

Wildlife Survey Areas, Survey Dates, and Survey Data Forms

Transect Area and Subarea Number & Description	2001 Survey Dates		
	April	May	June
Area 1, Plant Site :	4-08	5-02**, 5-06, 5-07, 5-22**, 5-23**	6-13, 6-14
Area 2, Jaussaud property	4-08	5-06	6-12 *
Area 3, Natural gas pipeline route, western portion			
Area 3, Subarea 1 (southwest segment)	4-10		
Area 3, Subarea 2 (central segment)	4-10	5-07	6-13*
Area 3, Subarea 2, south (well-field segment)		5-07	6-13*
Area 3, Subarea 3 (northwestern segment)	4-11		
Area 4, Electrical transmission line, western portion			
Area 4, Subarea 1 (western segment)	4-08		
Area 4, Subarea 2 (eastern segment)	4-08	5-07	6-13*
Area 5, Electrical transmission line, eastern portion			
Area 5, Subarea 1 (northernmost segment)	4-10	5-07	6-13*
Area 5, Subarea 2 (north of Worden Road)	4-10		
Area 5, Subarea 3 (south of Worden Road)	4-11		
Area 5, Subarea 4 (south segment)	4-11	5-08	6-13*
Area 5, Subarea 5 (interconnect segment)	4-11	5-08	6-13*
Area 6, Natural gas pipeline route, eastern portion			
Area 6, Subarea 1 (easternmost segment, tap site)	4-09	5-07	6-13*
Area 6, Subarea 2 (Simplot grazed lands-east)	4-09, 4-10	5-07	6-13
Area 6, Subarea 3 (Simplot grazed lands-west)	4-09	5-07	
Area 6, Subarea 4 (Worden Farms east)	4-09	5-08	
Area 6, Subarea 5 (Worden Farms central)	4-09		
Area 6, Subarea 6 (Worden Farms west)	4-09	5-08	
Area 6, Subarea 7 (intersect with transmission line ROW)	4-10		

* These sites walked through during botanical surveys

** Incidental sightings and surveys

Source: Smayda Environmental Associates, Inc. July 12, 2001

Updated Information on Geology and Seismicity in the Project Vicinity

Soils at the Switchyard and along the Interconnect, Transmission Line, and Access Road Rights-of-Way

Map Symbol	Soil Series	Texture	Slope (%)	Drainage	Erosion Hazards		Erosion Factor "K" ^a	Wind Erosion Group ^b	Permeability (inch/hr)	Agricultural Land Use Category
					Wind	Water				
Qd	Quincy-duneland complex	50% fine sand, 30% duneland, 20% minor extent	NA	NA	NA	NA	0.17-0.28	1	6 to 20	NA
QmB2	Quincy	Loamy fine sand over coarse sand, eroded	0 to 8	Very deep, excessively drained	NA	NA	0.28- 0.32	2	6 to 20	NA
QuB2	Quincy	Loamy fine sand, eroded	0 to 8	Very deep, excessively drained	NA	NA	0.28- 0.32	2	6 to 20	NA
QuC2	Quincy	Loamy fine sand, eroded	8 to 15	Very deep, excessively drained	NA	NA	0.28- 0.32	2	6 to 20	NA
AfC2	Adkins	Loamy fine sand, eroded	15 to 30	Very deep, well drained	NA	NA	0.28- 0.32	2	0.06 to 6	NA
Ac	Active duneland	Active duneland	NA	NA	NA	NA	0.17-0.28	1	6 to 20	NA
Hp2	Hezel-Quincy complex	50% Hezel, 40% Quincy, eroded	NA	NA	NA	NA	0.24-0.43	2	Hezel 6 to 20, Quincy 0.08-0.12	NA
QfD2	Quincy series	Fine sand, eroded	0 to 30	Very deep, excessively drained	NA	NA	0.17-0.28	1	6 to 20	NA
HoC2	Hezel series	Loamy fine sand, eroded	0 to 15	Very deep, somewhat excessively drained	NA	NA	0.24-0.43	2	0.2 to 6	NA

Map Symbol	Soil Series	Texture	Slope (%)	Drainage	Erosion Hazards		Erosion Factor "K" ^a	Wind Erosion Group ^b	Permeability (inch/hr)	Agricultural Land Use Category
					Wind	Water				
SmD2	Sagemoor series	Very fine sandy loam, eroded	8 to 15	Very deep, well drained	NA	NA	0.55	3	0.2 to 2	NA
SmB	Sagemoor series	Very fine sandy loam	3 to 8	Very deep, well drained	NA	NA	0.55-0.64	3	0.2 to 2	NA
SmC	Sagemoor series	Very fine sandy loam	8 to 15	Very deep, well drained	NA	NA	0.55-0.64	3	0.2 to 2	NA
BcG	Basalt Rockland	Very steep rockland, 60% rock outcrop, 30% Lickskillet	NA	NA	NA	NA	0.17-0.2	8	Rock 0 to 0.01, Lickskillet 0.06 to 0.14	NA
BdF	Basalt Rockland - Walla Walla complex	50% Rock outcrop, 35% Walla Walla soils	30 to 60	NA	NA	NA	0.2-0.49	5	Rock 0 to 0.01, Walla Walla 0.09 to 0.2	NA
BcF	Basalt Rockland - Lickskillet series	60% Rock outcrop, 30% Lickskillet soils	30 to 60	NA	NA	NA	Rock NA 0.17-0.20	8	Rock 0 to 0.01 Lickskillet 0 to 2	NA
SyD	Starbuck Rocky series	70% Starbuck soils, 20% rock outcrop	0 to 30	NA	NA	NA	0.32-0.55	5	Starbuck 0 to 20, Rock 0 to 0.01	NA
FaC	Farrell series	Very fine sandy loam	3 to 15	Very deep, well drained	NA	NA	0.49-0.55	3	0.6 to 2.0	NA
BcD	Basalt Rockland	Undulating to hilly	NA	NA	NA	NA	0.2-0.28	7	Rock 0 to 0.01, Lickskillet 0.06 to 0.14	NA
RtB	Ritzville series	Very fine sandy loam	0 to 8	Very deep, well drained	NA	NA	0.49-0.55	3	0.6 to 2	NA
RiD2	Ritzville series	Silt loam, eroded	8 to 30	Very deep, well drained	NA	NA	0.55	4L	0.6 to 2	NA
RiD	Ritzville series	Silt loam	8 to 30	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA

Map Symbol	Soil Series	Texture	Slope (%)	Drainage	Erosion Hazards		Erosion Factor "K" ^a	Wind Erosion Group ^b	Permeability (inch/hr)	Agricultural Land Use Category
					Wind	Water				
RiB	Ritzville series	Silt loam	0 to 8	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA
RiF	Ritzville series	Silt loam	45 to 60	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA
RtD	Ritzville series	Very fine sandy loam	8 to 30	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA
RiE	Ritzville series	Silt loam	30 to 45	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA
RtF2	Ritzville series	Very fine sandy loam, eroded	30 to 60	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA
RiG	Ritzville series	Wind-blown silt loam	60 to 65	Very deep, well drained	NA	NA	0.49-0.55	5	0.6 to 2	NA
79C	Ritzville series	Very fine sandy loam	7 to 12	Deep, well drained	Moderate	Moderate	0.43-0.49	3	Moderate, 10 to 13	Small grain-fallow
79B	Ritzville series	Very fine sandy loam	2 to 7	Deep, well drained	Moderate	Moderate	0.43-0.49	3	Moderate, 10 to 13	Small grain-fallow
79D	Ritzville series	Very fine sandy loam	12 to 25	Deep, well drained	Moderate	High	0.43-0.49	3	Moderate, 10 to 13	Small grain-fallow
79E	Ritzville series	Very fine sandy loam	25 to 50	Deep, well drained	Moderate	High	0.43-0.49	3	Moderate, 10 to 13	Small grain-fallow
50F	Lickskillet series	Rock outcrop complex	40 to 70	Shallow, well drained	High	Slight	0.15-0.17	NA	Moderate, 1 to 3	Rangeland and wildlife habitat
85F	Xeric Torriorthents series	Rock outcrop – Xeric Torriorthents complex	10 to 20	Moderately deep to deep, somewhat excessively drained to well drained	High	High	NA	NA	Variable	Rangeland and wildlife habitat
75E	Quincy series	Loamy fine sand	5 to 25	Deep, excessively drained	High	Slight	0.17	2	Rapid, 3 to 6	Irrigated cropland rangeland and wildlife habitat

Map Symbol	Soil Series	Texture	Slope (%)	Drainage	Erosion Hazards		Erosion Factor "K" ^a	Wind Erosion Group ^b	Permeability (inch/hr)	Agricultural Land Use Category
					Wind	Water				
23	Dune land	Eolian sand	0 to 3	Deep, excessively drained	High	Slight	NA	NA	Rapid to very rapid	Wildlife habitat and limited livestock grazing
15B	Burke series	Silt loam	1 to 7	Moderately deep, well drained	Moderate	Moderate	0.43-0.49	4L	Moderate to 26 inches, then very slow to 4 to 8	Small grained-fallow, few areas used for irrigated crops and rangeland
74B	Quincy series	Fine sand	0 to 5	Deep, excessively drained	High	Slight	0.17	1	Rapid, 2.5 to 5	Irrigated cropland pasture and rangeland
123B	Winchester Quincy series complex	Loamy fine sand	0 to 5	Deep, excessively drained	High	Slight	0.1-0.15	1	Rapid, 2.5-3.5 1.5-3	Irrigated cropland pasture and rangeland, and wildlife habitat
93B	Starbuck series	Very fine sandy loam	2 to 20	Shallow, well drained	Moderate	Moderate	0.28-0.43	3	Moderate, 1.5-3.5	Rangeland and wildlife habitat
78B	Quincy series	Rock outcrop	1 to 20	Deep, excessively drained	Moderate	Moderate	0.17	1	Rapid, 3-6	Non-irrigated crops, irrigated crops, rangeland
122B	Winchester series	Sand	0 to 5	Deep, excessively drained	Very high	Slight	0.1-0.15	1	Rapid, 2.5-3.5	Irrigated crops, pasture and rangeland, and wildlife habitat
119A	Wanser series	Loamy fine sand	0 to 3	Deep, poorly drained	High	Slight	0.24-0.32	2	Rapid, 3-6	Irrigated crops, pasture and rangeland
3A	Adkins series	Fine sandy loam, wet	0 to 3	Deep well drained soil wet - canal seepage	Moderate	Slight	0.32-0.37	3	Moderately rapid, 8-10	Irrigated crops, pasture, wildlife habitat

Map Symbol	Soil Series	Texture	Slope (%)	Drainage	Erosion Hazards		Erosion Factor "K" ^a	Wind Erosion Group ^b	Permeability (inch/hr)	Agricultural Land Use Category
					Wind	Water				
94A	Starbuck series	Rock outcrop complex	0 to 5	Shallow, well drained	Moderate	Moderate	0.28-0.43	3	Moderate, 1.5-3.5	Pasture, rangeland and wildlife habitat
1B	Adkins series	Fine sandy loam	0 to 5	Deep, well drained	Moderate	Slight	0.32-0.37	3	Moderate, 8-11	Irrigated crops, nonirrigated crops, pasture, rangeland and wildlife habitat
70	Pits, Gravels	Excavated, waterworn gravel, commonly mixed with sand	NA	Commonly occurs with other units such as the Quincy and Adkins soils	NA	NA	NA	NA	NA	NA – little support offered for vegetation
14B	Burbank series	Loamy fine sand	0 to 5	Deep, excessively drained	High	Slight	0.1-0.24	2	Rapid to 30, and very rapid below 1.5-3.5	Irrigated crops, rangeland, pasture and wildlife habitat
2C	Adkins series	Fine sandy loam, gravelly substratum	0 to 5	Deep, well drained	Moderate	Moderate	0.15-0.32	3	Moderately rapid, 6-9	Irrigated crops, pasture, rangeland and wildlife habitat

Sources: Soil Survey of Umatilla County Area, Oregon (USDA 1984), Soil Survey of Walla Walla County, Washington (USDA 1964)

^a K values range from 0.05 to 0.69. Higher values indicate more erosion susceptibility.

^b See table on next page for Wind Erosion Groups. Group 1 is the most susceptible to wind erosion with higher numbered groups increasingly less susceptible.
NA = Not Available

Wind Erosion Groups

Group	Soil Description
1	Sand, fine sand, and very fine sand. These soils are extremely erodible and it is difficult to establish vegetation on them.
2	Loamy sand, loamy fine sand, and loamy very fine sand. These soils are very highly erodible.
3	Sandy loam, coarse sandy loam, fine sandy loam, and very fine sandy loam. These soils are highly erodible.
4L	Calcareous loamy soils that are less than 35% clay and more than 5% finely divided calcium carbonates. These soils are erodible.
4	Clay, silty clay, clay loam, and silty clay loam that are more than 35% clay. These soils are moderately erodible.
5	Loamy soils that are less than 20% clay and less than 5% finely divided calcium carbonate and sandy loam and sandy clay that are less than 5 % finely divided calcium carbonate. These soils are slightly erodible.
6	Loamy soils that are 20 to 35% clay and less than 5% finely divided calcium carbonate, except silty clay loam. These soils are very slightly erodible.
7	Silty clay loam that is less than 35% clay and less than 5 % finely divided calcium carbonate. These soils are very slightly erodible.
8	Stony or gravelly soils and other soils not subject to wind erosion.
Source: USDA (1964, 1984)	