ROCKY FLATS SITE
REGULATORY CONTACT RECORD

Purpose: Rocky Flats Legacy Management Agreement Attachment 2: Modification to Revise Monitoring Points

Contact Record Approval Date: July 15, 2010

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Regulatory Contact(s)/Affiliation(s): Carl Spreng, Colorado Department of Public Health and Environment (CDPHE)

Introduction: This Contact Record documents the Rocky Flats Legacy Management Agreement (RFLMA) parties' consultation regarding proposed changes to RFLMA required monitoring points. The RFLMA monitoring points are incorporated in RFLMA Attachment 2, *Legacy Management Requirements,* and DOE proposes to eliminate certain monitoring points and establish new monitoring points as discussed in the Contact Record.

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.

The proposed changes are prompted for two main reasons. First, the U.S. Environmental Protection Agency (EPA), with CDPHE concurrence, deleted the Peripheral Operable Unit (POU) from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priority List (NPL) on May 25, 2007, and no further response action is required for the POU. DOE subsequently transferred jurisdiction and control of most of the land in the POU to the U.S. Fish and Wildlife Service for the establishment of the Rocky Flats National Wildlife Refuge. Thus, monitoring and compliance points in the POU are no longer on the NPL site.

Second, RFLMA anticipates moving the surface water points of compliance (POCs) if the terminal ponds are breached or other changes to site configuration force their relocation. DOE is preparing the *Rocky Flats Surface Water Configuration Environmental Assessment* (EA) to evaluate environmental impacts related to breaching the remaining dams. DOE released a draft EA for public review and comment from April 26, 2010, through June 1, 2010. RFLMA Contact Record 2010-02 also provides information related to the proposed dam breach work.

The remaining dams are Dams A-3 and A-4 (located in North Walnut Creek), Dam B-5 (located in South Walnut Creek), Dam C-2 (located at the end of the South Interceptor Ditch north of Woman Creek), and the Present Landfill (PLF) Dam (located in No Name Gulch) that retain surface water in retention ponds that are not necessary to site operations and are not a requirement of the remedy. RFLMA Attachment 2 provides that if the terminal ponds (Ponds A-4, B-4, and C-2) dams are breached, new monitoring and compliance points will be established.

In addition, DOE has historically operated the terminal ponds in a batch and release mode. Though not required by the remedy, RFMLA Attachment 2, section 5.4, "Operational Monitoring," requires DOE to sample and evaluate terminal pond water quality prior to batch release (unless an emergency release is warranted). In the EA, DOE evaluates operating the terminal ponds in flow-through mode for the next several years prior to actually breaching the dams.

Thus, as required by RFLMA, the proposed changes to monitoring points address where new monitoring and compliance points will be located considering DOE's proposed action to breach the terminal ponds. Also, the proposed changes to monitoring locations include elimination of pre-discharge sampling in the terminal ponds.

Figures 1 and 2 in this Contact Record also show the current required monitoring locations, the monitoring locations that DOE proposes to eliminate, and DOE's proposed new monitoring locations. The relevant monitoring locations are listed in Table 1 as well. Figures 1 and 2 also show the locations of the remaining ponds and dams and the approximate footprints of the construction areas for the proposed dam breach based on the preliminary design used in preparing the EA.

In addition to the main reasons for the proposed monitoring locations discussed above, the following items are also pertinent to the proposed changes:

- The proposed locations maintain the ability to evaluate the quality of surface water leaving the site in order to determine whether the remedy remains adequately protective of human health and the environment.
- The decision frameworks in the RFLMA Attachment 2 monitoring point evaluation flowcharts will be followed for reporting and consultation to implement response actions as appropriate when specified compliance values are exceeded.
- Compliance values are based on the surface water standards in RFLMA Attachment 2, Table 1.
- Boundary wells, which are located in the POU where no further response action is required, are remote from groundwater sources of contamination and are not used for POC monitoring.
- Having fewer routine sampling locations increases efficiency and reduces the need to enter the Refuge for monitoring and maintenance work.
- The monitoring locations within the Refuge are also in the possible route of the proposed Jefferson Parkway (see, www.jppha.org), so changes to locations need to be considered to accommodate the proposed Parkway routing.
- The Colorado Water Quality Control Commission moved the eastern end of Big Dry Creek Segment 5 (which includes Walnut Creek) to the eastern Central Operable Unit boundary as part of the 2009 triennial review of the Classifications and Numeric Standards for South Platte River Basin—Regulation 38 (5 CCR 1002-38), and the proposed Walnut Creek monitoring location will remain in Segment 5.

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On January 18, March 29, and April 27, 2010, DOE and CDPHE staff consulted regarding DOE's proposed changes to monitoring points. DOE and CDPHE have also continued to discuss the proposed changes during the public review and comment period for the draft EA.

The RFLMA parties agreed that the proposed RFLMA Attachment 2 modification will be released for a 30-day public review and comment period. The parties also agreed that a public information meeting regarding the proposed modification will also be scheduled to occur during the public comment period.

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.

Discussion: Some of the monitoring locations subject to the proposed modification are identified in the Corrective Action Decision/Record of Decision (CAD/ROD) and are incorporated into RFLMA Attachment 2. Other monitoring locations are only identified in RFLMA Attachment 2. The proposed monitoring point changes will therefore require EPA and CDPHE approval.

The following excerpts are relevant to the proposed monitoring point changes:

Pursuant to the CAD/ROD Section 17, "Selected Remedy/Corrective Action for the Central OU":

> [Points of Compliance (POCs)] … are currently established in Walnut and Woman Creeks at Indiana Street and at the outfalls of the terminal ponds (Ponds A-4, B-5, and C-2). POCs will remain at these points unless changes in site configuration (such as removal of the terminal ponds or the construction of a new highway along Indiana Street) force their relocation.

While the example of the removal of the terminal ponds is used to illustrate a change in site configuration, the deletion of the POU from the NPL site and determination that no further response action is required in the POU is also a site configuration change.

RFLMA Attachment 2, Section 5.1, "Monitoring Surface Water," provides the following direction:

> Compliance with the surface-water standards in Table 1 will be measured at the Points of Compliance (POCs) downstream of the terminal ponds in Woman and Walnut Creeks. If the terminal ponds are removed, new monitoring and compliance points will be designated and will consider groundwater in alluvium.

In addition to the changes to monitoring locations, the installation of flumes at the proposed new monitoring locations will involve excavations deeper than 3 feet below the surface, which is prohibited by RFLMA institutional controls (ICs) unless approved by CDPHE. This Contact Record provides information requested by CDPHE for approval of excavations deeper than 3 feet below the surface.

Table 1. RFLMA Monitoring Locations Proposed for Changes

ID	Location	Identified in CAD/ROD	Required by RFLMA	Proposed Change
GS01	Surface water Point of Compliance (POC)—Woman Creek at Indiana St.	Yes	Yes	Remove—not part of NPL site. POC is upstream in Woman Creek at the Central Operable Unit (COU) boundary. GS01 is in the Northwest Parkway proposed route.
GS03	Surface water POC—Walnut Creek at Indiana St.	Yes	Yes	Remove—not part of NPL site. POC is upstream in Woman Creek at COU boundary. GS03 is in the Northwest Parkway proposed route.
GS08	Surface water POC—South Walnut Creek at outfall of Pond B-5	Yes	Yes	Replace with new POC near COU boundary at confluence of North and South Walnut Creeks. Compliance value remains based on 12-month rolling average, but DOE will use 30-day rolling average to trigger consultation with CDPHE on whether mitigating actions are required.
GS11	Surface water POC—North Walnut Creek at outfall of Pond A-4	Yes	Yes	Replace with new POC near COU boundary at confluence of North and South Walnut Creeks. Compliance value remains based on 12-month rolling average, but DOE will use 30-day rolling average to trigger consultation with CDPHE on whether mitigating actions are required.
GS31	Surface water POC—At outfall of Pond C-2 upstream of Woman Creek	Yes	Yes	Replace with new POC in Woman Creek near COU boundary. Compliance value remains based on 12-month rolling average, but DOE will use 30-day rolling average to trigger consultation with CDPHE on whether mitigating actions are required.
PLFPONDEFF	Surface water grab sample location to determine water quality downstream of Present Landfill Treatment System if treatment system effluent exceeds RFLMA standards	No	Yes	A new sampling point ID will be assigned. Grab sample location will be in No Name Gulch near the proposed PLF dam notch after notching. This is the approximate downstream location of the current PLFPONDEFF location.
Pond A-4	Operational monitoring surface water grab sample location for pre-discharge sampling	No	Yes	Remove—operational monitoring not needed; pre-discharge sampling no longer relevant once surface water flow-through condition is restored.
Pond B-5	Operational monitoring surface water grab sample location for pre-discharge sampling	No	Yes	Remove—operational monitoring not needed; pre-discharge sampling no longer relevant once surface water flow-through condition is restored.
Pond C-2	Operational monitoring surface water grab sample location for pre-discharge sampling	No	Yes	Remove—operational monitoring not needed; pre-discharge sampling no longer relevant once surface water flow-through condition is restored.

ID	Location	Identified in CAD/ROD	Required by RFLMA	Proposed Change
Well 10394	Operational monitoring Boundary well near POC GS01	No	Yes	Abandon—not part of NPL site. Area of Concern wells inside COU meet groundwater point of compliance regulatory standard. Well is in the Northwest Parkway proposed route.
Well 41691	Operational monitoring Boundary well near POC GS03	No	Yes	Abandon—not part of NPL site. Area of Concern wells inside COU meet groundwater POC regulatory standard. Well is in the Northwest Parkway proposed route.

DOE intends to install monitoring equipment at the proposed new POC locations to have these locations operational before work begins on the surface water configuration project. Current monitoring locations will be sampled as required by RFLMA until the time monitoring at current locations is to be discontinued in accordance with any approved RFLMA Attachment 2 modifications.

Proposed RFLMA Attachment 2 Modifications: The following information provides more detail for the proposed changes outlined in Table 1.

Surface Water POCs—As outlined above, adjusting the location of the POCs to the edge of the COU is a consequence of deleting the POU from the NPL, establishing the Wildlife Refuge, and moving the boundary of the DOE-managed property. State and federal guidance for POCs (for groundwater, but the concepts and principles are the same for surface water) require locating them at or as close as possible to the "waste management area" boundary. CERCLA requires that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate federal and state requirements, standards, criteria, and limitations, which are collectively referred to as ARARs. ARARs are in the Rocky Flats CAD/ROD, Table 21, and include the Colorado Water Quality Control Commission (WQCC) statewide basic standards in Regulation No. 31 (5 CCR 1002-31), site-specific standards in WQCC Regulation No. 38 (5 CCR 1002-38), and groundwater standards in Regulation No. 41 (5 CCR 1002-41).

The Area of Concern (AOC) wells satisfy the ARAR in Regulation No. 41 for groundwater POCs. However, surface water POCs are not identified in Regulation No. 31 or No. 38, or in the Rocky Flats CAD/ROD ARARs, but are established in accordance with the remedial action, implemented under RFLMA. 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.

RFLMA Attachment 2 Section 5.1 states that new POCs will consider groundwater in alluvium. The draft EA describes that the proposed dam breach design is to notch, rather than completely remove the dams. The remaining structures will continue to effectively capture alluvial groundwater and direct it towards the surface water flowing through the notches so that it will be measured at the POCs. The proposed new POCs, like the current POCs, are downgradient of the AOC wells. They are also proposed to be located downstream of the notches proposed to breach the dams. Thus, the proposed new POCs are positioned to evaluate contaminated groundwater in the alluvium reaching the stream. No change to Section 5.1 is warranted and none is proposed.

Boundary Wells—Because the boundary wells are located outside the COU, DOE proposes to abandon them. RFLMA Attachment 2 Section 5.4.1 and the evaluation criteria for boundary well sampling

results presented in Figure 7 are proposed to be deleted; Figure 7 will be revised to only address AOC wells and SW018 sampling results evaluation criteria. RFLMA Attachment 2 Section 5.4.1 explains that the boundary wells are used to demonstrate that contaminants are not migrating off site in groundwater. However, contaminated groundwater migrates by discharging to surface water. The AOC wells, which are downgradient of contaminant plumes, adjacent to surface water features, together with the proposed surface water POCs downgradient of the AOC wells provide adequate monitoring information to determine if contamination in groundwater is migrating off site. The AOC wells inside the COU are much closer than the boundary wells to source areas, and the AOC wells therefore allow earlier detection of contaminant migration.

Pre-discharge Sampling for Terminal Ponds—The procedure and terminology in RFLMA Attachment 2 Section 5.4.2 refers to terminal pond pre-discharge sampling and providing notification to allow CDPHE and EPA to collect split or duplicate samples. While the pre-discharge sampling would be obviated by breaching the dams, the RFLMA Attachment 2 Section 5.4.2 text will be revised to provide for CDPHE and EPA to collect split or duplicate samples at the POCs. RFLMA Attachment 2 Figure 13, which contains the evaluation criteria for pre-discharge pond sampling results, is proposed to be deleted.

Determining Exceedances at POCs —In accordance with Note 1 of Figure 5 in RFLMA Attachment 2, plutonium, americium, and uranium concentrations in samples taken at GS01 and GS03 (and nitrate, when required at GS03) are measured by calculating the 30-day rolling average of the flow-paced sampling (and grab sampling for nitrate) results. For samples taken at GS08, GS11, and GS31 (and nitrate at GS08 and GS11) plutonium, americium, and uranium concentrations are measured by calculating the 12-month rolling average of the flow-paced sampling (and grab sampling for nitrate) results. For the proposed new POCs, the 30-day and 12-month averages will still be calculated and an exceedance of applicable remedy performance standards by either of these calculated values will constitute a reportable condition under RFLMA Attachment 2, Section 6.0. Exceedance of the 30-day rolling averages would trigger timely implementation of the RFLMA party consultation process in accordance with RFLMA paragraph 11 to determine the actions or direction to be taken. The 12-month rolling averages will be used to determine compliance with the remedy performance standards for surface water (RFLMA Attachment 2, Table 1). The criteria for determining exceedances in Figure 5 are proposed to be revised accordingly.

PLF Treatment System Evaluation—The protocols in RFLMA Attachment 2 Figure 11, which contains the evaluation criteria for treatment system sampling results, include collecting a grab sample from the PLF Pond (designated PLFPONDEFF) if three consecutive monthly samples of PLF Treatment System effluent indicate an exceedance for a monitored analyte. Once the PLF Dam is notched, the pond will be eliminated and a new sampling location established just upstream of the notch in the dam, at approximately the same place as the current location.

The proposed modification to RFLMA Attachment 2 released for public review and comment will contain other changes made for internal consistency. For example, the map (RFLMA Attachment 2, Figure 1) and table of water monitoring locations (RFLMA Attachment 2, Table 2) will be revised to reflect the monitoring location changes.

Excavation Work: Excavation to install the flumes in the stream channels for the proposed new POC locations is discussed below, and CDPHE agreed that the flume installation in these locations could proceed. However, the effective date for these locations to become POCs will be included in any approval decision by CDPHE and EPA regarding DOE's proposed modification. As a practical matter,

the planning and design work will take time to complete, but DOE intends to plan for this work during the upcoming construction season. However, these locations are not approved as the new POCs until RFLMA Attachment 2 modification designating them as POCs is approved.

The proposed excavation work will exceed the 3-foot depth limit established by ICs (RFLMA Attachment 2, Table 4, Control 2) and thus requires pre-approved procedures. The objective of IC 2 regarding excavations with a depth that exceeds 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 1×10^{-6} excess lifetime cancer risk. As discussed below, the proposed work achieves the risk management policy goal.

The flume construction will include excavation to install concrete footers for the flume. The soils removed for footer construction will be used for backfill, and any excess soil will be used in the construction area for recontouring and revegetation. Any excess soil could also be used for revegetation and minor recontouring in the COU to maintain and improve erosion controls.

The fill placement will be in conformance with the ICs, and the final elevations of areas receiving fill, after fill placement and reseeding, are expected to be above the existing elevations. Erosion controls for the excavation, construction, and fill activities will be employed in accordance with the *Erosion Control Plan for Rocky Flats Property Central Operable Unit*, DOE-LM/1497-2007, July 2007.

CDPHE has requested that the following information be included in Contact Records for soil excavation related to IC 2 that will not return soil to the preexisting grade:

1. *Provide information about any remaining subsurface structures in the vicinity so that the minimum cover assumption will not be violated (or state that there are none if that is the case).*

There are no subsurface building or tunnel structures near the flume locations. The soil surface will be returned to approximately pre-existing grades.

2. *Provide information about any former Individual Hazardous Substance Sites or Potential Areas of Concern (IHSSs/PACs) or other known soil or groundwater contamination in the vicinity (or state that there is no known contamination).*

The locations are not in any former IHSSs/PACs. The proposed new Walnut Creek POC is located in the Upper Walnut Drainage Exposure Unit (EU). The proposed new Woman Creek POC is located in the Lower Woman Drainage EU. The EUs were evaluated as part of the Remedial Investigation/Feasibility Study (RI/FS) and documented in the RI/FS Appendix A, “Comprehensive Risk Assessment” (CRA).

The results of the CRA for the Upper Walnut Drainage EU are in Volume 7 of Appendix A. Benzo(a)pyrene was identified as the only contaminant of concern (COC) for surface soil/surface sediment in this EU. No COCs were identified for subsurface soil. Benzo(a)pyrene was not directly associated with any Rocky Flats Site historical source areas but could be associated with traffic, paving, or pavement degradation prior to closure. The calculated risk to the wildlife refuge worker for the surface and subsurface exposure scenario for benzo(a)pyrene in the CRA is 1×10^{-6}.

The results of the CRA for the Lower Woman Drainage EU are in Volume 11 of Appendix A. No COCs were identified for this EU. Thus, risks are expected to be similar to those associated with background conditions.

3. *Resurvey any new surface established in subsurface soil, unless sufficient existing data is available to characterize the surface (or state that the excavated soil will be replaced and the original contours restored).*

When completed, the new surface elevations are not expected to be significantly different from current elevations. The flume elevations will be consistent with the final design drawings for the new flumes. Final elevations will be surveyed, and the resulting data will be used to update the COU topographic maps.

Closeout of the Contact Record: This Contact Record will be closed out when the RFLMA modification is completed and the as-built drawings are completed for the flume construction work.

Resolution: Carl Spreng, CDPHE, approved the summary of the consultation provided by this Contact Record documenting the approach for the proposed modification of monitoring locations. The soil excavation for the new flumes may also be conducted as described in the Contact Record.

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Rocky Flats Contact Record File

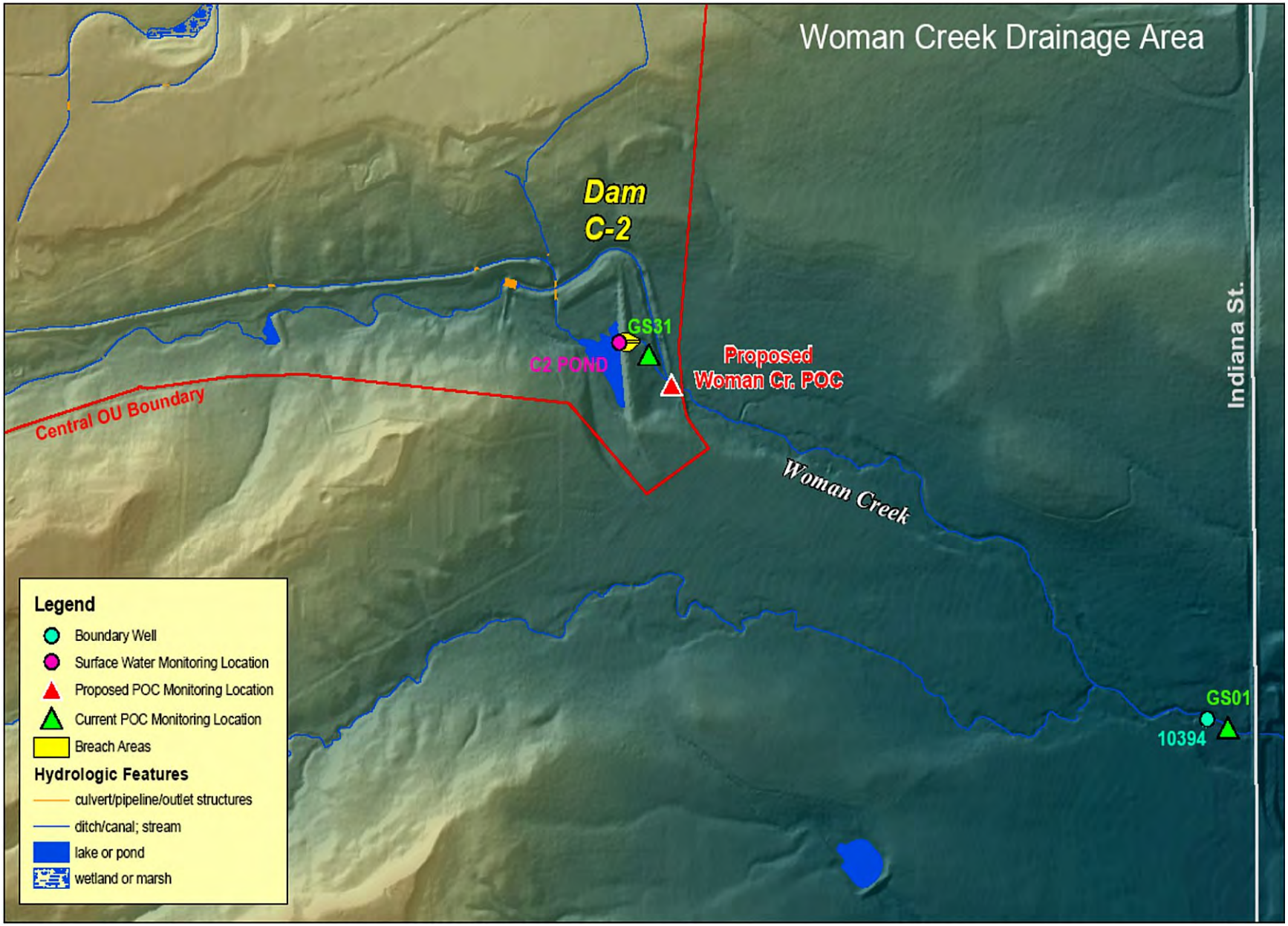

Figure 1. Monitoring and Dam Breach Locations—Woman Creek Drainage Area

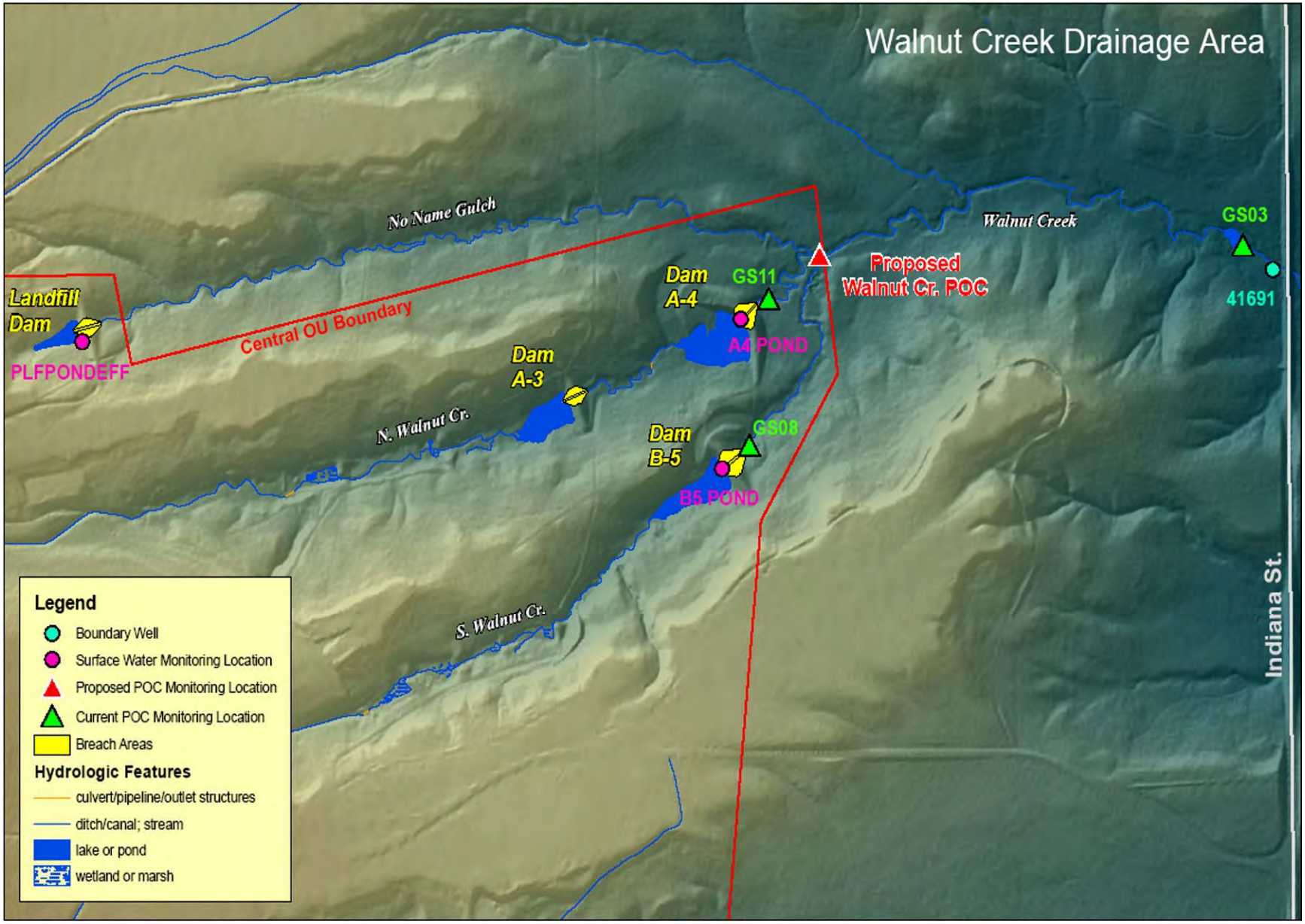

Figure 2. Monitoring and Dam Breach Location—Walnut Creek Drainage Area