ENGINEERING CHANGE NOTICE

1. ECN 633780

Proj. ECN N/A

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.	3a. USQ Required?	4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	J. W. Lindberg, HTS, H6-06, 376-5005	[] Yes [X] No	July 12, 1996
	5. Project Title/No./Work Order No. RCRA and Operational Monitoring	6. Bldg./Sys./Fac. No. 2440 STVCN	7. Approval Designator Q
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-EN-AP-189, Rev. 0	9. Related ECN No(s). NA	10. Related PO No. NA

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	NA	NA Cog. Engineer Signature & Date	NA Cog. Engineer Signature & Date

12. Description of Change

The second and third paragraphs in Section 5.1 are changed to add detail about proposed well for drilling.

13a. Justification (mark one)

Criteria Change	[]	Design Improvement	[]	Environmental	[X]	Facility Deactivation	[]
As-Found	[]	Facilitate Const	[]	Const. Error/Omission	[]	Design Error/Omission	[]

13b. Justification Details

Washington State Department of Ecology concurred with Rev. 0 about combining the three PUREX cribs into one RCRA groundwater monitoring site. Therefore, Rev. 0 temporarily fulfills the requirements for the approved design until the groundwater monitoring plan is released. However, Rev. 0 needs more detail in the description of the new well.

14. Distribution (include name, MSIN, and no. of copies)

J. F. Keller	R3-35	D. G. Horton	H6-06
B. A. Williams	H6-06	Central Files	A3-88
J. W. Lindberg	H6-06	EPIC	H6-08
J. M. Votava	H6-06		
W. R. Thackaberry	H6-32		

RELEASE STAMP

JUL 12 1996

DATE:

STA: 34

HANFORD RELEASE

ID: 22

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 633780

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]	Tickler File	[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision
NA		

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog. Eng. J. W. Lindberg J W Lindberg	7-12-96	PE	
Cog. Mgr. D. G. Horton	7-12-96	QA	
QA W. R. Thackaberry W R Thackaberry	7-12-96	Safety	
Safety		Design	
Environ.		Environ.	
Other		Other	
		DEPARTMENT OF ENERGY	
		Signature or a Control Number that tracks the Approval Signature	
		ADDITIONAL	

Combination of RCRA Groundwater Monitoring Activities for the 216-A-36B, 216-A-10, 216-A-37-1 Cribs

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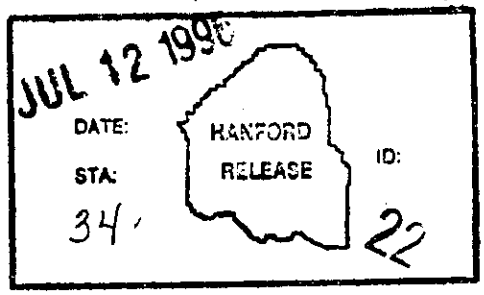
U.S. Department of Energy Contract DE-AC06-87RL10930

EDT/ECN: 633780 UC: 502
Org Code: 8H200 Charge Code: R4069
B&R Code: EW3120100 Total Pages: 35

Key Words: Aquifer, geology, hydrogeology, groundwater sampling, water table, RCRA, groundwater contamination, groundwater chemistry.

Abstract: This paper proposes to combine and integrate RCRA groundwater monitoring activities for the 216-A-36B, 216-A-10, and 216-A-37-1 Cribs in the 200 East Area south of the Plutonium-Uranium Extraction (PUREX) Plant. The primary reasons for this position paper are: (1) to address RCRA groundwater monitoring requirements at the 216-A-37-1 Crib; and (2) to propose an alternative groundwater program that deviates from the current unit-specific approach. An assessment-level monitoring program using 10 existing wells and one new well is proposed.



Release Stamp

Chris Willingham 7-12-96
Release Approval Date

Approved for Public Release

RECORD OF REVISION	(1) Document Number WHC-SD-EN-AP-189	Page 1

(2) Title

Combination of RCRA Groundwater Monitoring Activities for the 216-A-36B, 216-A-10, and 216-A-37-1 Cribs.

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
0	Orig EDT-610751		
RS 0A	(7) Replace page 22, ECN - 633780	JW Lindberg	DG Horton 1-12-96

Nitrate, arsenic ^{90}Sr, ^{129}I, and tritium exceed the primary drinking water standards in at least some of the wells near the cribs. The A-37-1 Crib has not been monitored as a RCRA site in the past, but data from wells adjacent to the crib show that it also has affected groundwater (see Section 4). An assessment monitoring program, which will determine the nature, extent,and rate of groundwater contamination, is appropriate for the A-10, A-36B, and A-37-1 Cribs. The proposed monitoring program is technically supported and meets the intent of the regulations more closely than individual TSD unit-specific detection monitoring programs.

5.1 MONITORING NETWORK

The proposed monitoring network will include approximately 10 existing monitoring wells and 1 new well. Figure 2 and Table 3 show preliminary choices for the network. Figure 11 shows the existing wells in the area. The wells were chosen for their location, well design, and concentration history. The selection of appropriate monitoring well locations (new and existing) will depend on adequate spacial coverage to define the existing contaminatn plumes. Well design and condition must be evaluated to ensure that the well yields representative data (e.g., casing materials, screened depth, and annular seals may affect groundwater data). Wells with historical chemistry data will be evaluated and selected over those with less data so that trending analysis can be used to delineate contaminant migration and determine appropriate sampling frequencies. Wells with greater data variability will be considered over wells with unchanging or minimal data.

The information gathered from the new well will fill the data gaps. The well will be drilled to basalt (approximately 525 ft of drill depth) at the proposed location (Figure 2) and sampled for both groundwater and soil samples to characterize the uppermost aquifer system. Groundwater samples will be collected at the water table (approximately 320 ft of drill depth) and at a 20 to 30 ft spacing until total depth (TD) is reached. The groundwater samples will be screened in the field for the most likely contaminants including nitrate and tritium. Soil samples will be collected at sediment changes below the water table in order to characterize the physical characteristics of the aquifers and aquitards. Analyses on the soil samples will include grainsize, effective porosity, and saturated hydraulic conductivity. Clays from a sample collected from the Ringold Formation lower mud unit will be identified by X-Ray diffraction (XRD), and the specific basalt member at TD verified by X-Ray Fluorensce (XRF) of a basalt core. After installing each string of temporary casing, the well will be logged geophysically using the spectral gamma tool.

After drilling to basalt, the new borehole will be backfilled to within 20 ft of the water table and the 20 ft well screen installed across the water table to subsequently sample groundwater at the top of the aquifer. To maximize well life in an area with a receding water table, approximately 19 ft of the well screen will be installed below the water table. Upon well completion the well will be developed and a slug test performed to estimate hydraulic conductivity of the completed well.