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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

August 20, 1991

Mr. Don Sump, Vice President
PureGro Company
3482 Glade Road North
Pasco, WA 99301-9389

Dear Mr. Sump:

The Department of Ecology has now assessed a hazard ranking for the Puregro, Othello site, as required by the Model Toxics Control Act. This is an estimation of the potential threat of this site to human health and the environment, relative to other Washington State sites scored at this time. A ranking of 5 (with 1 being the highest relative risk and 5 being the lowest) has been calculated for this site.

For your information, Ecology will be publishing the ranking of this and other sites in the August 27, 1991 Site Register. The rankings will be used in conjunction with other considerations in determining Ecology's priority for future actions at sites. It is not anticipated this ranking will affect the current activities at the PureGro, Othello site.

For further information, please contact me at (509) 456-6167.

Sincerely,

Patti Y. Carter

Patti Y. Carter
Site Hazard Assessments
Toxics Cleanup Section

PYC:adw

Crop Production Services INC. Othello

564

WASHINGTON RANKING METHOD

ROUTE SCORES SUMMARY AND RANKING CALCULATION SHEET

Western Farm Service –

Site name: ~~Paragro~~ Othello Region: ERO

City, county: Othello, Adams

This site was ranked on August 12, 1991, based on quintile values from 259 assessed/scored sites.

Pathway	Route Score(s)	Quintile Group number(s)
SW-HH	NS	–
Air-HH	~~9.6~~ 6.3	4 2
GW-HH	~~30.1~~ 28.1	4 2
Sed-HH	–	–
SW-En	NS	–
Air-En	0	4 1
Sed-En	–	–

Priority scores:

$$\frac{H^2 + 2M + L}{8} = \frac{4 + 4 + 0}{8} = 8/8 = 1$$

$$\frac{H^2 + 2L}{7} = \frac{1 + 0}{7} = 1/7 = 1$$

Use the matrix presented to the right, along with the two priority scores, to determine the site ranking. N/A refers to where there is no applicable pathway.

Human Health \ Environment	5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	3	4
3	1	2	3	4	4	5
2	2	3	4	4	5	5
1	2	3	4	5	(5)	5
N/A	3	4	5	5	5	5

DRAFT / (FINAL)

Matrix ("bin") Ranking: 5, or _____ No Further Action

CONFIDENCE LEVEL: The relative position of this site within this bin is:

____ almost into the next higher bin.
__✓__ right in the middle, unlikely to ever change.
____ almost into the next lower bin.

rev. 8/91

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (City, County, Section/Township/Range):

PureGro - Othello
Othello, WA - Adams County
NE1/4, NE1/4, Section 33, T. 16 N., R.30 E.

Site Description (Include management areas, compounds of concern, and quantities):

PureGro Company is a distributor of agricultural chemicals. The Othello facility includes a shop/office/chemical storage building, dry fertilizer storage, several tanks, a rinse pad, and holding pond. Spills reported at the site include an unknown quantity of chemical rinsate (herbicides, 2,4-D, Eptam), an unknown amount of phosphate, and approximately 1,000 gallons of ammonium poly phosphate fertilizer. In addition, a green acid (phosphate) tank broke and released an unknown volume of liquid. The liquid was pumped up, but no soil was removed. In 1989, approximately 750 gallons of urea solution was spilled. In 1990, a valve problem allowed approximately 1,000 gallons of ammonium poly phosphate fertilizer to flow along the railroad siding to a depression where it pooled on the frozen ground. About 600 gallons were retrieved, but an area about 10 yards wide by 150 yards long was reportedly contaminated.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

ROUTE SCORES:

Surface Water/Human Health:	NS	Surface Water/Environ.:	NS
Air/Human Health:	6.3	Air/Environmental:	0.0
Ground Water/Human Health:	28.1		

OVERALL RANK: 5

Rev. 5/31/91

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List substances to be considered for scoring: Source: 1

NOT SCORED

Explain basis for choice of substance(s) to be used in scoring.

List management units to be considered in scoring: Source:

Explain basis for choice of unit used in scoring. Source:

2. AIR ROUTE

List substances to be considered for scoring: Source: 1

Lindane, 4,4-DDT, 4,4-DDE, dieldrin, aldrin.

Explain basis for choice of substance(s) to be used in scoring.

Substances detected in soil samples.

List management units to be considered in scoring: Source: 1

Spills, contaminated soil.

Explain basis for choice of unit used in scoring.

Documented surface spills.

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List substances to be considered for scoring: Source: 1

Lindane, 4,4-DDT, 4,4-DDE, dieldrin, aldrin.

Explain basis for choice of substance(s) to be used in scoring.

Substances detected in soil samples.

List management units to be considered in scoring: Source: 1

Spills, contaminated soil.

Explain basis for choice of unit used in scoring.

Documented surface spills.

WORKSHEET 3
SUBSTANCE CHARACTERISTICS WORKSHEET
FOR MULTIPLE UNIT/SUBSTANCE SITES

	Combination 1	Combination 2	Combination 3
Unit:			
Substance:			

SURFACE WATER ROUTE

Human Toxicity Value:

Environ. Toxicity Value:

Containment Value:

Surface Water Human Subscore:

Surface Water Environ. Subscore:

AIR ROUTE

Human Toxicity/Mobility Value:

Environ. Toxicity/ Mobility Value:

Containment Value:

Air Human Subscore:

Air Environ. Subscore:

GROUND WATER ROUTE

Human Toxicity/ Mobility Value:

Containment Value:

Ground Water Subscore:

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS NOT SCORED

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1.									
2.									
3.									
4.									
5.									
6.									

*Potency Factor

Source:_____
Highest Value:_____
+2 Bonus Points?_____
Final Toxicity Value_____

1.2 Environmental Toxicity

Substance	Acute Criteria (ug/l)	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1.			
2.			
3.			
4.			
5.			
6.			

Source:_____ **Value:**_____

1.3 Substance Quantity Source:_____ **Value:**_____

Explain basis:_____

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment Source:_____ Value:_____
Explain basis:_____
_____

2.2 Surface Soil Permeability:_____ Source:_____ Value:_____

2.3 Total Annual Precipitation:_____ inches Source:_____ Value:_____

2.4 Max. 2-Yr/24-hour Precipitation:_____ inches Source:_____ Value:_____

2.5 Flood Plain:_____ Source:_____ Value:_____

2.6 Terrain Slope:_____ % Source:_____ Value:_____

3.0 TARGETS

3.1 Distance to Surface Water:_____ Source:_____ Value:_____

3.2 Population Served within 2 miles: $\sqrt{}$pop.=_____ Source:_____ Value:_____

3.3 Area Irrigated within 2 miles: 0.75$\sqrt{}$no. acres=_____ Source:_____ Value:_____

3.4 Distance to Nearest Fishery Resource:_____ Source:_____ Value:_____

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s)_____ Source:_____ Value:_____
_____
_____
_____

4.0 RELEASE
Explain basis for scoring a release to surface water: Source:_____ Value:_____
_____
_____
_____
_____

WORKSHEET 5
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring

1.2 Human Toxicity

Substance	Air Standard (ug/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1. lindane	0.003	10	X	0	X	0	0.8	X	0
2. DDT	X	0	X	0	X	0	0.8	5	4
3. DDE	X	0	X	0	X	0	0.8	X	0
4. dieldrin	X	0	X	0	13 (rat)	10	0.8	9	7
5. aldrin	X	0	X	0	X	0	0.8	9	7
6.									

*Potency Factor

Source: 2
Highest Value: 10
+2 Bonus Points? 2
Final Toxicity Value: 12

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility
Vapor Pressure(s): 1= ; 2= ; 3= Source:
4= ; 5= ; 6= **Value:**

1.3.2 Particulate Mobility
Soil type: silt loam Source: 1
Erodibility: 47 **Value:** 1
Climatic Factor: 10 - 30

1.4 Final Human Health Toxicity/Mobility Matrix **Value:** 6

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian Acute Toxicity	Value	Mobility	Value
1. lindane	X			
2. DDT	X			
3. DDE	X			
4. dieldrin	13 (rat)	10		1
5. aldrin	X			
6.				

Environmental Toxicity/Mobility Matrix Source: 2 **Value:** 5

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity: Est. 13,500 sq ft Source: 3 Value: 5
Explain basis: Contaminated soil

2.0 MIGRATION POTENTIAL

2.1 Containment: Contaminated soil, no cover Source: 1 Value: 10

3.0 TARGETS

3.1 Nearest Population: 300 ft Source: 3 Value: 10

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) >10,000 ft Source: 1 Value: 0

3.3 Population within 0.5 miles: $\sqrt{30} = 5.5$ Source: 1 Value: 6

4.0 RELEASE

Explain basis for scoring a release to air: Source: 1 Value: 0
None known or observed

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1. lindane	0.2	10	0.0003	5	76 (rat)	8	0.5	7	4
2. DDT	X	0	0.0005	5	87 (rat)	8	0.8	5	4
3. DDE	X	0	X	0	880 (rat)	5	0.8	5	4
4. dieldrin	X	0	0.00005	8	38.3 (rat)	10	0.8	9	7
5. aldrin	X	0	0.00003	8	39 (rat)	10	0.8	9	7
6.									

*Potency Factor

Source: 2
Highest Value: 10
+2 Bonus Points? 2
Final Toxicity Value 12

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions _____ Source: 2 **Value:** 0

OR
Solubility(mg/l) 1 - 0, 2 - 0, 3 - 0, 4 - 0, 5 - 0

1.3 Substance Quantity Source: 3 **Value:** 5
Explain basis: 7500 cu yds contaminated soil

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1 **Value:** 10
Explain basis: Spills, contaminated soil

2.2 Net Precipitation: 3.5 inches Source: 1 **Value:** 1

2.3 Subsurface Hydraulic Conductivity: $>10^{-5} - 10^{-3}$ Source: 1 **Value:** 3

2.4 Vertical Depth to Ground Water: 130 feet Source: 1 **Value:** 3

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 **TARGETS**

3.1 Ground Water Usage: Private, irrigation Source: 1 **Value:** 5

3.2 Distance to Nearest Drinking Water Well: 900 ft Source: 1 **Value:** 4

3.3 Population Served within 2 Miles: $\sqrt{43} = 6.5$ Source: 1 **Value:** 7

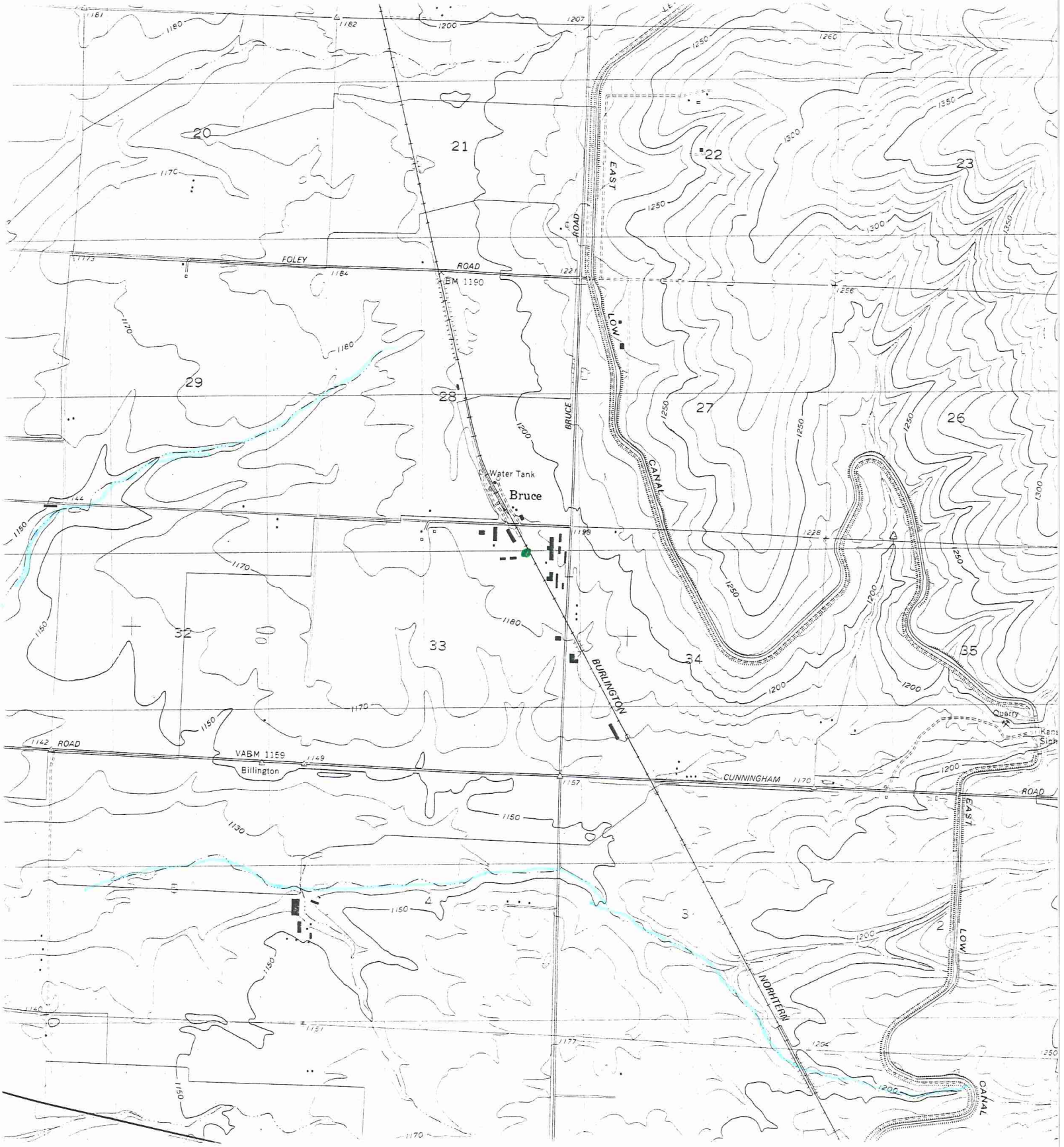
3.4 Area Irrigated by (Groundwater) Wells within 2 miles: $0.75\sqrt{2990} = 41$ Source: 1 **Value:** 41

4.0 **RELEASE**

Explain basis for scoring a release to ground water: None known or observed Source: 1 **Value:** 0

SOURCES USED IN SCORING

1. Site Hazard Assessment Data Collection Sheets, SAIC, 1991
2. Toxicology Database for use in WARM Scoring, SAIC, June, 1991.
3. George, Dave, 1990. Initial Investigation Data Sheet, PureGro Othello Site, Adams County, WA. WA Department of Ecology, August 29, 1990.
4.
5.
6.
7.
8.
9.
10.


20
21
22
23
29
28
27
26
32
33
34
35
3
2
4
FOLEY ROAD
BM 1190
EAST ROAD
BRUCE ROAD
LOW
CANAL
Water Tank
Bruce
BURLINGTON NORTHERN
VABM 1159
Billington
CUNNINGHAM ROAD
EAST LOW CANAL
Quarry

Census: 30

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is in hay and pasture. Sprinkling is the most suitable method of irrigation. (Capability unit IIs–3, irrigated; range site 7)

Royal fine sandy loam, loamy subsoil, 0 to 2 percent slopes (RtA).—Below the surface layer and to a depth of 20 to 36 inches, this soil is very fine sandy loam. It holds 7 to 9 inches of water that plants can use. In places depressions cause localized drainage problems.

Most of the acreage is irrigated. Both surface and sprinkler irrigation are suitable. The major crops are beans, sugar beets, corn, small grain, potatoes, and hay and pasture crops. Nitrogen is needed for nonlegumes. Nitrogen and zinc are needed for beans. In places where deep cuts have been made in leveling, fertility problems are likely to occur because of strong concentrations of lime. Generally, these problems can be corrected by applications of fertilizer, mainly phosphate. (Capability unit I–1, irrigated; range site 8)

Royal fine sandy loam, loamy subsoil, 2 to 5 percent slopes (RtB).—In irrigated areas of this soil, runoff is medium and the hazard of erosion is moderate. The crops are the same as are grown on Royal fine sandy loam, loamy subsoil, 0 to 2 percent slopes, but irrigation runs should be shorter, or corrugations and furrows should be held to a 2 percent gradient. (Capability unit IIe–1, irrigated; range site 8)

Royal fine sandy loam, loamy subsoil, 5 to 15 percent slopes (RtD).—In irrigated areas of this soil, runoff is rapid and the hazard of erosion is severe. Most slopes are between 5 and 10 percent. Sprinkling is the only suitable method of irrigation. (Capability unit IIIe–1, irrigated; range site 8)

Royal loamy fine sand, loamy subsoil, 0 to 5 percent slopes, eroded (RwB2).—The surface layer of this soil has been altered by wind erosion. In irrigated areas, runoff is slow to medium and the hazard of water erosion is slight to moderate. The hazard of wind erosion is severe. Drifting soil may injure young plants and fill irrigation ditches.

The crops are the same as those grown on Royal fine sandy loam, loamy subsoil, 0 to 2 percent slopes, but more of the acreage is in hay and pasture. Sprinkling is the most suitable method of irrigation. (Capability unit IIs–3, irrigated; range site 7)

Sagemoor Series

The Sagemoor series consists of well-drained, medium-textured soils underlain by slowly permeable or very slowly permeable lacustrine sediments of the Ringold or Touchet beds at a depth of 20 to 40 inches. These soils formed under bunchgrass and big sagebrush, from loess and lacustrine sediments. They occupy gently sloping to moderately sloping dissected terraces in the western part of the county. The elevation is about 1,200 feet. The annual precipitation is about 8 inches.

The surface layer is dark grayish-brown silt loam. The subsoil to a depth of 15 to 40 inches is uniform silt loam. The substratum consists of stratified lacustrine deposits of silty or very fine sandy loam.

Most of the acreage is irrigated as part of the Columbia Basin Irrigation Project.

Sagemoor silt loam, 0 to 2 percent slopes (ScA).—This is a silty soil on dissected terraces. Most slopes are about 1 percent.

Representative profile:

Surface layer—
0 to 9 inches, dark grayish-brown silt loam; weak, fine, granular structure; very friable; mildly alkaline; plentiful roots.

Subsoil—
9 to 19 inches, dark-brown silt loam; weak, medium and coarse, prismatic structure; very friable; mildly alkaline; plentiful roots.

Substratum—
19 to 46 inches, dark grayish-brown silt loam and very fine sandy loam; finely laminated; firm; moderately alkaline; strongly calcareous; few roots.
46 to 60 inches +, very dark grayish-brown silt loam; finely laminated; firm; strongly alkaline; strongly calcareous; no roots.

The surface layer ranges from dark grayish brown to dark brown. In cultivated areas, the surface layer is thicker than in the profile described. The depth to the laminated silty layers ranges from 15 to 40 inches but commonly is about 22 inches. The laminations are thin and consist of lenses of silt loam, silt, very fine sandy loam, and very fine sand. In places, piles of ice-rafted boulders are on the surface.

This soil is well drained, is easily worked, and holds 7 to 9 inches of water that plants can use. The subsoil is moderately permeable, and the substratum is slowly permeable. Because of the restrictive nature of the substratum, problems of drainage or of alkalinity and salinity may develop if too much irrigation water is applied or if water seeps from higher lying soils. Runoff is slow, and the hazard of water erosion is slight. The hazard of wind erosion is slight to moderate.

Corn, sugar beets, peas, potatoes, beans, wheat, and hay and pasture crops are grown. Both surface and sprinkler irrigation are suitable. Nitrogen is needed for nonlegumes. Zinc and nitrogen are needed for beans. (Capability unit IIs–2 irrigated; range site 4)

Sagemoor silt loam, 2 to 5 percent slopes (ScB).—In irrigated areas of this soil, runoff is medium and the hazard of water erosion is moderate.

The crops are the same as those grown on Sagemoor silt loam, 0 to 2 percent slopes. The same irrigation methods are suitable, but irrigation runs should be shorter, or furrows and corrugations should be held to a 2 percent gradient. (Capability unit IIe–3, irrigated; range site 4)

Sagemoor silt loam, 5 to 15 percent slopes (ScD).—Small areas where the slope is more than 15 percent were included with this soil in mapping. The slope is dominantly between 5 and 10 percent. In irrigated areas, runoff is rapid to very rapid and the hazard of water erosion is severe to very severe. Sprinkling is the most suitable method of irrigation. Row crops are not generally grown. (Capability unit IIIe–3, irrigated; range site 4)

Sagemoor silt loam, compact substratum, 0 to 2 percent slopes (ScA).—This soil is underlain by the compact, semiconsolidated, very slowly permeable lacustrine sediments of the Ringold beds at a depth of 20 to 40 inches. It holds 5 to 7 inches of water that plants can use. It is used for the same crops that are grown on Sagemoor silt loam, 0 to 2 percent slopes, but is less productive of some crops. Also, this soil requires more frequent and more

Othello
NE/4, NE/4, Sec 33
T16N, R30E

R29E R30E

T16

T15N

6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	19	11	12
18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36
6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12
18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36

Township, Range, and Section Diagram for Determining Well Data Collection Needs

CONTROL # / #OF PTS	SEC / R	OLD APPL / P	OLD PERM / LOC. OF POD/POW	OLD CERT / (CHG C#)	DATE OF PRIORITY / PURPOSE OF USE	S T	C C	A M	CNTY / USE TYPE	PERMIT DATE / INST QI	NAME	C M	R U	S U	ANNUAL QA	IRR AC	C M	S U	PRO-VISOS	TIME OF USE	R I	R A	R C
WATER RESOURCE INVENTORY AREA- 36																						
TOWNSHIP - 16 RANGE - 30 E																						
1	SW4SW4				DOMESTIC SINGLE				C	1000.0 G 2					2.0				RMBW$				
					IRRIGATION				C	1000.0 G 2					1077.0	640.0			RMBW$	03011101			
G3-01451C	08	10008	09260		02/05/969				ADAM	08/20/969	PAYNE DALE K											
1	NE4NE4				IRRIGATION				C	800.0 G					260.0	80.0			RM$WB	04010930			
G3-22170C	09				11/07/973				ADAM	09/09/974	BRINEY SHARON											
1	SW4				IRRIGATION				C	1600.0 G					400.0	160.0			RMB$	03151030			
G3-23053C	09				03/18/974	S			ADAM	09/08/975	CAMPBELL RODNEY DE											
1	NE4				IRRIGATION				C	1250.0 G					382.5	153.0			RIBMW$	04011031			
G3-24823N	09				03/12/976				ADAM	08/26/983	WA ST D N R/BRINEY											
1	SE4SW4				IRRIGATION				C	1000.0 G					120.0	60.0			$RK	02011130			
G3-23616C	12				09/06/974				ADAM	04/30/975	YAGER H H											
1	SE4SE4				DOMESTIC MULTIPLE				C	3.0 G					1.0				R$H				
G3-21237C	16				06/04/973	S			ADAM	02/28/974	GARNER N V ET AL											
1	SW4SW4NE4				IRRIGATION				C	1350.0 G					487.5	195.0			RW$	02011130			
G3-23819P	18				10/11/974				ADAM	09/08/975	USBR											
1	NE4NE4				DOMESTIC MULTIPLE				C	40.0 G					13.0				RIW$				
G3-01572C	22	07967	08027		02/16/966				ADAM	07/25/967	MICHAEL EVERETT											
1	S2NE4				IRRIGATION				C	2400.0 G					2560.0	640.0			REBZ	IS			
G3-01573C	22	10200	9582		05/15/969				ADAM	03/10/970	MICHEL EVERETT											
1	SW4NE4				IRRIGATION				C	2500.0 G					1364.0	310.0			KQRBZ	01011231			
G3-01560CABU	24	10615A	09963A		01/27/970	S			ADAM	04/30/980	ANDERSON JUDY J											
1	SW4SW4NW4				IRRIGATION				C	2300.0 G					1200.0	400.0			RMBW	IS			
G3-01560CBBU	26	10615B	09963B		01/27/970	S			ADAM	04/30/980	KLIPHARDT FREDERIC								WELLS			
2	NE4SE4, NE4NE4				IRRIGATION				C	4000.0 G					2640.0	800.0			RMBW	IS			
G3-00843C	27	11103			07/28/970	S	W		ADAM	10/10/973	JIM FRANK FARMS IN								WELL			
1	S2NW4/N2SW4				IRRIGATION				C	1200.0 G					1000.0	585.0			NTRM	04011031			
										G					S							
G3-01211C	27	08481	07886		01/16/967		W		ADAM	05/17/967	JIM FRANK FARMS IN								WELLS			
2	W2E2				DOMESTIC SINGLE				C	2000.0 G 2					2.0								
					IRRIGATION				C	2000.0 G 2					2680.0	670.0			AEZ	03011031			
G3-01557C	27	10041	10289		02/25/969	S	W		ADAM	09/08/972	JIM FRANK FARMS IN								WELL			
1	NW4NE4				IRRIGATION				C	1125.0 G					1000.0	585.0			RMBER/	04011101			
00644S	28	00644		00567	07/00/910				ADAM	/ /	NORTHERN PACIFIC R								WELL			
1	SE4SE4				RAILWAY				C	50.0 G					6.7								
G3-28613A	28				03/29/989				ADAM	/ /	PORT OF OTHELLO								WELL			
1	NE4SE4				COMMERCIAL/INDUSTRIAL				C	1000.0 G													
G3-20848P	33				02/20/973	S			ADAM	10/16/985	BURLINGTON NORTHER								WELL			
1	SW4NE4				IRRIGATION				C	1250.0 G					500.0	200.0			$R	04011001			
G3-01561C	34	10290	09631		07/07/969		W		ADAM	03/27/970	JIM FRANK FARMS ET								WELL			
1	NE4NE4				IRRIGATION				C	2200.0 G					2585.0	950.0			M/QBU	03011031			
G3-26593P	34				07/02/980				ADAM	03/29/985	ANDREWS CURT C								WELL			
1	NW4NW4				COMMERCIAL/INDUSTRIAL				C	500.0 G					800.0				KR$M				
G3-01367C	36	08092	07957		05/13/966				ADAM	06/19/967	WA ST D N R								WELL			
1	SE4				IRRIGATION				C	2200.0 G					2560.0	640.0			R$	IS			
G3-23517C	36				08/01/974				ADAM	04/10/975	WA ST D N R								WELLS			
2	NW4SE4				DOMESTIC SINGLE				C	3600.0 G 2					2.0				$KR				
					IRRIGATION				C	3600.0 G 2					1525.0	610.0			$KR	04011031			

STATE OF WASHINGTON
PUBLIC WATER SUPPLY SYSTEM LISTING
HZD/SITES/TOXICS-SPO

ID NO. SYSTEM NAME / SYSTEM MAILING ADDRESS / MANAGER/OWNER NAME / BACTI SAMPLING SCHEDULE / POPULATION / SOURCE NO. SOURCE NAME

COUNTY / CITY, ST ZIP / TELEPHONE — CLASS — ACTUAL POTEN — JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC — TWP RNG SEC

CATEGORY TYPE INTERTIE DEPTH CAPACITY TREATMENT

30544U RANCH ESTATES WATER
16455 NE 85TH, #103
Mgr: GEORGE WHITE
Bacti: once/12 months
Perm: 12
Source: 1 WELL #1

ADAMS
REDMOND, WA 98052
(206) 868-1952
Class: 4
4 0
WELL PRI. 190' 28 NONE.
15N 29E 27

85203C HI-LO HOME OWNERS ASSN
2062 HI LO DRIVE
Mgr: WILLIAM BAUER
Bacti: once/ 3 months (*)
Perm: 78
Source: 1 WELL #1

ADAMS
OTHELLO, WA 99344
(509) 448-9445
Class: 2
26 0
WELL PRI. 280' 100 NONE.
15N 29E 27D

707004 RADAR WATER ASSOCIATION
2012 W. YEISLEY RD
Mgr: MELVIN METZER
Bacti: once/ 3 months (*)
Perm: 50
Source: 1 WELL # 1

ADAMS
OTHELLO, WA 99344
(509) 488-2542
Class: 2
12 0
WELL PRI. 374' 60 NONE.
15N 29E 27E

85201B SUNBURST WATER ASSN.
BOX 551
Mgr: P.M. KRUPA
Bacti: once/ 3 months (*)
Perm: 100
Source: 1 WELL # 1

ADAMS
OTHELLO, WA 99344
488-2579
Class: 2
29 0
WELL PRI. 280' 75 NONE.
15N 29E 27P

15 COUNTRY LANE EAST
1687 WEST GILLIS RD.
Mgr: LARRY MCCOURTIE
Bacti: once/ 3 months (*)
Perm: 42
Source: 1 WELL #1

ADAMS
OTHELLO, WA 99344
(509) 488-2211
Class: 2
14 0
WELL PRI. 285' 25 NONE.
15N 30E 8D

14116R COLUMBIA BASIN RESEARCH UNIT #1
BRUCE/WARDEN RD.
Mgr: BILL BOLANDER
Bacti: once/12 months
Perm: 10
Source: 1

ADAMS
OTHELLO, WA 99344
(509) 786-2226
Class: 4
7 1
WELL PRI. 490' 30 NONE.
15N 30E 15D

64827L OTHELLO AIRPORT
PO BOX 572
Mgr: TED MUSCOTT
Bacti:
Perm: 0
Source: 1

ADAMS
OTHELLO, WA 99344
488-2544
Class: 4
0 1
A A A A A A 0 0 0
15 15 15 15 15 15 0 0 0
Variable: 0 0 0
Transitory: 0 0 0
WELL PRI. 270' 152 NONE.
15N 30E 17

STATE OF WASHINGTON
PUBLIC WATER SUPPLY SYSTEM LISTING
HZD/SITES/TOXICS-SPO

Perm: 0 Transitory: 0 0 0 15 15 15 15 15 15 0 0 0
Source: 1 WELL PRI. 270' 152 NONE. 15N 30E 17

ID NO. SYSTEM NAME / SYSTEM MAILING ADDRESS / MANAGER/OWNER NAME / BACTI SAMPLING SCHEDULE / POPULATION / SOURCE NO. SOURCE NAME — COUNTY / CITY, ST ZIP / TELEPHONE — CLASS / ACTUAL POTEN — JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC — CATEGORY TYPE INTERTIE DEPTH CAPACITY TREATMENT — TWP RNG SEC

31600X HATTON, TOWN OF
P O BOX 148
Mgr: LESTER ROBINSON, MAYOR
Bacti: once/ 3 months (*)
Perm: 67
ADAMS Class: 2
HATTON, WA 99332
(509) 488-9774 26 0
Source: 1 WELL # 1 — WELL PRI. 700' 195 CL2. 15N 32E 20D

934509 WASHTUCNA WATER DEPARTMENT
BOX 713
Mgr: DENNIS HILLE
Bacti: 1/month
Perm: 305
ADAMS Class: 1
WASHTUCNA, WA 99371
(509) 646-3423 142 145
Source: 1 SPRING #1 — SPRING PRI. 100 CL2. 15N 36E 33D
Source: 2 WELL # 2 (RR WELL) — WELL PRI. 308' 100 CL2. 15N 36E 33A
Source: 3 WELL # 3 — WELL SEC. 472' 500 CL2. 15N 36E 28P

83116X SPORTSMAN TRAILER PARK
372 S REYNOLD RD
Mgr: LOUIS J. MASSA
Bacti: once/ 3 months (*)
Perm: 48 Transitory: 10 0 0 3 3 3 4 5 10 60 40 40
ADAMS Class: 2
OTHELLO, WA 99344
(509) 488-9098 20 18
Source: 1 WELL # 2 — WELL PRI. 225' 80 NONE. 16N 29E 22K
Source: 2 WELL # 1 — WELL SEC. 200' 20 NONE. 16N 29E 22K

088877 BRUCE FARMS WATER SYSTEM
1628 W LEE RD
Mgr: KEN GARDNER
Bacti: once/12 months
Perm: 40
ADAMS Class: 4
OTHELLO, WA 99344
(509) 488-2334 5 0
Source: 1 — WELL PRI. NONE. 16N 30E 34

28456F ADAMS COUNTY LANDFILL
%VERN CHURCH PUBLIC WORKS
Mgr: JERRY WILKINS
Bacti: once/12 months
Perm: 0 Transitory: 24 24 24 24 24 24 24 24 24 24 24 24
ADAMS Class: 4
RITZVILLE, WA 99169
(509) 488-6171 0 0
Source: 1 WELL #1 — WELL PRI. 280' 75 NONE. 16N 31E 35

10101N BUTTERFIELD WATER SYSTEM
%W. 3517 BRUCE
Mgr: MELVIN BUTTERFIELD
Bacti: once/12 months
Perm: 20
ADAMS Class: 4
SPOKANE, WA 99208
(509) 326-1291 4 0
Source: 1 — WELL PRI. 485' 50 NONE. 16N 32E

Asotin Benton Chelan Clallam Clark

TABLE 1 - WEATHER REPORTING STATIONS

Station	County	Elevation	Latitude	Longitude	Period of Record
Hatton 8E	Adams	1428	46° 46'	118° 40'	1931-60
*Kahlotus 4SW	Franklin	1340	46° 36'	118° 36'	1931-60
Lind Exp. Sta.	Adams	1625	47° 00"	118° 35'	1931-60
*Moses Lake 3E	Grant	1208	47° 07'	119° 12'	1948-60
Othello	Adams	1110	46° 50'	119° 10'	1941-60
Ritzville	Adams	1825	47° 07'	118° 22'	1931-60
*Ruff 3SW	Grant	1440	48° 07'	119° 03'	1918-55
*Coulee Dam 1SW	Grant	1702	47° 57'	119° 00'	1935-53
Davenport	Lincoln	2450	47° 39'	118° 09'	1931-60
*Hartline	Grant	1905	47° 41'	119° 06'	1931-60
Harrington 1N	Lincoln	2177	47° 29'	118° 15'	1949-55
Harrington 5S	Lincoln	2167	47° 25'	118° 15'	1931-60
Odessa	Lincoln	1540	47° 20'	118° 40'	1931-60
Sprague	Lincoln	1925	47° 18'	117° 59'	1931-60
*Wellpinit	Stevens	2450	47° 53'	117° 59'	1931-60
Wilbur	Lincoln	2163	47° 45'	118° 42'	1931-60
*Wilson Creek	Grant	1276	47° 25'	119° 07'	1940-60
Cheney	Spokane	2400	47° 29'	117° 35'	1938-55
*Coeur d'Alene, Idaho	Kootenai	2160	47° 41'	116° 45'	1931-60
Deer Park 2E	Spokane	2114	47° 57'	117° 26'	1931-60
Mt. Spokane Summit	Spokane	5890	47° 55'	117° 07'	1953-60
*Newport	Pend Oreille	2135	48° 11'	117° 03'	1931-60
Spokane WBAS	Spokane	2357	47° 37'	117° 31'	1931-60
*Clarkston Heights	Asotin	1185	46° 23'	117° 05'	1938-59
Colfax 1NW	Whitman	1955	46° 53'	117° 23'	1931-60
Ewan	Whitman	1720	47° 07'	117° 44'	1940-60
LaCrosse 3ESE	Whitman	1546	46° 48'	117° 49'	1931-60
*Lewiston AP, Idaho	Nez-Perce	1413	46° 23'	117° 01'	1931-60
*Moscow, Idaho	Latah	2628	46° 44'	117° 00'	1931-60
*Potlatch, Idaho	Latah	2550	46° 55'	116° 53'	1931-60
Pullman 2NW	Whitman	2545	46° 46'	117° 12'	1931-60
Rosalia	Whitman	2400	47° 14'	117° 22'	1931-60
Tekoa	Whitman	2610	47° 13'	117° 05'	1939-60
*Wawawai 2NW	Garfield	695	46° 39'	117° 24'	1931-60

*Weather reporting stations located near counties included in summary.

The variability of monthly and annual precipitation is given in Table 11. Here, specific amounts corresponding with selected frequencies are given. For example, at Lind Experiment Station, the total precipitation for July is only a trace in 1 summer out of 10; also, it exceeds 0.6 of an inch in 1 summer out of 10. Annual precipitation is less than 6 inches in 1 year out of 10; also, it is more than 12 inches in 1 year out of 10.

Fig. 2 ANNUAL PRECIPITATION
(Inches)

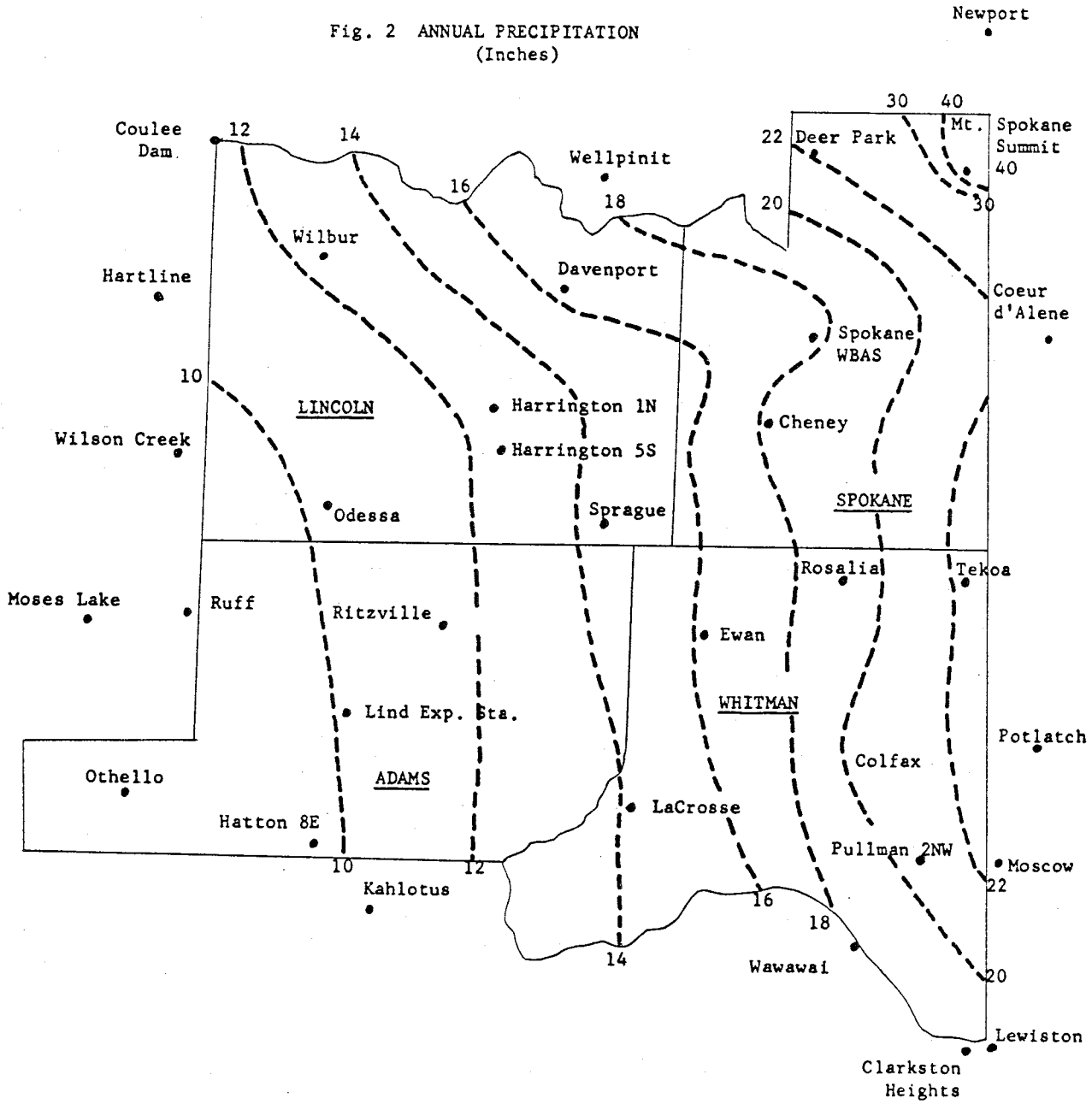

TABLE 24 ESTIMATED EVAPOTRANSPIRATION
(inches of water)

	J	F	M	A	M	J	J	A	S	O	N	D	ANNUAL
ADAMS COUNTY					Hatton 8E								
Precip	1.1	.9	.9	.7	.7	.9	.2	.1	.5	1.2	1.2	1.4	9.8
PET		.1	.7	1.8	3.3	4.3	5.5	4.9	3.2	1.6	.4		25.8
Ea(6)		.1	.7	1.7	2.2	1.9	.8	.3	.5	1.2	.4		9.8
					Lind Exp. Station								
Precip	1.1	.9	.8	.7	.9	1.1	.3	.3	.6	1.1	1.1	1.4	10.3
PET		.1	1.7	1.9	3.3	4.3	5.7	5.0	3.2	1.7	.3		27.2
Ea(6)		.1	1.6	1.6	1.7	1.8	.7	.4	.7	1.1	.3		10.0
					Othello								
Precip	1.1	.8	.6	.6	.8	1.0	.2	.1	.5	1.1	1.0	1.0	8.8
PET		.1	.7	1.9	3.4	4.4	5.9	5.1	3.3	1.6	.3		26.7
Ea(6)		.1	.7	1.7	2.0	1.7	.5	.2	.5	1.1	.3		8.8
					Ritzville								
Precip	1.3	1.0	1.0	.7	.9	1.2	.3	.3	.6	1.2	1.4	1.6	11.5
PET			.7	1.8	3.2	4.3	5.5	4.9	3.2	1.7	.3		25.6
Ea(6)			.7	1.7	2.5	2.5	1.3	.6	.7	1.2	.3		11.5
					*Ruff								
Precip	1.2	.9	.8	.5	.9	1.1	.4	.2	.4	1.0	1.1	1.6	10.1
PET			.8	2.0	3.3	4.4	5.7	5.0	3.3	1.6	.3		26.4
Ea(6)			.8	1.9	2.2	2.1	1.0	.4	.4	1.0	.3		10.1
LINCOLN COUNTY					Davenport								
Precip	2.0	1.5	1.4	1.1	1.4	1.5	.6	.5	.9	1.4	2.0	2.4	16.7
PET			.6	1.8	3.0	3.9	5.1	4.5	3.0	1.5	.2		23.6
Ea(6)			.6	1.8	2.7	2.9	2.0	1.1	1.1	1.5	.2		13.9
					*Hartline								
Precip	1.1	.9	.7	.8	1.1	1.3	.4	.3	.5	1.0	1.3	1.6	11.0
PET			.7	1.8	3.4	4.4	5.9	5.0	3.3	1.6	.2		26.3
Ea(6)			.7	1.6	2.4	2.4	1.4	.7	.6	1.0	.2		11.0
					Odessa								
Precip	1.3	.9	.9	.7	.9	1.2	.4	.2	.6	1.0	1.2	1.3	10.6
PET			.7	1.9	3.2	4.3	5.6	4.8	3.1	1.6	.3		25.5
Ea(6)			.7	1.6	2.2	2.3	1.3	.6	.7	1.0	.3		10.7
					Sprague								
Precip	1.7	1.3	1.3	1.0	1.1	1.2	.3	.4	.8	1.6	1.8	2.2	14.7
PET			.8	1.8	3.2	4.1	5.5	4.7	3.1	1.6	.4		25.2
Ea(6)			.8	1.8	2.7	2.6	1.6	.9	.9	1.6	.4		13.3
					Wilbur								
Precip	1.5	1.1	1.0	.9	1.1	1.2	.4	.3	.7	1.3	1.6	1.7	12.8
PET			.7	1.7	3.1	4.0	5.2	4.5	3.0	1.5	.2		23.9
Ea(6)			.7	1.7	2.6	2.6	1.7	.8	.9	1.3	.2		12.5
					*Wilson Creek								
Precip	1.0	.8	.7	.5	.8	1.3	.3	.2	.4	.9	1.1	1.3	9.3
PET		.1	.8	1.9	3.4	4.4	5.6	4.8	3.3	1.6	.3		26.2
Ea(6)		.1	.8	1.6	2.1	2.0	.8	.3	.4	.9	.3		9.3

Table 24 continued:

	J	F	M	A	M	J	J	A	S	O	N	D	ANNUAL
SPOKANE COUNTY					Deer Park 2E								
Precip	2.8	2.1	1.9	1.5	1.4	1.6	.5	.5	1.2	2.3	2.6	3.5	21.9
PET			.4	1.7	3.1	4.0	5.0	4.4	2.8	1.4	.2		23.0
Ea(6)			.4	1.7	2.9	3.1	2.0	1.1	1.4	1.4	.2		14.2
					*Newport								
Precip	3.4	2.5	2.5	1.7	1.8	1.9	.7	.7	1.5	2.8	3.3	3.9	26.7
PET			.4	1.7	3.0	4.0	5.0	4.2	2.7	1.4	.2		22.6
Ea(6)			.4	1.7	2.9	3.4	2.5	1.4	1.7	1.4	.2		15.6
					Spokane WBAS								
Precip	1.7	1.5	1.3	1.0	1.0	1.2	.4	.5	.9	1.3	1.9	2.2	14.9
PET			.6	1.6	3.1	4.1	5.5	4.7	3.0	1.6	.2		24.4
Ea(6)			.6	1.6	2.0	2.6	1.8	1.0	1.1	1.3	.2		12.8
WHITMAN COUNTY					*Clarkston Heights								
Precip	.9	1.0	.9	1.3	1.6	1.8	.5	.3	1.1	1.2	1.2	1.3	13.1
PET		.3	.9	2.0	3.3	4.3	5.8	5.0	3.2	1.6	.4	.1	26.9
Ea(6)		.3	.9	1.9	2.7	2.8	1.2	.4	1.2	1.2	.4	.1	13.1
					Colfax 1NW								
Precip	2.6	1.9	2.2	1.5	1.3	1.7	.5	.4	1.2	2.0	2.7	3.2	21.2
PET		.1	.8	1.9	3.1	4.0	5.2	4.5	3.0	1.7	.5	.1	24.9
Ea(6)		.1	.8	1.9	2.8	3.0	2.0	1.1	1.4	1.7	.5	.1	15.4
					LaCrosse 3ESE								
Precip	1.8	1.4	1.3	1.0	.9	1.2	.3	.3	.7	1.4	1.7	2.2	14.2
PET		.2	.9	1.9	3.1	4.0	5.5	4.7	3.1	1.6	.4	.1	25.5
Ea(6)		.2	.9	1.9	2.5	2.5	1.6	.8	.8	1.4	.4	.1	13.1
					Pullman 2NW								
Precip	2.5	2.0	2.1	1.4	1.3	1.5	.4	.4	1.1	1.8	2.2	2.7	19.4
PET		.1	.7	1.8	3.0	3.8	5.2	4.6	3.1	1.7	.5	.1	24.6
Ea(6)		.1	.7	1.8	2.7	2.8	2.0	1.1	1.3	1.7	.5	.1	14.8
					Rosalia								
Precip	2.1	1.6	1.7	1.3	1.4	1.6	.4	.4	1.2	1.8	2.2	2.6	18.3
PET			.7	1.7	3.1	4.0	5.3	4.6	3.0	1.6	.5		24.5
Ea(6)			.7	1.7	2.8	3.0	2.0	1.0	1.4	1.6	.5		14.7

Precipitation (Precip), Potential Evapotranspiration (PET), Actual Evapotranspiration for the 6-inch waterholding capacity soil (Ea[6])