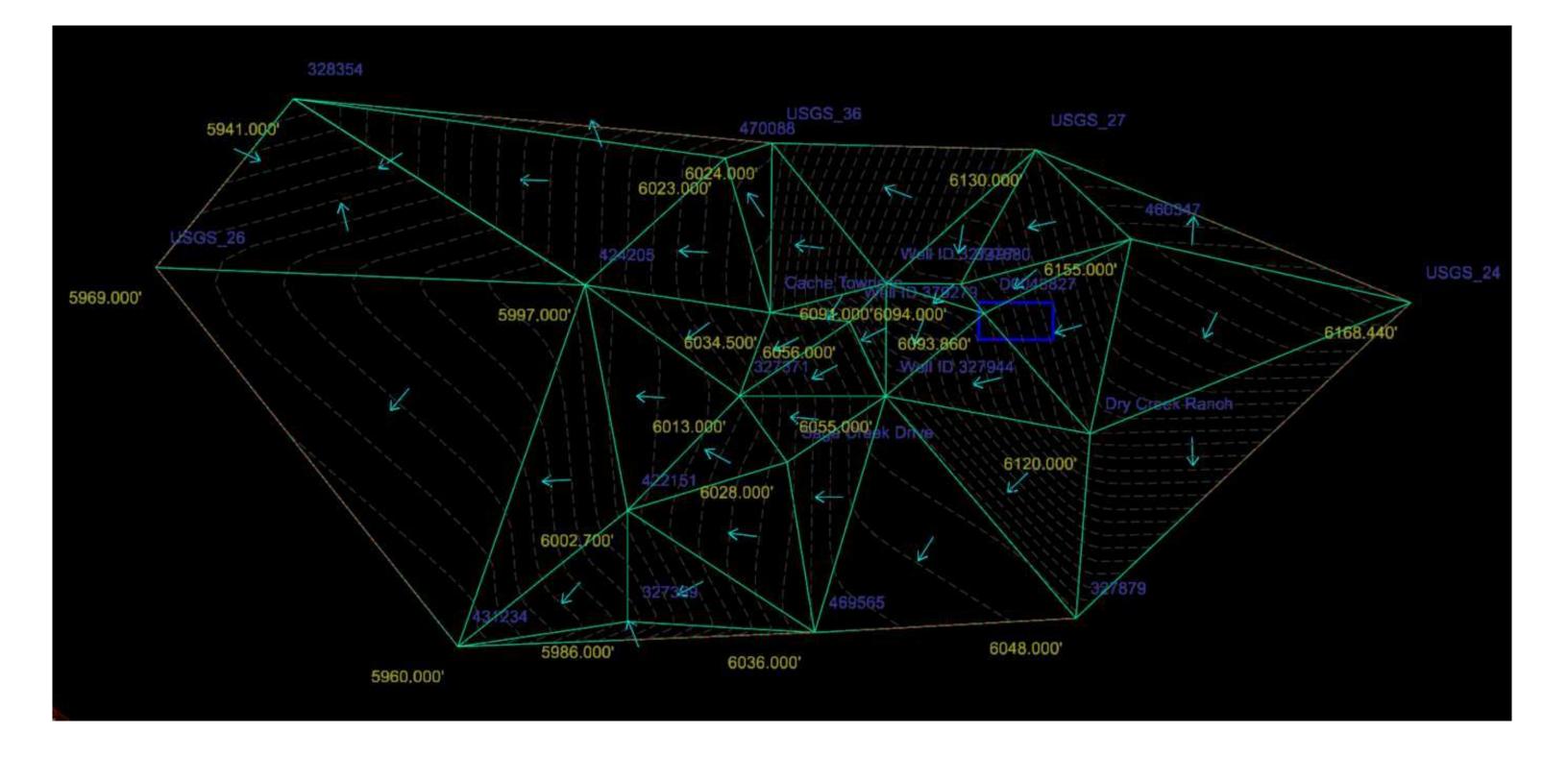
IDEQ LEVEL 1 NUTRIENT-PATHOGE					V. 1.3	5/2/2002	
				Estimating Ground-Water Quality Impacts From On-Site Sewa f Washington, Seattle, WA. Pages 23-41. See Instructions fo		stems.	
INPUT				OUTPUT			
Water Budget	Input Value	Default Value		Yearly Water Budget	Volume (m ³)	% of Total	
Hydraulic Conductivity (ft/day)	80.000	Site-specific		Ground Water	5.36E+04	90.9	
Hydraulic Gradient	0.009	Site-specific		Eflluent	1.93E+03	3.3	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	3.44E+03	5.8	
Aquifer Width Perpendicular to Flow (ft)	480	Site-specific		Total Water Volume	5.90E+04		
	04.40	0.1					
Parcel Area (acres)	21.13	Site-specific					
Percent of Parcel That Is Impervious (Percent)	4	Site-specific		Point of Compliance Nitrate Concentration Goal (mg/l)	4.4		
Current/Acceptable Number of Homes in Parcel	4.0	Site-specific					
Septic Tank Effluent (gallons/d/home)	350	300	Provide Justification	Avg. Downgradient Nitrate Concentration in GW (mg/l)	4.2		
Natural Recharge rate (inches/yr)	1.65	Site-specific		Current/Acceptable Lot Size (Acres)	5.3		
Nitrogen Budget (all concentrations represent nitrate r	nitrogen)			Yearly Nitrogen Budget			
					Mass (mg)	% of Total	
Upgradient Ground Water Concentration (mg/l)	3.4	Site-specific		Background GW Nitrate Mass	1.84E+08	74.6	
Septic Tank Effluent Concentration (mg/l)	32.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	6.19E+07	25.0	
Denitrification Rate (decimal fraction)		0	Default	Recharge Nitrate Mass	1.03E+06	0.4	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	2.47E+08		

Input parameter values appropriate to conditions at the site under consideration are entered in the <u>blue shaded cells</u> on the *INPUT* side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at an estimated Average Downgradient Nitrate Concentration in GW (shown in the *OUTPUT* side of the spreadsheet).

Aquifer Width Perpendicular to Flow: For land development flow, the site specific aquifer width value is determined using the			SITE INFORMATION		
	0.1		JC Ranches Subdivision	Site Name	
Ranges of Hydraulic Conductivity (K) for Unconsolida			Lots 15-18	Parcel Identification	
(feet/day)		estimated from total annual precipitation	8/5/2024	Date	
Silt and sandy silt	0.003 to 0.3	(TAP) using the equation: NRR $(inch a + b + b) = (TAP)^2 + 0.0040$	Adrienne Lemmers, PE Y2 Consultants, LLC	Prepared By	
Silty sands and fine sands		(inches/yr) = (TAP) ² * 0.0046 TAP is input in inches/yr.	Disclaimer: Considerable care was exercised in developing this	s software.	
Well-sorted sands and glacial outwash	3 to 300		However, the Idaho Department of Environmental Quality make	es no warranty	
Well-sorted gravel	30 to 3000		regarding its accuracy and shall not be held liable for any dama	ages resulting	
Typical Range of Hydraulic Gradient	0.0001 to 0.1		from its use.		

Appendix E: POTENTIOMETRIC MAPPING DATA

Appendix E: POTENTIOMETRIC MAPPING DATA



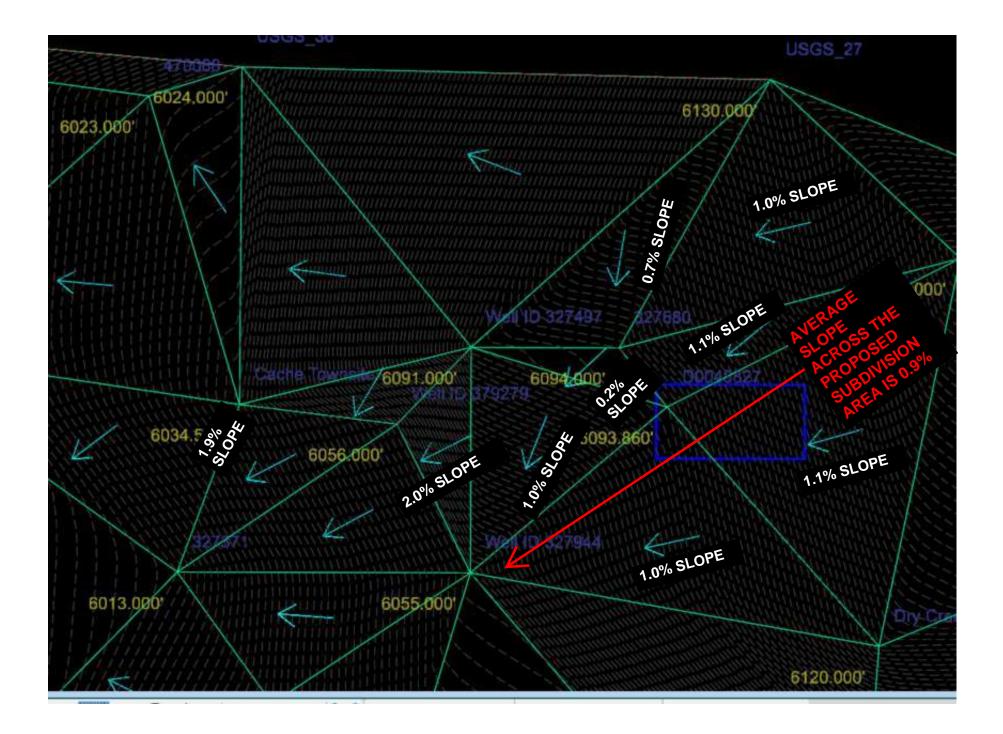


Table 6 Model Calibration Targets Teton Basin Ground-water Model

USGS Designation	Model Designation	State Plane x	Coordinates y	Water Level (ft, msl)	Date	Accuracy Datum (ft)
433439111090401	1	925076	697983	6077.00	05/09/94	5
433502111070601	2	933738	700425	6085.00	08/08/90	10
433604111072701	3	932097	706675	6045.00	01/10/94	5
433624111091401	4	924204	708654	6040.00	02/02/90	5
433640111102901	5	918677	710155	6029.11	07/27/99	40
433828111060201	6	938214	721298	6090.00	05/22/97	5
433832111071901	7	932517	721663	6059.10	05/06/02	5
433911111054701	8	939191	725721	6065.00	05/08/00	5
434008111104801	9	917022	731170	6022.00	05/18/90	5
434032111045001	10	943396	734052	6093.55	09/12/96	0.01
434047111065401	12	934172	735354	6084.23	09/14/98	10
434100111120701	13	911573	737813	6021.80	05/21/93	10
434110111062301	14	936416	737753	6081.00	06/19/00	5
434142111113701	15	913311	740641	6011.77	05/06/02	5
434323111133601	17	904442	750745	6007.27	05/07/02	5
434354111055101	18	938584	754369	6082.19	05/06/02	5
434501111035301	20	947340	761294	6203.96 (1)	*	10
434503111034701	21	947529	761450	6202.13	05/06/02	5
434514111025501	22	951346	762630	6250.00	10/12/00	5
434627111043401	23	944037	769898	6175.00	07/25/01	5
434651111041901	24	945035	772317	6168.44	05/07/02	5
434708111142701	26	900486	773558	5969.00	10/19/93	2
434746111072001	27	931732	777723	6130.00	06/24/96	5
434931111110201	30	915288	788202	5969.81	05/08/02	5
434936111143601	31	899525	788750	5828.15	03/18/98	0.01
434937111140701	32	901743	788629	5866.26	06/03/91	10
435016111064401	33	934152	793028	6180.00	10/22/98	5
435110111074101	34	929915	798444	6180.39	05/07/02	5
434827111122701	35	909745	781569	5922.00	10/24/99	5
434749111093401	36	922351	777957	6024.00	03/09/94	5

Highlighted wells were used to set a boundary for the potentiometric surface area. Other wells were initially included, but are very far north or south of the site (several miles) and were removed.

Data points in the 3D TIN model to generate the potentiometric surface. The USGS wells were from the Nicklin Table 6 on the previous sheet. Other wells were selected from the IDWR website and shown on the following pages.

Name	Field Code	Terrain Mo	Easting	Northing	Elevation
USGS_24	PNT	Spot	945035.000*	772317.000'	6168. <mark>44</mark> 0'
USGS_26	PNT	Spot	900486.000'	773558.000'	5969.000'
USGS_27	PNT	Spot	931732.000'	777723.000'	6130.000'
USGS_36	PNT	Spot	922351.000'	777957.000'	6024.000'
D0048827	PNT	Spot	929899.380'	771912.320'	6093.860'
Well ID 327944	PNT	Spot	926398.604'	768975.502	6055.000'
Well ID 379279	PNT	Spot	925102.604'	771613.927	6056.000'
Cache Townsite	PNT	Spot	922307.950'	771962.529'	6034.500'
Well ID 327497	PNT	Spot	926413.513'	772976.429'	6091.000'
Dry Creek Ranch	PNT	Spot	933656.326'	767667.156'	6120.000'
431234	PNT	Spot	911214.408'	760115.976'	5960.000'
327369	PNT	Spot	917244.676'	760982.530'	5986.000'
422151	PNT	Spot	917229.152	764942.198'	6002.700'
Sage Creek Drive	PNT	Spot	922889.102	766650.989'	6028.000'
327879	PNT	Spot	933147.920'	761119.283'	6048.000'
327680	PNT	Spot	929043.180'	772966.110'	6094.000'
460347	PNT	Spot	935087.871'	774552.521'	6155.000'
327371	PNT	Spot	921203.983	768979.619	6013.000'
470088	PNT	Spot	920697.327	777434.955'	6023.000'
424205	PNT	Spot	915714.757	772941.887	5997.000'
469565	PNT	Spot	923872.093'	760615.421'	6036.000'
328354	PNT	Spot	905375.200'	779531.096'	5941.000'

Well point data used in the potentiometric surface. Logs are provided for individual wells that were used - this happened when there was only one shallower well in an area. When multiple wells were used, the number, date range, and average water level was used in the mapping.

WellID - 4199166 PermitID - 849279 MetalTagNumber - D0048827 Construction Date - 10/01/2007 Static water level depth - 20' bgs Elevation from survey - 6113.86 Water level depth = 6093.86 x= 929899.38 y= 771912.32

WellID 327944 PermitID 702246 Construction Date - 4/8/1993 Static water level - 26' bgs Location is by quarter-quarter Lat:43.772108 Long:-111.143584 x= 926398.604 y= 768975.502 Surface = 6081 from topo map Water level depth = 6055

WellID - 379279 PermitID - 808484 MetalTagNumber - D0027575 Construction Date - 10/30/2003 Static water level depth - 20' bgs Surface = 6076 from topo map Water level depth = 6056 Lat:43.779389 Long:-111.148367 x= 925102.604 y= 771613.927 The Cache Townsite subdivision located at the corner of W 4000 N and N 3000 W has 10 well records from 2007 through 2022. All of these wells were drilled in the range of 60 to 100 feet bgs. The water level from the logs was averaged due to their proximity. The water levels range from 10 to 20 feet bgs with an average of 15.5 feet bgs. Surface = 6050 from topo map

Water level depth = 6034.5 Lat:43.780439 Long:-111.158931 x= 922307.950 y= 771962.529

WellID - 327497 PermitID - 702556 MetalTagNumber -Construction Date - 9/17/1994 Static water level depth - 15' bgs Surface = 6106 from topo map Water level depth = 6091 Lat:43.783082 Long:-111.1433404 x= 926413.513 y= 772976.429

Dry Creek Ranch
8 wells within subdivision drilled from
2005 to 2023. Shallow water levels are at
20' bgs.
Average Depth to Static Water Level = 20
Surface El = 6140 at about the center of
the subdivision
Lat:43.768270
Long:-111.116174
x= 933656.326
y= 767667.156
y= /6/66/.156

Well right next to the river
WellID - 431234
PermitID - 861998
MetalTagNumber - D0059712
Construction Date - 9/12/2011
Static water level depth - 18' bgs
Surface El = 5978
Lat:43.748306
Long:-111.201453
x= 911214.408
y= 760115.976

Well just east of N 4000 W - located in stream bed WellID - 327369 PermitID - 702433 MetalTagNumber -Construction Date - 4/27/1994 Static water level depth - 18' bgs Surface El = 6004 Lat:43.750488 Long:-111.178596 x= 917244.676 y=760982.530

3 wells, just south of N 4000 W & W 3000 N One drilled in 1993 and the other two in 2008 WellID - 422151 PermitID - 852378 MetalTagNumber -D0049730 Water levels 10, 13, and 20 Static water level depth = 14.3 Surface EL = 6017 Lat:43.761350 Long:-111.178476 x= 917229.152 y=764942.198

Wells along Sa	ge Cre	ek Driv	e	
20' and 24' de	oth, on	e anon	nalous v	vell had a
depth greater	than th	ne com	pletion	depth and
was not used.	Wells	were d	rilled in	2020 and
2023.				
Use a depth of	22'			
Surface El=605	0			
Lat: 43.765850)			
Long: -111.156	976			
x=922889.102				
y=766650.989				

WellID - 327879
PermitID - 702183
MetalTagNumber -
Construction Date -10/17/1992
Static water level depth - 68' bgs
Surface = 6116 from topo map
Water level depth = 6048
Lat:43.750327
Long:-111.118412
x= 933147.920
y= 761119.283
This well is much deeper than most wells used.
Used as a south boundary point and not used for
average slope for mass-balance spreadsheets.

WellID - 327680 PermitID - 701985 MetalTagNumber -Construction Date -8/20/1991 Static water level depth - 15' bgs Surface = 6109 from topo map Water level depth = 6094 Lat:43.750327 Long:-111.118412 x= 933147.920 y= 761119.283

WellID - 460347
PermitID - 895654
MetalTagNumber - D0083627
Construction Date -8/31/2020
Static water level depth - 20' bgs
Surface = 6175 from topo map
Water level depth = 6155
x= 935085.45
y= 774535.30

WellID - 327371
PermitID - 702435
MetalTagNumber -
Construction Date -4/28/1994
Static water level depth - 19' bgs
Surface = 6032 from topo map
Water level depth = 6013
x= 921203.98'
y= 768979.62'

WellID - 470088
PermitID - 905888
MetalTagNumber - D0092439
Construction Date -6/27/2022
Static water level depth - 20' bgs
Surface = 6043 from topo map
Water level depth = 6023
x= 920697.33'
y= 777434.96

WellID - 424205
PermitID - 854539
MetalTagNumber - D0049755
Construction Date -12/29/2008
Static water level depth - 20' bgs
Surface = 6017 from topo map
Water level depth = 5997
x=915714.76
y=772941.89

WellID - 469565
PermitID - 905346
MetalTagNumber - D0091772
Construction Date -5/26/2022
Static water level depth - 4' bgs
Surface = 6040 from topo map
Water level depth = 6036
x=923872.09
y=760615.42

WellID - 328354 PermitID - 701878 MetalTagNumber -Construction Date -10/4/1990 Static water level depth - 5' bgs Surface = 5946 from topo map Water level depth = 5941 x=905375.20 y=779531.10

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Føm 238 4/92

USE TYPEWRITER OR BALLPOINT PEN

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

State law requires that this within 30 day	report be filed with ys after the completion	the (on or	Director aban	or, Dep donme	partment ent of the	of Water Resource well.	'Ces'		
1. WELL OWNER Name <u>Steve</u> L Johnson	<u>~</u>	St	tatic w		vel _26	feet below			
Address <u>225 N 100 S D</u> Drilling Permit No. <u>22-93-6-03</u>	e1995 >-000	Flowing? Yes Image: No G.P.M. flow Artesian closed-in pressure p.s.i. Controlled by: Image: Valve Image: Cap Plug					'		
Water Right Permit No		Те	empera	ature	Describe ar	Quality tesian or temperature	zones below.		
2. NATURE OF WORK			ELL 1 Pum	PEST C)ATA □ Bailer	🗆 🗔 Air	Other		
Well diameter increase D Moo Abandoned (describe abandonment or modif	lification			e G.P.M.		Pumping Level	Hours	Pumped	1
such as liners, screen, materials, plug depth log, section 9.)									·
3. PROPOSED USE		9. LI	THOL	OGIC	LOG				
□ Industrial □ Stock □ Waste Dis □ Other (specify type)	Di		De From	То		Material	1071:	Yes	ter No
4. METHOD DRILLED	6	1	D 2'	71 351	Clay	and GRAVE	el		A F
Cable D Mud D Other	🗆 Reverse rotary	64	5 4	41 161'	<u>Clay</u> Clay	+ Geavel		4	
5. WELL CONSTRUCTION							· · · · · · · · · · · · · · · · · · ·		
Casing schedule: A Steel Concrete C	то								
inches inches inches inches inches inches	feet feet								
Was casing drive shoe used? 🎢 Yes 🛛 🗍 Was a packer or seal used? 🗋 Yes 🎢	No								
Perforated? Ves A How perforated? Factory Knife Size of perforation? inches by	Torch 🗆 Gun 🛏								
Number From perforations feet	To				RRA	PENNE	<u>n</u>		
perforations feet feet						A loan ma the	<u> </u>		
Well screen installed? Yes No Manufacturer Tap Backer of Headeine						DR 1 3 1993			
Top Packer or Headpipe Bottom of Tailpipe					Departme East	ent of Water Resou ern District Office	(C 8 3		
Diameter Slot size Set from Diameter Slot size Set from	feet to feet				·				
Gravel packed?	feet							++	
Surface seal depth 22 Material used in seal:				14		-			
Sealing procedure used: Slurry pi	e to seal depth	_			<u> </u>	: 1994	· · · · · · · · · · · · · · · · · · ·		
	d Welded detween strata	10.				<u>- 1994</u>		<u>[l.</u>	
Describe access port		N	/ork st	arted _	4-8-	<u>93</u> finish	ed <u>4-8-</u>	93	
6. LOCATION OF WELL					ERTIFICA				
Sketch map location must agree with written l		co	omplie	d with	at the tim	nimum well cons ne the rig was rei	moved.	ards w	ere
W E Lot No Block					-	oticon Da		3	
Address of Well Site				-	•	rvisor	1 0 .		_
(give at least name T5 NE 1/4 Sec9_, R. 4/5	of road) NACL or S□ EAT or W□			а	ind erator)		\mathcal{J}	~	
, n. 7					. ((If different than ti	ne Drilling Supe	ərvisor)	

Form 238-7 IDAHO DEPARTMENT OF WATER RESO WELL DRILLER'S REPORT	UR(CES				Office Use C No ed by Rge			
1. WELL TAG NO. D CO27575	12. \	VELLI	ESTS:			1/4 1/4 _ : : Long	1/4		
Water Right or Injection Well No.			'ump	🗆 Bailer	Air	Flowing A	rtesian		
2. OWNER:		Yield gal.	/min.	Drawdow	/n	Pumping Level	Ti	ne	
Name <u>huroid</u> Gee									
Address 2272 E HNDY 33 City Sugar City State FD Zip 83448									
J J	Wate	er Temp.		L		Botto	m hole tem	p	
3. LOCATION OF WELL by legal description: You must provide address or Lot, Blk, Sub. or Directions to well. Twp. S North or South				comments: _					****
Rge <u>US</u> East S or West	13. l	lithol	.OGIC L	.OG: (Descri	ibe repair	s or abandonmen	t)	Wa	ter
Sec. 9 . $1/4$ NW1/4 NE 1/4	Bore Dia	From	То	Remarks: 1	Lithology, V	Vater Quality & Terr	perature	Y	N
Gov't Lot County	B	D	20	0					X
Lat: : Long: : : Address of Well Site 375 n 300 W	6		68	Clay	CR.	Juer grave	- \	X	\sim
City Riccs			90	Clay		2) grav.	c١	*	
		90'	icol	clay	- Qre	wei		×	
Lt Blk Sub. Name				(<u> </u>				
4. USE:									
Domestic Inducipal Monitor Irrigation									
5. TYPE OF WORK check all that apply (Replacement etc.) New Well Modify Abandonment Other									
6. DRILL METHOD: Air Rotary Cable Mud Rotary Other									
7. SEALING PROCEDURES					•				
Seal Material From To Weight / Volume Seal Placement Method Bentonite o 20 400 H overboare									
Was drive shoe used? NY N Shoe Depth(s)									
Was drive shoe seal tested? \Box Y \blacksquare N How?									
8. CASING/LINER: Diameter From To Gauge Material Casing Liner Welded Threaded									
(3) +1 1003 ,250 Stee 1 N .				1467 <u>2</u>		IVED			
				<u> </u>	<u>~ </u>	8 2003			
Length of Headpipe Packer Y N Type				Departr	neal ci Va	<u>tier Hasources</u>			
					Eastern	389127			
9. PERFORATIONS/SCREENS PACKER TYPE									
Perforation Method Screen Type & Method of Installation									
From To Slot Size Number Diameter Material Casing Liner					.				
	Co	ompleted	l Depth	100)		(M	easura	able)
	Da	ate: Sta	irted	10/28	03	Completed	10/3	olo	3
	14.	DRILL	ER'S CI	ERTIFICATIO	DN			=1	-
10. FILTER PACK					constructio	n standards were c	omplied wit	h at th	ne
Filter Material From To Weight / Volume Placement Method		Ū	was rem			_			
	Corr	npany N	ame 冱	enning	Wen	Drining	Firm No	. S	8
		cipal Dr			Qemm	\mathcal{I}	ate <u>//-</u>	1_1	2
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE: ft. below ground Artesian pressurelb.	and			comme (A	Sam	F	,	<u>,-0</u>	J
Depth flow encounteredft. Describe access port or control devices:		er or Op	erator	pres	-66	here Da	ate $10/3$	00	3
	Ope	rator I _		١		Da	، 		

	Principal D	riller and	Rig Operator	Required.
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Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 288-7 1/94 IDAHO DEPARTMENT O WELL DRILL				ypewriter or Point Pen
				55899
1. DRILLING PERMIT NO. 22.94. 5. 147				
Other IDWR No. Other IDWR No.	11. WELL TES	TS: □ Bailer □Xai	ir 🗆 Flowing Ar	tesion
2. OWNER: // ///	Yleid gal./min.		Pumping Level	Time
NameKentHale	35	55	\$5	1 Nm
Address ρ , δ , $B\delta \chi$ /17				
City <u>7 etonia</u> State Dd Zip 83457		· ·		
	Water Temp		om hole temp	
3. LOCATION OF WELL by legal description:	Water Quality test o	or comments:	con + good	
Sketch map location <u>must</u> agree with written location.	12. LITHOLOG	IC LOG: (Describe	renaire or abandon	mont)
	Bore			
Twp North Ø or South □	Dia. From To	Remarks: Lithology, V	Water Quality & Tempe	rature Y N
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	6 0 20	sand I g	wil (12'A	ROK V
Sec. <u>2</u> , <u>3</u> E 1/4 D /V 1/4 1/4 Gov't Lot <u>County</u> 76 docres	K BORD	Washel C	1	
	14060	sond tal	me	
$\frac{175}{5}$ Address of Well Site <u>178 W</u> . 400 71			* - (
(Give at least name of road + Distance to Road or Landmark) City Ditomia				
· · · · · · · · · · · · · · · · · · ·				
LtBlkSub. Name			• • • • • • • • • • • • • • • • • • • •	
4. RROPOSED USE:				
A. FOROSED USE: Domestic				
□ Thermal □ Injection □ Other				
5, TYPE OF WORK			"h. Piars	
New Well Dodify or Repair Replacement DAbandonment	RECE,	<u> </u>)SCENT	
6. DRILL METHOD		VED I	(Sem)	
Y A STATE ST	1 196 2 6 1	•		
7. SEALING PROCEDURES	Department of Wator Fig	994	DEC 1 4 190	24
SEAL/FILTER PACK AMOUNT METHOD Material From To Sacks or	""Int of Wator Ba			
Material From To Sacks or Bontomete O 20 2 Over tome		SOUICes	Partment of Water Ro	GUICH
Complete C por 3 Cron bour			Esstern District Offi	ce
			• • • •	
Was drive shoe used? Y I N		2/12 (a for the second se	
Was drive shoe seal tested? Y D N D How?		1 los		
8. CASING/LINER:			, U	
Diameter From To Gauge Material Casing Liner Welded Threaded	110700	T 30	-7.4.1994	<u> </u>
		Prontinent -	f Maria	
		Eastern	I Water Resources	
.ength of Headpipe Length of Taiipipe	MAY 08			
9. PERFORATIONS/SCREENS NON-		995 [
Perforations Method		60		
Screen Type Screen Type	Completed Depth_	9-18-94	Completed C	_(Measurable)
From To Slot Size Number Diameter Material Casing Liner	Date: Started	······		18 74
		CERTIFICATION		
	I/We certify that all r	ninimum well constru		complied with at
	the time the rig was			
	Firm Name	on water	Works Fi	rm No.506
ft. below ground Artesian pressurelb. Depth flow encounteredft. Describe access port or	Firm Official		Date	10-12-94
control devices:	and Supervisor or Opera	1 head	Letter Date	
	supervisor of opera	(Sign once if Firm O		

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Form 238-7 6/07

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IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLE	R'S	REP	ORT		
1. WELL TAG NO. D_0059712	12. ST		ATER I	LEVEL and WELL TESTS:	
Drilling Permit No.	Depth first water encountered (ft)Static water level (ft)				
Water right or injection well #	Mator tomp ("E) BOTTOM DOLE TEMP ("E)				
2. OWNER: Willow Bend LLC % Derek Hora	Describe access port				
Name Derek Hora	Well to	est:		Test method:	-
Address P.O. BOX 761		down (feet		charge or Test duration Pump Bailer	Air Flowing artesian
city_Victor		50'	<u> </u>	<u>+</u> □ □	
3.WELL LOCATION:	Water	auality t	est or co		
Twp. Shorth Two or South Reg. $\frac{45}{10 \text{ acres}}$ East or West Sec. $\frac{19}{10 \text{ acres}}$ $\frac{14}{40 \text{ acres}}$ $\frac{40}{40 \text{ acres}}$ $\frac{14}{160 \text{ acres}}$ $\frac{14}{140}$		• •		and/or repairs or abandonment:	
Sec 1/4 1/4 1/4 1/4 1/4	Bore Dia.	From	То	Remarks, lithology or description of repairs or	
Gov't Lot County Teton	(in)	(ft)	(ft)	abandonment, water temp.	Y N
Lat. <u>43</u> <u>44 912</u> (Deg. and Decimal minutes)	10	2	16	Overburdien / c/ay	
Long. <u>/// º /2 • 032</u> (Deg. and Decimal minutes)		16	36	Clay Brund	
Address of Well Site 6000 W 2000 N		36	38	Said + Grave	
(Give at least name of road + Distance to Road or Landmark) City City	6	38	42	Sand + Gravel	-+ (
Lot Blk Sub. Name		42	36	Gravel + Sediment	<u> </u>
4. USE:		22	58	Grivel + Sediment	/
Comestic Municipal Monitor Irrigation Thermal Injection					
5. TYPE OF WORK:			[
New well Replacement well Modify existing well		ļ			
Abandonment Other					
6. DRILL METHOD: Ø Air Rotary □ Mud Rotary □ Cable □ Other					
7. SEALING PROCEDURES:					
Seal material From (ft) To (ft) Quantity (lbs or ft ³) Placement method/procedure					
Bantonik O 38 800# overbore 10"					
8. CASING/LINER:					
(nominal) (ft) 10 (it) Schedule Waterian Casing Lines Threaded Welded					
6" +2 58250 steel AG		ļ		have been been to a process to a process	
				Find the Contract of the second second	
				101 0 1 004	
Was drive shoe used? 🗶 Y 🗌 N Shoe Depth(s) <u>58</u>			[Apariment of Water Resources	
9. PERFORATIONS/SCREENS:				Eastern Region	
Perforations Y X Method					
Manufactured screen Y X N Type					
Method of installation			<u> </u>	Pat	
From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule	Compl	eted Dep	th (Meas		
	Date S	tarted:	9-1	3-// Date Completed: 9-/	13-11
	14. DI	RILLER	'S CERT	TIFICATION:	
			at all mini 1 was ren	imum well construction standards were com noved.	plied with at
Length of Headpipe Length of Tailpipe	C	-	N	enning Drilling CO. No.	518
Packer 🗌 Y 🕱 N Type			1		
10.FILTER PACK:	*Princ	ipal Drille	er ##	mul alanny Date_	<i>q-16-</i> 11
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	*Drille	r		Date	
	*Oner	ator II	Tyl	hill Date	<u>7-15-11</u>
			1		
11. FLOWING ARTESIAN:	Opera	ior I	<u> </u>	Date	
Flowing Artesian? TY XX Artesian Pressure (PSIG)	* Sigr	ature of	f Princip	al Driller and rig operator are required.	
Describe control device					

For the second	MAY 9 1994 Department of Wastatestate requires that this report be filed within 30 days after the completion of the com	WATE ER	R RE		ORT JU	CEIVUE N 13199 Nelsilikeseri	BALLPOIN 4		
N A	VELL OWNER ame Ken Dunn ddress 250 N 400 W Deiggs Id, rilling Permit No. 22 - 94 - E - 040 - 000 /ater Right Permit No.	F F A	Static w Flowing Artesiar Controll	l? □ n close led by:	Vel feet Yes / No d-in pressure Ovalve C °F. Quality _ Describe artesian or tem	G.P.M. p.s.i. ≿ap □ PI	flow		_
	ATURE OF WORK New well Deepened Replacement Well diameter increase Modification Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)		□ Pun	TEST (np e G.P.M.	Bailer D		Dther Hours Pu		
	ROPOSED USE Domestic Irrigation Monitor Industrial Stock Waste Disposal or Injection Other (specify type)	Bore		OGIC pth To		nterial	89933) Wa Yes	ter No
	ETHOD DRILLED Rotary Air Auger Reverse rotary Cable Mud Other (backhoe, hydraulic, etc.)	64 64 61		35' 57' 65'	Clay + Garvel Clay + Sand Clay Gravel Sa			/ /	<i>-</i>
C I W W P I I	ZELL CONSTRUCTION asing schedule: A Steel Concrete Other								
	Number From To								
Di Gi Pl Si	iameter Slot size Set from feet to feet iameter Slot size Set from feet to feet ravel packed? Yes No Size of gravel aced from feet to feet to feet feet feet urface seal depth ////////////////////////////////////		Mij	20	TI MED				
	Temp. surface casing Towns. Surface casing Towns. Surface casing: Threaded Threaded Solvent Weld Cemented between strata escribe access port	10.	FEA Work s	0	1995 4-28-94	finished	4-28-91	¢	
Sł w Ac	N Subdivision Name Subdivision Name		I/We c complie Firm N Addres	ertify th ame 1 s <i>Ba</i> by Dri	ERTIFICATION hat all minimum we at the time the rig Denning DRI RI RI RI RI RI RI RI RI RI	Was removed	d. 578 4 - 28 - Denning	9¥	

6492 DEPARTMENT OF WELL DRILL State law requires that this report be filed wi	DF IDAHO USE TYPEWRITER OF WATER RESOURCES BALLPOINT PEN ER'S REPORT th the Director, Department of Water Resources etion or abandonment of the well.
1. WELL OWNER Name <u>ANTHORY CLARD</u> TANK Address <u>PO Box 452</u> DRIGGS 83422 Drilling Permit No. <u>22-92-E-159</u> Water Right Permit No.	7. WATER LEVEL
 2. NATURE OF WORK New well Deepened Replacement Well diameter increase Modification Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.) 	8. WELL TEST DATA Image: Pump Bailer Air Other Discharge G.P.M. Pumping Level Hours Pumped Image: Pumping Level Hours Pumped
3. PROPOSED USE Domestic Industrial Stock Waste Disposal or Injection Other (specify type) A. METHOD DRILLED	9. LITHOLOGIC LOG Bore Depth Material Water Diam. From To Material Yes No 8" 0 20' Clay y Genvel 1 6" 20' 100' Chy & Genvel 1 10' 10' 10' 10' 10' 10' 10' 10' 10' 10'
A Rotary I Air □ Auger □ Reverse rotary □ Cable □ Mud □ Other	
5. WELL CONSTRUCTION Casing schedule: Isteel Concrete Other Inchess Diameter From To, Inchess inches feet Add Inches inches feet feet Inches Inches Itext feet Was a packer or seal used? Yes No Was a packer or seal used? Yes No How perforated? Factory Knife Torch Gun Size of perforation? inches by inches feet feet	$R = C = 1 \vee E D$ $NOV 2 5 1992$ $NOV 2 5 1992$ $R = C = 1 \vee E D$ $R = 1 \vee E D$
County	Work started <u>ID-16-92</u> finished <u>ID-18-98</u> 11. DRILLER'S CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Denning Denling</u> Firm No. <u>IO</u> Address <u>Bax 460 Ucon JA</u> Date <u>ID-18-92</u> Signed by Drilling Supervisor <u>ILunu Allenning</u>
(give at least name of road) T. 5 N 4 or S NW 14 NW 14 Sec. 23 , R. 45 E 16 or W USE ADDITIONAL SHEETS IF NECESSARY T	and (Operator) <u>(If different than the Detting Supervisor)</u> THE WHITE COPY TO THE DEPARTMENT

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Form 238-7 6/89

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

USE TYPEWRITER OR BALLPOINT PEN . .

V State law requires that this report be filed wit within 30 days after the complete						er Resources			
1. WELL OWNER	7.	WAT	ER LE\	/EL					
Name Don Dabel		Static	water I	level	15	feet below	land surface.		
Address Star Route Box 343 Wilson						G.P.M. f			
Owner's Permit No. 22-91-E-087WDM	ing	Contr	olled by	y: 🗆	Valve	□ Cap Quality temperature zon	🗆 Plug		
2. NATURE OF WORK	8.				sian or	temperature zon	es below.		
New well		🗋 Pu	mp	🗆 Bai	ler	🕅 Air	Other		
 Well diameter increase Abandoned (describe abandonment procedures such as materials, plus descha, sta, in lithelasis las) 		Discharg	e G.P.M.			mping Level			
materials, plug depths, etc. in lithologic log)		-51)						
3. PROPOSED USE	 								
Pomestic 🗆 Irrigation 🗀 Test 🗆 Municipal	9.	LITH	ologi	C LOG			· · · · · · · · · · · · · · · · · · ·		
Industrial Stock Waste Disposal or Injection Other (specify type)	Bore		pth To			Material	· · · ·	Wat	ter No
4. METHOD DRILLED	\mathcal{O}^{T}	\mathcal{D}	50	Sor	d-	Gravel		163	X
		59	54 85	Sar	n-t	+ Brown Gravel	r aay.	X	\bigtriangleup
Rotary Air 🗆 Hydraulic 🗆 Reverse rotary Cable 🗆 Dug 🗆 Other							· · ·		
5. WELL CONSTRUCTION				-		_			
Casing schedule: Steel 🗆 Concrete 🗆 Other									
Thickness Diameter From To inches inches feet feet feet									
inches inches feet feet							·		
inches inches feetffeet									
Was a packer or seal used?		• • • • • • • • • • • • • • • • • • •							~
How perforated? 🗌 Factory 🔲 Knife 🗌 Torch 🔲 Gun						······			
Size of perforation inches by inches Number From To									
perforations feet fee								-	
Well screen installed? Ves XNo									
Manufacturer's name Type Model No DiameterSlot sizeSet fromfeet tofeet Diameter Slot size Set fromfeet tofeet						· · · · · ·			
Diameter Slot size Set from feet to feet Diameter Slot size Set from feet to feet			-				<u> </u>		
Gravel packed? 🗆 Yes 💢 No 🗖 Size of gravel							<u> </u>		
Placed from									
Sealing procedure used: 🛛 Slurry pit 🖓 Temp. surface casing									
♦ Overbore to seal depth Method of joining casing: □ Threaded ♀ Welded □ Solvent							· · · · · · · · · · · · · · · · · · ·		
Weld									
Describe access port	10.	Woi	rk starte	ed <u>8</u>		191 finish	ed 8/21	191	_
6. LOCATION OF WELL	11.	DRIL	LERS (CERTIF	ICATI	ON			
Sketch map location <u>must</u> agree with written location. N Subdivision Name		compli	ied with	hat the	time th	ne rig was rem			re
WAY 0 5 1992		Firm N	Jame	ndepe	nder	+ On Iline	Firm No. <u>34</u>	<u>Ş</u>	_
W E E Block No		Addres	ss 664	W.ć	2001	V. Belift	Date 8136	191	_
		Signed	by (Fir	m Offic	ial) 👱	Bunt ,	4endruch		_
County 1000			(C	and Operato	r) ~	Kip à	L P.	her	
5E 1/4 5W 1/4 Sec. 3, T. 5_ NX AL EX			, c	perator	'' <i>-</i>	-ng _2	<u> </u>	timi 1	1

Form	238-7
6/07	

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IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D. DO083627	12 51			EVEL and WELL TEST	· C ·		
Drilling Permit No							
Water right or injection well #	- Water temp, (⁰ F) Bottom hole temp, (⁰ F)						
2. OWNER: 1204 las Evans							
Name	Well t				Test method:		
Address, <u>4369 N Hwy 33</u>	Draw	down (feei		charge or Test duration ald (gpm) (minutes)	Pump Bailer		Flowing artesian
City Tetonia State ID Zip 83452				35 20		12	
3.WELL LOCATION:							
Twp. <u>5</u> North 💹 or South 🗖 Rge. <u>46</u> East 🐼 or West 🗖	Water	quality t	est or co	omments:			
Sec. $$ } $$ } $$ $$ $$ $$ $$ $$ $$ $$ } $$ $$ $$ $$ } $$ $$ } $$ $$ } $$ $$ } $$ } $$ $$ } $$ $$ } $$ $$ } $$ $$ $$ } $$ $$ $$ $$ $$ $$ $$ $$ $$ $$	13. LIT Bore	HOLOG		and/or repairs or aband	donment:		
	Dia.	From (ft)	To (ft)	Remarks, lithology or desc abandonment, wa			Water
Gov't Lot County Teton	(in) [D	U	20	clay & gravel			N V
Lat (Deg. and Decimal minutes)	10	20	38	Clay & Gravel		+	+
Long (Deg. and Decimal minutes)	6	38	120	day & Pravel		X	
Address of Well Site 4.369 n Hwy 33				end Jun (
(Give at least name of road + Distance to Road or Landmark) City Tetton Ira							
Lot Blk Sub. Name							
4. USE:						_	
Domestic Municipal Monitor Irrigation Thermal Injection							
5. TYPE OF WORK:							
New well Replacement well Modify existing well Abandonment Other			· · · · · · · · · · · · · · · · · · ·				
6. DRILL METHOD: ☑ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other						_	-
7. SEALING PROCEDURES:							
Seal material From (ft) To (ft) Quantity (lbs or ft ²) Placement method/procedure							
Bentonia D 38 1150 LBS 10" temp casing							
						_	
8. CASING/LINER:	<u> </u>						
Diameter (nominal) From (ft) To (ft) Gauge/ Schedule Material Casing Liner Threaded Welded						_	+=
6 +2 120 250 Steel 1 0 1							-
							1
						-	
					REGE	IVE	D
					ATT 9 0	2020	_
9. PERFORATIONS/SCREENS:					Ser LO	1.01.0	
Perforations 🔲 Y 🖉 N Method				Cor	partment of Wa	ar Reso	#COS
Manufactured screen 🔲 Y 🛛 🕅 N Type				1.3	Eastern H	agion	+
Method of installation							1
From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule	Comple	ted Ded	th (Measu	(120)			(*)
			- 11	1110	malila	~~~~	
			1/1/2		pleted: 9/1/2	0	
				FIFICATION: mum well construction stan	idards were com	unlied with	nat
Length of Headpipe Length of Tailpipe			was ren			phou man	
	Compa	ny Nam	e Par	1/21 Denvine Arilli	Co. No.	518	
				2 1 11	J	6.10	50
IO.FILTER PACK: Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	*Princi	al Drille	-to	agent alunu	// Date	7752	N.
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	*Driller	Be	uf	5-9-1	Date <u>9</u>	1/2/20)
	*Opera	torll	U	0		, ,	
		0	1	7271 0	Date	, [].	
11. FLOWING ARTESIAN:	Operat	orl	and	piquet	Date	12/20	
Flowing Artesian? 🔲 Y 🛛 🕅 N Artesian Pressure (PSIG)	* Signa	ature of	Principa	al Driller and rig operator	are required.		
Describe control device							

DECEIVED CEPARTMENT OF				סרבפ	RECEIVE			
WIAY 9 1994 WELL DRILL State law requires that this report be filed with Department of Water Resources within 30 days after the complete	ER'	'SF Direct		OR	TDepartment of Water H ant of Water Resour	1050UTC05		
Lastern District Office 1. WELL OWNER Name <u>H</u> , <u>D</u> , <u>Dunno</u> Address <u>326 N 300 W</u> <u>Drisgs Id</u> , Drilling Permit No. <u>22 - 94 - 6 - 042 - 000</u> Water Right Permit No	7. V 5 F A C	WATER Static w Flowing Artesiar Controll	LEVEI	L Vel Yes d-in pr	9 / feet below l Ø No G ressure p.	i.P.M. flow s.i. □ Plug		
 2. NATURE OF WORK New well Well diameter increase Modification Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.) 		WELL 1 Discharge	-	🗇 Ba	ailer 🗆 Air Pumping Level	Other Hours F		
 3. PROPOSED USE Domestic Irrigation Monitor Industrial Stock Waste Disposal or Injection Other Other 	Bore		OGIC I		Material	89934	Wat Yes	ter No
4. METHOD DRILLED	6 6 6 6 6	0 8 40 50	8' 4/8' 50' 80'	Clay Clay Cla	av 1 * Gravel 2 + Saud 2 Saud Gravel		/ / /	
5. WELL CONSTRUCTION Casing schedule: Steel Concrete Other Thickness Diameter From To inches inches + feet feet inches inches feet feet inches inches feet feet inches inches feet feet Uas casing drive shoe used? Yes No Was a packer or seal used? Yes No Vas a packer or seal used? Yes No Perforated? Yes No How perforated? Factory Concerning inches Number From To perforations feet								
Well screen installed? Yes No Manufacturer Type Type Top Packer or Headpipe Bottom of Tailpipe Example Bottom of Tailpipe Set from feet to feet Diameter Slot size Set from feet to feet Diameter Slot size Set from feet to feet Bravel packed? Yes No Size of gravel feet					· · · · · · · · · · · · · · · · · · ·			
Placed from	10.	<u> </u>	0819		99-94 finish	ed_4-29-	- 94	
6. LOCATION OF WELL Sketch map location must agree with written location. N Subdivision Name W Subdivision Name Lot No. County Subdivision Name Lot No. County Subdivision Name (give at least name of road) T. Subdivision Name (give at least name of road) T. Subdivision Name (give at least name of road) T. Subdivision Name (give at least name of road) Subdivision Name (give at least name of road) Subdivision Name (give at least name of road) Subdivision Name (give at least name of road) N N Subdivision Name (give at least name of road) Subdivision Name (give at least name of road) (give at least name of road)		I/We co complie Firm N Addres	ertify thed with ame s by Drill a	hat all at the OC/Ini	TCATION minimum well cons time the rig was rer ing Delling Fir Ducon To Dat supervisor Date (If different than the	moved. m No. <u>518</u> te <u>4-39-9</u> <i>Deanung</i>	<u>94</u>	

- .

Form	238-7
6/07	

8

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 1)0092439	12. ST		VATER	LEVEL and WELL TESTS:		
Drilling Permit No.	Depth first water encountered (ft) Static water level (ft)					
Water right or injection well #						
2. OWNER: Brian maw						
Name	Well to	est:	Test method:			
Address Box 156	Drawdowr			scharge or Test duration Pump Bailer Air Flowin eld (gpm) (minutes) Pump Bailer Air artesia		
City 1) C.for State Zip				29 20 0 0 0		
3.WELL LOCATION:						
Twp. <u>S</u> North o r South Rge . <u>US</u> East s or West				omments:		
Sec. 5 10 acres 1/4 Ne 1/4 Ne 1/4 Ne 1/4	13. LIT Bore	1	T	and/or repairs or abandonment:		
	Dia.	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.		
Gov't Lot County_Teton	(in) 10	6	38	Clay, gravel		
Lat. <u>U3</u> <u>47 7309</u> (Deg. and Decimal minutes) Long. <u>111</u> <u>009 8862</u> (Deg. and Decimal minutes)	6	38		Clay Sind graves		
Long. <u>111 º OQ 3362</u> (Deg, and Decimal minutes)	-	80	100	gravel sont R		
Address of Wall Site (1851 1) 3250 4)						
(Give at least name of road + Distance to Road or Landmark)						
(Give at least name of road + Distance to Road or Landmark)						
Lot Blk Sub. Name						
4. USE:						
5. TYPE OF WORK:						
New well Replacement well Modify existing well						
Abandonment Other	_					
6. DRILL METHOD: Air Rotary I Mud Rotary I Cable I Other						
7. SEALING PROCEDURES: Seal material From (ft) To (ft) Quantity (lbs or ft ²) Placement method/procedure						
a Day I de Cale	-					
Bentente O 38 1100 (0" terme casher						
	ñ.					
8. CASING/LINER: Diameter From (ft) To (ft) Gauge/ Material Casing Liner Threaded Welded						
Diameter (norminal) From (ft) To (ft) Gauge/ Schedule Material Casing Liner Threaded Welded						
6 +7 100 250 stee				DECEIVED		
				RECEIVED		
			-	1111 2 5 2022		
Was drive shoe used? IN Shoe Depth(s)				JOL LU LAL		
9. PERFORATIONS/SCREENS:				Department of Water Respurces		
		Eastern Regio				
Perforations Y IN Method						
Manufactured screen 🔲 Y 📲 N Type		-				
Method of installation						
From (ft) To (ft) Slot size Number/ft Diameter (nominal) Material Gauge or Schedule	Comp	leted De	pth (Mea	surable): LOO		
	Date	Started: /	6/27/	22 Date Completed: 6/28/22		
	14 D	RILLER	R'S CER	RTIFICATION:		
	I/We	certify th	at all mir	nimum well construction standards were complied with at		
Length of Headpipe Length of Tailpipe	the ti	me the ri	ig was re			
Packer I Y II N Type	Com	bany Nai	me La	mil Dompy Drillhop Co. No. 518		
		- cipal Drij		1 7 7 1 - 20- 12		
10.FILTER PACK:	- *Prine	cipal Uril	100	fund fund Date 6/2012		
Filter Material From (ft) To (ft) Quantity (lbs or ft ³) Placement method	*Drille	er H	ne	Date 0/28/22		
	*000	rator II _		Date		
11. FLOWING ARTESIAN:	Oper	ator I		Date		
Flowing Artesian? 🔲 Y 👹 N Artesian Pressure (PSIG)	* Sig	nature o	of Princi	pal Driller and rig operator are required.		

Describe control device _____



IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

	Office	Use	Only	
Well ID	No.			

Inspected by

1. WELL TAG NO. D 0049755				da		Rge /4 1/4			
DRILLING PERMIT NO.				Lat:	: : Lon		:		
Water Right or Injection Well No.			ump	🗆 Bailer	🗌 Air	□ Flowing	Artesian		
2. OWNER:			Yield gal./min.		own Pumping Level			Time	
Name Roy Rell									
Address 4501 450 W									
City Tatonia State Id Zip 83452									
3. LOCATION OF WELL by legal description:						Bott	tom hole ten	пр	
You must provide address or Lot, Blk, Sub. or Directions to well.	Wate	r Quality	y test or (comments:					
Twp North 🗷 or South 🗆	40.1	ITUOI	00101	00. /D	ihe veneive	Depth first V			
Rge. <u>45</u> East E or West 🗆				LOG: (Desci	toe repairs	or abandonme	nıj	1	iter
Sec, 1/4 1/4 1/4 56 1/4 1/4 1/4 Gov't Lot 70 acres 1/4	Bore Dia.	From	То	Remarks:	Lithology, Wa	ater Quality & Te	mperature	Y	N
late e longe e	8"	0	20'	Chay	Some	Gravel			K
Address of Well Site 441 N 450 W	6"	20	60'	<u>Clur</u>	Gravel			K	
City Tetonia				1					
(Give at least name of read + Distance to Read or Landmark) LtBikSub. Name								<u> </u>	$\left - \right $
			<u> </u> ·──					+	
4. USE:	<u> </u>							+	
								1	
		<u> </u>							
5. TYPE OF WORK check all that apply (Replacement etc.)									
New Well 🛛 Modify 🔅 Abandonment 🖓 Other									
6. DRILL METHOD:								1	
Air Rotary Cable Mud Rotary Other									
7. SEALING PROCEDURES									
Seal Material From To Weight / Volume Seal Placement Method								_	
Bentomite 0 20' 500LBS Over Bire									
Was drive shoe used?									ŀ
Was drive shoe used? <i>I</i> Y □ N Shoe Depth(s) <i>U</i> Was drive shoe seal tested? □ Y <i>I</i> N How?									
8. CASING/LINER:	.								
Diameter From To Gauge Material Casing Liner Welded Threaded	'								
6" +1 59' 255" Steel 10 0 0						р	ECE		
						n		יייי	
Length of HeadpipeLength of Tailpipe							IAN 2 3	3 20	na
Packer DY ZN Type	-								
						Depai	rtment of Wa Eastern I	aler R	esourc
9. PERFORATIONS/SCREENS PACKER TYPE Perforation Method							Lasienn	ាះពួល	
Screen Type & Method of Installation									
From To Stot Size Number Diameter Material Casing Liner		L		101-					
		mpleted	-	60				easura	
	Dat	te: Sta	rted <u>/2</u>	-30-08		Completed	1 12-30	<u>y-l</u>	<u>۳</u>
				RTIFICATIO					
10. FILTER PACK					onstruction s	standards were	complied wit	th at th	ie
Filter Material From To Weight / Volume Placement Method	umei	uie tiĝ V	vas remo	•	~ 11	4			4.00
	Com	pany Na	ıme _ 🗓	Jennin	J. Drill	ing	Firm N	o. <u>5</u>	8
	Drine	ipal Dril	lor 4	Quund	De	1 //////	Date 12	-21	-08
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE: ft. below ground Artesian pressurelb.	and	ייים ווים וויים	101 — A	<u>Nuuri</u>	Buguy	\mathcal{T}			
ft. below ground Artesian pressurelb. Depth flow encounteredft. Describe access port or control devices:		r or Op	erator II _	Alaun	<u>l []]</u>	tin the second s)ate <u>/2-</u> ,	<u> 31 -</u>	08
	Opera	ator I		-	-	/ ,	Date		
	Oher	4.01 I		Principal Dril	ler and Rig C	Derator Require	ed.		<u> </u>
	(TO)				ave signatur	e of Driller/Ope	rator II.		
	· IEI WU		RESOL	BUES					

	238-7 STATE OF IDAHO DEPARTMENT OF WATER RESOURCES						USE TYPEWRITER OR BALLPOINT PEN		
WELL DRILLER'S REPORT State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.									
1. WELLOWNER Name BreckennidgeBros Address 494 N 500 W Tetoma 8345 Owner's Permit No. <u>22-90-E-086-000</u>	 7. WATER LEVEL Static water level feet below land surface. Flowing? □ Yes INO G.P.M. flow Artesian closed-in pressure p.s.i. Controlled by: □ Valve □ Cap □ Plug TemperatureOF. Quality Describe artesian or temperature zones below. 								
2. NATURE OF WORK	Bescribe artesian or temperature zones below. B. WELL TEST DATA Pump Bailer Air Other								
Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)	Di:	scharge	e G. P. M.	Pumping Level	Hours Pu	Hours Pumped			
3. PROPOSED USE	9. LITHOLOGIC LOG								
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other (specify type)	Bore Diam. F		То	Material		Wate Yes M			
4. METHOD DRILLED → Rotary Air □ Hydraulic □ Reverse rotary □ Cable □ Dug □ Other		F5-	15 52	- SAnd	······································				
5. WELL CONSTRUCTION Casing schedule: & Steel Concrete Other Thickness Diameter From To									
,2.50 inches inches feet 5/_ feet inches inches inches feet feet									
Was casing drive shoe used? Was a packer or seal used? Perforated? How perforated? Factory Knife Torch Gun Size of perforation inches by inches									
Number From To perforations feet feet perforations feet feet perforations feet feet Well screen installed? Yes No				01665					
Manufacturer's name Model No. Type Model No. Diameter Slot size Set from feet to feet Diameter Slot size Set from feet to feet Orameter Slot size Set from feet to feet					1 y 1990	 			
Gravel packed? Yes Yes Size of gravel Placed fromfeet tofeet Surface seal depth					strict Office				
Method of joining casing:									
Describe access port	10.	Wor	rk starte	ed <u>[C/4/90</u> finist	ned 10/5/0	<u>0</u> 			
6. LOCATION OF WELL Sketch map location <u>must</u> agree with write the set of t	F	I/We c complie Firm N Addres	centify t ied with Name ss	ERTIFICATION that all minimum well con at the time the rig was ren Ennine Millin CUCO Con m Official)	noved. $-\frac{1}{10000000000000000000000000000000000$	>/	_		
County V = County N = R = H (F = County R = County	and (Operator) de DEnning								

and the second second