



Department of Energy
Office of Legacy Management

April 5, 2011

Mr. Carl Spreng
RFLMA Project Coordinator
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Ms. Vera Moritz
USEPA Region 8
1595 Wynkoop Street
Denver, CO 80202

Subject: Transmittal of Modification to Rocky Flats Legacy Management Agreement (RFLMA) Attachment 1, Site Map and Attachment 2, Legacy Management Requirements, for approval

Dear Mr. Spreng and Ms. Moritz:

This correspondence is to transmit the enclosed modification to RFLMA attachments for approval in accordance with RFLMA Part 10, Amendment of Agreement and Modification of Attachments.

The Colorado Department of Public Health and Environment (CDPHE), U.S. Environmental Protection Agency, Region 8 (EPA), and the U.S. Department of Energy, Legacy Management (DOE) (jointly, the RFLMA parties) released the proposed modification for public review and comment on July 20, 2010. The public review and comment period ended October 19, 2010. The RFLMA Party consultation prior to the release of the proposed modification is documented in RFLMA Contact Record 2010-04, which was approved on July 15, 2010.

The modification is the result of RFLMA Party consultation in consideration of the public comments received. The enclosed *Common Concern Statements* and *Comment Responsiveness Summary* documents the RFLMA parties' response to the public comments.

The specific changes to RFLMA Attachment 2 are listed in the Document History pages of Attachment 2. Since RFLMA Attachment 1 consists of only the Site Map figure, there is no Document History part to this attachment. The Site Map was modified consistent with the modifications to map figures in Attachment 2.

2597 Legacy Way, Grand Junction, CO 81503

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10995 Hamilton-Cleves Highway, Harrison, OH 45030

232 Energy Way, N. Las Vegas, NV 89030

REPLY TO: Westminster, CO Office

99 Research Park Road, Morgantown, WV 26505

11025 Dover St., Suite 1000, Westminster, CO 80021

955 Mound Road, Miamisburg, OH 45342

Mr. Carl Spreng
Ms. Vera Mortiz

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Per our discussions, DOE, CDPHE, and EPA will issue the enclosed letter notifying stakeholders of the release of the modification. The enclosed letter is already signed by the DOE and EPA RFLMA Project Coordinators. After the RFLMA Party letter is signed by the CDPHE RFLMA Project Coordinator please return the signed copy to DOE for date stamping and posting of the documents to the Rocky Flats website. DOE will provide notification of the posting in accordance with the RFLMA Public Involvement Plan.

I may be reached at (720) 377-9682 if you have any questions.

Sincerely,



Scott R. Surovchak
LM Site Manager

Enclosures

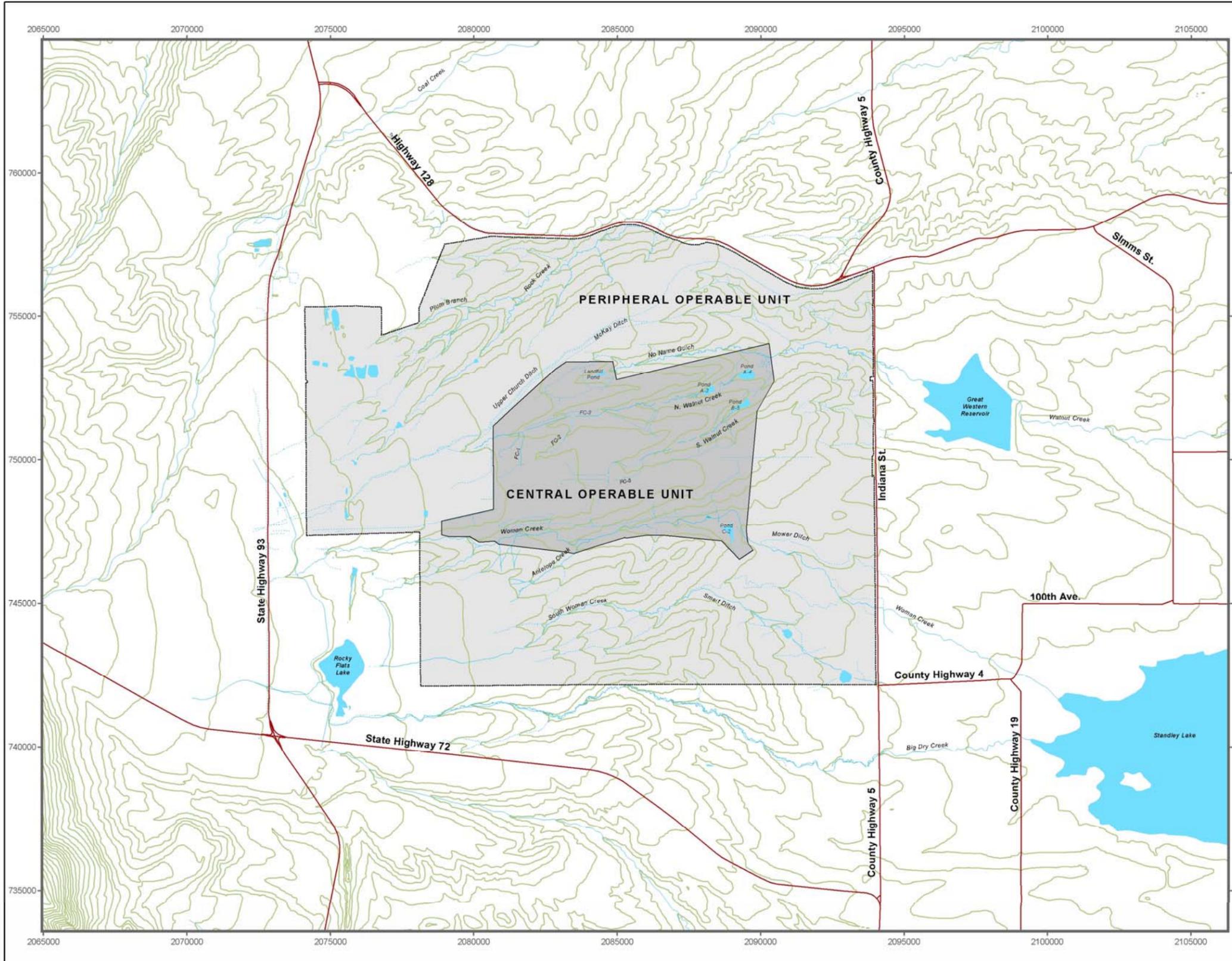
RLD/abm

cc w/o enclosures:
Karen Reed, DOE (e)
Rick DiSalvo, Stoller (e)
Linda Kaiser, Stoller (e)

cc w/enclosures:
rc-rocky.flats (e)
File: RFS 505.15

Attachment 1

Site Map



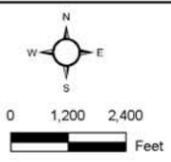
Site Map

KEY

- Major Roads
- Central Operable Unit
- Peripheral Operable Unit

Standard Map Features

- Central Operable Unit boundary
- Site boundary
- Ponds
- Wetland/Marsh
- Perennial stream
- Intermittent stream
- Ephemeral stream
- Topographic contour (40-foot interval)



Rocky Flats Site



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Attachment 2

Legacy Management Requirements

ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

Document History

Rocky Flats Legacy Management Agreement Attachment 2, Legacy Management Requirements

Date	Description of Changes
February 2007	Original document, effective on RFLMA effective date, March 14, 2007.
March 2008	Modification to Section 5.3.2 to change reference for <i>Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan</i> (PLF M&M Plan) to "as approved," to allow modification of the PLF M&M Plan, without need to update the specific date in Attachment 2 each time.
March 2008	Modification to Table 2 regarding PLF Area sampling frequency for GWISINFNORTH and GWISINF SOUTH from "Quarterly; Monthly (if required by decision)", to "Discontinued". Table 2 Note 11 changed to add "GWISINFNORTH and GWISINF SOUTH may be used for investigative purposes." See RFLMA Contact Record 2007-08.
March 2008	Modification to Table 3 regarding frequency of PLF inspections and exit strategy to reflect reduction in frequency based on results of inspections since closure. Based on modification of PLF M&M Plan. See RFLMA Contact Record 2007-08.
September 2009	Modification to Section 5.3.1 to change reference for <i>Final Landfill Monitoring and Maintenance Plan, RFETS, Original Landfill</i> (OLF M&M Plan) to "as approved," to allow modification of the OLF M&M Plan, without need to update the specific date in Attachment 2 each time.
September 2009	Modification to Table 1 to make standards consistent with changes promulgated by the Colorado Water Quality Control Commission (WQCC) through June 2009, as follows: <ul style="list-style-type: none"> • gross alpha/beta removed from analyte list; • Uranium standard changed to 16.8 µg/L; • Arsenic standard changed from 50 µg/L to 0.02 -10 µg/L; • Footnote [a] modified to change the reference to the December 31, 2005 effective date of the Colorado WQCC regulations to "promulgated", and added, "If relevant, effective date information is included in subsequent footnotes", for simplicity; • Deleted PRG acronym in Footnote [b] because not used in Table 1; • Deleted reference to segment specific ambient uranium standards in Footnote [l] and added explanation of radiological parameter units; and, • Footnote [n] added for arsenic, "Standard is 50 µg/L until December 31, 2009. Beginning January 1, 2010, the second number in the range is applied as the applicable or corresponding Table 1 standard the flowcharts in Figures 5 through 13." This is based on footnote 13 to Table III of WQCC Regulation 31, "Water bodies will be considered in attainment of this standard, and not included on the Section 303(d) List, so long as the existing ambient water quality does not exceed the second number in the range."
September 2009	Modification to Table 2 and Figure 1 to reflect changes to Table 1 for uranium and changes to monitoring locations, as follows: <ul style="list-style-type: none"> • U** replaced with U, and note ** referring to uranium isotopes deleted; • Well 45605 removed and replaced with well 45608; and, • Well TH046992 removed and SPPMM01 replaced by SPOUT. See RFLMA Contact Records 2007-07, 2008-04, and 2008-09.
September 2009	Modification to Table 3 regarding frequency of OLF inspections and exit strategy to reflect reduction in frequency based on results of inspections since closure and based on modification of OLF M&M Plan. See RFLMA Contact Record 2008-07. Clarified frequency for vegetation surveys and vegetation monitoring, and made PLF and OLF requirement read the same.

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Date	Description of Changes
September 2009	Modification of Section 5.3.7 and Table 5 to reflect completion of additional ecological sampling. See RFLMA Contact Record 2008-01.
September 2009	Modification of Section 7.2 to change reference "DOE 2006" to "as approved" for the PLF and OLF M&M Plan for consistency with modification to Sections 5.3.1 and 5.3.2.
December 2009	Modification to Table 1, Footnote [m] making 1,4-dioxane standard effective through 3/21/2012, consistent with changes promulgated by the WQCC in November 2009.
March 2011	Modification based on proposed modifications released for public review and comment on July 20, 2010. The final modification reflects consideration of public comments received and a comment responsiveness summary is included in the CDPHE and EPA approval letter. The specific changes are itemized below.
March 2011	Modification to Section 2.1 to reflect change to the surface water Recreation Classifications adopted by the Colorado Water Quality Control Commission, effective January 1, 2010.
March 2011	<p>Modification to Section 5.</p> <ul style="list-style-type: none"> • Section 5.1 revised to reflect new POCs in Walnut Creek and Woman Creek near the COU boundary. The new POCs, WALPOC and WOMPOC replace GS08, GS11 and GS31 when DOE notifies CDPHE and EPA that construction of new flumes and monitoring equipment for WALPOC and WOMPOC is complete. POCs GS01 and GS03 remain POCs for two years after WALPOC and WOMPOC become POCs. EPA or CDPHE may require DOE to submit a modification to the two year period in accordance with RFLMA paragraph 65. • Section 5.4.1 revised, to reflect removal of Boundary wells as RFLMA monitoring points, and moving the provision for duplicate and split samples from 5.4.2 to this sub-paragraph. • Section 5.4.2 revised to reflect discontinuance of protocol for pond pre-discharge samples when Pond A-4, B-5, or C-2 are no longer operated in batch and release mode.
March 2011	Section 6.0, bullet referring to Figure 7 changed to remove reference to Boundary wells.
March 2011	<p>Modification to Figure 1, Water Monitoring Locations</p> <ul style="list-style-type: none"> • Added note that surface water POC locations GS01, GS03, GS08, GS11, GS31 will be deleted as POCs in accordance with Section 5.1. • Added note that Figure 1 reflects current surface water configuration with ponds A-3, A-4, B-5, C-2 and PLF. Former ponds A-1, A-2, B1 through B-4 and C-1 designated as wetland/marsh. If remaining dams are breached the configuration of resulting wetland/marsh will be based on the dam breach design. • Wetland/marsh symbol added to Standard Map Features. • Deleted treatment system monitoring location PLFPONDEFF and added monitoring location NNG01. • Deleted Boundary wells 10394 and 41691. • Added new surface water POC monitoring locations WALPOC and WOMPOC. • Errata. Deleted note in Key incorrectly referencing Attachment 3.
March 2011	Modification to Figure 2 to add "(CAD/ROD Figure 13)" to the title to show source.
March 2011	<p>Modification to Figures 3 and 4.</p> <ul style="list-style-type: none"> • Former ponds A-1, A-2, B1 through B-4, and C-1 designated as wetland/marsh • Wetland/marsh symbol added to Standard Map Features
March 2011	Modification to Figure 5 to change terminology from "compliance value" to "calculated value" in flowchart and note 1. Changed reference from "Terminal Pond POCs" and "Indiana St. POCs" to "POCs inside COU" and "GS01 and GS03," respectively, in note 1. Calculated value for nitrate evaluation changed to "30-day average", from "85 th percentile of 30-day averages for previous calendar year".

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Date	Description of Changes
March 2011	Figure 6. Corrected the reference in note 1. Note 2 (explanation of 30-day average calculation) and note 3 (explanation of 12-month rolling average calculation), were inadvertently reversed in the original Figure 6. Changed terminology from “compliance value” to “calculated value” in flowchart and note 1.
March 2011	Modification to Figure 7 to remove reference to Boundary wells.
March 2011	Modification to Figure 11 to change name of sampling location PLFPONDEFF to NNG01. Deleted note 8 regarding evaluating pond operations. <ul style="list-style-type: none">• Deleted reference to SPPMM01 in note 5. Replaced by SPOUT in September 2009 modification.• Deleted reference to GWISINFNORTH and GWISINFSOUTH in note 4 and in flowchart. These locations deleted in March 2008 modification of Table 2.
March 2011	Modification to Figure 13, Pre-discharge Pond Sampling for discontinuance of pre-discharge sampling if ponds are not operated in batch and release mode.
March 2011	Modification to Table 1 to delete column for Temporary Modifications [TMs] and revise footnotes [c] and [h] to reflect expiration of TMs on December 31, 2009. Also revised footnote [n] to clarify it only applies to the arsenic standard.
March 2011	Modification to Table 2 to make consistent with changes to Figures 1, 5, 7, 11, and 13 and Section 5. <ul style="list-style-type: none">• Deleted reference to Boundary wells from note 7.• In footnote *, uranium added to list of analytes for groundwater samples that are filtered in the field using a 0.45 µm in-line filter.

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ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

1.0 PURPOSE AND BACKGROUND

The purpose of this attachment to the Rocky Flats Legacy Management Agreement (RFLMA) is to specify the legacy management requirements that will ensure the response action selected and approved in the final Corrective Action Decision and Record of Decision (CAD/ROD) for the Central Operable Unit (OU) remains protective of human health and the environment. The remedy specified in the final CAD/ROD is supported by a Comprehensive Risk Assessment, which is based on a specific land use. The remedy, therefore, relies on certain physical and institutional controls, which must be maintained to ensure long-term protectiveness. The remedy also includes engineered features – landfills and water treatment systems – which must be maintained to remain protective. Reduced levels of residual soil contamination remain at the site and may continue to affect surface water. Contaminated groundwater also exists at the site and may impact surface water quality. Continued routine monitoring for groundwater and surface water is therefore required. Air, soil, and ecological receptors have been extensively monitored for many years and routine monitoring is no longer required.

Legacy management requirements described in this attachment are intended to address the requirements of the following statutes:

- Resource Conservation and Recovery Act (RCRA);
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) including applicable or relevant and appropriate requirements (ARARs); and
- Colorado Hazardous Waste Act (CHWA).

Modifications to this attachment will occur in accordance with the provisions of Part 10 of RFLMA.

2.0 REMEDY PERFORMANCE STANDARDS AND REQUIREMENTS

Remedy performance standards and requirements are enforceable numerical values or narrative descriptions of conditions or restrictions, designed to protect existing or potential uses, against which remedy performance can be measured. These standards and requirements are derived from state surface water standards and from requirements established in the final CAD/ROD.

2.1 Surface Water Standards

Protection of surface water was a basis for making soil and groundwater response action decisions during the cleanup period so that surface water on site and leaving the site would be of sufficient quality to support all uses. The applicable surface water uses are consistent with the following Colorado Water Quality Control Commission (WQCC) surface water use classifications:

- Water Supply,
- Aquatic Life – Warm 2,

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- Agriculture,
- Recreation N (North Walnut Creek, South Walnut Creek, and Pond C-2), and
- Recreation E (Woman Creek).

The remedy performance standards for surface water at the Rocky Flats Site are found in Table 1 and are based on the tables found in the WQCC Regulation No. 31: Basic Standards and Methodologies for Surface Water (5 CCR 1002-31) and on the site-specific standards in the WQCC Regulations No. 38 (5 CCR 1002-38). If the numeric values from the basic standards and the site-specific standards differ, the site-specific standard applies. In addition to practical quantitation levels (PQLs) allowed by the WQCC regulations, site-specific PQLs may be proposed to Colorado Department of Public Health and Environment (CDPHE) for approval. Any changes to the standards will be discussed in the annual legacy management report.

The WQCC-designated groundwater use classification at the site is surface water protection. The numeric values for measuring potential effects of contaminated groundwater on surface water quality are the surface water standards in Table 1. Exceedances of water quality standards at a surface water POC may be subject to civil penalties under Sections 109 and 310(c) of CERCLA.

Criteria and strategies for comparing analytical results to these numeric values are established in Section 5 and in attached flowcharts.

2.2 Requirements of the Final CAD/ROD

Some response actions taken under Rocky Flats Cleanup Agreement decision documents specified conditions or restrictions that extend into the legacy management period. These requirements are captured in the final CAD/ROD and are specified in this attachment.

3.0 PHYSICAL CONTROLS

3.1 Engineered Remedies

DOE will maintain physical controls as necessary to protect engineered elements of the remedy, such as landfill covers, groundwater treatment systems, and monitoring equipment.

3.2 Signs

DOE will post signs legible from at least 25 feet at intervals around the perimeter of the Central OU, sufficient to notify persons that they are at the boundary of the Central OU. These signs will measure at least 11 inches by 14 inches and will include the following language: "U.S. Department of Energy – No Trespassing". In addition, signs listing use restrictions and providing contact information will be posted at access points to the Central OU.

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4.0 INSTITUTIONAL CONTROLS

Institutional controls in the form of use restrictions are established in the final CAD/ROD. These controls are embodied in an environmental covenant granted by DOE to the CDPHE and are listed in Table 4. The covenant is recorded by Reception Number 2006148295 in Jefferson County, Colorado.

DOE will employ administrative procedures to control all site modification, maintenance, or other activities requiring excavation within the Central OU in accordance with the institutional controls to ensure to prevent violation of the restrictions listed in Table 4. DOE shall ensure that all such site activities will not compromise the integrity or function of the remedy or result in uncontrolled releases of or exposures to subsurface contamination, in accordance with the land use restrictions in Table 4.

DOE will utilize work control procedures to help maintain the use restrictions and ensure protection of the integrity of the institutional controls. These procedures derive from EPA and State of Colorado regulation and guidance and DOE Orders and guidance. The DOE Integrated Safety Management System (ISMS) utilizes processes such as the job hazard analysis (JHA) to identify and mediate environmental, health and safety risks to ensure all work is done in a safe and environmentally protective manner.

5.0 MONITORING REQUIREMENTS

Monitoring will provide measurements for remedy performance, safety, compliance with standards, and effectiveness of physical and institutional controls. Monitoring requirements are designed to provide data that meet designated monitoring objectives (as outlined in Table 2 and in attached flowcharts) and that support operational and regulatory decision making. Legacy Management operational documents relating to the monitoring and maintenance performed by DOE will be provided to CDPHE and the Environmental Protection Agency (EPA) and will be available to the public.

Environmental sampling, analysis, and data management required by this attachment will conform to the Legacy Management CERCLA Sites Quality Assurance Project Plan (QAPP) and meet the quality assurance and quality control requirements in current EPA guidance. DOE will submit the QAPP to the CDPHE and EPA within two months of execution of the RFLMA. DOE will ensure that laboratories generating data have procedures for assuring that the precision, accuracy, representativeness, completeness, and comparability (and sensitivity in the case of radiological analyses) of data are known and documented. DOE will also perform periodic assessments of analytical data, including laboratory audits. Upon request, all analytical data including QA/QC procedures, audits, and reports will be provided to CDPHE and/or EPA.

Standard EPA analytical methods will be used with the intent that detection limits will be less than the respective standards. If standard analytical methods cannot attain the standard, then alternative methods or PQLs will be proposed to CDPHE. The currently accepted PQLs are listed in Table 1.

5.1 Monitoring Surface Water

Compliance with the surface-water standards in Table 1 will be measured at the Points of Compliance (POCs) downstream of the terminal ponds and consider groundwater in alluvium. Points of Evaluation (POEs) and additional performance monitoring locations serve to monitor the quality of surface water in the Central OU. The data evaluation methods described in the attached flowcharts will be used to evaluate sampling data collected at these locations. POCs, POEs and performance monitoring locations are shown in Figure 1; the monitoring location identification, description and sampling criteria are identified in Table 2.

- **Points of Compliance (POCs):** Located in Woman and Walnut Creeks. These locations are used to demonstrate compliance with the surface-water standards in Table 1. POC monitoring locations WALPOC and WOMPOC require construction of a new flume in Walnut Creek and a new flume in Woman Creek at the locations shown on Figure 1 and described in Table 2. After each new flume and associated sampling equipment is installed and tested for proper operation, DOE shall notify CDPHE and EPA that construction is complete. WALPOC will replace GS08 and GS11 on the date of the DOE notification for that location. WOMPOC will replace GS31 on the date of the DOE notification for that location. WALPOC and WOMPOC will also replace GS03 and GS01 respectively upon DOE notification to DOE and CDPHE certifying that WALPOC and WOMPOC have been functioning as POCs for at least two years. EPA or CDPHE may extend the two-year period by requiring DOE to submit a modification to this attachment in accordance with RFLMA paragraph 65 if either determines that such modification is necessary to ensure protection of human health and the environment.
- **Points of Evaluation (POEs):** Located in the Central OU upstream of the ponds and POCs. These locations are used to evaluate water-quality in comparison to the surface-water standards in Table 1.
- **Performance monitoring locations:** Located downstream of specific remedies to determine the short and long-term effectiveness of these remedies where known contaminants may affect surface water.

5.2 Monitoring Groundwater

Groundwater is monitored in or near areas of groundwater contamination that might adversely affect surface water quality (Figure 2). Contaminated groundwater emerges to surface water before leaving the Central OU. DOE will maintain a network of groundwater monitoring wells to assess the potential effects of contaminated groundwater on surface water quality. These wells and sampling criteria are identified in Table 2 and shown in Figure 1 with the following well classifications:

- **Area of Concern (AOC) Wells:** Located within a drainage and downgradient of a contaminant plume or group of contaminant plumes. These wells are monitored to determine whether the plume(s) may be discharging to surface water.
- **Sentinel Wells:** Typically located near downgradient edges of contaminant plumes, in drainages, and downgradient of groundwater treatment systems. These wells are

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monitored to determine whether concentrations of contaminants are increasing, which could indicate plume migration or treatment system problems.

- Evaluation Wells: Typically located within plumes and near plume source areas, or in the interior of the Central OU. Data from these wells will help determine when monitoring of an area or plume can cease. A subset of these wells is located in areas that may experience significant changes in groundwater conditions as a result of closure activities.
- RCRA Wells: Dedicated to monitoring the Present Landfill and Original Landfill.

5.3 Remedy Monitoring and Maintenance

5.3.1 Original Landfill

Groundwater and surface water monitoring details, including criteria and analytes, are listed in Table 2. Table 3 summarizes the inspection and maintenance requirements contained in the approved *Original Landfill Monitoring and Maintenance Plan*, which is incorporated by reference as an enforceable requirement of the RFLMA.

5.3.2 Present Landfill

Groundwater and surface water monitoring details, including criteria and analytes, are listed in Table 2. Table 3 summarizes the inspection and maintenance requirements contained in the approved *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan*, which is incorporated by reference as an enforceable requirement of the RFLMA.

5.3.3 Groundwater Treatment Systems

Each system will be monitored, at a minimum, for untreated influent and treated effluent, and for impacts to surface water downstream of the effluent discharge point according to the sampling criteria in Table 2 and the decision rules in the attached flowcharts. The systems will be maintained to ensure the effluent meets Table 1 standards.

5.3.4 Residual Subsurface Contamination

The Central OU will be monitored for significant erosion annually and following major precipitation events. DOE will evaluate whether the erosion is in proximity to the subsurface features shown in Figures 3 and 4. Monitoring will include visual observation (and measurements, if necessary) of precursor evidence of significant erosion (cracks, rills, slumping, subsidence, sediment deposition, etc.).

5.3.5 Monitoring Physical Controls

The condition of signs and other physical controls maintained by DOE will be inspected on a quarterly basis.

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5.3.6 Monitoring Institutional Controls

The effectiveness of the institutional controls described in Table 4 of this attachment and in the Environmental Covenant will be determined by inspecting the Central OU at least annually for any evidence of violations of those controls. DOE will also annually verify that the Environmental Covenant for the Central OU remains in the Administrative Record and on file with the Jefferson County Planning and Zoning Department.

5.3.7 Ecological Sampling

The Ecological Risk Assessment determined that residual contamination does not represent a significant risk of adverse ecological effects. The CAD/ROD, however, requires that specific additional sampling be conducted to reduce the uncertainties determined in the Ecological Risk Assessment. Additional ecological sampling listed in Table 5 was completed and approved by CDPHE on April 2, 2008.

5.4 Operational Monitoring

Operational monitoring is not a requirement of the CAD/ROD, but is a requirement of this Attachment. Operational monitoring provides information that will supplement CAD/ROD required monitoring.

5.4.1 Duplicate or Split Sampling

CDPHE and EPA will be allowed the opportunity to collect duplicate or split samples for any monitoring. This opportunity shall be coordinated in accordance with the consultative process and right of entry provisions in RFLMA.

5.4.2 Pre-discharge Pond Sampling

DOE will collect pre-discharge samples from Pond A-4, Pond B-5, and Pond C-2, and as needed from any other pond upstream of a POC temporarily functioning as a terminal pond when said pond is operated in batch and release mode. DOE will notify appropriate parties in accordance with Figure 13 in advance of pre-discharge pond sampling. Samples will be analyzed for POC constituents far enough in advance of a routine discharge to allow action to be taken if exceedances are suggested, but near enough to the time of discharge to be representative of the discharge composition. Figure 13 shows how actions are determined based on the results of pre-discharge samples. Ponds will be operated to maintain dam safety regardless of the status or results of pond sampling.

5.4.3 Adverse Biological Conditions

DOE will note evidence of adverse biological conditions (e.g., unexpected mortality or morbidity) observed during other monitoring and maintenance activities described above.

6.0 ACTION DETERMINATIONS

Whenever any of the following reportable conditions are observed, DOE shall follow the appropriate procedures in this section. Reportable conditions include:

- Exceedances of surface water standards at surface water and groundwater monitoring locations consistent with the attached flowcharts;
- Evidence of significant erosion in areas of residual subsurface contamination;
- Evidence of adverse biological conditions;
- Conditions affecting the effectiveness of the landfill covers;
- Evidence of violation of the institutional controls;
- Physical control failure that adversely affects the remedy; or
- Other abnormal conditions that adversely affect the remedy.

When reportable conditions occur (except in the case of evidence of violation of institutional controls as described below), DOE will inform CDPHE and EPA within 15 days of receiving the inspection reports or validated data. Within 30 days of receiving inspection reports or validated analytical data documenting a reportable condition, DOE will submit a plan and a schedule for an evaluation to address the condition. DOE will consult as described in RFLMA Paragraph 11 to determine if mitigating actions are necessary. Final plans and schedules for mitigating actions, if any, will be approved by CDPHE in consultation with EPA. DOE is not, however, precluded from undertaking timely mitigation once a reportable condition has been identified.

In the case of evidence of violation of institutional controls, DOE will notify EPA and CDPHE within 2 days of discovering any evidence of such a violation, and at that time will initiate the consultative process to address the situation. In no case will DOE notify EPA and CDPHE more than 10 days after the discovery of a situation that may interfere with the effectiveness of the institutional controls. DOE will notify EPA and CDPHE of the actions it is taking within 10 days after beginning the process to address the situation.

The RFLMA Parties will consult whenever reportable conditions are observed or at the request of one of the Parties when routine communication processes are not sufficient or appropriate. The objective of the consultation will be to determine a course of action to address the reportable condition and to ensure the remedy remains protective. Results of consultation will be documented in contact records and/or written correspondence.

Surface water and groundwater monitoring results will be evaluated as described in the following flowcharts:

- Figure 5 Flowchart – Points of Compliance
- Figure 6 Flowchart – Points of Evaluation

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- Figure 7 Flowchart – Area of Concern Wells and SW018
- Figure 8 Flowchart – Sentinel Wells
- Figure 9 Flowchart – Evaluation Wells
- Figure 10 Flowchart – RCRA Wells
- Figure 11 Flowchart – Groundwater Treatment Systems
- Figure 12 Flowchart – Original Landfill Surface Water
- Figure 13 Flowchart – Pre-discharge Pond Sampling

Exceedances of water quality standards at a POC may be subject to civil penalties under Sections 109 and 310(c) of CERCLA. In addition, failure of DOE to notify the State and EPA of such exceedances or other reportable occurrences, or failure to undertake source evaluations or mitigating actions as described above, will be enforceable consistent with the terms of Part 8 of the RFLMA.

7.0 PERIODIC REPORTING REQUIREMENTS

In addition to notifications of reportable conditions described in Section 6, periodic reporting will provide CDPHE, EPA, and the public with updated information pertaining to the surveillance and maintenance of the remedy prescribed in the final CAD/ROD. Analytical data and other information will be clearly presented along with summaries and evaluations to help interpret the data. Reports will be posted on the LM website and available for regulatory and public review in accordance with the following schedule:

Quarter ending March 31 will be posted by July 15
Quarter ending June 30 will be posted by October 15
Quarter ending September 30 will be posted by January 15
Year and Quarter ending December 31 will be posted by April 30

7.1 Quarterly Legacy Management Reports

The various reporting requirements may be combined into a summary report of surveillance and maintenance activities that occurred during the applicable quarter. The following topics will be included in quarterly reports:

- Surface water monitoring data;
- Groundwater monitoring data;
- Groundwater treatment system monitoring data;
- Ecological sampling data;
- Adverse biological conditions;
- Inspection reports; and
- Summary of maintenance and repairs.

7.2 Annual Legacy Management Reports

The various reporting requirements may be combined into a comprehensive report of all surveillance and maintenance activities that occurred during the applicable calendar year. Annual reports may include a summary for the previous quarter. The following will be included in annual reports:

- Discussion of surface water monitoring data;
- Discussion of groundwater monitoring data;
- Discussion of groundwater treatment system monitoring data;
- Discussion of ecological sampling data;
- Adverse biological conditions;
- Summary of actions taken in response to reportable conditions;
- Summary of maintenance and repairs;
- Inspection reports;
- Verification of the Environmental Covenant and evaluation of the effectiveness of institutional controls;
- Original Landfill Monitoring Report (see Table 3 and Section 6.1 of the *Original Landfill Monitoring and Maintenance Plan*, as approved);
- Present Landfill Monitoring Report (see Table 3 and Section 6.1 of the *Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan*, as approved);
- Assessments of analytical data, including laboratory audits; and
- Other conditions or actions taken that are pertinent to the continued effectiveness of the remedy.

7.3 CERCLA 5-Year Review

A statutory 5-year review is required under CERCLA for the Central OU because the selected remedy will result in hazardous substances, pollutants or contaminants remaining above levels that allow for unrestricted use and unlimited exposure. DOE will prepare the 5-year review consistent with EPA-OSWER Directive 9355.7-03B-P (or subsequent EPA directives), as applicable to Rocky Flats. DOE will submit the 5-year review to EPA by August 1, 2007 so as to allow for EPA approval by September 17, 2007. DOE will prepare subsequent reviews at five-year intervals from the aforementioned date, until such time as EPA determines that CERCLA periodic reviews are no longer required. The 5-year review will evaluate site conditions and determine whether the selected remedy remains protective of human health and the environment. In doing so, the 5-year review will evaluate the components of the remedy (including, but not limited to, requirements for monitoring, maintenance and inspections, institutional controls, and reporting.) The 5-year review will

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determine whether such remedy components will be continued, modified, or discontinued. The public will be notified when the review will be conducted. Results of 5-year reviews will be made available to the public.

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Table 1. Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	PQLs [d] (mg/L)
Acenaphthene	83-32-9	4.20E-01	W+F, WS	
Acrolein	107-02-8	3.50E-03	W+F, WS	2.50E-02
Acrylamide	79-06-1	7.80E-06	WS	3.20E-04
Acrylonitrile	107-13-1	5.10E-05	W+F	2.50E-02
Alachlor	15972-60-8	2.00E-03	W+F, WS	
Aldicarb	116-06-3	7.00E-03	WS	
Aldicarb sulfone	1646-88-4	7.00E-03	WS	
Aldicarb sulfoxide	1646-87-3	7.00E-03	WS	
Aldrin	309-00-2	4.90E-08	W+F	5.00E-05
Ammonia, un-ionized	7664-41-7	[e]	[e]	
Aniline	62-53-3	6.10E-03	WS	1.00E-02
Anthracene	120-12-7	2.10E+00	W+F, WS	
Aramite	140-57-8	1.40E-03	WS	2.00E-02
Arsenic, total recoverable	7440-38-2	2.00E-5 to 1.00E-02 [n]	SS	
Atrazine	1912-24-9	3.00E-03	WS	
Azobenzene	103-33-3	3.20E-04	WS	3.00E-02
Benzene [c]	71-43-2	2.20E-03	W+F	
Benzidine	92-87-5	8.60E-08	W+F	4.00E-02
alpha-BHC	319-84-6	2.60E-06	W+F	3.00E-05
beta-BHC	319-85-7	9.10E-06	W+F	6.00E-05
gamma-BHC [Lindane]	58-89-9	8.00E-05	AL	
Benzo(a)anthracene	56-55-3	3.80E-06	W+F	2.00E-02
Benzo(a)pyrene	50-32-8	3.80E-06	W+F	1.00E-02
Benzo(b)fluoranthene	205-99-2	3.80E-06	W+F	1.00E-02
Benzo(g,h,i)perylene	191-24-2	3.80E-06	W+F	1.00E-02
Benzo(k)fluoranthene	207-08-9	3.80E-06	W+F	1.00E-02
Benzotrichloride	98-07-7	2.70E-06	WS	1.00E-02
Benzyl chloride	100-44-7	2.10E-04	WS	1.00E-03
Beryllium	7440-41-7	4.00E-03	SS	
Boron, total	7440-42-8	7.50E-01	AG, SS	
Bromate	15541-45-4	5.00E-05	WS	1.00E-03
Bromodichloromethane	75-27-4	5.50E-04	W+F [f]	1.00E-03
Bromoform [Tribromomethane]	75-25-2	4.30E-03	W+F [f]	
Bromomethane [Methyl Bromide]	74-83-9	9.80E-04	W+F	1.00E-03
Butylbenzylphthalate	85-68-7	1.40E+00	W+F, WS	
Cadmium, dissolved	7440-43-9	1.50E-03	TVS [g]	
Carbofuran	1563-66-2	4.00E-02	WS	
Carbon tetrachloride [c]	56-23-5	2.30E-04	W+F	1.00E-03
Chlordane	57-74-9	8.00E-07	W+F	2.00E-04
Chlorobenzene	108-90-7	1.00E-01	W+F, WS	
Chlorodibromomethane (HM)	124-48-1	5.40E-02	W+F	
bis(2-Chloroethyl)ether	111-44-4	3.00E-05	W+F	1.00E-02

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Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	PQLs [d] (mg/L)
Chloroform [Trichloromethane]	67-66-3	3.40E-03	W+F [f]	
bis(2-Chloroisopropyl)ether	108-60-1	2.80E-01	W+F, WS	
Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	PQLs [d] (mg/L)
Chloromethane [Methyl chloride]	74-87-3	5.60E-03	W+F	
Bis(chloromethyl)ether (BCME)	542-88-1	1.00E-07	W+F	1.00E-02
4-Chloro-3-methylphenol	59-50-7	3.00E-02	AL	
Chloronaphthalene	91-58-7	5.60E-01	W+F, WS	
2-Chlorophenol	95-57-8	3.50E-02	W+F, WS	
Chloropyrifos	2921-88-2	4.10E-05	AL	5.00E-03
Chromium III, Total Recoverable	16065-83-1	5.00E-02	SS	
Chromium VI, dissolved	18540-29-9	1.10E-02	TVS [g]	2.00E-02
Chrysene	218-01-9	3.80E-06	W+F	1.00E-02
Copper, dissolved	7440-50-8	1.60E-02	TVS [g]	2.50E-02
Cyanide	57-12-5	5.00E-03	SS	
4,4-DDD	72-54-8	3.10E-07	W+F	1.10E-04
4,4-DDE	72-55-9	2.20E-07	W+F	5.00E-05
4,4-DDT	50-29-3	2.20E-07	W+F	1.20E-04
Dalapon	75-99-0	2.00E-01	WS	
Demeton	8065-48-3	1.00E-04	AL	1.00E-02
Dibenzo(a,h)anthracene	53-70-3	3.80E-06	W+F	1.00E-02
Dibromochloromethane	124-48-1	8.00E-02	W+F, WS [f]	
1,2-Dibromo-3-chloropropane	96-12-8	2.00E-04	WS	1.00E-03
Di-n-butylphthalate	84-74-2	7.00E-01	W+F, WS	
Dichloroacetic acid	79-43-6	7.00E-04	WS	5.00E-04
1,2-Dichlorobenzene	95-50-1	4.20E-01	W+F	
1,3-Dichlorobenzene	541-73-1	9.40E-02	W+F, WS	
1,4-Dichlorobenzene	106-46-7	6.30E-02	W+F	
3,3-Dichlorobenzidine	91-94-1	2.10E-05	W+F	2.00E-02
1,2-Dichloroethane [c]	107-06-2	3.80E-04	W+F	1.00E-03
1,1-Dichloroethene [c]	75-35-4	7.00E-03	W+F, WS	
1,2-Dichloroethene (cis)	156-59-2	7.00E-02	WS	
1,2-Dichloroethene (trans)	156-60-5	1.00E-01	W+F, WS	
2,4-Dichlorophenol	120-83-2	2.10E-02	W+F, WS	
Dichlorophenoxyacetic acid [2,4-D]	94-75-7	7.00E-02	WS	
1,2-Dichloropropane	78-87-5	5.00E-04	W+F	1.00E-02
1,3-Dichloropropylene	542-75-6	3.40E-04	W+F	1.00E-02
Dichlorvos	62-73-7	1.20E-04	WS	1.00E-02
Dieldrin	60-57-1	5.20E-08	W+F	2.00E-05
Di(2-ethylhexyl)adipate	103-23-1	4.00E-01	WS	
Diethylphthalate	84-66-2	5.60E+00	W+F, WS	
Diisopropyl methyl phosphonate	1445-75-6	8.00E-03	WS	1.00E-02

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Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	PQLs [d] (mg/L)
2,4-Dimethylphenol	105-67-9	1.40E-01	W+F, WS	
Dimethylphthalate	131-11-3	7.00E+01	W+F, WS	
4,6-Dinitro-2-methylphenol	534-52-1	2.70E-04	WS	5.00E-02
2,4-Dinitrophenol	51-28-5	1.40E-02	W+F, WS	5.00E-02
2,4-Dinitrotoluene	121-14-2	1.10E-04	W+F, WS	1.00E-02
2,6-Dinitrotoluene	606-20-2	2.30E-01	AL	
Dinoseb	88-85-7	7.00E-03	WS	
1,4-Dioxane	123-91-1	6.10E-03	WS [m]	1.00E-02
Dioxin (2,3,7,8 TCDD)	1746-01-6	5.00E-12	W+F	1.00E-05
1,2-Diphenylhydrazine	122-66-7	3.60E-05	W+F	1.00E-02
Diquat	85-00-7	2.00E-02	WS	
Endosulfan	115-29-7	5.60E-05	AL	
Endosulfan, alpha	959-98-8	5.60E-05	AL	2.00E-04
Endosulfan, beta	33213-65-9	5.60E-05	AL	
Endosulfan sulfate	1031-07-8	5.60E-05	AL	6.60E-04
Endothall	145-73-3	1.00E-01	WS	
Endrin (technical)	72-20-8	3.60E-05	AL	6.00E-05
Endrin aldehyde	7421-93-4	2.90E-04	W+F	
Epichlorohydrin	106-89-8	3.50E-03	WS	1.00E-02
Ethylbenzene	100-41-4	5.30E-01	W+F	
Ethylene dibromide [1,2-Dibromomethane]	106-93-4	5.00E-05	WS	1.00E-03
bis(2-Ethylhexyl)phthalate	117-81-7	1.20E-03	W+F	1.00E-02
Fluoranthene	206-44-0	1.30E-01	W+F	
Fluorene	86-73-7	2.80E-01	WS	
Folpet	133-07-3	1.00E-02	WS	
Furmecyclox	60568-05-0	1.20E-03	WS	1.00E-02
Glyphosate	1071-83-6	7.00E-01	WS	
Guthion	86-50-0	1.00E-05	AL	1.00E-01
Heptachlor	76-44-8	7.80E-08	W+F	5.00E-05
Heptachlor epoxide	1024-57-3	3.90E-08	W+F	1.00E-03
Hexachlorobenzene	118-74-1	2.80E-07	W+F	1.00E-02
Hexachlorobutadiene	87-68-3	4.40E-04	W+F	5.00E-03
Hexachlorocyclohexane, Technical	608-73-1	1.20E-05	W+F	1.00E-02
Hexachlorocyclopentadiene	77-47-4	5.00E-03	AL	1.00E-02
Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-hcdd)	19408-74-3	5.60E-09	WS	2.50E-05
Hexachloroethane	67-72-1	4.00E-04	W+F	1.00E-03
Hydrazine/Hydrazine sulfate	302-01-2	1.20E-05	WS	1.00E-02
Indeno(1,2,3-cd)pyrene	193-39-5	3.80E-06	W+F	1.00E-02
Isophorone	78-59-1	1.30E-01	W+F	
Lead, dissolved	7439-92-1	6.50E-03	TVS [g]	
Malathion	121-75-5	1.00E-04	AL	1.00E-02

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Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	PQLs [d] (mg/L)
Mercury, total	7439-97-6	1.00E-05	SS	1.00E-03
Methoxychlor	72-43-5	3.00E-05	AL	1.80E-03
4,4-Methylene bis (N,N'-dimethyl)aniline	101-61-1	7.60E-04	WS	1.00E-02
Methylene chloride [Dichloromethane]	75-09-2	4.60E-03	W+F	
Mirex	2385-85-5	1.00E-06	AL	1.00E-02
Naphthalene	91-20-3	1.40E-01	W+F, WS	
Nickel, dissolved	7440-02-0	1.23E-01	TVS [g]	
Nitrate [c] [h]	14797-55-8	1.00E+01	AG, SS	
Nitrite [c] [h]	14797-65-0	5.00E-01	AL [i], SS	
Nitrobenzene	98-95-3	3.50E-03	W+F, WS	
Nitrophenol 4	100-02-7	5.60E-02	WS, W+F	
Nitrosodibutylamine N	924-16-3	4.30E-06	W+F	1.00E-02
N-Nitrosodiethanolamine	1116-54-7	1.30E-05	WS	1.00E-02
Nitrosodiethylamine N	55-18-5	2.30E-07	W+F, WS	1.00E-02
Nitrosodimethylamine N	62-75-9	6.90E-07	W+F, WS	2.00E-02
n-Nitrosodiphenylamine	86-30-6	3.30E-03	W+F	1.00E-02
n-Nitrosodipropylamine	621-64-7	5.00E-06	W+F, WS	1.00E-02
N-Nitroso-N-methylethylamine	10595-95-6	1.60E-06	WS	1.00E-02
Nitrosopyrrolidine N	930-55-2	1.60E-05	W+F	4.00E-02
Oxamyl(vydate)	23135-22-0	2.00E-01	WS	
PCBs	1336-36-3	6.40E-08	W+F [j]	5.00E-04
Parathion	56-38-2	1.30E-05	AL	1.00E-02
Pentachlorobenzene	608-93-5	1.40E-03	W+F	1.00E-02
Pentachlorophenol	87-86-5	2.70E-04	W+F	5.00E-02
Phenol	108-95-2	2.10E+00	W+F, WS	
Picloram	1918-02-1	4.90E-01	WS	
Propylene oxide	75-56-9	1.50E-04	WS	1.00E-02
Pyrene	129-00-0	2.10E-01	W+F, WS	
Quinoline	91-22-5	1.20E-05	WS	
Selenium	7782-49-2	4.60E-03	AL	
Silver, dissolved	7440-22-4	6.00E-04	TVS [g]	1.00E-03
Simazine	122-34-9	4.00E-03	WS	
Sulfide	18496-25-8	2.00E-03	SS	
Styrene	100-42-5	1.00E-01	WS	
1,2,4,5-Tetrachlorobenzene	95-94-3	9.70E-04	W+F	1.00E-03
1,1,2,2-Tetrachloroethane	79-34-5	1.70E-04	W+F	1.00E-03
Tetrachloroethene [c]	127-18-4	6.90E-04	W+F	1.00E-03
Toluene	108-88-3	1.00E+00	W+F, WS	
Toxaphene	8001-35-2	2.00E-07	AL	2.50E-03
Tributyltin (TBT)	56573-85-4	7.20E-05	AL	1.00E-02
1,2,4-Trichlorobenzene	120-82-1	3.50E-02	W+F	
1,1,1-Trichloroethane	71-55-6	2.00E-01	WS	

ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

Table 1 (continued). Surface Water Standards

Analyte	CAS Reference Number	Standards [a] (mg/L)	Basis [b]	PQLs [d] (mg/L)
1,1,2-Trichloroethane	79-00-5	2.70E-03	W+F	
Trichloroethene [c]	79-01-6	2.50E-03	W+F	
2,4,6-Trichlorophenol	88-06-2	1.40E-03	W+F	1.00E-02
Trichlorophenol 2,4,5	95-95-4	7.00E-01	WS, W+F	
Trichlorophenoxypropionic acid	93-72-1	5.00E-02	WS	
Vinyl chloride	75-01-4	2.30E-05	W+F	2.00E-04
Xylene (total)	1330-20-7	1.00E+01	WS	
Zinc, dissolved	7440-66-6	1.41E-01	TVS [g]	

NOTES:

[a] The values in this table reflect the promulgated Colorado WQCC classifications and standards. If relevant, effective date information is included in subsequent footnotes. Standards for chloride, dissolved iron, dissolved manganese, and sulfate are Secondary Drinking Water Standards, which are based on aesthetic considerations. They have been removed as site-specific standards since Segments 4a, 4b, and 5 waters will not be used for drinking water supply.

[b] Acronyms: AG = Agriculture; AL = Aquatic Life; BS = Basic Standard; SS = Site Specific Standard; TVS = Table Value Standard; WS = Water Supply; W+F = Water plus Fish

[c] Temporary modifications (TMs) were in place for some analytes in Segment 5 until December 31, 2009. TMs removed in subsequent revision of this table.

[d] Whenever the practical quantitation level (PQL) for a pollutant is higher (less stringent) than a standard or temporary modification, "less than" the PQL will be used as the compliance threshold.

[e] There is no un-ionized ammonia standard for Segment 5 or Segment 4b. A standard of 0.1 mg/L applies to Segment 4a, which begins in Walnut Creek downstream of Indiana Street.

[f] Per the Basic Standards, the Total Trihalomethane (TTHM) standard applies to the sum of the four TTHM compounds. For dibromochloromethane the TTHM value for water supply, 80 parts per billion, was applied.

[g] Table value standards for metals are based on a toxicity equation which uses a hardness value of 143 mg/L.

[h] The expired TMs for nitrate and nitrite were in place for the Walnut Creek portions of Segment 5 only

[i] The listed nitrite value is the chronic aquatic life standard based on chloride levels in excess of 22 mg/L in Segment 4.

[j] The total PCB standard in the Basic Standards is based on the sum of the Aroclor analytes.

[k] Per the basic standard, this value applies to the sum of the two radium isotopes.

[l] Radionuclides are measured in activity per volume units except for uranium, which is measured as a metal parameter in mass per volume units.

[m] Effective through 3/21/2012; starting 3/22/2012 the standard is 3.20E-03 mg/L

[n] The second number in the range for arsenic is applied as the applicable Table 1 standard in the flowchart in Figure 11.

The scientific notation used in this table indicates the power of ten by which the two-decimal-place number is multiplied (e.g., 2.52E-02 = 2.52 X 10⁻² = .0252).

Table 2. Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
Points of Compliance (POCs)						
	POC (5)	SW	WALPOC	Walnut Creek near COU Boundary	Flow-paced (varies)	Pu, Am, U, nitrate, flow rate
	POC (5)	SW	WOMPOC	Woman Creek near COU Boundary	Flow-paced (varies)	Pu, Am, U, flow rate
	POC (5)	SW	GS01	Woman Creek at Indiana Street	Flow-paced (varies)	Pu, Am, U, flow rate
	POC (5)	SW	GS03	Walnut Creek at Indiana Street	Flow-paced (varies)	Pu, Am, U, nitrate (only when water flowing from upstream terminal pond), flow rate
	POC (5)	SW	GS08	Pond B-5 outlet	Flow-paced (varies)	Pu, Am, U, nitrate, flow rate
	POC (5)	SW	GS11	Pond A-4 outlet	Flow-paced (varies)	Pu, Am,U, nitrate, flow rate
	POC (5)	SW	GS31	Pond C-2 outlet	Flow-paced (varies)	Pu, Am,U, flow rate
Points of Evaluation (POEs)						
	POE (6)	SW	GS10	S. Walnut Creek at B-Series Bypass	Flow-paced (varies)	Pu, Am, U, dissolved Ag and Cd, total Be and Cr, flow rate
	POE (6)	SW	SW027	SID at Pond C-2	Flow-paced (varies)	Pu, Am,U, dissolved Ag and Cd, total Be and Cr, flow rate
	POE (6)	SW	SW093	N. Walnut Creek at end of FC-3	Flow-paced (varies)	Pu, Am, U, dissolved Ag and Cd, total Be and Cr, flow rate
Present Landfill (PLF) Area (2)						
	RCRA (10)	GW	70193	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	70393	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	70693	Upgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73005	Downgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73105	Downgradient	Quarterly	VOCs, metals
	RCRA (10)	GW	73205	Downgradient	Quarterly	VOCs, metals
	AOC (7)	GW	4087	Below East Landfill Pond	Semiannual	VOCs, U ⁺ , nitrate
	AOC (7)	GW	B206989	Below East Landfill Pond	Semiannual	VOCs, U ⁺ , nitrate
	Treatment System (11)	GW	PLFSEEPINF	Seep influent to treatment system	Quarterly	VOCs,U ⁺ , metals, instantaneous flow rate
	Treatment System (11)	GW	GWSINFNORTH	North GWS influent to treatment system	Discontinued	VOCs, U ⁺ , metals, nitrate
	Treatment System (11)	GW	GWSINF SOUTH	South GWS influent to treatment system	Discontinued	VOCs, U ⁺ , metals, nitrate
	Treatment System (11)	SW	PLFSYSEFF	Treatment system effluent	Quarterly; Monthly (if required by decision)	VOCs, SVOCs, U, metals
	Treatment System (11)	SW	NNG01	East of PLFSYSEFF	As required by decision rule	As required by decision rule
Original Landfill (OLF) Area (3)						
	RCRA (10)	GW	P416589	Upgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80005	Downgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80105	Downgradient	Quarterly	VOCs, metals, SVOCs
	RCRA (10)	GW	80205	Downgradient	Quarterly	VOCs, metals, SVOCs
	AOC (7)	GW	11104	Downgradient, downstream	Semiannual	VOCs, U ⁺
	OLF SW (12)	SW	GS05	Woman Creek at west property line (upstream)	Quarterly; Monthly (if required by decision)	VOCs, U, metals
	OLF SW (12)	SW	GS59	Woman Creek 700 feet east of OLF (downstream)	Quarterly; Monthly (if required by decision)	VOCs, U, metals

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
Mound Site Plume and Treatment System (MSPTS)						
	Evaluation (9)	GW	00897	Source area	Biennial	VOCs
	Sentinel (8)	GW	15899	Downgradient of intercept trench	Semiannual	VOCs
	Treatment System (11)	GW	MOUNDR1-0	Treatment system influent	Semiannual	VOCs
	Treatment System (11)	GW	MOUNDR2-E	Treatment system effluent	Semiannual	VOCs
	Treatment System (11)	SW	GS10	S. Walnut Creek at B-Series Bypass	Semiannual	VOCs
East Trenches Plume and Treatment System (ETPTS)						
	Evaluation (9)	GW	3687	Source area	Biennial	VOCs
	Evaluation (9)	GW	05891	Source area	Biennial	VOCs
	Evaluation (9)	GW	03991	East of source area	Biennial	VOCs
	Sentinel (8)	GW	04091	East of source area	Semiannual	VOCs
	Sentinel (8)	GW	95299	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	95199	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	95099	Downgradient of intercept trench	Semiannual	VOCs
	Sentinel (8)	GW	23296	Downgradient of intercept trench	Semiannual	VOCs, U ^a
	Treatment System (11)	GW	ET INFLUENT	Treatment system influent	Semiannual	VOCs
	Treatment System (11)	GW	ET EFFLUENT	Treatment system effluent	Semiannual	VOCs
	Treatment System (11)	SW	POM2	S. Walnut Creek downstream of treatment system	Semiannual	VOCs
Solar Ponds Plume and Treatment System (SPPTS)						
	Evaluation (9)	GW	P210189	VOC plume source area	Biennial	VOCs, U ^a , nitrate
	Evaluation (9)	GW	79102	SPP source area - north	Biennial	VOCs, U ^a , nitrate
	Evaluation (9)	GW	79202	SPP source area - north	Biennial	VOCs, U ^a , nitrate
	Evaluation (9)	GW	P208989	SPP source area - north	Biennial	VOCs, U ^a , nitrate
	Evaluation (9)	GW	79302	SPP source area - northeast	Biennial	U ^a , nitrate
	Evaluation (9)	GW	79402	SPP source area - northeast	Biennial	U ^a , nitrate
	Evaluation (9)	GW	79502	SPP source area - east	Biennial	U ^a , nitrate
	Evaluation (9)	GW	79605	SPP source area - east	Biennial	U ^a , nitrate
	Evaluation (9)	GW	00203	SPP source area - south	Biennial	VOCs, U ^a , nitrate
	Evaluation (9)	GW	22205	SPP downgradient plume - north	Biennial	VOCs, U ^a , nitrate
	Sentinel (8)	GW	P210089	SPP downgradient plume - north	Semiannual	VOCs, U ^a , nitrate
	Sentinel (8)	GW	70099	Northwest of system	Semiannual	U ^a , nitrate
	Treatment System (11)	GW	SPIN	Treatment system influent	Semiannual	U ^a , nitrate
	Treatment System (11)	GW	SPOUT	Treatment system effluent	Semiannual	U ^a , nitrate
	Treatment System (11)	SW	GS13	N. Walnut Creek at A-Series Bypass	Semiannual	U ^a , nitrate
	Evaluation (9)	GW	B210489	Downgradient of treatment system	Biennial	U ^a , nitrate
	Evaluation (9)	GW	51605	Downgradient, adjacent to GS13	Biennial	U ^a , nitrate

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)	
Other Areas of Interest							
Drainages Below Impacted Areas	AOC (7)	GW	10594	N. Walnut Creek downstream of GS13	Semiannual	VOCs, U ⁺ , nitrate	
	AOC (7)	GW	00997	S. Walnut Creek upstream of Pond B-5	Semiannual	VOCs, U ⁺ , nitrate	
	AOC (7)	GW	00193	Woman Creek upstream of Pond C-2	Semiannual	VOCs, U ⁺	
Former Building 371/374	Sentinel (8)	GW	37505	North part of former B371 area	Semiannual	VOCs, U ⁺ , nitrate	
	Sentinel (8)	GW	37405	North/northeast part of former B371/374 area	Semiannual	VOCs, U ⁺ , nitrate, Pu ⁺ , Am ⁺	
Former Building 771/774	Sentinel (8)	GW	37705	East/southeast of former B371/374 area at foundation drain confluence	Semiannual	VOCs, U ⁺ , nitrate, Pu ⁺ , Am ⁺	
	Sentinel (8)	GW	20705	North/northwest of former B771 area	Semiannual	VOCs, U ⁺ , nitrate, Pu ⁺ , Am ⁺	
	Sentinel (8)	GW	20505	North of former B771/774 area	Semiannual	VOCs, U ⁺ , Pu ⁺ , Am ⁺	
	Sentinel (8)	GW	20205	North/northeast of former B771/774 area	Semiannual	VOCs, U ⁺ , Pu ⁺ , Am ⁺	
Former North-Central IA	Evaluation (9)	GW	P114689	Southwest of former B559 area	Biennial	VOCs	
	Evaluation (9)	GW	P115589	West part of former B551 Warehouse area	Biennial	VOCs	
	Evaluation (9)	GW	70705	East part of former B707 area	Biennial	VOCs, U ⁺	
	Evaluation (9)	GW	33905	North of former 231 Tanks area	Biennial	VOCs	
	Evaluation (9)	GW	21505	West of former B776/777 area	Biennial	VOCs	
	Sentinel (8)	GW	52505	West of former IHSS 118.1 area	Semiannual	VOCs	
Former Building 559	Evaluation (9)	GW	20902	Northwest of former IHSS 118.1	Biennial	VOCs	
	AOC (7)	GW	42505	Terminus of FC-2	Semiannual	VOCs	
	Evaluation (9)	GW	55905	North part of former B559 area	Biennial	VOCs, U ⁺ , nitrate	
	Evaluation (9)	GW	56305	West part of former B559 area	Biennial	VOCs, U ⁺ , nitrate	
	Former IHSS 118.1	Evaluation (9)	GW	18199	North of former IHSS 118.1 area	Biennial	VOCs
		SW Performance (SW018)	SW	SW018	Upstream of FC-2 wetland	Semiannual	VOCs
	Former Building 444 Complex	Evaluation (9)	GW	40005	West part of former B444 area	Biennial	VOCs, U ⁺
		Evaluation (9)	GW	40205	South part of former B444 end	Biennial	VOCs, U ⁺
		Evaluation (9)	GW	P419689	Southeast of former B444 area	Biennial	VOCs, U ⁺
	Former Building 881	Sentinel (8)	GW	40305	East part of former B444 area	Semiannual	VOCs, U ⁺
Evaluation (9)		GW	P416889	Southeast of former B444 area	Biennial	VOCs, U ⁺	
Sentinel (8)		GW	11502	Southeast of former B444 area	Semiannual	VOCs, U ⁺	
Evaluation (9)		GW	88205	South part of former B881 area	Biennial	VOCs, U ⁺	
Sentinel (8)		GW	88104	South part of former B881 area	Semiannual	VOCs, U ⁺	
Sentinel (8)		GW	00797	South of former B881 area	Semiannual	VOCs, U ⁺	
Former Building 888	Evaluation (9)	GW	22996	East/northeast part of former B886 area	Biennial	VOCs, U ⁺	
Former Building 991	Sentinel (8)	GW	99305	East part of former B991 area	Semiannual	VOCs, U ⁺ , nitrate	
	Sentinel (8)	GW	99405	Southeast part of former B991 area	Semiannual	VOCs, U ⁺ , nitrate	
Former Oil Burn Pit No. 1	Sentinel (8)	GW	91305	South of confluence of FC-4 and FC-5	Semiannual	VOCs, U ⁺ , nitrate	
	Evaluation (9)	GW	33502	Source area	Biennial	VOCs	
	Evaluation (9)	GW	33604	Source area	Biennial	VOCs	
	Sentinel (8)	GW	33703	Downgradient of source area	Semiannual	VOCs	
	Former Oil Burn Pit No. 2	Evaluation (9)	GW	91105	Source area	Biennial	VOCs
Sentinel (8)		GW	91203	Downgradient of source area	Semiannual	VOCs	
Former SW056 OU 1 Plume	Sentinel (8)	GW	45608	Adjacent to French drain remnants and drain interruption	Semiannual	VOCs	
	Evaluation (9)	GW	891WEL	Source area	Biennial	VOCs	
903 Pad/Ryan's Pit Plume	AOC (7)	GW	89104	Downgradient at Woman Creek	Semiannual	VOCs	
	Evaluation (9)	GW	00191	East of former 903 Pad area	Biennial	VOCs	
	Evaluation (9)	GW	50299	East of former 903 Pad area	Biennial	VOCs	
	Evaluation (9)	GW	90402	Southeast of former 903 Pad area	Biennial	VOCs	
	Evaluation (9)	GW	00491	Southeast of former 903 Pad area	Biennial	VOCs	
	Evaluation (9)	GW	07391	Ryan's Pit source area	Biennial	VOCs, U ⁺	
	Evaluation (9)	GW	90804	Southeast part of 903 Pad/Ryan's Pit Plume	Biennial	VOCs	
	Sentinel (8)	GW	90399	Southeast part of 903 Pad/Ryan's Pit Plume at SID	Semiannual	VOCs	
	Sentinel (8)	GW	90299	Southeast part of 903 Pad/Ryan's Pit Plume at SID	Semiannual	VOCs	
	AOC (7)	GW	10304	Southeast of 903 Pad/Ryan's Pit Plume at Woman Creek	Semiannual	VOCs, U ⁺ , nitrate	
PU&D Yard Plume	Evaluation (9)	GW	30900	Source area	Biennial	VOCs	
	Sentinel (8)	GW	30002	Downgradient at N. Walnut Creek	Semiannual	VOCs	

Table 2 (continued). Water Monitoring Locations and Sampling Criteria

General Objective	Classification	Media	Location ID (1)	Location Description	Frequency	Analytes (4)
Pre-discharge						
	Pre-discharge (13)	SW	Pond A-4	A-Series terminal pond on N. Walnut Creek	Prior to routine discharge	Pu, Am, U, nitrate
	Pre-discharge (13)	SW	Pond B-5	B-Series terminal pond on S. Walnut Creek	Prior to routine discharge	Pu, Am, U, nitrate
	Pre-discharge (13)	SW	Pond C-2	C-Series terminal pond in Woman Creek	Prior to routine discharge	Pu, Am, U
Notes					Acronyms and Abbreviations	
(1) See Figure 1 for monitoring locations					Ag: silver	
(2) Laboratory analytes are limited to those listed in Appendix C of the Present Landfill Monitoring and Maintenance Plan and Post-Closure Plan					Am: americium-241	
(3) Laboratory analytes are limited to those listed in Appendix C of the Landfill Monitoring and Maintenance Plan, RFETS Original Landfill					AOC: Area of Concern	
(4) Analysis and evaluation for metals and VOCs will be performed for some or all of the analytes listed in Table 1					B (followed by numerals): Building (e.g., B371)	
(5) Results for POCs are evaluated using Figure 5. POCs GS01, GS03, GS08, GS11 and GS31 will be replaced by WALPOC and WOMPOC per Section 6.1					Be: beryllium	
(6) Results from POEs are evaluated using Figure 6.					Cd: cadmium	
(7) Results from AOC and SW018 are evaluated using Figure 7.					Cr: chromium	
(8) Results from Sentinel wells are evaluated using Figure 8.					FC: Functional Channel (e.g., FC-2)	
(9) Results from Evaluation wells are evaluated using Figure 9.					GW: ground water	
(10) Results from RCRA wells are evaluated using Figure 10.					IA: Industrial Area	
(11) Results from Treatment System locations are evaluated using Figure 11. GWSINFNORTH and GWSINF SOUTH may be used for investigative purposes.					N/A: not applicable	
(12) Results from OLF SW locations are evaluated using Figure 12.					OLF: Original Landfill	
(13) Results from Predischarge locations are evaluated using Figure 13.					OUI: Operable Unit 1	
					PLF: Present Landfill	
					POC: Point of Compliance	
* Samples of ground water collected for U, Pu and Am analysis will be filtered in the field using a 0.45 um in-line filter.					POE: Point of Evaluation	
					PU&D: Property Utilization and Disposal	
					Pu: plutonium-239,240	
					RCRA: Resource Conservation and Recovery Act	
					SID: South Interceptor Ditch	
					SPP: Solar Ponds Plume	
					SVOCs: semi-volatile organic compounds	
					SW: surface water	
					U: uranium	
					VOCs: volatile organic compounds	

Table 3. Present and Original Landfill Inspection and Maintenance Requirements

Present Landfill

Requirement	Description of activity	Frequency	Documentation/Reporting	Exit strategy
Final cover inspection and monitoring	<ul style="list-style-type: none"> - inspect/monitor slope stability, soil cover - visually inspect surface of landfill cover for cracks, depressions, heaving, and sinkholes - monitor settlement monuments and side slope stability monuments - vegetation surveys and monitoring 	<ul style="list-style-type: none"> - quarterly (settlement and stability monuments annually); evaluate frequency during CERCLA periodic review - additional weather-related inspections within 2 days after storm event of one inch or more of rain in a 24-hour period or significant melt of 10-inch or more snowstorm - Quarterly vegetation surveys. - Annually for vegetation monitoring 	<ul style="list-style-type: none"> - conditions affecting effectiveness of landfill cover to be reported per note 1 below - document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports 	<ul style="list-style-type: none"> - Consultative process or periodic CERCLA review - Vegetation monitoring performed until PLF M&M Plan grassland success criteria are met
Inspection and monitoring of stormwater management system and erosion control features	<ul style="list-style-type: none"> - Visually inspect stormwater management structures (channels/lining, culverts, and outfalls); erosion control features (perimeter channels and natural drainages); and seep treatment system 	<ul style="list-style-type: none"> - monthly for first year; evaluate frequency during CERCLA periodic review - additional weather-related inspections within 2 days after a storm event of one inch or more of rain in a 24-hour period or significant melt of a 10-inch or more snowstorm 	<ul style="list-style-type: none"> - conditions affecting effectiveness of landfill cover to be reported per note 1 below - document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports 	<ul style="list-style-type: none"> - Consultative process or periodic CERCLA review
GW monitoring	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10
Landfill seep and pond monitoring	Included in Table 2, Figure 1, and Figure 11	Included in Table 2, Figure 1, and Figure 11	Included in Table 2, Figure 1, and Figure 11	Included in Table 2, Figure 1, and Figure 11
Maintenance and repairs	Perform minor or major repairs as needed; for major damage or repairs, consult with parties and develop appropriate actions for approval by CDPHE	- as needed	<ul style="list-style-type: none"> - minor/routine repairs and maintenance report on inspection form - conditions affecting effectiveness of landfill cover to be reported per note 1 below 	Consultative process or periodic CERCLA review
Institutional and physical controls	Fence around perimeter of Central OU, signs at entry points to Central OU, warning signs in accordance with 6 CCR 1007-3 Part 265.14		<ul style="list-style-type: none"> - failure of physical controls to be reported per note 1 below - failure of institutional controls to be per note 2 below 	Consultative process or periodic CERCLA review

Table 3 (continued). Present and Original Landfill Inspection and Maintenance Requirements

Original Landfill

Requirement	Description of activity	Frequency	Documentation/Reporting	Exit strategy
Final cover inspection and monitoring	<ul style="list-style-type: none"> - inspect/monitor slope stability and soil cover - visually inspect surface of landfill cover for cracks, depressions, heaving, sinkholes; visually inspect diversion berms; measure height and gradient if indicated (employ inclinometer monitoring results and topographic surveys as described in OLF M&M Plan.) - monitor settlement monuments - .Vegetation surveys and monitoring 	<ul style="list-style-type: none"> - Monthly, until CDPHE approves Quarterly frequency; topographic survey every other year; evaluate frequency during CERCLA periodic review. - Additional weather-related monitoring within 2 days after a storm event of one inch or more or rain in a 24-hour period or significant melt of a 10-inch or more snowstorm - Quarterly until CDPHE approves annual frequency. - Quarterly vegetation surveys. - Annually for vegetation monitoring. 	<ul style="list-style-type: none"> - conditions affecting effectiveness of landfill cover to be reported per note 1 below - document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports 	<ul style="list-style-type: none"> - Consultative process or periodic CERCLA review - Vegetation monitoring performed until OLF M&M Plan grassland success criteria are met.
Inspection and monitoring of stormwater management system, seeps, and erosion controls	<ul style="list-style-type: none"> - Visually inspect/monitor stormwater management structures, seeps, and erosion controls 	<ul style="list-style-type: none"> - Monthly, until CDPHE approves Quarterly, Semi-annual or Annual frequency; evaluate frequency during CERCLA periodic review - Additional weather-related inspections within 2 days after a storm event of one inch or more of rain in a 24-hour period or significant melt of a 10-inch or more snowstorm 	<ul style="list-style-type: none"> - conditions affecting effectiveness of landfill cover to be reported per note 1 below - document on inspection checklist; submit to parties within one month of inspection; include in quarterly and annual reports 	<ul style="list-style-type: none"> - Consultative process or periodic CERCLA review
GW monitoring	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10	Included in Table 2, Figure 1, and Figure 10
SW monitoring	Included in Table 2, Figure 1, and Figure 12	Included in Table 2, Figure 1, and Figure 12	Included in Table 2, Figure 1, and Figure 12	Included in Table 2, Figure 1, and Figure 12
Maintenance and repairs	<ul style="list-style-type: none"> - Perform minor or major repairs and maintenance - For major damage or repairs, consult with parties and develop appropriate actions for approval by CDPHE 	<ul style="list-style-type: none"> - as needed 	<ul style="list-style-type: none"> - minor/routine repairs and maintenance, report on inspection form - conditions affecting effectiveness of landfill cover to be reported per note 1 below 	<ul style="list-style-type: none"> - Consultative process or periodic CERCLA review
Institutional and physical controls	<ul style="list-style-type: none"> - inspection for evidence that institutional controls were violated or physical controls damaged 	<ul style="list-style-type: none"> - document on inspection forms 	<ul style="list-style-type: none"> - failure of physical controls to be reported per note 1 below - failure of institutional controls to be reported per note 2 below 	<ul style="list-style-type: none"> - Consultative process or periodic CERCLA review

Table 3 (continued). Present and Original Landfill Inspection and Maintenance Requirements

Note 1: For reportable conditions as defined in RFLMA Attachment 2, Section 6.0 (except in the case of failure of institutional controls), DOE will inform CDPHE and EPA within 15 days of receiving the inspection reports or validated data. Evaluation and planning for mitigating actions, if any, will be prepared and submitted as defined in RFLMA, Attachment 2, Section 6.0.

Note 2: In case of failure of institutional controls, DOE will notify EPA and CDPHE within 2 days of discovering evidence and will perform evaluation, consultation, and actions as defined in RFLMA, Attachment 2, Section 6.0.

Table 4. Institutional Controls for the Central Operable Unit

Controls	Use Restrictions
1	The construction and use of buildings that will be occupied on a permanent or temporary basis (such as for residences or offices) is prohibited. The construction and use of storage sheds or other, non-occupied structures is permitted, consistent with the restrictions contained in controls 2 and 3 below, and provided such use does not impair any aspect of the response action at Rocky Flats.
2	Excavation, drilling, and other intrusive activities below a depth of three feet are prohibited, except for remedy-related purposes and routine or emergency maintenance of existing utility easements, in accordance with pre-approved procedures.
3	No grading, excavation, digging, tilling, or other disturbance of any kind of surface soils is permitted, except in accordance with an erosion control plan (including Surface Water Protection Plans submitted to EPA under the Clean Water Act) approved by CDPHE or EPA. Any such soil disturbance will restore the soil surface to preexisting grade.
4	Surface water may not be used for drinking water or agricultural purposes.
5	The construction or operation of groundwater wells is prohibited, except for remedy-related purposes.
6	Digging, drilling, tilling, grading, excavation, construction of any sort (including construction of any structures, paths, trails or roads), and vehicular traffic are prohibited on the covers of the Present Landfill and the Original Landfill, except for authorized response actions.
7	Activities that may damage or impair the proper functioning of any engineered component of the response action, including but not limited to any treatment system, monitoring well, landfill cap, or surveyed benchmark, are prohibited.

Table 5. Ecological Sampling

Requirement	Description of Activity	Frequency	Documentation/Reporting	Exit Strategy
Sample surface water and sediment for: Ammonia Cyanide Radium-228	Collect surface water and sediment samples from Ponds A4, B5, and C2	<u>Surface water:</u> Quarterly (minimum of 3) <u>Sediment:</u> Once	Report data in quarterly and annual reports; evaluate in CERCLA Periodic Review for relevance of the data to the ecological risks and uncertainty identified in the CAD/ROD	Sampling completed and data reported. Approved by CDPHE on April 2, 2008.

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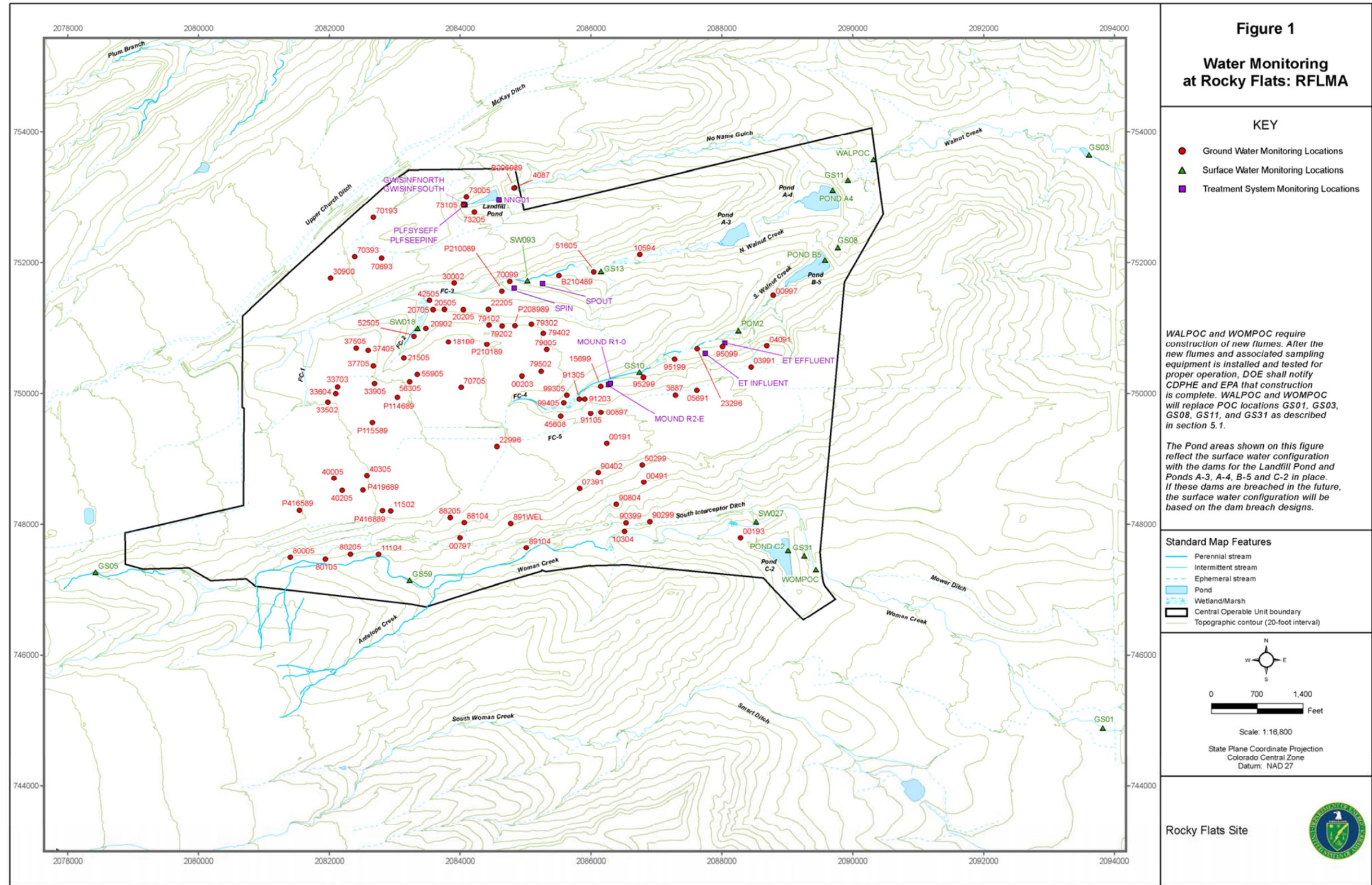


Figure 1. Water Monitoring at Rocky Flats

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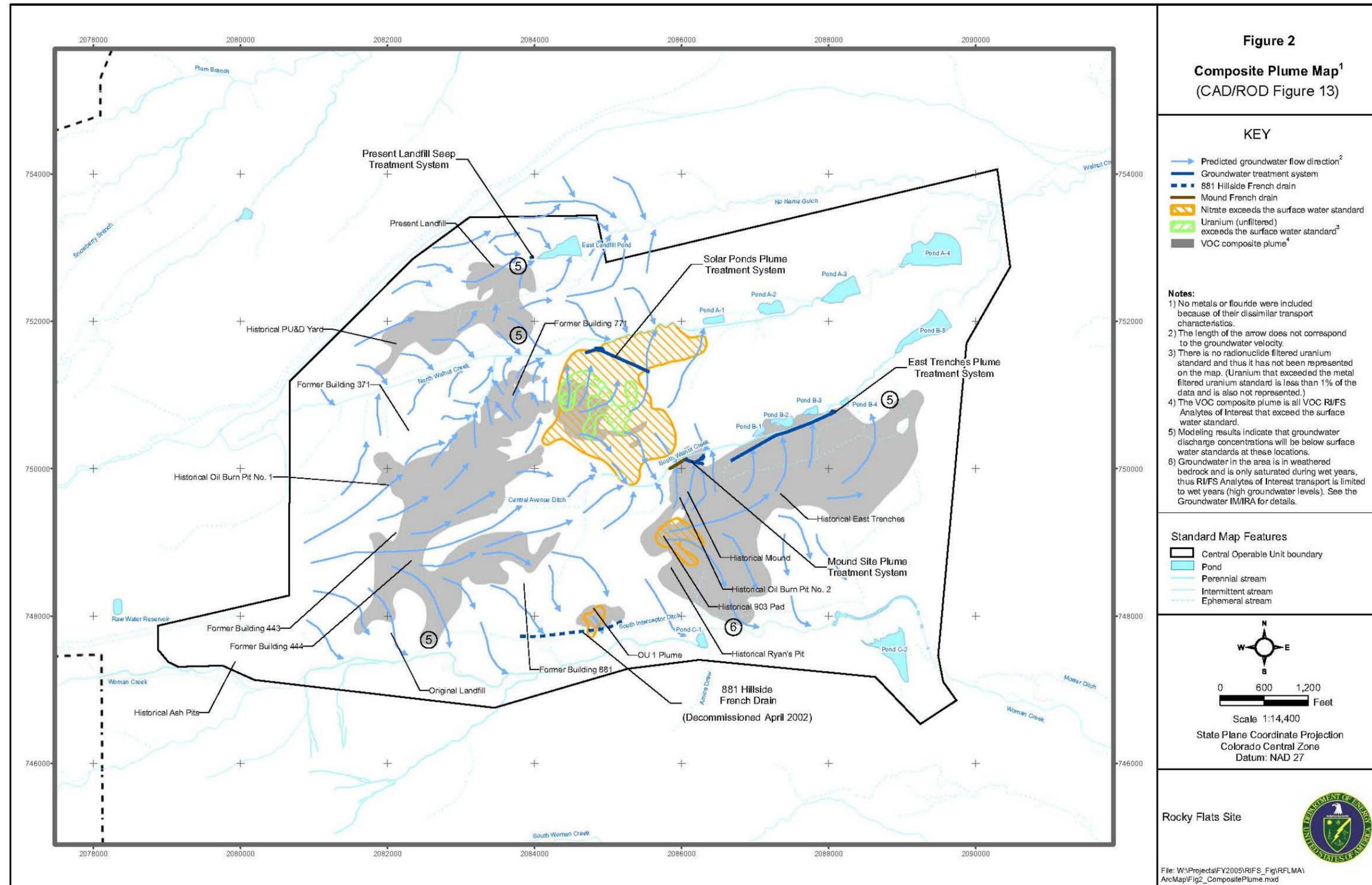


Figure 2. Composite Plume Map

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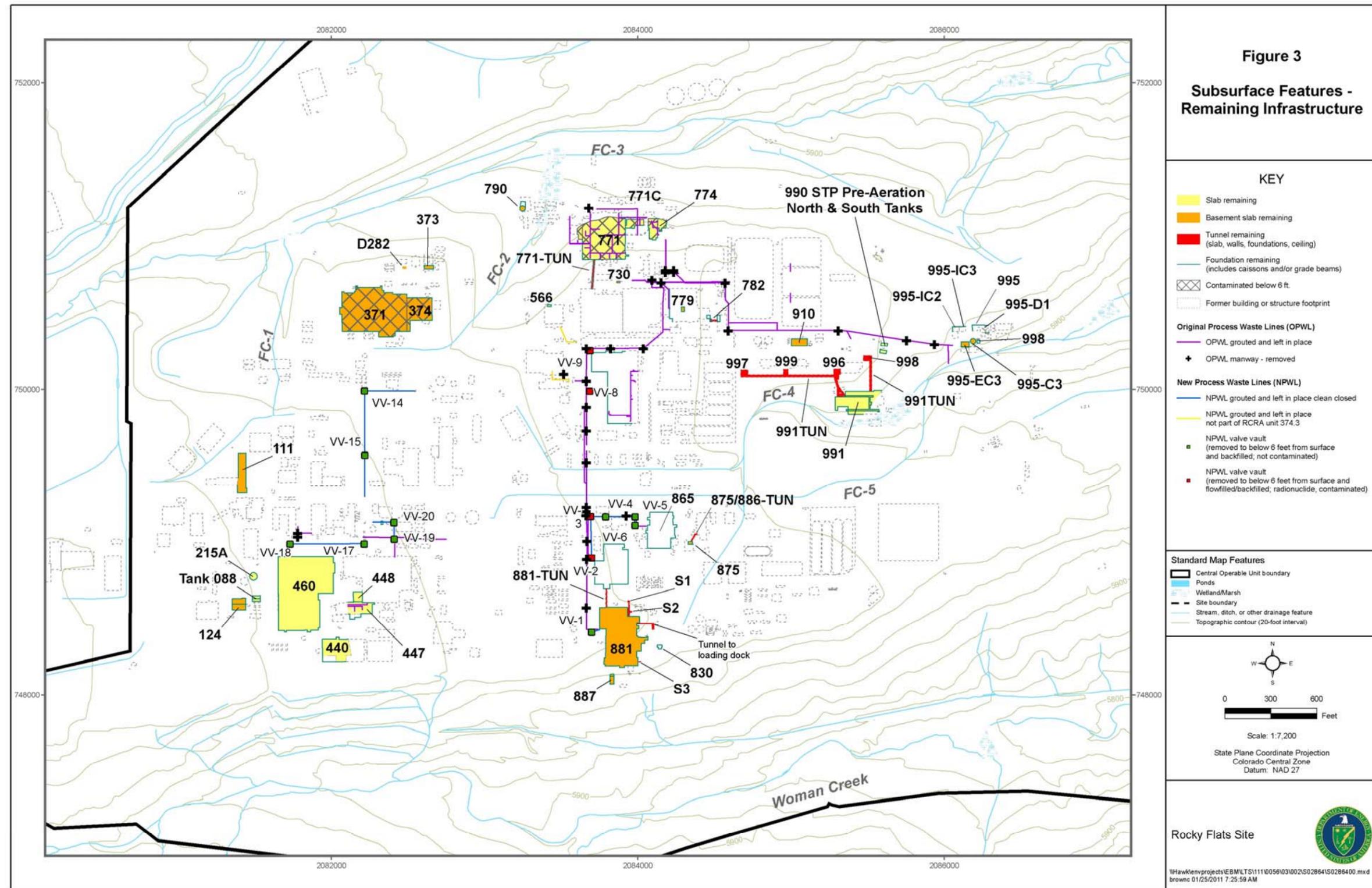


Figure 3. Subsurface Features—Remaining Infrastructure

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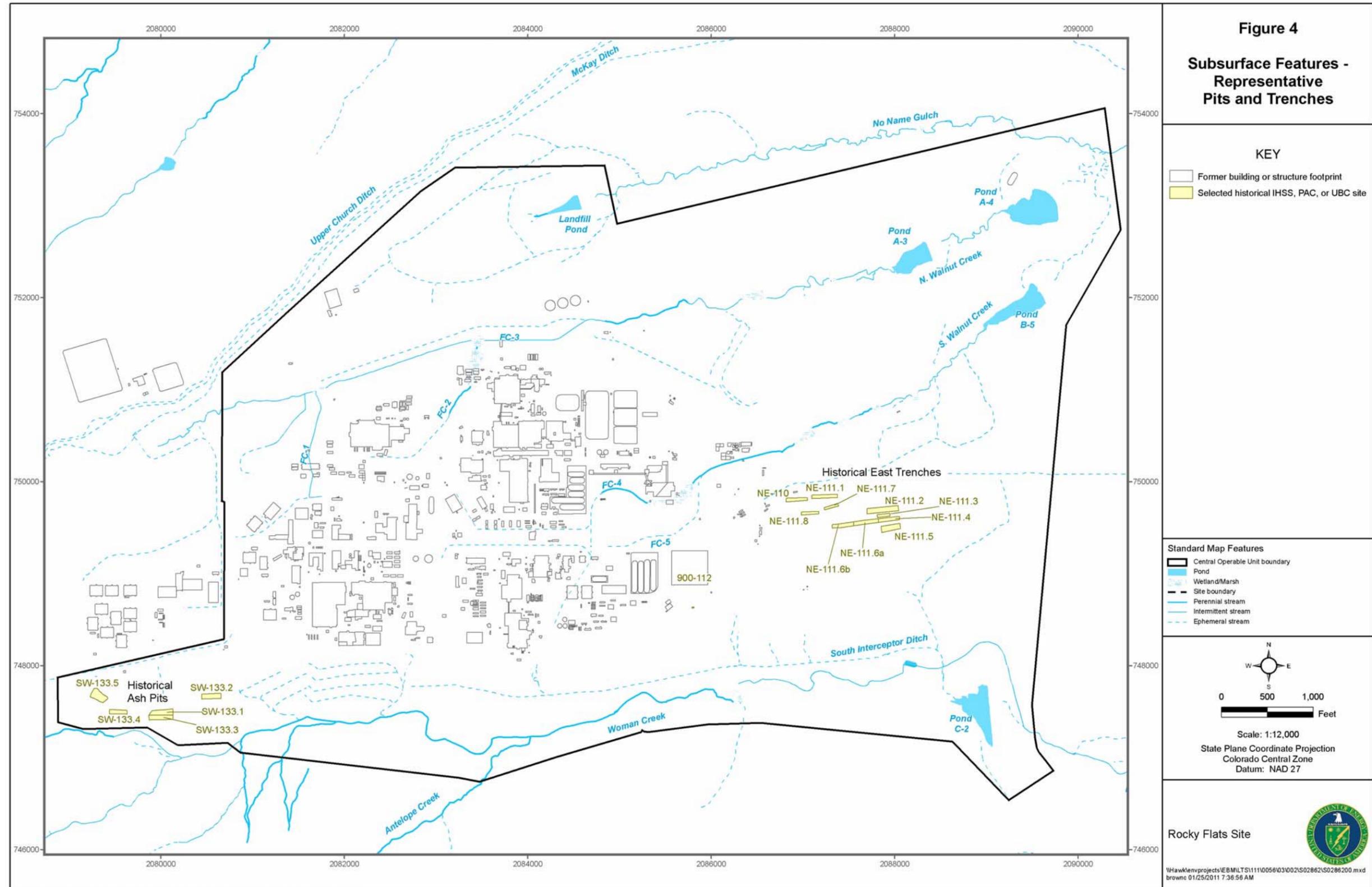
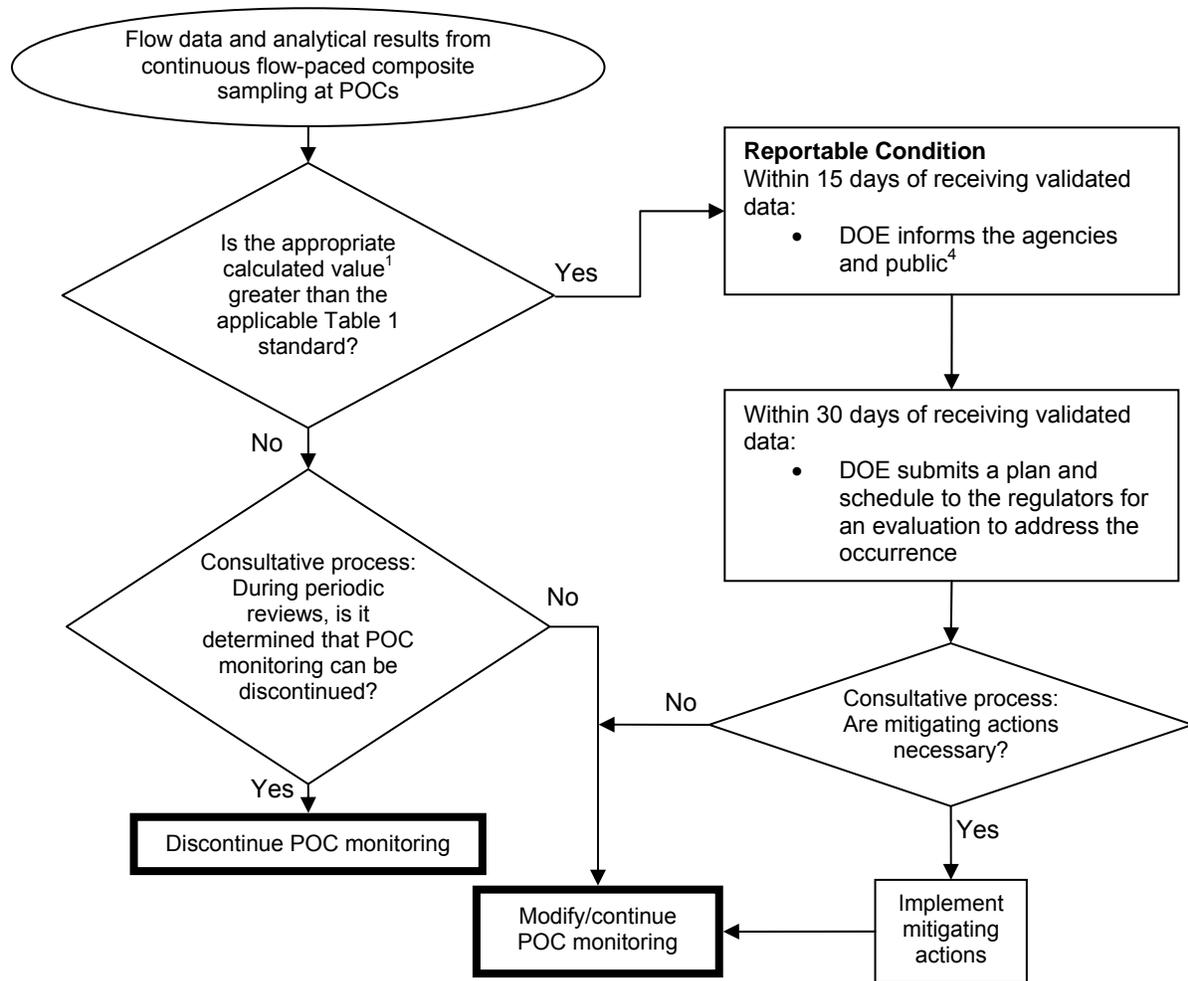


Figure 4. Subsurface Features—Representative Pits and Trenches

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

¹Calculated values for determining Reportable Condition and exceedances of remedy performance standards at POCs.

- Reportable conditions (according to Section 6.0):
 - **plutonium, americium, uranium, nitrate** → 30-day average²
- Reportable Conditions and evaluation of compliance with remedy performance standards in Table 1:
 - **plutonium, americium, uranium, nitrate** → 12-month rolling average³ for POCs inside COU; 30-day average for GS01 and GS03.

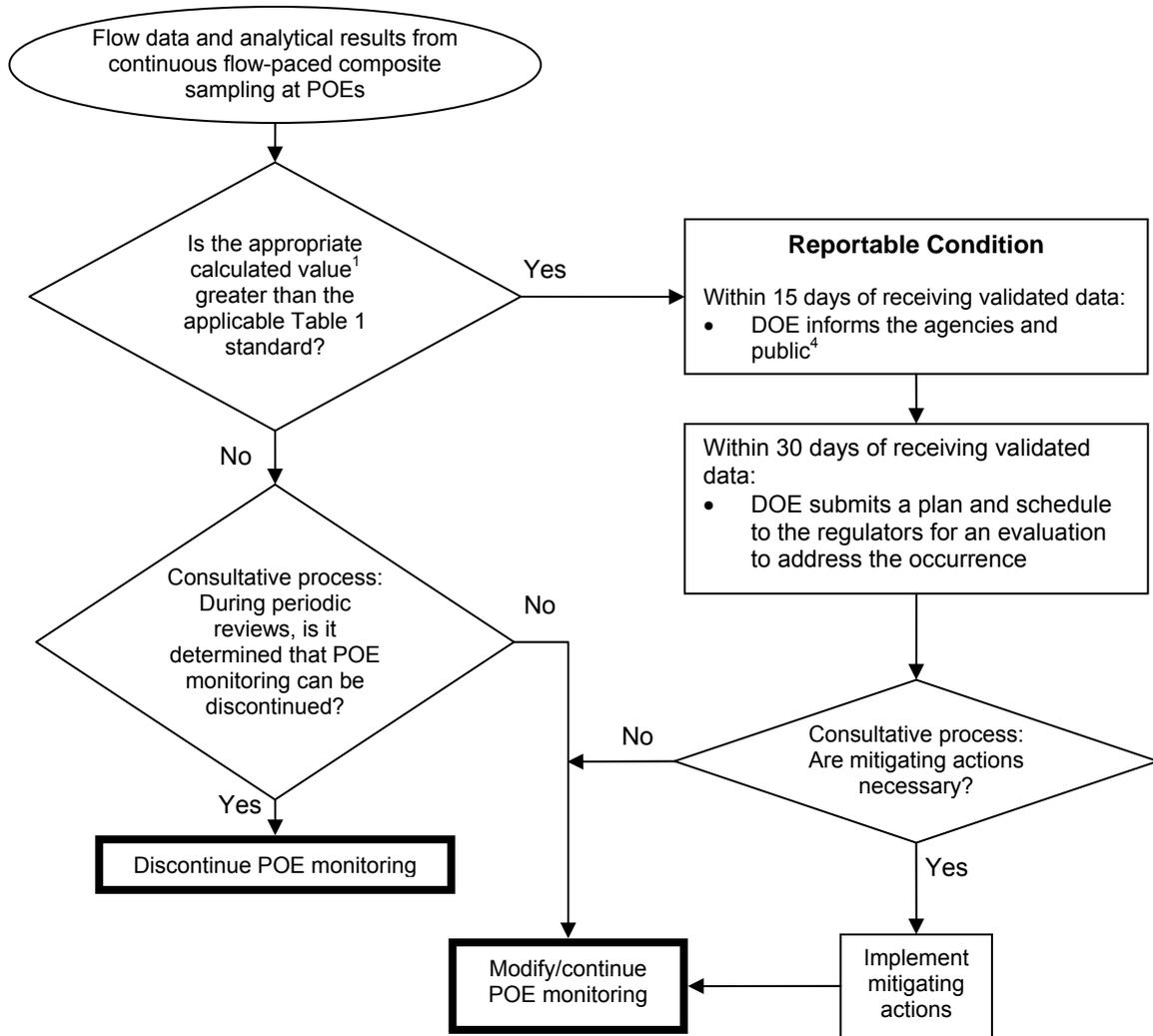
² The 30-day average for a particular day is calculated as a volume-weighted average of a “window” of time containing the previous 30 days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30-day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or non-sufficient quantity (NSQ) for analysis, no 30-day average is reported.

³ The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a “window” of time containing the previous 12 months. Each 12-month “window” includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

⁴ Agencies: EPA, CDPHE, and USFWS
Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 5. Points of Compliance

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

¹ Calculated Values by analytes (see Table 2 for reference)

- plutonium, americium, uranium → 12-month rolling average²
- dissolved Cd and Ag, total Be and Cr → 85th percentile of 30-day averages³ for previous calendar year

² The 12-month rolling average for the last day of a particular month is calculated as a volume-weighted average of a “window” of time containing the previous 12 months. Each 12-month “window” includes daily discharge volumes (measured with a flow meter) and daily activities/concentrations (from the sample carboy in place at the end of that day). Therefore, there are twelve 12-month rolling averages for a given calendar year. Days with no flow or no analytical result, either due to failed laboratory analysis or NSQ for analysis, are not included in the average. When no flow has occurred in the previous 12 months, no 12-month rolling average is reported.

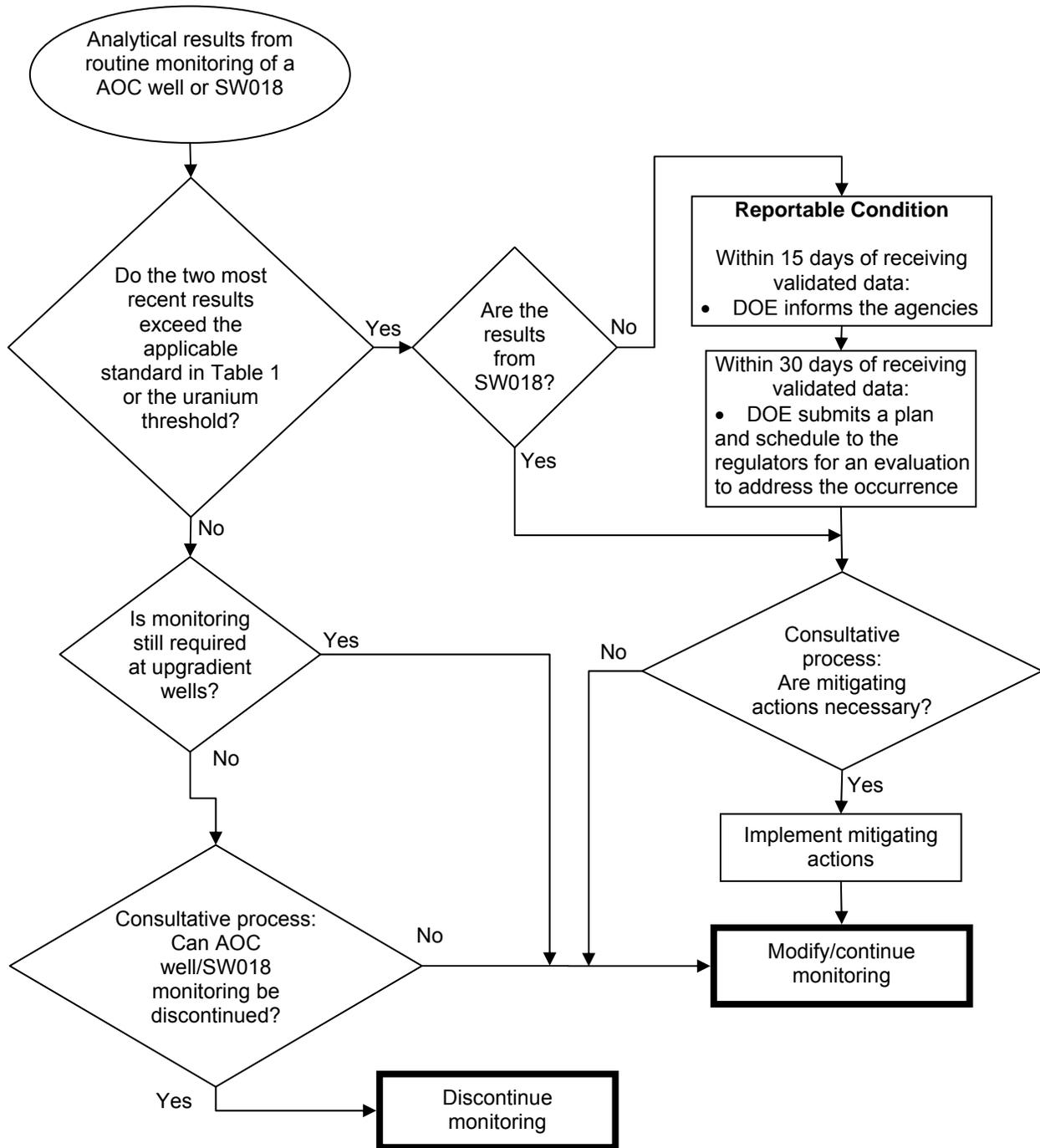
³ The 30-day average for a particular day is calculated as a volume-weighted average of a “window” of time containing the previous 30 days with measurable flow. Each day has its own discharge volume (measured with a flow meter) and activity/concentration (from the sample carboy in place at the end of that day). Therefore, there are 365 30 day moving averages for a location that flows all year. At locations that have intermittent flows, 30-day averages are reported as averages of the previous 30 days of greater than zero flow. For days where no analytical result is available, either due to failed laboratory analysis or NSQ for analysis, no 30-day average is reported.

⁴ Agencies: EPA, CDPHE, and USFWS

Public: Cities of Broomfield, Northglenn, Thornton, and Westminster; Rocky Flats Stewardship Council (RFSC)

Figure 6. Points of Evaluation

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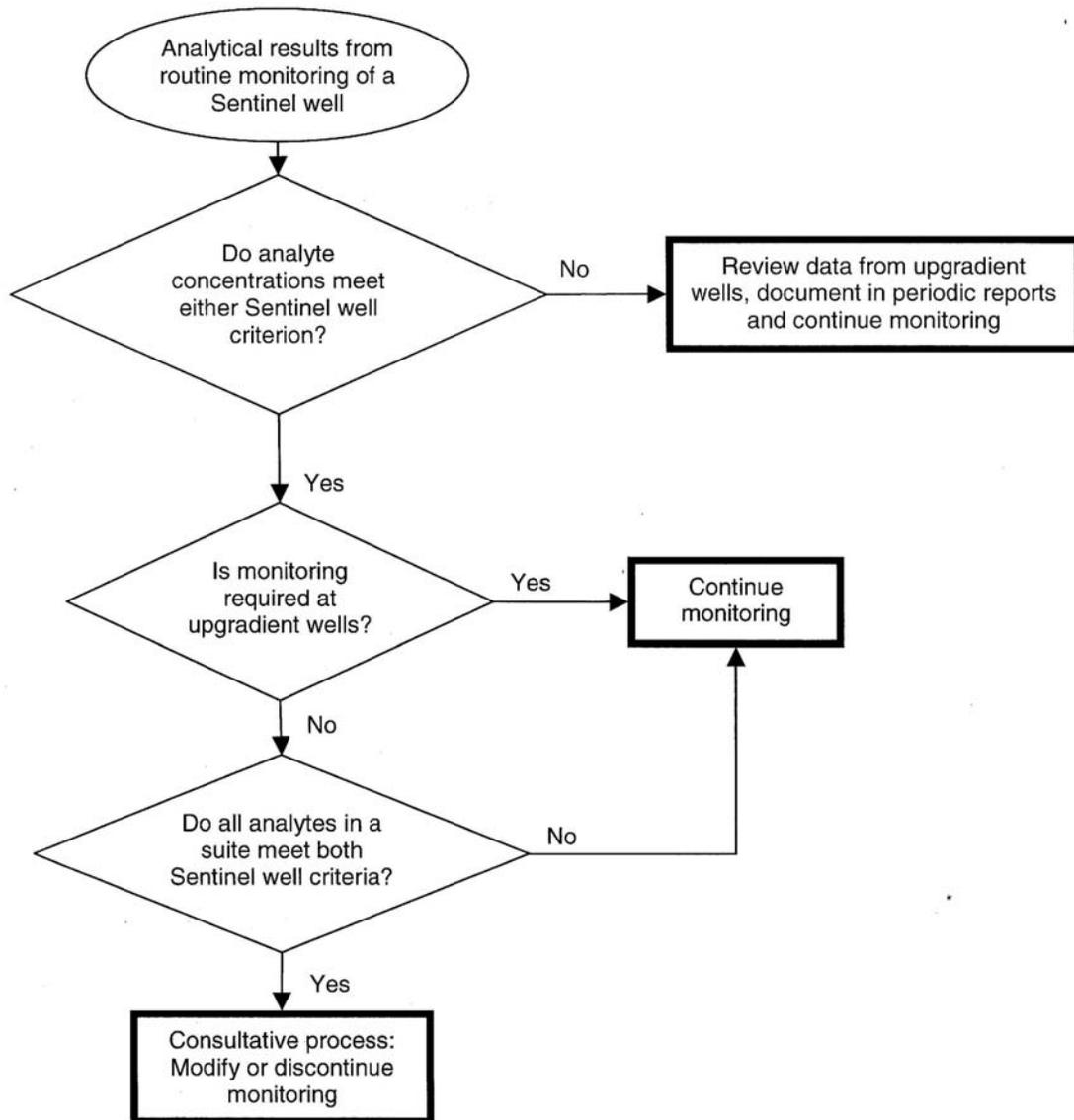


Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- AOC wells and location SW018 are sampled twice each year; see Table 2.
- Decisions related to uranium in ground water are based upon a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Figure 7. Area of Concern Wells and SW018

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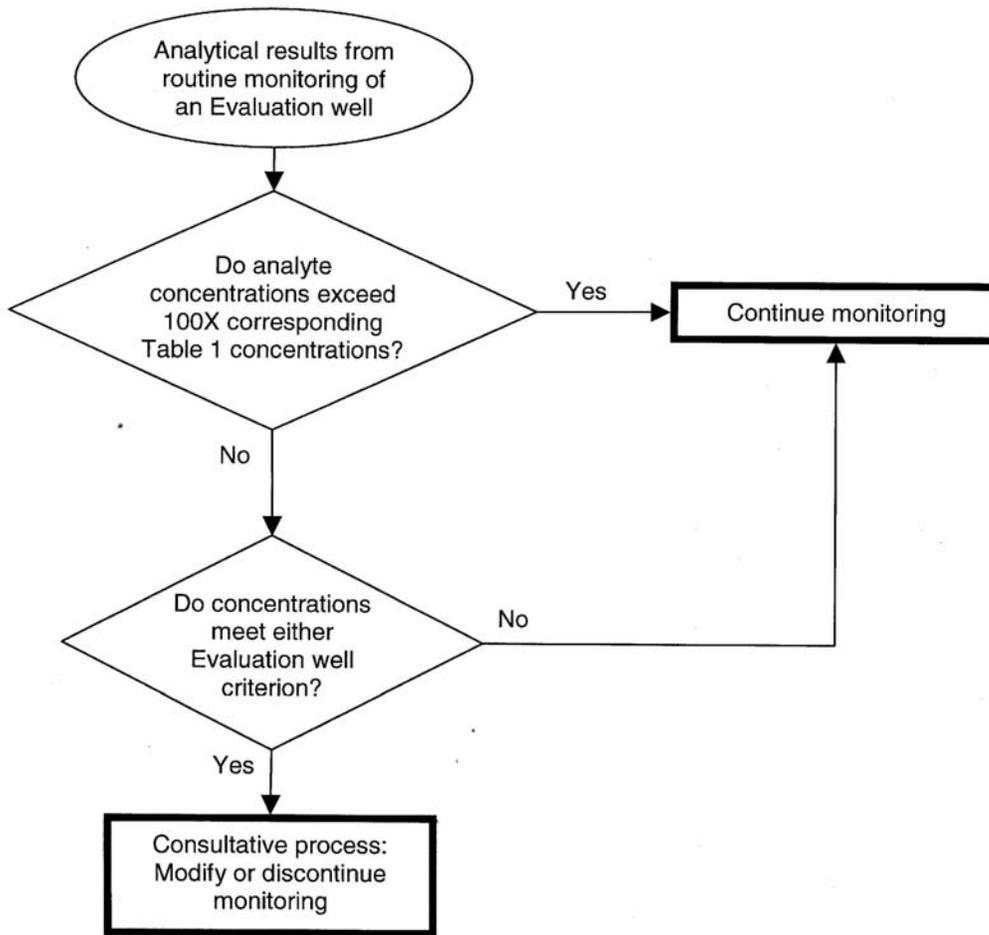
Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

- Sentinel wells are sampled twice each year; see Table 2.
- Decisions related to uranium are based upon a 120 ug/L threshold for AOC wells (basis: a grand mean of results from Site-wide high-resolution uranium analyses performed in the late 1990s through mid-2000s), rather than the standard in Table 1.

Sentinel Well Criteria

1. The 85th percentile concentration of an analyte is less than or equal to the corresponding concentration in Table 1 or, for uranium, the 85th percentile concentration does not exceed 2x120 ug/L or the highest calendar year 2005 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 8. Sentinel Wells



Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria.

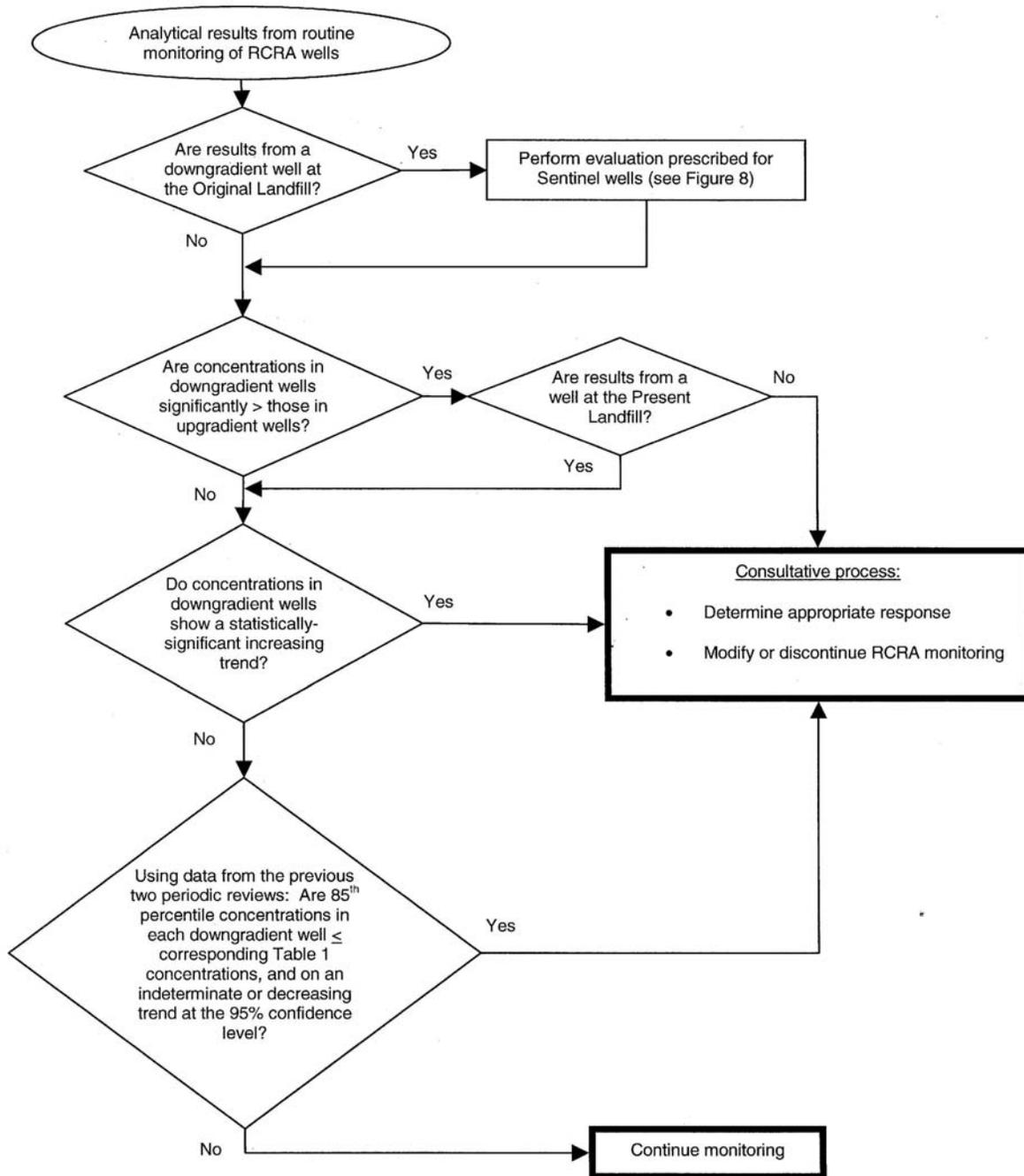
- Evaluation wells are listed in Table 2.

Evaluation Well Criteria:

1. The 85th percentile concentration of an analyte is less than or equal to the corresponding concentration in Table 1, or, for uranium, 240 ug/L or highest pre-CY05 concentration, whichever is higher.
2. Analyte concentrations exhibit an indeterminate or statistically-significant *decreasing* trend at the 95% confidence level.

Figure 9. Evaluation Wells

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Notes: see Fig. 1 and Tables 1 and 2 for locations, standards, and sampling criteria. RCRA wells are sampled quarterly; see Table 2.

Figure 10. RCRA Wells

ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

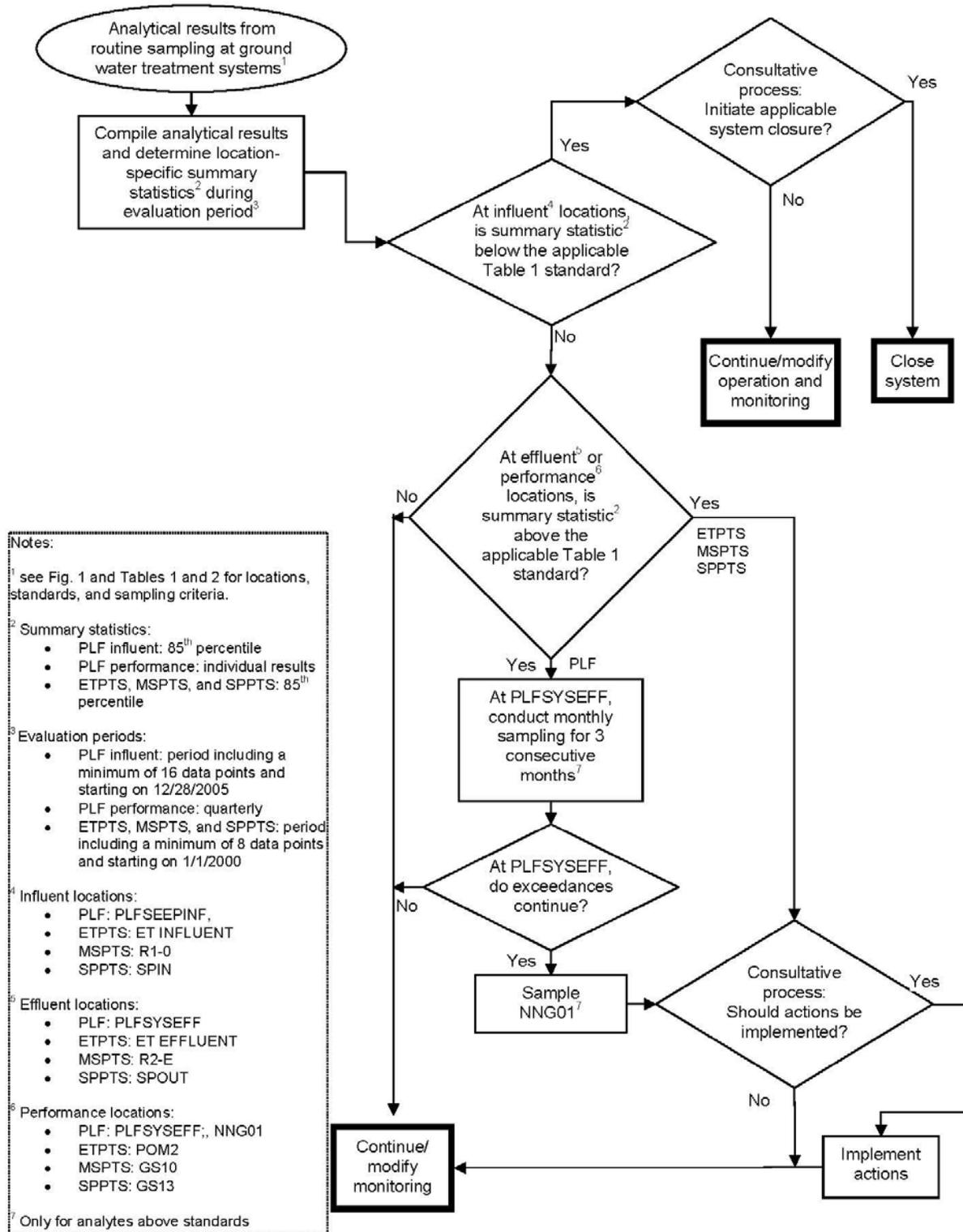


Figure 11. Groundwater Treatment Systems

ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

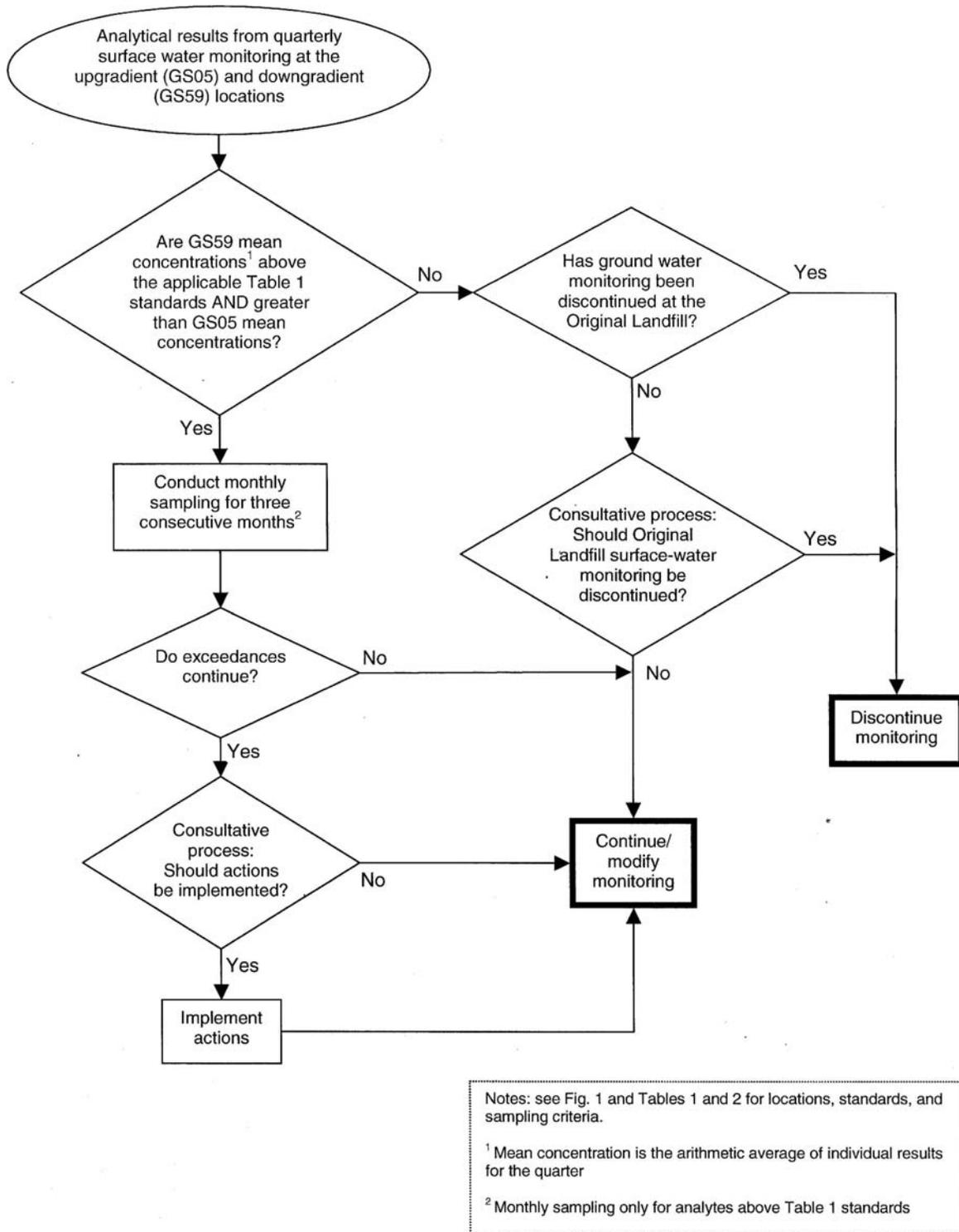


Figure 12. Original Landfill Surface Water

ROCKY FLATS LEGACY MANAGEMENT AGREEMENT

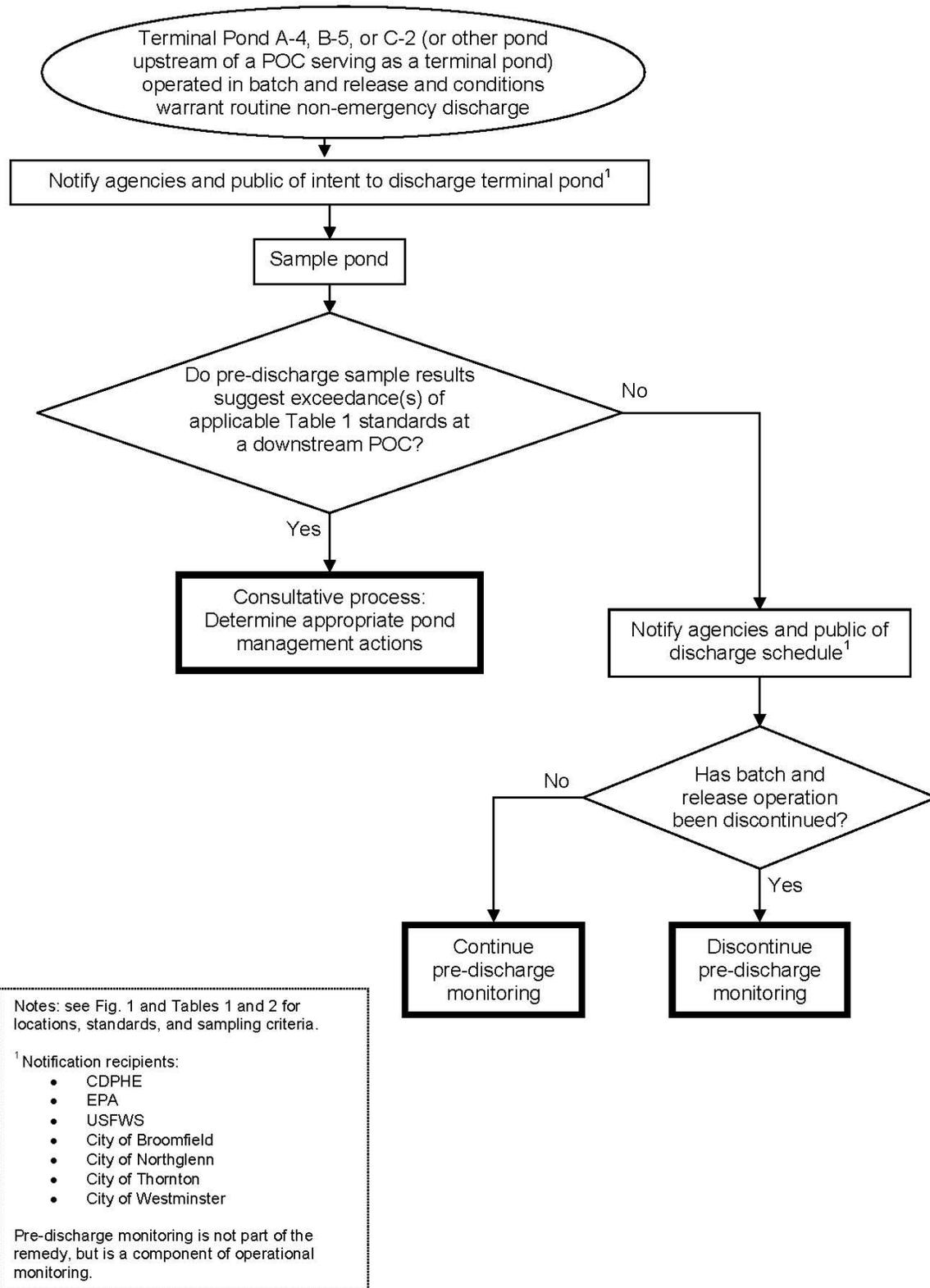


Figure 13. Pre-discharge Pond Sampling

Proposed 2010 Modifications to Attachment 2—Legacy Management Requirements of the Rocky Flats Legacy Management Agreement (RFLMA)

Common Concern Statements

Many of the comments received in response to the Proposed 2010 RFLMA Modifications presented similar concerns. Each comment has been addressed individually in the Comment Response table. This document presents a set of paraphrased Common Concern Statements that reflects the intent of the similar comments with a corresponding response from RFLMA Parties (The U.S. Department of Energy Office of Legacy Management [DOE], the U.S. Environmental Protection Agency, Region 8 [EPA], and the Colorado Department of Public Health and Environment [CDPHE]). The Common Concern Statements are numbered for easy identification, and the sequence does not represent an assigned hierarchy.

Common Concern Statement 1

Common Concern:

Commenters expressed concern that the proposed excavation to install new flumes for the proposed new Walnut Creek and Woman Creek Point of Compliance (POC) monitoring locations is prohibited by Institutional Control (IC) 2. Concern was expressed that Contact Records (CRs) 2010-02 (dam breach) and 2010-04 (revision of monitoring points) each include provisions requiring excavation below 3 feet for purposes that are not remedy-related, and that any proposal to modify the ICs requires amending the Corrective Action Decision/Record of Decision (CAD/ROD), the Environmental Covenant (EC), and the RFLMA.

Response:

The proposed modification to POC locations would require the installation of new flumes in Walnut Creek and Woman Creek. The CAD/ROD, the EC, and RFLMA Attachment 2, Table 4, include IC 2, which is as follows:

"Excavation, drilling, and other intrusive activities below a depth of three feet are prohibited, except for remedy-related purposes and routine or emergency maintenance of existing utility easements, in accordance with pre-approved procedures."

The modification of monitoring locations is remedy related and thus not prohibited by IC 2.

Note that U.S. Department of Energy's (DOE's) proposal to breach the remaining dams is not part of the 2010 Proposed RFLMA Modifications. While CR 2010-02 provides the evaluation to demonstrate that the objective for IC 2 is met for excavation areas described in the CR, because of questions concerning the interpretation of the IC, Colorado Department of Public Health and Environment (CDPHE) withdrew approval of CR 2010-02 (October 15, 2010) regarding the evaluation of the areas that would be excavated to accomplish breaching dams.

The RFLMA Parties are considering clarifying the ICs to include appropriate consideration of the objective and rationale for the control as stated in the CAD/ROD. The objective of IC 2 regarding excavations that exceed 3 feet is to maintain the current depth to subsurface

contamination or contaminated structures. This IC also results in achieving compliance with the CDPHE risk management policy of ensuring that residual risks to the site user are at or below a 1×10^{-6} excess lifetime cancer risk.

Common Concern Statement 2

Common Concern:

Commenters are concerned that the DOE Office of Legacy Management (LM) proposal appears to disregard state regulations and U.S. Environmental Protection Agency (EPA) guidance documents for Applicable or Relevant and Appropriate Requirements (ARARs) by eliminating upstream surface water POCs located at the terminal ponds and moving them further downstream from the source of contamination. The existing Indiana Street POCs, GS01 and GS03, have a long and rigorous water quality record and, historically, these POCs have been used to confirm that all relevant water quality standards are being met. Commenters are concerned that the regulatory justification for moving the POCs to the National Priorities List (NPL) boundary is not given.

Response:

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) policies specify groundwater monitoring as appropriate to determine remedy effectiveness and performance. However, there is no ARAR that specifies the location for surface water POCs. RFLMA surface water POCs and surface water Points of Evaluation (POEs) are required by the remedy decision.

CERCLA guidance for locating points of compliance is contained in the preamble to the final National Contingency Plan rule (40 CFR 300), 46 Federal Register 8666-8813, March 8, 1990. The preamble provides the following in relation to the requirements for the selection of the remedy in 40 CR 300.430.(f)(iii)(A), "... Performance shall be measured at appropriate locations in groundwater, surface water..." :

"While points of compliance attaining [remediation goal levels] are established on a site specific basis, as suggested by some commenters [to the proposed NCP rule] there are general policies for establishing points of compliance. For groundwater, remediation levels should generally be attained throughout the contaminated plume, or at and beyond the edge of the waste management area when waste is left in place. ... For surface waters, the selected levels should be attained at the point or points where the release enters the surface waters (p. 8713). ...

In particular, there may be circumstances where a plume of groundwater contamination is caused by releases from several distinct sources that are in close geographical proximity. In such cases, the most feasible and effective groundwater cleanup strategy may be to address the problem as a whole, rather than source-by-source, and to draw the point of compliance to encompass the source of the release (p. 8753)."

Several examples of appropriate locations for groundwater points of compliance based on site-specific conditions of a release can be found in EPA's "Handbook of Groundwater Protection and Cleanup Policies for RCRA Corrective Action", EPA530-R-04-030, April 2004.

The process for the proposal and approval of changes to RFLMA monitoring locations follows the requirements in RFLMA paragraph 66. The modification of RFLMA Attachment 2 does not change the remedy. The CAD/ROD, section 17, Selected Remedy/Corrective Action for the Central OU, *Description of the Selected Remedy/Corrective Action*, provides:

The selected remedy/corrective action consists of environmental monitoring and continued operation and maintenance of engineered structures such as landfill covers and groundwater treatment systems. The requirements of this remedy will be implemented through RFLMA, as well as through an environmental covenant for the Central OU that will be granted by DOE to CDPHE. Individual components of the remedy are discussed in more detail below....

DOE will continue to perform environmental monitoring for surface water and groundwater....Surface water monitoring will be conducted, at a minimum, at POCs and POEs.

The rationale for the new locations for surface water POCs is explained in CR 2010-04. The new POC locations in the final approved modification will provide monitoring data that allow for determination of the continuing protectiveness of the remedy and to demonstrate compliance with RFLMA surface water standards before the water leaves the NPL boundary. These locations are close to the waste management area boundary and will allow appropriate evaluation of any impacts from groundwater and surface soil contaminants to surface water quality in accordance with guidance and requirements.

While the new Walnut Creek POC (WALPOC) is up to several hundred yards downstream from the former POCs at the outlets of Terminal Ponds A-4 (GS11) and B-5 (GS08), the new POC also monitors the No Name Gulch portion of water in Walnut Creek before it leaves the Central Operable Unit (COU). Previously, the No Name Gulch contribution was not monitored in Walnut Creek until it reached the POC located at Indiana Street (GS03). No changes are proposed to the surface water POEs or the groundwater monitoring wells upstream of the terminal ponds and closest to sources of residual contamination, which serve as an early warning of possible impacts to surface water quality at the POCs.

The new Woman Creek POC (WOMPOC) replaces the former POC at Indiana Street (GS01). This new location is within the NPL boundary and is about two-thirds of a mile upstream of the former Indiana Street POC location. The new Woman Creek POC is about 90 yards downstream from the former Terminal Pond C-2 POC (GS31), but again, no change is proposed to the surface water POEs and the groundwater monitoring wells upstream of this terminal pond and closest to sources of residual contamination.

The Proposed 2010 RFLMA Modifications deleted the Indiana St. POCs (GS01 and GS03), but to address the common concerns, the approved modification retains these locations as POCs for two years after WALPOC and WOMPOC replace POCs GS08, GS11 and GS31. This approach will provide two years of RFLMA required monitoring at GS01 and GS03 during flow through operation of the terminal pond dams. The RFLMA Parties believe that two years of water monitoring data is generally considered sufficient to provide adequately representative data, and

is consistent with the CDPHE Water Quality Control Division's March, 2011 *Section 303(d) Listing Methodology 2012 Listing Cycle* guidance for representative data. EPA or CDPHE may extend the two-year period by requiring DOE to submit a modification to this attachment in accordance with RFLMA paragraph 65 if either determines that such modification is necessary to ensure protection of human health and the environment.

Common Concern Statement 3

Common Concern:

Many commenters recommended that LM, EPA, and CDPHE consider an incremental implementation strategy to changing POCs and dam breaching which would provide for greater community involvement. It was suggested that a working group representing downstream communities, the U.S. Fish and Wildlife Service (USFWS), and the regulators be established to discuss issues. Furthermore, it was recommended that no approvals or final decisions on the dam breachings or RFLMA amendments be made until the working group has had the opportunity to reach a consensus on purpose, need, timing, and scope of the proposed changes.

Response:

Issues related to the location of the monitoring points have been and will continue to be addressed in meetings within the context and processes described in the RFLMA public participation plan. The modifications have been approved by CDPHE and EPA in accordance with RFLMA requirements. It is not necessary to adopt an incremental approach to changing the POC locations because the new POC locations provide representative monitoring data to assess the protectiveness of the remedy. As discussed in the response to Common Concern Statement 3, GS01 and GS03 will remain as POCs for two years after WALPOC and WOMPOC become POCs. The POE configuration upstream of the POCs does not change.

The proposed dam-breaching project has been evaluated by DOE in accordance with National Environmental Policy Act (NEPA) requirements. The evaluation included consideration of the comments received from the downstream communities. DOE has been in communication with the downstream communities concerning the formation of an Adaptive Management Plan (AMP) group. Organizational meetings have been held, and issues including monitoring at former POCs under the AMP are currently being identified. EPA and CDPHE are participating in the AMP development meetings. The AMP process will address only issues connected with the NEPA proposed action to breach the remaining dams at the Site.

Common Concern Statement 4

Common Concern:

Commenters expressed concern about the basic premise of the proposal to relocate the POCs from the Indiana Street locations to the COU boundary. Commenters expressed disbelief that deletion of the Peripheral Operable Unit (POU) from the NPL requires moving the Indiana Street POCs to the COU boundary, and stated that modifying the monitoring locations is not required, as DOE retains the right to access the Indiana Street POCs.

Commenters stated that monitoring should be conducted at the boundary of federal property and not at the boundary of the NPL site.

Response:

The locations of the new POCs were selected to enable collection of samples representative of the water quality leaving the NPL site. These samples are to be used to verify that the water quality meets the RFLMA standards, which are based on the Colorado Water Quality Control Commission promulgated standards, and that the remedy remains protective of human health and the environment.

POC locations and compliance with remediation levels are established on a site-specific basis. However, CERCLA guidelines state that for surface water, POCs should be located at the point, or points, where the release enters the surface waters. As discussed in the response to Common Concern Statement 2, the RFLMA Parties have determined that the location of the POCs shall be close to the NPL boundary.

The POU was deleted from the NPL in May 2007 because it was determined that the POU poses no significant threat to public health or the environment and, therefore, no further remedial measures pursuant to CERCLA were appropriate. Because no hazardous substances, pollutants, or contaminants occur in the POU above levels that allow for unlimited use and unrestricted exposure, no five-year review is required. There is no further regulatory requirement to continue monitoring the POU. However, as discussed in the response to Common Concern Statement 3, GS01 and GS03 will remain as POCs for two years after WALPOC and WOMPOC become POCs.

Common Concern Statement 5

Common Concern:

Commenters are concerned that the Proposed 2010 RFLMA Attachment 2 Modifications presuppose the breaching of the dams because predischarge pond sampling has been eliminated in the RFLMA Attachment 2 Modification document. Commenters believe that to the extent the terminal dams are breached or operated in flow-through, the need for monitoring at Indiana Street as the water leaves federally controlled property is even greater.

Commenters are concerned that the release of the proposed RFLMA modification for public comment was premature, because they believe that in providing comments on the proposed RFLMA modification, the public had to make assumptions about the final Surface Water Configuration Environmental Assessment (EA) decision.

Response:

Although the proposal included elimination of predischarge sampling, the sampling and evaluation protocol has been retained in the final modifications. Predischarge samples will continue to be collected as long as the ponds are operated in batch and release mode. RFLMA and the CAD/ROD are subject to Resource Conservation and Recovery (RCRA) and CERCLA regulatory authorities, which are separate from the NEPA evaluation to breach the dams. The

dams are not part of the CAD/ROD requirements and are not included in Attachment 2 of RFLMA. Breaching the dams is subject to NEPA regulatory authority.

In accordance with the RFLMA regulatory approach (Part 5), the RFLMA Parties have consulted regarding changes to the locations of POCs as well as other changes to RFLMA required monitoring points. The RFLMA Parties have determined that relocating the POCs is appropriate because of the change in the NPL boundary. The CAD/ROD does not dictate the manner in which the ponds are managed (i.e., does not require batch-and-release versus flow-through) nor whether the dams are retained. These decisions are made by DOE following analysis pursuant to NEPA. Moving the POCs under RFLMA does not prejudge the outcome of the NEPA analysis. Approval of changes to monitoring points is not dependent on the decision to breach dams, and the Proposed 2010 RFLMA Modifications are being considered independently of any DOE decision regarding the dam breach EA.

Common Concern Statement 6

Common Concern:

Commenters expressed a preference that any new monitoring points should be operated in conjunction with existing POCs (i.e., located at the terminal ponds and Indiana Street) for several years to make sure monitoring results at the proposed location are representative of both upstream and downstream conditions.

Commenters believe that the POCs known as GS01 and GS03 should be maintained and operated indefinitely as part of DOE's ongoing obligation to ensure that surface flows leaving federally controlled lands meet relevant standards. And, that this monitoring should be required under RFLMA, instead of depending on some unenforceable assurance by DOE, so that there is federal regulator backing on the maintenance of this monitoring requirement.

Response:

The locations of the new POCs were selected to enable collection of samples representative of the water quality leaving the NPL site. The new POCs are the functional equivalent of the existing POCs. The POU was deleted from the NPL because it was determined that no hazardous substances occur above levels that allow for unlimited use and unrestricted exposure, and there is no further regulatory requirement to continue monitoring this zone. As discussed in the response to Common Concern Statement 3, GS01 and GS03 will remain as POCs for two years after WALPOC and WOMPOC become POCs. However, non-RFLMA monitoring at the Indiana Street wells and GS01 and GS03 after they cease to be RFLMA required POCs has been discussed with the downstream communities as a possible inclusion in the AMP.

Common Concern Statement 7

Common Concern:

Commenters were concerned that shifting from a 30-day to a 12-month average would delay the determination of any exceedances. The comments stated that the level of protection provided by the remedy would be reduced, and there would be a corresponding increase in the risks associated with the Site. Commenters stated that the proposal to use a 12-month rolling average

instead of a 30-day average to determine surface water compliance masks the variability of the monitoring data and reduces the ability to incorporate an advance warning system.

Response:

The Proposed 2010 RFLMA Modifications included reporting both the 30-day average and 12-month rolling average, and both data calculation methods will be evaluated according to designated RFLMA processes. Both methods can trigger notification of reportable conditions and regulatory consultation, which serve as an advance warning system. There is no increase in risk associated with the change because both methods are retained and provide the ability to respond in a timely manner.

Using both averaging methods actually has the potential to provide more accurate evaluation and response, given the intermittent stream flow conditions at the NPL site, and represents a more appropriate reporting process. A 30-day average is calculated using data from the previous 30 days in which measurable flow was present; the 12-month rolling average is calculated using data from a rolling 12-month calendar period, regardless of flow conditions. As an explanation of the various stream flow scenarios, the following examples based on observed conditions at Rocky Flats are provided:

- If a location flows constantly for 30 consecutive days, then the 30-day average covers 30 calendar days.
- If a location flows 30 days intermittently across 3 calendar months, then the 30-day average is essentially a 3 “calendar month” rolling average.
- If a location flows 30 days intermittently across 1 calendar year, then the 30-day average is equivalent to the 12-month rolling average for that calendar year.
- If a location flows 60 days intermittently across 1 calendar year, then the 30-day averages would be more sensitive to water quality variation than the 12-month rolling average for the same period. The 12-month rolling average would be equivalent to a 60-day average.
- If a location flows for 30 days intermittently across 2 calendar years (e.g., two 15-day discharges from a terminal pond, occurring once per year), then the 30-day average is essentially a 24 calendar-month average, which is less sensitive than the 12-month rolling average. Put another way, if a location flowed 15 days one calendar year, and then 15 days the next calendar year, the 30-day average would cover 2 calendar years, while the 12-month rolling averages would include only 15 days of flow, and thus the 12-month rolling average would be more sensitive to water quality variation than the 30-day average.

Common Concern Statement 8

Common Concern:

Commenters expressed concern that LM has not prepared a contingency plan in the event a compliance standard is exceeded. Instead of a contingency plan, LM relies on a consultative process with EPA and CDPHE to decide how to proceed with further studies or monitoring. Commenters requested that LM develop a contingency plan that outlines the physical and/or operational actions that LM will employ in the event a compliance standard is exceeded at any surface water POC.

Commenters disagree with the statement made by the regulators at the August 10, 2010, public meeting that sensitive water quality standards at the POCs, up gradient and down gradient water quality sampling, the Standley Lake Protection Project facilities, and replacement of Broomfield's drinking water source represent a contingency plan.

Response:

The most effective way to deal with contingency is to ensure that the original remedy provides long-term protectiveness. Any designed contingency plan considers and is appropriate to the corresponding level of risk represented by conditions at the Site. The RFLMA does not address specific circumstances but provides the decision logic for evaluation, reporting, consultation, and mitigation requirements that are based on meeting the remedy goals for protection of human health and the environment. The RFLMA process includes consultation to further understand an issue but is not limited - the process could result in immediate action or operational changes.

Although not part of the remedy, Rocky Flats surface water is diverted around downstream drinking water supplies by the Standley Lake Protection Project and the Walnut Creek Diversion Project. These projects were funded by DOE and constructed to isolate downstream drinking water reservoirs to address concerns of downstream communities. The water supply is further protected by the use of drinking water from Carter Lake and from the Walnut Creek Diversion Project, which provide diversion to protect downstream users.

Mitigation plans, if required, are based on the monitoring results and investigation of the possible source(s). The following elements in RFLMA combine to provide a compliant and protective system for measuring constituents that might flow off Site:

- **Upstream sampling:** POEs are located specifically to provide an indication of the quality of surface water flowing toward the POCs. Groundwater monitoring well data offer an even earlier indication of potential impacts to upstream water quality. This upstream monitoring serves as an advance indicator for potential downstream impacts.
- **Surface water standards:** The RFLMA standards are based on a 30-year exposure, yet they are applied to 30 days of flow and 12-month periods. For example, the RFLMA standard for plutonium is 0.15 picocurie per liter (pCi/L) (a chronic value based on consumption of 2 liters per day for 30 years), while the national drinking water maximum contaminant level (MCL) is 15 pCi/L for alpha emitters (such as Plutonium). Use of such conservative standards in RFLMA provides an additional measure of protection.
- **Notification and Consultation:** RFLMA requires that potentially affected communities and the regulatory agencies be informed if the 30-day or 12-month averages exceed standards at

POCs or POEs. Mitigating actions are determined in consultation with, and approved by, regulatory agencies. Results of the consultation are shared and discussed with the public in accordance with the Public Involvement Plan.

Having a sensitive standard, together with a comprehensive monitoring system, ensures that responses can be made within a time frame that is protective of human health and the environment.

Common Concern Statement 9

Common Concern:

Commenters are concerned that if the Proposed 2010 RFLMA Modifications are approved, the level of protection will be reduced, and there will be a corresponding increase in the risks associated with the Site. Commenters are concerned that moving existing upstream POCs farther from the source of contamination, and establishing new surface POCs at the confluence of multiple tributaries would dilute concentrations and monitoring results with larger volumes of flow.

Response:

The new POCs are representative of the water quality leaving the NPL site, and no RFLMA-required monitoring upstream of the POCs will change. The following information is provided as a comparison of the existing POCs to the proposed POCs as related to drainage area and tributary contributions:

New Woman Creek POC:

- New POC will monitor approximately 1,612 acres.
- New POC will no longer monitor runoff contributions from approximately 980 acres located outside the NPL site and will no longer monitor tributary water contributions from South Woman Creek and Woman Creek downstream of the NPL site. These water contributions currently act to dilute flows at the existing GS01 POC.
- New POC is likely to collect samples over a larger portion of the calendar year than the current GS01 POC, as the Woman Creek reach downstream of the NPL site generally loses water through evapotranspiration and infiltration to the alluvium. There are no significant groundwater seeps in Woman Creek downstream of the NPL site.
- Current POE SW027 will still directly monitor water entering Pond C-2 from NPL site areas with residual contamination.
- New POC location will result in representatively monitoring water leaving the NPL site; however, Pond C-2 water will be diluted by Woman Creek water.

New Walnut Creek POC:

- New POC will monitor approximately 1,052 acres.
- New POC will no longer monitor runoff contributions from approximately 840 acres located outside the NPL site and will no longer monitor tributary water contributions from

McKay/Upper Church ditches and Walnut Creek downstream of the NPL site. These water contributions currently act to dilute flows at the existing GS03 POC.

- New POC is likely to collect samples over a larger portion of the calendar year than current GS03 POC, as the Walnut Creek reach downstream of the NPL site generally loses water through evapotranspiration and infiltration to the alluvium. There are no significant groundwater seeps in Walnut Creek downstream of the NPL site.
- New POC location will result in representatively monitoring water leaving the NPL site; however, Pond A-4 and B-5 water will be diluted by No Name Gulch water.
- Current POEs SW093 and GS10 will still directly monitor water entering the A- and B-Series ponds from NPL site areas with residual contamination.

The proposed POCs will measure all the potentially contaminated water leaving the Site. They are the best locations for the new NPL boundary configuration and will be the functional equivalent of the current POCs.



**U.S. DEPARTMENT OF
ENERGY**



**Colorado Department
of Public Health
and Environment**



Date:

Subject: Release of Final Modification to Monitoring Locations at the Rocky Flats Site

Dear Rocky Flats Stakeholders,

Today the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE) are releasing the CDPHE and EPA approved modification to the Rocky Flats Legacy Management Agreement (RFLMA) Attachment 2, Legacy Management Requirements.

The modification establishes new surface water Point of Compliance (POC) monitoring locations in Walnut Creek and Woman Creek that will replace the existing POCs within the Central Operable Unit (COU) when DOE completes installation of flumes and monitoring equipment at the new POC locations.

The modification retains the Walnut Creek and Woman Creek POCs at Indiana St. (GS01 and GS03) in the Peripheral Operable Unit (POU) for a period of two years after the new flumes in the COU are operational. The modification also removes two designated Boundary wells in the POU as RFLMA monitoring locations.

The POU was delisted from the Comprehensive Environmental Response, Compensation and Liability Act National Priority List (NPL) and transferred to the U.S. Interior Department for management as the Rocky Flats National Wildlife Refuge in 2007. The RFLMA Parties have determined that RFLMA monitoring at locations in the refuge is not required because extensive monitoring in the remaining NPL site, the COU, demonstrates that the remedy remains protective of human health and the environment. With this modification the POCs located in the POU will be phased out as RFLMA required monitoring locations and the Boundary wells will no longer be RFLMA required monitoring locations.

The approved modification is based upon a proposed modification to RFLMA Attachment 2 released by the RFLMA Parties for public review and comment on July 20, 2010. The public comment period ended on October 19, 2010. Several public meetings with stakeholders to discuss the proposed modification were also held by the RFLMA

Parties during the public comment period. The RFLMA Parties considered all written comments received and incorporated some, but not all of the changes requested by commenters.

The enclosed *Common Concern Statement* and *Comment Responsiveness Summary* documents the RFLMA parties' response to the public comments. In addition, the Document History page in RFLMA Attachment 2 summarizes the changes made in this modification, dated "March 2011".

Some of the changes suggested by commenters also led the RFLMA Parties to update the Figures in RFLMA Attachment 2 containing maps of the surface water features at Rocky Flats to reflect the configuration after breaching of dams for Ponds A-1, A-2 and B-1 through B-4 in 2009. RFLMA Attachment 1, *Site Map*, has also been updated to reflect the surface water features after breaching the dams for those ponds.

The final modification, the *Common Concern Statement* and *Comment Responsiveness Summary* documents are posted on the Community Involvement page of the Rocky Flats Site website at http://www.LM.doe.gov/Rocky_Flats/Sites.aspx?view=5.

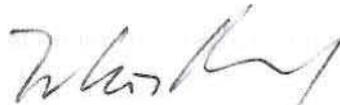
If you have any difficulty accessing the document from the website, or have any other questions, please e-mail Bob Darr at bob.darr@LM.doe.gov, or call (720) 377-9672, to request assistance.

Sincerely,



Scott Surovchak, DOE RFLMA Coordinator

Carl Spreng, CDPHE RFLMA Coordinator



Vera Moritz, EPA RFLMA Coordinator

Proposed 2010 Modifications to Attachment 2—Legacy Management Requirements of the Rocky Flats Legacy Management Agreement (RFLMA) Comment Responsiveness Summary

Comments with U.S. Department of Energy (DOE), U.S. Environmental Protection Agency (EPA), and Colorado Department of Public Health and Environment (CDPHE) Responses

Note: The following table provides responses to comments submitted on the Proposed 2010 RFLMA Modifications. The Proposed Modifications were posted on the DOE Office of Legacy Management (LM) web site in July 2010, and public comments were solicited. All comments are presented **verbatim** from the letters received by DOE. Comments are numbered for easy identification and do not represent an assigned hierarchy.

No.	Comment	DOE Response
City and County of Broomfield, George Di Ciero, City and County Manager, letter dated October 19, 2010		
1	The proposed amendments to RFLMA which eliminate the test and release operations for the terminal ponds violates the terms and conditions of the Lease Agreement between the Department of Energy and Broomfield, dated September 26, 2006.	The agreement between the DOE and Broomfield is not a regulatory document. DOE is bound by federal regulations for the remedy at the Rocky Flats Site (RFS). In part, DOE’s stated intent in entering into the Water Lease Agreement with Broomfield was to “control and test the waters that flow through the holding ponds at RFETS in the manner agreed upon by DOE, EPA and CDPHE; and to provide Broomfield with means to replace depletions to Walnut Creek resulting from out of priority storage of water in the holding ponds at RFETS.” (RFETS is an abbreviation for Rocky Flats Environmental Technology Site.) The Water Lease Agreement is therefore subordinate to the RFLMA.
2	The construction of the new monitoring points, as well as the breaching of the dams which is being considered as a separate action under the National Environmental Protection Act (NEPA) process, violates the institutional control which prohibits excavations greater than 3 feet.	See Common Concern Statement 1 and the response to Comment 7. The institutional control provisions of the Corrective Action Decision/Record of Decision (CAD/ROD) are memorialized in the Central Operable Unit (COU) Environmental Covenant (EC). Paragraph 1.b of the COU EC allows excavations greater than 3 feet for remedy-related purposes. Changing the location of monitoring points is a remedy-related purpose. The RFLMA modifications under

No.	Comment	DOE Response
		consideration do not include breaching the dams.
3	Any changes or modifications to the Institutional Controls requires a formal amendment to the Corrective Action Decision/Record of Decision (CAD/ROD) and cannot be made through a consultative process.	See Common Concern Statement 1. No changes to the institutional controls are being proposed at this time. With 4 years of experience in implementing the existing institutional controls, the RFLMA Parties are considering clarifying the institutional controls. These clarifications would be intended to maintain the protectiveness of the controls, while enhancing DOE's ability to manage site operations. Any clarifications to the institutional controls will follow all appropriate regulatory processes.
4	DOE-LM is proposing to disregard state regulations and EPA guidance documents for Applicable or Relevant and Appropriate Requirements (ARAR) by eliminating upstream surface water Points of Compliance (POC) located at the terminal ponds and moving them further downstream from the source of contamination.	See Common Concern Statement 2, and response to Comment 22. There is no ARAR that specifies the location for surface water POCs. The locations are specified in the CAD/ROD and the RFLMA. Surface water POCs (and surface water Points of Evaluation [POEs]) are required by the remedy decision.
5	The proposal to use a 12-month rolling average instead of a 30-day average to determine surface water compliance masks the variability of the monitoring data and disregards the ability to incorporate an advance warning system.	See Common Concern Statement 7. Surface water concentrations at the POCs inside the COU, which monitor the water leaving the NPL site, will be measured using both 30-day and 12-month averages. If either of these calculated values exceeds the surface water standards, CDPHE, EPA, and the communities must be notified and consultation among the RFLMA Parties is required to determine what actions may be necessary to protect surface water quality. The RFLMA Parties have agreed that, because of the chronic nature of the radionuclide standards, the 12-month rolling average will be used to measure compliance. Surface water concentrations at the POCs GS01 and GS03 at Indiana St. will continue to be measured using the 30-day and 12-month averages. GS01 and GS03 will continue to be RFLMA POCs until 2 years after the new POCs inside the COU, WALPOC and WOMPOC, replace the current POCs GS08, GS11 and GS31 as specified in the approved

No.	Comment	DOE Response
		modification of RFLMA Attachment 2, section 5.1. Requirements for POCS are enforceable under the RFLMA.
6	AOC Wells and the discharge locations for the four groundwater treatment units need to be designated as POC to adhere to state and federal regulations.	<p>See the response to Comment 22.</p> <p>There is no regulatory requirement to designate these locations as POCs. The treatment systems are designed to reduce contaminant loading to surface water and to protect surface water quality. If effluent concentrations and/or surface water performance monitoring locations exceed specified summary statistics for RFLMA surface water standards, per RFLMA Attachment 2, Figure 11, for treatment systems, then RFLMA Party consultation regarding what actions may be necessary is triggered.</p>

No.	Comment	DOE Response
7	<p>Contact Record 2010-04, dated July 15, 2010, presumes that the amendments to the RFLMA will be implemented and prematurely grants approval for DOE-LM to excavate below 3 feet for the new monitoring locations. In addition, it also assumes that the NEPA document for the dam breachings has been approved.</p>	<p>See Common Concern Statements 1 and 5.</p> <p>The CR does not presume. It just approves excavation for construction of the new flumes that were <i>proposed</i> to become POCs at some point in the future. The CR clarifies this by stating:</p> <p>“This Contact Record does not constitute approval of the proposed changes to RFLMA monitoring points discussed herein. The proposed changes to RFLMA Attachment 2 are subject to regulatory approval under RFLMA paragraph 65. The parties agreed that in accordance with RFLMA paragraph 66, the proposed changes to monitoring points will be subject to public review and comment, as discussed below.” (Page 1)</p> <p>and,</p> <p>“The RFLMA parties also agreed that the dates upon which the specific changes to monitoring locations become effective would be included in any approval decision by CDPHE and EPA regarding DOE’s proposed modification.” (Page 3)</p> <p>DOE decided that, in consideration of community feedback during the public comment period, the construction would not be done during the 2010 construction window of opportunity.</p>
8	<p>Any new monitoring points should be operated in conjunction with existing POCs (i.e. located at the terminal ponds and Indiana Street) for several years to make sure monitoring results at the proposed location are representative of both upstream and downstream conditions.</p>	<p>See Common Concern Statement 6.</p> <p>With approval of the Proposed 2010 RFLMA Attachment 2 Modifications, GS8, GS11 and GS31 will cease to be RFLMA POCs once the new POCs inside the COU (WALPOC and WOMPOC) are operational. The proposed modification deleted the Indiana St. POCs (GS01 and GS03), but the approved modification of RFLMA Attachment 2, section 5.1 retains these locations as POCs for two years after WALPOC and WOMPOC replace POCs GS08, GS11 and GS31. This approach will provide two years of RFLMA required monitoring at GS01 and GS03 during flow through operation of the terminal pond</p>

No.	Comment	DOE Response
		<p>dams. The RFLMA Parties believe that two years of water monitoring data is generally considered sufficient to provide adequately representative data, and is consistent with the CDPHE Water Quality Control Division’s March, 2011 <i>Section 303(d) Listing Methodology 2012 Listing Cycle</i> guidance for representative data. EPA or CDPHE may extend the two-year period by requiring DOE to submit a modification to this attachment in accordance with RFLMA paragraph 65 if either determines that such modification is necessary to ensure protection of human health and the environment.</p>
9	<p>No changes or revisions to the POC monitoring frequency, water quality standards, method of calculation, and compliance standards should be made until the evaluation period in the previous item above is completed and another public comment period is held.</p>	<p>See the response to Comment 8.</p>
10	<p>DOE-LM has not provided any data or modeling studies to support the statement that groundwater emerges to surface water before leaving the Central OU [RFLMA Section 5.2].</p>	<p>The statement referenced in this comment is not part of the Proposed 2010 RFLMA Modifications. It is in the original version of Attachment 2 and is not being changed.</p> <p>The statement is based on the July 2006 <i>Proposed Plan</i> summary of key points of the site physical characteristics in Section 2.0 of the RCRA Facility Investigation/Corrective Measures Study-CERCLA Remedial Investigation Feasibility Study Report for the Rocky Flats Environmental Technology Site (RI/FS). The Proposed Plan summary includes the following: “Shallow groundwater impacted by site activities emanates from the former industrial area and discharges to surface water in the drainages up gradient of the terminal ponds” (p.7). It is also based on Section 5.0, “Site Characteristics,” in the September 2006 <i>Corrective Action Decision/Record of Decision for Rocky Flats Plant (USDOE) Peripheral Operable Unit and Central Operable Unit</i>: “...the UHSU groundwater that has been impacted by site activities discharges to surface water prior to leaving the Central OU” (p. 19). (UHSU is an abbreviation for upper hydrostratigraphic unit.)</p>

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		<p>The supporting groundwater modeling studies are referenced and discussed in the June 2005 <i>Interim Measure/Interim Remedial Action for Groundwater at the Rocky Flats Environmental Technology Site</i>, as well as in RI/FS Section 2.0, “Physical Characteristics of the Study Area,” and in RI/FS Section 8.0, “Contaminant Fate and Transport.”</p>
11	<p>Broomfield wants to make sure that the remedy remains protective of human health and the environment. In addition, Broomfield would prefer to support the changes rather than taking on an adversarial position. To achieve this, we recommend that DOE-LM, USEPA, and CDPHE consider an alternative approach that uses an incremental implementation strategy and provides for greater community involvement.</p>	<p>See Common Concern Statements 3, 6, and 8. See the response to Comment 8.</p> <p>The RFLMA Parties have determined that monitoring at the new locations will continue to provide the data required to monitor remedy performance to ensure the remedy remains protective. Given the existing evaluation process as provided in RFLMA, incremental implementation for the new POC monitoring locations inside the COU is not necessary.</p>
12	<p>Broomfield requests that a working group be established to address the comments and concerns stated in this letter. No approvals or final decisions on the dam breachings or RFLMA amendments should be made until the working group has had the opportunity to reach a consensus on purpose, need, timing, and scope of the proposed changes. Broomfield will provide its vision of the roles, responsibilities, and participants of this working group in the next 4 to 6 weeks. We believe that the working group should be formally recognized and acknowledged as an amendment to RFLMA.</p>	<p>See Common Concern Statement 3.</p> <p>The RFLMA Parties have met with representatives of the local communities over the course of developing the Proposed 2010 RFLMA Modifications and during the public review and comment period. The RFLMA Parties have considered the public comments received on the proposed monitoring location changes and CDPHE and EPA have decided to approve new RFLMA monitoring locations and to eliminate others. However, the RFLMA Parties are interested in continuing the dialogue using the Rocky Flats Stewardship Council to facilitate the scheduling and dissemination of information on topics of community interest.</p>
13	<p>We have divided the remainder of this letter into three main headings: General Comments, Specific Comments, and Closing Remarks. We request that DOE-LM, USEPA, and CDPHE disposition each comment individually and would appreciate a joint meeting with each agency to review the</p>	<p>See Common Concern Statement 3.</p> <p>The RFLMA Parties have jointly considered each comment and each comment is included in this responsiveness summary.</p>

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	responses before any final decisions or approvals are made.	<p>The request by a commenter to review the responses to its own comments with the RFLMA regulatory agencies prior to final Agency decision does not have a foundation in regulation or policy.</p> <p>CERCLA regulations and policies outline the procedures for public review and responding to comments.</p> <p>The public comment period for the Proposed 2010 RFLMA Modifications started July 20th, 2010, and ended October 19, 2010, and included several public meetings.</p>
14	The proposed changes openly violate the institutional controls and other restrictions in the regulatory closure documents, state and federal environmental statutes, and written agreements.	See Common Concern Statement 1 and the responses to Comments 2 and 3.
15	There are no compelling technical or scientific justifications for the changes.	The rationales for the proposed RFLMA monitoring location changes are included in CR 2010-04. The remedy anticipates that the Site configuration may change over time and, as discussed in the response to Comment 4, the monitoring locations will continue to provide adequate data to determine remedy protectiveness.
16	With regulatory closure occurring less than 5 years ago, the site has not been subject to a sufficient number of wet, normal, and dry hydrologic cycles to demonstrate long-term effectiveness of the remedy.	RFLMA Attachment 2 requires DOE to perform specific monitoring and maintenance until changes to any of these requirements are approved by CDPHE and EPA. In addition, the protectiveness of the remedy is required to be evaluated through the CERCLA five-year review process. The changes to RFLMA monitoring locations will continue to allow the collection of data for evaluation of remedy performance regardless of hydrologic conditions.
17	Many of the engineered controls are not functioning as intended and the site is still undergoing physical changes.	<p>See the response to Comment 16.</p> <p>The engineering controls are functioning as intended because remedy performance standards continue to be met. The CAD/ROD recognizes that engineering controls will continue to require maintenance though time. CERCLA requires a detailed review of remedy protectiveness</p>

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		<p>every 5 years.</p> <p>Discussion of changes made or proposed for optimization is included in the RFLMA-required Annual Reports of Site Surveillance and Maintenance Activities. Monitoring data have confirmed that modifications at the groundwater treatment systems have resulted in improvements in treatment effectiveness.</p>
18	<p>To date, Broomfield has not received any satisfactory written responses from DOE-LM, USEPA, or CDPHE to repeated requests on the first two items listed above. Broomfield believes that any future changes should adequately address these very important concerns, at a minimum. Any decision to proceed without a formal response would constitute poor public policy.</p>	<p>See the responses to Comments 14 and 15.</p>
19	<p>Broomfield believes that the interim changes to operate the terminal ponds in a flow through manner and the permanent modifications to breach the dams are in direct violation of the terms and conditions of the Lease Agreement between DOE and Broomfield, dated September 26, 2006. Both modes of operation are in direct conflict to the requirement to sample and test surface water before discharges are made.</p>	<p>See the response to Comment 1.</p>
20	<p>Breaching the remaining dams and constructing new monitoring points would violate institutional control that prohibits excavations deeper than 3 feet. The CAD/ROD does not provide a process for issuing variances to the Institutional Controls. A description of the consultative process begins on page 71 of the CAD/ROD and reads: "DOE shall notify EPA and CDPHE 45 days in advance of any proposed land use changes that are inconsistent with the objectives of these institutional controls or the selected remedy/corrective action. DOE shall not modify or terminate institutional controls, implantation actions or modify land use without approval of</p>	<p>See Common Concern Statement 1 and the responses to Comments 2, 3, and 55.</p>

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	<p>EPA and CDPHE. DOE shall seek concurrence before any anticipated action that may disrupt the effectiveness of these institutional controls or any action that may alter or negate the need for the institutional controls. <u>For purposes of this CAD/ROD, DOE may not modify or terminate these institutional controls without the approval of EPA and CDPHE, by formal amendment to this CAD/ROD.</u> (Emphasis added.) Broomfield asserts that approving excavations beyond 3 feet for non-remedy related purposes constitutes a modification to the Institutional Control. Since the proposed activities create new pathways that were not evaluated in the comprehensive risk assessment, an amendment to the CAD/ROD is needed to include supplemental risk assessments for each location where excavations will occur.</p>	
21	<p>EPA guidance documents for ARARs clearly state that surface water Points of Compliance (POC) should be located at the site boundary or at the point of discharge. For the Rocky Flats site, all of the groundwater treatment units at the Rocky Flats site have been designated in the remedy as engineering controls. Therefore, regulatory points of compliance should be established at the discharge of all groundwater treatment systems to maintain consistency with EPA guidance documents and with state water quality regulations.</p>	<p>See the response to Comment 6.</p>
22	<p>Contact Record 2010-04, dated July 15, 2010, states that the Area of Concern (AOC) wells serve as the points of compliance for groundwater. The RFLMA should be revised to support this statement and maintain compliance with State WQCC Regulation No. 41. In addition, all AOC wells should be tested for the entire suite of analytes listed in Table 1 of the RFLMA.</p>	<p>See the response to Comment 6.</p> <p>The CR does not state that AOC wells serve as POCs for groundwater. The CR explains that there is no ARAR for locating surface water POCs, but by analogy to Colorado Water Quality Control Commission (WQCC) Regulation 41 concerning the criteria for establishment of POCs for groundwater in site-specific rulemaking, the surface water POCs are located close to the waste management area boundary. The arrangement of the AOC wells upgradient of the POCs provides</p>

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		<p>monitoring data to demonstrate the continued effectiveness of the remedy.</p> <p>The list of analytes and analyte groups is in RFLMA Attachment 2, Table 2. The analytes listed in Table 2 are based on evaluation of the RI/FS data and reflect the contaminants of concern in the respective source areas. The evaluation is consistent with the protocols in Colorado WQCC Regulation 41 (specifically, Section 41.6), as well as RCRA regulations (40 CFR 264, subpart F).</p>
23	<p>DOE-LM has repeatedly stated that one of its primary goals is to re-establish natural conditions at the Rocky Flats site. While this is an admirable objective to pursue, it does not address the fact that residual contamination will remain at the site for many generations to come. Broomfield believes that the current remedy (which collectively includes the institutional controls, the engineered controls, the monitoring program, and operations plan) is adequate and the changes proposed by DOE-LM do not reduce risk or provide greater protection for human health and the environment.</p>	<p>See response to Common Concern Statements 2, 8, and 9.</p>
24	<p>Currently, there are two analytical methods to determine if a violation of an enforceable standard occurs at the existing surface water POCs. A 30-day average calculation applies to the Indiana Street POC, while a less sensitive 12-month rolling is used at the POC located at the terminal ponds. Broomfield is concerned that the use of the longer timeframe will delay the timing when a reportable condition occurs. We believe that any future POCs should be based on the 30-day average since it will better reflect subtle changes in contamination levels and provide more advanced warning of increases in contaminate levels.</p>	<p>See Common Concern Statement 7 and the response to Comment 5.</p> <p>Additionally, we assume that the commenter meant to say data evaluation methods, rather than analytical methods.</p>
25	<p>The actions above are further compounded by the fact that DOE-LM has not prepared a contingency plan in the event a</p>	<p>See Common Concern Statement 8.</p>

No.	Comment	DOE Response
	compliance standard is exceeded. Instead, DOE-LM will rely on a consultative process with EPA and CDPHE to decide how to proceed with further studies or monitoring. This method of operation is unacceptable to Broomfield.	
26	In addition to the general comments discussed above, Broomfield has several specific comments of the proposed amendments to Attachment 2 of RFLMA. These changes are listed .in chronological order. Proposed additions are shown in <i>bold italic</i> typeface and proposed deletions are shown in strike through typeface.	Explanation noted. Additionally, the text from all comment letters is shown verbatim in this responsiveness summary.
27	Section 2.1 Surface Water Standards - Page 2 The existing surface water use classification of Recreation 2 at the top of the page should be replaced with the following to maintain consistency with WQCC Regulation Nos. 31 and 38: Recreation 2, and <i>Recreation N (North Walnut Creek, South Walnut Creek, and Pond C-2),</i> <i>Recreation E (Woman Creek),</i>	The RFLMA Parties agree, and the change is incorporated in the approved modification.
28	Section 2.1 Surface Water Standards - Page 2 The first full paragraph, beginning with the second sentence should be revised as follows to reflect the fact that the all previously granted temporary modifications for the site expired on December 31, 2009: If the numeric values from basic standards and the site specific standards differ, the site specific standard applies, except where temporary modifications <i>have been approved by the WQCC are in place.</i> Temporary modifications fro organic compounds, nitrate and nitrite, as listed in Table 1, have been granted through the year 2009 by the WQCC.	The RFLMA Parties agree that the reference to the expired temporary modifications should be deleted, and the change is incorporated in the approved modification. There is no need to include the suggested clause regarding the WQCC approval.

No.	Comment	DOE Response
29	<p>Section 2.1 Surface Water Standards - Page 2</p> <p>The last sentence of the second paragraph should be revised as follows since Contact Record 2010- 04, dated July 15, 2010, states that Area of Concern (AOC) wells satisfy the ARAR in [WQCC] Regulation No. 41 for groundwater POCs: Exceedances of water quality standards at a surface water POC or a ground water AOC Well may be subject to civil penalties under Sections 109 and 310(c) of CERCLA.</p>	<p>See the response to Comment 22.</p> <p>The suggested change is not incorporated in the approved modification.</p>
30	<p>Section 5.0 Monitoring Requirements - Page 3</p> <p>The second sentence under the third paragraph should be revised as follows: If standard analytical methods have detection limits that are higher than the respective standard cannot attain the standard then alternative methods or PQLs will be proposed to the CDPHE for review and approval by the WQCC.</p>	<p>The suggested change is not incorporated in the approved modification. EPA and CDPHE have the authority to approve the practical quantitation levels (PQLs) for RFLMA standards.</p>
31	<p>Section 5.1 Monitoring Surface Water - Page 4</p> <p>No changes to this section should be made until such time that DOE-LM can demonstrate through concurrent sampling that the proposed POCs will be representative of the existing upstream and downstream POCs.</p>	<p>See Common Concern Statement 6 and the response to comment 8.</p> <p>The point in time when the new Woman Creek and Walnut Creek monitoring locations, WALPOC and WOMPOC, become the RFLMA POCs is described in the approved modification. Surface water collected at those POCs is representative of the water quality leaving the NPL site.</p>
32	<p>Section 5.2 Monitoring Groundwater - Page 4</p> <p>The second sentence in the Area of Concern (AOC) Wells classification should be revised as follows pursuant to WQCC Regulation No. 41: These wells are monitored as Groundwater POCs to determine whether the plume(s) may be discharging to surface water and demonstrate compliance with the water standards in Table 1.</p>	<p>See the responses to Comments 6 and 22.</p> <p>The suggested change is not incorporated in the approved modification.</p>

No.	Comment	DOE Response
33	<p>Section 5.3.3 Groundwater Treatment Systems - Page 5</p> <p>The last sentence should be revised as follows since the groundwater treatment systems discharge to surface waters of the State:</p> <p>The <i>effluent discharge point will serve as the POC and the treatment</i> systems will be <i>operated and</i> maintained to ensure the effluent meets <i>the water standards in</i> Table 1 standards.</p>	<p>See the response to Comment 6.</p> <p>The suggested change is not incorporated in the approved modification.</p>
34	<p>Section 5.4.1 Boundary Wells - Page 6</p> <p>This section should be retained without any changes until such time the monitoring data or new groundwater studies and/or modeling show that groundwater contamination is not migrating beyond Indiana Street.</p>	<p>More than 15 years of monitoring at the well locations confirms that groundwater is not impacted at these locations by releases from former site operations. The RFLMA Parties have determined that there is no technical basis for continued monitoring groundwater at the Boundary well locations, which are outside the NPL site.</p>
35	<p>Section 5.4.2 Pre-discharge Pond Sampling - Page 6</p> <p>Broomfield asserts that this paragraph should remain unchanged since a final decision to breach the dams has not been made. In addition, if DOE plans to operate the terminal ponds in a flow through condition (a proposal that we strictly oppose unless protocols and procedures are significantly revised), then at a minimum, appropriate sampling protocols and procedures need to be added to this section to specify when flow through operations will cease and then subsequently resume. These are the types of revisions, among others, which we submit are appropriate to address in the working group. Further, additional modifications and amendments to the RFLMA and Water Lease with Broomfield will be required to allow any changes to the existing test and release mode of operations for the terminal ponds.</p>	<p>See Common Concern Statement 8.</p> <p>See the response to Comment 1 concerning the water lease.</p> <p>Section 5.4.2 text has been reinstated. The text was also expanded to note that when batch-and-release operation ceases, pre-discharge sampling will not be performed. In flow-through mode, water will be continually monitored at designated POCs and will be subject to the evaluation procedures in RFLMA Attachment 2, Figure 5. If RFLMA surface water standards are exceeded, notifications are required, RFLMA Party consultation is triggered, and a determination of the appropriate mitigating actions will be made by CDPHE in consultation with EPA.</p> <p>The Broomfield Water Lease Agreement, paragraph 25, provides for modifications. DOE will give due consideration to any modifications of the Lease Agreement proposed by Broomfield.</p>

No.	Comment	DOE Response
36	<p>Section 6.0 Action Determinations - Page 7</p> <p>Add language that local communities are notified of all reportable conditions <u>and</u> are invited to participate in any consultative process between DOE, CDPHE, and EPA. When reportable conditions occur (except in the case of evidence of violation of institutional controls as described below), DOE will inform CDPHE, and EPA, and the downstream communities' working group within 15 days of receiving the inspection reports or validated data. Within 30 days of receiving inspection reports or validated analytical data documenting a reportable condition, DOE will submit a plan and a schedule for an evaluation to address the condition initiate the consultative process described in RFLMA Paragraph 11 to determine if mitigating actions are necessary. As part of the first step in the consultative process, DOE will submit a draft plan and proposed schedule to identify the potential source, cause, and risks associated with the reportable condition consult as described in RFLMA Paragraph 11 to determine if mitigating actions are necessary. The downstream communities working group will be invited to participate whenever the consultative process is initiated for informational purposes and to provide support if requested. Final plans and schedules to conduct further investigations and studies or for implementing any mitigating actions, if any, will be approved by CDPHE in consultation with EPA. DOE is not, however, precluded from undertaking timely mitigation to protect human health and the environment once a reportable condition has been identified.</p>	<p>See Common Concern Statement 3 and the responses to Comments 8 and 18.</p> <p>The approved modifications to Figure 5, “Points of Compliance,” and to Figure 6, “Points of Evaluation,” includes notification of the listed downstream communities and the Rocky Flats Stewardship Council if the 30-day average or 12-month rolling average concentration exceeds the RFLMA standard. The RFLMA Parties do not agree that the suggested language is needed to implement the consultative process.</p> <p>The RFLMA Parties have been, and remain, committed to meet and discuss any Rocky Flats-related topic consistent with the RFLMA Public Involvement Plan.</p> <p>The suggested language to specify that timely mitigation “to protect human health and the environment” is not needed. That is already the implementation purpose of RFLMA.</p>

No.	Comment	DOE Response
37	<p>Section 6.0 Action Determinations - Page 7 (Cont.)</p> <p>In the case of a violation of institutional controls, DOE will notify EPA, and CDPHE, <i>and the downstream communities' working group</i> within 2 days of discovering any evidence of such a violation, and at that time initiate the consultative process to address the situation. In no case will DOE notify EPA, and CDPHE, <i>and the downstream communities' working group</i> more than 10 days after the discovery of a situation that may interfere with the effectiveness of the institutional controls. DOE will notify EPA, and CDPHE, <i>and the downstream communities' working group</i> of the actions it is taking within 10 days after beginning the process to address the situation.</p>	<p>See the response to Comment 18.</p> <p>The suggested change is not incorporated in the approved modification. The RFLMA Parties do not believe issues related to institutional control (IC) violations require immediate notification of the communities on a fixed timetable.</p> <p>Existing RFLMA procedures provide the mechanism to determine appropriate corrective action upon discovery of an IC violation. These actions will be reported to the public through the means described in the RFLMA Public Involvement Plan.</p>
38	<p>Section 6.0 Action Determinations - Page 8</p> <p>The last bullet point that references Figure 13 Flowchart - Pre-discharge Pond Sampling should not be deleted.</p>	<p>See Common Concern Statement 8.</p> <p>See the response to Comment 35 concerning when batch-and-release operations cease.</p> <p>Figure 13 is retained, but provides a decision point to terminate pre-discharge sampling.</p>
39	<p>Table 1 Surface Water Standards - Pages 11 through 15</p> <p>Remove the Temporary Modifications column and delete footnotes [c] and [h].</p>	<p>The RFLMA Parties agree that the reference to the expired temporary modifications should be deleted, and the change is incorporated in the approved modification.</p>
40	<p>Table 1 Surface Water Standards - Pages 11 through 15</p> <p>Revise footnote [n] to indicate that the standard is for arsenic.</p>	<p>While footnote [n] is only in Table 1 for arsenic, the RFLMA Parties agree to add "arsenic" to the footnote and the change is incorporated in the approved modification.</p>

No.	Comment	DOE Response
41	<p>Table 2 Water Monitoring Locations and Sampling Criteria - Pages 16 through 18</p> <p><u>Points of Compliance</u> - No changes to delete the existing or construct new surface water Points of Compliance should be made until sufficient field data has been gathered to demonstrate the new proposed locations will continue to be representative of the existing monitoring sites.</p>	<p>See Common Concern Statement 6 and the response to Comments 8 and 31.</p>
42	<p>Table 2 Water Monitoring Locations and Sampling Criteria - Pages 16 through 18</p> <p><u>Boundary Wells</u> - The boundary wells should not be deleted.</p>	<p>See the response to Comment 34.</p>
43	<p>Table 2 Water Monitoring Locations and Sampling Criteria - Pages 16 through 18</p> <p><u>Present Landfill (PLF) Area</u> - Assuming the Present Landfill pond is breached and PLFPONDEFF monitoring site is deleted, there is no need to add the new surface water monitoring site designated as NNG01. The monitoring site PLFSYSEFF, which corresponds to the Present Landfill Treatment System effluent, would better serve as the compliance location since it discharges to surface waters of the State and is located as close as practical to the source of contamination.</p>	<p>See the response to Comment 8.</p> <p>The POCs for Walnut Creek are listed in Table 2 of the approved modification. The RFLMA Parties have determined that NNG01 is an appropriate location for surface water sampling in the instance of elevated levels at PLFSYSEFF as it is equivalent to the former PLFPONDEFF downstream location.</p>
44	<p>Table 2 Water Monitoring Locations and Sampling Criteria - Pages 16 through 18</p> <p><u>Present Landfill (PLF) Area</u> - Based on the preceding item above, the analytes for PLFSYSEFF should be changed from "VOCs, SVOCs, U, metals" to "<i>As required by decision rule.</i>"</p>	<p>The suggested change is not incorporated in the approved modification since the required analyte list is clear. The reference to the decision rule is to note that, in the case of 3 monthly sample result exceedances for a particular analyte at PLFSYSEFF, only the analyte(s) with exceedances will be analyzed. See RFLMA Attachment 2, Figure 11, for the decision rules.</p>
45	<p>Table 2 Water Monitoring Locations and Sampling Criteria - Pages 16 through 18</p> <p><u>Pre-discharge</u> - All three pre-discharge monitoring locations listed should be retained.</p>	<p>See Common Concern Statement 8.</p> <p>See the response to Comment 35 concerning flow-through operations, monitoring, and evaluation.</p>

No.	Comment	DOE Response
46	<p>Proposed Figure 1 Water Monitoring at Rocky Flats - Page 26</p> <p>The proposed sequence and dates for the dam breaching listed in the right hand margin do not correspond to the verbal information provided by DOE. Regardless, the original figure should be retained since the justification for the new monitoring sites are based on plans to breach the terminal dams which have not been approved.</p>	<p>The proposed Figure 1 information was intended to inform the public about the proposed monitoring point locations. Because DOE is evaluating breaching the dams, the surface water configuration of the listed ponds may change, depending on the outcome of DOE's decision.</p> <p>The approved modification of Figure 1 shows the current configuration and indicates when the new POCs will become effective.</p>
47	<p>Figure 5 Points of Compliance - Page 30</p> <p>No changes to the figure should be made since the changes are based on the assumption that the dams have been breached. In addition, Reportable Conditions and evaluation of compliance with remedy performance standards for Nitrate must be based on a 30-day average, not a 12-month rolling average, to adhere to the chronic standards listed in State WQCC Regulations Nos. 31 and 38.</p>	<p>RFLMA Attachment 2, Section 2.1, specifies that RFLMA surface water standards are based on the Tables in Colorado WQCC Regulations 31 and 38. Regulation 31 recognizes CDPHE's and EPA's authority to approve criteria that may be different than that adopted by the Commission.</p> <p>Regulation 31 (Section 31.11, Section 5) says: "Nothing in this regulation shall be interpreted to preclude: (a) An agency responsible for implementation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601 et seq., as amended, from selecting a remedial action that is more or less stringent than would be achieved by compliance with the statewide numerical standards established in this section, or alternative site-specific standards adopted by the commission, where a determination is made that such a variation is authorized pursuant to the applicable provisions of CERCLA."</p> <p>RFLMA Attachment 2, Figure 5, "Points of Compliance," documents the evaluation protocol approved by CDPHE and EPA for implementation of the remedy. The RFLMA Parties have determined that the approved RFLMA protocols allow for appropriate comparison of water monitoring data to Colorado water quality standards to demonstrate that water is of sufficient quality to support all uses.</p>

No.	Comment	DOE Response
48	<p>Figure 6 Points of Evaluation - Page 31</p> <p>The method of calculation for all applicable analytes should be based on a 30-day average instead of the 12-month rolling average since these monitoring site are intended to serve as an early warning system. Accordingly, footnote 2 regarding the 12-month rolling average should also be deleted.</p>	<p>See Common Concern Statement 7 and the response to Comment 5.</p>
49	<p>Figure 7 Area of Concern Wells, Boundary Wells, and SWO18 - Page 32</p> <p>The existing figure should be retained as is, without any of the changes proposed by DOE.</p>	<p>See the response to Comment 34.</p> <p>The approved modification does not include Boundary wells as RFLMA monitoring locations.</p>
50	<p>Figure 11 Groundwater Treatment Systems - Page 36</p> <p>The following revisions should be made to the flow chart: Box that states "Sample PLFPONDEFF⁷ NNG01⁷ " should be deleted since there is no need to construct a new surface water monitoring site downstream of the PLFSYSEFF if the Present Landfill pond is breached. PLFSYSEFF is the appropriate monitoring location since it is where discharges to surface water occurs and it is as close as possible to the source of contamination.</p>	<p>See the response to Comment 43.</p> <p>The location NNG01 is a grab sample location. There is no construction involved for this location.</p>
51	<p>Figure 11 Groundwater Treatment Systems - Page 36</p> <p>The following revisions should be made to the flow chart: Footnote 7 should be deleted based on the preceding item above.</p>	<p>See the response to Comment 50.</p> <p>The suggested change is not incorporated in the approved modification.</p>
52	<p>Figure 11 Groundwater Treatment Systems - Page 36</p> <p>The following revisions should be made to the flow chart: PLFPONDEFF should be deleted from footnote 6 if the monitoring site is removed.</p>	<p>The suggested change is incorporated in the approved modification.</p> <p>The RFLMA Parties also noted that the GWISINFNORTH and GWISINFSOUTH locations for the PLF influent in note 4 should have been deleted in the March 2008 modification consistent with changes to Table 2 at that time. The change is now incorporated in this modification.</p>

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53	Figure 13 Pre-discharge Pond Sampling - Page 38 This figure should not be deleted and be retained.	See Common Concern Statement 8. See the response to Comment 35 concerning flow-through operations, monitoring, and evaluation.
54	Broomfield is amenable to considering flow-through operations of the terminal ponds <u>contingent upon the development of operational and performance criteria for initiating or terminating flow-through operations on a temporary or permanent basis.</u> Such criteria must be agreed upon by the downstream communities and documented in RFLMA. In addition, DOE-LM must adopt a contingency plan that outlines the physical and/or operational actions that DOE-LM will employ in the event a compliance standard is exceeded at any surface water Point of Compliance.	See Common Concern Statements 5 and 8. See the response to Comment 35 concerning flow-through operations, monitoring, and evaluation. RFLMA does not dictate how ponds operate in batch-and-release or flow-through modes. For the Surface Water Configuration Environmental Assessment, DOE has initiated an Adaptive Management Plan development process with community participation that will serve to address this comment.
55	If EPA and CDPHE approves the changes to RFLMA as proposed by DOE-LM, the level of protection provided by the remedy will be reduced, and there will be a corresponding increase in the risks associated with the site. In effect, DOE-LM's proposal will result in the following: 1. Creation of new exposure pathways that were not evaluated or considered as part of the comprehensive risk assessment in the CAD/ROD. 2. Moves existing upstream points of compliance further from the source of contamination. 3. Proposes to establish new surface water points of compliance at the confluence of multiple tributaries which would dilute concentrations and monitoring results with larger volumes of flow. 4. Adopts a less sensitive 12-month average for regulatory compliance purposes instead of keeping the 30-day average that exists at the downstream POCs. 5. Eliminates the physical capability to prevent water that	Changes in monitoring locations do not alter the fundamental effectiveness of the remedy. Response to item 1: Installing new monitoring points does not create “new exposure pathways.” Evaluation of the areas proposed to be excavated for the new monitoring locations is summarized in CR 2010-04. Based on the evaluation, there is no evidence to suggest that any residual contamination poses risks above acceptable levels. Response to items 2 and 3: See Common Concern Statement 9. Response to item 4: See Common Concern Statement 7. Response to item 5: The comment is not relevant to the RFLMA proposed modifications as these are monitoring locations only, which, regardless of location, have never prevented any water from leaving the Site.

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	exceeds the standards from migrating off-site.	
56	<p>Despite our opposition to the approach taken so far, we believe that the formation of a working group would provide a forum to allow DOE-LM to meet its goals, allow CDPHE and EPA to provide continued regulatory oversight, and allow the downstream communities to establish greater confidence that the remedy will continue to remain protective of human health and the environment well into the future. Broomfield recommends the establishment of such a group to ensure the proposal and any future site changes occur in a phased manner through a collaborative and cooperative manner. This type of an approach will reaffirm our confidence in the long-term performance of the remedy and help foster a credible public image. As stated previously, we will provide a recommendation for the organizational structure of the working group in the next 4 to 6 weeks.</p>	<p>See Common Concern Statement 3 and the response to Comment 12.</p>
<p>Woman Creek Reservoir Authority, Josh Nims, President, letter dated October 12, 2010</p>		
57	<p>Maintaining the Indiana Street POC's is critical to ongoing Authority operations. Elimination of the Indiana Street POC's is inconsistent with DOE obligations under the Operations Agreement with the Authority.</p>	<p>The Standley Lake Protection Project Operations Agreement (SLPPOA) (1996) states that DOE is responsible for testing flows in Woman Creek “at the Indiana Street Point of Compliance, as that term is defined in the RFCA” (Rocky Flats Cleanup Agreement). When the SLPPOA was signed, the Rocky Flats National Wildlife Refuge Act had not been enacted, and the easement for a transportation corridor along the Indiana Street boundary of RFETS was not a consideration. Since the 2001 Wildlife Refuge Act, both the CAD/ROD and RFLMA have anticipated that the locations of the POCs on Indiana Street might be changed. Delisting of the peripheral operable unit by the EPA in 2007 and the transfer of the land on which the Indiana Street POC is located to the U.S. Fish and Wildlife Service have changed the conditions which existed in 1996 when the SLPPOA was signed. DOE’s proposal for relocating the Indiana Street POC on Woman</p>

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		Creek to below the C-2 dam where Woman Creek leaves the NPL site serves the same function as the POC at Indiana Street on Woman Creek. DOE will continue to “test flows” at the RFLMA POCs.
58	<p>One of the clear objectives under the Rocky Flats Cleanup Agreement of 1996 (RFCA), was that flows leaving the Rocky Flats site would meet relevant water quality standards. Under that agreement, the site itself was referred to as the Rocky Flats Environmental Technology Site ("RFETS") and was defined as "including the property owned by the United States Government, formerly known as the Rocky Flats Plant or Rocky Flats Site, and now known as the Rocky Flats Environmental Technology Site, including the Buffer Zone." See RFCA, Part 5 Definitions, Paragraph 25, subparagraph bj. July 16, 1996. In the preamble of that agreement, the parties to RFCA agreed that, "...all on-site surface water and all surface water and groundwater leaving RFETS will be of acceptable quality for all uses including domestic water supply Reliable monitoring and controls to protect water quality during storage of plutonium and other special nuclear material and wastes, and during storm events will continue. To assure the above described water quality, long-term operation and maintenance of waste management and cleanup facilities will continue." See RFCA, Preamble, Paragraph B.3.b., July 16, 1996. To satisfy these water quality objectives, the RFCA established points of compliance at Indiana Street, as well as at the relevant terminal ponds.</p>	<p>The RFLMA Parties are the same as the RFCA Parties and are thoroughly familiar with the RFCA goals and objectives that were intended to help guide the accelerated action cleanup decisions under RFCA. Thus, the consideration of the proposed modifications to RFLMA monitoring locations includes full background knowledge of the regulatory approach that resulted in cleanup and closure of Rocky Flats.</p> <p>RFLMA modifies and supersedes RFCA, and is focused on remedy implementation requirements for the NPL site (see RFLMA Part 2, “Statement of Purpose”). The RFLMA Parties have determined that surface water leaving the NPL site is of acceptable quality for all uses and that contaminated groundwater will not impact acceptable surface water quality.</p> <p>The monitoring locations in the approved modification are appropriate for evaluation of water quality as required to meet RFLMA implementation requirements.</p>
59	<p>The successor agreement to RFCA, the Rocky Flats Legacy Management Agreement, ("RFLMA") maintained the points of compliance at Indiana Street as part of the ongoing monitoring requirements. At present, points of compliance GS-01 and GS-03 under RFLMA are located on Woman and Walnut Creeks, respectively, immediately before those Creeks reach Indiana</p>	<p>See the response to Common Concern Statements 4 and 9 and the response to Comment 8.</p>

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	<p>Street (the "Indiana Street Points of Compliance"). These are the points where water flowing through the former Rocky Flats Plant Site, including the groundwater which daylights to these streams, leaves federally controlled land. Historically, the Indiana Street Points of Compliance have been used to confirm that DOE is in compliance with relevant water quality standards. The current proposal, as we understand it, is to revise the RFLMA to move these points of compliance approximately three quarters of a mile upstream onto the Central Operable Unit and no longer require DOE testing of waters leaving federally controlled lands at the Indiana Street Points of Compliance. The Authority strongly opposes any such action.</p>	
60	<p>The Indiana Street Points of Compliance provide the Authority, its downstream municipal members and Broomfield, with important assurances that the quality of water leaving the former Rocky Flats Plant Site meets relevant standards. Moving these points of compliance upstream simply means that flows off a significant portion of federal lands, (which are documented to contain some levels of plutonium), are no longer subject to compliance testing at Indiana Street. This, in turn, eliminates the Authority's ability to fully assure downstream citizens that water leaving the federal lands meets relevant standards and can safely flow through the various communities. In addition, Woman Creek is a gaining stream on the federal lands during times of the year. This is likely due, in part, to groundwater contributions from the former "buffer zone" lands that now comprise the National Wildlife Refuge. Removing compliance testing under RFLMA at the federal land boundary at the Indiana Street Point of Compliance would mean that the water gained would not be tested before leaving federal lands.</p>	<p>See Common Concern Statements 4 and 9 and the response to Comment 34.</p>

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	<p>The proposed modifications also eliminate the so-called boundary wells that have historically provided groundwater monitoring on the west side of Indiana Street. The Authority believes maintaining those boundary wells is an important component of RFLMA and urges that any proposal to cease boundary well operation and testing be withdrawn.</p>	
61	<p>More importantly, the Indiana Street Point of Compliance is critical to Woman Creek Reservoir operations. DOE's compliance testing at the Indiana Street Points of Compliance provides the Authority with the basis to require DOE action at Woman Creek Reservoir in the event of an exceedance. To the extent an exceedance of relevant water quality standards occurs at the Indiana Street Point of Compliance, DOE has agreed to take certain actions to address the issue. If no exceedance occurs, water is released from Woman Creek Reservoir to the Walnut Creek basin. Moving the compliance point upstream on Woman Creek undermines the assurances under RFLMA that <u>all</u> flows leaving the former Rocky Flats site comply with the relevant water quality standards, since <u>all</u> such flows would no longer be tested under the DOE proposal -- only those flows leaving the COU would be tested going forward. Without a monitoring point at Indiana Street, DOE and the regulators have lost the ability to assure the Authority and downstream communities that all water leaving federally controlled lands meets the relevant standards.</p>	<p>See Common Concern Statement 4 and the response to Comment 57.</p> <p>The new POC is the functional equivalent and does not change DOE's responsibilities under the agreement. The new POC location allows monitoring of Woman Creek water quality leaving the NPL site to determine that the remedy remains protective.</p>
62	<p>As indicated above, both the Authority and DOE are parties to the Operations Agreement which sets forth DOE's obligations for responding to an exceedance at the Indiana Street Point of Compliance. The Operations Agreement is the only direct agreement between DOE and the Authority concerning DOE response obligations. As such, it is an extremely important document to the Authority. The current proposal serves to</p>	<p>DOE is proposing to relocate the Indiana Street POC for Woman Creek, GS01. There is no proposal to discontinue monitoring water downstream of Pond C-2 before it leaves the NPL site. The Authority's anticipation of what it believes DOE is likely to argue at some unspecified time in the future misinterprets DOE's intent in proposing to relocate the Indiana Street POC and is not consistent with DOE's proposal.</p>

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	<p>undermine the Operations Agreement. It is imperative that monitoring requirements under RFLMA continue at Indiana Street. Absent such monitoring requirements under RFLMA, DOE will likely argue that the obligations under the Operations Agreement are, or could be, automatically terminated. Paragraph 7 of the Operations Agreement contemplates automatic termination of the document upon the later occurrence of two specific events; the removal of the RFETS from the National Priorities List under CERCLA or the termination of any monitoring requirements at the Indiana Street Point of Compliance in accordance with a Record of Decision for the RFETS under CERCLA. The Authority is deeply concerned that DOE will argue that the present proposed modifications to RFLMA, if adopted, constitutes one such specific event. Such a result is flatly unacceptable to the Authority.</p>	
63	<p>The proposed revisions to RFLMA must be considered in the context of the pending proposal to breach the terminal dams. To the extent the terminal dams are breached or operated in "flow through", the need for monitoring at Indiana Street as the water leaves federally controlled property is even greater. Maintaining the Indiana Street Points of Compliance under RFLMA is critical to the downstream communities and is the only way to ensure that water leaving federal lands meets standards.</p>	<p>See Common Concern Statements 4 and 5 and the response to Comment 57.</p> <p>Regardless of whether the terminal pond dams are breached in the future or if the dams are operated in flow-through mode, the water leaving the NPL site is being monitored. The approved modification provides for RFLMA monitoring locations within the NPL boundary, not the federally owned property boundary.</p>
64	<p>The Authority believes the current proposal to modify Attachment 2 of RFLMA as proposed by the regulators must be considered in concert with the pending proposal to breach certain terminal ponds on Woman and Walnut Creeks. An Environmental Assessment ("EA") has been submitted for public comment relative to terminal dam breaching activities. The Authority has participated in the public comment relative</p>	<p>See Common Concern Statements 1 and 2 and the response to Comment 57.</p> <p>The RFLMA Parties did consider the proposed changes to monitoring point locations a significant change that was subject to public review and comment in accordance with RFLMA paragraph 66. While existing agreements between DOE and the Authority are not included</p>

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	<p>to the EA and maintains its strong preference for a "no action" decision. In an EA comment letter submitted prior to the RFLMA modification proposal, the Authority requested "specific assurances from DOE and the relevant regulators that a 'breach' or any other 'alternative' considered in this process does not include or constitute a relaxation, movement, change or re-visitation of DOE's ongoing obligations for operation and monitoring of the Indiana Street Point of Compliance in the future. DOE must continue to monitor water quality at the Indiana Street Point of Compliance indefinitely. Any attempt to relax or move the point of compliance would constitute a major change to the RFLMA and would be inconsistent with DOE's existing agreements with the Authority." Clearly, the current RFLMA proposal does exactly the opposite; namely it intends to eliminate the points of compliance at Indiana Street and replace them with points of compliance a significant distance upstream. The Authority is disappointed on multiple levels at the current proposal and the means by which it has been advanced. The Authority strongly opposes this effort and encourages the RFLMA parties to withdraw the currently proposed revisions to the RFLMA.</p>	<p>in RFLMA remedy implementation, the RFLMA Parties have considered the Authority's arguments in favor of retaining GS01 and GS03 as RFLMA POCs. The RFLMA Parties have determined there is no technical or regulatory reason to maintain these locations as RFLMA POCs.</p>
65	<p>At an absolute minimum, monitoring must continue under RFLMA at Indiana Street, even as a point of evaluation rather than a point of compliance.</p>	<p>See Common Concern Statement 6 and the response to Comment 57. RFLMA POEs are established at locations upstream of POCs.</p>
66	<p>The Authority would prefer that the points of compliance known as GS-01 and GS-03 be maintained and operated indefinitely as part of DOE's ongoing obligation to ensure that surface flows leaving federally controlled lands meet relevant standards. Failing that, the Authority requests that the proposed amendments be revised to ensure that monitoring continues at GS-01, the Indiana Street Point of Compliance on Woman Creek. The Authority would be willing to accept a</p>	<p>See Common Concern Statement 6 and the response to Comments 8 and 62.</p>

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	<p>revision to GS-01 so that it is a point of evaluation under RFLMA. Under such an approach, continued monitoring requirements would be in place <u>under RFLMA</u> and would ensure that surface water flows leaving federal lands and coming into Authority controlled facilities meet relevant standards. By requiring this monitoring <u>under RFLMA</u>, rather than some unenforceable assurance by DOE, the Authority has the benefit of the federal regulators backing on the maintenance of this monitoring requirement. Moreover, it would eliminate any attempt by DOE to claim that the Operations Agreement between it and the Authority has somehow automatically terminated. As noted above, the Authority relies on its Operations Agreement with DOE to ensure that DOE remains solely responsible for any exceedances. This is a fundamental reason why the Authority opposes the proposed revisions since, with CDPHE and EPA's inherent blessing, the proposed revisions potentially give DOE an argument to avoid responsibility under its private agreement with the Authority.</p>	
67	<p>The Authority encourages DOE and the regulators to withdraw the proposed amendments to the RFLMA and maintain the document in the current state.</p>	<p>Comment noted.</p>
68	<p>On a related matter, the Authority encourages DOE and the regulators to withdraw the proposal concerning the breaching of the terminal ponds, as well as the Environmental Assessment related thereto.</p>	<p>Comment noted.</p>
69	<p>Assuming that DOE and the regulators are unwilling to withdraw the proposed RFLMA amendments and/or the terminal pond breaching proposal, the Authority requests that a point of evaluation <u>under RFLMA</u>, be maintained at the current Indiana Street Point of Compliance location indefinitely, or at a minimum, until the Central Operable Unit</p>	<p>See Common Concern Statement 6. See the response to Comments 8 and 57.</p>

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	is removed from the National Priority List.	
70	<p>The Authority further requests that DOE acknowledge, in writing, that the proposed changes to the RFLMA do <u>not</u> constitute a change in the Indiana Street Points of Compliance that would cause a termination of the existing Operations Agreement. To this end, the RFLMA should specifically reference that the proposed point of compliance at the COU boundary is the functional equivalent of the existing Indiana Street Point of Compliance for purposes of the DOE Operations Agreement. Finally, as a condition of approval of the RFLMA proposed changes, the regulators must require DOE to enter into an amendment of the existing DOE Operations Agreement that specifically identifies the new point of compliance on Woman Creek and an acknowledgment that said agreement is not automatically terminated as a result of any approved changes to RFLMA.</p>	<p>See the response to Comment 61.</p> <p>The proposed POC at the NPL site boundary is the functional equivalent of the Indiana Street POC for purposes of the SLPPOA.</p>
71	<p>Failing a complete withdrawal of the proposed RFLMA changes, (which is the Authority's preferred outcome), or the continued existence of GS-01 as an additional point of compliance under RFLMA, alternative specific suggested language changes to the RFLMA would include:</p> <p>In the second bullet of paragraph 5.1, a specific reference to GS-01 in paragraph 5.1 as a point of evaluation. The paragraph would then read, "Points of Evaluation (POEs): Located in the Central OU upstream of the ponds and POCs, <u>and in the Peripheral OU downstream on Woman Creek at GS-01, where Woman Creek flows leave federally controlled lands.</u> These locations are used to demonstrate compliance with the surface-water standards in Table 1, <u>and in the case of GS-01, additionally used for purposes of determining DOE obligations under the Standley Lake Protection Project Operations Agreement dated August 21, 1996, until such time as said</u></p>	<p>The approved modification does not incorporate the suggested text. See the responses to Comments 8, 64 and 65.</p>

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	<u>Operations Agreement is mutually amended to incorporate the relocated Woman Creek point of compliance."</u>	
72	Failing a complete withdrawal of the proposed RFLMA changes, (which is the Authority's preferred outcome), or the continued existence of GS-01 as an additional point of compliance under RFLMA, alternative specific suggested language changes to the RFLMA would include: As indicated above, the Authority opposes the elimination of the terminal ponds as contemplated in the pending EA. Therefore, the Authority supports re-insertion of the language in paragraphs 5.1 and 5.4.2 related to the terminal pond points of compliance and the pre discharge pond sampling.	See the responses to Comments 34 and 35.
73	Failing a complete withdrawal of the proposed RFLMA changes, (which is the Authority's preferred outcome), or the continued existence of GS-01 as an additional point of compliance under RFLMA, alternative specific suggested language changes to the RFLMA would include: Re-insertion of the entirety of the Boundary Wells language in paragraph 5.4.1, and conforming references throughout the document.	See the responses to Comments 34 and 35.
74	The Authority requests formation of a water working group composed of DOE, EPA, CDPHE, downstream municipal water suppliers and the Authority to discuss ongoing water quality results and related activities at the former Rocky Flats Site.	See Common Concern Statement 3 and the response to Comment 12.
75	The Authority supports the positions taken, and the comments provided, by the effected downstream communities to the proposed RFLMA modifications.	Comment noted.
76	The Authority remains in strong opposition to this proposal and urges the regulators and DOE to withdraw the proposal. Failing that, the proposal must be revised to require ongoing monitoring under RFLMA at the Indiana Street Point of	Comment noted.

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	Compliance (GS-01) on Woman Creek, consistent with the bullet points set forth above.	
City of Westminster, J. Brent McFall, City Manager, letter dated October 19, 2010		
77	Westminster strongly opposes the proposed RFLMA modifications. Retention of the existing POCs at Indiana Street ensures that all flows leaving the federal lands comply with applicable water quality standards. Westminster encourages DOE and the regulators to withdraw the current proposal.	See Common Concern Statement 4 and the response to Comment 58.
78	The proposed RFLMA modification was released with Contact Record 2010-04 which provides the detailed rationale for the proposed changes to RFLMA. The Contact Record describes one of the primary reasons for proposing the RFLMA modification for relocating the POCs is based on the dam breaching actions proposed in the Draft Rocky Flats Surface Water Configuration Environmental Assessment ("EA"). Westminster, along with numerous other affected governments, submitted comments opposing the EA proposed actions before the public comment deadline on June 1, 2010. To date, the disposition of all public comments and the final EA have not been released; therefore, we conclude that release of the proposed RFLMA modification for public comment is premature. In providing comments on the proposed RFLMA modification, the public is forced to make assumptions about the final EA decision that may not be accurate. The published version of the proposed RFLMA modification does not accurately reflect the verbal proposals DOE has offered since the draft EA and RFLMA modification documents were released for public comment. The public is not fully informed about DOE's current intentions regarding the surface water configuration and management at the Site.	See Common Concern Statement 5 and the response to Comment 46. The EA is evaluating the impacts of DOE's proposed action to breach the remaining dams. Whether or not DOE conducts the proposed action, the proposal did provide an impetus for the RFLMA Parties to consider changes to the downstream monitoring locations at this time.
79	The City of Westminster respectfully requests that DOE withdraw the proposed modification to RFLMA Attachment 2	See Common Concern Statements 1 and 2 and the responses to Comments 2, 3, and 7.

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	<p>due to unresolved issues associated with the rationale for the proposal. We contend that DOE's current proposal is premature for the following reasons:</p> <p>The construction of the new POC monitoring stations in the Woman Creek and Walnut Creek drainages below the terminal ponds may be in violation of Institutional Control #2, which prohibits excavation below three feet for purposes that are not remedy-related. DOE could propose modification of the institutional controls by a formal amendment to the Corrective Action Record/Record of Decision (CAD/ROD), which in turn would require modification of the Environmental Covenant (EC) and RFLMA. The process of modifying the institutional controls could be a lengthy process subject to public comment. The resolution of this issue and the subsequent impact on the current RFLMA proposal cannot be assumed or predicted.</p>	
80	<p>We contend that DOE's current proposal is premature for the following reasons:</p> <p>Contact Records 2010-02 (dam breaching) and 2010-04 (POC relocation) were approved by CDPHE. The City of Westminster encourages CDPHE to recognize the inconsistencies and ambiguities associated with the two interrelated proposals and withdraw approval of the aforementioned contact records. If approval of the contact records is withdrawn or the new POCs cannot be constructed as proposed, there is not sufficient cause for proposing the RFLMA modification as currently presented for public comment.</p>	See Common Concern Statement 1 and the response to Comment 7.
81	<p>While we contend the RFLMA modification proposal is premature, Westminster will not forego the first opportunity to provide public comment on the RFLMA document since it was adopted in 2007. Our comments are based on all information provided or referenced in the document released</p>	Comment noted.

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	for public comment.	
82	<p>Westminster has significant concern about the basic premise of the proposal to relocate the POCs from the Indiana Street locations to the Central Operating Unit ("COU") boundary. Contact Record 2010-04 details DOE's rationale for the RFLMA proposal to modify monitoring locations. One reason suggests that deletion of the Peripheral Operating Unit ("POU") from the National Priority List requires moving the Indiana Street POCs to the COU boundary. Westminster contends that modifying the monitoring locations is not required for the stated reason, as DOE retains the right to access the Indiana Street POCs because the CAD/ROD states <i>"The selected remedy/corrective action will be implemented through a modification to the Rocky Flats Environmental Covenant (DOE 2006b) to include all of the institutional controls required for the Central OU, through DOE retention of jurisdiction for or access to any real property to be used in carrying out the final response action (that is, the Central OU and designated monitoring points outside the Central OU), and through an interagency agreement/corrective action order among DOE, EPA and CDPHE."</i> (Emphasis added.)</p> <p>The text in RFLMA itself (February 2007) defines the Rocky Flats Site to include United States Government owned property and provides a map delineating the Site boundary in document Attachment 1, which encompasses both the COU and the POU acreages. Westminster contends that the POCs should be retained at the current locations until such time as active construction of the Jefferson County Parkway forces the relocation. Options for relocating the monitoring stations will be evaluated at that time</p>	<p>See Common Concern Statement 4 and the response to Comment 8.</p> <p>The RFLMA Parties agree that the deletion of the POU from the NPL does not <i>require</i> moving the Indiana Street POCs. Contact Record 2010-04 does not state that the locations must be moved or that DOE no longer has access to them. It does state that, because these monitoring locations are well outside the NPL site in an area that has been deleted from the NPL, RFLMA monitoring at these locations for remedy compliance purposes may be discontinued.</p> <p>The RFLMA Parties have determined that moving the POC locations within the boundary of the NPL site is appropriate.</p>
83	Similarly, the boundary wells, also located on the POU at Indiana Street, currently serve as the last point to measure	See Common Concern Statement 4 and the response to Comment 34.

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	<p>groundwater leaving the Site. DOE contends in RFLMA that <i>"all contaminated groundwater emerges to surface water before leaving the Central OU."</i> Without reference wells located outside the COU boundary, DOE cannot ensure this assertion will remain accurate over time. There are no groundwater wells located downstream of the ponds on the COU. Westminster insists that monitoring at the existing boundary well locations should be retained at the current frequency until such time as active construction of the Jefferson County Parkway forces the relocation. Options for relocating the monitoring stations will be evaluated at that time.</p>	
84	<p>Westminster is a principle member of the Woman Creek Reservoir Authority (Authority). The Authority's comments provided for the proposed RFLMA modification thoroughly detail our concerns about moving the POCs; as such, we support the Authority's opposition to elimination of GS-01 as the Point of Compliance.</p>	<p>Comment noted.</p> <p>See the responses to Comments 57 through 76.</p>
85	<p>DOE maintains that the state and federal guidance for locating groundwater POCs as close as possible to the "waste management area" boundary is also applicable to surface water POCs; however, DOE fails to cite state and federal documents that support this claim. If DOE's assertion is correct, it would follow that dilution of surface water downstream of the "waste management area" by supplemental surface water flows from surrounding drainages could jeopardize accurate assessment of the affected areas. For example, the proposed new WOMAN POC will result in significant dilution of the South Interceptor Ditch ("SID") flows measured at SW027 (SID above Pond C-2) by as much as 2000%. The 2009 annual flow at SW027 was 4.35 acre-feet and the 2009 annual flow at GS59 (closest upstream location from Pond C-2 on Woman Creek) was</p>	<p>See Common Concern Statement 9, and comment 22.</p>

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	177.54 acre feet. The new WOMAN POC is planned to be located downstream from current POC GS31, just below the confluence with Woman Creek, thus combining the flows from SW027 and GS59. The current monitoring location at GS01 adequately provides the compliance data encompassing all flows leaving the Site. Note the 2009 annual flow at GS01 was 217.22 acre-feet.	
86	As stated in Contact Record 2010-04, <i>...Under CERCLA guidance, compliance with surface water ARARs is measured at an appropriate point considering groundwater impacts to surface water within the NPL site boundary.</i> The same Contact Record further describes how the plans to notch the dams, rather than completely removing them, will effectively capture alluvial groundwater and direct it towards the surface water flowing through the notches. If this assessment is correct, what constraints preclude using or modifying the existing POC locations downstream of the terminal ponds (e.g. GS31 below Pond C-2) as the POC when operating the pond in a flow through configuration? The current POCs downstream of the terminal ponds are even closer to the "waste management area" than the proposed new POCs. The current POCs at Indiana Street, in conjunction with the POEs upstream of the terminal ponds and the current POCs below the terminal ponds, provide a clear picture of any contaminant migration.	See the response to Comment 7. See the response to Comment 35 concerning flow-through operations, monitoring, and evaluation. The approved modification describes the criteria for designating the new Woman Creek and Walnut Creek flume locations as the RFLMA POCs after they are installed.
87	Lacking any response to comments provided on the EA, Westminster must again provide comment regarding our contention that construction of the new POCs in the Woman and Walnut Creek drainages violates Institutional Control #2. The CAD/ROD, Environmental Covenant and RFLMA reference Institutional Control #2: <i>"Excavation, drilling and other intrusive activities below a depth of three feet are</i>	See Common Concern Statement 1 and the responses to Comments 2 and 7.

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	<p><i>prohibited, except for remedy-related purposes and routine or emergency maintenance of existing utility easements, in accordance with pre-approved procedures." The CAD/ROD states "These controls will extend throughout the Central OU" and "will run with the Property in perpetuity and be binding on DOE and all parties having any right, title or interest in the Property. "</i></p>	
88	<p>To reinforce our position regarding the issue, the following statements paraphrase portions of a memo from Daniel S. Miller (First Assistant Attorney General -Colorado) to Ken Salazar (Attorney General - Colorado) on April 10, 2002 regarding a legal analysis of the federal government's obligation to comply with Colorado's environmental covenant law:</p> <p>Colorado Senate Bill 01-145 (SB 145) took effect on July 1, 2001 creating a statutory "environmental covenant" as a mechanism for enforcing use restrictions imposed in connection with remediation of contaminated sites. Use restrictions are imposed or relied upon in an environmental remedial decision to protect human health and the environment.</p> <p>Institutional controls are required when cleanup levels are set based on land use restrictions being in place. This typically occurs when the party responsible for the cleanup wants to reduce its cleanup costs.</p> <p>In the event of an actual or threatened violation of an environmental covenant, the Department (CDPHE) may issue an administrative order requiring compliance with the terms of the covenant, or may ask the attorney general to file suit for appropriate injunctive relief.</p> <p>SB 145 also allows other entities that have an interest in ensuring the covenant is not violated to sue for appropriate</p>	Comment noted.

No.	Comment	DOE Response
	injunctive relief.	
89	<p>Westminster acknowledges the provision in the CAD/ROD allowing DOE to propose land use changes to CDPHE and EPA with 45 days advance notice. CDPHE and EPA may approve the proposed changes by formal amendment to the CAD/ROD. An amendment to the CAD/ROD may result in opening the CAD/ROD for public comment. The resolution of this issue and the subsequent impact on the RFLMA cannot be assumed or predicted.</p> <p>Westminster contends that the current monitoring locations adequately evaluate remedy performance.</p>	<p>See Common Concern Statement 1 and the responses to Comments 2 and 3.</p> <p>The RFLMA Parties are not proposing any land use changes or changes to the remedy institutional controls. The RFLMA Parties have determined the Proposed 2010 RFLMA Modifications and the approved changes to RFLMA monitoring locations do not significantly change or fundamentally alter the remedy selected with respect to scope, performance, or cost, and therefore do not require an amendment to the CAD/ROD. (See CERCLA implementing regulations, 40 <i>Code of Federal Regulations</i> 300.435, “Remedial Design/Remedial Action, Operation and Maintenance.”)</p> <p>The RFLMA Parties did determine that the Proposed 2010 RFLMA Modifications entailed changes to certain activities DOE must perform as requirements of RFLMA (i.e., operating, maintaining, sampling, and evaluating results for RFLMA monitoring locations) that were subject to public review and comment, under RFLMA paragraph 66.</p>
90	<p>In the event the terminal ponds are operated in a flow through condition, Westminster insists the sampling locations in each terminal pond must be retained for predischarge sampling if the dam valves were closed due to concerns regarding release of contaminants off the COU. The ability to close the dam valves is a protective measure advocated by the downstream communities in the case of an unforeseeable event. The specific circumstances requiring terminal pond sampling can be determined during discussions with the RFLMA parties and the downstream communities.</p>	<p>See Common Concern Statement 5.</p> <p>See the response to Comment 35 concerning flow-through operations, monitoring, and evaluation.</p> <p>Additionally, to clarify the procedures at the RFS, predischarge sampling in the current ponds is conducted via a grab sample, and not through a designated well or monitoring station. The sampling locations in the terminal ponds are determined by the level of water in each pond, and therefore there is no set sampling location. If the dams are operated in a flow-through configuration, and the valves were closed for any purpose, the level of the water remaining or accumulating in the dams would dictate any sampling location.</p>

No.	Comment	DOE Response
91	<p>Compliance with surface water standards is based on the Colorado Water Quality Control Commission ("WQCC") regulations. Westminster contends that DOE's protocols for evaluating compliance with the RFLMA Table 1 standards at POCs do not adhere to current WQCC regulations for the following analytes:</p> <p>Segment 5 - uranium and nitrate Segments 4a and 4b - plutonium, americium, uranium and nitrate</p>	See the response to Comment 47.
92	<p>The WQCC Regulation #38 allows for use of the 12-month flow-weighted rolling average concentration (computed monthly) <u>only</u> for Segment 5 and <u>only</u> for plutonium and americium. Westminster requests clarification on DOE's rationale regarding the application of the current RFLMA protocols for evaluating compliance with surface water standards at the Site.</p>	See Common Concern Statement 7 and the responses to Comments 5 and 47.
93	<p>Revise Table 1 to remove all references to the expired Temporary Modifications. All associated language in the RFLMA text should be removed.</p>	See the response to Comment 28.
94	<p>Westminster strongly opposes the proposed plan to relocate the Points of Compliance. We appreciate the efforts of the RFLMA Parties to dialogue about the issues in an attempt to resolve concerns and clarify information and positions. DOE and CDPHE have committed to a water working group to further explore Site issues with the downstream communities. We fully support this effort and intend to actively participate.</p>	See Common Concern Statement 3 and the response to Comment 12.

No.	Comment	DOE Response
City of Northglenn, Joyce Downing, Mayor, letter dated October 19, 2010		
95	Northglenn requests that the RFLMA parties (DOE, EPA, and CDPHE) withdraw the proposal due to unresolved issues associated with the rationale for the proposal as outlined in this letter. Furthermore, Northglenn requests that a committee comprised of asset holders and RFLMA parties be formed to resolve issues related to water quality. Baring these outcomes, the City's comments are outlined below.	See Common Concern Statement 3 and the response to Comment 12.
96	It is Northglenn's belief that the construction of the new Point of Compliance monitoring stations in the Woman Creek and Walnut Creek drainages may be in violation of Institutional Control #2 which prohibits excavation below three feet for purposes that are not remedy-related. Any proposal to modify the institutional controls would require amending the Corrective Action Record/Record of Decision (CAD/ROD), the Environmental Covenant ("EC") and the RFLMA. Amendments to the CAD/ROD, similarly to the RFLMA, are a public process. The Colorado Department of Public Health and Environment ("CDPHE") has approved Contact Records 2010-02 (dam breach) and 2010-04 (revision of monitoring points); each with provisions requiring excavation below three feet for purposes that are not remedy-related. The Department is urged to rescind approval of the aforementioned contact records.	See Common Concern Statement 1 and the responses to Comments 2 and 3.
97	At the time of writing, the final decision on the Environmental Assessment (EA) for dam breaching has not been issued. As a result, public comment on the EA has not been addressed. The two documents (RFLMA and EA) are related, answers to EA questions have a bearing on the proposed RFLMA changes. The disconnect between the two documents, creates a concern for Northglenn that some of our comments submitted in this letter may not be applicable. Furthermore, Northglenn is concerned that the RFLMA Attachment 2 Modifications,	See Common Concern Statement 5 and the responses to Comments 7 and 35.

No.	Comment	DOE Response
	presupposes the breaching of the dams. Case in point, pre-discharge pond sampling has been eliminated in the RFLMA Attachment 2 Modification document, yet the determination to breach the dams has not been made.	
98	Northglenn has previously expressed concern over the lack of a contingency plan in our comment letter related to the dam breaching EA; those concerns will not be reiterated in this letter. Northglenn does however, disagree with the statement made by the regulators at the August 10, 2010 public meeting, that sensitive water quality standards at the POC's, up gradient and down gradient water quality sampling, the Standley Lake Protection Project facilities and replacement of Broomfield's drinking water source are considered a contingency plan.	See Common Concern Statement 8.
99	The existing points of compliance (POC), GS-01 and GS-03, both at Indiana Street, have a long and rigorous water quality record. Historically, these POC's have been used to confirm that all relevant water quality standards are being met. The DOE's proposal is to move these points of compliance approximately three quarters of a mile upstream to the Central Operable Unit boundary, abandon the Indiana Street Points of Compliance, and construct new points of compliance on DOE retained land. The regulatory justification for moving the POC's to the Central Operable Unit is not given. Before abandoning a long and rigorous water quality record for a new, untried location, Northglenn requests that the DOE supply a copy of the document directing them to locate monitoring sites on DOE retained land. Maintaining the points of compliance at their current locations provides our citizens with assurances that water leaving the former Rocky Flats Site meets relevant water quality standards.	See Common Concern Statements 2 and 4 and the response to Comment 8.

No.	Comment	DOE Response
100	<p>Groundwater use designation for the Site is surface water protection. Currently, groundwater samples are filtered (Site Operations Guide, Doc. No. S03037-2.0). Regulation 41, Radioactive Materials Standards Table, footnote 2 states: Radionuclide samples for these materials should be analyzed using unfiltered (total) samples. The footnote refers to Americium and Plutonium 239/240, identified in the table. The City requests that this apparent disconnect be addressed <i>prior to adopting any changes to the RFLMA, Attachment 2.</i></p>	<p>The RFLMA Parties agree that the cited regulation specifies unfiltered samples. However, RFLMA Attachment 2, Table 2, “Water Monitoring Locations and Sampling Criteria,” footnote * provides, “Samples of ground water collected for plutonium and americium analysis will be filtered in the field using a 0.45 µm in-line filter.” Colorado WQCC Regulation 41 (and Regulation 31) recognizes CDPHE and EPA authority to approve criteria that may be different than that adopted by the Commission.</p> <p>Section 41.5, Section C (5) (a)a. provides, “ Nothing in this regulation shall be interpreted to preclude: a. An agency responsible for implementation of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. 9601, et seq., as amended, from selecting a remedial action and a point of compliance that are more or less stringent than would be achieved by compliance with the statewide numerical standards established in this subsection, or alternative site-specific standards adopted by the Commission, where a determination is made that such a variation is authorized pursuant to the applicable provisions of CERCLA”.</p> <p>The technical reason the analysis of filtered samples for groundwater is used is that these contaminants migrate in groundwater when dissolved. The dissolved data provides a better indication of actual groundwater contaminant migration potential that may impact surface water. Also, low levels of residual surface soil contamination could be a source of cross-contamination in the well introduced during the sampling process. This was observed at locations monitored for plutonium and americium north of former Building 771, and it was shown in samples collected in 2005 that filtering the sample eliminates the potential for erroneous conclusions based on nonrepresentative data.</p> <p>While no change was proposed for the RFLMA Attachment 2, Table 2,</p>

No.	Comment	DOE Response
101	<p>Page iii</p> <ul style="list-style-type: none"> Modification to Section 5 - It is unclear, in this table or in the figures located at the end of the document, whether the new POC's will have the full enforceability as GS-01 and GS-03. Modification to Figure 1, Water Monitoring Locations deleting PLFPONDEFF and replacing with NNGS01 will allow for volatilization and potential dilution to occur between the treatment facility and the new sampling location. This is not a true measure of how well the treatment facility is working nor is it protective of the environment. Modification to Figure 5 - Northglenn requests DOE provide documentation from the Water Quality Control Regulations that allows using the 85% in setting a nitrate standard. Multiple groundwater treatment facilities exist on site. The Site's groundwater use classification is surface water protection. Given this, why isn't the nitrate standard measured at the treatment plant outfall(s)? This would be an excellent way to determine how well the treatment plant is operating and support the use designation. 	<p>footnote * in the Proposed 2010 RFLMA Modifications, the RFLMA Parties have determined that uranium needs to be added to the footnote to document approval of filtered samples for the same technical reason discussed above. The approved modification includes uranium in footnote *.</p> <p>Bullet 1: Yes, the new POCs are subject to full enforceability.</p> <p>Bullet 2: NNG01 will essentially fulfill the same monitoring objective as the NPFPONDEFF, as both locations will monitor the effluent from the PLF Pond. Sampling at NNG01 will still be triggered based on results at the PLFSYSEFF location and according to the current RFLMA protocols.</p> <p>Bullet 3: Nitrate is measured at the Solar Ponds Plume Treatment System (SPPTS) effluent location, SPOUT. Evaluation of treatment system effluent is done in accordance with RFLMA Attachment 2, Figure 11, and monitoring locations and analytes have not changed for the SPPTS in the approved modification.</p> <p>The application of the 85th percentile of the data is consistent with the Colorado WQCC Regulation 31, "The Basic Standards and Methodologies for Surface Water," in determining existing water quality for several analytes, including nitrate. See Colorado WQCC Regulation 31, Section 31.5 (20).</p>
102	<p>Page 3, Sec 5.0</p> <p>Northglenn requests to be notified of changes in sampling protocols, methodology, and documents related to water quality monitoring as these documents have bearing on statistical interpretation of the data.</p>	<p>The RFLMA Parties will continue to inform downstream communities and the public in accordance with the RFLMA Public Involvement Plan regarding any proposed changes to RFLMA monitoring protocols</p>

No.	Comment	DOE Response
103	<p>Page 4, Sec 5.1 Provide ARAR documentation supporting the justification for moving the POC's to the COU boundary.</p>	<p>See the response to Common Concern Statement, and Comment 4.</p>
104	<p>Page 6, Sec 5.4.1 Northglenn disagrees with eliminating the Boundary Wells located at Indiana Street. These wells, with their corresponding surface water POC's, are the last data collection point before water leaves the historic Rocky Flats boundary. This is an important sampling site to our citizens and to the Woman Creek Reservoir Authority. Northglenn recognizes that the wells are located in a transportation right of way and that it might be necessary to move or remove these wells in the future. Until that time, the required once a year monitoring hardly seems a hardship.</p>	<p>See the response to Comment 34.</p>
105	<p>Page 30, Figure 5 Are the calculated value and compliance value equivalent in their regulatory meaning. If they are equivalent, for clarity of record and legacy documentation, Northglenn requests language in the RFLMA to this effect. Please cite the WQCC Regulation allowing the setting of a nitrate standard at 85%.</p>	<p>See the response to Comment 101 to address the 85% nitrate standard.</p> <p>The calculated value is the 85th percentile of the averages for nitrate. The change from "Compliance Value" was made because this term is not defined in RFLMA and the RFLMA Parties determined that the use of calculated value was clearer. Compliance with the RFLMA standard specified in RFLMA Attachment 2, Figure 5, is determined using the calculated value.</p>
106	<p>Page 32, Figure 7 Northglenn objects to the deletion of the Boundary Wells. The DOE performs groundwater flow calculations to estimate movement of pollutant plumes. Northglenn requests the DOE consider our recommendation (detailed in the next sentence) rather than discontinuing monitoring if the two most recent sampling results do not exceed the standard. Northglenn requests that the DOE use flow calculations to determine when the pollutant might reach the well. If the pollutant plume is not measured within the modeled/estimated time, then the flow</p>	<p>No changes were proposed for AOC or Sentinel wells and none are included in the approved modifications. The RFLMA Parties will continue to inform downstream communities and the public in accordance with the RFLMA Public Involvement Plan regarding any proposed changes to RFLMA monitoring locations.</p> <p>The flowchart would allow AOC well monitoring to be discontinued if monitoring is no longer required at up gradient (Evaluation and Sentinel) wells. This comment appears to agree with the decision logic in RFLMA Attachment 2, Figure 7. Note also that whether monitoring</p>

No.	Comment	DOE Response
	<p>chart would serve as the determinant as to whether sampling should be discontinued. It is Northglenn's understanding that the well monitoring program (Evaluation, Sentinel, & Area of Concern Wells) is designed to work in a series, from the source (Evaluation wells) to "early warning" (Sentinel wells) and finally, the Area of Concern Wells serving as the last point where groundwater is tested prior to day lighting as surface water. If this understanding is correct, and given that site hydrology is moving from surface to groundwater, changes in location, monitoring frequency or constituents, to AOC and Sentinel wells has the potential to impact surface water. Northglenn also requests to be notified of any proposed changes to AOC and Sentinel wells.</p>	<p>may be discontinued is not automatic, but is the subject of RFLMA Parties consultation.</p>
107	<p>Page 33, Figure 8 Two criteria are used to determine whether to discontinue monitoring. Our comments/questions are related to these criteria. Northglenn requests clarification as to the rationale for setting the uranium standard at 240 ug/L or pre-CY05 whichever is higher. Northglenn requests clarification as to the rationale for allowing an indeterminate trend at the 95% confidence level as a monitoring "out". We request clarification on the minimum number of years and sample size DOE uses for trending.</p>	<p>No changes were proposed for Sentinel wells and none are included in the approved modifications.</p> <p>This comment contains three separate parts, the details of which are addressed individually below. The point each part of this comment has in common is that the decisions referenced by the comment were discussed and finalized through numerous preclosure meetings and consultations with the RFLMA regulators and stakeholders as a part of Water Working Group efforts to develop the final 2005 versions of the RFCA-era Integrated Monitoring Plans (IMPs) and evaluation of groundwater conditions. Having thus demonstrated their utility and RFLMA regulator and community acceptance, these final approaches were incorporated into the RFLMA.</p> <p>1. The uranium threshold (not standard) is based on the results of high-resolution isotopic analysis of uranium from wells across the Site, and it is intended to highlight a distinction between normal and off-normal conditions. As is widely demonstrated by water quality data, groundwater in many regions of Colorado, including the Rocky Flats area, has elevated levels of natural uranium; it is therefore important to</p>

No.	Comment	DOE Response
		<p>be able to easily and cost-effectively differentiate between high natural uranium and concentrations of uranium that may be related to contamination from former operations. The reference to pre-2005 data has the same objective. For additional background, see the 2005 IMP Background Document, Rev. 1 (September, 2005).</p> <p>2. A statistically-significant indeterminate trend signals neither increasing nor decreasing concentrations, and at Rocky Flats is often (though not always) due to a prevalence of nondetects in the data. An analyte that is typically not detected is suitable for elimination from the analytical suite, assuming the detection limit is appropriate. However, it should be stressed that the reference to a “monitoring ‘out’” is not entirely accurate, as proposals to modify or discontinue monitoring still must meet the scrutiny and approval of the regulators via the consultative process. Simply identifying an indeterminate trend, in and of itself, does not allow the DOE to decide to exit the corresponding monitoring.</p> <p>3. The minimum number of years and the sample size used for trending is based on statistical requirements. Recommendations regarding how many data points are required vary in the published literature. The minimum size of a data set for some trending methods is four data points per season, implying at least four years of data be available before trend analysis can be attempted. Based on technical recommendations for statistical trending of groundwater data at the Site, a minimum of eight regularly scheduled, routine sampling events defined by the RFLMA monitoring frequencies specified in Attachment 2 are required. This prevents misuse of the statistical test, for example by merely collecting samples as quickly as possible and using the resulting data to evaluate concentration trends. Instead, the normal monitoring schedule (e.g., quarterly, semiannual, biennial) must be followed to compile the required samples. By reducing uncertainty in this manner, any trend identified through the statistical test is more likely to be representative of actual conditions.</p>

No.	Comment	DOE Response
108	Page 34, Figure 9 Same questions as Figure 8 on the criteria.	See the response to Comment 107. No changes were proposed for Evaluation wells and none are included in the approved modifications.
109	Page 35, Figure 10 Northglenn requests to be notified of proposed changes to RCRA wells.	No changes were proposed for RCRA wells and none are included in the approved modifications.
110	Northglen Requests: DOE withdraw the proposed modifications to the RFLMA Attachment 2 and maintain the document in the current state.	Comment noted.
111	Northglen Requests: DOE withdraw the dam breaching EA and CDPHE rescind the contact record related to breaching terminal dams until such time as the inconsistencies between the RFLMA and the EA can be worked out.	Comment noted. See the response to Comment 7.
112	Northglen Requests: The formation of a working group composed of downstream communities, USFWS, and the regulators for the purpose of discussing and reaching agreements on water quality issues.	See Common Concern Statement 3 and the response to Comment 12.
113	Failing complete withdrawal of the proposed RFLMA Attachment 2 Modification, Northglenn requests written responses to our questions and concerns. The City supports the positions taken, and the comments provided, by the affected downstream communities.	This table constitutes the response to each individual comment. Additionally, where applicable, common concern statements have been prepared and responses to these comments are also being supplied with this table.
Jefferson County Public Health, Mark B. Johnson, JD, MPH, Executive Director, letter dated August 10, 2010, and letter dated October 12, 2010		
114	We are requesting a written response to our letter dated August 10, 2010, and reiterated in this October 12, 2010 letter.	This table constitutes the response to each comment. Additionally, where applicable, common concern statements have been prepared and responses to these comments are also being supplied with this table.
115	(From the August 10 letter) At this time we feel that the removal of these features if premature. ...we are of the opinion that a sound public health case for the removal of these	See Common Concern Statement 5 and the response to Comment 55.

No.	Comment	DOE Response
	features has not been made. While not part of the final remedy, it is our understanding that these features serve in some manner to protect human health and the environment of the communities located downstream of Rocky Flats.	
116	(From the August 10 letter) Until the DOE-LM can clearly demonstrate with a long term record of compliance that they can consistently meet the performance standards set for the off-site migration of the contaminants of concern, we request that the terminal ponds A-4, B-5, C-2, and the present Landfill Pond be retained and that the existing point of compliance and enforcements standards be maintained.	See Common Concern Statements 2 and 6.
117	(From the August 10 letter) We request that the terminal dams be safely operated and maintained in a manner that protects the downstream communities.	See Common Concern Statement 1. All the remaining Site dams are maintained and inspected in accordance with the applicable regulations for dam safety promulgated by the Colorado State Engineer.
118	(From the August 10 letter) We request that DOE-LM adhere to the conditions set forth in the Environmental Covenants dated December 4, 2006, held by the Colorado Department of Public Health and Environment for this property concerning excavation below the 3-feet criteria for the proposed activities. (from the October 12 letter) Jefferson County Public Health asks that CDPHE rescind the two Contact Records that address breaching the dams and constructing monitoring stations.	See Common Concern Statement 1 and the responses to Comments 2 and 3.
119	(From the October 12 letter) We request that CDPHE refrain from approving any further requests by DOE-LM for any excavations not related to the remedy for depths greater than 3 feet.	See Common Concern Statement 1 and the responses to Comments 2 and 3.