

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 170013

Proj.
ECN

4. Date

8/11/93

7. Impact Level

4

10. Related PO No.

N/A

2. ECN Category (mark one)

- Supplemental
- Direct Revision
- Change ECN
- Temporary
- Supersedure
- Discovery
- Cancel/Void

3. Originator's Name, Organization, MSIN, and Telephone No.

R. E. Bolls, Env. Eng. & SARs, N3-13, 376-4350

5. Project Title/No./Work Order No. 216-T-4
Wastewater Stream Sampling and
Analysis Plan

6. Bldg./Sys./Fac. No.

T-Plant

8. Document Number Affected (include rev. and sheet
no.)
WHC-SD-WM-PLN-030, Rev. 1

9. Related ECN No(s).

186925

11a. Modification Work

- Yes (fill out Blk. 11b)
- No (NA Blks. 11b, 11c, 11d)

11b. Work Package
Doc. No.

N/A

11c. Complete Installation Work

N/A

Cog. Engineer Signature & Date

11d. Complete Restoration (Temp. ECN only)

N/A

Cog. Engineer Signature & Date

12. Description of Change

Revise and incorporate additional analytical methods to Table 7-1 of the 216-T-4 SAP per change number M-17-93-05 of the Hanford Federal Facility Agreement and Consent Order (TPA).

13a. Justification (mark one)

- Criteria Change
- Design Improvement
- Environmental
- As-Found
- Facilitate Const.
- Const. Error/Omission
- Design Error/Omission

13b. Justification Details

Revision of the above table is required per change number M-17-93-05 of the Hanford Federal Facility Agreement and Consent Order (TPA). Failure to incorporate the changes could result in significant delays while additional capabilities are negotiated and contracted.

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

Refer to Distribution List



RELEASE STAMP

OFFICIAL RELEASE **42**
BY WHC
DATE **AUG 30 1993**

Sta 11

93509.244

ENGINEERING CHANGE NOTICE

Page 2 of 2

1. ECN (use no. from pg. 1)
170013

15. Design Verification Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	16. Cost Impact <table style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">ENGINEERING</td> <td style="width: 50%; text-align: center;">CONSTRUCTION</td> </tr> <tr> <td>Additional <input type="checkbox"/> \$ _____</td> <td>Additional <input type="checkbox"/> \$ _____</td> </tr> <tr> <td>Savings <input type="checkbox"/> \$ _____</td> <td>Savings <input type="checkbox"/> \$ _____</td> </tr> </table>	ENGINEERING	CONSTRUCTION	Additional <input type="checkbox"/> \$ _____	Additional <input type="checkbox"/> \$ _____	Savings <input type="checkbox"/> \$ _____	Savings <input type="checkbox"/> \$ _____	17. Schedule Impact (days) Improvement <input type="checkbox"/> _____ Delay <input type="checkbox"/> _____
ENGINEERING	CONSTRUCTION							
Additional <input type="checkbox"/> \$ _____	Additional <input type="checkbox"/> \$ _____							
Savings <input type="checkbox"/> \$ _____	Savings <input type="checkbox"/> \$ _____							

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

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
_____	_____	_____
_____	_____	_____
_____	_____	_____

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog./Project Engineer <u>[Signature]</u>	<u>08/15/93</u>	PE _____	_____
Cog./Project Engr. Mgr. <u>[Signature]</u>	<u>16 Aug 93</u>	QA _____	_____
QA <u>Robert Meador</u>	<u>8-18-92</u>	Safety _____	_____
Safety _____	_____	Design _____	_____
Security _____	_____	Other _____	_____
Proj. Prog./Dept. Mgr. <u>[Signature]</u>	<u>8/18/93</u>	_____	_____
Def. React. Div. _____	_____	_____	_____
Chem. Proc. Div. _____	_____	_____	_____
Def. Wst. Mgmt. Div. _____	_____	DEPARTMENT OF ENERGY	
Adv. React. Dev. Div. _____	_____	_____	_____
Proj. Dept. _____	_____	_____	_____
Environ. Div. <u>[Signature]</u>	<u>8-18-93</u>	ADDITIONAL	
IRM Dept. _____	_____	_____	_____
Facility Rep. (Ops) <u>[Signature]</u>	<u>8/19/93</u>	_____	_____
Other _____	_____	_____	_____
Sampling: Mobile Labs <u>[Signature]</u>	<u>18 Aug 93</u>	_____	_____
HASM <u>Michelle Hendrix</u>	<u>19 Aug 93</u>	_____	_____

247-60656

8/30/93

ORIGINAL

Date/Received: 8/30/93	INFORMATION RELEASE REQUEST	Reference: WMC-CM-3-4
----------------------------------	------------------------------------	--------------------------

Complete for all Types of Release

Purpose <input type="checkbox"/> Speech or Presentation <input type="checkbox"/> Full Paper (Check only one suffix) <input type="checkbox"/> Summary <input type="checkbox"/> Abstract <input type="checkbox"/> Visual Aid <input type="checkbox"/> Speakers Bureau <input type="checkbox"/> Poster Session <input type="checkbox"/> Videotape	<input type="checkbox"/> Reference <input checked="" type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Databases <input type="checkbox"/> Controlled Document <input type="checkbox"/> Other	ID Number (include revision, volume, etc.) WMC-SD-WM-PLN-030, REV. 1A List attachments: ECN 170013 Date Release Required ASAP
---	--	---

Title T-Plant Facility 216-T-4 Wastewater Stream Sampling and Analysis Plan	Unclassified Category UC-	Impact Level 4
--	-------------------------------------	--------------------------

New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WMC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes Disclosure No(s).	Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)
Copyrights? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has written permission been granted? <input type="checkbox"/> No <input type="checkbox"/> Yes (Attach Permission)	Trademarks? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (Identify)

Complete for Speech or Presentation

Title of Conference or Meeting	Group or Society Sponsoring
Date(s) of Conference or Meeting	City/State
Will proceedings be published?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Will material be handed out?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Title of Journal	

CHECKLIST FOR SIGNATORIES

Review Required per WMC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval
			Name (printed) Signature Date
Classification/Unclassified Controlled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Patent - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	S. W. Berglin <i>[Signature]</i> 8-23-93
Legal - General Counsel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	S. W. Berglin <i>[Signature]</i> 8-23-93
Applied Technology/Export Controlled Information or International Program	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
WHC Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	D. R. Speer <i>[Signature]</i> 8-18-93
Communications	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
RL Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	M. J. Furman <i>[Signature]</i> 8/25/93
Publication Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	J. D. Hudspeth <i>[Signature]</i> 8/14/93
Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Information conforms to all applicable requirements. The above information is certified to be correct.

References Available to Intended Audience	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Author/Requestor (Printed/Signature)	Date
R. E. Bolls <i>[Signature]</i>	08/16/93
Intended Audience	
<input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External	
Responsible Manager (Printed/Signature)	Date
R. D. Pierce <i>[Signature]</i>	16 Aug 93

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP	
Stamp is required before release. Release is contingent upon resolution of mandatory comments.	
	
Date Cancelled	Date Disapproved

93089.2143

SUPPORTING DOCUMENT

1. Total Pages 65

2. Title

T-Plant Facility 216-T-4 Wastewater Stream Sampling and Analysis Plan

3. Number

WMC-SD-WM-PLN-030

4. Rev No.

1A

5. Key Words

Sampling, Analysis, QAPP, liquid effluent stream

6. Author

Name: R. E. Bolls

R. E. Bolls
Signature

Organization/Charge Code 87350/A2D94

7. Abstract

In accordance to Change Number M-17-93-05 of the Federal Facility Agreement and Consent Order, Table 7-1 within the 216-T-4 SAP was revised to incorporate several additional analytical methods. By doing so, the capability to perform sampling and analysis in a timely manner was enhanced by allowing more than one laboratory to be chosen for the analyses of a sample. All other sections of the document have remained the same and discuss the responsible organizations, sampling location, frequency, schedule, equipment and procedures, along with the sample analysis and handling processes utilized at T-Plant to obtain a liquid effluent sample from the 216-T-4 stream.

~~8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.~~

~~PATENT STATUS - This document copy since it is transmitted in advance of patent clearance, is made available in confidence solely for use in performance of work under contracts with the U.S. Department of Energy. This document is not to be published nor its contents otherwise disseminated or used for purposes other than specified above before patent approval for such release or use has been secured, upon request from the Patent Counsel, U.S. Department of Energy Field Office, Richland, WA.~~

DISCLAIMER - This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, nor any of their contractors, subcontractors or their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

10. RELEASE STAMP

OFFICIAL RELEASE 42
BY WHC
DATE AUG 30 1993

Sta 11

9. Impact Level 4

APPROVED FOR PUBLIC RELEASE

M. Boston
IRA 8/30/83

9513089.2144

WHC-SD-WM-PLN-030
REV. 1A

RECORD OF REVISION

CHANGE CONTROL RECORD

<u>REVISION NO.</u>	<u>DESCRIPTION OF CHANGE - REPLACE, ADD, AND DELETE PAGES</u>
1A	Remove pages 39 and 40 of WHC-SD-WM-PLN-030, Rev. 1 and replace with pages 39 and 40 of WHC-SD-WM-PLN-030, Rev. 1A per ECN-170013.

9573089-2146

Table 7-1. Analytes of Interest for 216-T-4 Wastewater Stream Effluent

Analysis Name	Regulatory Reference	Analytical Procedure	Container	Container Size (ml)	Preservatives	Holding Time
Aluminum	1	6010 ⁶	P,G	1000	HNO ₃ to pH <2	6 mo
Barium	1,3,4	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Boron	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Cadmium	1,3,4	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Calcium	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Copper	2	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Iron	2	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Magnesium	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Manganese	2	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Potassium	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Silicon	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Sodium	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Strontium	—	6010	P,G	1000	HNO ₃ to pH <2	6 mo
Zinc	2,5 (as sulphate)	6010	P,G	1000	HNO ₃ to pH <2	6 mo
pH	4	9040	P,G	125	none	ASAP
TOC	—	9060 ⁶	P,G	250	Cool to 4°C, HCL or H ₂ SO ₄ to pH <2	28 d
TOX	4	9020 ⁶	G ¹¹	250	cool to 4°C, H ₂ SO ₄ to pH <2	7 d
TDS	2	160.1 ⁷	P,G	125	cool 4°C	48 hrs
Chloride	2	300.0 ⁸	P,G	125	none	28 d
Fluoride	1,2	300.0	P	125	none	28 d
Sulfate	2,5	300.0, 375.4, 9036	P,G	125	cool 4°C	28 d
Nitrate	1	300.0, 353.1, 353.2, 353.3	P,G	125	cool 4°C	48 h
Ammonia	5	350.1, 350.2, 350.3	P,G	250	cool 4°C H ₂ SO ₄ to pH <2	28 d
Gross Alpha	1	footnote ¹²	P,G	1000	HNO ₃ to pH <2	6 mo

Analysis Name	Regulatory Reference	Analytical Procedure	Container	Container Size (ml)	Preservatives	Holding Time
Gross Beta	1	footnote 12	P,G	1000	HNO ₃ to pH <2	6 mo
Gamma	1	footnote 12	P,G	1000	HNO ₃ to pH <2	6 mo
Radium (total alpha emitting)	1	footnote 12	P,G	1000	HNO ₃ to pH <2	6 mo
Uranium	5 (as nitrate)	footnote 12	P,G	1000	HNO ₃ to pH <2	6 mo

P = Plastic

G = Glass

1 40 CFR 141, National Primary Drinking Water Regulations (EPA)

2 40 CFR 143, National Secondary Drinking Water Regulations (EPA)

3 40 CFR 268, Land Disposal Restrictions (EPA)

4 WAC 173-303, Dangerous Waste Regulations (Washington State)

5 40 CFR 302, Designation, Reportable Quantities and Notification

6 Test Methods for Evaluating Solid Wastes, SW-846 (EPA, Latest Edition).

7 EPA-600/4-79-020, Methods for the Chemical Analysis of Water and Wastes, US EPA, EMSL, 1979.

8 EPA-600/4-84-017, The Determination of Inorganic Anions in Water by Ion Chromatography, US EPA, 1984.

9 EPA-600/4-80-032, Prescribed Procedures for Measurement of Radioactivity in Drinking Water, US EPA, 1980.

10 EPA-520/5-84-006, Eastern Environmental Radiation Facility (EERF) Radiochemistry Procedures Manual, US EPA, 1984.

11 Tetrafluoroethylene lined cap required.

12 Analytical procedures for radionuclides are to be laboratory specific methods which have been approved in advance by WHC.

953089.248