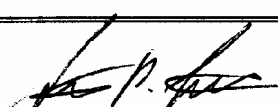



**Interim Change Notice
(ICN)**

A. Document No.: PNNL-12114 Revision No.: September 1999 Document Title: <u>RCRA Assessment Plan for Single-Shell Tank Waste Management Area S-SX at the Hanford Site, September 1999</u> Document's Original Author: V. G. Johnson and C. J. Chou		Effective Date of ICN: 12/1/06 Change Requested By: Ronald M. Smith
B. Action: Make changes in the WMA S-SX groundwater quality assessment plan as described in Section D below. Attach this ICN to the front of the document		
C. Effect of Change: This ICN updates the assessment plan to reflect the current wells in the monitoring system and the current constituent list for WMA S-SX in compliance with RCRA assessment monitoring.		
D. Reason for Change/Description of Change: Reason for Change: Three new wells, 299-W22-69, 299-W22-72, and 299-W22-86, were constructed east of WMA S-SX as part of the UP-1 Operable Unit monitoring network modification. These wells have been added to the S-SX network and the monitoring well list has been modified accordingly to accommodate these changes. Description of Change: Replace Figure R3.A.2 (page 3) in PNNL-12114-ICN-3 with Figure R4.A.2 attached. Replace Table R3.1 with the attached revised Table R4.1. Add well summary sheets for the three new wells to Appendix B.		
E. Document Management Decisions: None.		
F. Approval Signatures (Please Sign and Date) Task Manager: <u></u> 11/30/06 S. P. Luttrell		Type of Change: (Check one): _____ Minor <input checked="" type="checkbox"/> Major

Project Quality Engineer:  Date: 11-30-06
 T. G. Walker

Other Approvals:  Date: 11-30-06
 R. M. Smith

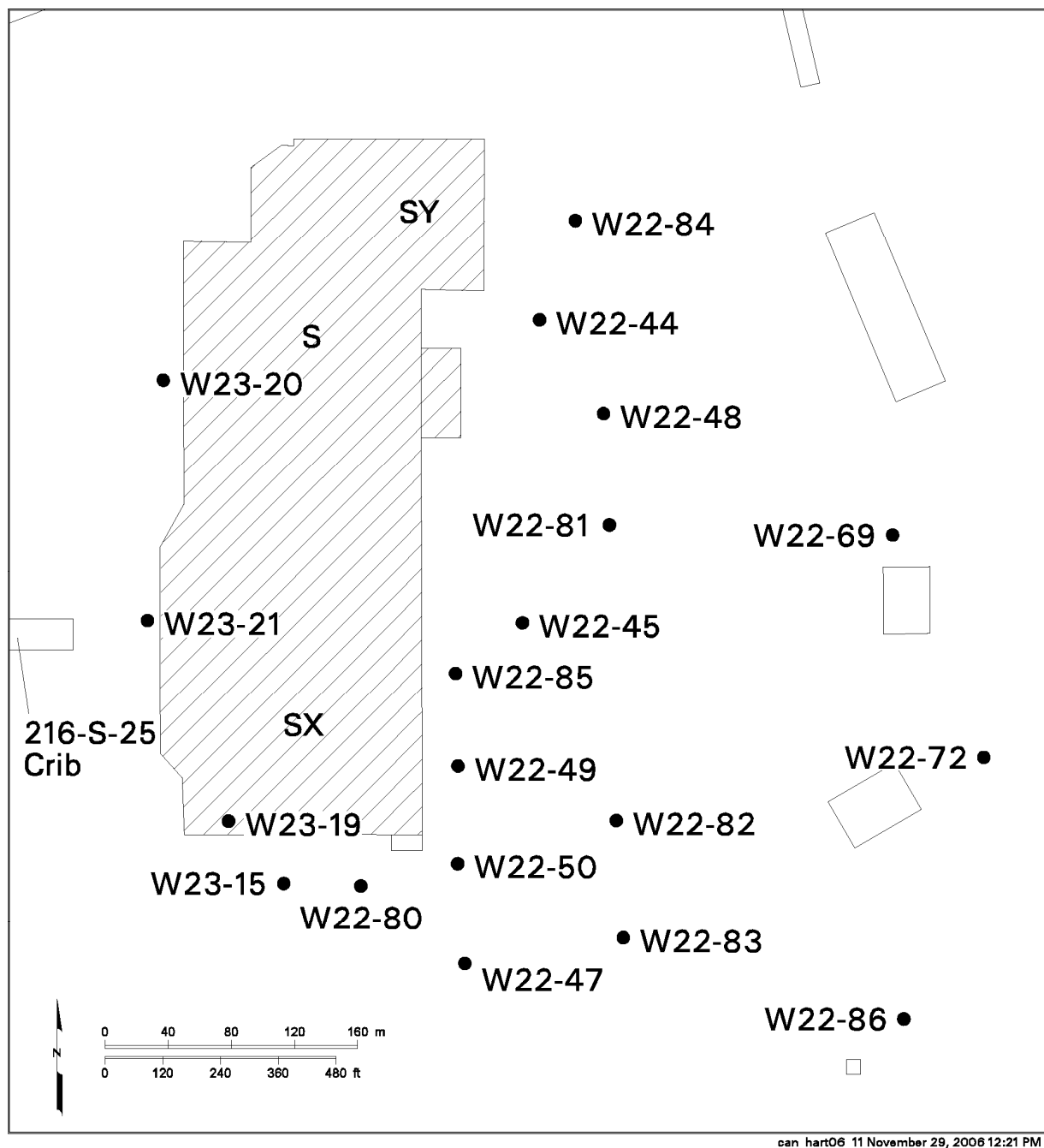


Figure R4.A.2. Waste Management Area S-SX.

Well ID	Well Name	Purpose	WAC Compliant	Constituents of Interest			Supporting Constituents										
				Specific Conductance (a)	Chromium (total, filtered)	Nitrate	Technetium-99 (d)	Temperature (a)	pH (a)	Turbidity (a)	Water Level (a)	Alkalinity	Anions (b)	Metals (filtered) (c)	Tritium (d)	Uranium (d)	Low-Level Gamma Scan (d)
A4975	299-W22-44	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
A4976	299-W22-45	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C4667	299-W22-47	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
B8812	299-W22-48	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
B8813	299-W22-49	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
B8814	299-W22-50	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C4969	299-W22-69	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C4970	299-W22-72	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3115	299-W22-80	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3123	299-W22-81	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3124	299-W22-82	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3126	299-W22-83	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3398	299-W22-84	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3399	299-W22-85	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C4971	299-W22-86	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
A4984	299-W23-15	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
B8809	299-W23-19	Downgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	A
C3112	299-W23-20	Upgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-
C3113	299-W23-21	Upgradient	C	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	A	A	-

Footnotes

(a) Field measurement.

(b) Anions - Analytes include but not limited to chloride, nitrate, sulfate, and fluoride.

(c) Metals - Analytes include but not limited to calcium, potassium, magnesium, and sodium.

(d) Not regulated under RCRA; co-contaminant to aid in determination of groundwater flow rate and direction and to support CERCLA and AEA monitoring.

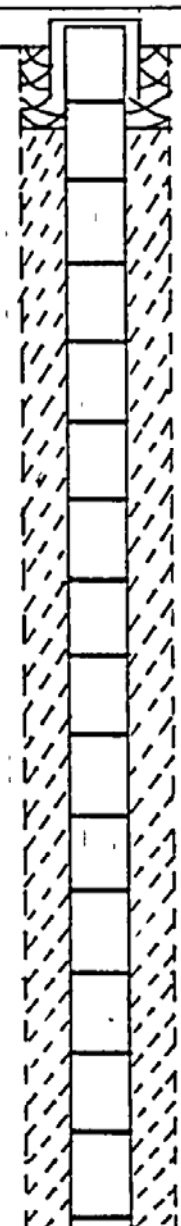
Codes

N = Well construction is not compliant with WAC 173-160 resource protection requirements

C = Well is constructed as a WAC 173-160 resource protection well

A = To be sampled annually

Q = To be sampled quarterly

WELL SUMMARY SHEET		Start Date: ^{est} 1-27-06	Page 1 of 3
		Finish Date: 3-6-06	
Well ID: C4964		Well Name: 299-W22-69	
Location: NW of S Plant		Project: 200-UP-1-00 Monitoring Wells	
Prepared By: Robin Henderson	Date: 3-2-06	Reviewed By: L.O. Walker	Date: 3/8/06
Signature: Robin Henderson		Signature: <i>L.O. Walker</i>	
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA	
Description	Diagram	Depth in Feet	Lithologic Description
9" x 6" dual wall temp drill casing		0	0-1' Gravel
			1-5' Sand
			5-20' Gravelly Sand
			20-46' Sand
6" stainless steel type 304/304L protective casing set 0.45 ft above well casing		25	
4" ss. type 304/304L riser pipe:			46-55' Sandy Gravel
+230 → 238.03		50	55-60' Gravel
			60-66' Sand
4" ss. type 304/304L 10-20 slot wire wrap screen: 238.03 → 273.05			66-70' Sandy Gravel
			70-90' Sand
4" ss type 304/304L sump: 273.05 → 276.03		75	
			90-92' Sandy Silt
			92-100' Sand
Portland Cement Grout: 0 → 10.57		100	100-105' Sandy Silt
		105-115' Silty Sand	
		115-130' Sand	
Granular Bentonite: 10.57 → 222.51	125		
		130-141' Sandy Silt	
		141-144' Silty Sand w/ Caliche	
		144-147' Gravelly Silt	

WELL SUMMARY SHEET		Start Date 1-27-06	Page 2 of 3
		Finish Date 3-6-06	
Well ID: C4969		Well Name: 299-W22-109	
Location NW of S Plant		Project 200-02-100 Monitoring Wells	
Prepared By: Robin Henderson	Date: 3-2-06	Reviewed By: L.D. Walker	Date 3/8/06
Signature: Robin Henderson		Signature: L.D. Walker	
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA	
Description	Diagram	Depth In Feet	Lithologic Description
Granular Bentonite: 10.57 → 222.51		150	147' → 155' silty sandy gravel 155' → 160' Sandy Gravel 160' → 175' Gravelly Sand
Bentonite Pellet Seal: 222.51 → 228.00		175	175' → 186' Sandy Gravel 186' → 187' Gravel 187' → 195' Sandy Gravel 195' → 206' Gravel
10-20 Colorado Silica Sand: 228.00 → 281.16		200	206' → 212' Sandy Gravel 212' → 236' Gravel
Bentonite Pellet Seal: 281.16 → 286.25		225	236' → 302' Sandy Gravel
Colorado Silica Sand back fill: 286.25 → 376.55		250	Static groundwater level: 236.05 ft bgs (3-2-06)
		275	

WELL SUMMARY SHEET		Start Date: 1-27-06		Page 3 of 3		
		Finish Date: 3-16-06				
Well ID: C4969		Well Name: 299-W22-69				
Location: NW of S Plant		Project: 200-UP-100 Monitoring Wells				
Prepared By: Robin Henderson		Date: 3-2-06		Reviewed By: L.D. Walker		
Signature: Robin Henderson		Signature: L.D. Walker				
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA				
Description	Diagram	Depth in Feet	Graphic Log	Lithologic Description		
Colorado Silica Sand Backfill: 286.25 → 376.55		300		302' → 316' Silty Sandy Gravel		
				316' → 325' Gravelly Sand		
					325' → 336' Sand	
					336' → 358' Sandy Gravel	
			325			
			350			
		375				
			</			

WELL SUMMARY SHEET		Start Date: 2-22-06		Page 1 of 3	
Finish Date: 3-21-06					
Well ID: C4970		Well Name: 299-W32-72			
Location: NW of S Plant		Project: 200-VP-1 OU Monitoring Wells			
Prepared By: Robin Henderson		Date: 3-21-06		Reviewed By: L.D. Walker	
Signature: Robin Henderson		Signature: L.D. Walker		Date: 5/11/06	
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA			
Description	Diagram	Depth in Feet	Graphic Log	Lithologic Description	
9" x 6" dual wall temp drill casing		0		0+1.5' Sandy Gravel	
				1.5'→8' Silty Sand	
				8'→24' Howard Fm. Sand	
6" S.S. type 304/304L protective casing set 1 ft above well casing		25		24'→35' slightly silty gravelly Sand	
4" S.S. type 304/304L riser pipe: +2.00' → 236.98'				35'→51' Sand	
4" S.S. type 304/304L 20 slot wire wrap screen: 236.98' → 272.00'		50		51'→55' Sandy Gravel	
				55'→82' Sand	
4" S.S. type 304/304L sump: 272.00' → 274.98'		75		82'→90' slightly silty sand	
				90'→96' Silty Sand	
Portland Cement Grout: 0 → 10.25'		100		96'→103' slightly silty sand	
				103'→108' Silty Sand	
				108'→112' slightly silty Sand	
				112'→120' Sand	
Granular Bentonite: 10.25' → 219.17'		125		120'→126' Silty Sand	
				126'→130' Sandy Silt	
				130'→137' Silty Sand	
				137'→142' Sandy Silt	
				142'→146' Silt	

WELL SUMMARY SHEET		Start Date: 2-22-06		Page 2 of 3	
		Finish Date: 3-21-06			
Well ID: C4970		Well Name: 249-W22-72			
Location: NW of S Plant		Project: 200-0210V monitoring wells			
Prepared By: Robin Henderson	Date: 3-11-06	Reviewed By: L.D. Walker	Date: 5-11-06		
Signature: Robin Henderson		Signature: L.D. Walker			
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA			
Description	Diagram	Depth in Feet	Graphic Log	Lithologic Description	
Granular Bentonite: 10.25' → 219.17'		150			
				166' → 170' Silty Sand	
Bentonite Pellet Seal: 219.17' → 224.80'				170' → 202' Silt	
10-20 mesh Colorado Silica Sand Filter pack: 224.80' → 250.70'		175			
Coated Bentonite Pellet Seal: 250.70' → 255.67'		200			
				208' → 211' Sandy Silt	
				211' → 215' Silt	
				215' → 223' Gravely Silt	
Colorado Silica Sand backfill: 255.67' → 335.9'		225		223' → 225' Silty Sand	
				225' → 228' Silty Gravel	
				228' → 232' Silty Sandy Gravel	
				232' → 237' Sand	
				237' → 250' Sandy Gravel	
			250		
		275		250' → 255' Gravel	
				255' → 290' Sandy Gravel	
				290' → 295' Gravel	
				295' → 300' Silty Gravel	
static groundwater level: 237.10 ft bgs (2-27-06)					

WELL SUMMARY SHEET		Start Date: 2-22-06		Page 3 of 3		
		Finish Date: 3-21-06				
Well ID: C4970		Well Name: 299-W22-72				
Location: NW of S Plant		Project: 200-UP-1 OU Monitoring Wells				
Prepared By: Robin Henderson		Date: 3-21-06		Reviewed By: L.D. Walker		
Signature: Robin Henderson		Signature: L.D. Walker				
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA				
Description	Diagram	Depth in Feet	Graphic Log	Lithologic Description		
Colorado Silice Sand		300		300' → 305'	Gravel	
backfill: 285.47' → 357.8'				305' → 316'	Sand	
				316' → 322'	Sandy Gravel	
				322' → 328'	Silty Sandy Gravel	
			325		328' → 331'	Sandy Gravel
					331' → 342'	Gravelly Sand
					342' → 357.8' (TD)	Sandy Gravel
			350		TD = 357.8'	
All depths are in feet below ground surface						
All temporary casing was removed from ground						

WELL SUMMARY SHEET		Start Date: 3-10-06		Page 1 of 3	
Finish Date: 4-27-06					
Well ID: C4971		Well Name: 299-W22-56			
Location: NW OF S Plant		Project: 200-021 DU monitoring wells			
Prepared By: Robin Henderson		Date: 4-27-06		Reviewed By: L.D. Walker	
Signature: Robin Henderson		Date: 5-11-06		Signature: L.D. Walker	
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA			
Description	Diagram	Depth in Feet	Graphic Log	Lithologic Description	
6" S.S. monument set 1.0' above perm. casing		0		0' to 12' Sand	
4" S.S. type 304/3041				12' to 16' Gravelly Sand	
Riser pipe: +2.00 to 231.44 ft.				16' to 21' Sand	
				21' to 42' Silty Sand	
4" S.S. type 304/3041		25			
Wire-wrap 20 slot screen: 231.44' to 266.53'				42' to 46' Gravelly Sand	
				46' to 61' Silty Sand	
4" S.S. type 304/3041		50			
Cump: 266.53' to 269.52'				61' to 72' Sand	
				72' to 75' slightly silty sand	
Portland Cement Grout: 0 to 10.54'		75		75' to 80' sand	
				80' to 123' slightly silty sand	
Granular Bentonite: 10.54' to 217.83'		100			
				123' to 126' sandy silt	
		125		126' to 157' silt	

WELL SUMMARY SHEET		Start Date: 3/0-06		Page 2 of 3	
		Finish Date: 4-27-06			
Well ID: C4471		Well Name: 294-W22-86			
Location: NW of S Plant		Project: 200-UP1 OU Monitoring Wells			
Prepared By: Robin Henderson		Date: 4-27-06		Reviewed By: L.D. Walker	
Signature: Robin Henderson		Signature: L.D. Walker		Date: 5/11/06	
CONSTRUCTION DATA		GEOLOGIC/HYDROLOGIC DATA			
Description	Diagram	Depth in Feet	Graphic Log	Lithologic Description	
Granular Bentonite:		150		157' to 159' Gravely Silt	
10.54' to 217.83'				159' to 167' Sandy Silt w/ Caliche	
				167' to 187' Silt	
Bentonite Pellets:		175			
217.83' to 223.33'				187' to 193' Silty Sand	
				193' to 196' Gravely Silty Sand	
Colorado Silica Sand (10-20 slot):				196' to 201' Sandy Silt	
223.33' to 275.75'				201' to 205' Sand	
				205' to 211' Gravely Sandy Silt	
				211' to 216' Silty Sandy Gravel	
Coated Bentonite Pellets:			216' to 222' slightly silty gravelly sand		
275.75' to 281.10'			222' to 226' Silt		
			226' to 235' Sand		
		225			
			235' to 237' Gravely Sand		
Colorado Silica Sand backfill (10-20 slot):			237' to 248' Sandy Gravel		
281.10' to 350.00'			248' to 249' Sand		
		250			
			249' to 249' Sandy Gravel		
		275			

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