FH-0800996

0077265

Meeting Minutes Transmittal/Approval
Unit Managers' Meeting
200 Area Groundwater and Source Operable Units
1200 Jadwin, Richland, Washington
April 16, 2008

APPROVAL: _____ Date: 5-15-08
Larry Romine, 200 Area Unit Manager, DOE/RL

APPROVAL: _____ Date: 5/15/08
Arlene Tortoso, 200 Area Assistant Manager, DOE/RL

APPROVAL: _____ Date: 5/15/08
Craig Cameron, 200 Area Unit Manager, EPA

APPROVAL: _____ Date: 5-15-2008
John Price, 200 Area Unit Manager, Ecology

HFFACO Action Plan Section 4.1 requires signature of agreements and commitments made during the Unit Manager Meeting. Approval of these minutes documents approval of agreements and commitments documented in Attachment 3 to these minutes. Approval does not apply to any other attachments, which are included in these minutes for informational purposes.

Minutes of the 200 Area Unit Managers' Meeting of April 16, 2008 are attached. Minutes are comprised of the following:

Attachment 1	Agenda
Attachment 2	Attendance Record
Attachment 3	Agreements and Issues List
Attachment 4	Action Item List
Attachment 5	Operable Units and Facilities Status
Attachment 6	200-UP-1 Uranium
Attachment 7	200-UP-1 Technetium-99
Attachment 8	Carbon tetrachloride concentrations in extraction well 299-W15-6.
Attachment 9	Revised Soil Vapor Extraction System Operating Plan for FY 2008
Attachment 10	Figure 1: Wells 299-E33-205, 299-E33-340, 299-E33-342, and 299-E33-345 Location Map
Attachment 11	Two Aquifer Tubes at PO-1 Locations C6374 and C6375
Attachment 12	216-A-30 Crib Borehole (C5941) Radiological Contamination – Field Instrument Rad Reading (dpm)
Attachment 13	BCCA Downposting
Attachment 14	Change Notice for Modifying Approved Documents/Workplans In Accordance with the Tri-Party Agreement Action Plan, Section 9.0, Documentation and Records (TPA-CN-210)

Attachment 1
FH-0800996

200 AREA UNIT MANAGERS' MEETING AGENDA

1200 Jadwin/Rm 1-C-1
April 16, 2008
8:30 AM

SOURCE REMEDIES AND D4

- 200-CW-3
- BC Control Area
- 200-UW-1
- Facilities (D4)
- Recap Agreements, Issues and Action Items

GROUNDWATER and SOURCE OPERABLE UNITS

- 200-UP-1, 200-CS-1 and 200-CW-1 Group
- Supplemental Characterization Model Groups 2/4/6 and 5
- 200-BC-1, 200-IS-1, 200-CW-5 and 200-SW-1/2 Group
- 200-ZP-1, 200-PW-1/3/6 Group
- 200-MW-1 Group and 200-PW-2/4
- 200-MG-1/2 and Eco. Group
- 200-BP-5 Group and 200-PO-1
- 200-SC-1 Group and 200-LW-1/2 Group
- 200-TW-1 and 200-PW-5
- 200-TW-2 Group
- 200-UR-1
- Recap Agreements, Issues and Action Items

Attachment 2
FH-0800996

200 Area Unit Managers' Status Meeting
April 16, 2008

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE (FOR RESPONSIVE)	TELEPHONE
MARCO VOOLD	DOE	RPM/PM	376-8375
Ed Jacobs	FH	U-PM	376-2859
Allan Danielson	WDOH		946-0703
Wade Woolery	RL	D&D PM	372-2889
Frank Roddy	DOE	CP sites	372-0945
Craig Cameron	EPA		376-8665
Jerrie Seaver	FH	D&D	376-3762
Tina Crane	FH D&D	D&D PM	376-9789
Tom Watson	FH SGRP	CP Mgr.	376-5450
Mandy Jones	DOE	PMM	372-7916
Ron Brunke	FH	CS-1 CW-1	376-2663
MIKE HICKEY	FH	CW-5 IS-1	373 3092
Jay Dacka	FH	SC-1 LW-1/2	376-4416
Susan Norbutowski	FH	6 P5	376-4623
BRIAN ESPARZA	FH	7W-1 & 2 PW-5	376-6199

200 Area Unit Managers' Status Meeting
April 16, 2008

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PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Dave Black	FH	TPA	376-0740
Jennifer Allen	Ecy	200SW2	372-7988
Zelma Jackson	EPA	200A	372-7910
Arlene Tutt	DOE	200A	373-9631
Glen Triner	FH	200 UP-1 UW-1	430-1013
Shirley Cimon	ODOE		(541) 240-0161
Jeanne Wallace	Ecology	200A	372-7931
GLORIA CUMMINS	FH	200-PO-1	372-2484
Rich Olson	FH	ECO	372-2426

200 Area Unit Managers' Status Meeting
April 16, 2008

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PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Kevin Leary	DOE-RL	IS-1/200-UW-1	373-7285
Mark Byrnes	FH	ZP-1 Project Manager	373-3996
Russ Hulvey	FH	5&6 RP	376-0303

200 Area Unit Managers' Meeting
Agreements and Issues List
April 16, 2008

Agreement: TPA-CN-210 for the supplemental RI/FS Work Plan for the 200 Area Central Plateau Operable Units Volume II: Site-Specific Field-Sampling Plan Addenda DOE/RL-2007-02, Rev. 0, Volume II Addendum 1 – Site Specific Field-Sampling Plans for a the 216-S-5, 216-S-6, 216-T-36, 216-B-55, 216-A-37-2, 216-A-30 Cribs in the 200-SC-1 Operable Unit has been approved by DOE and EPA, dated 3/17/08 (**Attachment 14**).

Issue: None Identified.

Delegations for April 16, 2008 UMM meeting:

EPA	Craig Cameron
Ecology	Mandy Jones for John Price
DOE/RL	Arlene Tortoso
	Margo Voogd for Larry Romine

OPEN ACTION ITEM TRACKING

Action #	Action/Subject	Assigned To	Owed To	Assigned Date	Original Due Date	Adjusted Due Date	Status
107	Draft an agreement for the Parties as to Ecology expectations for 200-MG-1/2 RTD sites (no modeling will be required to show protectiveness of groundwater and the expectation is that all contamination will be removed).	Ecology-Price	RL-Charboneau (Roddy)	1/16/08	2/21/08	4/1/08	Closed - TPA Change Request to be transmitted by RL to EPA and Ecology.
109	Set up a meeting with Ecology on U Plant Area pipelines EE/CA.	RL-Leary	Ecology-Price	2/21/08	3/20/08		Complete - 4/14/08
113	Provide the anticipated transmittal date for 200-UW-1 STOMP modeling approach document	RL-Leary	Ecology-Price	3/20/08	4/16/08		Complete - the document to be transmitted on 4/30/08.
114	RL to set up a meeting with Ecology on the permitting approach for NRWL.	RL-Roddy	Ecology-Price	3/20/08	4/16/08		Complete - 4/14/08

CERCLA 5-Year Review Action Items

Action #	Action/Subject	Assigned To	Due Date	Status
13-1	Complete a data quality objective process and sampling plan to further characterize the technetium-99 groundwater plume near T Tank Farm.	Fluor Hanford		Complete
14-1	Assess treatment options to address technetium-99 near T Tank Farm.	Fluor Hanford		Complete
15-1	Complete data quality objective process and sampling plan to further characterize the high soil conductivity measurements detected at B/C cribs and trenches.	Fluor Hanford		Complete
16-1	Increase the pump size in 200-ZP-1 extraction wells 299-W15-45 and 299-W15-47.	Fluor Hanford		Complete
17-1	Evaluate expanding the soil-vapor extraction operations. Also, specifically review converting former groundwater extraction well 299-W15-32 to a soil-vapor extraction well.	Fluor Hanford		Complete
18-1	Prepare an explanation of significant difference for 200-UP-1 Interim ROD.	Ecology	6/1/2008	Ecology working with EPA.

200 AREA UNIT MANAGERS' MEETING OPERABLE UNITS AND FACILITIES STATUS

April 16, 2008

D&D OUs

200-CW-3 - EPA Lead

- SAP submitted to DOE for review March 24, 2008.
- RAWP is in development for "remaining sites" 216-N-1, -4, and -6, one solid waste site, two UPRs and three pipelines.

Rail Car Disposition Options Study

The railroad car disposition options study is in progress. Target completion date is September 30, 2008.

EE/CA for Buildings 212-N, P, R - The development of the EE/CA has been initiated. Target completion date: October 30, 2008.

Schedule Status: Behind on working schedule.

200-BC Control Area (BCCA) – Ecology Lead

- BCCA EE/CA 30-day Public Comment period ended March 26, 2008. Comments are being resolved.
- Cultural/Historical/Biological/Ecological reviews for BCCA Zone A are scheduled to start on April 7, 2008.
- The Cultural/Historical/Biological/Ecological reviews to support the haul road upgrades were submitted for public comment on March 13, 2008.
- The RAWP and Action Memorandum for the BCCA planned removal action are in development and will undergo internal review following completion of draft form.

Schedule Status: On schedule.

200-UW-1 Ecology

- The technical basis documents that describe how the STOMP modeling approach being proposed satisfies the applicable or relevant and appropriate requirements of WAC 173-340-747(8) and other State and Federal regulations and guidance were informally transmitted to DOE/RL on October 1, 2007. DOE/RL is working through their concurrence process and making revisions before they officially transmit the documents to the EPA and Ecology.
- The U-8 Supplemental DVZ Characterization DQO is complete.
- The U-1/2, U-12, and 270-W Supplemental DVZ Characterization DQO will begin shortly.

Schedule Status: Behind schedule due to the delay in the ROD approval.

FACILITIES STATUS

- DOE received Regulator comments on the 221-U RD/RAWP and initiated the TPA dispute processes to resolve comments. This dispute is currently scheduled for review by the IAMIT May 15, 2008.

Central Plateau Facility Decommissioning

- The Agreement in Principle for decommissioning central plateau facilities is on hold pending completion of the dispute resolution process regarding comments to the 221-U RD/RAWP.

Schedule Status: 221-U RD/RAWP is behind schedule. There is no formal schedule for the Facility Decommissioning AIP.

200-UP-1, 200-CS-1, 200-CW-1 OU Group

200-UP-1

- Values at well 299-W19-36 dropped below the 9,000 pCi/L RAO for Technetium-99. Well 299-W19-36 yielded a concentration of 7,400 pCi/L in a January 8, 2008 sample based on interim results.
- All other wells are below the interim RAOs of 480 µg/L and 9,000 pCi/L respectively **(Attachments 6 and 7)**.

- RI/FS Work Plan:
  - Drilling has been completed on the remaining six wells (UP-6, UP-7, UP-8, UP-9, UP-10, and UP-12).
  - Construction of five wells has been completed and one well is being constructed as of April 1, 2008. At this last well, the groundwater samples ranged just above to below the Tc-99 900 pCi/L MCL. Five of the wells have been developed and will be accepted by April 9, 2008.
- Explanation of Significant Difference (ESD):
  - Ecology is incorporating EPA comments. Once this is completed, the ESD will be discussed with DOE/RL.
- Pump and Treat
  - On April 19, 2007, the pumps in wells W19-36 and W19-43 were restarted. As of February 24, 2008, the project has pumped about 21,400,000 liters to the LERF Basin 43 at an average rate of approximately 36 L/m (9.4 gpm). These two wells address the higher uranium groundwater concentrations found in the area.

Schedule Status: On schedule.

200-CS-1

Ecology response has not been received on the Draft B of the feasibility study and proposed plan that were submitted to Ecology on September 27, 2007. Per TPA Action Plan Section 9.2, DOE/RL expected a response by October 29. Per Ecology's July 3, 2006 letter RL and TPA Action Plan Section 9.2, RL expected a response on the TSD closure plans by December 26.

Ecology is developing the Hazardous Waste Management Act (HWMA) permit closure chapters for the 200-CS-1 OU TSD units. Ecology expects to develop those chapters without further Ecology comment on the draft feasibility study and draft closure plans. Ecology believes this approach is consistent with its letter dated April 26, 2006. Ecology expects to include permit conditions for the 200-CS-1 OU TSDs, requiring physical closure to start within 180 days or a year, unless TPA milestones set different dates.

If Ecology takes action to require RL to close the TSDs outside of the established TPA process, RL's position is that a NEPA Environmental Assessment would be required to cover the TSD closures outside of CERCLA. It is RL's concern that a CERCLA EE/CA - Action Memorandum would likely stall at the same point as the Proposed Plan has stalled. DOE/RL is continuing to evaluate options for moving forward.

Schedule Status: Behind schedule.

200-CW-1
(M-015-38B, 5/31/09, Feasibility Study/Proposed Plan) Ecology

- **Model Group 5 SAP**
  - Preparations are underway to begin investigation activities. Currently, direct pushes began the week of April 7, auger holes are scheduled for May, and the borehole in August, 2008.
  - DOE is preparing a TPA change package for M-015-38B, based on delays in starting field work. The delays were due to Ecology review and approval of the work plan taking longer than planned by DOE.

Schedule Status: Behind schedule to meet current milestone.

<u>200-BC-1, 200-IS-1, 200-CW-5, & 200-SW-1/2 OU Group</u>

200-BC-1
(M-15-51, 4/30/10, Feasibility Study/Proposed Plan) EPA

- SAP for electrical resistivity correlation was approved November 28, 2007. Drilling the first borehole began January 30 and reached total depth (248 ft) on February 21, 2008. Drilling the next borehole began on February 19, 2008 and reached total depth of ~200 ft March 13. Drilling the third borehole began February 19 and is ~340 ft deep, approximately 15 ft above the water table. Analyses are in progress.
- Decisional draft of the excavation-based treatability test Phase I report was provided to RL March 28. RL review is in progress.

- Treatability Test Phase II planning/preparations continued. Advance authorization to install infrastructure elements was granted. The cultural/eco review report is in the review/approval process. Equipment and instrumentation are being procured. Personnel training is underway. Awaiting approval of TTP and air monitoring documents.
- Treatability Test Plan (Rev. 0) submitted to EPA for approval on March 21. EPA approval needed to support start of Phase II excavation scheduled to begin April 16.
- Waste Control Plan (SGW-34277) was revised to establish WCSA for ERDF cans and increase emphasis on the excavation portion of the TT.
- EPA comments on draft air monitoring plan incorporated. EPA approval needed to support start of Phase II excavation scheduled to begin April 16.

Schedule Status: On schedule.

200-IS-1

(M-13-27, 6/30/07, RI/FS Work Plan) Ecology

- The 200-IS-1 dispute resolved. DOE has sent a letter to document agreements.
- Ecology comments were incorporated into the SAPs. The redline strikeout version of the SAPs was transmitted to Ecology for review.
- Ecology comments on the work plan are being incorporated.

Schedule Status: Behind schedule.

200-CW-5 (no change)

(M-15-40D, 7/31/08, Feasibility Study/Proposed Plan) EPA

Feasibility Study and Proposed Plan are on schedule for submittal July 31, 2008.

Schedule Status: Work for this fiscal year is on schedule.

200-SW-1/2

(M-13-28, 9/30/07, (Completed) RI/FS Work Plan) Ecology

- Submitted the RI/FS Work (Draft B) Plan to Ecology in September 2007.
- Received Ecology's comments on Draft B Work Plan on February 12, 2008.
- Comment responses have been drafted; 215 of the 265 comment responses have been endorsed by RL and forwarded to Ecology (others will follow). Weekly comment disposition meetings with Ecology began on April 4, 2008.

Schedule Status: On schedule

<u>200-ZP-1, 200-PW-1/3/6 OU Group</u>

200-ZP-1

(M-15-48B, 9/30/07, Feasibility Study/Proposed Plan) EPA

- Remediation Treatment Status:
  - Between October 1, 2007 and March 30, 2008 the 200-ZP-1 pump-and-treat system average pumping rate was approximately 230 gpm.
  - All ten 200-ZP-1 extraction wells are currently on line pumping water at approximately 260 gpm.
    - A pump was recently replaced in Extraction well #2.
  - One of the two T Tank Farm extraction wells (W11-45) is down for an aquifer recovery test. Extraction well W11-46 is pumping around 35 gpm to ETF and will be shut down very soon for an aquifer recovery test.
  - ETF will be down for eight to ten weeks starting in mid June.
  - Soil removal activities around the W15-765 Purolite resin skid are complete. With RL and EPA concurrence last month the excavated area has been backfilled.
  - **Attachment 8** shows the latest carbon tetrachloride concentrations in extraction well 299-W15-6.
  - ZP-1 decisional draft SAP for Aquifer Testing has been issued for RL and EPA review. Comments are due back on April 29, 2008.
  - The 200-ZP-1 decisional draft remedial design report (DOE/RL-96-07, Rev. 4) will be issued for DOE-RL and EPA review in the next week or so. This report was updated to add the four new 200-ZP-1 extraction wells to go on line by the end of FY2008.
  - The design for tying in these four new extraction wells is 100% complete at this time.
    - Extraction well development is complete. Screens are on order.
    - Injection well testing is nearly complete.
    - Extraction well pumps and other materials are on order.
  - The ZP-1 Functional and Operation Requirements document is complete and is currently going through the signature process for delivery to DOE-RL prior to April 30, 2008.
  - A national solicitation task for ex-situ treatment options is on schedule. A vendor forum was held April 2, 2008 and over 20 companies participated. All indicated they would be responding to the RFP either alone or teaming with other companies.
  - A draft pre-conceptual design document is on schedule. An attempt was made to meet with the tank waste EIS group on March 27, 2008, but no EIS team members showed up. Mary Beth Burandt was requested to select a convenient meeting time and date on March 27, April 4 and April 15, 2008.

- RI/FS Status:
  - FS and PP Report:
    - EPA comments on the Draft B FS and PP were delivered March 27, 2008. Responses to comments will be provided in 30 days.
    - The full quantitative assessment of the two Native American scenarios will be included in Revision 0.
    - Currently pulling together the important components of the PP and FS for EPA's use in preparing the ROD.

- Tc-99 Investigation Status:
  - T Tank Farm Investigations:
    - The new "T-6" (W11-89) well will be positioned shortly after the extraction well W11-45 and W11-46 aquifer testing has been completed.
  - Purolite Resin Treatability Testing:
    - The Purolite Resin Test Report is around 75% complete.

Schedule Status: On schedule.

200-PW-1, 200-PW-3, & 200-PW-6

(M-15-45B, 9/30/07, Feasibility Study/Proposed Plan) EPA

- Responses to comments received from EPA and Ecology on the PW-1/3/6 FS and PP were transmitted to EPA on February 22, 2008.
- A Tri-Parties workshop on the 200-PW-1/3/6 FS is tentatively scheduled for April 15.
- Soil Vapor Extraction System (SVE):
  - The SVE system successfully started April 1, 2008 as planned.
  - The soil vapor extraction system operating plan for FY 2008 is being revised to document the current operating configuration of the system. This revised plan will be attached to the UMM meeting minutes when it has been signed by the DOE/RL and EPA operable unit managers (**Attachment 9**).
  - Design specifications have been completed for two new 500 cfm SVE units that are to be delivered this fiscal year.
  - The passive systems remain operational.
  - Monthly monitoring results for March 2008 for the soil vapor probes and wells are not yet available. It is anticipated that these results will be summarized at the May UMM meeting.

Schedule Status: On schedule.

200-MW-1 & PW-2 OU Group

200-MW-1

(M-15-44B, 12/31/08, Feasibility Study/Proposed Plan) EPA

- Decommissioning of the high-risk borehole in the 216-A-2 Crib is completed.
- Work continues on the mini-RI for the supplemental investigations. Internal review is anticipated to begin the week of April 21, 2008.
- The draft RI (DOE/RL-2005-62) documenting investigations of sites that have since been parsed to others OUs was provided to EPA on April 4, 2008 for informal review prior to being formally transmitted to DOE.
- Kick off for the FS report preparation is expected to occur the week of April 14 or April 21.

Schedule Status: On schedule to meet TPA interim milestone.

200-PW-2 & 200-PW-4
(M-15-43D, 12/31/10, Feasibility Study and Revised Recommended Remedy(ies))
Ecology

- A draft report on the surface electrical resistivity was provided by the contractor in late-March.
- Planning for the field work at the 216-A-5 and 216-S-1/2 Cribs is underway. The direct pushes are anticipated to be performed in late-April and the high-risk borehole at 216-A-5 is expected to start in mid-May.

Schedule Status: On schedule to meet TPA interim milestone.

200-MG-1/2 & ECO OU Group

200-MG-1/200-MG-2 Model Group 1 Sites
(M-15-49A, 12/31/08, MG-1 Feasibility Study/Recommended Remedy) Ecology
(M-15-49B, 12/31/08, MG-2 Feasibility Study/Proposed Plan) EPA

DOE will continue discussions with EPA and Ecology to resolve the schedule and TPA milestone issues for 200-MG-1/2. Ecology states that the issues are:

- DOE lacks remedial investigation data to complete feasibility studies required by M-15-49a and M-15-49b.
- DOE's baseline funding profile for waste site cleanup does not support the M-16 milestone changes that were informally proposed by EPA and Ecology.

The Contractor will continue to prepare the FS/PP as required by the existing TPA milestones, pending regulatory approval of TPA change requests to redefine the milestones from feasibility studies to engineering evaluations/cost analyses.

Schedule Status: Tri-Party Agreement interim milestones M-015-49A and M-015-49B are not achievable as currently defined.

Ecological Risk Assessment

- The Draft A version of the Ecological Risk Assessment (ERA) Report was transmitted to DOE/RL on February 1, 2008. A re-issue version with some word changes was transmitted to DOE/RL on February 29, 2008.
- DOE/RL transmitted the Draft A ERA to regulators on March 6, 2008.
- A workshop was set for March 26, 2008 with the Tri-Party Agency decision-makers, tribal participants and external stakeholders to discuss the risk assessment results. However, a TPA-required budget meeting was scheduled for that same day, deferring the Central Plateau ERA workshop to April 9, 2008.

Schedule Status: Currently 1 month behind the baseline due to the resolution of RL comments on the Rev A document.

200-BP-5 & PO-1 OU Group

200-BP-5
(M-13-06B, 3/31/07, RI/FS Work Plan, Completed) EPA
(M-15-21A, 10/31/10, Feasibility Study/Proposed Plan) EPA

Drilling:

- Drilling of well 299-E33-342/C5857 began March 12 and reached total depth April 7 (Figure 1, **Attachment 10**).
  - Well completion is in progress.
  - Analytical is in progress.
- Well 299-E33-345/C6226 was completed April 3, 2008 (Figure 1).
  - Completed geophysical logging to 260' bgs on February 26, 2008.
  - Analytical in progress.
- Drilling of well 299-E33-340/C5853 began April 7, 2008 (Figure 1).

Work Plan:

Completed Rev 0 of DOE/RL-2007-18 *"RI/FS Work Plan for the 200-BP-5 GW OU"* March 4, 2008. Sent to EPA for review and signature March 24.

Integration:

Working with CHG on DQO for WMA C. Participated in the development of decision statements, principle study questions, and boundaries.

Completing pre-drilling efforts for well 299-E33-205/C5989 the "C" well in the BX tank farm (Figure 1). Drilling is scheduled to start April 22.

Schedule Status: Behind schedule.

200-PO-1
(M-015-25C, 12/30/09 200-PO-1 OU RI/FS Phase II Report) Ecology

- Phase I High Resolution Reflection Seismic data acquisition began March 21, 2008. Data was acquired for a total of seven lines in the 200 East Area. Field data collection completed on April 9, 2008.
- Phase I Airborne EM Contract for the 600 Area along the Columbia River was awarded on April 3, 2008. Expected start of field activity in late April.
- Two aquifer tubes at PO-1 locations C6374 and C6375 were installed April 5-7, 2008 (**Attachment 11**).
  Tube C6374 - screen interval 6.8 to 7.3 ft - refusal depth 7.4 ft, conductivity 384 uS/cm at 12.8 deg. C, good flow and low turbidity after pumping.
  Tube C6375 - screen interval 8.88 to 9.38 - refusal depth about 9.5 ft - conductivity 386 uS/cm at 13.7 deg. C, good flow after pumping.

- Waste Control Plan update draft revision initiated March 1, 2008. Completed internal review and comment process April 1, 2008. Incorporating comments into decisional draft document.
- 200-PO-1 OU Sampling and Analysis Plan (DOE/RL-2003-04, Rev. 2) Decisional Draft Document for routine monitoring activities was submitted to RL on March 26, 2008 for review and comment. This revision addresses updates and changes to the routine monitoring network in 200-PO-1 over the last two years.

Schedule Status: On schedule.

200-SC-1 & 200-LW-1 OU Group

200-SC-1

(M-15-40E, 12/31/10, Feasibility Study/Proposed Plan for 200-SC-1) EPA

- **Supplemental Characterization:**
  - **216-B55 Crib:** Samples from four of five sample intervals at characterization borehole C5942 were not shipped to the laboratories for analysis within the allowable sample holding times. A recovery plan is being developed. The reasons why the samples were not shipped is being examined and corrective measures to prevent reoccurrence will be implemented.
    - The Parties met on April 15, 2008 to discuss issues, problems and potential pathforward for the 216-B55 borehole.
  - **216-A-30 Crib:** At the close of business April 7, 2008, the characterization borehole depth was 188 ft bgs. The figure in **Attachment 12** depicts radiological contamination with borehole depth as measured with hand held radiological monitoring instruments.
  - **216-S-6 Crib:** Characterization borehole drilling started on April 3, 2008. At the close of business April 7, 2008, the borehole depth was 15 ft bgs. Radiological contamination in the borehole cuttings was detected with hand held radiological monitoring instruments.

Schedule Status: On schedule.

200-LW-1/200-LW-2

(M-15-46B, 12/31/11, Feasibility Study/Recommended Remedy) Ecology

- **200-LW-1/2 Site-Specific Field-Sampling Plans (DOE/RL-2007-02-VOL II Rev 1A):**
  - **Draft Document:** The draft document is being prepared for transmittal to Ecology for review and approval.

Schedule Status: On schedule.

200-TW-1 & 200-PW-5 OU Group

200-TW-1 & 200-PW-5
(M-15-42D, 12/31/11, Feasibility Study/Proposed Plan for TW-1 & PW-5) EPA

- Site-specific field sampling plan has been transmitted to EPA for approval.

Schedule Status: On schedule.

200-TW-2 OU Group

200-TW-2
(M-15-42E, 12/31/11, Feasibility Study/Revised Recommended Remedy(ies) for TW-2) Ecology

- The site-specific field sampling plan is in the transmittal process.

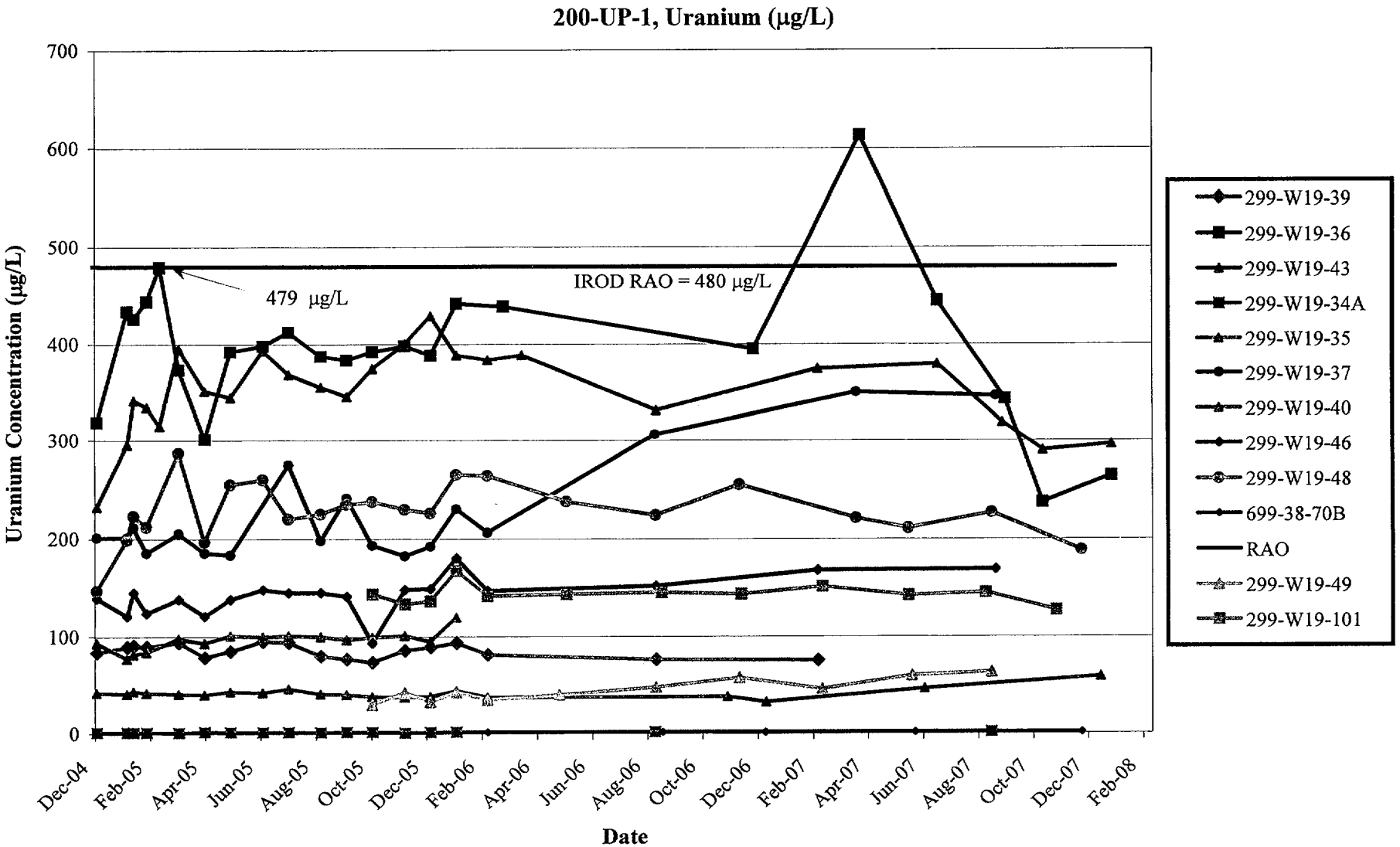
Schedule Status: Behind schedule.

200-UR-1

200-UR-1 Ecology

- BC Control Area
    - Radiological surveys for the Eastern and Western sections approximately 45% complete (**see Attachment 13**). RCTs presently engaged in higher priority work including surveying to support planned removal action. Path forward: Complete E. Section in FY08; carry over funding for W. section and complete in FY09.
    - Draft DQA for soil samples & analyses completed.
    - Revise plan for remaining BCCA tasks to align with EE/CA R/T/D.
- West Lake DQO summary report
    - Review workshops with Ecology concluded February 25, 2008. Ecology is preparing written comments.
    - Briefing for Tribes February 21, 2008, follow-up briefing April 16.

Schedule Status: West Lake DQO and SAP twelve months behind.


200-UP-1, Uranium (µg/L)
Uranium Concentration (µg/L)
700
600
500
400
300
200
100
0
479 µg/L
IROD RAO = 480 µg/L
Dec-04
Feb-05
Apr-05
Jun-05
Aug-05
Oct-05
Dec-05
Feb-06
Apr-06
Jun-06
Aug-06
Oct-06
Dec-06
Feb-07
Apr-07
Jun-07
Aug-07
Oct-07
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Date
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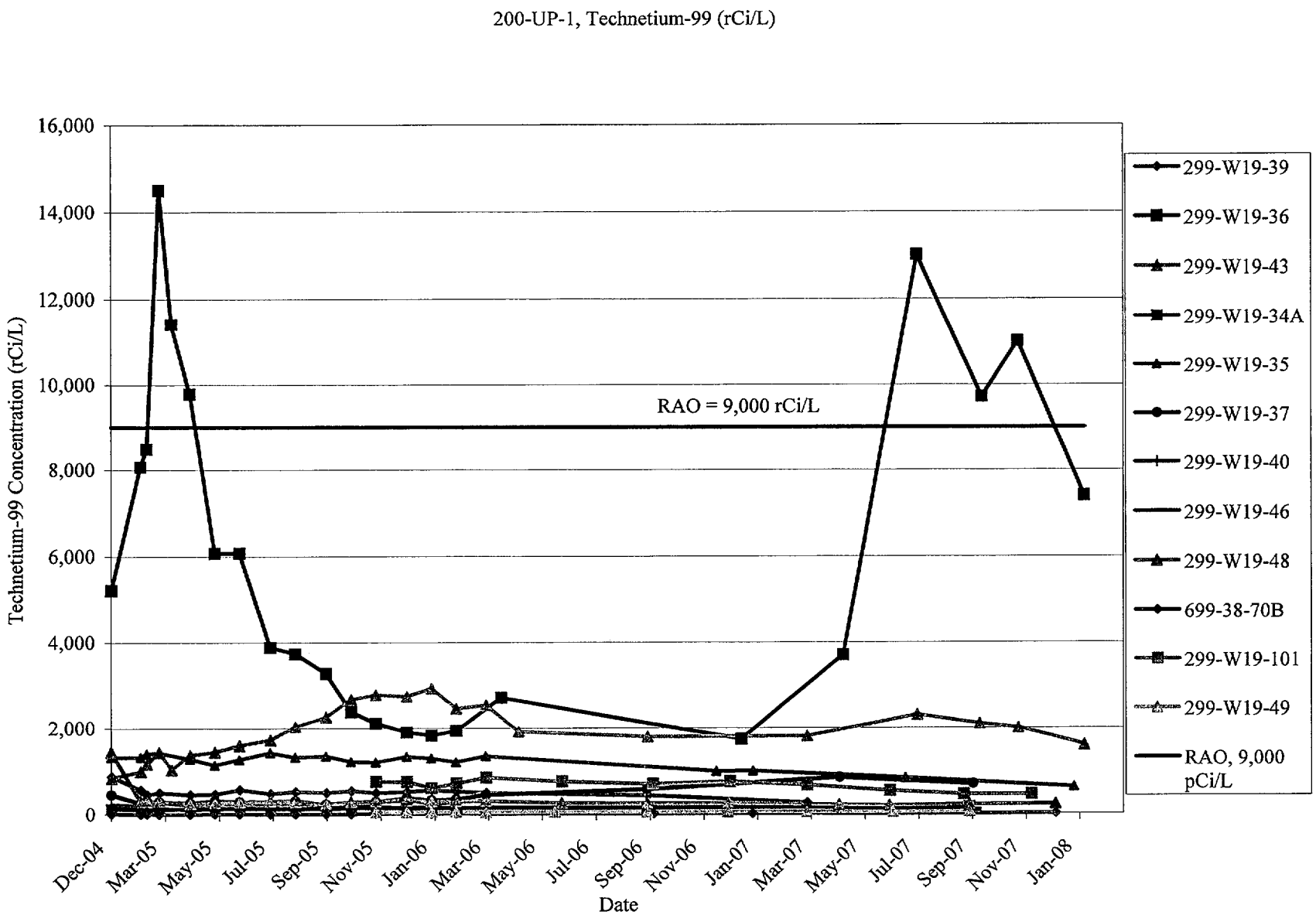
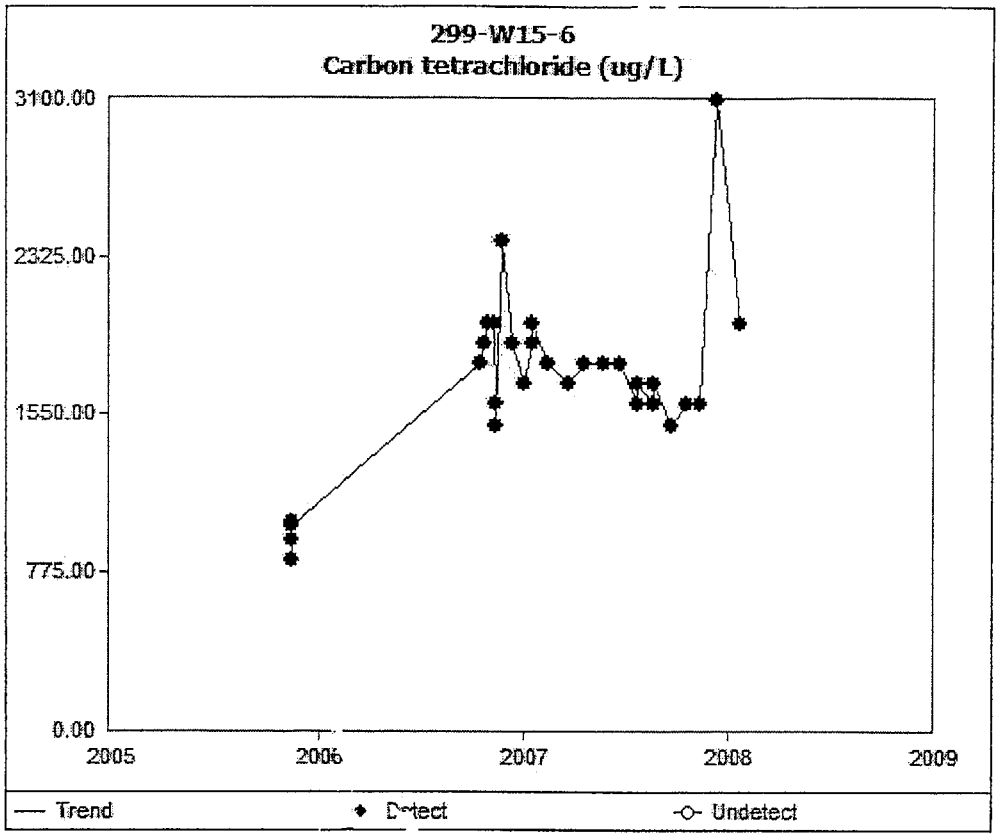
299-W19-46
299-W19-48
699-38-70B
RAO
299-W19-49
299-W19-101


200-UP-1, Technetium-99 (rCi/L)
Technetium-99 Concentration (rCi/L)
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
RAO = 9,000 rCi/L
Dec-04
Mar-05
May-05
Jul-05
Sep-05
Nov-05
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07
Jan-08
Date
299-W19-39
299-W19-36
299-W19-43
299-W19-34A
299-W19-35
299-W19-37
299-W19-40
299-W19-46
299-W19-48
699-38-70B
299-W19-101
299-W19-49
RAO, 9,000 pCi/L

Attachment 8



Attachment 9, Figure 1

APPROVAL OF THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR FY 2008

The Unit Managers for the Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit) approve the attached FY 2008 Soil Vapor Extraction System Operating Plan.

A. C. Tortoso 4/23/08 D. A. Faulk 4/23/08

A. C. Tortoso U.S. Department of Energy Richland Operations Office	Date	D. A. Faulk U.S. Environmental Protection Agency Region 10, Hanford Office	Date

FY 2008 SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR THE CARBON TETRACHLORIDE EXPEDITED RESPONSE ACTION (200-PW-1 OPERABLE UNIT)

SUMMARY

Soil vapor extraction will be used at the 200-PW-1 Operable Unit (OU) during FY 2008 to remove carbon tetrachloride from the vadose zone. The primary objectives for this remediation are protection of the groundwater and mass removal. Only the 14.2 m^3/min soil vapor extraction (SVE) system will be operated. Two sites will be remediated using SVE: the 216-Z-9 (Z-9) site and the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Specific on-line wells have been selected prior to start-up at each site based on vapor monitoring, previous concentration trends, and location. These site-specific plans are included in this operating plan for approval by the Unit Managers prior to implementation. Based on characterization data collected at on-line wells during operation, the mix of on-line wells may be reconfigured during operations to optimize removal. These adjustments to the mix of on-line wells will not be submitted to the Unit Managers for approval prior to implementation but will be reported at Unit Manager Meetings.

Ongoing passive soil vapor extraction will be maintained at Z-1A wells. Passive soil vapor extraction is a remediation technology that uses naturally induced pressure gradients between the subsurface and the surface to drive soil vapor to the surface. In general, falling atmospheric pressure causes subsurface vapor to move to the atmosphere through wells, while rising atmospheric pressure causes atmospheric air to move into the subsurface. The passive soil vapor extraction systems will be used to remove carbon tetrachloride from the vadose zone.

Soil vapor monitoring will be conducted at vadose zone locations near the groundwater, the Cold Creek unit, and the ground surface at the Z-1A and Z-9 sites while they are not being actively remediated using SVE. The soil vapor monitoring plan for both sites from April 2008 through September 2008 is included with this operating plan for approval prior to implementation. Anomalies in the monitoring results will be reported at the 200 Area Unit Manager Meetings. If carbon tetrachloride vapor concentrations increase such that the carbon tetrachloride contamination may impact human health or the environment (including groundwater), the Unit Managers will decide on the appropriate response to mitigate the problem (e.g., relocating the vapor extraction system to address the problem).

The anticipated schedule for SVE operations and soil vapor monitoring is:

April 2008 through June 2008:	Operate the SVE system at the Z-1A site Monitor soil vapor concentrations at the Z-9 site
July 2008 through September 2008:	Operate the SVE system at the Z-9 site Monitor soil vapor concentrations at the Z-1A site

This plan implements continued system operations as determined by the 200-PW-1 operable unit project managers, consistent with *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) Change Number M-15-97-01, "Revised 200-ZP-2 Rebound Study Restart."

This soil vapor extraction system operating plan was updated in April 2008 to add the following summary of the differences between the configuration of the soil vapor extraction system as described in supporting documentation and as currently operating.

SOIL VAPOR EXTRACTION SYSTEM CONFIGURATION

The following table summarizes differences that have been identified between the current SVE system configuration and the configuration identified by historical documents. Justification for these differences is provided below.

Differences – SVE System Supporting Documentation and Current Configuration

Affected Components	Reference	Supporting Documentation Requirements	Current Status and Justification
Record Air Sampler Vacuum Pump	BHI-00395 [a], (May 1996)	Radioactive particulates in the soil vapor stream are to be measured using a **vacuum sample pump and filter paper** located after each HEPA filtration unit. The sample filter paper to be analyzed for radionuclide particulates.	No samplers are installed. System is monitored through routine surveillance.
Record Air Samplers	BHI-00395 [a], (May 1996)	**A continuous sample of the vapor stream** will be drawn through sample filter paper and analyzed for the presence of particulate radionuclides.	
Record Air Sampler	BHI-00089 [b], (May 1995)	A **record sampler** is required to be located on the positive pressure side of the blower.	
HEPA Filter Moisture Control	DOE/RL-91-32 [c] (September 1991)	As a precaution, **filtration and moisture control** will be required for systems placed within radiologically-zoned areas.	No electric heaters or moisture control devices other than passive moisture separators are in place. Filter functionality shall be validated by satisfactory annual DOP testing and monitoring of filter differential pressure.
HEPA Filter Electric Heater	BHI-00395 [a], (May 1996)	A non-contact **electric heater** may be installed before the pre-filter to raise the vented gas temperature and reduce its relative humidity	
System Interlocks Blower Shutdown	BHI-00089 [b], (May 1995)	A control system should be in place to maintain in-line **air stream temperature** (because of heat from the in-line heaters) to < 94° C (200 ° F). This is important to eliminate any decomposition of carbon tetrachloride.	Current interlock shuts-down blower if temperature exceeds 275° F. Undesirable by-products are formed at 400° F. Current 275° F setpoint provides an adequate margin of safety and will be maintained.
HEPA Filter Relative Humidity Criteria	BHI-00395 [a], (May 1996)	The … soil vapor is treated to… **cool and/or heat the vapor (maintain relative humidity at about 40%).**	There are no controls in the system to maintain relative humidity at 40%.

Attachment 9, Figure 4

			Filter functionality shall be validated by satisfactory annual DOP tests and monitoring of filter differential pressure.
System Interlocks Automatic Shutdown	BHI-00395 [a], (May 1996)	If the inlet vapor stream contaminant concentrations exceed 10,000 ppmv carbon tetrachloride, **1,000 ppmv methyl ethyl ketone, or 500 ppmv chloroform**, the system is supposed to shut down and a high inlet contaminant concentration alarm annunciates.	There are no interlocks involving concentrations of methyl ethyl ketone, and chloroform. These two constituents are only present in trace amounts and are not a significant consequence. Interlock will continue to be based only on concentrations of carbon tetrachloride.
HEPA Filter	BHI-00089 [b], (May 1995)	Listed in System Components: The HEPA filter housing containing a pre-filter and two HEPA filters in series	The SVE system may have 1 stage of HEPA filtration. Radiological Control operating experience strongly supports that particulate contamination (other than radon progeny) is not an issue with operation of the SVE units.

HEPA = High-efficiency particulate air (filter)
DOP = Dioctyl phthalate
[a] BHI-00395, Rev. 0, Design, Operations, and Maintenance of the Soil Vapor Extraction Systems for the 200 West Area Carbon Tetrachloride Expedited Response Action (May 1996).
[b] BHI-00089, Rev. 02, Safety Analysis for the 200 West Area Expedited Response Action for Remediation of Carbon Tetrachloride (May 1995)
[c] DOE/RL-91-32 Draft B, Expedited Response Action Proposal (EE/CA & EA) for 200 West Area Carbon Tetrachloride Plume (September 1991)

Attachment 9, Figure 5

SOIL VAPOR EXTRACTION AT THE 216-Z-1A, 216-Z-18, AND 216-Z-12 SITE

Scope

Twenty-eight wells at the 216-Z-1A, 216-Z-18, and 216-Z-12 site (Z-1A site) are identified for potential soil vapor extraction (Table 1). Selected wells will be prepared for potential hook-up to the soil vapor extraction system during April through June 2008.

The last non-operational soil vapor monitoring at Z-1A prior to SVE restart will take place in late March 2008. At that time, any sampling tubes will be removed from potential on-line wells. The current wellhead assemblies (configured for non-operational soil vapor monitoring) will not be disturbed until the monitoring has been completed and the tubing removed.

Extraction Wells

Passive soil vapor extraction is being conducted at the following Z-1A wells with lower intervals open between the Cold Creek unit and groundwater: 299-W18-6L, 299-W18-7, 299-W18-10L, 299-W18-11L, 299-W18-12, 299-W18-246L, 299-W18-247L, and 299-W18-252L (Table 2).

For initial start-up operations at Z-1A, extraction will be implemented at five planned intervals in the Z-1A tile field: 299-W18-165, 299-W18-166, 299-W18-167, 299-W18-168, and 299-W18-174 (Table 1) (Figure 1). Start-up operations in FY 2001, FY 2002, FY 2003, FY 2004, and FY 2005 also were initiated using these five extraction intervals (a sixth interval selected in FY 2001 produced virtually no flow). In FY 2006 and FY 2007, start-up operations were initiated using three of these wells. Selecting the same set of initial wells will allow the rebound in FY 2008 to be compared to the rebound in previous years.

The mix of on-line wells will be periodically changed during operations, based on changing concentrations, extraction interval locations, and operating experience. In general, the initial extraction wells will be nearer the primary carbon tetrachloride source (Z-1A Tile Field) and wells added later will expand operations away from this source.

Two wells, 299-W18-150 and 299-W18-175, in the Z-1A Tile Field, were converted for use as SVE wells during FY 2008 and are included in the list of SVE wells in Table 1. These wells will be prioritized for use in FY 2008.

Characterization

The initial five intervals will be characterized on the first day of operations. During continued operations, all on-line wells will be characterized each week and all off-line wells, if requested, will be characterized during the 2nd, 4th, 6th, 8th, 10th, and final weeks, according to the attached sampling and analysis plan (Table 3).

Data Management

The 200-PW-1 OU technical lead organizes and maintains spreadsheets of the characterization data on a desktop computer. The characterization data are included in the annual performance evaluation report (e.g., SGW-33746, *Performance Evaluation Report for Soil Vapor Extraction Operations at the 200-PW-1 Operable Unit Carbon Tetrachloride Site, Fiscal Year 2006*).

Attachment 9, Figure 6

SOIL VAPOR EXTRACTION AT THE 216-Z-9 SITE

Scope

Thirty wells at the 216-Z-9 site (Z-9 site) are identified for potential vapor extraction (Table 4). Selected wells will be prepared for potential hook-up to the soil vapor extraction system during July through September 2008.

The last non-operational soil vapor monitoring at Z-9 prior to SVE restart will take place in mid to late June 2008. At that time, any sampling tubes will be removed from potential on-line wells. The current wellhead assemblies (configured for non-operational soil vapor monitoring) will not be disturbed until the monitoring has been completed and the tubing removed.

Extraction Wells

For initial start-up operations at Z-9, extraction will be implemented at four planned intervals: 299-W15-217, 299-W15-82, 299-W15-9U, and 299-W15-9L (Table 4) (Figure 1). Start-up operations at Z-9 in FY 1998, FY 1999, FY 2001, FY 2002, FY 2004, FY2006, and FY 2007 also were initiated using these four extraction intervals. (A slightly different set of initial wells was used in FY 2005). Selecting the same set of initial wells will allow the rebound in FY 2008 to be compared to the rebound in previous years. (The SVE system was not operated at the Z-9 site during FY 2003 to avoid interfering with the characterization sampling to be conducted during drilling of well 299-W15-46.)

The mix of on-line wells will be periodically changed during operations, based on changing concentrations, extraction interval locations, and operating experience. In general, the initial extraction wells will be nearer the carbon tetrachloride source (Z-9 Trench) and wells added later will expand operations away from this source.

Two narrow diameter wells, CPT-21 and CPT-11, in the Z-9 wellfield were converted for use as SVE wells during FY 2008 and are included in the list of SVE wells in Table 4. These wells will be prioritized for use in FY 2008. Three narrow-diameter wells (C4937, C4938, and C5340), which were installed south of Z-9 in FY 2007, and the Z-9 slant well (299-W15-48), which was installed beneath Z-9 in FY 2006, also will be prioritized for use in FY 2008.

Characterization

The initial four intervals will be characterized on the first day they are placed into operation. During continued operations, all on-line wells will be characterized each week and all off-line wells, if requested, will be characterized during the 2^{nd}, 4^{th}, 6^{th}, 8^{th}, 10^{th}, and final weeks, according to the attached sampling and analysis plan (Table 3).

Data Management

The 200-PW-1 OU technical lead organizes and maintains spreadsheets of the characterization data on a desktop computer. The characterization data are included in the annual performance evaluation report.

VADOSE ZONE MONITORING PLAN FOR SOIL VAPOR EXTRACTION SITES

Summary

This plan describes planned non-operational monitoring and passive soil vapor extraction monitoring to be conducted during April through September 2008 for the 200 West Area Carbon Tetrachloride Expedited Response Action (200-PW-1 Operable Unit). Non-operational monitoring will be conducted at the 216-Z-9 (Z-9) site during April through June 2008 while the soil vapor extraction (SVE) system is operating at the 216-Z-1A/Z-18/Z-12 (Z-1A) site. Non-operational monitoring will be conducted at the Z-1A site during July through September 2008 while the SVE system is operating at the Z-9 site. Passive soil vapor extraction monitoring will be conducted at the Z-1A site from April 2008 through September 2008.

Purpose and Objectives

The purpose of non-operational monitoring is to measure carbon tetrachloride concentrations in the vadose zone during the shutdown of the SVE system.

The objectives of monitoring the non-operational wells and soil vapor probes are (1) to measure carbon tetrachloride concentrations and trends near the vadose-atmosphere and vadose-groundwater interfaces to evaluate whether non-operation of the SVE system is negatively impacting the atmosphere or groundwater; and (2) to be cognizant of carbon tetrachloride concentrations and trends near the lower permeability Cold Creek unit to provide an indication of concentrations that can be expected during restart of SVE operations and to support selection of on-line wells.

The objectives of monitoring the passive soil vapor extraction system wells, which are all open near the vadose-groundwater interface, are: (1) to measure carbon tetrachloride concentrations and trends near the vadose-groundwater interface; and (2) to quantify the mass of carbon tetrachloride removed using this technology.

Scope and Methods

Carbon tetrachloride soil vapor concentrations will be monitored at selected soil vapor probes and wells during non-operation of the soil vapor extraction (SVE) system (Tables 5 and 6). At any particular time, all of the probes and some of the wells will be "non-operational," i.e., they will not be connected to the SVE system.

Eight of the non-operational wells have a passive soil vapor extraction system installed at the wellhead. Passive extraction wells will vent through aboveground canisters containing granular activated carbon (GAC). The carbon tetrachloride vapor concentration will be monitored both upstream and downstream of the GAC.

For monitoring the non-operational soil vapor probes and wells and the passive extraction wells, the components of this scope are:

- Collect soil vapor samples in Tedlar bags for field screening
- Analyze soil vapor samples for carbon tetrachloride using a field screening instrument (the Bruel and Kjaer 1302 multi-gas analyzer)

- Evaluate concentration trends and report anomalous results to 200-PW-1 Operable Unit Managers
- Include results in annual reports

Duration

Non-operational monitoring and passive soil vapor extraction monitoring will be conducted from April 2008 through September 2008 during FY 2008.

Monitoring Frequency

Monitoring will be conducted monthly.

Monitoring Locations

Locations were selected to focus carbon tetrachloride monitoring near the vadose-atmosphere and vadose-groundwater interfaces and near the Cold Creek unit (Table 5). These monitoring locations may be revised by the 200-PW-1 OU task lead based on developing trends, accessibility, and/or recommendations of the sampler. The 200-PW-1 Operable Unit Managers will be advised of any changes to the monitoring locations. Monitoring locations are shown on Figures 2 and 3.

Data Management

The field screening data obtained from non-operational wells and soil vapor probes and passive extraction wells are entered into a controlled field logbook, which is maintained by Lockheed Martin Services Inc (LMSI) Records Information Management (RIM) department. The 200-PW-1 OU technical lead organizes and maintains spreadsheets of the field screening data on a desktop computer. The field screening data are entered into the Hanford Environmental Information System (HEIS) database.

Data Reporting

All of the field screening data, and associated quality control data, are included in the annual performance evaluation report for soil vapor extraction operations (e.g., SGW-33746, *Performance Evaluation Report for Soil Vapor Extraction Operations at the 200-PW-1 Operable Unit Carbon Tetrachloride Site, Fiscal Year 2006*). The 200-PW-1 Unit Managers will be advised of any anomalous results or new trends, based on comparison with results of previous carbon tetrachloride monitoring and evaluation by the 200-PW-1 technical lead.

Quality Assurance/Quality Control

Quality assurance/quality control requirements for sampling and analysis will be conducted at a level appropriate to field screening for volatile organic compounds, in accordance with the project quality assurance project plan [HNF-20635, *Soil & Groundwater Remediation Project Quality Assurance Project Plan (GRP-QA-001)*]. At a minimum, one field duplicate sample will be collected for every 20 vapor samples collected. A carbon tetrachloride standard and a blank sample will be analyzed at the beginning of the analysis of the vapor samples.

References

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington, as amended.

HNF-20635, *Soil & Groundwater Remediation Project Quality Assurance Project Plan (GRP-QA-001)*, Rev. 2, Fluor Hanford, Inc., Richland, Washington.

SGW-33746, *Performance Evaluation Report for Soil Vapor Extraction Operations at the 200-PW-1 Operable Unit Carbon Tetrachloride Site, Fiscal Year 2006*, Rev. 0, Fluor Hanford, Inc., Richland, Washington.

Table 1. Wells Available for Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through June 2008

Potential On-Line Wells	Reason	Initial Wells
299-W18-6U	Mass removal	
299-W18-89	Mass removal	
299-W18-93	Mass removal	
299-W18-94	Mass removal	
299-W18-96	Mass removal	
299-W18-97	Mass removal	
299-W18-98	Mass removal	
299-W18-99	Mass removal	
299-W18-150	Mass removal	
299-W18-152	Mass removal	
299-W18-153	Mass removal	
299-W18-157	Mass removal	
299-W18-158L	Mass removal	
299-W18-159	Mass removal	
299-W18-163L	Mass removal	
299-W18-165	Mass removal	X
299-W18-166	Mass removal	X
299-W18-167	Mass removal	X
299-W18-168	Mass removal	X
299-W18-169	Mass removal	
299-W18-171L	Mass removal	
299-W18-174	Mass removal	X
299-W18-175	Mass removal	
299-W18-246U	Mass removal	
299-W18-247U	Mass removal	
299-W18-248	Mass removal	
299-W18-249	Mass removal	
299-W18-252U	Mass removal	

Table 2. Passive Soil Vapor Extraction Wells at the 216-Z-1A/Z-18/Z-12 Site, FY 2007

Passive Soil Vapor Extraction Wells	Reason
299-W18-6L	Groundwater Protection
299-W18-7	Groundwater Protection
299-W18-10L	Groundwater Protection
299-W18-11L	Groundwater Protection
299-W18-12	Groundwater Protection
299-W18-246L	Groundwater Protection
299-W18-247L	Groundwater Protection
299-W18-252L	Groundwater Protection

Attachment 9, Figure 11

Table 3. Sampling and Analysis Plan for Soil Vapor Extraction System Operations, April through September 2008

When to Monitor	on-line wells	off-line wells	vacuum wellhead	flow	CCl4 carbon tetrachloride	CHCl3 chloroform	CH2Cl2 methylene chloride	MEK MEK
first day of operations	X		X	X	X	X	X	X
beginning of 2nd week	X	X	X	X	X	X	X	X
beginning of 3rd week	X		X	X	X	X	X	X
beginning of 4th week	X	X	X	X	X	X	X	X
beginning of 5th week	X		X	X	X	X	X	X
beginning of 6th week	X	X	X	X	X	X	X	X
beginning of 7th week	X		X	X	X	X	X	X
beginning of 8th week	X	X	X	X	X	X	X	X
beginning of 9th week	X		X	X	X	X	X	X
beginning of 10th week	X	X	X	X	X	X	X	X
beginning of 11th week	X		X	X	X	X	X	X
beginning of 12th week	X		X	X	X	X	X	X
last day of operations	X	X	X	X	X	X	X	X
Fax copy of monitoring records to 200-PW-1 OU Technical Lead (Virginia Rohay at 376-2344) by close of day following monitoring.								

Table 4. Wells Available for Soil Vapor Extraction System Operations at the 216-Z-9 Site, July through September 2008

Potential On-Line Wells	Reason	Initial Wells
299-W15-6U	Mass removal	
299-W15-6L	Groundwater Protection	
299-W15-8U	Mass removal	
299-W15-8L	Groundwater Protection	
299-W15-9U	Mass removal	X
299-W15-9L	Groundwater Protection	X
299-W15-32	Groundwater Protection	
299-W15-48	Mass Removal	
299-W15-82	Mass removal	X
299-W15-84U	Mass removal	
299-W15-84L	Mass removal	
299-W15-85	Mass removal	
299-W15-86	Mass removal	
299-W15-95U	Mass removal	
299-W15-95L	Mass removal	
299-W15-216U	Mass removal	
299-W15-216L	Groundwater Protection	
299-W15-217	Mass removal	X
299-W15-218U	Mass removal	
299-W15-218L	Groundwater Protection	
299-W15-219U	Mass removal	
299-W15-219L	Groundwater Protection	
299-W15-220U	Mass removal	
299-W15-220L	Groundwater Protection	
299-W15-223	Mass removal	
C4937 (P66D)	Mass removal	
C4938 (P69C)	Mass removal	
C5340 (P68C)	Mass removal	
CPT-11	Mass removal	
CPT-21	Mass removal	

Table 5a. Distribution of Selected Monitoring Locations During Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through June 2008

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-25 m below ground surface)	5	10	14
Cold Creek (25-45 m below ground surface)	0	8	8
Groundwater (50-65 m below ground surface)	8[a]	5	13
Total	13	23	36

[a] Eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network.

Table 5b. Distribution of Selected Monitoring Locations During Soil Vapor Extraction System Operations at the 216-Z-9 Site, July through September 2008

Target Zone	Number of Monitoring Locations		
	Z-1A	Z-9	Total
Near-surface (3-25 m below ground surface)	11	3	14
Cold Creek (25-45 m below ground surface)	6	2	8
Groundwater (50-65 m below ground surface)	8[a]	0	8
Total	25	5	30

[a] Eight available monitoring locations near the vadose/groundwater interface in the Z-1A area are being monitored as part of the passive soil vapor extraction system network.

Table 6a. Non-Operational Wells and Soil Vapor Probes Selected for Monitoring During Soil Vapor Extraction System Operations at the 216-Z-1A/Z-18/Z-12 Site, April through June 2008

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-17 10 ft (blue)	3	southwest of Z-9	CPT-4E 25 ft (white)	8	north central in Z-1A/Z-18/Z-12 field
near-surface	CPT-16 25 ft (blue)	8	east of Z-9	CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface	CPT-27 33 ft (red)	10	southeast of Z-9	CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface	CPT-18 35 ft (blue)	11	northwest of Z-9	CPT-1A 35 ft (black)	11	west of Z-12
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9	CPT-34 40 ft (green)	12	west of Z-18
near-surface	C4937	20	south of Z-9			
near-surface	C4938	20	south of Z-9			
near-surface	C5340	20	south of Z-9			
near-surface	CPT-16 65 ft (red)	20	east of Z-9			
near-surface	CPT-21A 65 ft (green)	20	south of Z-9			
Cold Creek	299-W15-82	25	east side of Z-9			
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9			
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9			
Cold Creek	299-W15-8U	31	southside of Z-9			
Cold Creek	299-W15-217	35	southwest corner of Z-9			
Cold Creek	CPT-24 118 ft (red)	36	northwest of Z-9			
Cold Creek	299-W15-220 SST/118 ft (red)	36	east of Z-9			
Cold Creek	299-W15-95L	44	north side of Z-9			
ground-water	299-W15-220L 163 ft	50	east of Z-9	299-W18-247L*	51	southeast of Z-18
ground-water	299-W15-219L 175 ft	53	northwest of Z-9	299-W18-246L*	52	west of Z-1A
ground-water	299-W15-84L 180 ft	55	west of Z-9	299-W18-252L*	53	middle of Z-1A/Z-18/Z-12 field
ground-water	299-W15-9L	57	11 m from 299-W15-32 extraction well	299-W18-10L*	55	east side of Z-18
ground-water	299-W15-46	66	southside of Z-9	299-W18-7*	60	east side of Z-1A
ground-water				299-W18-11L*	60	Within Z-18
ground-water				299-W18-12*	60	Within Z-18
ground-water				299-W18-6L*	63	west side of Z-1A

* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

Table 6b. Non-Operational Wells and Soil Vapor Probes Selected for Monitoring During Soil Vapor Extraction System Operations at the 216-Z-9 Site, July through September 2008

Target Zone	Z-9	Depth (m)	Comment	Z-1A	Depth (m)	Comment
near-surface	CPT-28 40 ft (blue)	12	farfield south of Z-9	CPT-32 25 ft (green)	8	west of Z-1A
near-surface	CPT-9A 60 ft (blue)	18	farfield north of Z-9	CPT-4E 25 ft (white)	8	north central in Z-1A/Z-18/Z-12 field
near-surface	CPT-21A 65 ft (green)	20	south of Z-9	CPT-13A 30 ft (blue)	10	southeast of Z-1A
near-surface				CPT-7A 32 ft (yellow)	10	farfield northeast of Z-1A
near-surface				CPT-1A 35 ft (black)	11	west of Z-12
near-surface				CPT-33 40 ft (green)	12	between Z-18 and Z-12
near-surface				CPT-34 40 ft (green)	12	west of Z-18
near-surface				CPT-30 48 ft (blue)	15	north of Z-18 (middle of Z-1A/Z-18/Z-12 field)
near-surface				CPT-C3872 62.5 ft	19	east side of Z-1A
near-surface				CPT-1A 68 ft (yellow)	21	west of Z-12
near-surface				CPT-32 70 ft (red)	21	west of Z-1A
Cold Creek	CPT-21A 86 ft (red)	26	south of Z-9	299-W18-152	31	northwest corner of Z-12
Cold Creek	CPT-28 87 ft (red)	27	farfield south of Z-9	299-W18-167	32	within Z-1A
Cold Creek				CPT-4F 109 ft (red)	33	north central in Z-1A/Z-18/Z-12 field
Cold Creek				299-W18-165	33	within Z-1A
Cold Creek				299-W18-249	40	northeast corner of Z-18
Cold Creek				299-W18-248	40	east side of Z-1A
ground-water				299-W18-247L*	51	southeast of Z-18
ground-water				299-W18-246L*	52	west of Z-1A
ground-water				299-W18-252L*	53	middle of Z-1A/Z-18/Z-12 field
ground-water				299-W18-10L*	55	east side of Z-18
ground-water				299-W18-7*	60	east side of Z-1A
ground-water				299-W18-11L*	60	within Z-18
ground-water				299-W18-12*	60	within Z-18
ground-water				299-W18-6L*	63	west side of Z-1A

* Passive soil vapor extraction wells

Note: Colors refer to the color coding on the soil vapor probe tubing.

Figure 1. Location of Extraction and Monitoring Wells at the 216-Z-1A/Z-18/Z-12 and 216-Z-9 Sites

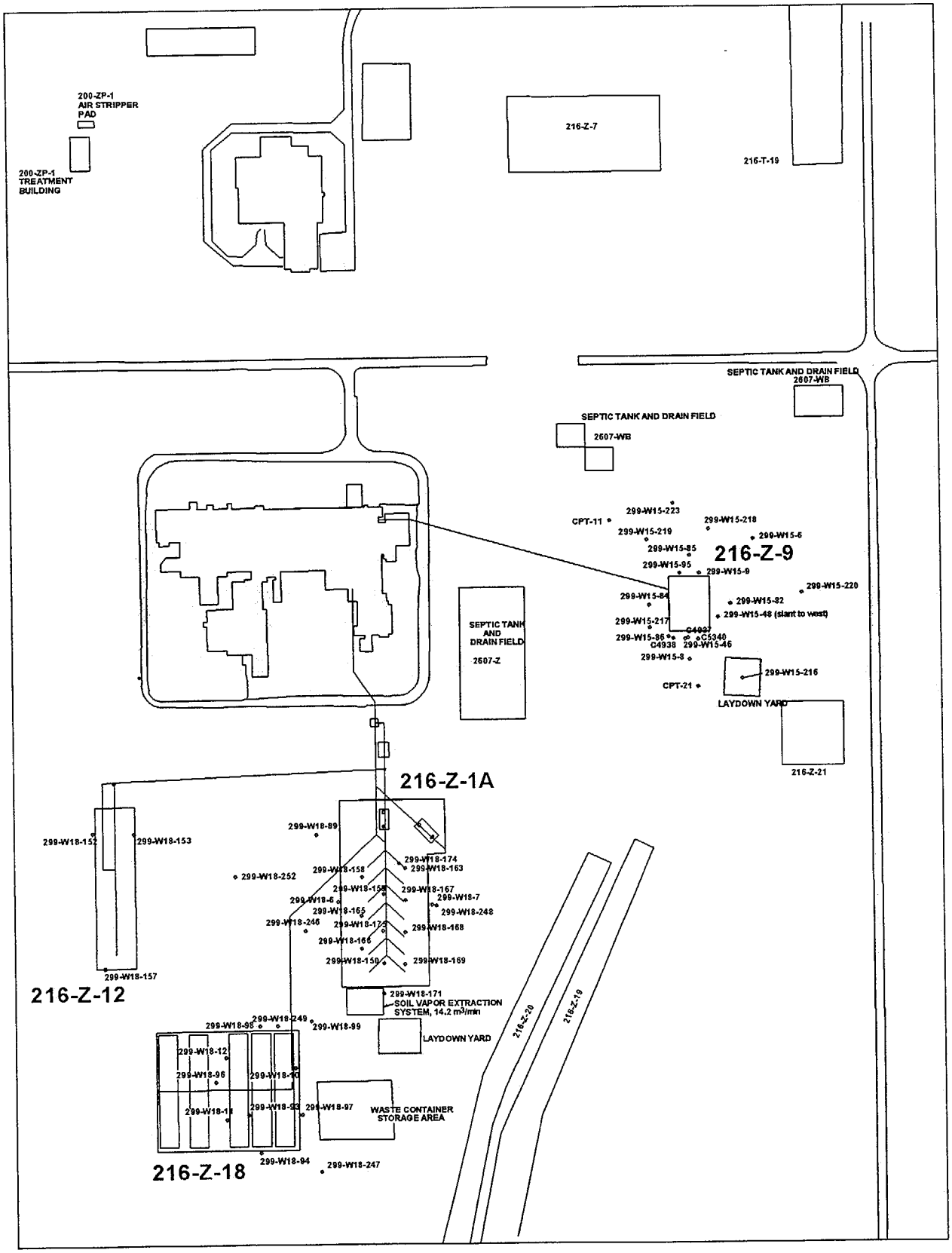


Figure 2. Location of Wells and Soil Vapor Probes Selected for Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring, April through June 2008

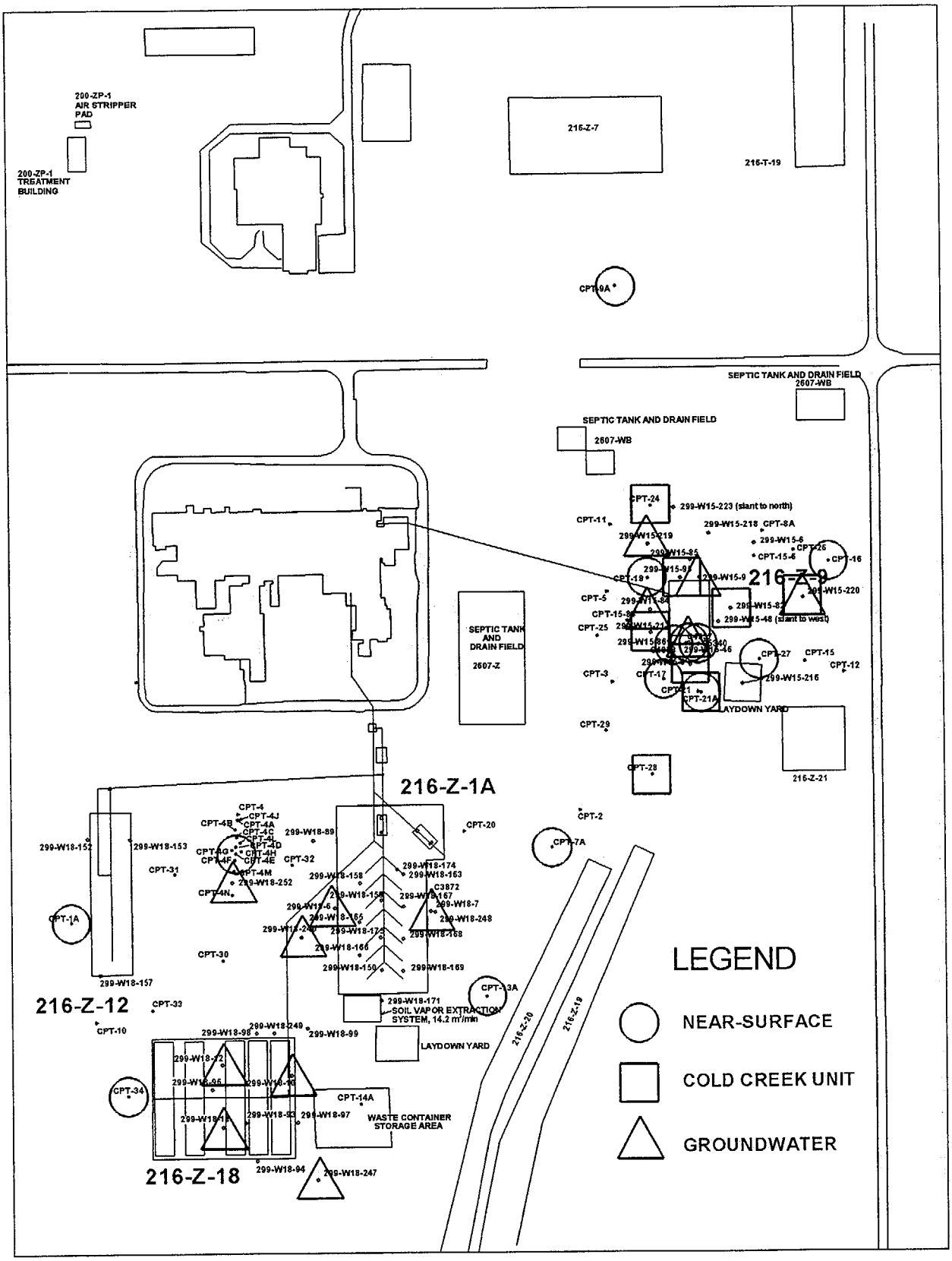


Figure 3. Location of Wells and Soil Vapor Probes Selected for Non-Operational Monitoring and Passive Soil Vapor Extraction Monitoring, July through September 2008

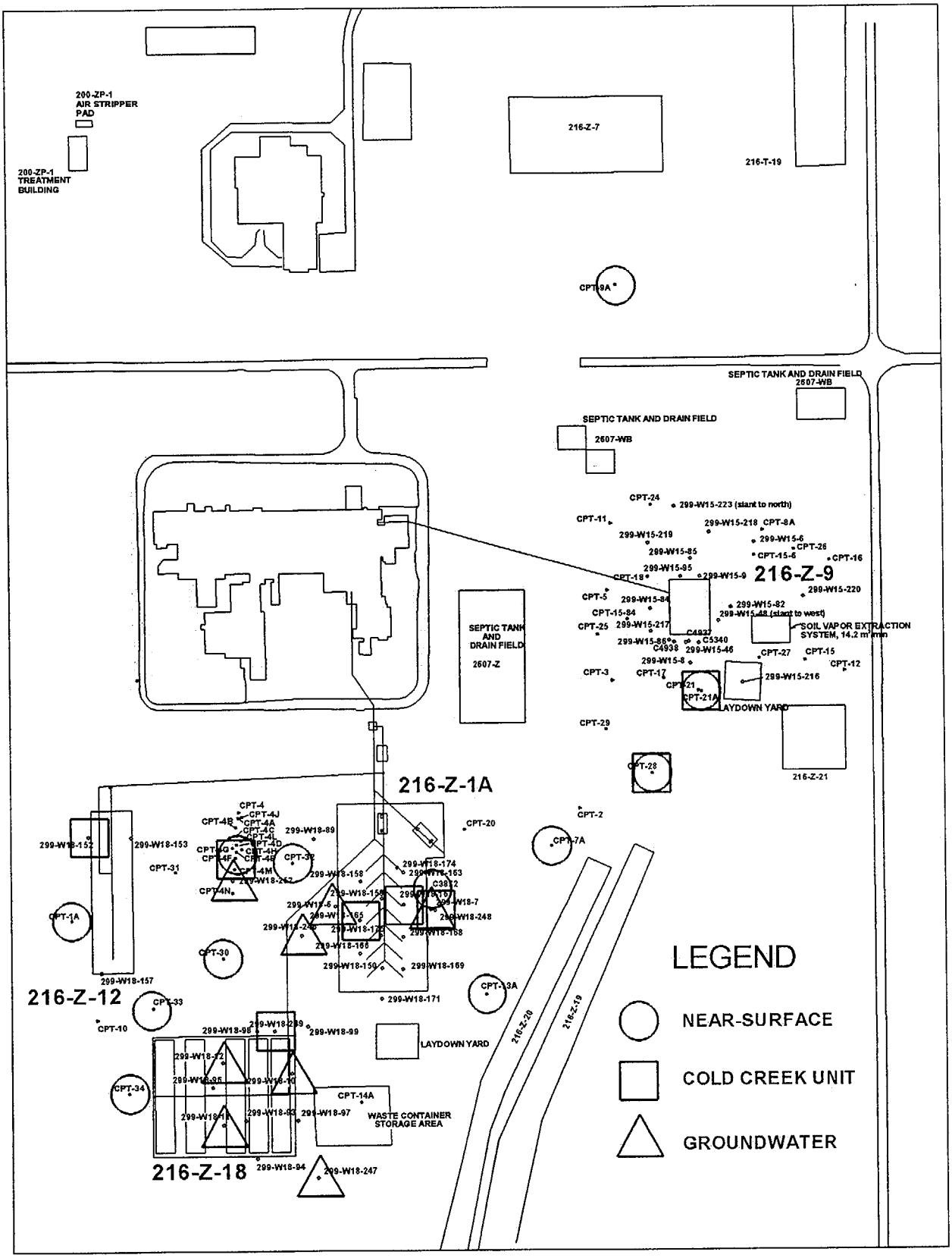
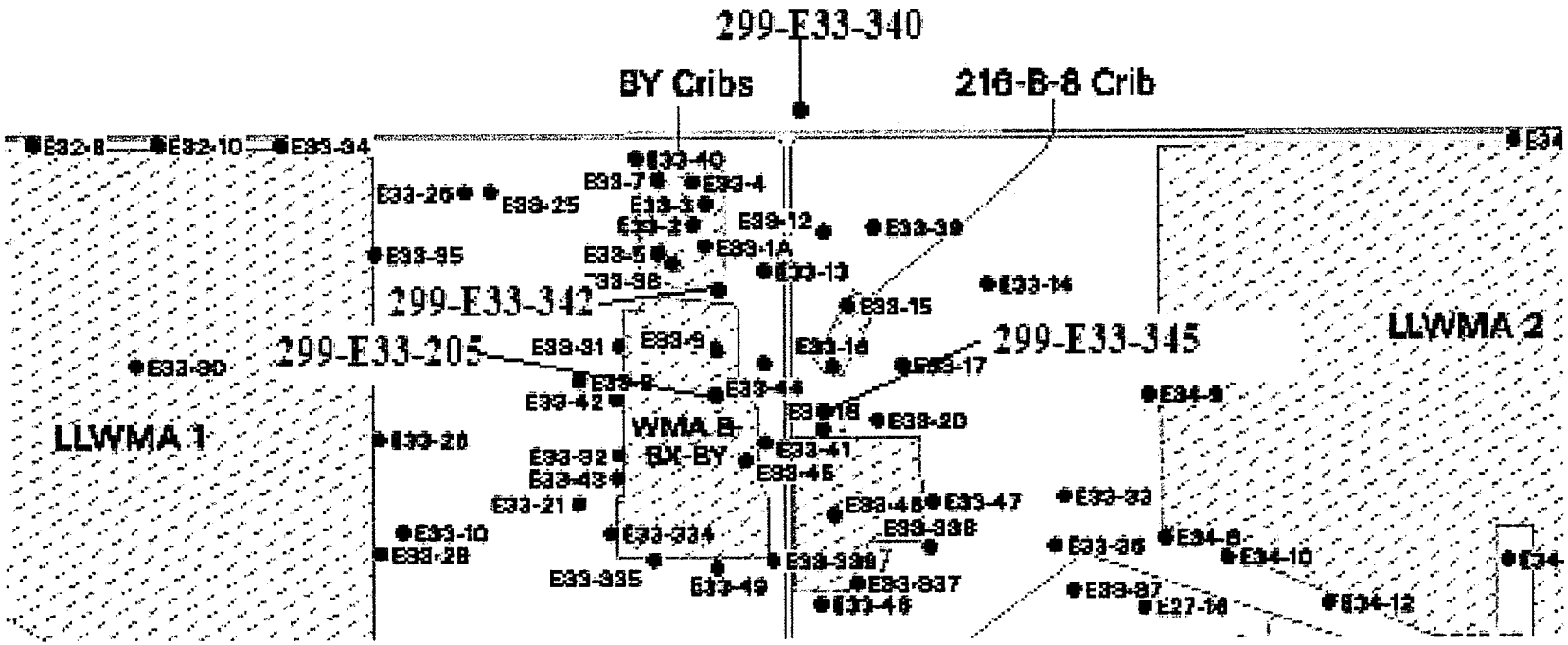
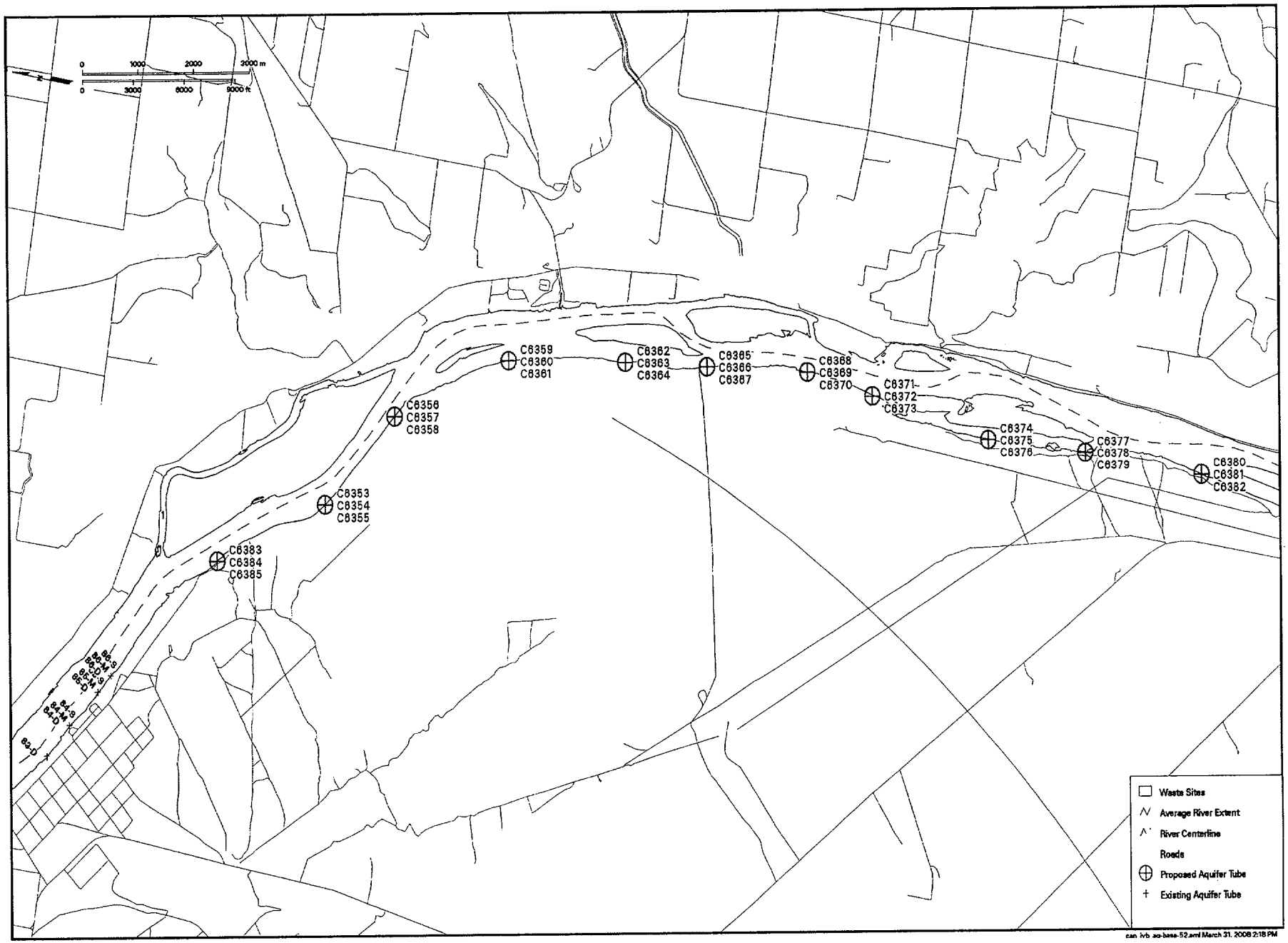


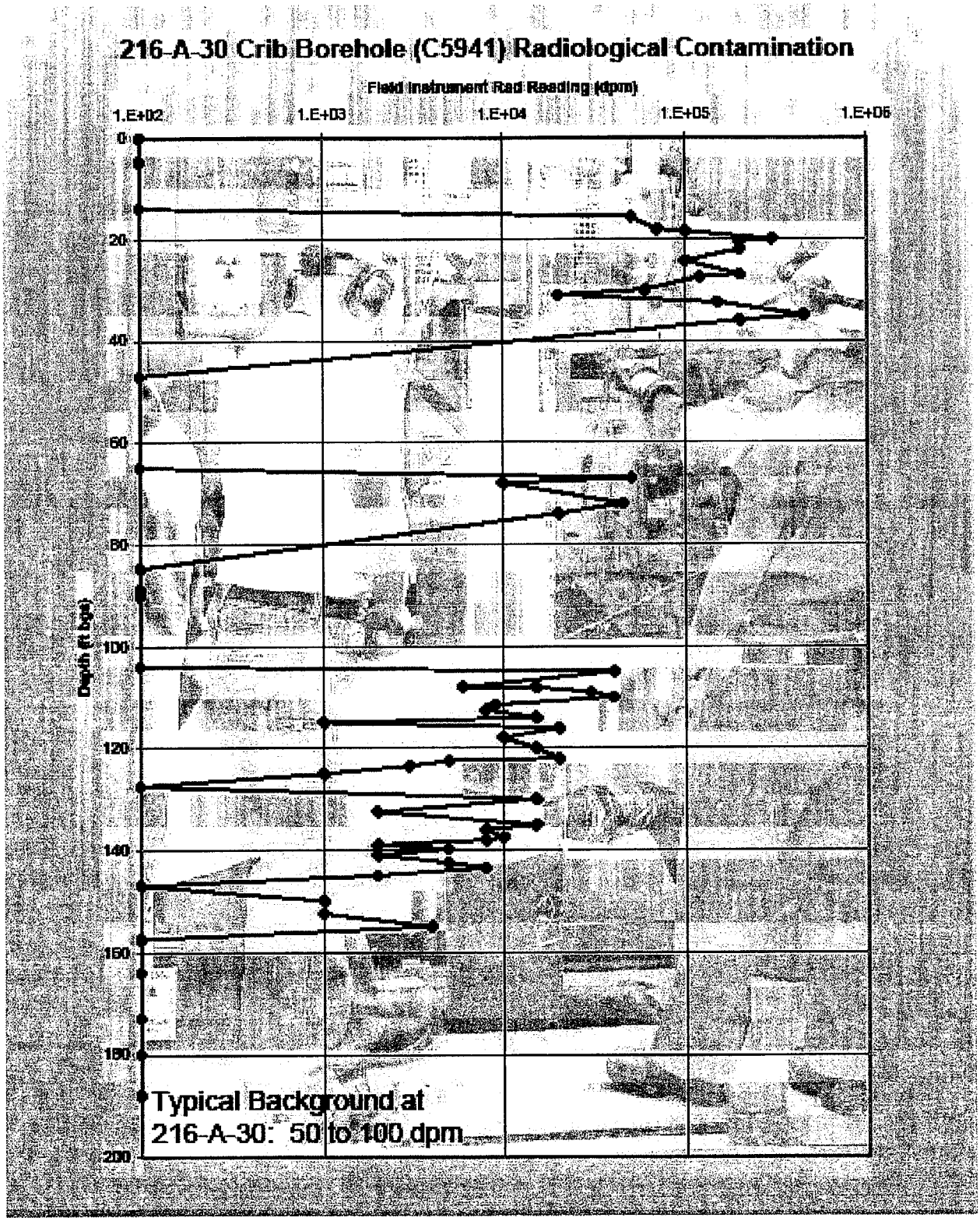
Figure 1: Wells 299-E33-205, 299-E33-340, 299-E33-342, and 299-E33-345 Location Map.



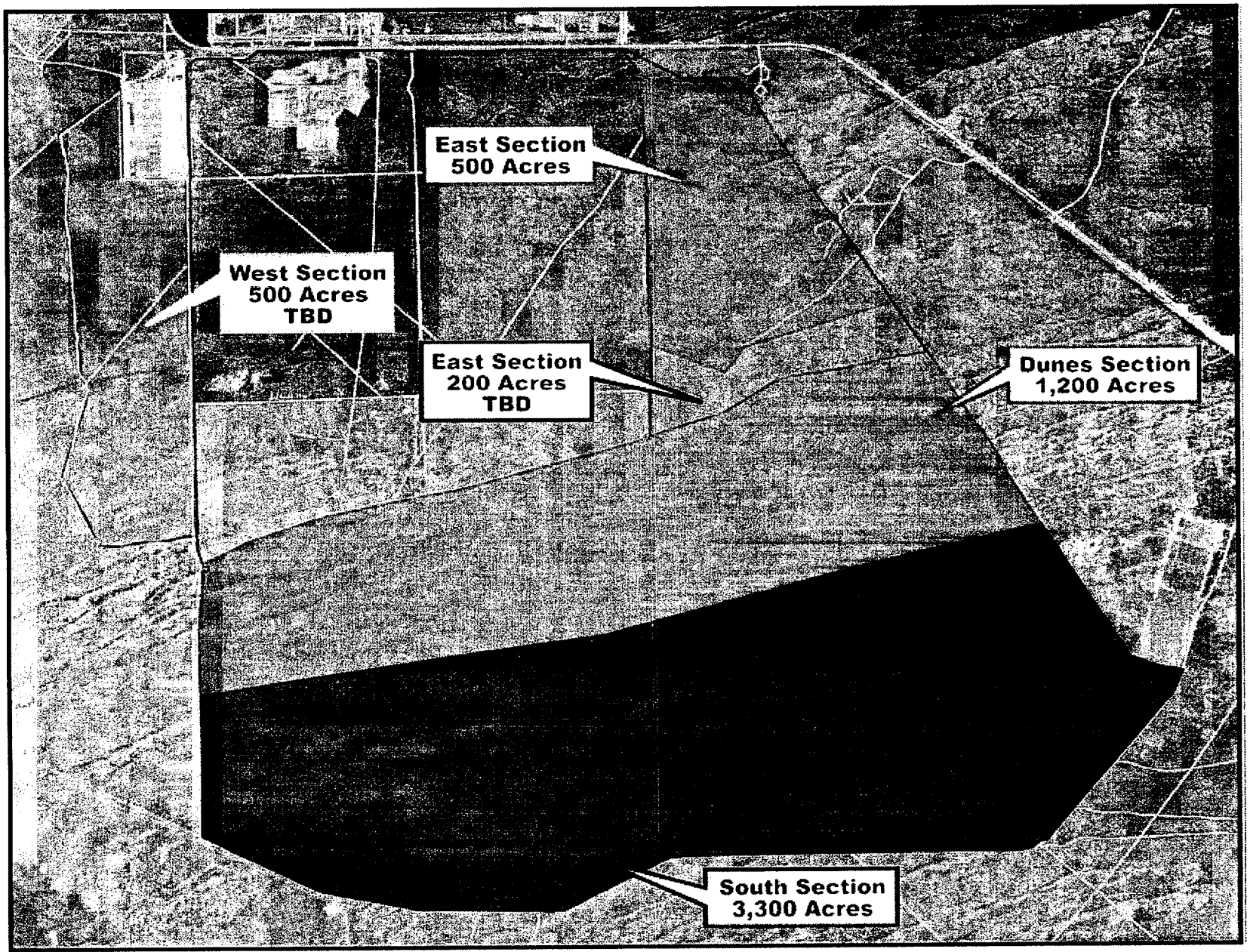
Attachment 11



Attachment 12



BCCA Downposting



Attachment 14, Figure 1

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans
In Accordance with the Tri-Party Agreement Action Plan,
Section 9.0, *Documentation and Records*

Change Number	Document Submitted Under Tri-Party Agreement Milestone	Date:
TPA-CN- 210	Not Applicable	March 17, 2008

Document Number and Title:
Supplemental Remedial Investigation/Feasibility Study Work Plan for the 200 Area Central Plateau Operable Units Volume II: Site-Specific Field-Sampling Plan Addenda DOE/RL-2007-02, Rev. 0, Volume II Addendum 1 - Site-Specific Field-Sampling Plans for the 216-S-5, 216-S-6 216-T-36,216-B-55, 216-A-37-2, 216-A-30 Cribs in the 200-SC-1 Operable Unit

Date Document Last Issued:
December 12, 2007

Originator: Jay S. Decker **Phone:** 376-4416

Description of Change: This change is an update to Figure AD1-14, 216-A-30 Crib Data-Collection Locations which is page AD 1-35 of the document.

The revised location of the subject borehole is as depicted in the Attachment 1 figure.

B. A. Charboneau ~~M.S. McCormick~~ and Craig Cameron agree that the proposed change modifies an approved
RL **Lead Regulatory Agency**

Workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:
During the development of the Supplemental Remedial Investigation/Feasibility Study Work Plan for the 200 Area Central Plateau Operable Units, locations for the site-specific characterization needs, including boreholes, were discussed among the Tri-Parties. The Tri-Parties also discussed and agreed that changes to the sampling locations may occur as new information becomes available, such as the results of electrical resistivity data. Based on the review of the electrical resistivity characterization results, there is an area of high conductivity that is desirable to sample to determine correlation of sample data with electrical resistivity data. This change in borehole location will support this effort. This change has no impact on completed or ongoing activities.

Approvals:

RL Project Manager*	3-26-08 Date	X Approved	__ Disapproved	
Lead Regulatory Project Manager*	3/27/08 Date	X Approved	__ Disapproved	

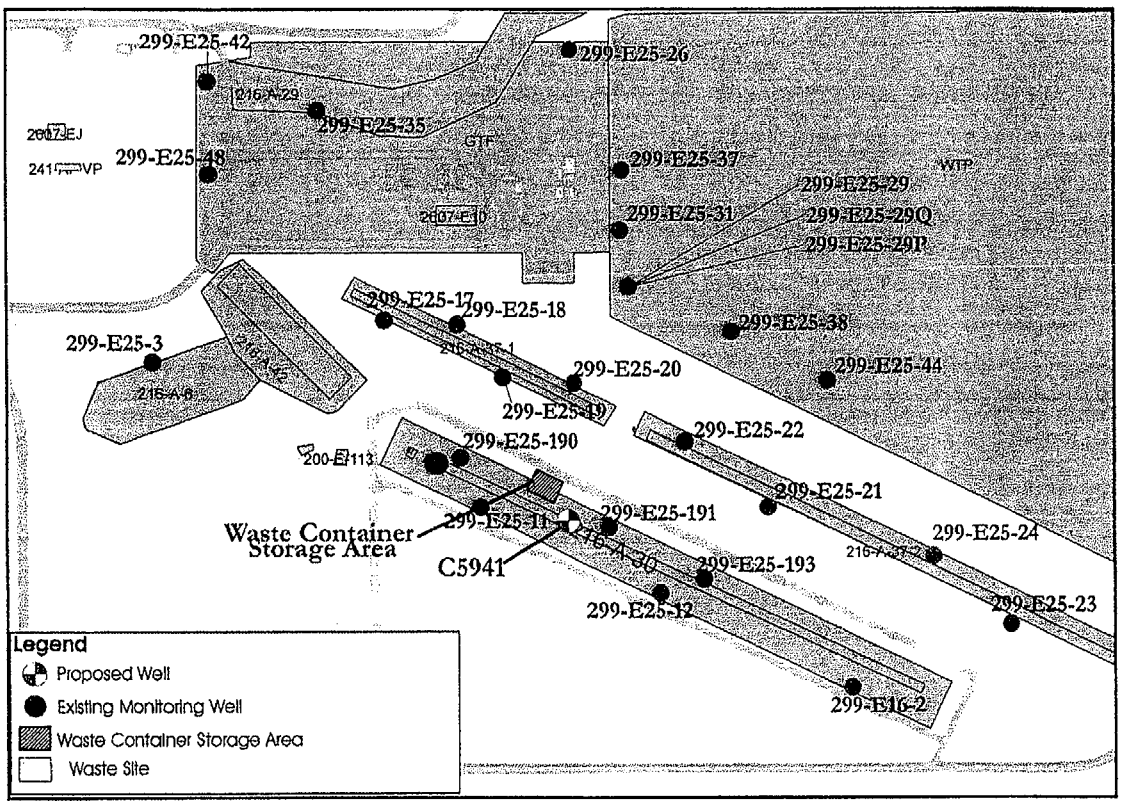
*Send approved form to FH TPAI, H8-12, and the Administrative Record, H6-08

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans
In Accordance with the Tri-Party Agreement Action Plan,
Section 9.0, *Documentation and Records*

Attachment 1

Figure – 1



*Send approved form to FH TPAI, H8-12, and the Administrative Record, H6-08