

LOCATION ALDERWOOD

WA

Established Series  
Rev. AD/RJE  
01/2000

## ALDERWOOD SERIES

The Alderwood series consists of moderately deep to a cemented pan, moderately well drained soils formed in glacial till. Alderwood soils are on glacially modified foothills and valleys and have slopes of 0 to 65 percent. The average annual precipitation is about 40 inches, and the mean annual temperature is about 50 degrees F.

**TAXONOMIC CLASS:** Loamy-skeletal, isotic, mesic Vitrandic Dystroxerepts

**TYPICAL PEDON:** Alderwood gravelly ashy loam - forested. (Colors are for moist soil unless otherwise noted.)

**Ap**--0 to 7 inches; very dark grayish brown (10YR 3/2) gravelly ashy sandy loam, brown (10YR 5/3) dry; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine roots; few fine irregular pores; slightly acid (pH 6.2); abrupt smooth boundary. (3 to 7 inches thick)

**Bs1**--7 to 21 inches; dark yellowish brown (10YR 4/4) very gravelly ashy sandy loam, yellowish brown (10YR 5/4) dry; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; many fine roots; many fine tubular and irregular pores; 35 percent pebbles; diffuse smooth boundary; slightly acid (pH 6.2).

**Bs2**--21 to 30 inches; dark brown (10YR 4/3) very gravelly ashy sandy loam, pale brown (10YR 6/3); dry; weak medium subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; common fine roots; few very fine tubular pores; 40 percent pebbles; slightly acid (pH 6.2); clear wavy boundary. (Combined Bs1 and Bs2 horizons are 15 to 30 inches thick)

**2Bs3**--30 to 35 inches; 50 percent olive brown (2.5Y 4/4) very gravelly sandy loam, light yellowish brown (2.5Y 6/4) dry and 50 percent dark grayish brown (2.5Y 4/2) cemented fragments with strong brown (7.5YR 5/6) coatings on fragments, light brownish gray (2.5Y 6/2) and reddish yellow (7.5YR 6/6) dry; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots; common fine tubular and interstitial pores; 45 percent pebbles; moderately acid (pH 6.0); abrupt wavy boundary. (0 to 15 inches thick)

**2Bsm**--35 to 43 inches; dark grayish brown (2.5Y 4/2) cemented layer that crushes to very gravelly sandy loam, light brownish gray (2.5Y 6/2) dry; dark yellowish brown (10YR 4/4), reddish brown (5Y 4/4), yellowish red (5YR 4/8) and strong brown (7.5YR 5/6) in cracks; massive; extremely hard; extremely firm, nonsticky and nonplastic; few fine roots; few fine tubular pores; 40 percent pebbles; moderately acid (pH 6.0); abrupt irregular boundary. (5 to 20 inches thick)

**2Cd**--43 to 60 inches; grayish brown (2.5Y 5/2) compact glacial till that breaks to very gravelly sandy loam, light gray (2.5Y 7/2) dry; massive; extremely hard, extremely firm, nonsticky and nonplastic; 40

percent pebbles; moderately acid (pH 6.0).

**TYPE LOCATION:** Snohomish County, Washington; about 5 miles east of Lynnwood on Maltby road; 200 feet south and 400 feet east of the center of sec. 28. T. 27 N., R. 5 E.

**RANGE IN CHARACTERISTICS:** The mean annual soil temperature is estimated to range from 47 to about 55 degrees F. These soils are usually moist, but are dry between depths of 8 and 24 inches for 60 to 75 consecutive days in the summer in most years. The soil is strongly acid to slightly acid above the Bsm horizon and slightly acid or moderately acid in the Bsm horizon. Depth to Bsm horizon is 20 to 40 inches. Rock fragments in the particle-size control section range from 35 to 50 percent and include 0 to 10 percent cobbles.

The A horizon has hue of 10YR or 7.5YR, value of 2 or 3 moist, 3 through 5 dry, and chroma of 2 to 4. It has weak or moderate granular structure. Some pedons have an E horizon less than 1 inch thick.

The Bs1 and Bs2 horizons have hue of 10YR or 7.5YR, and value and chroma of 2 through 6 dry or moist. It is very gravelly loam or very gravelly sandy loam and has weak or moderate blocky structure. The Bs1 is gravelly loam in some pedons. This horizon contains none to many hard concretions presumed to be of iron and manganese compounds.

The 2Bs3 horizon, or the 2BC or 2CB horizon has hue of 10YR or 2.5Y, value of 5 through 7 dry, and chroma of 2 through 4 moist and dry. They have redox concentrations in some pedons, but lack depletions of 2 or lower chroma within 30 inches of the surface. These horizons are very gravelly sandy loam or very gravelly loam. They have weak subangular blocky structure or are massive.

The 2Bsm horizon (cemented layer) has hue of 10YR or 2.5Y, value of 4 through 8 dry, and chroma of 1 through 3 moist and dry and is mottled in some pedons. It is very gravelly sandy loam, very gravelly loamy sand, gravelly sandy loam, or gravelly loamy sand when crushed.

**COMPETING SERIES:** These are the Baldhill, Neausite, Dabob, Fidalgo, and Whistle series. The Baldhill soils are very deep and lack cemented pans and densic materials. The Beausite and Fidalgo soils are 20 to 40 inches deep to a lithic contact. The Whistle soils are 40 to 60 inches deep to a lithic contact. Dabob soils have an albic horizon and lack densic materials within 60 inches.

**GEOGRAPHIC SETTING:** These soils are on till plains and moraines at elevations of 50 to about 800 feet. Slope is 0 to 65 percent. The soils formed in glacial till. Alderwood soils are in a cool marine climate. The summers are cool and dry, and the winters are mild and wet. Mean annual precipitation ranges from 25 to 60 inches, most of which falls as rain from November through March. Mean January temperature is 38 degrees F, mean July temperature is 60 degrees F, and mean annual temperature is 50 degrees F. The growing season (28 degrees F) is about 200 days.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are the Beausite, Dick, Everett, Hoogdal, Indianola, Kitsap, Norma, Quilcene, Skipopa and Whidbey series. All of these soils except Whidbey soils lack a cemented layer within 40 inches. In addition, the Beausite soils have a lithic contact at 20 to 40 inches. Dick, Hoogdal, Indianola, Kitsap, and Skipopa soils have less than 35 percent coarse fragments. Everett soils are sandy-skeletal. McKenna soils have an aquic moisture regime. Norma soils have an aquic moisture regime of less than 35 percent coarse fragments in the upper part of the control section. Quilcene soils are in a fine family. Whidbey soils have an E horizon 2 to 5 inches thick and have a higher base status.

LOCATION INDIANOLA

WA

Established Series  
Rev. RFP/FJE  
11/88

## INDIANOLA SERIES

The Indianola series consists of deep, somewhat excessively drained soils formed in sandy glacial drift and minor amounts of volcanic ash. Indianola soils are on terraces, terrace escarpments, eskers, and kames at elevations of near sea level to 1,000 feet. Slopes are 0 to 90 percent. The mean annual precipitation ranges from 30 to 55 inches and the mean annual temperature is about 50 degrees F.

**TAXONOMIC CLASS:** Mixed, mesic Dystric Xeropsamments

**TYPICAL PEDON:** Indianola loamy sand-forested. (Colors are for moist soil unless otherwise stated.)

**A--**0 to 6 inches; dark reddish-brown (5YR 3/3) loamy sand, brown (10YR 5/3) dry; weak coarse and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine and few coarse and medium roots; common fine tubular pores; neutral (pH 6.8); abrupt smooth boundary. (1 to 9 inches thick)

**Bw--**6 to 13 inches; dark reddish-brown (5YR 3/4) loamy sand, pale brown (10YR 6/3) dry; weak coarse and medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and few medium roots; few fine tubular pores; neutral (pH 6.8); clear smooth boundary. (3 to 10 inches thick)

**BC--**13 to 25 inches; dark brown (10YR 4/3) loamy sand, pale brown (10YR 6/3) dry; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; few very fine tubular pores; 5 percent rounded pebbles; neutral (pH 6.6); clear smooth boundary. (3 to 12 inches thick)

**C1--**25 to 35 inches; dark yellowish-brown (10YR 4/4) sand, light brownish gray (2.5Y 6/2) single grain; loose; few very fine roots; few very fine tubular pores; 5 percent rounded pebbles; neutral (pH 6.8); gradual wavy boundary. (4 to 24 inches thick)

**C2--**35 to 60 inches; olive brown (2.5Y 4/4) sand; light brownish-gray (2.5Y 6.2) dry single grain; loose; few very fine roots; many fine interstitial pores; 5 percent rounded pebbles; neutral (pH 6.6).

**TYPE LOCATION:** Thurston County, Washington; about 2 miles southeast of Tumwater, north end of Munn Lake near Department of Game boat launching site; 2,200 feet east and 2,550 feet north of the southwest corner sec. 1, T. 17 N., R. 2 W.

**RANGE IN CHARACTERISTICS:** These soils are usually moist but are dry in the moisture control section for 60 to 75 consecutive days following summer solstice. The mean annual soil temperature is estimated to range from 47 to 52 degrees F. Reaction ranges from neutral to strongly acid throughout. The particle-size control section contains 0 to 15 percent rock fragments.

The A horizon has hue of 10YR, 7.5YR, or 5YR, value of 2 or 3 moist, 3 through 6 dry, and chroma of 1 through 6 moist and dry.

The B horizon has hue of 10YR, 7.5YR, or 5YR, value of 2 through 4 moist, 4 through 6 dry, and chroma of 1 through 4 moist and dry. It is loamy fine sand or loamy sand.

The BC horizon has hue of 10YR or 2.5Y, value of 4 or 5 moist, 6 or 7 dry, and chroma of 3 or 4 moist and dry. It is loamy fine sand, loamy sand, fine sand, or sand.

The C horizon has hue of 10YR, 2.5Y or 5Y, value of 4 through 6 moist, 5 through 7 dry, and chroma of 2 through 4 moist and dry. It is loamy fine sand to sand.

**COMPETING SERIES:** These are the Birdsview, Greenwater, Keystone, and Pilchuck series. Birdsview soils are dry for 45 to 60 consecutive days following the summer solstice. Greenwater soils have 5 to 25 percent pumice in the control section. Keystone soils are dry for 75 to 90 consecutive days following the summer solstice. Pilchuck soils have chroma of 2 or less throughout the control section.

**GEOGRAPHIC SETTING:** Indianola soils are on terraces, terrace escarpments, eskers, or kames at elevations of near sea level to 1,000 feet. Slopes are 0 to 90 percent. These soils formed in sandy glacial drift and minor amounts of volcanic ash. They are in a maritime climate of cool dry summers and mild wet winters. Mean annual precipitation ranges from 30 to 55 inches most of which falls between October and April. The average January temperature is 36 degrees F., the average July temperature is 62 degrees F., and mean annual temperature is 50 degrees F. The frost-free season ranges from 150 to 210 days.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are the Alderwood, Cassolary, Everett, Hoypus, Kitsap, Nisqually, Quilcene, Sinclair, Spanaway, and Tokul soils. Alderwood, Sinclair, and Tokul soils have a duripan at a depth of 20 to 40 inches. Cassolary soils are fine-loamy. Everett, Hoypus and Spanaway soils are sandy-skeletal. Kitsap soils are fine-silty. Nisqually soils have an umbric epipedon. Quilcene soils have a fine control section and are underlain by weathered shale at depths of 20 to 40 inches.

**DRAINAGE AND PERMEABILITY:** Somewhat excessively drained; slow runoff; rapid permeability.

**USE AND VEGETATION:** Mostly woodland and pasture. Native vegetation is Douglas-fir, western redcedar, western hemlock, red alder and bigleaf maple, with an understory of salal, Oregon-grape, red huckleberry, western bracken-fern, western swordfern, trailing blackberry, evergreen huckleberry and vine maple.

**DISTRIBUTION AND EXTENT:** Puget lowlands in Northwestern Washington. The series is of moderate extent.

**MLRA OFFICE RESPONSIBLE:** Portland, Oregon

**SERIES ESTABLISHED:** Kitsap County, Washington, 1935.

**ADDITIONAL DATA:** Laboratory Data S74-WA-61-5, Riverside, California.

LOCATION KITSAP

WA

Established Series  
Rev. JPE/AZ/RJE  
01/2000

## KITSAP SERIES

The Kitsap series consists of very deep, moderately well drained soils formed in lacustrine sediments. Kitsap soils are on terraces and terrace escarpments and have slopes of 0 to 70 percent. The mean annual precipitation is about 37 inches. The mean annual temperature is about 50 degrees F.

**TAXONOMIC CLASS:** Fine-silty, isotic, mesic Aquandic Dystrochrepts

**TYPICAL PEDON:** Kitsap silt loam - pasture. (Colors are for moist soil unless otherwise noted.)

**Ap**--0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; moderately acid (pH 5.8); abrupt smooth boundary. (3 to 6 inches thick)

**Bw1**--6 to 10 inches; dark brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; few very fine pores; many 2 to 5 mm light brown (7.5YR 6/4) concretions; moderately acid (pH 6.0); clear wavy boundary. (3 to 12 inches thick)

**Bw2**--10 to 17 inches; brown (10YR 4/3) silty clay loam, pale brown (10YR 6/3) dry; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; many very fine roots; common very fine pores about 3 percent fine pebbles; few 2 to 5 mm light brown (7.5YR 6/4) concretions; few silt balls; few krotovinas; slightly acid (pH 6.4); clear wavy boundary. (4 to 22 inches thick)

**BC**--17 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam, light gray (2.5Y 7/2) dry; many large prominent strong brown (7.5YR 5/6) redox concentrations; moderate medium subangular blocky structure; hard, firm, moderately sticky and moderately plastic; few very fine roots; common very fine pores; slightly acid (pH 6.5); clear irregular boundary. (0 to 35 inches thick)

**C**--32 to 60 inches; light olive brown (2.5Y 5/4) silt loam and silty clay loam, light brownish gray (2.5Y 6/2) dry; very fine and fine stratification; hard, firm, moderately sticky and moderately plastic; few roots; few very fine pores; tongues of grayish brown (2.5Y 5/2) material like the B3 horizon; neutral; (pH 6.6).

**TYPE LOCATION:** Pierce County, Washington; 100 feet north of corner of 104th St. and 80th Ave.; 2,050 feet west and 2,750 feet south of the northeast corner of sec. 5, T. 19 N., R. 4 E.

**RANGE IN CHARACTERISTICS:** These soils are usually moist but are dry in the moisture control section for 45 to 60 consecutive days following summer solstice. The mean annual soil temperature is estimated to range from 50 to about 53 degrees F. These soils range from moderately acid to neutral throughout. Coarse fragments in the control section average 0 to 5 percent by volume. Depth to

redoximorphic features with a chroma of 2 or less is 5 to 24 inches.

The A horizon has value of 2, 3 or 4 moist, 4, 5 or 6 dry, and chroma of 2 or 3 moist or dry. It is silt loam or loam.

The Bw horizon has value of 3 through 5 moist, 5 through 7 dry, and chroma of 3 or 4 moist or dry. It is silt loam or silty clay loam, and has weak or moderate blocky structure. The BC horizon has hue of 10YR or 2.5Y, value of 4 through 6 moist, 6 through 8 dry and is prominently mottled. It has blocky or prismatic structure or is massive.

The C horizon has hue of 10YR, 5Y or 2.5Y, value of 5 or 6 moist, 6 through 8 dry, chroma of 2 through 4 moist and dry and is mottled. In some pedons bluish gray (5B 5/1) gleying is prominent in root channels. This horizon is stratified silt, silt loam and silty clay loam. Some pedons contain thin strata of silty clay, silt, or fine sand.

**COMPETING SERIES:** This is the Aloha series and the similar Giles and Saxon series. Aloha soils have an average soil temperature of 54 to 56oF and lack strata of silty clay loam in the lower part of the particle- size control section. Giles and Saxon soils lack grayish colors or mottles in the subsoil and are well drained. Also, Saxon soils have a dense laminated silt, clay, or silty clay loam B horizon.

**GEOGRAPHIC SETTING:** Kitsap soils are on terraces and terrace escarpments at elevations ranging from near sea level to about 500 feet. Slopes are 0 to 70 percent. The soils formed in lacustrine sediments. These soils occur in a mild marine climate. Summers are cool and dry and winters are mild and wet. The mean annual precipitation ranges from 30 to 45 inches. The mean January temperature is 39 degrees F., mean July temperature is 61 degrees F., and mean annual temperature is 50 degrees F. The frost-free season is 160 to 200 days.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are the Alderwood, Everett, Harstine, and Indianola soils. These soils have less than 18 percent clay in the control section. Alderwood and Harstine soils have a duripan. Everett soils are sandy-skeletal, and Indianola soils are sandy.

**DRAINAGE AND PERMEABILITY:** Moderately well-drained; slow or medium runoff; slow permeability.

**USE AND VEGETATION:** Mostly forests and some cropland and pasture. Native vegetation is Douglas-fir, western hemlock, western redcedar, red alder, bigleaf maple, and willows, with understory of western brackenfern, western swordfern, salal, Oregon-grape, trailing blackberry, red huckleberry, vine maple, evergreen huckleberry, red elderberry, and wild ginger.

**DISTRIBUTION AND EXTENT:** Northwestern Washington. The series is of moderate extent.

**MLRA OFFICE RESPONSIBLE:** Portland, Oregon

**SERIES ESTABLISHED:** Kitsap County, Washington, 1934.

**REMARKS:** Classification changed 4/94 and 1/00 because of amendments to Soil Taxonomy. The 0 to 10 inch depth is estimated to have >5 percent volcanic glass and >0.4 percent Al + 1/2 Fe by acid-oxalate.

**ADDITIONAL DATA:** Partial laboratory data available on this soil. Pedon # S77WA-061-30, NSSL,

LOCATION RAGNAR

WA

Established Series

Rev. CLP/RJE

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## RAGNAR SERIES

The Ragnar series consists of very deep, well drained soils that formed in glacial outwash. Ragnar soils are on rolling areas of esker and kame relief and have slopes of 0 to 70 percent. The average annual precipitation is about 47 inches and the mean annual temperature is about 50 degrees F.

**TAXONOMIC CLASS:** Coarse-loamy over sandy or sandy-skeletal, isotic over mixed, mesic Vitrandic Dystrocherepts

**TYPICAL PEDON:** Ragnar fine sandy loam, forested. (Colors are for moist soil unless otherwise noted.)

**Oe**--0 to 1 inch; black (10YR 2/1) partially decomposed leaves and twigs; many roots; abrupt smooth boundary. (1 to 2 inches thick)

**A**--1 to 5 inches; very dark grayish brown (10YR 3/2) and very dark gray (10YR 3/1) fine sandy loam, grayish brown (10YR 5/2) dry; massive; slightly hard, very friable, nonsticky, nonplastic; many roots; many very fine pores; NaF pH 10.5; moderately acid (pH 6.0); abrupt wavy boundary. (3 to 9 inches thick)

**Bs**--5 to 18 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) fine sandy loam, brown (10YR 5/3) dry; massive; slightly hard, very friable, nonsticky, nonplastic; many roots; many very fine pores; NaF pH 11.5; moderately acid (pH 6.0); clear smooth boundary. (5 to 13 inches thick)

**2BC**--18 to 28 inches; yellowish brown (10YR 5/4) loamy fine sand, brown (10YR 5/3) dry; massive; slightly hard, very friable, nonsticky, nonplastic; common roots; many very fine pores; NaF pH 10.5; slightly acid (pH 6.2); clear smooth boundary. (6 to 12 inches thick)

**2C**--28 to 41 inches; olive brown (2.5Y 4/4) loamy sand, yellowish brown (10YR 5/3) dry; massive; loose; few roots; many very fine pores; NaF pH 10.0; slightly acid (pH 6.2).

**TYPE LOCATION:** King County, Washington; 330 feet north, 230 feet east of center of section 3, T.21N., R.5E.

**RANGE IN CHARACTERISTICS:** The mean annual soil temperature is 47 to 53 degrees F. These soils are usually moist, but are dry in all parts between depths of 8 and 24 inches for 60 to 80 consecutive days in most years. The upper part of the 10 to 40 inch control section contains 2 to 10 percent clay. The lower part of the control section is loamy sand or sand. Depth to the 2C horizon ranges from 20 to 35 inches. Rock fragments in the control section range from 0 to 15 percent by volume. Reaction is moderately acid or slightly acid.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3 moist, 4 or 5 dry, and chroma of 1 through 3

moist or dry.

The Bs horizon has hue of 10YR or 7.5YR, value of 3 through 5 moist, 4 through 7 dry, and chroma of 4 through 6 moist or dry. It contains 0 to 5 percent iron concretions.

The 2C horizon has hue of 10YR through 5Y, value of 3 through 7 moist, 4 through 7 dry, and chroma of 1 through 4 moist or dry. It is loamy sand, sand, or fine sand.

**COMPETING SERIES:** These are the Birchbay, Lystair, and Winston series. Birchbay and Winston soils are sandy-skeletal in the lower part of the particle-size control section. Lystair soils are mottled in the C horizon.

**GEOGRAPHIC SETTING:** These soils are on esker and kame like relief along the edges of major valleys at elevations of 300 to 1,000 feet. Slopes are 0 to 70 percent. The soils formed in glacial outwash. They have cool, dry summers and mild, wet winters. The average annual precipitation ranges from 35 to 65 inches, most of which falls between October and April. Some snow falls in winter. The average January temperature is about 38 degrees F.; the average July temperature is 66 degree F.; and the frost free season ranges from 150 to 212 days.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are the Alderwood, Everett, Harstine, Indianola, and Kitsap soils. Alderwood and Harstine soils have dense glacial till at a depth of 20 to 40 inches. Everett soils average more than 35 percent rock fragments in the 10 to 40 inch control section. Indianola soils have a sandy control section. Kitsap soils are a fine-silty.

**DRAINAGE AND PERMEABILITY:** Well drained; medium to slow runoff; rapid permeability.

**USE AND VEGETATION:** Most of the Ragnar soils are used for growing timber. They are used to a small extent for growing hay, pasture, early berries and truck crops. Many areas are used for homesites. The dominant overstory is Douglas-fir, Pacific madrone, western hemlock, red alder, and western redcedar with an understory of salal, Oregon-grape, huckleberry, western brackenfern, western swordfern, trailing blackberry, and evergreen huckleberry.

**DISTRIBUTION AND EXTENT:** Northwestern Washington. This series is moderately extensive.

**MLRA OFFICE RESPONSIBLE:** Portland, Oregon

**SERIES ESTABLISHED:** King County, Washington, 1943.

**REMARKS:** Classification updated 3/94 and 1/00 because of amendments to Soil Taxonomy. Estimate that the 0 to 17 inch zone has >5.0 percent volcanic glass and >0.4 percent by ammonium-oxalate extract. Diagnostic horizons and features recognized in this pedon are an ochric epipedon from 1 to 5 inches, a cambic horizon from 5 to 18 inches, and a lithologic change at 18 inches from coarse-loamy to sandy soil material.

Depths to diagnostic horizons and features are measured from the to of the first mineral horizon.

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National Cooperative Soil Survey  
U.S.A.



**Physical Environment Data**

**Soil Data**

**Air Temp.**

**Minimum Maximum Current**

**Site:** \_\_\_\_\_

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Soil Horizon	Depth	Bulk Density	Temperature	Color	Sample	Comments

**Notes:**

	Depth	Sample
<u>Throughfall</u>		
<u>Groundwater</u>		

	Speed	Direction
<u>Wind</u>		

<b>Rainfall</b>	<b>Depth</b>	<b>Sample</b>				
<b>Air Temp.</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Current</b>	<b>Temp</b>	<b>Flow Rate</b>	<b>Sample</b>