

JUN 23 1994

11

ENGINEERING DATA TRANSMITTAL

1. EDT 136145

2. To: (Receiving Organization) Distribution

3. From: (Originating Organization) Well Services Support

4. Related EDT No.: 600221

7. Purchase Order No.:

5. Proj./Prog./Dept./Div.: ER

6. Cog. Engr.: R. K. Ledgerwood

9. Equip./Component No.:

8. Originator Remarks: Release to record file. EDT 600221 lists contents within WHC-SD-EN-AP-173, Rev. 0. See EDT 600221 for mandatory signatures. Attached

10. System/Bldg./Facility:

12. Major Assm. Dwg. No.:

11. Receiver Remarks:

13. Permit/Permit Application No.:

14. Required Response Date:

15. DATA TRANSMITTED

Table with 4 columns: (A) Item No., (B) Document/Drawing No., (C) Sheet No., (D) Rev. No., (E) Title or Description of Data Transmitted, (F) Impact Level, (G) Reason for Transmittal, (H) Originator Disposition, (I) Receiver Disposition. Includes a red circular stamp: JUL 1994 RECEIVED EDMC

16. KEY

Table defining keys for Impact Level (F), Reason for Transmittal (G), and Disposition (H) & (I).

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)

Table for signatures and distribution with columns: (G) Reason, (H) Disp., (J) Name, (K) Signature, (L) Date, (M) MSIN. Includes entries for R. K. Ledgerwood and M. G. Gardner.

18. Signature of EDT Originator: M.G. Gardner for 6/23/94

19. Authorized Representative for Receiving Organization: _____ Date _____

20. Cognizant Manager: M.G. Gardner 6/23/94

21. DOE APPROVAL (if required) Ltr No. [] Approved [] Approved w/comments [] Disapproved w/comments

INSTRUCTIONS FOR COMPLETION OF THE ENGINEERING DATA TRANSMITTAL

(USE BLACK INK OR TYPE)

BLOCK	TITLE	
(1)*	EDT	<ul style="list-style-type: none"> ● Pre-assigned EDT number.
(2)	To: (Receiving Organization)	<ul style="list-style-type: none"> ● Enter the individual's name, title of the organization, or entity (e.g., Distribution) that the EDT is being transmitted to.
(3)	From: (Originating Organization)	<ul style="list-style-type: none"> ● Enter the title of the organization originating and transmitting the EDT.
(4)	Related EDT No.	<ul style="list-style-type: none"> ● Enter EDT numbers which relate to the data being transmitted.
(5)*	Proj./Prog./Dept./Div.	<ul style="list-style-type: none"> ● Enter the Project/Program/Department/Division title or Project/Program acronym or Project Number, Work Order Number or Organization Code.
(6)*	Cognizant Engineer	<ul style="list-style-type: none"> ● Enter the name of the individual identified as being responsible for coordinating disposition of the EDT.
(7)	Purchase Order No.	<ul style="list-style-type: none"> ● Enter related Purchase Order (P.O.) Number, if available.
(8)*	Originator Remarks	<ul style="list-style-type: none"> ● Enter special or additional comments concerning transmittal, or "Key" retrieval words may be entered.
(9)	Equipment/Component No.	<ul style="list-style-type: none"> ● Enter equipment/component number of affected item, if appropriate.
(10)	System/Bldg./Facility	<ul style="list-style-type: none"> ● Enter appropriate system, building or facility number, if appropriate.
(11)	Receiver Remarks	<ul style="list-style-type: none"> ● Enter special or additional comments concerning transmittal.
(12)	Major Assm. Dwg. No.	<ul style="list-style-type: none"> ● Enter applicable drawing number of major assembly, if appropriate.
(13)	Permit/Permit Application No.	<ul style="list-style-type: none"> ● Enter applicable permit or permit application number, if appropriate.
(14)	Required Response Date	<ul style="list-style-type: none"> ● Enter the date a response is required from individuals identified in Block 17 (Signature/Distribution).
(15)*	Data Transmitted	
	(A)* Item Number	<ul style="list-style-type: none"> ● Enter sequential number, beginning with 1, of the information listed on EDT.
	(B)* Document/Drawing No.	<ul style="list-style-type: none"> ● Enter the unique identification number assigned to the document or drawing being transmitted.
	(C)* Sheet No.	<ul style="list-style-type: none"> ● Enter the sheet number of the information being transmitted. If no sheet number, leave blank.
	(D)* Rev. No.	<ul style="list-style-type: none"> ● Enter the revision number of the information being transmitted. If no revision number, leave blank.
	(E) Title or Description of Data Transmitted	<ul style="list-style-type: none"> ● Enter title of the document or drawing or a brief description of the subject if no title is identified.
	(F)* Impact Level	<ul style="list-style-type: none"> ● Enter the appropriate Impact Level (Block 15). Also, indicate the appropriate approvals for each item listed, i.e., SQ, ESQ, etc. Use NA for non-engineering documents.
	(G) Reason for Transmittal	<ul style="list-style-type: none"> ● Enter the appropriate code to identify the purpose of the data transmittal (see Block 16).
	(H) Originator Disposition	<ul style="list-style-type: none"> ● Enter the appropriate disposition code (see Block 16).
	(I) Receiver Disposition	<ul style="list-style-type: none"> ● Enter the appropriate disposition code (see Block 16).
(16)	Key	<ul style="list-style-type: none"> ● Number codes used in completion of Blocks 15 (G), (H), and (I), and 17 (G), (H) (Signature/Distribution).
(17)	Signature/Distribution	
	(G) Reason	<ul style="list-style-type: none"> ● Enter the code of the reason for transmittal (Block 16).
	(H) Disposition	<ul style="list-style-type: none"> ● Enter the code for the disposition (Block 16).
	(J) Name	<ul style="list-style-type: none"> ● Enter the signature of the individual completing the Disposition 17 (H) and the Transmittal.
	(K)* Signature	<ul style="list-style-type: none"> ● Obtain appropriate signature(s).
	(L)* Date	<ul style="list-style-type: none"> ● Enter date signature is obtained.
	(M)* MSIN	<ul style="list-style-type: none"> ● Enter MSIN. Note: If Distribution Sheet is used, show entire distribution (including that indicated on Page 1 of the EDT) on the Distribution Sheet.
(18)	Signature of EDT Originator	<ul style="list-style-type: none"> ● Enter the signature and date of the individual originating the EDT (entered prior to transmittal to Receiving Organization). If the EDT originator is the cognizant engineer, sign both Blocks 17 and 18.
(19)	Authorized Representative for Receiving Organization	<ul style="list-style-type: none"> ● Enter the signature and date of the individual identified by the Receiving Organization as authorized to approve disposition of the EDT and acceptance of the data transmitted, as applicable.
(20)*	Cognizant Manager	<ul style="list-style-type: none"> ● Enter the signature and date of the cognizant manager. (This signature is authorization for release.)
(21)*	DOE Approval	<ul style="list-style-type: none"> ● Enter DOE approval (if required) by letter number and indicate DOE action.

*Asterisk denote the required minimum items check by Configuration Documentation prior to release; these are the minimum release requirements.

llh

Date Received: 6/14/94/llh		INFORMATION RELEASE REQUEST		Reference: WHC-CM-3-4	
Complete for all Types of Release					
Purpose			ID Number (include revision, volume, etc.) WHC-SD-EN-AP-173, Rev. 0		
<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 checked="" type="checkbox"/> Reference <input type="checkbox"/> Technical Report <input type="checkbox"/> Thesis or Dissertation <input type="checkbox"/> Manual <input type="checkbox"/> Brochure/Flier <input type="checkbox"/> Software/Database <input type="checkbox"/> Controlled Document <input type="checkbox"/> Other		
			List attachments.		
			Date Release Required June 10, 1994		
Title Activity Plan for Decommissioning Natural Gas Wells, Fitzner/Eberhart Arid Land Ecology Reserve, Hanford Site			Unclassified Category UC-	Impact Level E, D	
New or novel (patentable) subject matter? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If "Yes", has disclosure been submitted by WHC or other company? <input type="checkbox"/> No <input type="checkbox"/> Yes (Disclose 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 N/A			Group or Society Sponsoring N/A		
Date(s) of Conference or Meeting N/A	City/State N/A	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 N/A					
CHECKLIST FOR SIGNATORIES					
Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval		
			Name (printed)	Signature Date	
Classification/Uncontrolled Nuclear Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Patent - General Counsel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Legal - General Counsel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
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"/>	J. K. Pollock	JAMES K. PATTERSON	6-13-94
Communications	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
RL Program/Project	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Clark H. Gunion	CLARK H. GUNION	6-9-94
Publication Services	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	L. Hermann	L. Hermann	6-13-94
Other Program/Project	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Information conforms to all applicable requirements. The above information is certified to be correct.					
			INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP		
References Available to Intended Audience	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Stamp is required before release. Release is contingent upon resolution of mandatory comments.		
Transmit to DOE-HQ/Office of Scientific and Technical Information	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Author/Requestor (Printed/Signature)		Date			
R. K. Ledgerwood		5/13/94			
Intended Audience	<input type="checkbox"/> Internal <input type="checkbox"/> Sponsor <input checked="" type="checkbox"/> External				
Responsible Manager (Printed/Signature)	Date		Date Cancelled		
M. G. Gardner	5/13/94		Date Disapproved		

ENGINEERING DATA TRANSMITTAL

2. To: (Receiving Organization) Distribution	3. From: (Originating Organization) Well Services Support	4. Related EDT No.: N/A 136145
5. Proj./Prog./Dept./Div.: Environmental Restoration	6. Cog. Engr.: R. K. Ledgerwood	7. Purchase Order No.: N/A
8. Originator Remarks: This Engineering Data Transmittal transmits construction status information, fitness-for-use evaluations and disposition recommendations for 12 natural gas exploration and production wells within the Fitzner/Eberhart Arid Land Ecology Reserve, Hanford Site.		9. Equip./Component No.: N/A
11. Receiver Remarks: N/A		10. System/Bldg./Facility: N/A
		12. Major Assm. Dwg. No.: N/A
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: TBD

15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Transmittal	Originator Disposition	Receiver Disposition
1	EDT File Introduction, Table of Contents and Well Location Map	Pg 1-8	N/A	Introduction, Table of Contents and Well Location Map for 12 gas exploration and production wells	NA	3		
2	Well 699-S10-62 (Walla Walla #8)	Pages 10-13	N/A	EII 6.6 package for 699-S10-62	E, Q	4		
3	Well 699-S9-54 (Conservative #1)	Pages 14-17	N/A	EII 6.6 package for 699-S9-54	E, Q	4		
4	Well 699-S9-62A (Walla Walla #7)	Pages 18-21	N/A	EII 6.6 package for 699-S9-62A	E, Q	4		
5	Well 699-S9-63B (Walla Walla #6A)	Pages 22-25	N/A	EII 6.6 package for 699-S9-63B	E, Q	4		

16. KEY					
Impact Level (F)		Reason for Transmittal (G)		Disposition (H) & (I)	
1, 2, 3, or 4 (see MRP 5.43)		1. Approval	4. Review	1. Approved	4. Reviewed no/comment
		2. Release	5. Post-Review	2. Approved w/comment	5. Reviewed w/comment
		3. Information	6. Dist. (Receipt Acknow. Required)	3. Disapproved w/comment	6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION (See Impact Level for required signatures)											
(G)	(H)	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1	Cog. Eng. R. K. Ledgerwood	<i>[Signature]</i>	5-19-94	N3-05	C. A. Brandt	<i>[Signature]</i>	5/19/94	K6-93	1	
1	1	Cog. Mgr. M. G. Gardner	<i>[Signature]</i>	5-19-94	N3-06	S. P. Luttrell	<i>[Signature]</i>	5/19/94	K6-96	1	
1	1	QA W. R. Thackaberry	<i>[Signature]</i>	5-23-94	H4-16	J. W. Fassett	<i>[Signature]</i>	5/26/94	H6-06	3	
		Safety N/A				E. L. Kelley	<i>[Signature]</i>	5/19/94	K6-79	1	
1		Env. K. A. Gano	<i>[Signature]</i>	5-19-94	X0-21						
1		Geosciences K. R. Fecht	<i>[Signature]</i>		H6-06						

18. Signature of EDT Originator <i>[Signature]</i> 5-19-94	19. Authorized Representative for Receiving Organization <i>[Signature]</i> N/A	20. Cognizant/Project Engineer's Manager <i>[Signature]</i> 5/19/94	21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments
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INSTRUCTIONS FOR COMPLETION OF THE ENGINEERING DATA TRANSMITTAL

(USE BLACK INK OR TYPE)

BLOCK	TITLE	
(1)*	EDT	<ul style="list-style-type: none"> Pre-assigned EDT number.
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(5)*	Proj./Prog./Dept./Div.	<ul style="list-style-type: none"> Enter the Project/Program/Department/Division title or Project/Program acronym or Project Number, Work Order Number or Organization Code.
(6)*	Cognizant Engineer	<ul style="list-style-type: none"> Enter the name of the individual identified as being responsible for coordinating disposition of the EDT.
(7)	Purchase Order No.	<ul style="list-style-type: none"> Enter related Purchase Order (P.O.) Number, if available.
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	(G) Reason for Transmittal	<ul style="list-style-type: none"> Enter the appropriate code to identify the purpose of the data transmittal (see Block 16).
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(16)	Key	<ul style="list-style-type: none"> Number codes used in completion of Blocks 15 (G), (H), and (I), and 17 (G), (H) (Signature/Distribution).
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(18)	Signature of EDT Originator	<ul style="list-style-type: none"> Enter the signature and date of the individual originating the EDT (entered prior to transmittal to Receiving Organization). If the EDT originator is the cognizant engineer, sign both Blocks 17 and 18.
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(20)*	Cognizant Manager	<ul style="list-style-type: none"> Enter the signature and date of the cognizant manager. (This signature is authorization for release.)
(21)*	DOE Approval	<ul style="list-style-type: none"> Enter DOE approval (if required) by letter number and indicate DOE action.

* Asterisk denote the required minimum items check by Configuration Documentation prior to release; these are the minimum release requirements.

ENGINEERING DATA TRANSMITTAL

(CONTINUATION PAGE)

5. Proj./Prog./Dept./Div.: Environmental Restoration	6. Cog. Eng. R. K. Ledgerwood	1. EDT 600221	Page 2 of 2
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15. DATA TRANSMITTED					(F)	(G)	(H)	(I)
(A) Item No.	(B) Document/ Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	Impact Level	Reason for Trans- mittal	Origina- tor Dispo- sition	Receiver Dispo- sition
6	Well 699-S9-65 (West Coast #2)	Pages 26-29	N/A	EII 6.6 package for 699-S9-65	E,Q	4		
7	Well 699-S8-61 (Walla Walla #9)	Pages 30-33	N/A	EII 6.6 package for 699-S8-61	E,Q	4		
8	Well 699-S7-62C (West Coast #1)	Pages 34-37	N/A	EII 6.6 package for 699-S7-62C	E,Q	4		
9	Well 699-S7-62B (Walla Walla #5)	Pages 38-41	N/A	EII 6.6 package for 699-S7-62B	E,Q	4		
10	Well 699-S7-62A (Walla Walla #1)	Pages 42-45	N/A	EII 6.6 package for 699-S7-62A	E,Q	4		
11	Well 699-S6-64 (Yellowhawk #1)	Pages 46-49	N/A	EII 6.6 package for 699-S6-64	E,Q	4		
12	Well 699-S3-67 (Walla Walla #3)	Pages 50-53	N/A	EII 6.6 package for 699-S3-67	E,Q	4		
13	Well 699-S2-61 (Colfax #1)	Pages 54-57	N/A	EII 6.6 package for 699-S2-61	E,Q	4		
14	Appendix B	Pages 58-61	N/A	Letter DNR to WHC & USCOE "Plugging Wells, Rattlesnake Gas Field"	NA	3		

SUPPORTING DOCUMENT

1. Total Pages 63

2. Title
Activity Plan for Decommissioning Natural Gas Wells, Fitzner/Eberhart Arid Land Ecology Reserve, Hanford Site

3. Number
WHC-SD-EN-AP-173

4. Rev No.
0

5. Key Words
Natural gas exploration and production wells, Well decommissioning

6. Author
Name: R. K. Ledgerwood

Signature
R. K. Ledgerwood

Organization/Charge Code 86A10/PD422

APPROVED FOR PUBLIC RELEASE

7. Abstract

6/20/94 D. Solis

This document provides well construction and completion summary drawings, resource protection groundwater well structure fitness-for-use checklists and proposed decommissioning methods for 12 abandoned natural gas exploration and production wells located on the Fitzner/Eberhart Arid Land Ecology Reserve, Rattlesnake Mountain, Hanford Site.

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.

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10. RELEASE STAMP

OFFICIAL RELEASE **11**
BY WHC
DATE JUN 23 1994

9. Impact Level E, Q

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INTRODUCTION

Approximately 26 natural gas exploration and production wells were drilled on the north slope of Rattlesnake Mountain after gas was encountered in a well being drilled for water in 1913 (Table 1). Most of the wells were drilled during the early 1920s. Natural gas was produced from some of the wells and distributed to towns in the lower Yakima valley until the field was depleted in the 1930s.

None of the wells were constructed to present groundwater well or oil/gas resource protection standards. The wells were abandoned after depletion of the field, no formal decommissioning was done. Casing was removed from many of the wells during World War II and used as metal scrap. Many sites where casing was removed are now open pits.

This area is now part of the Fitzner/Eberhart Arid Land Ecology Reserve (ALE) administered by Pacific Northwest Laboratories. It has been designated as one of the portions of the Hanford Site to be returned to public or private beneficial use. Before return all potential hazards to the public must be removed and any dangerous waste sites cleaned up. The present condition of the wells or the large open pits left by casing removal presents hazards both to the public and groundwater resources.

This supporting document provides well construction and completion summary drawings and resource protection groundwater well structure fitness for use checklists containing decommissioning recommendations for 12 of the gas field wells that could be located. This information is compiled as a part of the fitness for use evaluation and approval process contained in environmental investigations instruction (EII) 6.6. A proposed diagrammatic well decommissioning process is also included for wells that still exist.

Figure 1 is a map showing location of identified wells still in existence or having pit sites where casing has been removed. Not all historically identified wells could be located. Wells 699-20-82 and 699-10-99 listed in Table 1 are not included in this package. The wells have been in use as groundwater monitoring wells and will be decommissioned as part of another package (Ledgerwood, 1994).

Table 1. Fitzner/Eberhart Arid Land Ecology Reserve
Gas Exploration and Production Wells

HANFORD WELL DESIGNATION	HANFORD N/S	COORDINATES W/E	TWN N	RNG E	SEC Q/S	COMMON NAME	Drill Date	Drill Depth	Depth Water	Csng Size	Ref Elev	Comments
699-S17-56	S	16,780	W	55,700	11/26-34M1	NW Natural Gas #4	1931	980	ND	ND	1,420	Pit
699-S15-62	S	14,500	W	62,250	11/26-32A	North Pacific #1	1931	100	NA	ND	1,880	Cannot locate
699-S13-61	S	13,200	W	61,200	11/26-28N1	NW Natural Gas #2	1930	1,281	ND	ND	1,710	Pit
699-S12-60	S	11,560	W	59,550	11/26-28L1	NW Natural Gas #5	1931	650	ND	ND	1,380	Depression
699-S11-60	S	10,500	W	60,050	11/26-28F1	NW Natural Gas #3	1930	757	ND	ND	1,350	Cannot locate
*699-S10-62	S	9,800	W	62,088	11/26-29B3	Walla Walla #8	1930	790	ND	12"	1,420	12-in casing
699-S10-66	S	9,950	W	66,050	11/26-27E1	Big Bend #1	<1920	670	ND	ND	1,150	Cannot locate
*699-S9-54	S	8,600	W	53,800	11/26-27G1	Conservative #1	<1924	806	450	10"	1,020	10-in casing
699-S9-56	S	9,200	W	55,600	11/26-27D1	Goodwin #1	1920	2,212	ND	ND	1,130	Structure
*699-S9-62A	S	8,830	W	62,200	11/26-29B2	Walla Walla #7	<1930	763	ND	ND	1,360	24-in hole
699-S9-62B	S	8,650	W	61,550	11/26-28D1	NW Natural Gas #1	1930	712	ND	ND	1,320	Cannot locate
*699-S9-63B	S	8,642	W	63,227	11/26-29B1	Walla Walla #6A	1933	3,660	ND	ND	1,436	Cased in pit
*699-S9-65	S	9,020	W	64,670	11/26-29C1	West Coast #2	1931	850	ND	ND	1,560	Cased
*699-S8-61	S	8,100	W	61,050	11/26-21L3	Walla Walla #9	1930	700	ND	ND	1,240	Cannot locate
699-S8-65	S	7,900	W	65,450	11/26-20N	Walla Walla #10?	1930	663	ND	ND	1,480	Cannot locate
699-S7-62D	S	6,500	W	61,600	11/26-21M1	WW #2/Blue Hen	1917	800	ND	ND	1,180	Cannot locate
*699-S7-62C	S	7,300	W	62,000	11/26-20R3	West Coast #1	1930	705	ND	12"	1,280	12-in casing
*699-S7-62B	S	7,300	W	62,000	11/26-20R2	Walla Walla #5	<1925	780	ND	11"	1,300	11-in casing
*699-S7-62A	S	7,300	W	62,000	11/26-20R1	Walla Walla #1	1913	1,234	ND	14"	1,275	14-in casing
*699-S6-64	S	6,150	W	64,100	11/26-20L1	Yellowhawk #1	1930	715	ND	ND	1,280	Pit or cased
699-S4-57	S	4,000	W	56,000	11/26-21G1	Walla Walla #4	<1925	640	300	ND	960	Cannot locate
*699-S3-67	S	3,150	W	67,200	11/26-19A1	Walla Walla #3	1920	1,507	ND	8"	1,250	8-in casing
*699-S2-61	S	2,400	W	60,900	11/26-16N1	Colfax #1	<1924	740	ND	ND	1,020	Large pit
699-S1-67	S	1,400	W	67,200	11/26-18J1	Walla Walla #6	<1925	205	NA	ND	1,125	Cannot locate
699-10-99	N	10,200	W	98,550	11/25-5E1	Rattlesnake Gas#1	1922	1,003	ND	10"	1,160	Cased
699-20-82	N	19,849	W	82,342	12/25-26M1	Benson Ranch	1929	2,000	210	Mult	614	Downhole flow

Wells or well sites marked with an asterisk (*) have been located and are scheduled for decommissioning or plugging of site pits.

Wells not located are assumed to have had casing pulled. Some of these sites may have associated minor pits. Those sites will be remediated as part of the general cleanup of ALE and are not within the scope of this plan.

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2.0 REQUIREMENTS

2.1 REGULATORY REQUIREMENTS

The Revised Code of Washington (RCW 18.104, as amended) states that the drilling, making, or constructing of wells within the state is a business and activity of vital interest to the public. It further states that in order to protect the public health, welfare, and safety it is necessary that provision be made for the regulation and licensing of well contractors and operators and for the regulation of well design and construction.

RCW 18.104 empowers the Washington State Department of Ecology (Ecology) to adopt rules regulating those activities. Those rules and regulations are contained in Washington Administrative Code (WAC) 173-160 "Minimum Standards for Construction and Maintenance of Wells" and WAC 173-162 "Well Contractors and Operators -- Licensing" issued by Ecology. WAC 173-160-010 specifically excludes from those regulations:

(2)(d) An excavation for the purpose of obtaining or prospecting for oil, natural gas, minerals, products of mining, quarrying, inserting media to repressure oil or natural gas bearing formations, storing petroleum, natural gas or other products, as provided in chapter 78.52 RCW

Chapter 78.52 RCW (Oil and Gas Conservation) established a conservation committee to regulate those activities and appointed the Washington State Department of Natural Resources (DNR) as agent of that committee. DNR has issued WAC 344-12, General Rules to administer and enforce the Oil and Gas Conservation Act. WAC 344-12-131 Procedure for Plugging contains requirements applicable to the plugging of abandoned wells.

All wells within the ALE gas field were drilled before the enactment of either RCW 18.104 or 78.52 and issue of implementing administrative codes. Therefore, the requirements of those acts are not applicable to the ALE wells. However, WHC has obtained guidance from DNR on proper decommissioning of the wells. Appendix A is a letter from DNR providing that guidance and expressing some concerns. Those concerns have been addressed and resolved. WHC has incorporated DNR suggestions on specific plugging techniques in the planned methods given in this document for decommissioning the wells.

2.2 TECHNICAL REQUIREMENTS

General applicable technical requirements for abandonment or decommissioning of gas exploration or production wells are contained in:

WAC 344-12-131 PROCEDURE FOR PLUGGING. *Each abandoned well drilled for the discovery of oil or gas or for any other purpose related to the exploration including seismic and core holes or production of oil and gas shall be plugged by or on behalf of the owner, operator, or producer who is in charge of the well or wells and responsible therefor. In general, cement plugs will be placed across specified intervals to protect oil and gas zones, to prevent degradation of potentially usable waters, and to protect surface conditions.*

(WAC 344-12-131 continues with additional technical details)

2.3 GOVERNING PROCEDURES

WHC conducts well characterization, fitness-for-use assessments and decommissioning field operations and activity documentation according to Environmental Investigations Instructions (EIIs) contained in WHC-CM-7-7 *Environmental Investigations and Site Characterization Manual*.

Characterization of existing condition including well site visits and photographs, depth measurement, television surveys, and wellbore cleaning are performed in accordance with EII 6.4.

Fitness-for-intended use assessment of identified wells is performed in accordance with EII 6.6. This EII also provides the mechanism for obtaining review and approval of proposed remediation or decommissioning methods. The review and approval process involves all potential users and involved programs.

Decommissioning procedures are contained in EII 6.10. The EII implements the technical and regulatory requirements of WAC 173-160 (and WAC 344-12 when applicable) for borehole decommissioning.

An environmental readiness review is required by EII 1.13. This review evaluates the readiness of an activity to progress to the operational phase.

2.4 EFFLUENT MONITORING AND WASTE MANAGEMENT

Specifications and applicable EIIs address the effluent monitoring and waste management requirements of WHC-CM-7-5 Environmental Compliance and provide for control and disposition of fluids and waste produced during maintenance, remediation, or decommissioning of wells.

2.5 HEALTH AND SAFETY

Instructions for decommissioning activities contain applicable health and safety requirements. These requirements may include special training, field safety, radiological safety and hazardous waste safety. Excavation and/or hazardous work permits are obtained as needed using existing procedures and forms.

2.6 PLANNING AND BUDGETING

Work within this activity is controlled under the WHC Management Control System as defined in WHC-CM-2-5 *Management Control System*.

2.7 ACTIVITY DOCUMENTATION

Well decommissioning field activities are documented as required by applicable EIIs using daily field activity reports. Reports are transmitted to the Environmental Division Records Center with copies also maintained in the Subsurface Investigations Support field file.

2.8 ENVIRONMENTAL READINESS REVIEW

2.8.1 Conduct of Operations Matrix

A generic conduct of operations matrix for well decommissioning activities has been prepared and approved according to EII 1.13. The matrix shall apply to activities within the scope of this plan.

2.8.2 Readiness Checklist

Preparation of a readiness checklist is required in EII 1.13. The Groundwater Well Remediation/Decommissioning Checklist completed according to EII 6.10 is acceptable as a readiness checklist.

2.9 SPECIAL ENVIRONMENTAL CONSIDERATIONS

The ALE site is an environmentally, ecologically and culturally sensitive area. All operations will be discussed with PNL staff responsive for administering the site. A PNL biologist will be available on site for additional guidance as needed.

Special efforts will be taken to avoid disturbance of cultural artifacts or sensitive plant/animal species. Those efforts include establishment of designated pathways to well sites. Pathways are determined by surveys of potential routes to select those having the least impact.

Precautions will be taken to determine presence or location of rattlesnakes. The remnant heat of drilling rigs or equipment may attract reptiles. Any detected snakes will not be destroyed but will be removed and relocated according to PNL guidance by WHC animal control technicians.

2.9.1 Equipment Access and Use

Off-road use of vehicles and equipment will be limited as far as possible to minimize impact to the surface environment. Required access to the sites can be divided into three generic categories listed below. The categories are:

1. **Extensive work required.** Decommissioning of a well in this category requires access by a full size truck mounted drill rig and support equipment including a camera van, water truck, forklift, tool trailer, pipe trailer and tool truck. The wells also will require multiple loads of abandonment materials (e.g., sand, bentonite or cement).

Two of the wells fall into this category. They are the Colfax #1 and Walla Walla #6A (699-S9-63B and 699-S2-61).

2. **Brief work required.** Well decommissioning in this category requires as a minimum a small pickup mounted pump rig supported by a water truck and pickup style tool truck.

Shallow plugs will be tested by using a sample hammer and jars to ensure the plug is substantial. If the plug fails the plugging material will be pushed to bottom. Any surface casing will be removed approximately 60 feet below grade if accessible. This removal is to insure no mobilization of surface water into the formation via casing/formation

annulus. The hole will be abandoned with bentonite to near the surface and a cement cap will be placed on top of the bentonite if conditions allow. Encountered conditions may require extension of the workscope to that described in category 1.

Eight wells fall within this category. They are Walla Walla #1,3,5,7 and 8; West Coast #1 and #2 and Conservative #1, (699-S7-62A, 699-S3-67, 699-S7-62B, 699-S9-62A, 699-S10-62, 699-S7-62C, 699-S9-65, 699-S9-54).

3. **No vehicle access required.** For these sites a cement plug can be installed by laying a grout hose from the nearest roadway to the well. Should the plug fail under the weight of the cement, the workscope may change to that described in category 2.

Two wells fall within this category. They are Walla Walla #9 and Yellowhawk #1 (699-S8-61 and 699-S6-64).

2.9.2 Fire Prevention

Grassland fire prevention is of extreme importance. Therefore, an area extending approximately 75 feet in radius will be wet down before any cutting, welding or grinding is done. The water truck will remain on site during any cutting, welding or grinding activities. Specifics and limitations of these activities are addressed in site safety plans.

REFERENCES

- Ledgerwood, R. K., 1994, *Fitness-For-Intended-Use Evaluation Recommendations for Hanford Site 600 Area Wells*, WHC-SD-EN-AP-161, Westinghouse Hanford Company, Richland, Washington
- PNL-6907, *HANFORD WELLS*, 1989, V. L. McGhan, Pacific Northwest Laboratory, Richland, Washington.
- RCW 18.104, "Well Construction,"
Revised Code of Washington, as amended.
- RCW 78.52, "Oil and Gas Conservation,"
Revised Code of Washington, as amended.
- WAC-173-160, 1990, "Minimum Standards for Construction and Maintenance of Wells,"
Washington Administrative Code, as amended.
- WAC-173-162, 1990, "Well Contractors and Operators - Licensing,"
Washington Administrative Code, as amended.
- WAC-344-12, 1988, "General Rules,"
Washington Administrative Code, as amended.
- WHC-CM-2-5, *Management Control System*,
Westinghouse Hanford Company, Richland, Washington.
- WHC-CM-7-5, *Environmental Compliance*,
Westinghouse Hanford Company, Richland, Washington.
- WHC-CM-7-7, Vol 1, *Environmental Investigations and Site Characterization Manual*, Westinghouse Hanford Company, Richland, Washington.
EII 1.13, "Environmental Readiness Review."
EII 6.4, "Resource Protection Well Services."
EII 6.6, "Resource Protection Well Characterization and Evaluation."
EII 6.10, "Abandoning/Decommissioning Groundwater Wells."

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S10-62</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Not capped or locked	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9a. Drilling/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> No driller's log	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S10-62</u> Page 2 of 2																		
11. Is design and construction IAW WAC 173-160-540? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable																			
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable																			
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable																			
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable																			
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable																			
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable																			
13. Data Sources Used: Logs: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Driller's: <u>No log available</u></td> <td style="width: 25%;">Date: _____</td> <td style="width: 25%;">Company: _____</td> </tr> <tr> <td>Geologist: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> <tr> <td>Geophysical: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> <tr> <td>Television: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> </table> Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>		Driller's: <u>No log available</u>	Date: _____	Company: _____	Geologist: <u>N/A</u>	Date: _____	Company: _____	Geophysical: <u>N/A</u>	Date: _____	Company: _____	Television: <u>N/A</u>	Date: _____	Company: _____						
Driller's: <u>No log available</u>	Date: _____	Company: _____																	
Geologist: <u>N/A</u>	Date: _____	Company: _____																	
Geophysical: <u>N/A</u>	Date: _____	Company: _____																	
Television: <u>N/A</u>	Date: _____	Company: _____																	
Databases: <u>N/A</u>																			
Field Check: <u>WHC GWWS</u> Date: <u>07/16/93</u> Company: _____																			
Other: _____ _____ _____																			
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____																			
15. Status <table style="width: 100%; border: none;"> <tr> <td style="width: 45%;">Well is acceptable for intended use</td> <td style="width: 5%;">[<u>No</u>]</td> <td style="width: 50%;">Gas field is depleted</td> </tr> <tr> <td>Well is acceptable for intended use if variance is granted</td> <td>[<u>No</u>]</td> <td>Construction is unacceptable</td> </tr> <tr> <td>Rehabilitation required to continue intended use</td> <td>[<u>No</u>]</td> <td>No value</td> </tr> <tr> <td>Remediation required to achieve intended use</td> <td>[<u>No</u>]</td> <td>Gas field depleted</td> </tr> <tr> <td>Decommission, well is unneeded or cannot be remediated</td> <td>[<u>Yes</u>]</td> <td>Well is unneeded</td> </tr> <tr> <td colspan="3">Other: _____</td> </tr> </table>		Well is acceptable for intended use	[<u>No</u>]	Gas field is depleted	Well is acceptable for intended use if variance is granted	[<u>No</u>]	Construction is unacceptable	Rehabilitation required to continue intended use	[<u>No</u>]	No value	Remediation required to achieve intended use	[<u>No</u>]	Gas field depleted	Decommission, well is unneeded or cannot be remediated	[<u>Yes</u>]	Well is unneeded	Other: _____		
Well is acceptable for intended use	[<u>No</u>]	Gas field is depleted																	
Well is acceptable for intended use if variance is granted	[<u>No</u>]	Construction is unacceptable																	
Rehabilitation required to continue intended use	[<u>No</u>]	No value																	
Remediation required to achieve intended use	[<u>No</u>]	Gas field depleted																	
Decommission, well is unneeded or cannot be remediated	[<u>Yes</u>]	Well is unneeded																	
Other: _____																			
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>																			

WELL CONSTRUCTION AND COMPLETION SUMMARY		
Drilling Method: <u>Cable tool</u> Drilling Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Walla Walla Company: <u>Oil Gas & Pipeline Co</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Location: <u>Not documented</u> Date Complete: <u>During 1931</u>	WELL TEMPORARY NUMBER: <u>699-S10-62 A9178</u> WELL NO: <u>Walla Walla #8</u> Hanford Coordinates: N/S <u>S 9,800</u> E/W <u>W 51,000</u> State NAD83 Coordinates: N <u>N 395,343</u> E <u>2,233,262</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>29B3</u> Elevation Ground surface: <u>Not documented</u>
Depth to water: <u>Not documented</u> (Ground surface) GENERALIZED STRATIGRAPHY Driller's Log None available		Elevation of reference point: <u>[1,420-ft]</u> (top of casing) Height of reference point above ground surface: <u>[ND]</u> Depth of surface seal: <u>[ND]</u> No surface seal documented: 12-in casing, <u>+ND=ND</u> Hole diameter, <u>Not documented</u> No perforations documented Borehole drilled depth: <u>[790-ft]</u>
Drawing By: <u>RKL/6S10W62.ASB</u> Date: <u>29Apr94</u> Reference: <u>HANFORD WELLS</u>		

DIAGRAMMATIC WELL DECOMMISSIONING PLAN

Drilling Method: <u>Cable tool</u>	Sample Method: <u>Hard tool (nom)</u>	WELL NUMBER: <u>699-S10-62 A9178</u>	TEMPORARY WELL NO: <u>Walla Walla #8</u>
Drilling Fluid Used: <u>Not documented</u>	Additives Used: <u>Not documented</u>	Hanford Coordinates: N/S <u>S 9,800</u>	E/W <u>W 51,000</u>
Driller's Name: <u>Not documented</u>	WA State Lic Nr: <u>Not documented</u>	State MAD83 Coordinates: N <u>W 395,343</u>	E <u>2,233,262</u>
Drilling Walla Walla Company: <u>Oil Gas & Pipeline Co</u>	Location: <u>Not documented</u>	Start Card #: <u>Not documented</u>	T <u>11N R 26E S 29B3</u>
Date Started: <u>Not documented</u>	Date Complete: <u>During 1931</u>	Elevation Ground surface: <u>Not documented</u>	

Depth to water: Not documented
(Ground surface)

DECOMMISSIONING ACTIVITIES

1] Inspect site for safe operating conditions. Rehabilitate as needed.*

2] Establish depth to bottom inside casing. If plugged, test stability of plug using a sample hammer or other suitable wireline weight.

3] If plug fails, push to bottom or refusal using the wireline weight.

4] Cut casing at approximately 60-ft below grade or where plugged.

5] Remove casing from hole if possible. If not possible, perforate casing as determined in field to within six feet of ground surface.

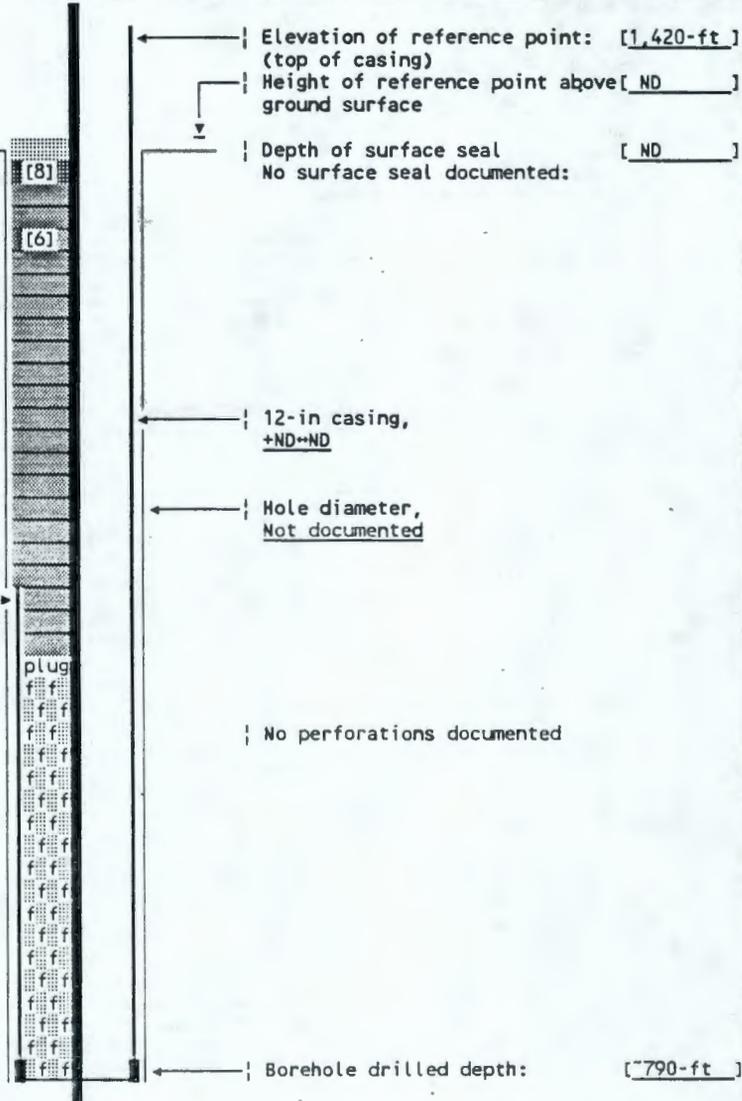
6] Fill open casing, perforated casing or open hole with bentonite crumbles or pellets to within 3-6-ft of ground surface. Filling may be done as casing is pulled as determined in field.

7] Cut any remaining casing at approximately 3-6-ft below ground surface.

8] Place a cement cap and fill to grade with native soil.

NOTE: Order of work and depths may require alteration depending on field conditions.

* All surface work must conform to conduct of operations requirements of this document.



Drawing By: RKL/6S10W62.PLN
Date: 29Apr94
Reference: HANFORD WELLS

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-54</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> No <input checked="" type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> No <input checked="" type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> No <input checked="" type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> No <input checked="" type="checkbox"/> Not capped or locked	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> No <input checked="" type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
9a. Drill rig/equipment casing/screen cleaned? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> No driller's log	

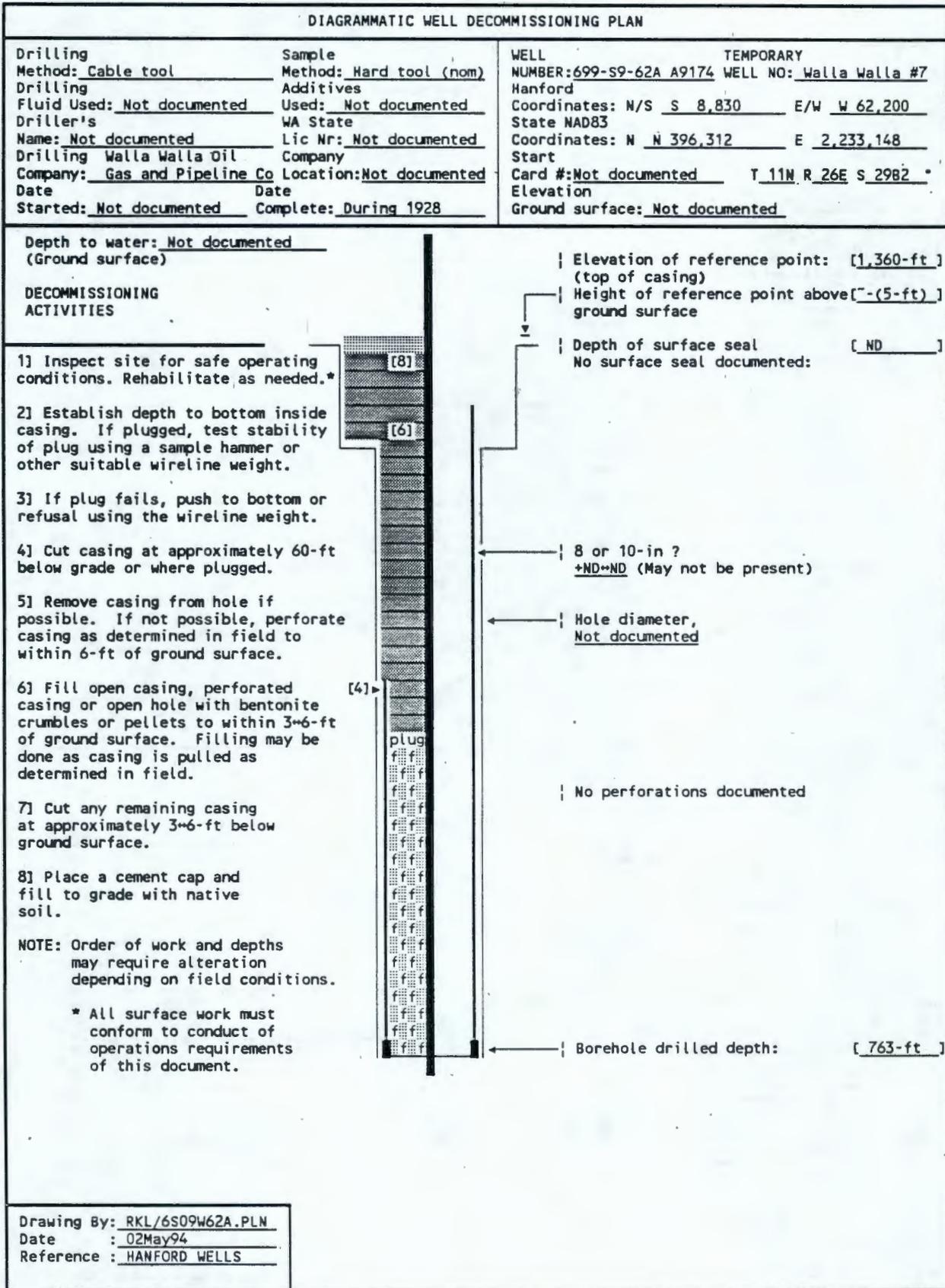
RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-54</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-540? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
13. Data Sources Used:	
Logs:	
Driller's: <u>No log available</u>	Date: _____ Company: _____
Geologist: <u>N/A</u>	Date: _____ Company: _____
Geophysical: <u>N/A</u>	Date: _____ Company: _____
Television: <u>N/A</u>	Date: _____ Company: _____
Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>	
Databases: <u>N/A</u>	
Field Check: <u>WHC GWWS</u>	Date: <u>07/16/93</u> Company: _____
Other: _____ _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____	
15. Status	
Well is acceptable for intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field is depleted</u>
Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Construction is unacceptable</u>
Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>No value</u>
Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field depleted</u>
Decommission, well is unneeded or cannot be remediated	<input checked="" type="checkbox"/> <u>Yes</u> <input type="checkbox"/> <u>Well is unneeded</u>
Other: _____	
16. Status Recommendation	
Done By: Name: <u>R. K. Ledgerwood</u>	Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>

WELL CONSTRUCTION AND COMPLETION SUMMARY			
Drilling Method: <u>Cable tool</u> Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>Conservative Oil&Gas</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Location: <u>Spokane WA</u> Date Complete: <u>Within 1922</u>	WELL NUMBER: <u>699-S9-54 A9172</u> Coordinates: N/S <u>S 8,600</u> E/W <u>W 53,800</u> State NAD83 Coordinates: N <u>N 396,564</u> E <u>2,241,547</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>27G1</u> Elevation Ground surface: <u>Not documented</u>	TEMPORARY WELL NO: <u>Conservative #1</u> Hanford
Depth to water: <u>Not documented</u> (Ground surface) GENERALIZED STRATIGRAPHY Driller's Log		Elevation of reference point: [<u>1,020-ft</u>] (top of casing) Height of reference point above [<u>ND</u>] ground surface Depth of surface seal [<u>ND</u>] No surface seal documented:	
Water bearing stratum at 450-ft Clay at 600-ft (From Shedd, p. 117)		8 or 10-in casing + <u>ND-ND</u> Hole diameter, Not documented No perforations documented Borehole drilled depth: [<u>806-ft</u>]	
Drawing By: <u>RKL/6S09W54.ASB</u> Date : <u>29Apr94</u> Reference : <u>HANFORD WELLS</u>			

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-62A</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Not capped or locked	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9a. Drilling/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> No driller's log	

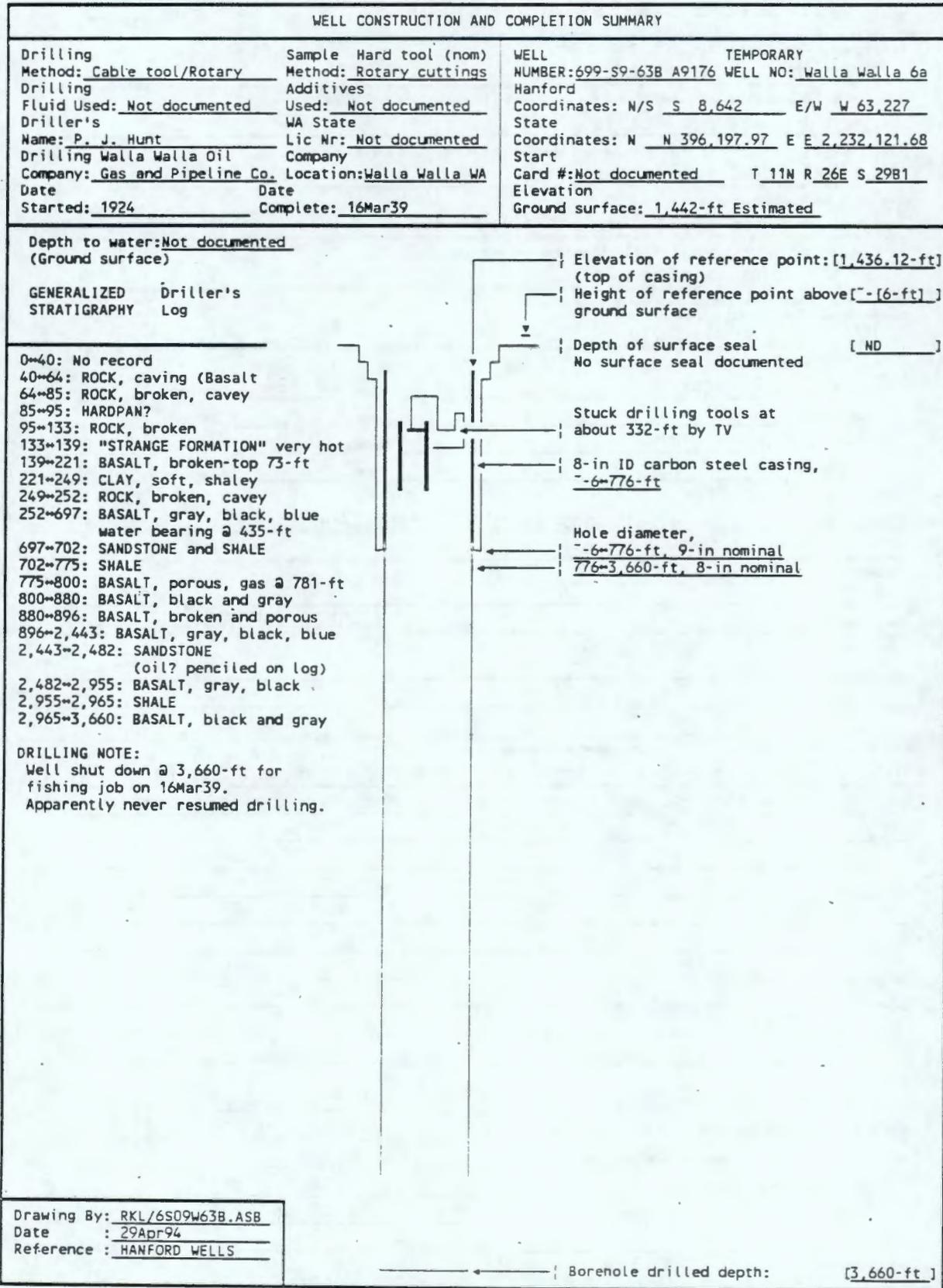
RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-62A</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-5407 <input type="checkbox"/> <u>N/A</u>) Not applicable	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u>) Not applicable	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u>) Not applicable	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u>) Not applicable	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u>) Not applicable	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u>) Not applicable	
13. Data Sources Used: Logs: Driller's: <u>No log available</u> Date: _____ Company: _____ Geologist: <u>N/A</u> Date: _____ Company: _____ Geophysical: <u>N/A</u> Date: _____ Company: _____ Television: <u>N/A</u> Date: _____ Company: _____ Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u> _____ Databases: <u>N/A</u> Field Check: <u>WHC GWWS</u> Date: <u>07/16/93</u> Company: _____ Other: _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____ _____	
15. Status Well is acceptable for intended use <input type="checkbox"/> <u>No</u>) Gas field is depleted Well is acceptable for intended use if variance is granted <input type="checkbox"/> <u>No</u>) Construction is unacceptable Rehabilitation required to continue intended use <input type="checkbox"/> <u>No</u>) No value Remediation required to achieve intended use <input type="checkbox"/> <u>No</u>) Gas field depleted Decommission, well is unneeded or cannot be remediated <input type="checkbox"/> <u>Yes</u>) Well is unneeded Other _____	
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>	

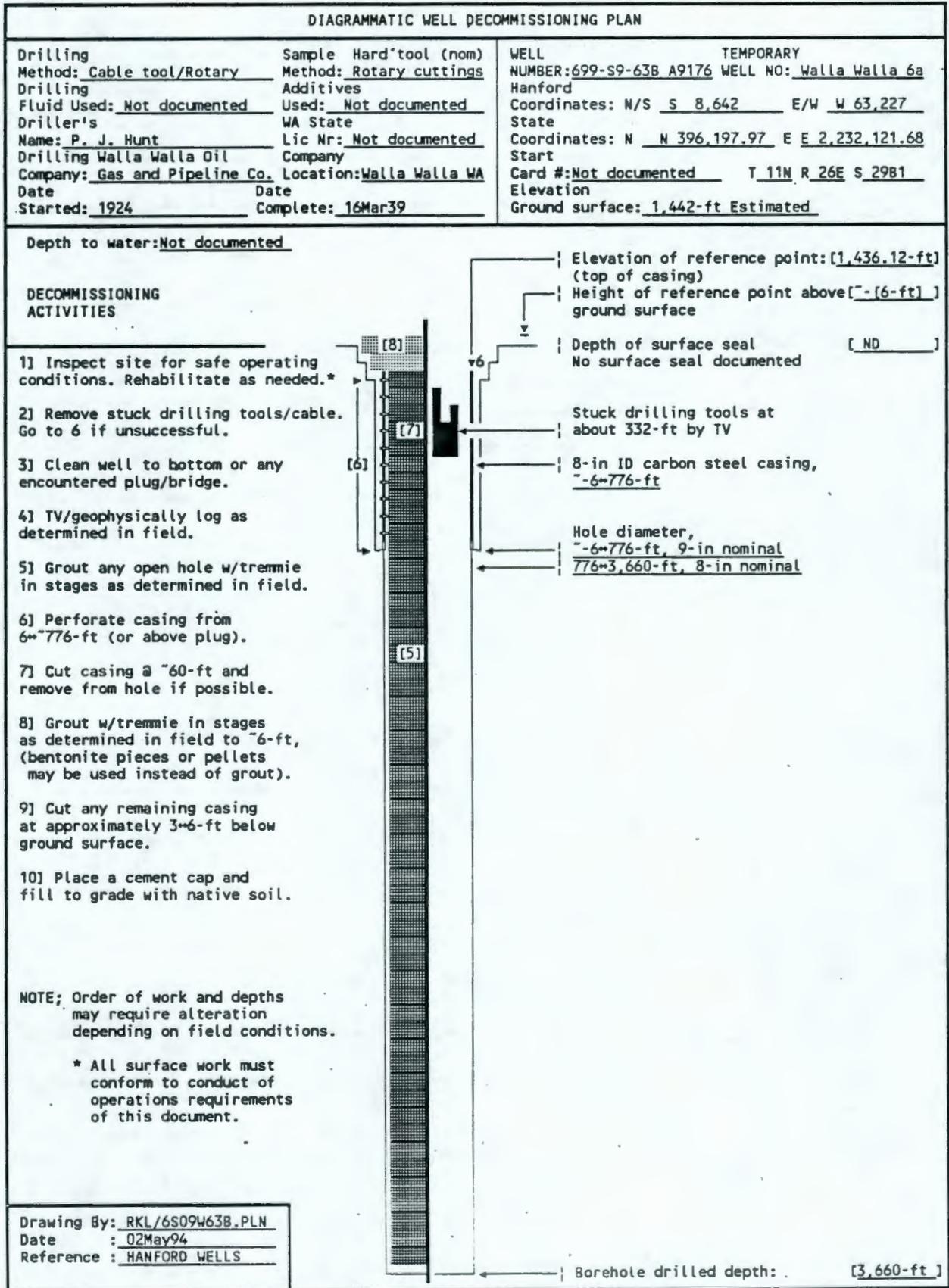
WELL CONSTRUCTION AND COMPLETION SUMMARY					
Drilling Method: <u>Cable tool</u> Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>Walla Walla Oil Gas and Pipeline Co</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Location: <u>Not documented</u> Date Complete: <u>During 1928</u>	WELL TYPE: <u>TEMPORARY</u> NUMBER: <u>699-S9-62A A9174</u> WELL NO: <u>Walla Walla #7 Hanford</u> Coordinates: N/S <u>S 8,830</u> E/W <u>W 62,200</u> State: <u>WAD83</u> Coordinates: N <u>N 396,312</u> E <u>2,233,148</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>29B2</u> Elevation Ground surface: <u>Not documented</u>			
Depth to water: <u>Not documented</u> (Ground surface)					
GENERALIZED STRATIGRAPHY: <u>None available</u> Driller's Log:		Elevation of reference point: <u>[1,360-ft]</u> (top of casing) Height of reference point above ground surface: <u>[-(5-ft)]</u>			
		Depth of surface seal: <u>[ND]</u> No surface seal documented:			
		8 or 10-in ? +ND-ND (May not be present)			
		Hole diameter, <u>Not documented</u>			
		No perforations documented			
		Borehole drilled depth: <u>[763-ft]</u>			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">Drawing By: <u>RKL/6S09W62A.ASB</u></td> </tr> <tr> <td>Date: <u>29Apr94</u></td> </tr> <tr> <td>Reference: <u>HANFORD WELLS</u></td> </tr> </table>			Drawing By: <u>RKL/6S09W62A.ASB</u>	Date: <u>29Apr94</u>	Reference: <u>HANFORD WELLS</u>
Drawing By: <u>RKL/6S09W62A.ASB</u>					
Date: <u>29Apr94</u>					
Reference: <u>HANFORD WELLS</u>					



RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-638</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Open below 776-ft to 3,660-ft	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Has temporary tape cap	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Open 776-3,660-ft	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Has taped cap	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9a. Drill rig/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-63B</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-5407 <input checked="" type="checkbox"/> <u>N/A</u>) Not applicable	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input checked="" type="checkbox"/> <u>N/A</u>) Not applicable	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input checked="" type="checkbox"/> <u>N/A</u>) Not applicable	
11c. Well has been developed. <input checked="" type="checkbox"/> <u>N/A</u>) Not applicable	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input checked="" type="checkbox"/> <u>N/A</u>) Not applicable	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input checked="" type="checkbox"/> <u>N/A</u>) Not applicable	
13. Data Sources Used:	
Logs:	
Driller's: <u>USGS Records</u>	Date: <u>Mar39</u> Company: _____
Geologist: <u>N/A</u>	Date: _____ Company: _____
Geophysical: <u>N/A</u>	Date: _____ Company: _____
Television: <u>N/A</u>	Date: _____ Company: _____
Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamnes and J. K. Merz, August 1993</u>	
Databases: <u>N/A</u>	
Field Check: <u>WHC GWWS</u>	Date: <u>07/21/93</u> Company: _____
Other: _____ _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Large open interval connects aquifers. Well is plugged with lost drilling tools. Decommissioning is required.</u> _____ _____ _____ _____ _____ _____	
15. Status	
Well is acceptable for intended use	<input checked="" type="checkbox"/> <u>No</u>) Gas field is depleted
Well is acceptable for intended use if variance is granted	<input checked="" type="checkbox"/> <u>No</u>) Well may connect aquifers
Rehabilitation required to continue intended use	<input checked="" type="checkbox"/> <u>No</u>) No value
Remediation required to achieve intended use	<input checked="" type="checkbox"/> <u>No</u>) Gas field depleted
Decommission, well is unneeded or cannot be remediated	<input checked="" type="checkbox"/> <u>Yes</u>) Well is unneeded
Other: _____	<input type="checkbox"/> _____
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>10/25/93</u>	

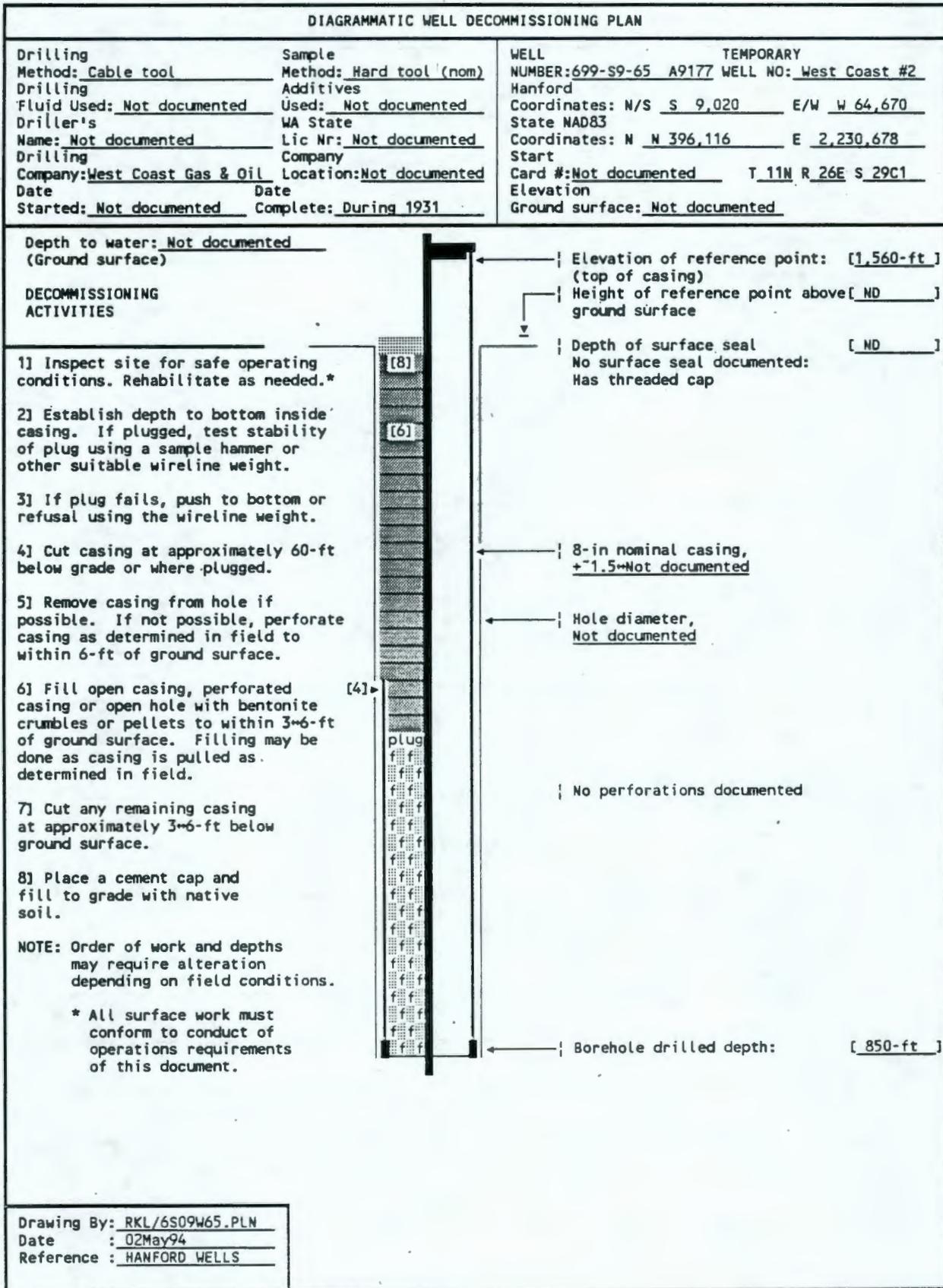




RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1 Well No. <u>699-S9-65</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> ; <u>No identified user</u>	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> ; <u>Well is abandoned</u>	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> <u>ND</u> ; <u>Not documented</u>	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> ; <u>Not documented</u>	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>ND</u> ; <u>Not documented</u>	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> ; <u>No surface or annular seal</u>	
4d. Casing overlap more than 8 ft: packed and grouted? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> <u>Yes</u> ; <u>Capped w/screw cap.</u>	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> <u>N/A</u> ; <u>Well in gas well, not resource protection well</u>	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>ND</u> ; <u>Not documented</u>	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> <u>N/A</u> ; <u>Drilled before applicable date of WAC 173-303</u>	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> ; <u>No permanent identification</u>	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
9a. Drill rig/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> ; <u>Not applicable</u>	
10b. Vertical lithology documented? <input type="checkbox"/> <u>N/A</u> ; <u>No driller's log</u>	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S9-65</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-540? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
13. Data Sources Used:	
Logs:	
Driller's: <u>No log available</u>	Date: _____ Company: _____
Geologist: <u>N/A</u>	Date: _____ Company: _____
Geophysical: <u>N/A</u>	Date: _____ Company: _____
Television: <u>N/A</u>	Date: _____ Company: _____
Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>	
Databases: <u>N/A</u>	
Field Check: <u>WHC GWWS</u>	Date: <u>07/16/93</u> Company: _____
Other: _____ _____	
14. Comments: Identify evaluation criteria addressed by number. <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____	
15. Status	
Well is acceptable for intended use	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> Gas field is depleted
Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> Construction is unacceptable
Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> No value
Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> Gas field depleted
Decommission, well is unneeded or cannot be remediated	<input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Well is unneeded
Other: _____	
16. Status Recommendation	
Done By: Name: <u>R. K. Ledgerwood</u>	Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>

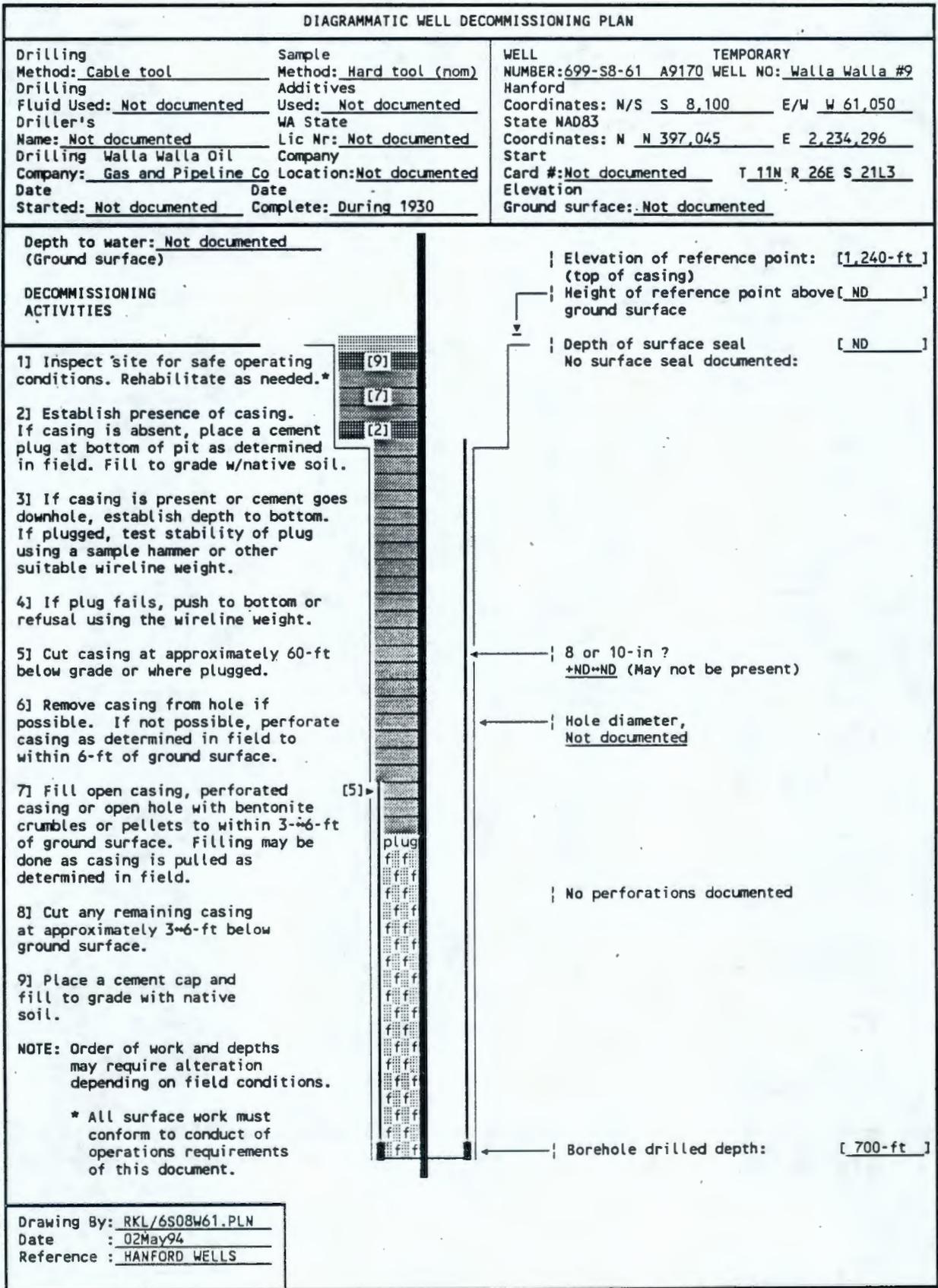
WELL CONSTRUCTION AND COMPLETION SUMMARY					
Drilling Method: <u>Cable tool</u> Drilling Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>West Coast Gas & Oil</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Company Location: <u>Not documented</u> Date Complete: <u>During 1931</u>	WELL TYPE: <u>TEMPORARY</u> NUMBER: <u>699-S9-65 A9177</u> WELL NO: <u>West Coast #2</u> Hanford Coordinates: N/S <u>S 9,020</u> E/W <u>W 64,670</u> State NAD83 Coordinates: N <u>N 396,116</u> E <u>2,230,678</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>29C1</u> Elevation Ground surface: <u>Not documented</u>			
Depth to water: <u>Not documented</u> (Ground surface) GENERALIZED STRATIGRAPHY: <u>None available</u> Driller's Log:		Elevation of reference point: <u>[1,560-ft]</u> (top of casing) Height of reference point above <u>[ND]</u> ground surface Depth of surface seal: <u>[ND]</u> No surface seal documented: Has threaded cap 8-in nominal casing, +1.5- <u>Not documented</u> Hole diameter, <u>Not documented</u> No perforations documented Borehole drilled depth: <u>[850-ft]</u>			
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;">Drawing By: <u>RKL/6S09W65.ASB</u></td> </tr> <tr> <td>Date: <u>29Apr94</u></td> </tr> <tr> <td>Reference: <u>HANFORD WELLS</u></td> </tr> </table>			Drawing By: <u>RKL/6S09W65.ASB</u>	Date: <u>29Apr94</u>	Reference: <u>HANFORD WELLS</u>
Drawing By: <u>RKL/6S09W65.ASB</u>					
Date: <u>29Apr94</u>					
Reference: <u>HANFORD WELLS</u>					



RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S8-61</u>
Page 1 of 2	
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> No <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> No <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> No <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> Yes <input type="checkbox"/> Capped w/screw cap.	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> N/A <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> N/A <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> No <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
9a. Drilling/equipment casing/screen cleaned? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> N/A <input type="checkbox"/> No driller's log	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S8-61</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-540? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
13. Data Sources Used:	
Logs:	
Driller's: <u>No log available</u>	Date: _____ Company: _____
Geologist: <u>N/A</u>	Date: _____ Company: _____
Geophysical: <u>N/A</u>	Date: _____ Company: _____
Television: <u>N/A</u>	Date: _____ Company: _____
Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>	
Databases: <u>N/A</u>	
Field Check: _____ Date: _____ Company: _____	
Other: _____ _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____	
15. Status	
Well is acceptable for intended use	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> Gas field is depleted
Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> Construction is unacceptable
Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> No value
Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u> <input type="checkbox"/> Gas field depleted
Decommission, well is unneeded or cannot be remediated	<input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Well is unneeded
Other: _____	
16. Status Recommendation	
Done By: Name: <u>R. K. Ledgerwood</u>	Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>

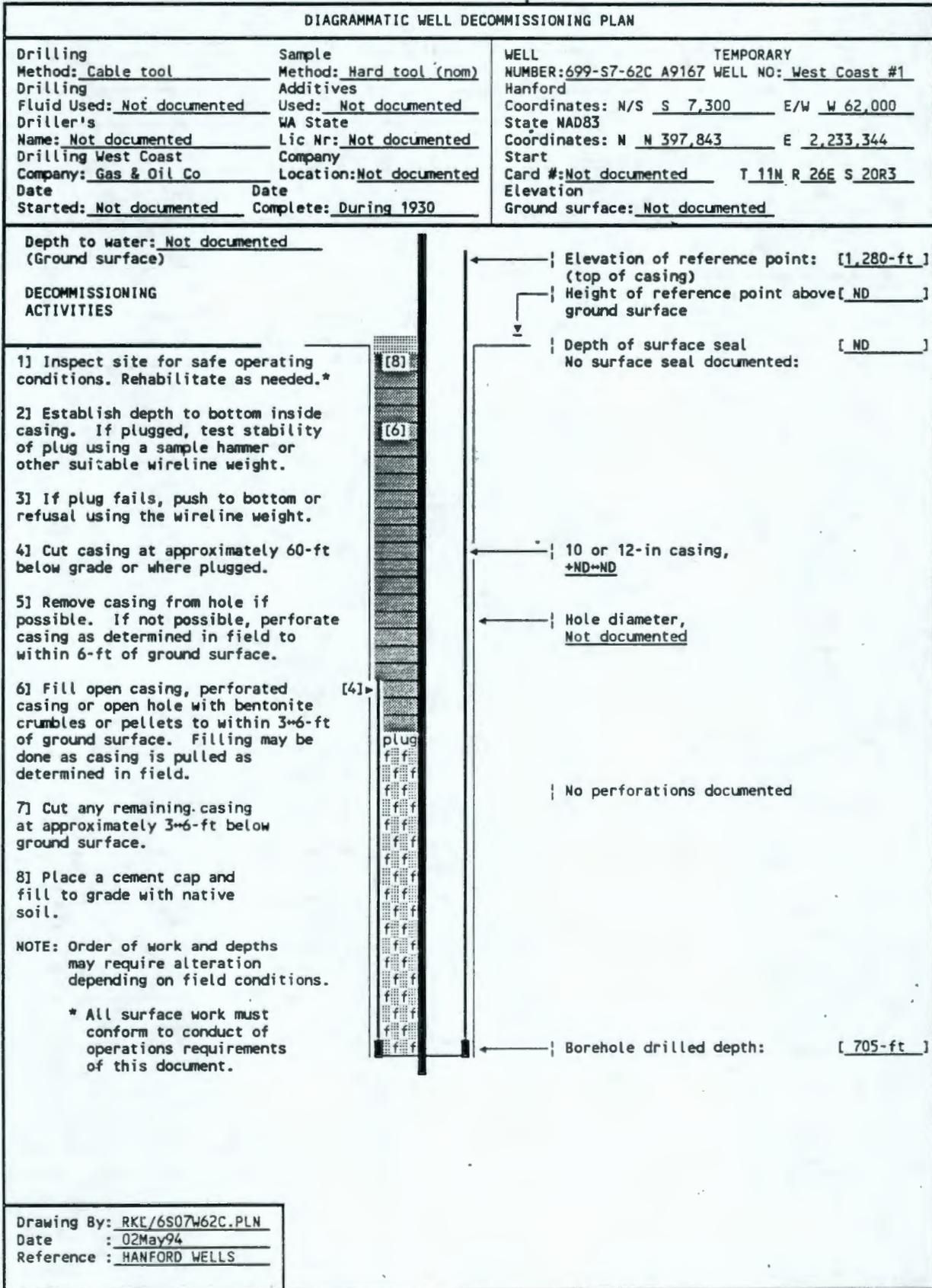
WELL CONSTRUCTION AND COMPLETION SUMMARY		
Drilling Method: <u>Cable tool</u> Drilling Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>Walla Walla Oil Gas and Pipeline Co</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Company Location: <u>Not documented</u> Date Complete: <u>During 1930</u>	WELL NUMBER: <u>699-SB-61</u> A9170 WELL NO: <u>Walla Walla #9</u> Hanford Coordinates: N/S <u>S 8,100</u> E/W <u>W 61,050</u> State <u>NAD83</u> Coordinates: N <u>N 397,045</u> E <u>2,234,296</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>21L3</u> Elevation Ground surface: <u>Not documented</u>
Depth to water: <u>Not documented</u> (Ground surface)		
GENERALIZED STRATIGRAPHY Driller's Log None available	Elevation of reference point: [<u>1,240-ft</u>] (top of casing) Height of reference point above [<u>ND</u>] ground surface Depth of surface seal [<u>ND</u>] No surface seal documented: 8 or 10-in ? +ND+ND (May not be present) Hole diameter, Not documented No perforations documented Borehole drilled depth: [<u>700-ft</u>]	
Drawing By: <u>RKL/6S08W61.ASB</u> Date : <u>29Apr94</u> Reference : <u>HANFORD WELLS</u>		



RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No <u>699-S7-62C</u>
Page 1 of 2	
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> <u>No identified user</u>	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> <u>Well is abandoned</u>	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> <u>ND</u> <u>Not documented</u>	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> <u>Not documented</u>	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>ND</u> <u>Not documented</u>	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> <u>No surface or annular seal</u>	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> <u>Yes</u> <u>Capped w/screw cap.</u>	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> <u>N/A</u> <u>Well in gas well, not resource protection well</u>	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>ND</u> <u>Not documented</u>	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> <u>N/A</u> <u>Drilled before applicable date of WAC 173-303</u>	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> <u>No permanent identification</u>	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
9a. Drilling/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> <u>Not applicable</u>	
10b. Vertical lithology documented? <input type="checkbox"/> <u>N/A</u> <u>No driller's log</u>	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S7-62C</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-5407 <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
13. Data Sources Used: Logs: Driller's: <u>No log available</u> Date: _____ Company: _____ Geologist: <u>N/A</u> Date: _____ Company: _____ Geophysical: <u>N/A</u> Date: _____ Company: _____ Television: <u>N/A</u> Date: _____ Company: _____ Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u> _____ _____ Databases: <u>N/A</u> Field Check: <u>WHC SIS</u> Date: <u>07/21/93</u> Company: _____ Other: _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____ _____	
15. Status Well is acceptable for intended use <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field is depleted</u> Well is acceptable for intended use if variance is granted <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Construction is unacceptable</u> Rehabilitation required to continue intended use <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>No value</u> Remediation required to achieve intended use <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field depleted</u> Decommission, well is unneeded or cannot be remediated <input type="checkbox"/> <u>Yes</u> <input checked="" type="checkbox"/> <u>Well is unneeded</u> Other _____ <input type="checkbox"/> _____	
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>	

WELL CONSTRUCTION AND COMPLETION SUMMARY					
Drilling Method: <u>Cable tool</u> Drilling Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>West Coast Gas & Oil Co</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Company Location: <u>Not documented</u> Date Complete: <u>During 1930</u>	WELL NUMBER: <u>699-S7-62C A9167</u> TEMPORARY WELL NO: <u>West Coast #1</u> Hanford Coordinates: N/S <u>S 7,300</u> E/W <u>W 62,000</u> State <u>NAD83</u> Coordinates: N <u>N 397,843</u> E <u>2,233,344</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>20R3</u> Elevation Ground surface: <u>Not documented</u>			
Depth to water: <u>Not documented</u> (Ground surface) GENERALIZED STRATIGRAPHY Driller's Log None available					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Drawing By: <u>RKL/6S07W62C.ASB</u></td> </tr> <tr> <td style="padding: 2px;">Date : <u>29Apr94</u></td> </tr> <tr> <td style="padding: 2px;">Reference : <u>HANFORD WELLS</u></td> </tr> </table>			Drawing By: <u>RKL/6S07W62C.ASB</u>	Date : <u>29Apr94</u>	Reference : <u>HANFORD WELLS</u>
Drawing By: <u>RKL/6S07W62C.ASB</u>					
Date : <u>29Apr94</u>					
Reference : <u>HANFORD WELLS</u>					



RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S7-62B</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> No <input checked="" type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> No <input checked="" type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> No <input checked="" type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Capped w/screw cap.	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> ND <input checked="" type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> No <input checked="" type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
9a. Drill rig/equipment casing/screen cleaned? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL? -	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> N/A <input checked="" type="checkbox"/> No driller's log	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S7-62B</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-5407 <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
13. Data Sources Used: Logs: Driller's: <u>No log available</u> Date: _____ Company: _____ Geologist: <u>N/A</u> Date: _____ Company: _____ Geophysical: <u>N/A</u> Date: _____ Company: _____ Television: <u>N/A</u> Date: _____ Company: _____ Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u> _____ _____ Databases: <u>N/A</u> Field Check: <u>WHC SIS</u> Date: <u>07/29/93</u> Company: _____ Other: _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____ _____	
15. Status Well is acceptable for intended use <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field is depleted</u> Well is acceptable for intended use if variance is granted <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Construction is unacceptable</u> Rehabilitation required to continue intended use <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>No value</u> Remediation required to achieve intended use <input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field depleted</u> Decommission, well is unneeded or cannot be remediated <input type="checkbox"/> <u>Yes</u> <input checked="" type="checkbox"/> <u>Well is unneeded</u> Other _____ <input type="checkbox"/> _____	
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>	

WELL CONSTRUCTION AND COMPLETION SUMMARY		
Drilling Method: <u>Cable tool</u> Drilling Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>Walla Walla Oil Gas & Pipeline Co</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Location: <u>Not documented</u> Date Complete: <u>During 1922</u>	WELL NUMBER: <u>699-S7-62B A9166</u> TEMPORARY WELL NO: <u>Walla Walla #5 Hanford</u> Coordinates: N/S <u>S 7,300</u> E/W <u>W 62,000</u> State <u>NAD83</u> Coordinates: N <u>N 397,843</u> E <u>2,233,344</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>20R2</u> Elevation Ground surface: <u>Not documented</u>
Depth to water: <u>Not documented</u> (Ground surface)		
GENERALIZED STRATIGRAPHY Driller's Log		
0~12: Volcanic ASH and SHALE 12~137: GRAVEL and loose basaltic BOULDERS 137~780: BASALT		
Above description from Shedd, verbal from Mr. H.D. James of Walla Walla Oil, Gas and Pipeline Co. Open flow capacity of well estimated at about 1,300,000 cubic-ft day.		
Elevation of reference point: [1,300-ft] (top of casing) Height of reference point above [2-ft] ground surface Depth of surface seal [ND] No surface seal documented: 10-in casing, +2-not documented Hole diameter, Not documented No perforations documented Borehole drilled depth: [780-ft]		
Drawing By: <u>RKL/6S07W62B.ASB</u> Date : <u>29Apr94</u> Reference : <u>HANFORD WELLS</u>		

DIAGRAMMATIC WELL DECOMMISSIONING PLAN

Drilling Method: Cable tool
 Drilling Fluid Used: Not documented
 Driller's Name: Not documented
 Drilling Company: Oil Gas & Pipeline Co
 Date Started: Not documented

Sample Method: Hard tool (nom)
 Additives Used: Not documented
 WA State Lic Nr: Not documented
 Location: Not documented
 Date Complete: During 1922

WELL NUMBER: 699-S7-62B A9166 TEMPORARY WELL NO: Walla Walla #5 Hanford
 Coordinates: N/S S 7,300 E/W W 62,000
 State NAD83
 Coordinates: N N 397,843 E 2,233,344
 Start Card #: Not documented T 11N R 26E S 20R2
 Elevation Ground surface: Not documented

Depth to water: Not documented
 (Ground surface)

DECOMMISSIONING ACTIVITIES

1] Inspect site for safe operating conditions. Rehabilitate as needed.*

2] Establish depth to bottom inside casing. If plugged, test stability of plug using a sample hammer or other suitable wireline weight.

3] If plug fails, push to bottom or refusal using the wireline weight.

4] Cut casing at approximately 60-ft below grade or where plugged.

5] Remove casing from hole if possible. If not possible, perforate casing as determined in field to within 6-ft of ground surface.

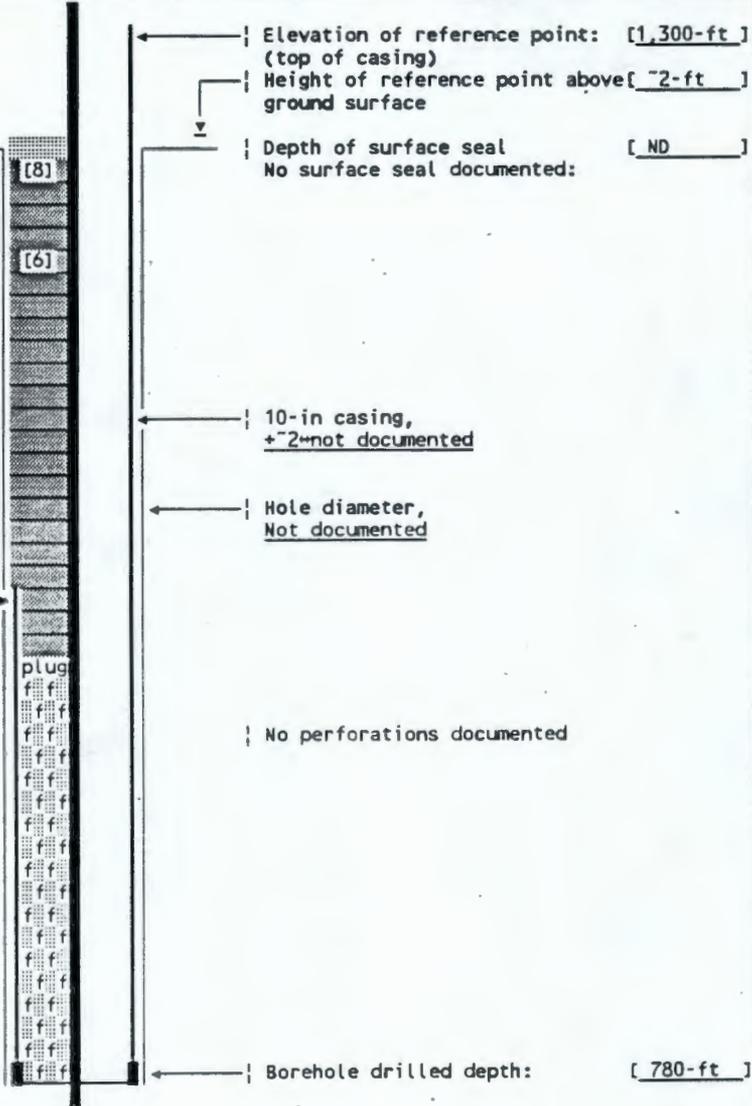
6] Fill open casing, perforated casing or open hole with bentonite crumbles or pellets to within 3-6-ft of ground surface. Filling may be done as casing is pulled as determined in field.

7] Cut any remaining casing at approximately 3-6-ft below ground surface.

8] Place a cement cap and fill to grade with native soil.

NOTE: Order of work and depths may require alteration depending on field conditions.

* All surface work must conform to conduct of operations requirements of this document.



Drawing By: RKL/6S07W62B.PLN
 Date: 02May94
 Reference: HANFORD WELLS

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S7-62A</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-0757? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-0857? <input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Capped w/screw cap.	
6. Is design and construction IAW WAC 173-160-5007? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-3037? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-5107? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-5207? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-5307? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9a. Drilling/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Has driller's log	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S7-62A</u> Page 2 of 2																		
11. Is design and construction IAW WAC 173-160-5407 <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
13. Data Sources Used: Logs: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Driller's: <u>Conservative Land Co</u></td> <td style="width: 15%;">Date: <u>1913</u></td> <td style="width: 35%;">Company: _____</td> </tr> <tr> <td>Geologist: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> <tr> <td>Geophysical: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> <tr> <td>Television: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> </table> Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>		Driller's: <u>Conservative Land Co</u>	Date: <u>1913</u>	Company: _____	Geologist: <u>N/A</u>	Date: _____	Company: _____	Geophysical: <u>N/A</u>	Date: _____	Company: _____	Television: <u>N/A</u>	Date: _____	Company: _____						
Driller's: <u>Conservative Land Co</u>	Date: <u>1913</u>	Company: _____																	
Geologist: <u>N/A</u>	Date: _____	Company: _____																	
Geophysical: <u>N/A</u>	Date: _____	Company: _____																	
Television: <u>N/A</u>	Date: _____	Company: _____																	
Databases: <u>N/A</u>																			
Field Check: _____ Date: _____ Company: _____																			
Other: _____ _____ _____																			
14. Comments: Identify evaluation criteria addressed by number. <u>[15] Well is unneeded. Decommissioning required as part of Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____																			
15. Status <table style="width: 100%; border: none;"> <tr> <td style="width: 45%;">Well is acceptable for intended use</td> <td style="width: 10%;"><input type="checkbox"/> <u>No</u></td> <td style="width: 45%;"><input checked="" type="checkbox"/> <u>Gas field is depleted</u></td> </tr> <tr> <td>Well is acceptable for intended use if variance is granted</td> <td><input type="checkbox"/> <u>No</u></td> <td><input checked="" type="checkbox"/> <u>Construction is unacceptable</u></td> </tr> <tr> <td>Rehabilitation required to continue intended use</td> <td><input type="checkbox"/> <u>No</u></td> <td><input checked="" type="checkbox"/> <u>No value</u></td> </tr> <tr> <td>Remediation required to achieve intended use</td> <td><input type="checkbox"/> <u>No</u></td> <td><input checked="" type="checkbox"/> <u>Gas field depleted</u></td> </tr> <tr> <td>Decommission, well is unneeded or cannot be remediated</td> <td><input checked="" type="checkbox"/> <u>Yes</u></td> <td><input checked="" type="checkbox"/> <u>Well is unneeded</u></td> </tr> <tr> <td>Other</td> <td><input type="checkbox"/></td> <td>_____</td> </tr> </table>		Well is acceptable for intended use	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>Gas field is depleted</u>	Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>Construction is unacceptable</u>	Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>No value</u>	Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>Gas field depleted</u>	Decommission, well is unneeded or cannot be remediated	<input checked="" type="checkbox"/> <u>Yes</u>	<input checked="" type="checkbox"/> <u>Well is unneeded</u>	Other	<input type="checkbox"/>	_____
Well is acceptable for intended use	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>Gas field is depleted</u>																	
Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>Construction is unacceptable</u>																	
Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>No value</u>																	
Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u>	<input checked="" type="checkbox"/> <u>Gas field depleted</u>																	
Decommission, well is unneeded or cannot be remediated	<input checked="" type="checkbox"/> <u>Yes</u>	<input checked="" type="checkbox"/> <u>Well is unneeded</u>																	
Other	<input type="checkbox"/>	_____																	
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>																			

WELL CONSTRUCTION AND COMPLETION SUMMARY		
<p>Drilling Method: <u>Cable tool</u></p> <p>Drilling Fluid Used: <u>Not documented</u></p> <p>Driller's Name: <u>Not documented</u></p> <p>Drilling Company: <u>Conservative Land Co</u></p> <p>Date Started: <u>Not documented</u></p>	<p>Sample Method: <u>Hard tool (nom)</u></p> <p>Additives Used: <u>Not documented</u></p> <p>WA State Lic Nr: <u>Not documented</u></p> <p>Company Location: <u>Spokane WA</u></p> <p>Date Complete: <u>During 1913</u></p>	<p>WELL NUMBER: <u>699-S7-62A A9165</u> TEMPORARY Discovery Well</p> <p>WELL NO: <u>Walla Walla #1</u></p> <p>Hanford</p> <p>Coordinates: N/S <u>S 7,300</u> E/W <u>W 62,000</u></p> <p>State NAD83</p> <p>Coordinates: N <u>N 397,843</u> E <u>2,233,344</u></p> <p>Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>20R1</u></p> <p>Elevation</p> <p>Ground surface: <u>Not documented</u></p>
<p>Depth to water: <u>Not documented</u> (Ground surface)</p>		
<p>GENERALIZED Driller's STRATIGRAPHY Log</p>		
<p>0-16: SURFACE</p> <p>16-126: BASALT</p> <p>126-166: Yellow, soft SANDSTONE</p> <p>166-506: BASALT</p> <p>506-628: Gray BASALT</p> <p>628-699: Greenish-blue SHALE or CLAY</p> <p>699-719: Porous BASALT and gas</p> <p>719-744: Porous BASALT, Gas pressure 5½-lbs. Volume 500,000 cubic-ft day from 3-in well. Cased off and drilling continued.</p> <p>744-814: Hard BASALT</p> <p>814-827: Porous BASALT, more gas</p> <p>827-840: Hard BASALT</p> <p>840-848: Porous BASALT, more gas</p> <p>848-894: Hard BASALT</p> <p>894-915: Porous BASALT, more gas, now altogether 16,700 ft³-daily</p> <p>915-1,234: Alternating hard and soft BASALT, no further gas</p>	<p>Elevation of reference point: [1,275-ft] (top of casing)</p> <p>Height of reference point above [-2-ft] ground surface</p> <p>Depth of surface seal [ND] No surface seal documented:</p> <p>14-in casing, +2-not documented</p> <p>Hole diameter, Not documented</p> <p>No perforations documented</p> <p>Borehole drilled depth: [1,234-ft]</p>	
<p>Drawing By: <u>RKL/6S07W62A.ASB</u></p> <p>Date : <u>29Apr94</u></p> <p>Reference : <u>HANFORD WELLS</u></p>		

DIAGRAMMATIC WELL DECOMMISSIONING PLAN

Drilling Method: Cable tool
 Drilling Fluid Used: Not documented
 Driller's Name: Not documented
 Drilling Company: Conservative Land Co.
 Date Started: Not documented

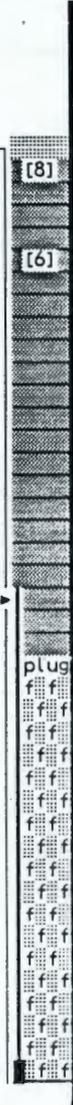
Sample Method: Hard tool (nom)
 Additives Used: Not documented
 WA State Lic Nr: Not documented
 Location: Spokane WA
 Date Complete: During 1913

WELL NUMBER: 699-S7-62A A9165 TEMPORARY Discovery Well
 Hanford WELL NO: Walla Walla #1
 Coordinates: N/S S 7,300 E/W W 62,000
 State NAD83
 Coordinates: N N 397,843 E 2,233,344
 Start Card #: Not documented T 11N R 26E S 20R1
 Elevation Ground surface: Not documented

Depth to water: Not documented
 (Ground surface)

DECOMMISSIONING ACTIVITIES

- 1) Inspect site for safe operating conditions. Rehabilitate as needed.*
 - 2) Establish depth to bottom inside casing. If plugged, test stability of plug using a sample hammer or other suitable wireline weight.
 - 3) If plug fails, push to bottom or refusal using the wireline weight.
 - 4) Cut casing at approximately 60-ft below grade or where plugged.
 - 5) Remove casing from hole if possible. If not possible, perforate casing as determined in field to within 6-ft of ground surface.
 - 6) Fill open casing, perforated casing or open hole with bentonite crumbles or pellets to within 3-6-ft of ground surface. Filling may be done as casing is pulled as determined in field.
 - 7) Cut any remaining casing at approximately 3-6-ft below ground surface.
 - 8) Place a cement cap and fill to grade with native soil.
- NOTE: Order of work and depths may require alteration depending on field conditions.
- * All surface work must conform to conduct of operations requirements of this document.



Elevation of reference point: [1,275-ft] (top of casing)
 Height of reference point above [2-ft] ground surface
 Depth of surface seal [ND]
 No surface seal documented:
 14-in casing, +2-in not documented
 Hole diameter, Not documented
 No perforations documented
 Borehole drilled depth: [1,234-ft]

Drawing By: RKL/6S07W62A.PLN
 Date : 02May94
 Reference : HANFORD WELLS

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1 Well No. <u>699-S6-64</u> Page 1 of 2
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2. Has a need for use of the well been identified and documented?
 No No identified user
3. Is well presently in use?
 No Well is abandoned
4. Is casing sealed in accordance with IAW WAC 173-160-075?
 ND Not documented
 - 4a. Natural barriers preserved?
 ND Not documented
 - 4b. Aquifer/strata penetrated permanently sealed?
 ND Not documented
 - 4c. Annulus sealed against surface water?
 No No surface or annular seal
 - 4d. Casing overlap more than 8 ft; packed and grouted?
 N/A Not applicable
5. If not in use, is well capped IAW WAC 173-160-085?
 Yes Capped w/screw cap.
6. Is design and construction IAW WAC 173-160-500?
 N/A Well in gas well, not resource protection well
 - 6a. Saturated formation/aquifers not connected?
 ND Not documented
 - 6b. Cuttings/development water handled IAW WAC 173-303?
 N/A Drilled before applicable date of WAC 173-303
 - 6c. Well properly identified?
 No No permanent identification
7. Is surface protection IAW WAC 173-160-510?
 N/A Not applicable
 - 7a. Well capped and protected?
 N/A Not applicable
 - 7b. Protective posts, surface pad or cover installed?
 N/A Not applicable
 - 7c. Surface protection waived or variance obtained?
 N/A Not applicable
 - 7d. Is existing surface protection damaged?
 N/A Not applicable
8. Are casing materials IAW 173-160-520?
 N/A Not applicable
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530?
 N/A Not applicable
 - 9a. Drilling/equipment casing/screen cleaned?
 N/A Not applicable
 - 9b. Filter pack cleaned? Material compatible?
 N/A Not applicable

RCRA/CERCLA MONITORING WELL?

10. Does water sample from vertical screened interval represent horizontal stratigraphy?
 N/A Not applicable
 - 10a. Screened interval documented?
 N/A Not applicable
 - 10b. Vertical lithology documented?
 N/A No driller's log

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S6-64</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-5407 <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>	
13. Data Sources Used:	
Logs:	
Driller's: <u>Not documented</u>	Date: _____ Company: _____
Geologist: <u>N/A</u>	Date: _____ Company: _____
Geophysical: <u>N/A</u>	Date: _____ Company: _____
Television: <u>N/A</u>	Date: _____ Company: _____
Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>	
Databases: <u>N/A</u>	
Field Check: <u>WHC SIS</u>	Date: <u>07/21/93</u> Company: _____
Other: _____ _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____	
15. Status	
Well is acceptable for intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field is depleted</u>
Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Construction is unacceptable</u>
Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>No value</u>
Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> <u>Gas field depleted</u>
Decommission, well is unneeded or cannot be remediated	<input type="checkbox"/> <u>Yes</u> <input checked="" type="checkbox"/> <u>Well is unneeded</u>
Other _____	_____
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>	

WELL CONSTRUCTION AND COMPLETION SUMMARY						
Drilling Method: <u>Cable tool</u> Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>Not documented</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Company Location: <u>Not documented</u> Date Complete: <u>During 1922</u>	WELL NUMBER: <u>699-S6-64 A9151</u> WELL NO: <u>Yellowhawk #1</u> Hanford Coordinates: N/S <u>S 6,150</u> E/W <u>W 64,100</u> State Coordinates: N <u>N 398,987</u> E <u>2,231,241</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>20L1</u> Elevation Ground surface: <u>Not documented</u>	TEMPORARY Elevation of reference point: [<u>1,280-ft</u>] (top of casing) Height of reference point above [<u>ND</u>] ground surface Depth of surface seal [<u>ND</u>] No surface seal documented: Large pit at site ~20-in +ND+ND (May not be present) Hole diameter, Not documented No perforations documented Borehole drilled depth: [<u>715-ft</u>]			
Depth to water: <u>Not documented</u> (Ground surface) GENERALIZED STRATIGRAPHY Driller's Log						
None available						
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Drawing By: <u>RKL/6S06W64.ASB</u></td> </tr> <tr> <td>Date: <u>29Apr94</u></td> </tr> <tr> <td>Reference: <u>HANFORD WELLS</u></td> </tr> </table>				Drawing By: <u>RKL/6S06W64.ASB</u>	Date: <u>29Apr94</u>	Reference: <u>HANFORD WELLS</u>
Drawing By: <u>RKL/6S06W64.ASB</u>						
Date: <u>29Apr94</u>						
Reference: <u>HANFORD WELLS</u>						

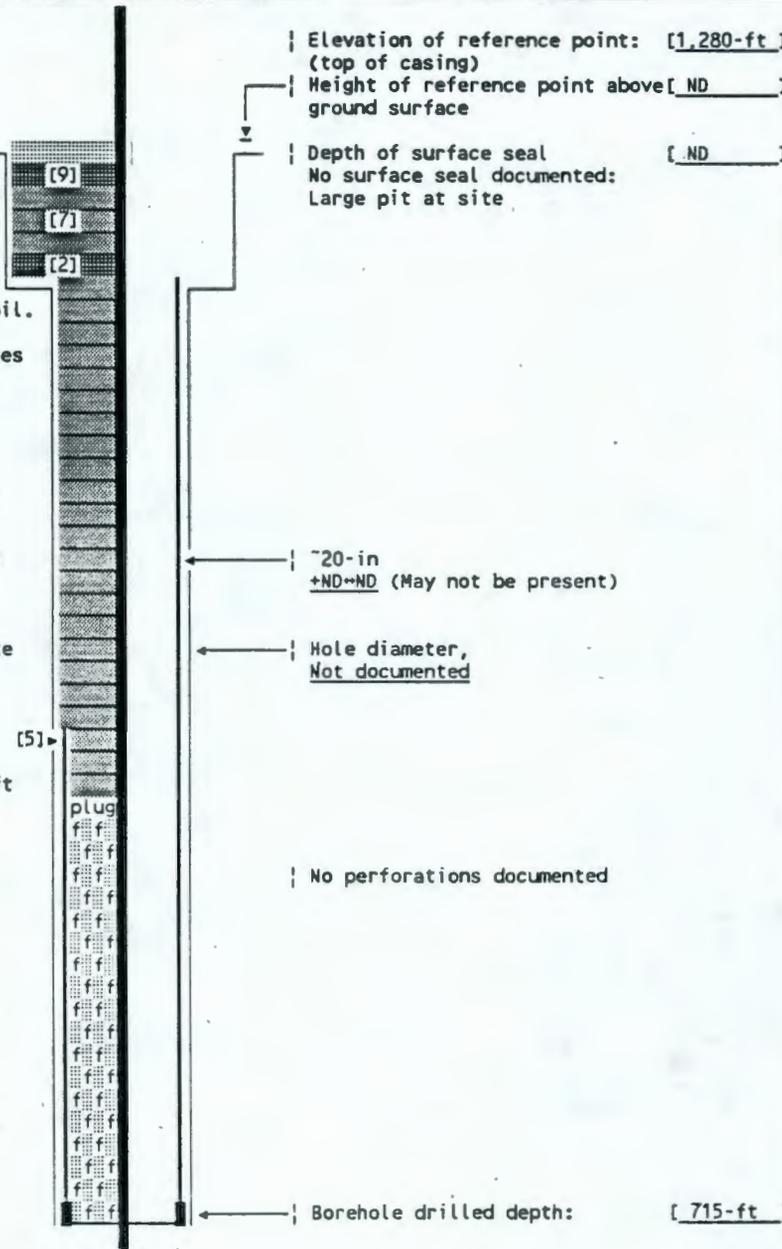
DIAGRAMMATIC WELL DECOMMISSIONING PLAN

Drilling Method: <u>Cable tool</u> Drilling Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Drilling Company: <u>Not documented</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> WA State Lic Nr: <u>Not documented</u> Company Location: <u>Not documented</u> Date Complete: <u>During 1922</u>	WELL NUMBER: <u>699-S6-64 A9151</u> TEMPORARY WELL NO: <u>Yellowhawk #1 Hanford</u> Coordinates: N/S <u>S 6,150</u> E/W <u>W 64,100</u> State Coordinates: N <u>N 398,987</u> E <u>2,231,241</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>20L1</u> Elevation Ground surface: <u>Not documented</u>
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Depth to water: Not documented (Ground surface)

DECOMMISSIONING ACTIVITIES

- 1) Inspect site for safe operating conditions. Rehabilitate as needed.*
 - 2) Establish presence of casing. If casing is absent, place a cement plug at bottom of pit as determined in field. Fill to grade w/native soil.
 - 3) If casing is present or cement goes downhole, establish depth to bottom. If plugged test stability of plug using a sample hammer or other suitable wireline weight.
 - 4) If plug fails, push to bottom or refusal using the wireline weight.
 - 5) Cut casing at approximately 60-ft below grade or where plugged.
 - 6) Remove casing from hole if possible. If not possible, perforate casing as determined in field to within 6-ft of ground surface.
 - 7) Fill open casing, perforated casing or open hole with bentonite crumbles or pellets to within 3-6-ft of ground surface. Filling may be done as casing is pulled as determined in field.
 - 8) Cut any remaining casing at approximately 3-6-ft below ground surface.
 - 9) Place a cement cap and fill to grade with native soil.
- NOTE: Order of work and depths may require alteration depending on field conditions.
- * All surface work must conform to conduct of operations requirements of this document.

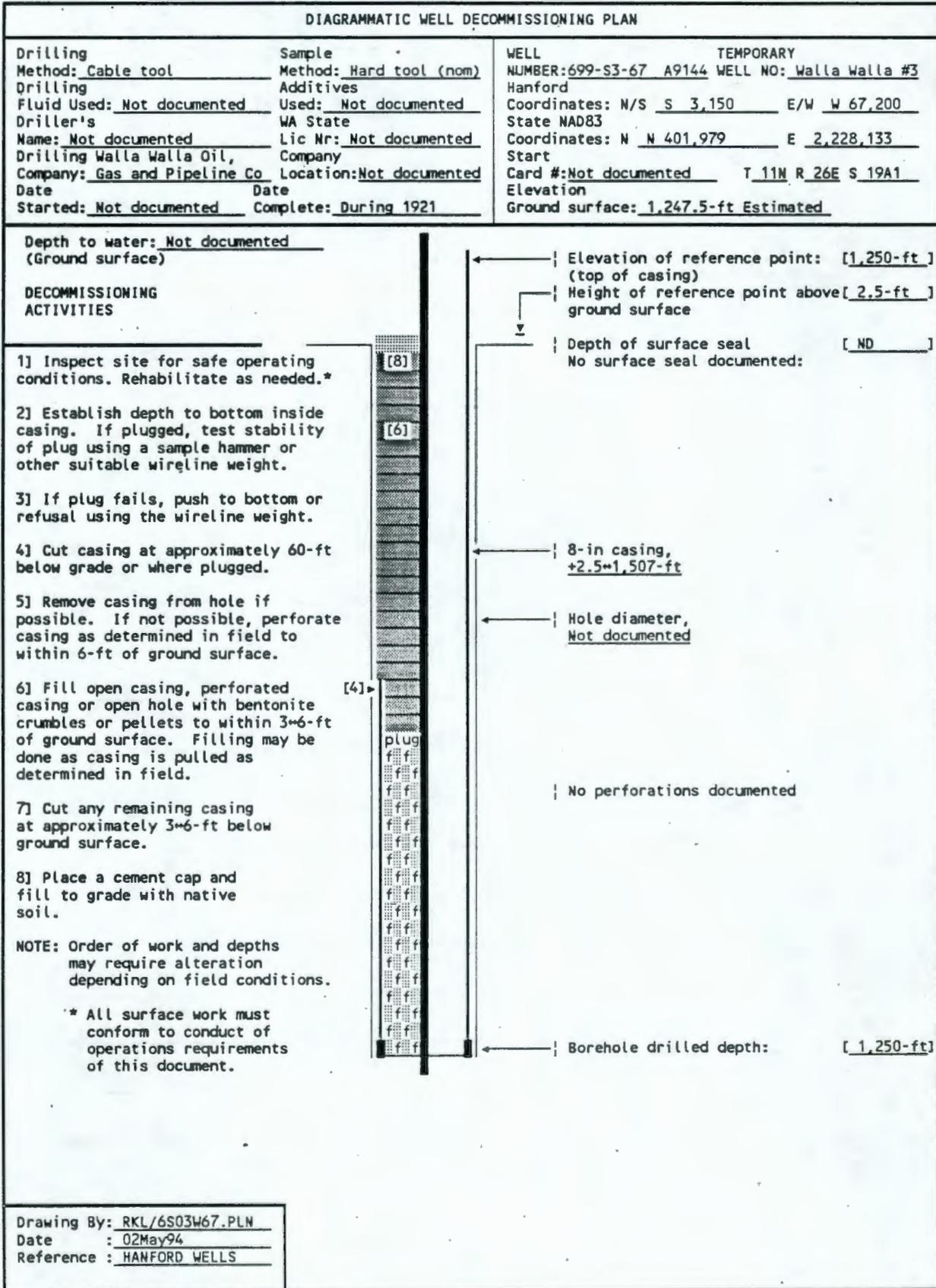


Drawing By: RKL/6S06W64.PLN
 Date: 02May94
 Reference: HANFORD WELLS

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S3-67</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Capped w/screw cap.	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> <u>ND</u> <input type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> <u>No</u> <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9. Was drilling/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9a. Drilling/equipment casing/screen cleaned? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> <u>N/A</u> <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Has driller's log	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S3-67</u> Page 2 of 2
11. Is design and construction IAW WAC 173-160-540? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> Not applicable	
13. Data Sources Used:	
Logs:	
Driller's: <u>Not documented</u>	Date: _____ Company: _____
Geologist: <u>N/A</u>	Date: _____ Company: _____
Geophysical: <u>N/A</u>	Date: _____ Company: _____
Television: <u>N/A</u>	Date: _____ Company: _____
Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>	
Databases: <u>N/A</u>	
Field Check: <u>WHC SIS</u>	Date: <u>07/26/93</u> Company: _____
Other: _____ _____ _____	
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____	
15. Status	
Well is acceptable for intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> Gas field is depleted
Well is acceptable for intended use if variance is granted	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> Construction is unacceptable
Rehabilitation required to continue intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> No value
Remediation required to achieve intended use	<input type="checkbox"/> <u>No</u> <input checked="" type="checkbox"/> Gas field depleted
Decommission, well is unneeded or cannot be remediated	<input checked="" type="checkbox"/> <u>Yes</u> <input type="checkbox"/> Well is unneeded
Other: _____	
16. Status Recommendation	
Done By: Name: <u>R. K. Ledgerwood</u>	Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>

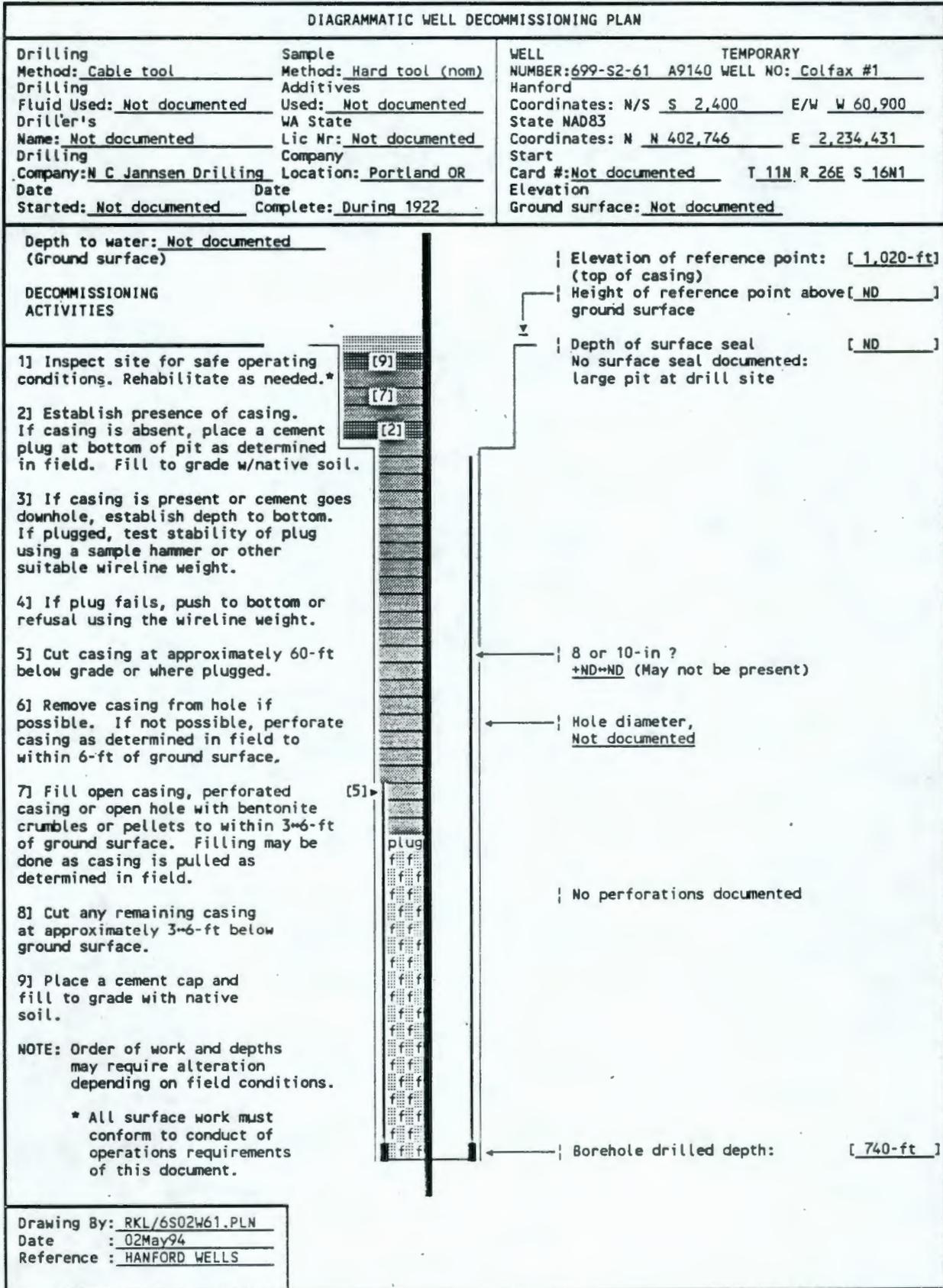
WELL CONSTRUCTION AND COMPLETION SUMMARY		
<p>Drilling Method: <u>Cable tool</u></p> <p>Drilling Fluid Used: <u>Not documented</u></p> <p>Driller's Name: <u>Not documented</u></p> <p>Drilling Company: <u>Gas and Pipeline Co</u></p> <p>Date Started: <u>Not documented</u></p>	<p>Sample Method: <u>Hard tool (nom)</u></p> <p>Additives Used: <u>Not documented</u></p> <p>WA State Lic Nr: <u>Not documented</u></p> <p>Company Location: <u>Not documented</u></p> <p>Date Complete: <u>During 1921</u></p>	<p>WELL NUMBER: <u>699-S3-67 A9144</u> TEMPORARY WELL NO: <u>Walla Walla #3 Hanford</u></p> <p>Coordinates: N/S <u>S 3,150</u> E/W <u>W 67,200</u></p> <p>State NAD83 Coordinates: N <u>W 401,979</u> E <u>2,228,133</u></p> <p>Start Card #: <u>Not documented</u> T <u>11N R 26E S 19A1</u></p> <p>Elevation Ground surface: <u>1,247.5-ft Estimated</u></p>
<p>Depth to water: <u>Not documented</u> (Ground surface)</p> <p>GENERALIZED STRATIGRAPHY</p> <p>Driller's Log</p>	<p style="text-align: right;">Elevation of reference point: [<u>1,250-ft</u>] (top of casing)</p> <p style="text-align: right;">Height of reference point above [<u>2.5-ft</u>] ground surface</p> <p style="text-align: right;">Depth of surface seal [<u>ND</u>] No surface seal documented:</p> <p style="text-align: right;">8-in casing, <u>+2.5=1,507-ft</u></p> <p style="text-align: right;">Hole diameter, <u>Not documented</u></p> <p style="text-align: center;">No perforations documented</p> <p style="text-align: right;">Borehole drilled depth: [<u>1,250-ft</u>]</p>	
<p>0-90: CLAY and GRAVEL, some BASALT</p> <p>90-175: Gray BASALT</p> <p>175-260: White SILICA</p> <p>260-705: Gray BASALT</p> <p>705-795: Blue SHALE or SOAPSTONE</p> <p>795-1,400: Gray BASALT</p> <p>1,400-1,507: Not documented</p> <p>DRILLING NOTE: Gas encountered at 782-ft. Well was plugged in shooting.</p>		
<p>Drawing By: <u>RKL/6S03W67.ASB</u></p> <p>Date : <u>29Apr94</u></p> <p>Reference : <u>HANFORD WELLS</u></p>		



RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S2-61</u> Page 1 of 2
2. Has a need for use of the well been identified and documented? <input type="checkbox"/> No <input type="checkbox"/> No identified user	
3. Is well presently in use? <input type="checkbox"/> No <input type="checkbox"/> Well is abandoned	
4. Is casing sealed in accordance with IAW WAC 173-160-075? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
4a. Natural barriers preserved? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
4b. Aquifer/strata penetrated permanently sealed? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
4c. Annulus sealed against surface water? <input type="checkbox"/> No <input type="checkbox"/> No surface or annular seal	
4d. Casing overlap more than 8 ft; packed and grouted? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
5. If not in use, is well capped IAW WAC 173-160-085? <input type="checkbox"/> Yes <input type="checkbox"/> Capped w/screw cap.	
6. Is design and construction IAW WAC 173-160-500? <input type="checkbox"/> N/A <input type="checkbox"/> Well in gas well, not resource protection well	
6a. Saturated formation/aquifers not connected? <input type="checkbox"/> ND <input type="checkbox"/> Not documented	
6b. Cuttings/development water handled IAW WAC 173-303? <input type="checkbox"/> N/A <input type="checkbox"/> Drilled before applicable date of WAC 173-303	
6c. Well properly identified? <input type="checkbox"/> No <input type="checkbox"/> No permanent identification	
7. Is surface protection IAW WAC 173-160-510? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7a. Well capped and protected? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7b. Protective posts, surface pad or cover installed? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7c. Surface protection waived or variance obtained? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
7d. Is existing surface protection damaged? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
8. Are casing materials IAW 173-160-520? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
9. Was drill rig/drilling equipment cleaned IAW WAC 173-160-530? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
9a. Drill rig/equipment casing/screen cleaned? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
9b. Filter pack cleaned? Material compatible? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
RCRA/CERCLA MONITORING WELL?	
10. Does water sample from vertical screened interval represent horizontal stratigraphy? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
10a. Screened interval documented? <input type="checkbox"/> N/A <input type="checkbox"/> Not applicable	
10b. Vertical lithology documented? <input type="checkbox"/> Yes <input type="checkbox"/> Has driller's log	

RESOURCE PROTECTION GROUNDWATER WELL STRUCTURE FITNESS FOR USE CHECKLIST	1. Well No. <u>699-S2-61</u> Page 2 of 2																		
11. Is design and construction IAW WAC 173-160-540? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11a. Screen commercially fabricated of material nonreactive to subsurface conditions? <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11b. If filter pack installed, extends from bottom of screen to at least 3 ft above screen. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11c. Well has been developed. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
11d. Annulus grouted with bentonite or bentonite/cement mixture. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
12. Does water sample meet established acceptance criteria? Sample is less than 5 NTU and sand free. <input type="checkbox"/> <u>N/A</u> <input checked="" type="checkbox"/> <u>Not applicable</u>																			
13. Data Sources Used: Logs: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Driller's: <u>N C Janssen Drilling Co</u></td> <td style="width: 15%;">Date: <u>1922</u></td> <td style="width: 35%;">Company: _____</td> </tr> <tr> <td>Geologist: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> <tr> <td>Geophysical: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> <tr> <td>Television: <u>N/A</u></td> <td>Date: _____</td> <td>Company: _____</td> </tr> </table> Publications: Title, Author, Date <u>HANFORD WELLS, M. A. Chamness and J. K. Merz, August 1993</u>		Driller's: <u>N C Janssen Drilling Co</u>	Date: <u>1922</u>	Company: _____	Geologist: <u>N/A</u>	Date: _____	Company: _____	Geophysical: <u>N/A</u>	Date: _____	Company: _____	Television: <u>N/A</u>	Date: _____	Company: _____						
Driller's: <u>N C Janssen Drilling Co</u>	Date: <u>1922</u>	Company: _____																	
Geologist: <u>N/A</u>	Date: _____	Company: _____																	
Geophysical: <u>N/A</u>	Date: _____	Company: _____																	
Television: <u>N/A</u>	Date: _____	Company: _____																	
Databases: <u>N/A</u>																			
Field Check: <u>WHC SIS</u> Date: <u>07/26/93</u> Company: _____																			
Other: _____ _____ _____																			
14. Comments: Identify evaluation criteria addressed by number: <u>[15] Well is unneeded. Decommissioning required as part of</u> <u>Fitzner/Eberhart Arid Land Ecology Reserve cleanup program.</u> _____ _____ _____ _____ _____ _____																			
15. Status <table style="width: 100%; border: none;"> <tr> <td style="width: 45%;">Well is acceptable for intended use</td> <td style="width: 5%;">(<u>No</u>)</td> <td style="width: 50%;"><u>Gas field is depleted</u></td> </tr> <tr> <td>Well is acceptable for intended use if variance is granted</td> <td>(<u>No</u>)</td> <td><u>Construction is unacceptable</u></td> </tr> <tr> <td>Rehabilitation required to continue intended use</td> <td>(<u>No</u>)</td> <td><u>No value</u></td> </tr> <tr> <td>Remediation required to achieve intended use</td> <td>(<u>No</u>)</td> <td><u>Gas field depleted</u></td> </tr> <tr> <td>Decommission, well is unneeded or cannot be remediated</td> <td>(<u>Yes</u>)</td> <td><u>Well is unneeded</u></td> </tr> <tr> <td>Other _____</td> <td>(_____)</td> <td>_____</td> </tr> </table>		Well is acceptable for intended use	(<u>No</u>)	<u>Gas field is depleted</u>	Well is acceptable for intended use if variance is granted	(<u>No</u>)	<u>Construction is unacceptable</u>	Rehabilitation required to continue intended use	(<u>No</u>)	<u>No value</u>	Remediation required to achieve intended use	(<u>No</u>)	<u>Gas field depleted</u>	Decommission, well is unneeded or cannot be remediated	(<u>Yes</u>)	<u>Well is unneeded</u>	Other _____	(_____)	_____
Well is acceptable for intended use	(<u>No</u>)	<u>Gas field is depleted</u>																	
Well is acceptable for intended use if variance is granted	(<u>No</u>)	<u>Construction is unacceptable</u>																	
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Decommission, well is unneeded or cannot be remediated	(<u>Yes</u>)	<u>Well is unneeded</u>																	
Other _____	(_____)	_____																	
16. Status Recommendation Done By: Name: <u>R. K. Ledgerwood</u> Title: <u>Principal Scientist</u> Date: <u>05/04/94</u>																			

WELL CONSTRUCTION AND COMPLETION SUMMARY		
Drilling Method: <u>Cable tool</u> Fluid Used: <u>Not documented</u> Driller's Name: <u>Not documented</u> Company: <u>N C Janssen Drilling</u> Date Started: <u>Not documented</u>	Sample Method: <u>Hard tool (nom)</u> Additives Used: <u>Not documented</u> Lic Nr: <u>Not documented</u> Location: <u>Portland OR</u> Date Complete: <u>During 1922</u>	WELL NUMBER: <u>699-S2-61 A9140</u> TEMPORARY WELL NO: <u>Colfax #1</u> Hanford Coordinates: N/S <u>S 2,400</u> E/W <u>W 60,900</u> State <u>NAD83</u> Coordinates: N <u>N 402,746</u> E <u>2,234,431</u> Start Card #: <u>Not documented</u> T <u>11N</u> R <u>26E</u> S <u>16N1</u> Elevation Ground surface: <u>Not documented</u>
Depth to water: <u>Not documented</u> (Ground surface)		
GENERALIZED STRATIGRAPHY Driller's Log		Elevation of reference point: [<u>1,020-ft</u>] (top of casing) Height of reference point above [<u>ND</u>] ground surface
0-465: <u>Not documented</u> 465-658: <u>BASALT</u> 658-740: <u>SHALE</u> (Verbal from N C Janssen to W Warren)		Depth of surface seal [<u>ND</u>] No surface seal documented: large pit at drill site
Drawing By: <u>RKL/6S02W61.ASB</u> Date : <u>29Apr94</u> Reference : <u>HANFORD WELLS</u>		





WASHINGTON STATE DEPARTMENT OF
Natural Resources

JENNIFER M. BELCHER
Commissioner of Public Lands

KALEEN COTTINGHAM
Supervisor

October 19, 1993

Incoming 9206243

Mr. Randy Chang
U.S. Army Corps of Engineers
Building 618
City/County Airport
Walla Walla, WA 99362

Don Moak
Westinghouse Hanford Company
Box 1970 N3-05
Richland, WA 99352

Subject: Plugging wells, Rattlesnake Hills Gas Field

Dear Messrs. Chang and Moak:

This letter is to discuss the rationale and procedures as set forth in Washington state law, that could be used as a model for abandoning locatable wells in the depleted Rattlesnake Hills Gas Field (RSHGF). The applicable state laws are Chapter 73.52 of the Revised Code of Washington and Chapter 344-12-131 of the Washington Administrative Code (WAC) [attached].

Plugging the RSHGF wells using Washington State standards is not mandatory because all of the wells are grandfathered under Chapter 73.52.

The following discussion is based on a review of some drilling data, the literature, and our site inspection of October 1, 1993. The assumptions regarding regional groundwater chemistry and flow patterns presented below should be verified by your staff, and the plugging procedures should be amended on the basis of their technical recommendations.

Normally, Washington would not cause long-abandoned gas wells similar to those at the RSHGF to be plugged because the potential to remobilize formation fluids during plugging would outweigh the minuscule risk to ground water or to surface conditions. The "Flaming Geyser" well in King County and the "Burning Bush" well in suburbs near Bellingham are examples of wells that have continued to produce gas and salt water without significant degradation of the environment.

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However, we have identified four sets of conditions which could necessitate rigorous plugging procedures for the RSHGF wells: (1) Contamination of shallow, potable aquifers by upward migration of saline formation waters through the boreholes, (2) Increased lateral movement of groundwater that might mobilize radioactive contaminants in the adjacent Pasco Basin, (3) Contamination of groundwater by downward migration of pollutants such as fertilizers through the boreholes, and (4) Contamination of the surface or of the groundwater by upward migration of methane gas. Each set of conditions is described below:

(1) There is little or no potential to contaminate potable aquifers by upward migration of saline formation waters from strata above 2,000 feet drilled depth. Saline waters have not been observed above 2,000 feet in the Columbia Basin. This observation should be verified using the Westinghouse database.

There is potential to contaminate potable formation waters by upward migration of saline formation waters from aquifers below 2,000 feet. However, plugging procedures to preclude upward migration from deep aquifers would not be necessary if Westinghouse/USDOE can demonstrate that all aquifers above the bottom of the deepest RSHGF wells contain fresh water. If this cannot be demonstrated, then the two deeper wells should be plugged using standards outlined in WAC 344-12-131(6).

(2) Westinghouse Hanford and/or the USDOE should demonstrate that the RSHGF wells have not significantly increased lateral groundwater flow that might eventually mobilize groundwater or sediments contaminated with radioactive materials. During the October 1, 1993, meeting, a local hydrologist suggested that the Rattlesnake Hills are a groundwater recharge area for the Pasco Basin. If this assessment is correct, then plugging the RSHGF wells would not appreciably reduce regional permeability.

This tentative conclusion is based on our assumption that in order to serve as an effective aquifer recharge, the component of regional permeability in the Rattlesnake Hills area that results from fractures within the basalt would have to be much greater than the component of permeability resulting from the unplugged gas wells.

However, wells with demonstrable water flows should be plugged as a precaution to limit lateral migration. Washington's standards for plugging these wells are outlined in WAC 344-12-131.

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(3) The small potential to contaminate potable formation waters at RSHGF by downward migration of surficial pollutants could be reduced by placing surface plugs in the remaining open holes.

(4) Plugging to prevent methane gas contamination of the surface or of ground water is unnecessary because both gas producing zones were depleted before 1942. We understand that traces of methane have continued to leak out from some wells owing to residual gas saturations in the formation fluids. However, thorough plugging will not stop trace seepage that will occur along faults located directly southwest of the field or through macro-annuli around the exterior of well casings.

We also have the following suggestions on specific plugging procedures:

All wells that can be located should have cement surface plugs set in the hole and in all open annuli from 5 to 30 feet drilled-depth to prevent downward migration and "cratering" around the bore (WAC 344-13-131(6)). Filling the holes with drilling fluid is not advised because subnormal pressures may make circulation difficult or impossible to maintain. (Introduction of a 0.42 psi/ft fluid gradient may rupture natural seals that may have formed from Mabton Interbed claystones flowing into the boreholes a few months after operations ceased.) Similarly, you may have better luck using a foamed cement product for plugging the deeper wells. Surface cement pours would be acceptable for shallow wells. Blowout preventors would not be required. Casing should be cut off 5 feet below ground level and a 3/8-inch plate welded to the flange. The plate should be marked with the plugging date and well name.

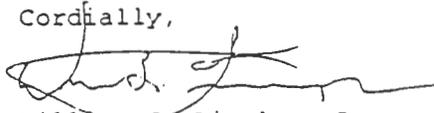
One reason that Westinghouse may have been unable to locate all of the RSHGF wells could be that several wells were given more than one name. (i.e., Westinghouse may have accounted for more wells than were actually drilled.) Ms. Lynn Moses, now with the Washington Department of Transportation in Olympia, was able to resolve several of these nomenclature problems by a thorough review of the literature and she may be of assistance.

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I have discussed the contents of this letter with Don Ford, acting Chairperson for the Washington State Oil and Gas Conservation Committee, who endorses these suggestions, and also questions the advisability of plugging these wells.

Cordially,



William S. Lingley, Jr.
Regulatory Programs Manager

cc Jennifer Belcher - Commissioner of Public Lands
Kaleen Cottingham - Supervisor, dept. of Natural Resources
Don Ford - Washington Oil & Gas Conservation Committee
Ray Lasmanis - Washington State Geologist

DISTRIBUTION SHEET

To:
DistributionFrom:
R. K. LedgerwoodDate:
May 19, 1994

Project Title/Work Order:

Activity Plan for Decommissioning Natural Gas Wells,
Fitzner/Eberhart Arid Land Ecology Reserve, Hanford Site
WHC-SD-EN-AP-173, Rev. 0EDT No.: ~~600221~~ 136145

ECN No.: NA

Name	MSIN	With Attachment	EDT/ECN & Comment	EDT/ECN Only
C. A. Brandt	K6-93	X		
J. W. Fassett	H6-06	X		
K. R. Fecht	H6-06	X		
K. A. Gano	X0-21	X		
M. G. Gardner (5)	N3-06	X		
C. H. Gunion	A5-20	X		
J. A. Hall	K6-93	X		
R. C. Havenor	N3-06	X		
R. K. Ledgerwood	N3-05	X		
S. P. Luttrell	K6-96	X		
D. J. Moak	N3-05	X		
W. D. Perro (3)	A5-19	X		
W. R. Thackaberry	H4-16	X		
SIS Records Center	N3-05	X		
EPIC (2) (1)	H6-08	X		
Central Files (2)	L8-04	X		

