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0024092

Final

Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 200-BP-1 Operable Unit
450 Hills Street, Richland, WA
August 27, 1992

FROM/APPROVAL: Allan C Harris Date 9/24/92
Allan Harris, 200-BP-1 Unit Manager, RL (A5-19)

APPROVAL: Douglas P Sherwood for Date 9/24/92
Paul Beaver, 200-BP-1 Unit Manager, EPA (B5-01)

APPROVAL: Dib Goswami Date 9/24/92
Dib Goswami, 200-BP-1 Unit Manager, WA Department of Ecology

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Meeting Minutes are attached. Minutes are comprised of the following:

Attachment #1 - Meeting Summary/Summary of Commitments and Agreements
Attachment #2 - Agenda for the Meeting
Attachment #3 - Attendance List
Attachment #4 - Status of Action Items
Attachment #5 - Document Change Control Form #26
Attachment #6 - Various Analyte Lists and Analyses
Attachment #7 - 200-BP-1 Well Remediation Activities
Attachment #8 - 200-BP-1 Sorption/Column Leach Testing
Attachment #9 - 200-BP-1 Sample Validation Summary
Attachment #10 - 200-BP-1 Cone Penetrometer Locations
Attachment #11 - Cone Penetrometer Test Results
Attachment #12 - Site Development and Infrastructure Planning Overview
Attachment #13 - 200-BP-1 Operable Unit

OCT 1992
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Prepared by: Suzanne Clarke Date: 9/24/92
Suzanne Clarke, Kay Kimmel, GSSC (A4-35)

Concurrence by: Mark Buckmaster Date: 9/24/92
Mark Buckmaster, WHC RI Coordinator (H4-55)

Attachment #1

Meeting Summary and Summary of Commitments and Agreements
Unit Manager's Meeting: 200-BP-1 Operable Unit
August 27, 1992

1. SIGNING OF THE JULY 200-BP-1 MEETING MINUTES:

   Minutes from the July meeting were reviewed and approved with one change.

2. ACTION ITEM UPDATE: (See Attachment 4 for status)

   All Action Items were closed at the July meeting.

3. NEW ACTION ITEMS (INITIATED August 27, 1992): No new action items initiated.

4. STATUS OF REMEDIAL INVESTIGATION TASKS:

   - RI Status

     - Work Plan Changes to the QAPjP were described by Mark Buckmaster (see Document Change Control Form #26 - attachment #5).

     - Attachment #6 was provided for the minutes and provides analyte and analysis information.

     - 200-BP-1 Well Remediation Activities: Well remediation activities were presented by M. Buckmaster and are outlined in attachment #7.

     - 200-BP-1 Sorption/Column Leach Testing: The update of these activities was presented by M. Buckmaster and is outlined in attachment #8.

     - Sample Validation Summary: See attachment #9.

   - Issues

     - Cone Penetrometer Status: Dennis Myers presented the data from the in-situ characterization probe demonstration (see attachments #10 & 11).

     - Land Use: Boyd Hathaway presented the present and projected future land use of the 200 area (see attachment #12).

     - Risk Assessment Update: Douglas Morell presented present and future land use for the purpose of risk assessment (see attachment #13).

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5. INFORMAL TRANSMITTALS: The following documents were informally transmitted to the regulators:

   - "200-BP-1 Borehole Summary Report for Task 2, 4, and 6"
   - "Summary of the Geology of the 200-BP-1 Operable Unit"
   - "Aquifer Test Report for Wells 699-49-57B, 699-52-54, 699-52-57, and 699-53-55C, 200-BP-1 Operable Unit".

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Attachment #2

200-BP-1 UNIT MANAGERS MEETING AGENDA
AUGUST 27, 1992
1:00-2:00 PM
450 HILLS ST., ROOM 47

Introduction:

Status:

- Action Items:
- Work Plan Changes:
  - o QAPP Modifications
- Remedial Investigation:
  - o Well Remediation
  - o Column/Sorption Testing
  - o Chemical Data Status
- Issues:
  - o Cone Penetrometer
  - o Land Use
- Agreements and Commitments:

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Attachment #3

200-BP-1 Operable Unit Manager's Meeting
Official Attendance Record
August 27, 1992

Please print clearly and use black ink

PRINTED NAME	SIGNATURE	ORGANIZATION	O.U. ROLE	TELEPHONE
KAY KIMMEL	Kay Kimmel	SWEC	GSSC	509-372-0610
Hal Downey	H.D. Downey	WHC	E.R. Program office	509-376-5539
M.A. Buckmaster	M.A. Buckmaster	WHC	RI Coor	509-376-1792
Paul Beaver	Paul Beaver	EPA	Unit Mgr	376-8665
Dib Goswami	D Goswami	Ecology	UM.	546-4301
NANCY UZIEMBLO	Nancy Uziembło	Ecology	UM	546-2999
Steven W. Clark	Steven W. Clark	WHC	Risk Assessment	509-376-1883
Bill Kane	William F. Kane	Parametrix	Ecology Support	206-822-8880
Dennis R. MYERS	D.R. Myers	WHC	TECH. DEVEL	509-376-1723
Bruce R Cassem	B. Cassem	WHC	ARID-ID	376-1007
Len Collard	L.B. Collard	WHC	groundwater modeling	376-1032
Audree DeAngeles	Audree DeAngeles	PRC	EPA Support	206-624-2692
Ward Staubitz	Ward Staubitz	USGS	EPA Support	206-593-6510
Jack Donnelly	[illegible]	WDOE	O.U.M.	546-2968
Ken HOFFMANN	Ken Hoffman	WHC	Proj. Geologist	509-376-9725
Darci Teel	Darci Teel	Ecology	OUM support	509 5452312
Douglas Morell	Douglas Morell	Golder Assoc.	WHC Support	(206) 883-8777
Jeff Phillips	Jeff Phillips	Ecology	UM	(509) 546-2968
Boyd Hathaway	H. Boyd Hathaway	WHC/Site Planning	Land use Planner	(509) 509-7340
G.R. Erickson	G.R. Erickson	GSSC	RL/Support	376-8189
A.C. Harris	A.C. Harris	DOE-RL	O.U. Mgr.	376-4339

Attachment #4

Action Item Status List
Unit Manager's Meeting: 200-BP-1 Operable Unit
August 27, 1992

ITEM NO.	ACTION/SOURCE OF ACTION	STATUS

None.

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Attachment #5

Change Number	APPROVED DOCUMENT CHANGE CONTROL FORM	Date
26	Do not use blue ink. Type, or print in black	July 30, 1992

Document Number & Title	Date Document Last Issued
DOE-RL 88-32, Rev. 1, "Remedial Investigation/Feasibility Study Work Plan for the 200-BP-1 Operable Unit, Hanford Site, Richland, Washington"	March 1990

Originator M. A. Buckmaster 8/26/92 Phone (509)376-1792
200-BP-1 RI Coordinator

Description of Change

1. Delete the following from the second sentence of paragraph 1 of Section 2.3 on page SAP/QAPP-6: "subject to controls of QI 7.3, "Source Surveillance and Inspection" (WHC 1989a).

2. As required by Section 3.0; page SAP/QAPP; revise Table 1 to reflect the detection limit, precision and accuracy requirements negotiated in the Statements of Work for analytical services. Revised Table 1 is attached.

3. Add the following to the fourth sentence of paragraph 1 of Section 4.1.2 on page SAP/QAPP-17: "or MRP 4.22 "Job Classification, Training and Indoctrination," as applicable."

4. Change the reference in the fifth sentence of paragraph 1 of Section 4.1.2 on page SAP/QAPP-17. from EII 1.6, "Records Management" (WHC 1989b) to WHC-CM-3-5 Section 5 (WHC 1990).

5. Change the last sentence in paragraph 1 of Section 11.0 on page SAP/QAPP-31 to the following: "When samples are analyzed using methods developed, the requirements for preventive maintenance of laboratory analytical equipment are as defined in the procured laboratory's QA plan(s)."

Note: Include affected page number

Justification and Impacts of Change

The above changes are required to correct errors and inaccuracies in the Quality Assurance Project Plan. These errors and inaccuracies are delineated in RL Audit Finding 91-03-WHC-02.

A. C. Harris _____ _____
DOE UNIT MANAGER DATE

D. R. Sherwood _____ _____
LEAD REGULATORY UNIT MANAGER DATE

Per Action Plan for Implementation of the Hanford Consent Order and Compliance Agreement, Section 9.3

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ANALYSIS: CLP TAL INORGANICS
REFERENCE DOCUMENT: CLP INORGANIC SOW

ANALYTE	CONTRACT REQUIRED DETECTION LIMITS[1,2] (ug/L)	PRECISION[3]	ACCURACY[4]
Aluminum	200		75-125
Antimony	60		75-125
Arsenic	10		75-125
Barium	200		75-125
Berylium	5		75-125
Cadmium	5		75-125
Calcium	5000		75-125
Chromium	10		75-125
Cobalt	50		75-125
Copper	25		75-125
Iron	100		75-125
Lead	5		75-125
Magnesium	5000		75-125
Manganese	15		75-125
Mercury	0.2		75-125
Nickel	40		75-125

ANALYTE	CONTRACT REQUIRED DETECTION LIMITS[1,2] (ug/L)	PRECISION[3]	ACCURACY[4]
Potassium	5000		75-125
Selenium	5		75-125
Silver	10		75-125
Sodium	5000		75-125
Thallium	10		75-125
Vanadium	50		75-125
Zinc	20		75-125

1. The CRDL's are determined in pure water. Detection limits for actual samples may be considerably higher depending on sample matrix.

2. No detection/quantitation limits are established for soil in the CLP Inorganic SOW.

3. Control limits: ±20 (expressed as RPD) for water and ±35% for soil for sample concentrations>5X CRDL; ±CRDL for water and ±2X for CRDL soil for one or both sample values<5X CRDL.

4. Accuracy is 75-125% for water and soil. However, control limits do not apply if sample concentration exceeds spike concentration by a factor of 4 or more.

ANALYSIS: CLP GC/MS VOLATILE ORGANICS
REFERENCE DOCUMENT: CLP ORGANIC SOW 187

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
Chloromethane	10	10
Bromomethane	10	10
Vinyl Chloride	10	10
Chloroethane	10	10
Methylene Chloride	5	5
Acetone	10	10
Carbon Disulfide	5	5
1,1 - Dichloroethene	5	5
1,1 - Dichloroethane	5	5
1,2 - Dichloroethane (total)	5	5
Chloroform	5	5
1,2 - Dichloroethane	5	5
2 - Butanone	10	10

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
1,1,1 - Trichloroethane	5	5
Carbon Tetrachloride	5	5
Vinyl Acetate	10	10
Bromodichloromethane	5	5
1,2 - Dichloropropane	5	5
cis - 1,3 - Dichloropropene	5	5
Trichloroehtene	5	5
Dibromochloromethane	5	5
1,1,2 - Trichloroethane	5	5
Benzene	5	5
trans - 1,3 Dichloropropene	5	5
Bromoform	5	5
4 -Methyl-2-pentanone	10	10
2-Hexanone	10	10
Tetrachloroethene	5	5
Toluene	5	5
1,1,2,2 - Tetrachloroethane	5	5
Chlorobenzene	5	5
Ethyl Benzene	5	5

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
Styrene	5	5
Xylenes (total)	5	5

1.Medium Soil/Sediment Contract Required Quantitation Limits for Volatile TCL Compounds are 125 times the individual Low Soil/Sediment Quantitation Limits.

2.Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

3.Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

CLP VOLATILE ORGANICS PRECISION AND ACCURACY[1]

ANALYTE	WATER		SOIL	
	PRECISON[2]	ACCURACY[3]	PRECISION[2]	ACCURACY[3]
1,1 - Dichloroethene	14	61-145	22	59-172
Trichloroethene	14	71-120	24	62-137
Benzene	11	76-127	21	66-142
Toluene	13	76-125	21	59-139
Chlorobenzene	13	75-130	21	60-133

1. The compounds presented in this Table have been selected to be representative of the Volatile Organic TCL. The precision and accuracy values given are advisory control limits only.

2. Expressed as Relative Percent Difference (RPD).

3. Expressed as percent recovery.

ANALYSIS: CLP GC/MS SEMI-VOLATILE ORGANIC
REFERENCE DOCUMENT: CLP ORGANIC SOW

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
Phenol	10	330
bis(2-Chloroethyl) ethyl	10	330
2 - Chlorophenol	10	330
1,3 - Dichlorobenzene	10	330
1,4 - Dichlorobenzene	10	330
Benzyl alcohol	10	330
1,2 - Dichlorobenzene	10	330
2 - Methylphenol	10	330
bis(2-Chloroisopropyl) ether	10	330
4 - Methylphenol	10	330
N - Nitroso-di-n-dipropylamine	10	330
Hexachloroethane	10	330
Nitrobenzene	10	330
Isophorone	10	330
2 - Nitrophenol	10	330
2,4 - Dimethylphenol	10	330

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
Benzoic acid	50	1600
bis(2-Chloroethoxy) methane	10	330
2,4 - Dichlorophenol	10	330
1,2,4 - Trichlorobenzene	10	330
Naphthalene	10	330
4 - Chloroaniline	10	330
Hexachlorobutadiene	10	330
4 - Chloro-3-Methylphenol (para-chloro-meta-cresol)	10	330
2 - Methylnaphthalene	10	330
Hexachlorocyclopentadiene	10	330
2,4,6 - Trichlorophenol	10	330
2,4,5 - Trichlorophenol	50	1600
2 - Chloronaphthalene	10	330
2 - Nitroaniline	10	1600
Dimethylphthalate	10	330
Acenaphthylene	10	330
2,6 - Dinitrotoluene	10	330
3 - Nitroaniline	50	1600
Acenaphthene	10	330

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
2,4 - Dinitrophenol	50	1600
4 - Nitrophenol	50	1600
Dibenzofuran	10	330
2,4 - Dinitrotoluene	10	330
Diethylphthalate	10	330
4 - Chlorophenyl-phenyl ehter	10	330
Fluorene	10	330
4 - Nitroaniline	50	1600
4,6 - Dinitro-2-methylphenol	50	1600
N - nitrosodiphenylamine	10	330
4 - Bromophenyl-phenyl ether	10	330
Hexachlorobenzene	10	330
Pentachlorophenol	50	1600
Phenanthrene	10	330
Anthracene	10	330
Di-n-butylphthalate	10	330
Fluoranthene	10	330
Pyrene	10	330
Butylbenzylphthalate	10	330

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
3,3' - Dichlorobenzidine	20	660
Benzo(a)anthracene	10	330
Chrysene	10	330
bis(2-Ethylhexyl) phthalate	10	330
Di-n-octylphthalate	10	330
Benzo(b)fluoranthene	10	330
Benzo(k)fluoranthene	10	330
Benzo(a)pyrene	10	330
Indeno(1,2,3-cd)pyrene	10	330
Dibenz(a,h)anthracene	10	330
Benzo(g,h,i)perylene	10	330

1.Medium Soil/Sediment Contract Required Quantitation Limits for Semi-Volatile TCL Compounds are 60 times the individual Low Soil/Sediment Quantitation Limits.

2.Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

3.Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

CLP SEMI-VOLATILE ORGANICS PRECISION AND ACCURACY[1]

ANALYTE	WATER		SOIL	
	PRECISON[2]	ACCURACY[3]	PRECISION[2]	ACCURACY[3]
Phenol	42	12-89	35	26-90
2 - Chlorophenol	40	27-123	50	25-102
1,4 - Dichlorobenzene	28	36-97	27	28-104
N - Nitroso-di-n-dipropylamine	38	41-116	38	41-126
1,2,4 - Trichlorobenzene	28	39-98	23	38-107
4 - Chloro-3-Methylphenol (para-chloro-meta-cresol)	42	23-97	33	26-103
Acenaphthylene	31	46-118	19	31-137
4 - Nitrophenol	50	10-80	50	11-114
2,4 - Dinitrotoluene	38	24-96	47	28-89
Pentachlorophenol	50	9-103	47	17-109
Pyrene	31	26-127	36	35-142

1. The compounds presented in this Table have been selected to be representative of the Semi-Volatile TCL. The precision and accuracy values given are advisory control limits only.

2. Expressed as Relative Percent Difference (RPD).

3. Expressed as percent recovery.

ANALYSIS: CLP PESTICIDES/PCB'S
REFERENCE DOCUMENT: CLP ORGANIC SOW

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
alpha-BHC	0.05	8.0
beta-BHC	0.05	8.0
delta-BHC	0.05	8.0
gamma-BHC (Lindane)	0.05	8.0
Heptachlor	0.05	8.0
Aldrin	0.05	8.0
Heptachlor epoxide	0.05	8.0
Endosulfan I	0.05	8.0
Dieldrin	0.10	16.0
4,4' - DDE	0.10	16.0
Endrin	0.10	16.0
Endosulfan II	0.10	16.0
4,4' - DDT	0.10	16.0
Methoxychlor	0.5	80.0
Endrin ketone	0.10	16.0
alpha-Chlordane	0.5	80.0

ANALYTE	WATER	LOW SOIL/SEDIMENT[1]
	CONTRACT REQUIRED QUANTITATION LIMIT[2] (uG/L)	CONTRACT REQUIRED QUANTITATION LIMIT[2,3] (uG/Kg)
gamma-Chlordane	0.5	80.0
Toxaphene	1.0	160.0
Aroclor-1016	0.5	80.0
Aroclor-1221	0.5	80.0
Aroclor-1232	0.5	80.0
Aroclor-1242	0.5	80.0
Aroclor-1248	0.5	80.0
Aroclor-1254	1.0	160.0
Aroclor-1260	1.0	160.0

1.Medium Soil/Sediment Contract Required Quantiitation Limits for Pesticide/PCB TCL compounds are 15 times the individual Low Soil/Sediment Quantitation Limit.

2.Specific quantitation limits are highly matrix dependent. The quantitation limits listed herein are provided for guidance and may not always be achievable.

3.Quantitation limits listed for soil/sediment are based on wet weight. The quantitation limits calculated by the laboratory for soil/sediment, calculated on dry weight basis as required by the contract, will be higher.

CLP PCB'S/PESTICIDES PRECISION AND ACCURACY[1]

ANALYTE	WATER		SOIL	
	PRECISON[2]	ACCURACY[3]	PRECISION[2]	ACCURACY[3]
gamma-BHC (Lindane)	15	56-123	50	46-127
Heptachlor	20	40-131	31	35-130
Aldrin	22	40-120	43	34-132
Dieldrin	18	52-126	38	31-134
Endrin	21	56-121	45	42-139
4,4' - DDT	27	38-127	50	23-134

1. The compounds presented in this Table have been selected to be representative of the PCB/Pesticide TCL. The precision and accuracy values given are advisory control limits only.

2. Expressed as Relative Percent Difference (RPD).

3. Expressed as percent recovery.

ANALYSIS	DETECTION LIMIT	UNITS
WATER AND OTHER AQUEOUS MATRICES		
Gross Alpha	3	pCi/l
Gross Beta	4	pCi/l
GEA - Co-58 Fe-59 Co-60 Cs-137 Eu-152 Eu-154 Eu-155	15 30 25 15 50 50 50	pCi/l
Tritium	400	pCi/l
C-14	200	pCi/l
Ni-59	30	pCi/l
Ni-63	15	pCi/l
Sr-89	5	pCi/l
Sr-90	2	pCi/l
Tc-99	15	pCi/l
I-129	5	pCi/l
I-131	5	pCi/l
Ra-226	2	pCi/l
Ra-228	3	pCi/l
Gross Radium	1	pCi/l
Th-230/232[1]	1	pCi/l
Isotopic Uranium (U-234, U-235, U-238)	1/isotope	pCi/l
Total Uranium (Laser Kenetic Phos.)	0.1	ug/l
Np-237	1	pCi/l
Pu-239/240	1	pCi/l
Pu-241	15	pCi/l
Am-241	1	pCi/l
Cm-244[1]	1	pCi/l

[1]Analysis only available from Weston as part of "Specific Radionuclide Identification...." Analyses

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ANALYSIS	DETECTION LIMIT	UNITS
USEPA 900 SERIES DRINKING WATER ANALYSES		
Gross Alpha/Gross Beta 900.0	3 Alpha 4 Beta	pCi/l
Alpha Emitting Radium Isotopes 903.0	1	pCi/l
Radioactive Strontium 905.0	10 Sr-89 2 Sr-90	pCi/l
Tritium 906.0	1000	pCi/l
Uranium - Fluorometric 908.1[2]	0.1	ug/l
[2]Laboratories use alternate procedure; Laser Kenetic Phosphoresence		

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ANALYSIS	DETECTION LIMIT	UNITS
SOIL AND OTHER MATRICES		
Gross Alpha	10	pCi/g
Gross Beta	15	pCi/g
GEA - Co-58	0.05	pCi/g
Fe-59	0.05	
Co-60	0.05	
Cs-137	0.1	
Eu-152	0.1	
Eu-154	0.1	
Eu-155	0.1	
Ra-226	0.1	
Ra-228	0.2	
Tritium	400	pCi/g
C-14	50	pCi/g
Ni-63	30	pCi/g
Sr-89	1	pCi/g
Sr-90	1	pCi/g
Tc-99	15	pCi/g
I-129 (TMA only)	2	pCi/g
Pb-210 (Soil only)	5	pCi/g
Total Radium (Weston only)	5	pCi/g
Th-230/232[1]	1	pCi/g
Uranium Isotopic (U-234, U-235, U-238)	1	pCi/g
Total Uranium (Laser Kenetic Phos.)	1	ug/g
Np-237	1	pCi/g
Pu-239/240	1	pCi/g
Pu-241	15	pCi/g
Am-241	1	pCi/g
Cm-244[1]	1	pCi/g

[1]Analysis only available from Weston as part of "Specific Radionuclide Identification...." Analyses

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RADIOCHEMICAL ANALYSES PRECISION AND ACCURACY[1]

Precision (expressed as Relative Percent Difference;RPD):

- ± 35% for Water and Soil Sample Matrices.

Accuracy (expressed as percent recovery):

- 30 - 105% for Water and Soil Sample Matrices. If sample activity is > 4x the spike activity, recovery limits do not apply.

1. Precision and Accuracy values based on acceptance criteria for duplicate and matrix spike/chemical yield analyses contained in the document titled "Data Validation for Radiological Analyses", dated June 18, 1991.

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TMA RADIONUCLIDE PROCEDURES

Pg	TEST TITLE	TMA PROCEDURE NUMBERS
	LIQUID ANALSYIS	
5	Gross Alpha Analysis at <60 pCi/l	EP-10
5	Gross Beta Analysis at <60 pCi/l	EP-10
5	Gamma Scan Determination at <60 pCi/l	RC-30
5	Specific Radionuclide Identification and Quantification at >60 pCi/l	NOT BID
5	Technetium-99 Analysis	RC-24 RC-604
5	Cesium-137 Analysis	RC-30
6	Cobalt-60 Analysis	RC-30
30	Isotopic Uranium	EP-70 EP-71 EP-5
30	Gross Alpha Analaysis at >60 pCi/l	EP-10
31	Gross Beta Analysis at >60 pCi/l	EP-10
31	Gamma Scan Determination at >60 pCi/l	RC-30
	AQUEOUS ANALYSIS	
31	Americium-241	EP-80 EP-90 EP-91 EP-92 EP-93 EP-5
21	Nickel-63	RC-609 RC-610
34	Carbon-14	RC-618
34	Iodine-129	RC-617 RC-605
35	Neptunium-237	RC-101A RC-622 EP-5
35	Strontium 89/90	RC-306 RC-303 RC-309 RC-304
35	Radium-226	EA-34
35	Radium-228	RC-30
36	Iron-59	RC-30
36	Cobalt-58	RC-30
36	Europium-152,154,155	RC-30

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

9 2 1 2 7 5 6 0 7 7 3

TMA RADIONUCLIDE PROCEDURES

AQUEOUS DRINKING WATER		
8	Gross Alpha/Gross Beta EPA 900.0	EP-10
8	Radium (Total Radium) EPA 903.0	EA-34
8	Sr-89/Sr-90 EPA 905.0	RC-306 RC-303 RC-309 RC-304
8	Tritium EPA 906.0	EP-20
9	Uranium EPA 908.0	[1]
9	Gross Radium Gamma Scan EPA 900.0	[1]
SOLIDS		
6	Gross Alpha Analysis at <60 pCi/g	EA-82
6	Gross Beta Analysis at <60 pCi/g	EA-82
6	Gamma Scan Determination at <60 pCI/g	RC-30
6	Specific Radionuclide Identification and Quantification at >60 pCi/g	NOT BID
OTHER		
34	Americium-241	EP-80 EP-90 EP-91 EP-92 EP-93 EP-5
28	Nickel-63	RC-609 RC-610
35	Carbon-14	RC-618 EA-85 EA-85A
35	Neptunium-237	RC-101A RC-622 EP-5
37	Iron-59	RC-30
37	Cobalt-58	RC-30
37	Europium-152,154,155	RC-30

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

9 2 1 2 7 3 6 0 7 7 4

TMA RADIONUCLIDE PROCEDURES

SOILS		
7	Sr-89/Sr-90	RC-306 RC-303 RC-309 RC-304
7	Technetium-99	RC-24 RC-604
7	Cesium-137	RC-30
7	Cobalt-60	RC-30
7	Radium (228)	RC-30
8	Tritium	EA-48
8	Uranium	EP-70 EP-71 EP-5
32	Isotopic Uranium	EP-70 EP-71 EP-5
32	Total Uranium	KPA EA-01C
32	Gross Alpha Anlaysis at >60 pCi/g	EA-82
33	Gross Beta Anlaysis at >60 pCi/g	EA-82
33	Gamma Scan Determination at >60 pCi/g	RC-30
33	Americium-241	EP-80 EP-90 EP-91 EP-92 EP-93 EP-5
33	Nickel-63	RC-609 RC-610
34	Carbon-14	EA-85 EA-85A
34	Neptunium-237	RC-101A RC-622 EP-5
36	Iron-59	RC-30
36	Cobalt-58	RC-30
36	Europium-152,154,155	RC-30

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

9 2 1 2 7 3 6 0 7 7 5

TMA RADIONUCLIDE PROCEDURES

WATER SOIL & OTHER		
26	Carbon-14	RC-618 EA-85 EA-85A
236	Uranium Isotopes	EP-70 EP-71 EP-5
26	Iodine in Milk & Water (I-131) (w,o)	EA-23 EA-77
27	Iodine in Vegetation (I-129) (o)	RC-25 RC-605
27	Strontium in Feedstuff (o)	RC-301 RC-302
27	Gross Alpha, Gross Beta in Vegetation and Marine Organisms	EA-41
27	Lead-210 (s)	EA-121
27	Alpha Spectroscopy for Pu, U, Am, CM - Marine Organisms	EP-70 EP-71 EP-80 EP-81 EP-90 EP-91 EP-92 EP-93 EP-5
28	Nickel-59 in Water (w)	RC-609 RC-610
28	Plutonium-241	EP-80 EP-81 EP-5 RC-108
28	Strontium in Fish and Shellfish - Sr 89,90	NO BID
28	I-131 in Milk and Water (w,o)	EA-23 EA-77
28	Total Uranium	KPA EA-01C
29	Pu-238, 239, 240, 242	EP-80 EP-81 EP-5
29	Cesium-137	RC-30
29	Cobalt-60	RC-30
29	Gamma Scan	RC-30
29	Radium (228)	RC-30
29	Technetium-99	RC-24 RC-604
30	Tritium	EA-48

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

9 2 1 2 7 3 6 0 7 7 6

WESTON RADIONUCLIDE PROCEDURES

TEST #	TEST TITLE	TELEDYNE PROCEDURE #	ECOTEK PROCEDURE #
	LIQUID ANALYSIS		
18	Gross Alpha Analysis at <60 pCi/l	PRO-032-1	RL-2302
19	Gross Beta Analysis at <60 pCi/l	PRO-032-1	RL-2302
20	Gamma Scan Determination at <60 pCi/l	PRO-042-5	RL-4303 RL-4304
21	Specific Radionuclide Identification and Quantification at >60 pCi/l	PRO-032-16 PRO-052-35 PRO-042-5 PRO-052-32 PRO-022-65 PRO-032-67	RL-2320 RL-2311 RL-2325 RL-2318 RL-2322 RL-2326 RL-2307
22	Technetium-99 Analysis	PRO-032-78	RL-2317
23	Cesium-137 Analysis	PRO-042-5	RL-4304 RL-4303
24	Cobalt-60 Analysis	PRO-042-5	RL-4303 RL-4304
169	Isotopic Uranium	PRO-052-32	RL-2322
170	Gross Alpha Analaysis at >60 pCi/l	PRO-032-1	RL-2302
171	Gross Beta Analysis at >60 pCi/l	PRO-032-1	RL-2302
172	Gamma Scan Determination at >60 pCi/l	PRO-042-5	RL-4303 RL-4304
	AQUEOUS ANALYSIS		
187	Americium-241	PRO-052-32 or PRO-062-109	RL-2326
188	Nickel-63	PRO-032-37	RL-2329
193	Carbon-14	PRO-032-82	RL-2301-A
194	Iodine-129	PRO-032-90	RL-2306
195	Neptunium-237	PRO-042-5[2]	RL-2307
196	Strontium 89/90	PRO-032-16	RL-2314
197	Radium-226	PRO-022-65	RL-2151 RL-2313 RL-4306
198	Radium-228	PRO-032-67	RL-2151 RL-2313 RL-4306
204	Iron-59	PRO-042-5	RL-4303 RL-4304
205	Cobalt-58	PRO-042-5	RL-4303 RL-4304
206	Europium-152,154,155	PRO-042-5	RL-4303 RL-4304

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

WESTON RADIONUCLIDE PROCEDURES

TEST #	TEST TITLE	TELEDYNE PROCEDURE #	ECOTEK PROCEDURE #
	AQUEOUS: DRINKING WATER ANALYSES		
36	Gross Alpha/Gross Beta EPA 900.0	PRO-032-302	RL-2302
37	Radium (226) EPA 903.0	PRO-032-81	Not Bid
38	Sr-89/Sr-90 EPA 905.0	PRO-032-16	Not Bid
39	Tritium EPA 906.0	PRO-052-35[2]	RL-2320
40	Uranium ~~EPA 908.0~~ EPA 908.1	PRO-032-89	RL-2323
	SOLIDS		
25	Gross Alpha Analysis at <60 pCi/g	PRO-032-15	RL-2302
26	Gross Beta Analysis at <60 pCi/g	PRO-032-15	RL-2302
27	Gamma Scan Determination at <60 pCI/g	PRO-042-5	RL-4303 RL-4304
28	Specific Radionuclide Identification and Quantification at >60 pCi/g	PRO-032-16 PRO-052-35 PRO-042-5 PRO-052-32 PRO-022-65 PRO-032-67	RL-2320 RL-2311 RL-2325 RL-2318 RL-2322 RL-2326 RL-2307
	OTHER		
189	Americium-241	PRO-052-32 or PRO-062-109	RL-2326
190	Nickel-63	PRO-032-37	RL-2329
199	Carbon-14	PRO-032-80	RL-2301-A
200	Neptunium-237	PRO-042-5[2]	RL-2307
207	Iron-59	PRO-042-5	RL-4303 RL-4304
208	Cobalt-58	PRO-042-5	RL-4303 RL-4304
209	Europium-152,154,155	PRO-042-5	RL-4303 RL-4304

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

WESTON RADIONUCLIDE PROCEDURES

TEST #	TEST TITLE	TELEDYNE PROCEDURE #	ECOTEK PROCEDURE #
	SOILS		
29	Sr-89/Sr-90	PRO-032-38 PRO-032-25	RL-2314
30	Technetium-99	PRO-032-78	RL-2317
31	Cesium-137	PRO-042-5	RL-4304 RL-4304
32	Cobalt-60	PRO-042-5	RL-4303 RL-4304
33	Radium (total)	PRO-042-5	RL-2151 RL-2313 RL-4306
34	Tritium	PRO-052-35[2] PRO-052-57	RL-2320
35	Uranium (total)	PRO-042-5	RL-2323
178	Isotopic Uranium	PRO-052-32	RL-2322
179	Total Uranium	PRO-042-5	RL-2323
180	Gross Alpha Anlaysis at >60 pCi/g	PRO-032-15	RL-2302
181	Gross Beta Anlaysis at >60 pCi/g	PRO-032-15	RL-2302
182	Gamma Scan Determination at >60 pCi/g	PRO-042-5	RL-4303 RL-4304
185	Americium-241	PRO-052-32 or PRO-062-109	RL-2326
186	Nickel-63	PRO-032-37	RL-2329
191	Carbon-14	PRO-032-80	RL-2301-A
192	Neptunium-237	PRO-042-5[2]	RL-2307
201	Iron-59	PRO-042-5	RL-4303 RL-4304
202	Cobalt-58	PRO-042-5	RL-4303 RL-4304
203	Europium-152,154,155	PRO-042-5	RL-4303 RL-4304

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

WESTON RADIONUCLIDE PROCEDURES

TEST #	TEST TITLE	TELEDYNE PROCEDURE #	ECOTEK PROCEDURE #
	WATER SOIL & OTHER		
146	Carbon-14	PRO-032-80(s,o) PRO-032-82[1](w)	RL-2301-A
147	Uranium Isotopes	PRO-052-32	RL-2322
148	Iodine in Milk - I-131 (o)	PRO-032-11	Not Bid
149	Iodine in Vegetation - I-131 (o)	PRO-032-12[1]	Not Bid
150	Strontium in Feedstuff (o)	PRO-032-23	RL-2314
151	Gross Alpha, Gross Beta in Vegetation and Marine Organisms	PRO-032-26	Not Bid
152	Lead-210 (s)	PRO-032-30	Not Bid
153	Alpha Spectroscopy for Pu, U, Am, CM - Marine Organisms	PRO-052-32	RL-2326 RL-2322 RL-2325
154	Nickel-59 in Water (w)	PRO-032-79	RL-2329
155	Plutonium-241	PRO-052-84	RL-2325[2]
156	Strontium in Fish and Shellfish - Sr 89,90 (o)	PRO-032-85	Not Bid
157	I-131 in Milk and Water (w,o)	PRO-032-11	Not Bid
158	Total Uranium	PRO-032-89(w) PRO-042-5(s,o)	RL-2323
159	Pu-238, 239, 240, 242	PRO-052-32	RL-2325
160	Cesium-137	PRO-042-5	RL-4303 RL-4304
161	Cobalt-60	PRO-042-5	RL-4303 RL-4304
162	Gamma Scan	PRO-042-5	RL-4303 RL-4304
163	Radium Total (w,s)	PRO-032-81(w) PRO-042-5(s)	RL-2151 RL-2313 RL-4306
164	Technetium-99	PRO-032-78	RL-2317
165	Tritium	PRO-052-35[2] PRO-052-57(s,o)	RL-2320

[1]Procedure not yet provided. [2]Procedure incomplete or unsuitable.

GENERAL CHEMISTRY ANALYSES

Method #	Analyte	Detection Level (mg/L)[1]	Accuracy	Precision
EPA 300.0	chloride	0.25	75-125	± 20
300.0	fluoride	0.50	75-125	±20
300.0	nitrate	0.25	75-125	±20
300.0	nitrite	0.25	75-125	±20
300.0	phosphate	0.25	75-125	±20
300.0	sulfate	0.25	75-125	±20
EPA 350.3	ammonia (as N)	0.10	75-125	±20
SW-846 9010 / CLP	cyanide (tot)	0.01	75-125	±20

[1] Detection levels are highly matrix dependent and may not always be achievable in all matrices. Detection levels are not specified for non-aqueous and soil matrices and will be higher.

GENERAL CHEMISTRY ANALYSIS

Method #	Analyte	Detection Level (mg/kg)[1]	Accuracy	Precision
EPA 300.0	Chloride	1.25	75-125	± 35
EPA 300.0	Fluoride	2.5	75-125	± 35
EPA 300.0	Nitrate	1.25	75-125	± 35
EPA 300.0	Nitrite	1.25	75-125	± 35
EPA 300.0	Phosphate	1.25	75-125	± 35
EPA 300.0	Sulfate	1.25	75-125	± 35

[1] The method referenced does not specify detection limits for soil. Detection levels are highly matrix dependent and may not be achievable in all samples.

Attachment #7

200-BP-1 WELL REMEDIATION ACTIVITIES

Well Remediation:

- o Remediation activities have begun on the 5 remaining wells
- o Currently working on 299-E-33-24 (Webster Completion).
- o The remaining wells: 299-E33-12, 299-E33-13, 299-E33-15, 299-E33-18.
- o Tentative schedule to complete all remediation activities is the end of September.

9 2 1 2 7 3 6 0 7 3 3

Attachment #8

200-BP-1 SORPTION/COLUMN LEACH TESTING

Column Leach Testing:

- All testing has been completed.
- Preliminary results are schedule to be submitted by the end of September.

Sorption Testing:

- PNL QA review has been completed.
- Currently, procuring materials.
- Testing will begin in late September. Tentatively scheduled to be completed in November.

9 2 1 2 7 5 6 0 7 3 4

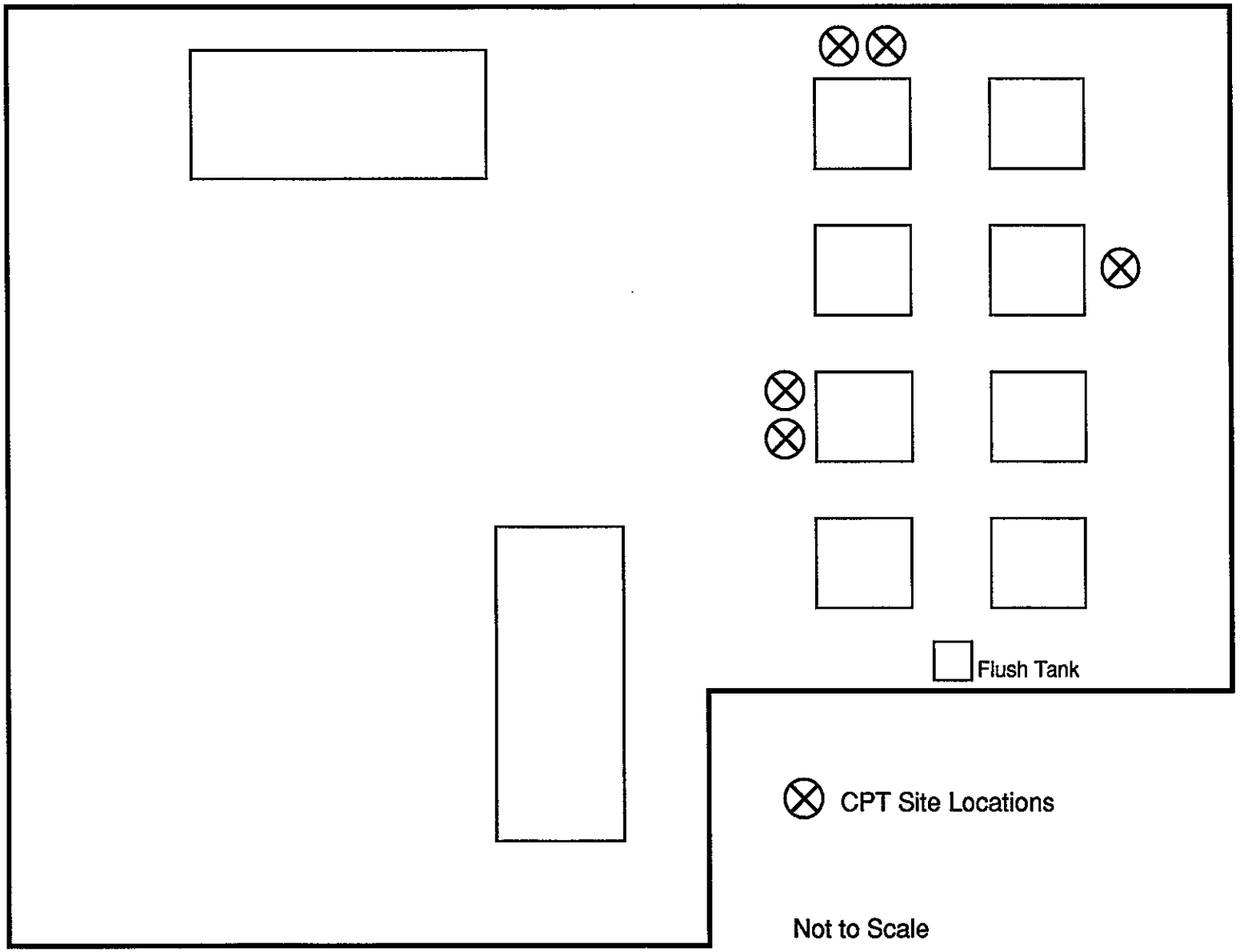
200-BP-1 SAMPLE VALIDATION SUMMARY

CHEMICAL SAMPLES					
Sample Type	Total Samples	Number of Samples Received from Laboratory	Total Validated Samples	Total Unvalidated Samples	Total Samples which have Partial Data Validated
2nd Quarter Groundwater	189	189	169	20	10
3rd Quarter Groundwater	133	133	131	2	0
4th Quarter Groundwater	113	113	87	26	0
Crib Samples	321	212	144	177	9

RADIOCHEMICAL SAMPLES					
Sample Type	Total Samples	Number of Samples Received from Laboratory	Total Validated Samples	Total Unvalidated Samples	Total Samples which have Partial Data Validated
2nd Quarter Groundwater	60	60	0	60	0
3rd Quarter Groundwater	52	52	0	52	0
4th Quarter Groundwater	43	43	0	43	0
Crib Samples	179	100	0	179	0

Attachment #9

200-BP-1
Cone Penetrometer Locations



MAB\M031692-A

Attachment #10

CONE PENETROMETER TEST RESULTS

- Successful penetration of salt cake
- Larger column for physical properties
- Cone penetrometer can provide access
- 6 of 13 soil attempts reached 20-66 feet
- 66 foot soil gas monitoring well at Z-9 crib
- Enhanced cone penetrometer program

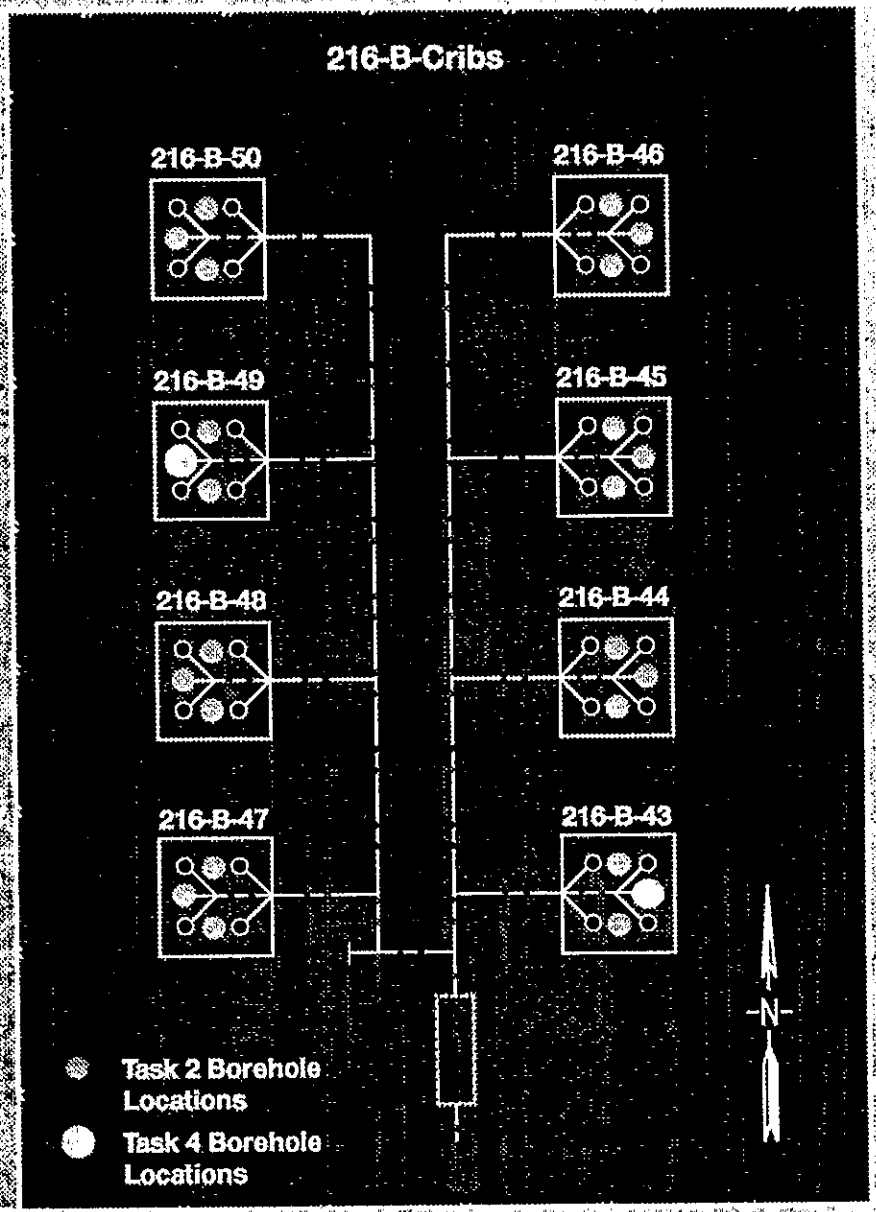
HOGEN01

IN SITU CHARACTERIZATION PROBE DEMONSTRATION

- Well Casing - 60 degree Conical Tip
- Four-inch diameter hollow probe
- Driven into five selected 200-BP-1 sites
- Target depth of 50-ft, one probe to 100-ft
- Proof-of-principal demonstration

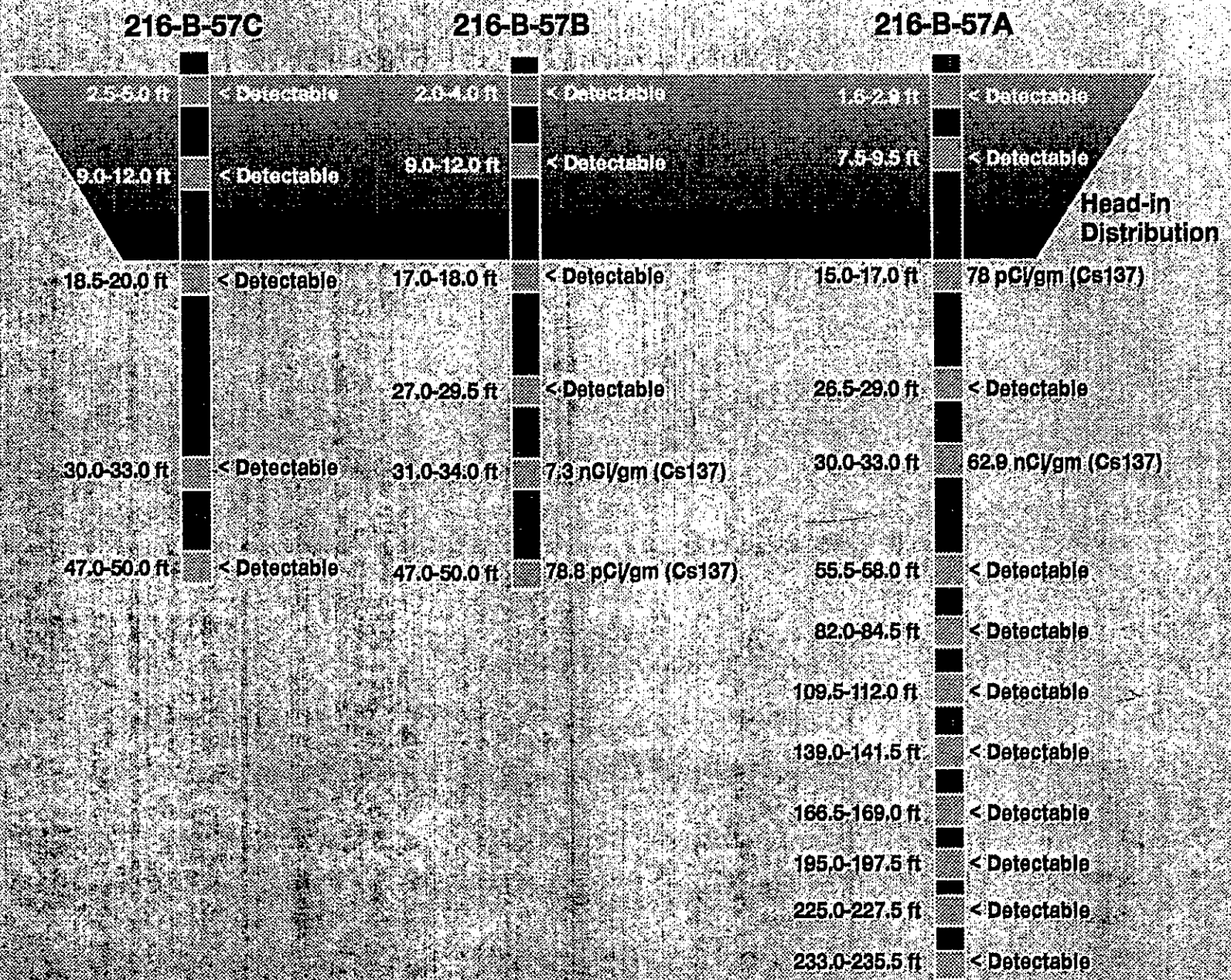
INSITU01

200-BP-1 Task-2/4 Work Scope

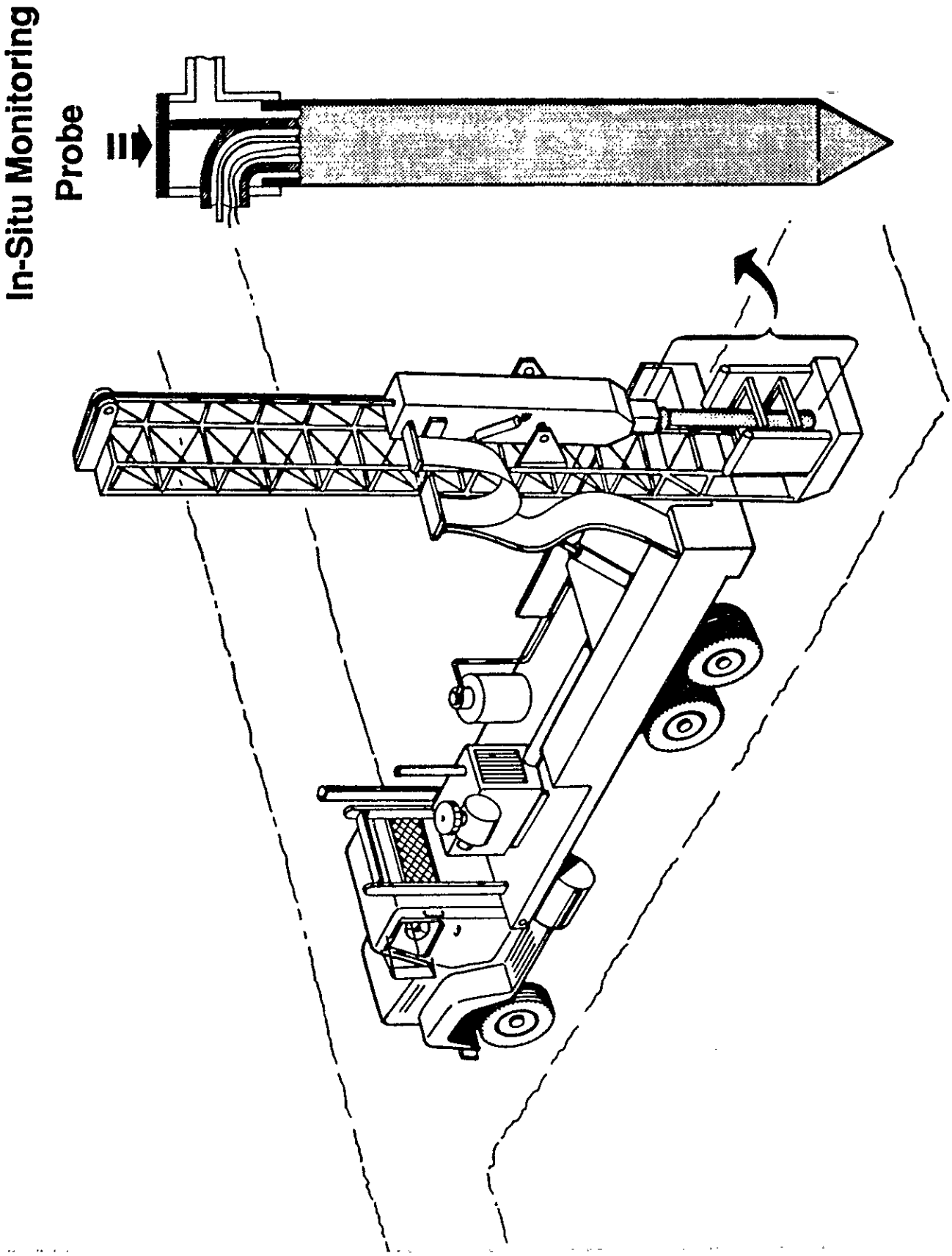


H9112005.10F

216-B-57 Crib



H9202024.11F



9 2 1 2 7 3 6 0 7 9 1

IN SITU CHARACTERIZATION PROBE DEMONSTRATION

- Bentonite surface seal
- Three protective posts - 2 foot stickup
- Excluded from WAC 173-160
- Temporary borehole, submit start cards
- Abandon properly to protect aquifer

INSITU02

IN SITU CHARACTERIZATION PROBE DEMONSTRATION

- Improved safety and ALARA
- RLS logging and radiochemical assay
- No secondary waste generation
- Help define lateral extent of contamination
- Cost savings and post closure monitoring

INSITU03

SITE DEVELOPMENT AND INFRASTRUCTURE PLANNING

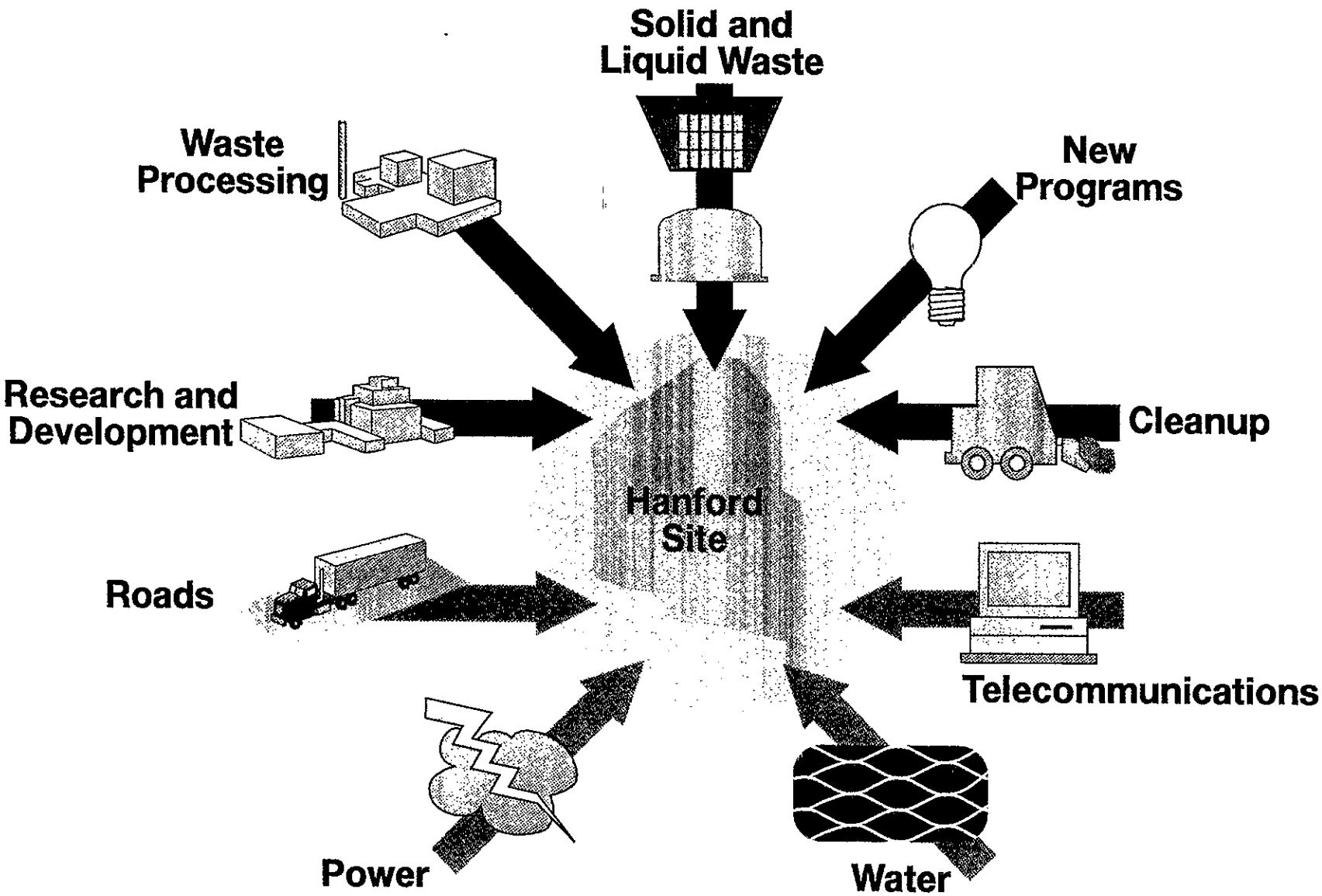
OVERVIEW

AUGUST 1992

BOYD HATHAWAY, SITE DEVELOPMENT PLANNER

WESTINGHOUSE HANFORD COMPANY / SITE PLANNING

DOE Site Development Planning Process



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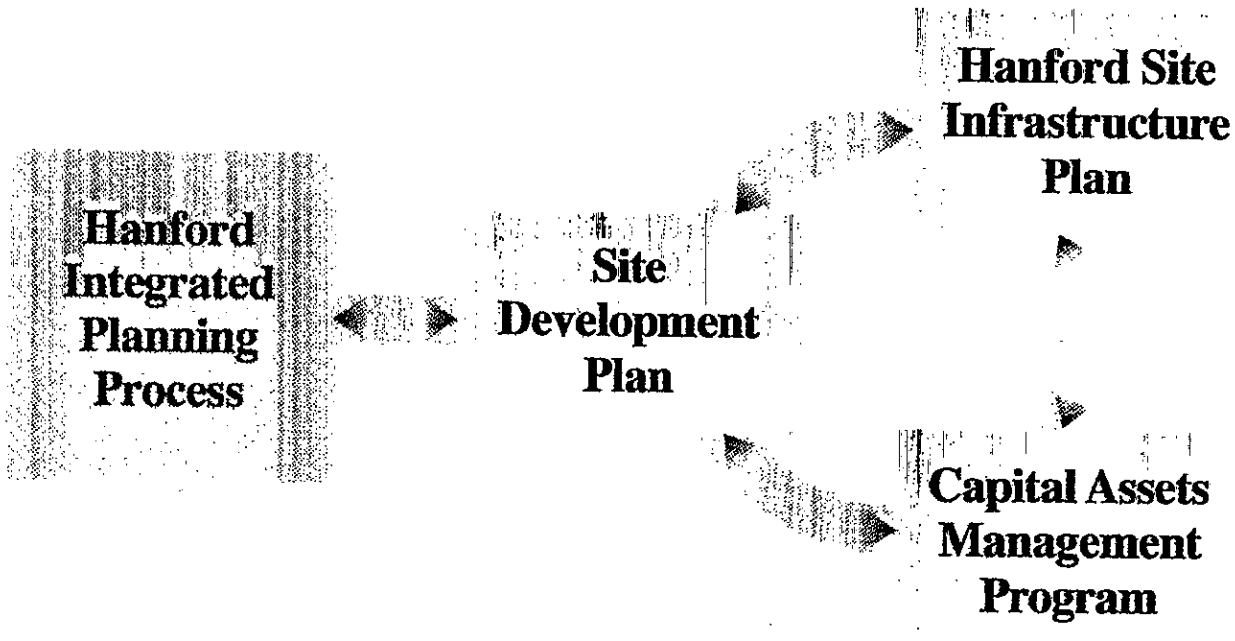
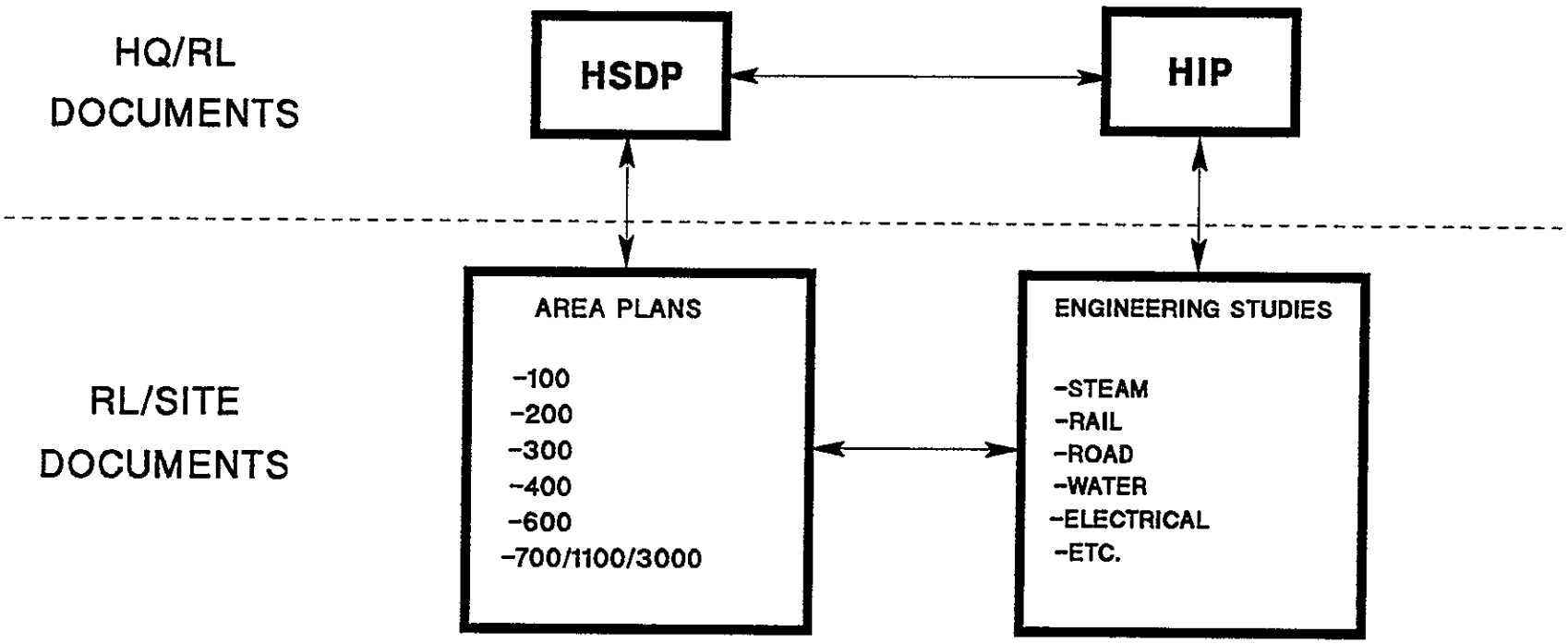

Hanford Integrated Planning Process
Site Development Plan
Hanford Site Infrastructure Plan
Capital Assets Management Program

DOE SITE DEVELOPMENT PLANNING DOCUMENTS



HSDP = HANFORD SITE DEVELOPMENT PLAN

HIP = HANFORD SITE INFRASTRUCTURE PLAN

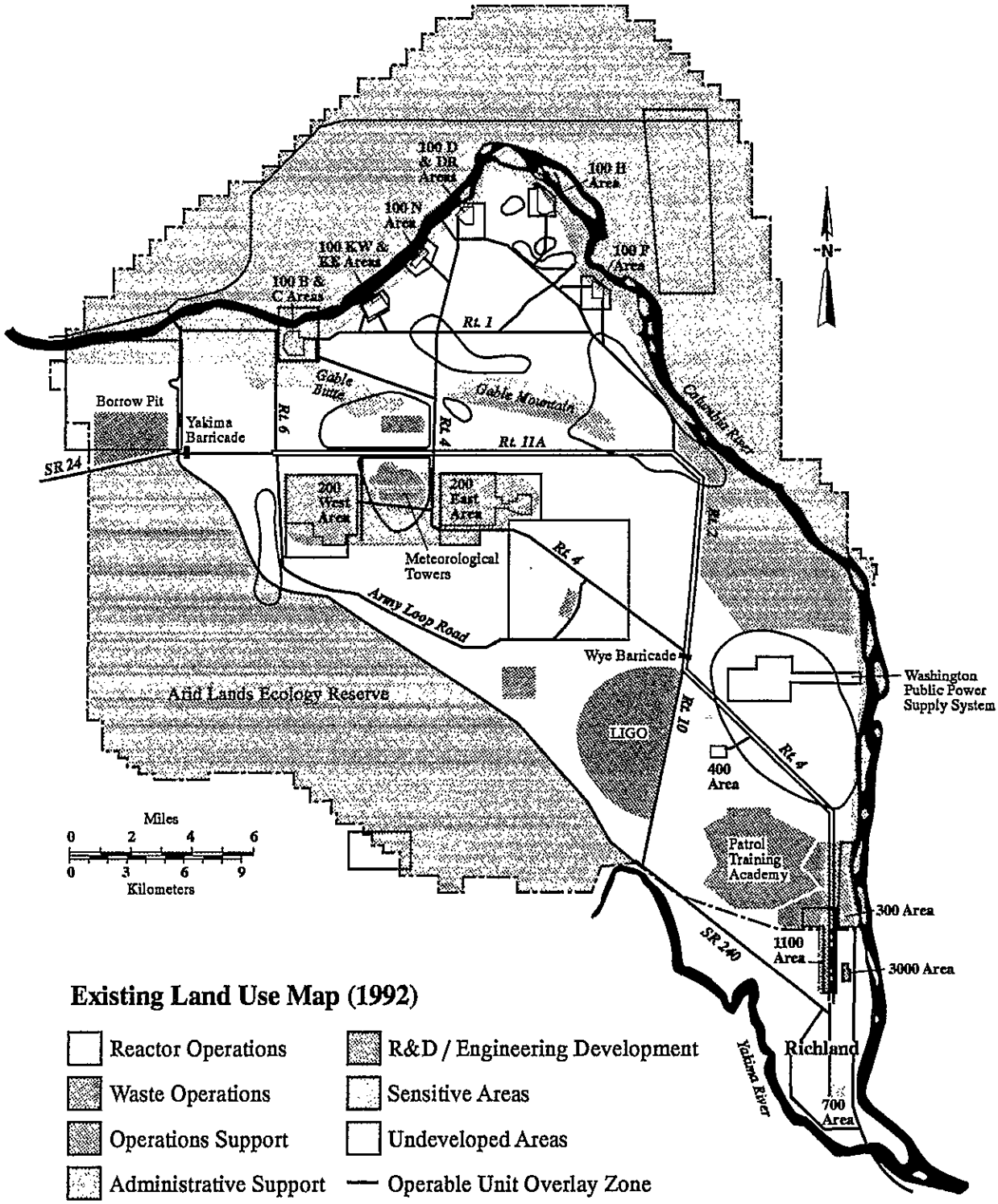
HQ = DEPARTMENT OF ENERGY HEAD QUARTERS

RL = DEPARTMENT OF ENERGY RICHLAND FIELD OFFICE

DRAFT

#12/Page 5 of 7

9 2 1 2 7 5 6 0 7 9 8



DRAFT

#12/Page 6 of 7

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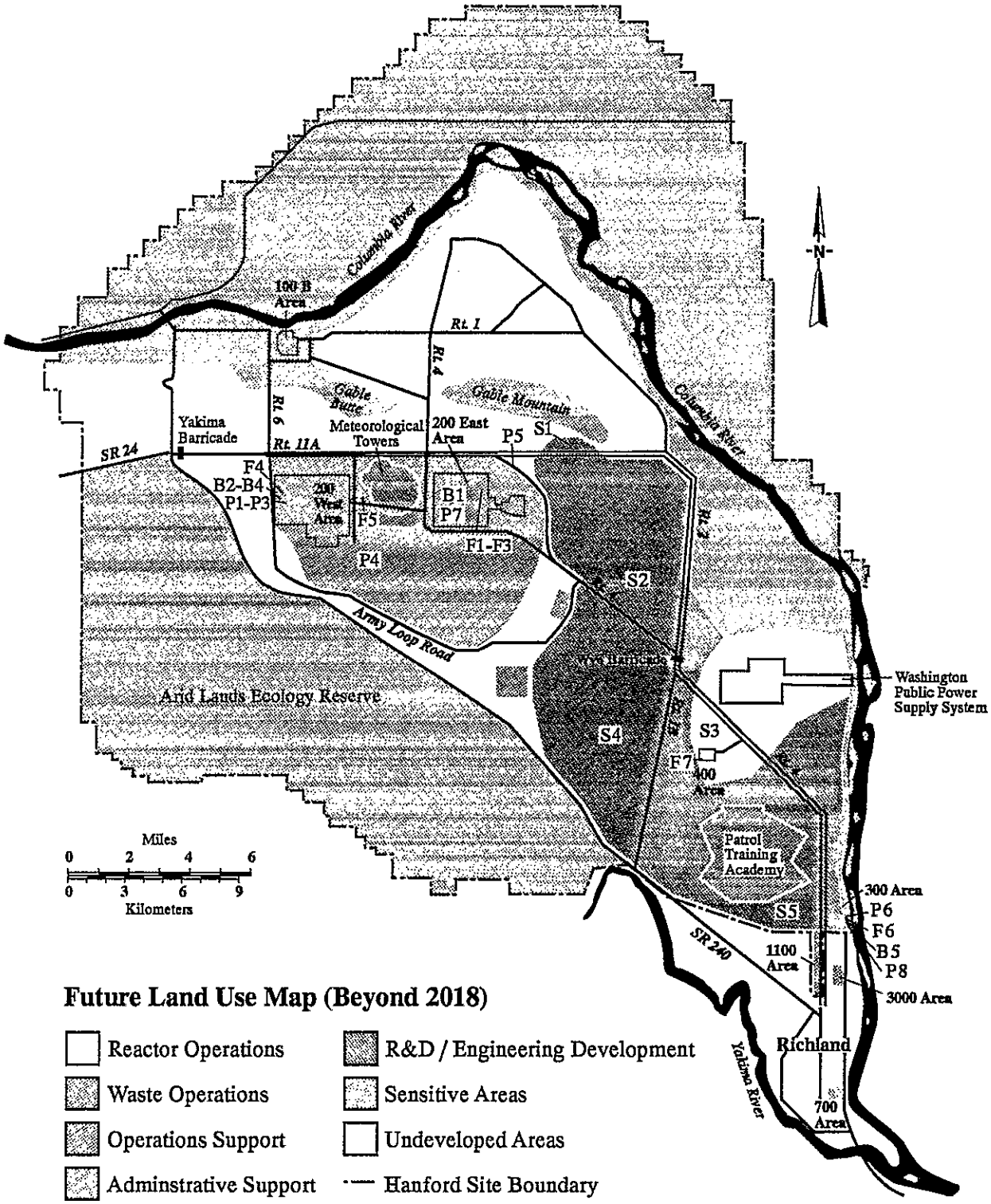


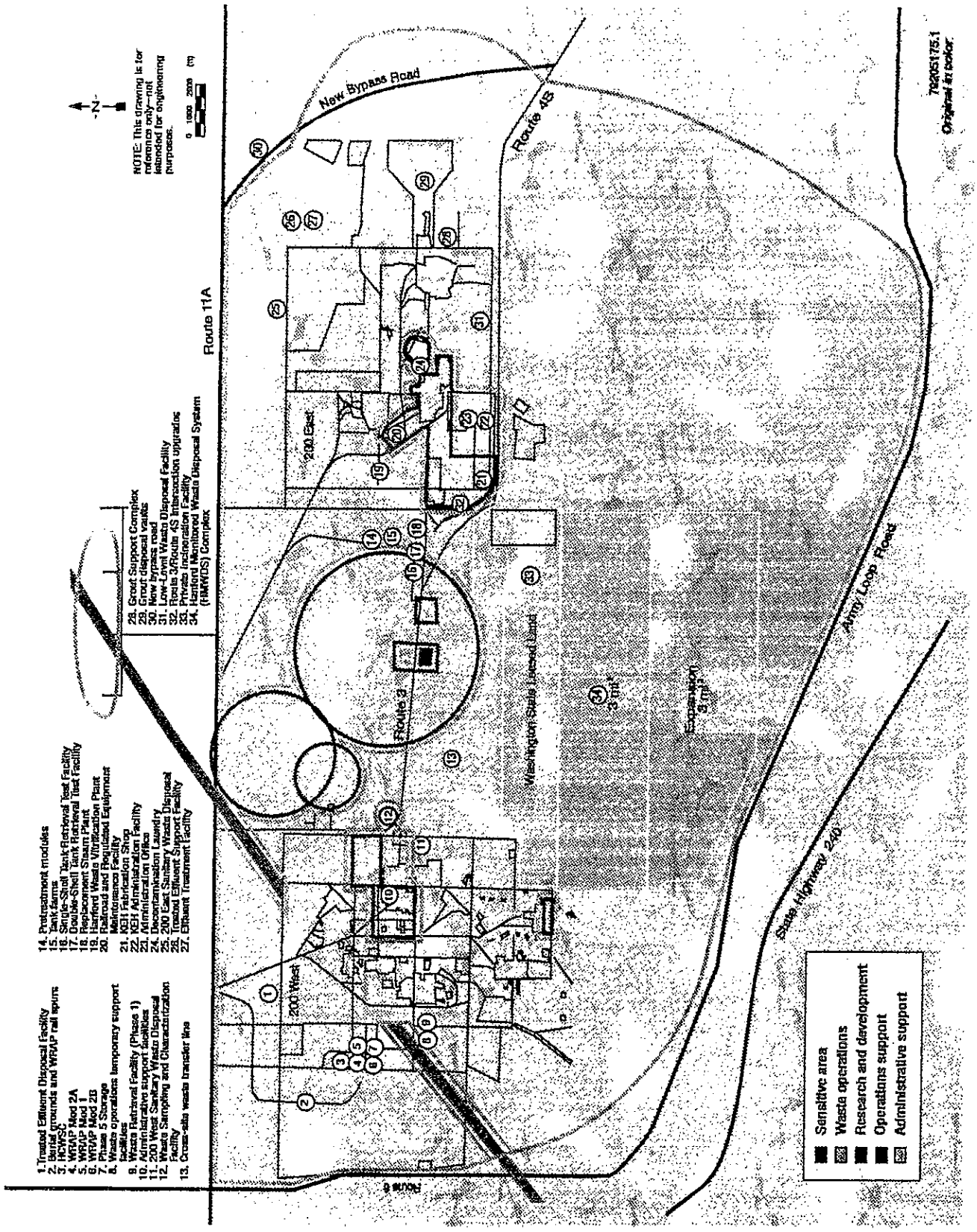
Future Land Use Map (Beyond 2018)

- Reactor Operations
- Waste Operations
- Operations Support
- Adminstrative Support
- R&D / Engineering Development
- Sensitive Areas
- Undeveloped Areas
- Hanford Site Boundary

Note: • Refer to construction projects list for callouts (e.g., B1, F3, P2, and S1)

• The land uses identified in this map represent DOE's vision of future land uses based on existing and potential Hanford missions. This map will be updated annually to incorporate decisions made by the Hanford Remedial Action Environmental Impact Statement, other NEPA or regulatory decision documents, mission changes, and other sources as appropriate.

Figure 4-9. 200 Areas Master Plan.



200-BP-1 OPERABLE UNIT

SCENARIO	ON-OU			ON-HANFORD SITE			OFF-HANFORD SITE			RATIONALE FOR EVALUATION
	Current	2018	2118	Current	2018	2118	Current	2018	2118	
Industrial	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	The OU vicinity is an active industrial area; therefore, evaluation of an on-OU industrial scenario under both current and future conditions is appropriate. The evaluation of potential exposures at other Hanford Site areas would be important for the air pathway because of the other work areas near 200-BP-1. Groundwater, as a potential industrial exposure, would be important if there is groundwater use downgradient from the area.
Residential	No	No	No	No	No	Yes	Yes	Yes	Yes	Given that the OU vicinity is an active industrial area and the potential for the 200 Area to be the site of the macro landfill, it is not appropriate to evaluate residential scenarios on the OU or on the Hanford Site. Off-Hanford Site residential exposures should be evaluated for the air pathway. The groundwater to river and then to an off-Site resident should also be considered. The water pathways would require modeling from soil to groundwater to river and downriver to the City of Richland water intake.
Recreational	No	No	No	No	No	Yes	Yes	Yes	Yes	Given that the OU vicinity is an active industrial area and the potential for the 200 Area to be the site of the macro landfill, it is not appropriate to evaluate recreational scenarios on the OU or on the Hanford Site. The recreational scenario should be evaluated for off-Hanford Site recreational receptors because mobile media (e.g., air and groundwater to river) could be impacted and contaminants could be transported to off-Site recreational receptors.
Agricultural	No	No	No	No	No	Yes	Yes	Yes	Yes	As with the residential scenario, there is no real likelihood of agriculutral land use on the OU or the Hanford Site near the OU in the forseeable future. The agricultural scenario is basically a residential scenario with a garden and livestock. Evaluation of this scenario would only be necessary if there is significant contamination in a mobile media that could bioconcentrate in a food chain receptor. If residential receptors off the Hanford Site are evaluated for the mobile media, sufficient information should be available to qualitatively discuss questions on exposures to potential "agricultural scenario" receptors, by analogy.

Attachment #13

Distribution

Unit Manager's Meeting: 200-BP-1 Operable Unit
August 27, 1992

Julie K. Erickson . . . . . Chief, DOE-RL, ERD/EPB (A5-19)
Roger D. Freeberg . . . . . Chief, Rstr. Br., DOE-RL/ERD (A5-19)
Mike Thompson . . . . . DOE-RL, EAP/RPB (A5-19)
Diane Clark . . . . . DOE-RL, TSD/SSB (A5-55)
Mary Harmon . . . . . DOE-HQ (EM-442)
Suzanne Clarke, SWEC . . . . . GSSC to DOE-RL (A4-35)

Dennis Faulk . . . . . 100 Aggregate Area Manager, EPA (B5-01)
Pamela Innis . . . . . EPA (B5-01)
Ward Staubitz, USGS . . . . . Support to EPA
Audree DeAngeles, PRC . . . . . Support to EPA

Darci Teel . . . . . 100 Aggregate Area Manager, WDOE (Kennewick)
Larry Goldstein . . . . . WDOE (Lacey)

Lynn Albin . . . . . Washington Dept. of Health

Richard D. Wojtasek . . . . . Prgm. Mgr. WHC (L4-92)
Tom Wintczak . . . . . WHC (L4-92)
Mel Adams . . . . . WHC (H4-55)
L.D. Arnold . . . . . WHC (B2-35)
Rich Carlson . . . . . WHC (H4-55)
Mark Buckmaster . . . . . WHC (H4-55)
Doug Dunster . . . . . Golder Associates, Support to WHC

Chris Abraham . . . . . GAO (A1-80)
Ralph O. Platt . . . . . Oregon Water Resources Department

ADMINISTRATIVE RECORD: 200-BP-1; Care of EDMC, WHC (H4-22)

This list has been updated. Please inform Suzanne Clarke (SWEC) of deletions or additions to the distribution list.

9 2 1 2 7 1 5 0 3 0 2