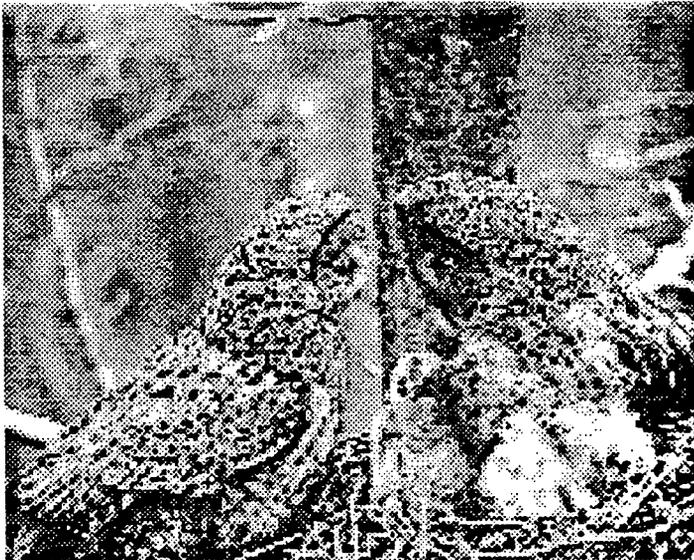
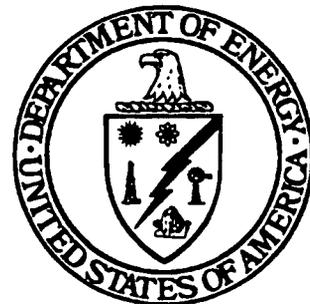


25372

Environmental Restoration Program



Monthly
Report for
May 1993



Rocky Flats Office

June 20, 1993

Reviewed for Classification (UCM)
BY George H. Bellock
DATE 6/15/93 UNU

ADMINISTRATIVE

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

A-SW-001426

TABLE OF CONTENTS

Executive Summaryi

 Significant Activities and Achievements for May 1993i

 Problems and Programmatic Issues.....iii

 Near-Term IAG Milestonesv

1. Introduction.....1

2. Project Status3

 2.1 OU 1 - 881 Hillside Area3

 2.1.1 OU 1 Assessment.....3

 2.1.2 OU 1 Remediation.....5

 2.2 OU 2 - 903 Pad, Mound, and East Trenches.....7

 2.2.1 OU 2 Assessment.....7

 2.2.2 OU 2 Remediation.....10

 2.3 OU 3 - Offsite Areas.....13

 2.4 OU 4 - Solar Evaporation Ponds.....17

 2.4.1 OU 4 Assessment.....17

 2.4.2 OU 4 Remediation.....20

 2.5 OU 5 - Woman Creek25

 2.6 OU 6 - Walnut Creek31

 2.7 OU 7 - Present Landfill.....35

 2.8 OU 8 - 700 Area39

 2.9 OU 9 - Original Process Waste Lines41

 2.10 OU 10 - Other Outside Closures43

 2.11 OU 11 - West Spray Field.....45

 2.12 OU 12 - 400/800 Area.....47

 2.13 OU 13 - 100 Area49

 2.14 OU 14 - Radioactive Sites.....51

 2.15 OU 15 - Inside Building Closures53

 2.16 OU 16 - Low Priority Sites55

 2.17 Sitewide Activities57

3. Routine Environmental Monitoring61

 3.1 Surface Water and Sediments61

 3.2 Soils61

 3.3 Ground Water.....61

4. Contractor/Subcontractor Identification63

Appendix - Acronyms.....A-1

EXECUTIVE SUMMARY

SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR MAY 1993

In OU 1, the 881 Hillside, the samples from the plutonium hot spots were collected in early May. All samples arrived at the appropriate laboratories and are undergoing expedited analysis.

The planning and design of the wetlands mitigation effort was completed ahead of schedule. Cattails, sedges, bulrush, threesquare, and willows were successfully planted on the 881 Hillside as part of the revegetation plan after the area was lined with bentonite. The construction of the new wetlands was added to the original scope after it became evident that there would be loss of some wetlands associated with the construction of the OU 1 Interim Measures/Interim Remedial Action (IM/IRA) French drain.

A meeting was held among the EPA, the Colorado Department of Health (CDH), and the Department of Energy's Rocky Flats Office (RFO) to update all parties on the OU 1 Remedial Investigation (Phase III Resource Conservation and Recovery Act Facilities Investigation/Remedial Investigation [RFI/RI]) and the Interim Remedial Investigation. After the update, a tour of the 881 Hillside wetlands was given. Growth of the wetland vegetation was examined and the regulatory agencies were pleased with the work accomplished. Only ongoing monitoring activities remain.

In OU 2, the 903 Pad and East Trenches Area, the Final Technical Memorandum (TM) #8, *Bedrock Work Plan*, was delivered to the regulatory agencies for final approval on May 24, 1993. This is the rescoped TM that replaces the original Bedrock Work Plan.

In the Solar Evaporation Ponds project, OU 4, CDH transmitted their comments to RFP for TM #2, *Final Phase I RFI/RI Work Plan, Modifications to Field Activities*. The CDH has granted conditional approval of TM #2.

The Solar Evaporation Ponds long-term strategy was approved in May. The regulatory agencies, EPA and CDH, agreed to support the RFP long-term strategy for the Solar Ponds cleanup (Option 2A). The Plant Change Control Board (PCCB) approved the proposal for changing the Solar Ponds scope and schedule to Option 2A on May 21, 1993. This change is important because it documents the changes to scope, schedule, and cost associated with the pursuit of Option 2A, which defers processing pondsludge until a disposal site is available.

Plutonium hot spots were detected in OUs 5 and 6 on May 20, 1993. On May 20, 1993, while performing a Field Instrument for the Detection of Low-Energy Radiation (FIDLER) survey in OU 5, an anomalous reading of approximately 45000 counts per minute (cpm) was identified. The background count rate is roughly 3500 cpm. RFP Radiological Engineering (RE) was notified and the location was investigated with a Portable Gamma Spectroscopy System (PGSS). It was determined that the elevated activity was due to three small chunks of metal. Work was stopped on May 20, 1993, and the material was removed from the site, double bagged, labeled appropriately, and moved to the Radiologically Controlled Area (RCA) cargo unit on May 28, 1993. The material was then packaged according to "Radioactive Waste Packaging Outside the Protected Area."

On May 20, 1993, in OU 6, Walnut Creek, excavation activities were underway on the northeast corner of the dam of Pond B-1. Following removal of a sediment settling system, the area was

DOE, Rocky Flats Plant

monitored with a FIDLER, as per the Soil Disturbance Permit. The radiological protection technician (RPT) identified an anomalous reading of 16000 cpm, against a background of approximately 3000 cpm, in the soil. The contamination is localized to a small area. Work has been interrupted until resolution is determined. The location will be sampled under the OU 6 scope of work. A critique has been scheduled to investigate the matter and discuss proposed corrective actions. The objective at this time is to backfill the area and continue with the dam upgrade project. All equipment and personnel were carefully monitored and no contamination was detected.

PROBLEMS AND PROGRAMMATIC ISSUES

Procurement Status

In response to two DOE letters requesting additional procedures to be implemented within Environmental Restoration Management (ERM), Procurement Support has developed two additional requirements that are to be added to a Statement of Work (SOW) when applicable. The first additional requirement deals with Chemical Reporting/Tracking. This section covers the proper Reporting and Tracking of chemicals on site that are brought in by Subcontractors, which are to be documented through the Chemical Control System (CCS). The second requirement deals with identifying a minimum of one certified hazmat employee who will oversee shipments of hazardous or potentially hazardous material if the statement of work requires shipment of samples. These new requirements were added to the Guide for Writing a Statement of Work to assist the Contractor Technical Representative (CTR) with the recommended structure for writing the SOW.

In accordance with the DOE letter dated February 17, 1993, regarding the findings of the Contractor Purchasing System Review (CPSR), System Criterion 4, *Advance Purchasing Planning System*, Procurement Support is continuing to provide to Procurement, a projected procurement plan that has been expanded to a 12-month window and is updated every quarter. The next scheduled submittal is due to Procurement on June 15, 1993. This project will include all procurements over the \$25,000 threshold.

Other

Significant cost and schedule impacts may result in all OUs as a result of changes to OU 1. The scope of the Human Health Risk Assessments (HHRA) for OU 1 has measurably increased over the baseline condition as a result of negotiations among the DOE and the regulatory agencies. The expanded scope of assessment includes four characteristics: 1) an OU-wide assessment integrating all reported data, 2) at-the-source assessments, 3) complementary at-the-source assessments, and 4) anomaly assessments.

The OU 3, Offsite Areas, July 16, 1993, IAG Milestone for submittal of the Draft Phase I RFI/RI Report will require an extension due to delays in completing the field work. DOE is preparing an extension letter for submittal to EPA and CDH in June.

A meeting was held with the EPA and the CDH on May 26, 1993 to discuss the OU 4, Solar Evaporation Ponds, IAG milestone extension request for the Phase I RFI/RI reports. EPA and CDH indicated that they would not grant more than a 79-working-day extension and recommended that DOE initiate the "dispute resolution" process in accordance with the IAG. The Draft Phase I RFI/RI Report was due May 21, 1993. A letter requesting an extension to April 17, 1994, was submitted to

the EPA and the CDH on May 5, 1993. On May 19, 1993, a reply granted a 79-working-day extension to September 14, 1993. EPA's decision was based on acceptance of longer than anticipated radiological analysis, increased time for critical path elements to support the Baseline Risk Assessment, and increased time to construct vadose zone boreholes requested by CDH. CDH did not accept the DOE position on adding time for added mobilization tasks, the designation of the Solar Ponds as a Radiological Controlled Area (RCA), or logistic and security problems. The OU 4 Draft Phase I RFI/RI Report 79-working-day extension to September 14, 1993, granted by CDH, is inadequate to complete the report.

The OU 6, Walnut Creek, Draft Phase I RFI/RI Report, due on August 4, 1993, and the Final Phase I RFI/RI Report due on January 7, 1994, will require schedule extensions due to delays incurred prior to starting field operations. Extension request documentation is being prepared for submittal to EPA and CDH.

The revised OU 13 Remedial Investigation Work Plan submitted to the regulatory agencies on March 10, 1993, was rejected. The main issue to be resolved is the revised Surficial Soils Sampling Plan.

NEAR-TERM IAG MILESTONES

<u>OU</u>	<u>Milestone Description</u>	<u>Due to EPA/CDH</u>	<u>Status</u>
2	Submit Draft Phase II RFI/RI Report	12 Mar 93	Delinquent
2	Submit Draft Treatability Test Report	18 May 93	Extended to 13 Jul 93
4	Submit Draft Phase I RFI/RI Report	21 May 93	Extended to 14 Sep 93
2	Submit Final Treatability Test Report	13 Jul 93	Extended to 8 Sep 93
3	Submit Draft Phase I RFI/RI Report	16 Jul 93	Extension request being prepared by DOE
6	Submit Draft Phase I RFI/RI Report	4 Aug 93	*
2	Submit Final Phase I RFI/RI Report	9 Aug 93	*
7	Submit Draft Phase I RFI/RI Report	12 Oct 93	•
4	Submit Final Phase I RFI/RI Report	18 Oct 93	Extended to 14 Feb 94
2	Submit Draft CMS/FS Report	4 Nov 93	*
1	Submit Final Phase III RFI/RI Report	15 Nov 93	Extended from 4 Jan 93
5	Submit Draft Phase I RFI/RI Report	30 Nov 93	*
3	Submit Final Phase I RFI/RI Report	13 Dec 93	Extension request being prepared by DOE
1	Submit Draft Proposed Plan	23 Dec 93	Extended from 27 Sep 93
1	Submit Final Proposed Plan	4 Jan 94	*
6	Submit Final Phase I RFI/RI Report	7 Jan 94	*
1	Submit Draft CMS/FS Report	11 Feb 94	Extended from 31 Mar 93
8	Submit Draft Phase I RFI/RI Report	14 Feb, 94	Extension required
7	Submit Final Phase I RFI/RI Report	16 Mar 94	•
9	Submit Draft Phase I RFI/RI Report	11 Apr 94	*
4	Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94	*
12	Submit Draft Phase I RFI/RI Report	20 Apr 94	*
4	Submit Draft Phase II Work Plan	22 Apr 94	*
5	Submit Final Phase I RFI/RI Report	3 May 94	*
1	Submit Draft Responsiveness Summary	6 May 94	*
2	Submit Final CMS/FS Report	10 May 94	*
2	Submit Draft Proposed Plan	10 May 94	*
8	Submit Final Phase I RFI/RI Report	12 Jul 94	•
15	Submit Draft Phase I RFI/RI Report	1 Aug 94	On schedule
1	Submit Final CMS/FS Report	3 Aug 94	*
1	Submit Final Responsiveness Summary	3 Aug 94	•
1	Submit Draft CAD/ROD	3 Aug 94	*
13	Submit Draft Phase I RFI/RI Report	8 Aug 94	*
2	Submit Final Proposed Plan	9 Aug 94	*
10	Submit Draft Phase I RFI/RI Report	25 Aug 94	*
9	Submit Final Phase I RFI/RI Report	6 Sep 94	*
4	Submit Phase I Proposed IM/IRA Decision Document	12 Sep 94	*
7	Submit Draft Phase II Work Plan	13 Sep 94	*
12	Submit Final Phase I RFI/RI Report	15 Sep 94	•
4	Submit Final Phase II RFI/RI Work Plan	19 Sep 94	•
11	Submit Draft Phase I RFI/RI Report	20 Sep 94	*

* Behind original IAG schedule; extension required

SECTION 1. INTRODUCTION

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for May 1993. This program implements the Inter-Agency Agreement (IAG) among the U.S. Department of Energy, the U.S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess, and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Plant in Golden, Colorado. This agreement was signed on January 22, 1991. The work is being performed for DOE by EG&G Rocky Flats, Inc.

Section 2.1 of this report highlights significant achievements and summarizes the milestones completed during May. Section 2.2 presents any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU) as well as other program activities are presented in Section 3. Section 4 contains the schedules for routine environmental sampling as required by Paragraph 210 of the Interagency Agreement. Section 5 contains a list that identifies the contractors and subcontractors performing work on the program as required by Paragraph 13 of the IAG.

SECTION 2. PROJECT STATUS

2.1 OU 1 - 881 HILLSIDE AREA

The alluvial ground water at the 881 Hillside Area, located north of Woman Creek in the southeast section of RFP, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately 2 miles from the eastern, outer edge of the plant's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSS) that make up OU 1 were being investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface ground water and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface ground water flowing from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and released onsite into the South Interceptor Ditch along side Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. The Remedial Investigation and Feasibility Study (RI/FS) to determine the final remedial action are continuing in parallel with operation of the IRA.

2.1.1 OU 1 ASSESSMENT

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase III RFI/RI Work Plan	06 Feb 90
Accomplishments	Submit Final Phase III RFI/RI Work Plan	31 Oct 90
	Submit Draft Phase III RFI/RI Report	28 Oct 92

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Final Phase III RFI/RI Report	4 Jan 93	15 Nov 93	15 Nov 93
Submit Draft CMS/FS Report	31 Mar 93	11 Feb 94	31 Mar 94
Submit Final CMS/FS Report	27 Sep 93	3 Aug 94	30 Sep 94
Submit Draft Proposed Plan	27 Sep 93	3 Aug 94	30 Sep 94
Submit Final Proposed Plan	Jan 94		17 May 95
Submit Draft Responsiveness Summary	6 May 94		2 Nov 95
Submit Final Responsiveness Summary	3 Aug 94		12 Apr 96
Submit Draft CAD/ROD	3 Aug 94		12 Apr 96

DOE, Rocky Flats Plant

May/ Work Activity Status The samples from the plutonium hot spots were collected at the beginning of May. All samples arrived at the appropriate laboratories and are undergoing expedited analysis.

A meeting was held among the Environmental Protection Agency (EPA), the Colorado Department of Health (CDH) and the Department of Energy (DOE) to resolve the ecological risk assessment issues on OU 1. Items resolved were the contaminant of concern (COC) decision tree and the exposure assessment methodology. Work is now underway on these items.

Work on response to comments on the draft Remedial Investigation Report is ongoing. Revision of the report and production of the final document is progressing in parallel to response to comments, and both are within schedule.

At the direction of DOE, EPA and CDH received copies of approximately 100 responses to comments on the Draft RI Report for informal review. EPA has returned their edits to the comment response document.

Technical Memoranda

Project:

OU 1 - 881 Hillside

TM #10

TM Title:

TM Status:

Preliminary Remediation Goals

Submitted draft TM to DOE in February. DOE comments were completed for Appendix A of TM #10 in May 1993. The remainder of effort on TM #10 is on hold pending resolution of regulatory comments on the Draft RI Report.

Planned Work for June

- Continue response to comments and revision of the Draft RI Report.
- Analyze radionuclide hot spot samples.
- Complete draft FY94 work package.

Problems

None

Open Items

None

2.1.2 OU 1 REMEDIATION

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Proposed IM/IRA Decision Document	18 Sep 89
	Submit Proposed IM/IRA Decision Document	06 Oct 89
	Submit Final IM/IRA Decision Document	05 Jan 90
	Begin Phase I-A IM/IRA Construction	15 Jan 90
	Restart Phase I-A IM/IRA Construction (after shutdown)	20 Jun 90
	Begin Phase I-B IM/IRA Construction (ahead of schedule)	28 Sep 90
	Submit IM/IRA Implementation Document	22 Feb 91
	Begin Phase II-A IM/IRA Construction	01 Apr 91
	Begin IM/IRA Testing	05 Aug 91
	Begin Phase II-B IM/IRA Construction	03 Sep 91
	Complete IM/IRA Construction (891 treatment building)	02 Mar 92
	Complete IM/IRA Construction (French drain)	13 Apr 92

Future IAG Milestones Through FY94 None

May Work Activity Status The planning and design of the wetlands mitigation effort was completed ahead of schedule. Cattails, sedges, bulrush, threesquare, and willows were successfully planted on the 881 Hillside as part of the revegetation plan after the area was lined with bentonite. The construction of the new wetlands was added to the original scope after it became evident that there would be loss of some wetlands associated with the construction of the OU 1 IM/IRA French drain.

Interim Measures/Interim Remedial Action (IM/IRA) Facility - 891 Treatment Building: Effluent tanks T-205 and T-206 are 100 percent full. T-206 is being retreated to lower total dissolved solids (TDS) below applicable, relevant and appropriate requirements (ARARs). T-205 is awaiting the results of sample analytical data prior to discharge. Tank T-207 (approximately 110,000 gallons) was discharged on May 10, 1993. T-207 is now filling with water.

A new subcontractor, RTG, took over operation and maintenance of OU 1 and OU 2 treatment facilities after 6 weeks of on-the-job training.

Water collected from the decontamination pads is being received and treated at OU 1 as requested by CDH. This water has trace amounts of volatile organic compounds (VOCs) that are too high for the Building 374 Evaporator.

Building 891 continued to receive water from the decontamination pad during May. One tanker truck load (2,500 gallons) contains 4500 parts per billion (ppb) of trichloroethene (TCE). The treatment system will require piping modifications to allow for recirculation of the water for further treatment. The Building 891 UV system is unproven at TCE levels this high, and it is anticipated that the water will require several passes through the treatment system.

Treated ground water this month: approximately 195,000 gallons
Total treated ground water: approximately 1,262,465 gallons

Planned Work for June

- Continue to treat water at the 891 Treatment Facility.
- Run decontamination water and sample to measure UV performance.
- Work on process modifications and complete procurement of in-line gas chromatograph.
- Complete draft FY94 work package.

Problems

None

Open Items

None

2.2 OU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage in the 1950s and 1960s of waste drums that corroded over time, allowing hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent, some of which may have contaminants that were not removed by the treatment system.

An IM/IRA provides for surface water in source areas of contamination to be collected, treated, and discharged to the surface water drainage. Operation of a field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process will be evaluated at three locations: the entrance to the treatment facility, several points within the facility, and the discharge point. After completion of the field-scale treatability tests, the unit is anticipated to remain in service until the final remedial action is operational. The Remedial Investigation (RI) and Feasibility Study (FS) are continuing in parallel with the IRA.

A second IM/IRA was established in late-1991. This Subsurface Investigation Interim Measure/Interim Remedial Action Plan/Environmental Assessment (IM/IRAP/EA) is north of Woman Creek and encompasses the 903 Pad, the Mound Area, and the East Trenches Area of OU 2. This IM/IRAP/EA identifies and evaluates interim remedial actions for removal of residual free-phase VOC contamination from three distinct subsurface environments at OU 2. Each of the VOC-removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial actions for the collection of information will aid in the selection and design of final remedial actions that address subsurface, residual free-phase VOC contamination at OU 2.

2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period The methods of determining COCs was changed based on OU 1 negotiations. This increased the time and subcontract dollars required to accomplish the COCs and human health risk assesment tasks.

Technical Approach Changes This Period The methods of determining COCs was changed based on OU 1 negotiations. This increased the time and subcontract dollars required to accomplish the COCs and human health risk assesment tasks.

IAG Milestone Accomplishments	Submit Draft Phase II RFI/RI Work Plan (Alluvial) Submit Final Phase II RFI/RI Work Plan (Alluvial) Submit Draft Phase II RFI/RI Work Plan (Bedrock) Submit Final Phase II RFI/RI Work Plan (Bedrock)	21 Dec 89 12 Apr 90 05 Feb 91 02 Jul 91
-------------------------------	--	--

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II RFI/RI Report	12 Mar 93	Denied	6 Jan 94
Submit Final Phase II RFI/RI Report	9 Aug 93		6 June 94
Submit Draft CMS/FS Report	4 Nov 93		30 Oct 96
Submit Final CMS/FS Report	10 May 94		10 July 97
Submit Draft PP	10 May 94		10 July 97
Submit Final PP	9 Aug 94		26 Jan 98

May Work Activity Status The Final TM #8, *Bedrock Work Plan*, was delivered to the regulatory agencies for final approval on May 24, 1993. This is the rescoped TM that replaces the original Bedrock Work Plan.

TM #5, *Exposure Scenario*, Comment Resolution was delivered to DOE on Wednesday, May 19, 1993. A meeting is scheduled with the regulatory agencies to discuss the ground water COCs.

A meeting was held with the subcontractor to resolve risk assessment issues and to expedite all tasks.

Four drill rigs are operational and are drilling. Drilling status for each site associated with the revised bedrock program is as follows:

WC-1: The pilot borehole and the A-series well have been completed. Ground water development was also initiated.

WC-2: The pilot borehole is nearing completion and is expected to be geophysically logged this week.

WC-3: The pilot borehole and the A-series well have been completed. Ground water sampling was initiated.

WC-4: The pilot borehole has been completed. The A-series well surface casing is being installed.

WC-5: The pilot borehole has been completed and the A-series isolation casing has been set. Well installation is proceeding.

WC-6: The pilot borehole has been completed and A-Series well has been installed.

SB-2: Drilling has begun at this location and surface casing was installed.

Procurement has issued another extension on the Letter Contract for the Bedrock Field program through June 18, 1993.

Technical Memoranda

Project: OU 2 - 903 Pad, Mound, and East Trenches

TM #5
TM Title Exposure
TM Status When preparation concluded or estimated to be concluded:
1/15/93
Projected date of submittal to EPA/CDH: 1/15/93
Actual date of submittal: 1/15/93
Date when comments received: 2/11/93 EPA, 3/12/93 CDH

TM #6
TM Title Modeling
TM Status When preparation concluded or estimated to be concluded:
1/15/93
Projected date of submittal to EPA/CDH: 1/15/93
Actual date of submittal: 1/15/93
Date when comments received: 4/1/93 EPA, 3/31/93 CDH

TM #7
TM Title Surficial Soils
TM Status When preparation concluded or estimated to be concluded:
1/7/93
Projected date of submittal to EPA/CDH: 1/7/93
Actual date of submittal: 1/12/93
Date when comments received: 1/21/93
Approved

TM #8
TM Title Bedrock
TM Status When preparation concluded or estimated to be concluded:
3/15/93
Projected date of submittal to EPA/CDH: 3/1/93
Actual date of submittal: 3/15/93
Date when comments received: 4/14/93 EPA, 4/14/93 CDH

Planned Work for June

- Approve TMs #5 and #6
- Complete contract for the Bedrock Field Program is expected by June 18, 1993.
- Continue field work for the Bedrock Work Plan.
- Continue risk assessment for the Draft Phase II RFI/RI Report.
- Complete draft FY94 work package.

Problems

Significant cost and schedule impacts may result in all OUs as a result of changes to OU 1. The scope of the Human Health Risk Assessments (HHRA) for OU 1 has measurably increased over the baseline condition as a result of negotiations among the DOE and the regulatory agencies. The expanded scope of assessment includes four characteristics: 1) an OU-wide assessment integrating all reported data, 2) at-the-source assessments, 3) complementary at-the-source assessments, and 4) anomaly assessments.

Open Items

Completion of the delinquent Draft Phase II RFI/RI Report is pending.

2.2.2 OU 2 REMEDIATION

Scope of Work Changes This Period

Scope associated with the IAG milestone titled, Draft Phase II Treatability Study Report has increased due to the revised content, format and approach. This includes the addition of a risk assessment.

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

Submit Draft Proposed IM/IRA Decision Document	19 Jun 90
Submit Proposed Plan IM/IRA Decision Document	18 Sep 90
Submit Draft Responsiveness Summary	13 Dec 90
Submit Final Responsiveness Summary and Final IM/IRA Decision Document	11 Jan 91
Field Treatability Test System Installation Complete	10 May 91
Begin Field Treatability Testing (Carbon System)	13 May 91
Submit Draft Treatability Test Report (Phase I GAC)	01 Apr 92
Complete IM/IRA Construction (radionuclides removal system)	24 Apr 92
Begin Field Treatability Testing (radionuclides removal system)	27 Apr 92
Submit Final Treatability Test Report (Phase I GAC)	02 Jun 92
Submit Subsurface Site I Draft Test Plan	29 Oct 92
Submit Subsurface Site I Final Test Plan	12 Jan 93

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase II Treatability Study Report	18 May 93	13 Jul 93	13 Jul 93
Submit Final Phase II Treatability Study Report	13 Jul 93	8 Sep 93	8 Sep 93

May Work Activity Status

Surface IRA Program - The IAG Milestone titled Draft Phase II Treatability Test Report, for the OU 2 Surface Interim Measures/Interim Remedial Action Plan (IM/IRAP), was due to the EPA and CDH on May 18, 1993. EPA granted DOE a 60-day extension on the milestone. In May, cost and schedule impacts of a revised scope for the Draft Phase II Treatability Test Report presented by DOE in a meeting on April 30, 1993, were evaluated by EG&G.

A total of 20 55-gallon drums of sludge were generated by the seepage collection treatment system in May. Increased precipitation is requiring longer operation hours and increasing chemical and sludge volumes.

Two additional 40-foot cargo containers were received on May 4, 1993. These will become part of the 90-day storage area in the RCRA Unit #EM 1890 located at OU 2. The additional storage will allow for more flexible and efficient handling of the mixed low-level sludge drums that OU 2 generates.

Real Time Radiography (RTR) had been shut down for several weeks, causing accumulation of sludge drums at the OU 2 RCRA EM 1890 site. RTR detects liquids in drums. Drums are being stored in one of the two new cargo containers; the other cargo container is being saved for additional drum storage if required.

Twelve 55-gallon drums of sludge were removed from RCRA Unit # EM 1890 and transported to Building 664 for RTR analysis (detection of free-liquids in drums) and storage in a permitted RCRA storage facility.

The three containers stored in the EM 1890 RCRA storage area were transferred to the Interim Storage Area 18.03 (tent 1) on May 6, 1993.

Treated Surface Water this month: ←822,430 gallons
Total Treated Water: 15,223,250 gallons

Subsurface IRA Program - A Soil Gas Survey contract is almost in place. A modification to the existing contract (similar to a letter contract to proceed) has been completed by Procurement. This will allow the soil gas survey to be done at the East Trenches so that the Pilot Test Plan extraction wells can be located. When the contract is negotiated, the other two sites will be completed.

Technical evaluations for the implementation contract is complete. Purchasing had requested leased property documentation from Industrial Engineering. This report will require approximately 5 days minimum for signoff. An Organizational Conflict of Interest (OCI) issue still must be resolved in Procurement before this contract can be completed. The contract is expected to go to negotiations by June 1, 1993.

A Critical Path Method (CPM) schedule for the remaining tasks in the project has been refined. The draft is being reviewed RFP by management.

RTG, the subcontractor that operates the OU 1 and OU 2 IM treatment facilities, is continuing to fabricate the vapor extraction unit. Delivery of the vapor extraction unit is scheduled for August 9, 1993.

Planned Work for June

Surface IRA Program

- Continue preparation of the Draft Phase II Treatability Study Report.
- Complete draft FY94 work package.

Subsurface IRA Program

- Complete Soil Gas Survey at the East Trenches and Mound Areas; begin Soil Gas Survey at 903 Pad.
- Award contract for the installation of the wells and pilot test unit for the pilot tests at Site #1 - East Trenches.
- Complete draft FY94 work package.

Problems

None

Open Items

None

2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG directs activities according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This involves assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay v. U.S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Past Remedy Report	26 Oct 90
	Submit Draft Historical Information/ Preliminary Health Risk Assessment Report	09 Nov 90
	Submit Final Past Remedy Report	02 Apr 91
	Submit Final Historical Information/ Preliminary Health Risk Assessment Report	16 Apr 91
	Submit Draft Phase I RFI/RI Work Plan	10 Jul 91
	Submit Final Phase I RFI/RI Work Plan	06 Dec 91

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	16 Jul 93	request to	2 Nov 93
Submit Final Phase I RFI/RI Report	13 Dec 93	be submitted	20 Jul 94

May Work Activity Status Negotiations continued with offsite landowners for access to surface soil sampling locations. Only three landowners remain to approve the access request.

DOE comments were incorporated into TM #2, which outlines the exposure scenarios for the human health risk assessment (HHRA). The document will be transmitted to EPA and CDH.

A presentation to EPA and CDH on the Wind Tunnel Study was held May 5, 1993. Most comments were to clarify specific points in the plan. A letter from EPA was received by RFP on May 11, 1993, providing approval to begin field work. The wind tunnel field work began June 1, 1993.

The scope and estimate of the air monitoring construction package was received May 14, 1993, and is being evaluated to determine which tasks are necessary and where the estimate can be reduced.

A meeting was held May 27, 1993, with EPA and CDH to present the first of three presentations to the regulatory agencies on the status of the environmental evaluations (EEs). The presentation outlined the "problem formulation" phase of the ecological risk assessment. These three meetings will hopefully provide a forum for communication and reduce the number of comments on the draft RI report.

Technical Memoranda

Project

TM #1

TM Title

TM Status

OU 3 - Offsite Areas

Field Changes to RFI/RI Work Plan

When preparation concluded or estimated to be concluded:
May 10, 1993

Projected date of submittal to EPA/CDH: May 10, 1993

Actual date of submittal: May 10, 1993

Date when comments received: (expected) June 18, 1993

TM #2

TM Title

TM Status

Exposure Scenarios for the HHRA

When preparation concluded or estimated to be concluded:
May 12, 1993

Projected date of submittal to EPA/CDH: May 12, 1993

Actual date of submittal : May 12, 1993

Date when comments received: (expected) June 18, 1993

TM #3

TM Title

TM Status

Modeling

When preparation concluded or estimated to be concluded:
August 1993

Projected date of submittal to EPA/CDH: August 27, 1993

Actual date of submittal : N/A

Date when comments received: N/A

Planned Work for June

- Begin Wind Tunnel field work June 1, 1993, and continue for approximately 2 weeks.
- Procure a subcontractor for air monitoring site construction.
- Continue work on the introductory section of the RI Report.
- Start data analysis by media for the RI Report.

- A tour for EPA and CDH personnel is scheduled for June 3, 1993.
- Complete draft FY94 work package.

Problems

The July 16, 1993, IAG Milestone for submittal of the Draft Phase I RFI/RI Report will require an extension due to delays in obtaining permission from offsite landowners for sample collection necessary to complete the field work. DOE is preparing an extension letter for submittal to EPA and CDH.

Open Items

None

2.4 OU 4 - SOLAR EVAPORATION PONDS

OU 4 is made up of five solar evaporation ponds: 207A, 207B series (north, center, south), and 207C. Beginning in the late 1950s, the ponds were used to store and evaporate low-level radioactive process water containing high concentrations of nitrates and treated acidic wastes. The sludge and sediments that resulted from the process were periodically removed and disposed of at the Nevada Test Site (NTS).

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and ground water was detected. Interceptor trenches were installed in 1971 to collect and recycle ground water contaminated by the ponds and to prevent natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were replaced by the current, larger, interceptor trench system which recycles approximately four million gallons of ground water a year back into the solar evaporation ponds.

No additional process water has been pumped into the ponds since 1986. The interceptor trench system collects and recycles ground water into the modular storage tanks. The ponds are RCRA interim status regulated units that are currently under closure. In order to proceed and characterize the level of contamination at the site, approximately eight million gallons of excess liquid in the ponds must be removed. The removal of this liquid and the redirection and treatment of the ground water by the interceptor trench system are the focus of an IM/IRA dated April 1992, which began construction in May 1992.

The April 1992 IM/IRA was developed to facilitate DOE fulfilling commitments under the AIP and IAG. DOE attempted to modify the existing RCRA Part B permit for water removal and treatment for liquids in the solar ponds and ground water collected by the interceptor trench system, but the regulatory agencies rejected permit modification and required development of an IM/IRA to document operation and use of the proposed water treatment system.

There is also an IM/IRA scheduled in the IAG that will be completed after results are collected and analyzed from the Phase I RFI/RI field work. The first draft of the IAG IM/IRA is scheduled for delivery in April 1994.

2.4.1 OU 4 ASSESSMENT

Scope of Work Changes None
This Period

Technical Approach None
Changes This Period

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Accomplishments	Submit Draft Phase I RFI/RI Work Plan	26 Nov 90

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	21 May 93	14 Sep 93	15 Apr 94
Submit Final Phase I RFI/RI Report	18 Oct 93	14 Feb 94	16 Sep 94
Submit Draft Phase II RFI/RI Work Plan	22 Apr 94		18 Aug 95
Submit Final Phase II RFI/RI Work Plan	19 Sep 94		26 Apr 96

May Work Activity Status The OU 4 Draft Phase I RFI/RI Report was due May 21, 1993, and the Final Phase I RFI/RI Report was due October 18, 1993. A letter requesting an extension to April 17, 1994, and September 17, 1994, was submitted to the EPA and the CDH on May 5, 1993. On May 19, 1993, a reply granted a 79-working-day extension to September 14, 1993, for the Draft Report, and February 14, 1994, for the Final Report. EPA's decision was based on acceptance of longer than anticipated radiological analysis, increased time for critical path elements to support the Baseline Risk Assessment, and increased time to construct vadose zone boreholes requested by CDH. CDH did not accept the DOE position on adding time for added mobilization tasks, the designation of the Solar Ponds as a Radiological Controlled Area (RCA), or logistic and security problems.

A meeting was held with EPA and CDH on May 26, 1993 to discuss OU 4 IAG milestone extension for the Phase I RFI/RI reports. The regulators indicated that they would not grant any more time for the extension and recommended that DOE initiate the "dispute resolution" process in accordance with the IAG.

Well pads have been completed for all piezometers and vadose zone boreholes. Water level measurements have been obtained at all of the OU 4 RFI/RI boreholes with piezometers and piezometer nests. Guelph permeameter tests were conducted in the Protected Area (PA). The soil gas survey was completed on May 17, 1993.

On May 17, 1993, a geophysical survey (refraction) was initiated to map the weathered bedrock and to assist in delineating potential buried channels which may act as a transport mechanism for contamination.

Vadose Zone monitoring continues relative to lysimeter sampling, neutron probe monitoring and ground water elevation monitoring. Core logging activities also continue.

Data evaluation continues on the historical and Phase I RFI/RI data in support of preparation of the OU 4 Phase I RFI/RI Report.

CDH has transmitted their comments for TM #2, *Final Phase I RFI/RI Work Plan, Modifications to Field Activities*. The CDH has granted conditional approval of TM #2.

Regulatory agency comments for TM4, *Final Phase I RFI/RI Work Plan, Human Health Assessment Exposure Scenarios for OU4-Solar Ponds*, have been analyzed and a determination was made that the agency comments would not have an adverse schedule impact on the OU 4 Phase I RFI/RI Report schedule.

Technical Memoranda

Project

OU 4 - Solar Evaporation Ponds

TM #1

TM Title:

TM Status:

Vadose Zone Investigation

Draft submitted to EPA/CDH: 11/16/92

Comments received: 11/30/92

Conditional Approval: 11/30/92

Projected submittal of Final to EPA/CDH: 12/15/92

Actual submittal date of Final: 12/15/92

Submittal of TM #1 VZ Schedule: 05/19/93

EPA/CDH Final Approval of TM #1: 06/17/93

TM #2

TM Title:

TM Status:

Modification to Field Activities

Draft submitted to EPA/CDH: 03/18/93

Comments received: 05/07/93

Projected submittal of Final to EPA/CDH: 06/07/93

Actual submittal date of Final: 06/09/93

EPA/CDH Final Approval of TM #2: 06/30/93

TM #3

TM Title:

TM Status:

Environmental Evaluation

Draft submitted to EPA/CDH: 03/19/93

Comments received: EPA 04/21/93 CDH: 06/02/93

Projected submittal of Final to EPA/CDH: 04/30/93

Actual submittal date of Final: 07/02/93

EPA/CDH Final Approval of TM #3: 07/30/93

TM #4

TM Title:

TM Status:

Human Health Risk Assessment Exposure Scenarios

Draft submitted to EPA/CDH: 3/19/93

Comments received: EPA 04/21/93 CDH 04/23/93

Projected submittal of Final to EPA/CDH: 06/11/93

Actual submittal date of Final: 06/11/93

EPA/CDH Final Approval of TM #4: 06/25/93

DOE, Rocky Flats Plant

TM #5

TM Title:

TM Status:

Exposure Models

Projected submittal of Draft to EPA/CDH: 08/01/93

Projected submittal of Final to EPA/CDH: 10/15/93

TM #6

TM Title:

TM Status:

Contaminants of Concern

Projected submittal of Draft to EPA/CDH: 11/09/93

Projected submittal of Final to EPA/CDH: 12/22/93

TM #7

TM Title:

TM Status:

Toxicity Assessment

Projected submittal of Draft to EPA/CDH: 11/04/93

Projected submittal of Final to EPA/CDH: 12/22/93

Planned Work for June

- DOE will invoke dispute resolution on the Draft and Final RI Reports.
- Receive final approval on TMs #1, #2, and #4.
- Implement the Environmental Evaluation.
- Complete draft FY94 work package.

Problems

The OU 4 Draft Phase I RFI/RI Report 79-working-day extension to September 14, 1993, granted by CDH is inadequate to complete a report.

Open Items

DOE will consider invoking dispute resolution in June under the IAG to seek further consideration of the Draft and Final RI Reports extension dates.

2.4.2 OU 4 REMEDIATION

Scope of Work Changes This Period

None

Technical Approach Changes This Period

None

IAG Milestone Accomplishments

None. The first IAG remediation milestone for this OU is the Draft Phase I Proposed IM/IRA Decision Document scheduled for April 14, 1994.

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I Proposed IM/IRA Decision Document	14 Apr 94		8 Oct 96
Submit Draft Phase II Proposed IM/IRA Decision Document	12 Sep 94		17 Jun 97

May Work Activity Status *Program Management* - A Change Proposal was submitted (internal Rocky Flats process) on May 21, 1993. This proposal was for changing the Solar Ponds Scope and Schedule to Option 2A and adding \$2.6 Million to the cost for FY93. This change is important because it documents the changes to scope, schedule, and cost associated with the pursuit of Option 2A, which defers processing pondsludge until a disposal site is available. The NTS is unable to receive RFP waste as originally planned.

DOE and EG&G met with the CDH and the EPA representatives in the regular monthly Solar Ponds information meeting. EG&G presented a status report on the Building 910 evaporator start-up and a schedule for consolidation of pond water and sludge. Transfer of excess pond water to Building 374 treatment facilities is the longest critical path activity, and the regulators urged RFP to compress that activity. The regulators are concerned that past experience with precipitation water filling emptied ponds could be repeated. The regulators are also concerned that RFP place appropriately high priority on treating excess pond water rather than stored trench system water: CDH requested a regular report on which water stream is being treated.

RFP staff had previously planned to perform the acceptance phase testing of Building 910 evaporators using pond water as feed. Due to the higher pH and solids loading of the pond water versus trench water, RFP would prefer to perform the acceptance test using trench water as feed. This was mentioned to the regulators at the May 18, 1993, information meeting, and they indicated no problem with the change.

Pondsludge Status and Issues - The Project Team is conducting Strategic Planning to assess the HNUS role in Option 2A requirements. Most pressing in these meetings is a determination of how best to economically and operationally manage the HNUS equipment. A course of action will be developed to define key points for demobilization/remobilization, purchase, rental and maintenance decisions. The methodology for making these decisions will be incorporated into FY94 schedules as appropriate.

Kaiser Engineers, under the auspices of their Options Analysis Subcontract, are comparing designs for the Liquid Effluent Retention Facility (LERF) at Hanford with the conceptual design, to date, for the 'A' Pond reline. The design/construct history from LERF will be utilized to streamline the 'A' Pond reline effort. As a data point, the LERF took 2 1/2 years to design/build, and the reline effort is expected to span a 16-month effort.

ICF/Kaiser Engineers are also investigating the most reasonable equipment utilization and demobilization options for HNUS equipment. The results of these studies will provide input to decisions concerning immediate demobilization decisions and post-Phase I IM/IRA Decision Document options. The study will be completed in June.

Water Management Status and Issues - The Building 374 evaporator processed 425,000 gallons from the solar ponds and 163,000 gallons from the modular tanks during the month of May.

Response to the equipment leak found in the Building 910 Licon Evaporations during the cold startup runs is proceeding. A contract was put in place to use the on-site support contractor, J. A. Jones, for replacement of selected fittings and related work. Some of the needed replacement fittings arrived on site, and plans were made to begin work over the weekend. Although the repair effort was not anticipated in our original schedule, it appears probable that EG&G will be able to meet the commitment date for completing the acceptance phase tests mandated by the Solar Ponds Interim Measure/Interim Remedial Action Decision Document (IM/IRA).

The J.A. Jones activity for repairing the leaks in Building 910 evaporators was completed on May 27, 1993, and cold test runs to evaluate the completeness of the leak repair were started on May 28, 1993. This cold testing is expected to continue for approximately 2 weeks.

A detailed schedule for the sludge consolidation activity has been completed and is now being reviewed for compression and baselining. The schedule now shows center pond clean and dry September 30, 1993, and north pond clean and dry November 19, 1993. This schedule requires that the excess water be out of the ponds by July 1, 1993. This appears achievable if 374 Building continues to perform reliably. This accelerated schedule, which allows drilling in the center and north ponds this calendar year, may require higher than planned expenditures during this fiscal year. Sources for these funds are currently being explored.

Total Freeboard:	167.3 inches
Pond Water excess volume:	75,000 gallons

Modular tank volume: 192,000 gallons
Pond Water pumped to Building 374: 308,000 gallons
Pond water cum to Building 374 since 4/1/93: 760,000 gallons
Modular tank (MST) water pumping to Building 374 163,000 gallons
MST water cum to Building 374 since 4/1/93: 331,000 gallons

Solar Ponds Program Office staff met with support groups to discuss some apparent inconsistencies between the B910 Process Control Plan (PCP), Quality Plan (QP), and sampling plans. Solar Ponds Program Office staff clarified that the PCP & QP are summary-level documents with regards to sampling, and the specifics to be implemented are in the sampling plans. This confusion delayed sign-off of the documents, but no impact to the B910 schedule is expected.

Planned Work for June

- Perform field work for Environmental Evaluations.
- Complete draft FY94 work package.

Problems

None

Open Items

Milestone Schedule for the Solar Evaporation Ponds Water Management IM/IRA:

	<u>Original Date</u>	<u>Revised Date</u>	<u>Status</u>
Begin Construction of Treatment and Storage System	Mar 1, 1992	Apr 6, 1992	Complete
Complete Construction of Treatment and Storage System	June 1, 1992	Jul 7, 1993	In Progress
Conduct Trial Run of Treatment System	Jun 8, 1992	Jun 28, 1993	Pending
Begin Full-scale Operations	Jun 15, 1992	Sep 9, 1993	Pending
Diversion of ITS Water	April 16, 1993	April 8, 1993	Complete

2.5 OU 5 - WOMAN CREEK

This activity encompasses assessment and remediation of 10 IHSS in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSS 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSS 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881. Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. Possible contamination in this operable unit was caused by landfill operations, storm water runoff into holding ponds, and ash-pit operations. Constituents in OU 5 are believed to include nitrates, plutonium, uranium, metals, beryllium, solvents, pesticides, oils, paints, and cleaners. Media affected include soils, sediments, surface water, ground water, and air resuspension.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	05 Apr 91
Accomplishments	Submit Final Phase I RFI/RI Work Plan	30 Aug 91

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	30 Nov 93		9 Feb 95
Submit Final Phase I RFI/RI Report	3 May 94		18 Oct 95

May Work Activity Status On May 20, 1993, while performing a gridded Field Instrument for the Detection of Low-Energy Radiation (FIDLER) survey, the subcontractor identified an anomalous reading of approximately 45000 counts per minute (cpm). The background count rate is roughly 3500 cpm. The subcontractor notified RFP Radiological Engineering (RE) of the "hot spot." The location was investigated with a Portable Gamma Spectroscopy System (PGSS) by RE. It was determined that the elevated activity was due to three small chunks of "metal." The analysis of the gamma spectrum indicates a total activity of 4 microCi of ²³⁸U (Depleted Uranium). The beta/gamma activity measured 5000 cpm with a Ludlum Model 31.

Work was stopped when the counts were detected. The samples were removed on Friday, May 28, 1993. DOE notified both EPA and CDH and received their concurrence prior to removal of the hot material. The OU 5 Project Manager was directed to remove the material from the site. It will be double-bagged, labeled appropriately, and transferred to the Radiological Controlled

Area (RCA) cargo unit. The material will then be packaged according to WO1101, "Radioactive Waste Packaging Outside the Protected Area." A critique was held on May 25, 1993, and again on May 26, 1993, about sending a hot sample offsite. Procurement sent a Cure Notice (stop work order) to the subcontractor (ASI), for any field operations that involved intrusive activities. No intrusive activities had been previously scheduled for Thursday May 27 or Friday, May 28, 1993.

The number of soil borings at the Old Landfill, four, was determined based on the review of the data from the recently completed soil gas sampling at the Old Landfill. There are three soil gas anomalies; one of them is inaccessible to a drill rig. At the inaccessible anomaly, an All Terrain Vehicle (ATV) with hydropunch will access the location and will collect two soil and water samples if water is present. The wells that were to be drilled within the Old Landfill at the soil gas anomalies will be replaced with the water collected by the hydropunch. The change in the program has been endorsed by EPA and CDH. The OU 5 RFI/RI Work Plan, Section 7, Field Sampling Plan (FSP), is in the process of being clarified and revised. A letter detailing the changes to the program has been transmitted to DOE.

TM #8, *Monitoring Wells at Individual Hazardous Substance Site (IHSS)115*, will not be generated. Two letters will be written in its place. One of these letters details the changes in the FSP for the borings/monitoring wells at the soil gas anomalies at IHSS 115 and the second letter details the logic behind the placement of the monitoring wells downgradient from the Old Landfill. EPA and CDH have agreed to replace TM #8 with these letters. This will not significantly alter the scope of work, but will expedite the timing of the work in the field.

The drill rig will be moved onto location at the IHSS 115 soil gas anomalies and begin borings on May 12, 1993.

Surficial soil sampling (23 locations) at IHSS 209 was completed. Surficial soil sampling began at IHSS 133 on May 10, 1993, and was completed May 14, 1993. The vertical profile sampling standard operating procedures (SOP) (two locations in IHSS 133) has not yet been approved by the agencies.

A letter detailing the changes to the borehole locations at the soil gas anomalies at IHSS 115 has been reviewed by CDH and EPA and they are in concurrence with the work proposed.

Surficial soil sampling began at IHSS 133 on May 10, 1993, and was completed May 21, 1993. The vertical profile sampling standard operating procedures (SOP) (two location in IHSS 133) has not yet been approved by the agencies, so those samples cannot yet be collected.

An OU 5 project progress meeting was held with DOE, EPA and CDH on May 14, 1993. The agencies were given an overview of the field progress that has been made since the last meeting held on February 22, 1993. Another meeting was scheduled to occur at the conclusion of the field work for OU 5, which should take place in June 1993. DOE will produce a detailed breakdown on the remaining schedule for the OU 5 Draft and Final Phase I RFI/RI Report.

The tertiary (and last) phase of the soil gas sampling (103 locations) has been completed. The data has been reviewed and the locations for the nine borings have been selected. One of the anomalous locations is in an area that will be extremely difficult to access. The site will require bulldozer work to move the drill rig on the site. RFO is contacting the regulatory agencies to see if RFP can modify this task. RFP Construction Management will take a tour of the site to see if access can be achieved and also initiate the process for the permits (soil disturbance, etc.) necessary to conduct activities in that area.

The Cone Penetrometer Testing (CPT) was completed on Thursday, April 19, 1993. Drilling of the four borings at IHSS 209 was completed on May 4, 1993. The rig then moved over to complete the nine remaining borings at IHSS 115.

Conditional approval was given to complete two of the four well locations addressed in TM #9, *Monitoring Wells at IHSS 133*. One of these wells has been completed. The agency comments on Draft TM #9, *Monitoring Wells at IHSS 133*, are being incorporated into the Final TM.

The vertical profile sampling described in TM #4, *Surficial Soil Sampling at IHSS 133*, has received final approval, the two vertical profile samples were collected.

Technical Memoranda

Project

OU 5 - Woman Creek Priority Drainage

TM #1

TM Title

TM Status

Surface Water and Sediments

When preparation concluded or estimated to be concluded:

11/30/92

Projected date of submittal to EPA/CDH: 11/30/92

Actual date of submittal: 10/13/92

TM #2

TM Title

TM Status

Surface Geophysics

When preparation concluded or estimated to be concluded:

11/30/92

Projected date of submittal to EPA/CDH: 11/30/92

Actual date of submittal: 10/13/92

DOE, Rocky Flats Plant

TM #3
TM Title Soil Sampling at IHSS 115
TM Status When preparation concluded or estimated to be concluded:
5/7/93
Projected date of submittal to EPA/CDH: 5/7/93
Actual date of submittal: 1/26/93

TM #4
TM Title Soil Sampling at IHSS 133
TM Status When preparation concluded or estimated to be concluded:
6/7/93
Projected date of submittal to EPA/CDH: 6/7/93
Actual date of submittal: 4/12/93

TM #5
TM Title Soil Gas Sampling at IHSS 115
TM Status When preparation concluded or estimated to be concluded:
5/7/93
Projected date of submittal to EPA/CDH: 5/7/93
Actual date of submittal: 3/25/93

TM #6
TM Title Cone Penetrometer at IHSS 115
TM Status When preparation concluded or estimated to be concluded:
4/14/93
Projected date of submittal to EPA/CDH: 4/14/93
Actual date of submittal: 3/25/93

TM #7
TM Title Soil Borings at IHSS 133
TM Status When preparation concluded or estimated to be concluded:
5/7/93
Projected date of submittal to EPA/CDH: 5/7/93
Actual date of submittal: 2/19/93

TM #8
TM Title Monitoring Wells at IHSS 115
TM Status TM 8, has been canceled, and is being replaced by a letter
outlining the justification behind the location of the three (3)
wells in IHSS 115

TM #9
TM Title Monitoring Wells at IHSS 133, Ash Pits, Incinerator and
Concrete Wash Pad
TM Status When preparation concluded or estimated to be concluded:
5/14/93
Projected date of submittal to EPA/CDH: 5/6/93
Actual date of submittal: 5/6/93
EPA/CDH comments scheduled: 6/11/93

TM #10
TM Title
TM Status

Soil Borings at IHSS 209
When preparation concluded or estimated to be concluded:
3/6/93
Projected date of submittal to EPA/CDH: 3/6/93
Actual date of submittal: 3/6/93

Planned Work for June

- A followup to the critique regarding sending contaminated material offsite is scheduled for June 7, 1993.
- Begin well drilling at IHSS 133 on June 2, 1993.
- Complete draft FY94 work package.

Problems

A hot spot was detected on May 20, 1993. While performing a gridded Field Instrument for the Detection of Low-Energy Radiation (FIDLER) survey, the subcontractor identified an anomalous reading of approximately 45000 counts per minute (cpm). The background count rate is roughly 3500 cpm. The subcontractor notified RFP Radiological Engineering (RE) of the "hot spot." The location was investigated with a Portable Gamma Spectroscopy System (PGSS) by RE. It was determined that the elevated activity was due to three small chunks of "metal." The analysis of the gamma spectrum indicates a total activity of 4 microCi of ²³⁸U (Depleted Uranium).

Open Items

Hot spot detected on May 20, 1993.

2.6 OU 6 - WALNUT CREEK

This activity encompasses assessment and remediation in the Walnut Creek Drainage of 21 IHSS: A-series Detention Ponds, Ponds A-1 through A-4 (IHSS 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North, Pond, and South Area Spray Fields (IHSS 167.1, 167.2 and 167.3); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSS 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143). and the Soil Dump Area (IHSS 156.2). Eleven ground water monitoring wells have been installed throughout OU 6 to monitor the alluvial aquifer.

Sediment samples will be collected from the Walnut Creek drainage where existing data are insufficient to adequately characterize the sediments. Sediment sampling has been proposed along each stream segment on North and South Walnut Creeks where additional characterization is needed. Based on a review of the data collected at the existing locations along the OU 6 drainage, there is sufficient information about the sediments in many parts of OU 6. Therefore, the sampling locations specified in the RFI/RI Work Plan have been reduced in those areas.

The regulatory agencies have proposed a new IM/IRA on the operation of the RFP Ponds. If approved, this IM/IRA would affect the RFP ponds, including OU 6, placing them under CERCLA rather than the National Pollution Discharge Elimination System (NPDES).

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	19 Apr 91
Accomplishments	Submit Final Phase I RFI/RI Work Plan	16 Sep 91

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	4 Aug 93		21 Oct 94
Submit Final Phase I RFI/RI Report	7 Jan 94		10 Jul 95

May Work Activity Status Excavation activities were occurring on the northeast corner of the dam of Pond B-1. Following removal of a sediment settling system, the area was monitored with a FIDLER, as per the Soil Disturbance Permit. The RPT identified an anomalous reading of 16000 cpm, against a background of approximately 3000 cpm, in the soil. The Construction Coordinator notified RE of the "hotspot." The location was investigated using a Portable Gamma Spectroscopy System (PGSS) by RE. The analysis of the gamma spectrum indicated a total activity of 0.93 microCi ²⁴¹Am (6.51 microCi ²³⁹Pu). The contamination is localized to a small area.

Work was interrupted until resolution is determined. The location will be sampled under the OU 6 scope of work. Due to a discovery of the radioactive soil at the base of B1 dam, a critique was held on May 21, 1993. It was determined that samples will be taken and the area will be covered to prevent any dispersion of contaminants. RFP Traffic and Sample Management were contacted to provide procedures to follow for shipping these samples offsite. The objective is to backfill the area and continue with the dam upgrade project. All equipment and personnel were carefully monitored and no contamination was detected.

All high purity germanium (HPGe) surveys for OU 6 are complete. The HPGe survey data have been processed. Environmental Evaluation (EE) sampling is also complete. Storm event sampling of Walnut Creek was completed in May. This completes all sampling except quarterly sampling of ground water monitoring wells.

A review has been completed of the data for OU 6 monitoring wells. This was done to ensure that each well is being sampled on a quarterly basis and that the correct analytes are being collected. The OU 6 Work Plan was reexamined to ascertain which previously existing monitoring wells are to be used to supply data to support OU 6. The result is a revised list of wells and analytes to be sampled under OU 6.

Other work for OU 6 has included computing the flow measurements for the storm event that occurred on May 17, 1993, and correcting some data on the Soil Gas Survey and submitting it to the Rocky Flats Environmental Database System/Geographic Information System (RFEDS/GIS).

Technical Memoranda

Project

OU 6 - Walnut Creek

TM #2

TM Title

TM Status

Exposure Scenarios

When preparation concluded or estimated to be concluded:
July 1, 1993

Projected date of submittal to EPA/CDH: TBD

Actual date of submittal: N/A

Date when comments received: N/A

TM #3
TM Title
TM Status

Modeling Surface and Ground Water
When preparation concluded or estimated to be concluded:
July 1, 1993
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments received: N/A

TM #4
TM Title
TM Status

Contaminants of Concern
When preparation concluded or estimated to be concluded:
September 15, 1993
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments received: N/A

TM #5
TM Title
TM Status

Toxicity Factors
When preparation concluded or estimated to be concluded:
September 15, 1993
Projected date of submittal to EPA/CDH: TBD
Actual date of submittal: N/A
Date when comments received: N/A

Planned Work for June

- Deliver TM #3, *Modeling of Surface Water and Ground Water*, to DOE. EG&G will respond to comments on TM #2, *Exposure Scenarios*.
- Complete draft FY94 work package.
- Place development of the RFP Pondwater IM/IRA Decision Document under OU 6.

Problems

The Draft Phase I RFI/RI Report due on August 4, 1993, and the Final Phase I RFI/RI Report due on January 7, 1994, will require schedule extensions due to delays incurred prior to starting field operations.

A hot spot was detected on May 20, 1993, near OU 6. The excavation activities were occurring on the northeast corner of the dam of Pond B-1. Following removal of a sediment settling system, the area was monitored with a FIDLER, as per the Soil Disturbance Permit. The RPT identified an anomalous reading of 16000 counts per minute (cpm), against a background of approximately 3000 cpm, in the soil.

Open Items

A draft extension request was completed on May 20, 1993, for the Draft and Final RFI/RI Reports.

Hotspot detected on May 20, 1993.

Completion of the Pondwater Management IM/IRA Decision Document.

2.7 OU 7 - PRESENT LANDFILL

The Present Landfill, OU 7, is located north of the plant complex on the western edge of an unnamed tributary of North Walnut Creek and is comprised of two IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill, soils beneath the landfill potentially contaminated with leachate, and sediments and water in the East Landfill Pond. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August of 1968 and was originally constructed to provide for disposal of RFP's nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill, and consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

Scope of Work Changes None
This Period

Technical Approach None
Changes This Period

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Accomplishments	Submit Final Phase I RFI/RI Work Plan	28 Aug 91

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	12 Oct 93		20 Dec 93
Submit Final Phase I RFI/RI Report	16 Mar 94		2 Sep 94
Submit Draft Phase II RFI/RI Work Plan	13 Sep 94		7 Aug 95

May/ Work Activity Status The risk assessment team has developed a process flow for COCs. This flow is in line with the OU 1 process although not identical. The flow chart and accompanying text will be submitted to the agencies for review and concurrence prior to finalization of the COC TM. Depending on the process flow selected, significant cost and schedule impacts may result.

A meeting to resolve outstanding issues on TM 1, *Exposure Scenarios*, was held among CDH, EPA, DOE, and EG&G. The COC process flow was discussed and CDH and EPA reiterated the need to follow the example of OU 1.

There may be significant opportunities to streamline the Phases I and II as well as the IM/IRA process. Issues to be addressed in near-term meetings include:

- Streamlining the IM/IRA process by assuming presumptive remedies.
- Reducing the risk assessment to a single phase. Since the Phase I Work Plan addresses closure as well as "source and soils," additional data has been collected to support analysis of other Phase II pathways. The opportunity to modify the data quality objectives (DQO), FSP, and the baseline risk assessment (BRA) section to include all pathways may eliminate the need for a Phase II Work Plan.

The end result would lead to a significant acceleration into final action.

- Eliminate the need to investigate the asbestos disposal pits that have already been identified by the agencies as necessary for Phase I, although it is additional scope not covered in the Phase I Work Plan.

Technical Memoranda

Project

OU 7 - Present Landfill

TM #1

Title:
Status:

Exposure Scenarios

Initial reviews completed by DOE/HQ and RFO. Review completed by EPA and CDH. Response summary developed and submitted to all parties for review. Reviews complete. Revised response summary completed May 25 with a final review underway prior to transmittal to the agencies.

TM #2

Title:
Status:

Model Description.

Transmitted to agencies for review January 8, 1993. Initial review by DOE and the Agencies complete April 30. Draft response summary complete May 25.

TM #3

Title:
Status:

Addendum to Final Phase I RFI/RI Work Plan. Surface Soil and Asbestos Pit Disposal Area Characterization Plan.

Transmitted to DOE for review February 5, 1993. Transmitted to the agencies for review February 8. Comments received April 26, 1993. Conditional approval by the Agencies received February 22, 1993. Clarification of outstanding comments from Agencies received May 3, 1993.

TM #4

Title:

Contaminants of Concern

Status:

Under development

Planned Work for June

- Complete draft contaminant of concern process in TM #4.
- Complete draft FY94 work package.
- Continue data evaluation.
- Continue negotiating the OU 7 IM/IRA streamlining process.

Problems

None

Open Items

None

2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Plant. Contamination sources within the various IHSSs include above ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affected areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and in some cases through precipitation runoff. The chemical composition of the contaminants also varies widely between the IHSSs, ranging from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	01 May 92
Accomplishments	Submit Final Phase I RFI/RI Work Plan	01 Dec 92

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	14 Feb 94		2 Nov 15
Submit Final Phase I RFI/RI Report	12 Jul 94		19 Jul 16

May Work Activity Status A letter subcontract was issued on May 13, 1993, to allow the subcontractor to begin training and initialize planning documents (the Health and Safety Plan [HSP] and implementation plan). A kick-off meeting with the subcontractor was held on Monday May 24, 1993, to discuss development of the HSP, Implementation Plan, and development of Standard Operating Procedures (SOP) for implementation of the Industrial Area (IA) OUs. The Health and Safety Plan is to be delivered to EG&G for internal review on June 2, 1993.

Procurement is in the process of completing the negotiation plan for the IA OU contract. The anticipated date of negotiation is July 1, 1993. The funding provided in the letter subcontract is sufficient for performing initial field work (soil sampling collection and additional data compilation).

Approval of the Final Phase I RFI/RI Work Plan based on the comment responsiveness summaries delivered to EPA and CDH on February 26, 1993, is still pending. EG&G is

completing the minor comment revisions received from a meeting with the EPA, CDH, and DOE held on April 14, 1993. EG&G expects to have the comments revision to DOE by June 15, 1993.

Technical Memoranda

None

Planned Work for June

- Continue efforts to award the subcontract for the integrated OUs (8, 9, 10, 12, 13 and 14).
- Initiate EE field work for the industrial area.
- Begin radiation surveys using the HPGe system.
- Complete draft FY94 work package.

Problems

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

A major issue regarding CDH's proposed enforcement action still remains unresolved regarding DOE's position that the "residential use scenario" for the risk assessments for the IA OUs will not be used. EPA and CDH stated that the "residential use scenario" must be used and if DOE refuses to use "residential" scenario then approval of the OU 8 Phase I RFI/RI Work Plan will be withheld.

Acceptance of the Optimal Interim Remedial Action Plan (O/IRAP), which will include OUs 8, 9, 10, 12, 13, and 14, is pending EPA and CDH approval.

2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This activity involves characterizing a series of tanks and associated process waste lines. The Original Process Waste Lines (OPWL) consisted of a system of 57 designated pipe sections extending between 73 tanks and 24 buildings connected by 35,000 feet of buried pipeline that transferred process wastes from point of origin to onsite treatment plants. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced over the 1975-1983 period by the new process waste system. Some tanks and lines from the original system have been incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including pickling liquor from foundry operations, medical decontamination fluids, miscellaneous laboratory liquids from Building 123, and laundry effluent from Buildings 730 and 778. The RFI/RI plan includes inspection and sampling of the OPWL tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred, near pipe joints and valves, at approximately 200-foot intervals along the pipelines and by installing borings around the tanks that are outdoors. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the RFI/RI will determine the need for interim and/or final remediation action.

Scope of Work Changes - None
This Period

Technical Approach - None
Changes This Period

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Accomplishments	Submit Final Phase I RFI/RI Work Plan	26 Nov 91

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	11 Apr 94		20 Nov 02
Submit Final Phase I RFI/RI Report	6 Sep 94		7 Aug 03

May Work Activity Status A letter contract was awarded on May 13, 1993, to Jacobs Engineering to begin the Integrated OU non-intrusive field work.

Arrangements were made for the RFP computer-aided-design/computer-aided-engineering (CAD/CAE) Group to supply Plant Utility Drawings to RFEDS/GIS Group for use in preparing field sampling plans.

A substantial amount of useful background data on OU 9 is included in the tables in the RI Work Plan. This data has been converted so that we can upload this information into the GIS and can continue to build on it while preparing the FSP this summer.

On May 21, 1993, a kickoff meeting was conducted with the Jacobs Engineering Project Manager to go over OU 9 background information and details of Work Plan.

There are concerns about the status of the HHRA. It was suggested to perform separate risk analyses for each IHSS. OU 9 has 121 IHSSs (60 pipelines, 46 tanks, 3 spill/soil contamination areas, 12 Under-Building Contaminations), not counting the Sanitary Sewer System. We need to be able to "thin out" the matrix of cases to evaluate the impact of HHRA decisions.

Technical Memoranda

Project

OU 9 - Original Process Waste Lines

TM#1

TM Title

TM Status

Stage 1 Field Sampling Plan

When preparation concluded or estimated to be concluded:
September 1993

Projected date of submittal to EPA/CDH: September 1993

Actual date of submittal: N/A

Date when comments received: N/A

Planned Work for June

- Perform data compilation tasks including review of engineering drawings and waste log books for use in preparing TM #1, *Field Sampling Plan*.
- Complete draft FY94 work package.

Problems

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

Acceptance of the O/IRAP, which will include OUs 8, 9, 10, 12, 13, and 14, is pending EPA and CDH approval.

2.10 OU 10 - OTHER OUTSIDE CLOSURES

OU 10 is made up of 15 IHSSs scattered throughout the plant, which consist of various hazardous waste units. Six of the IHSSs are located in the PA, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the plant. The types of wastes identified at these sites range from pondcrete/saltcrete storage and drum storage to a utilization yard with waste spills. A Final Phase I RFI/RI Work Plan is currently in preparation. The primary components of the RFI/RI Work Plan for OU 10 will be a FSP, Baseline Risk Assessment Plan (BRAP), and an EE Work Plan. An IRA is scheduled to begin in early 1998.

Scope of Work Changes None
This Period

Technical Approach None
Changes This Period

IG Milestone	Submit Draft Phase I RFI/RI Work Plan	27 Nov 91
Accomplishments	Submit Final Phase I RFI/RI Work Plan	01 May 92

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	25 Aug 94		2 Nov 15

May Work Activity Status The letter contract was awarded for the subcontractor's HSP and Implementation Plan. The anticipated award date of the full contract will be June 15, 1993. This delay has pushed the field work schedule by approximately 3 weeks. The implementation of the IA/OU fieldwork is being expedited to try and recover some of the delay.

A kick-off meeting for the Industrial Area field work contract was held with representatives from Jacobs Engineering Group (JEG) on May 24, 1993. Included in the discussions were logistical concerns for implementing the field work, required deliverables, and general contract information. After the meeting, a site tour was conducted to familiarize JEG staff with RFP and the IA OUs.

The implementation of the radiation survey/HPGe task was discussed with EG&G representatives. This activity is scheduled to begin staking location on June 1, 1993. Resources and personnel have been allocated to support OU 10 Phase I field work.

The effort to remove the waste storage items in the PU&D yard was successful. Nearly all of the material stored in this IHSS has been removed. The remaining empty barrels, various pallets and some scrap metal, should be removed by the June 1, 1993 deadline. The implementation of OU 10 Phase I field work can begin as scheduled.

RFP Services has completed the removal of storage items from IHSS 176 - the 964 "Laydown" area - within the PA. As with the PU&D yard, the Phase I field work for OU 10 will proceed as scheduled.

Technical Memoranda

None

Planned Work for June

- Complete removal of scrap and stored items in the PU&D Yard.
- Award the contract to develop the IA HSP and Implementation Plan.
- Begin OU 10 Phase I Field Work (radiation surveys).
- Complete draft FY94 work package.

Problems

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

Acceptance of the O/IRAP, which will include OUs 8, 9, 10, 12, 13, and 14, is pending EPA and CDH approval.

2.11 OU 11 - WEST SPRAY FIELD

The West Spray Field is located within the Rocky Flats Plant buffer zone immediately west of the plant security area. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from solar evaporation ponds 207-B North and Center (contaminated ground water in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105.1 acres, 38.3 of which received direct application of hazardous waste. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and ground water.

Scope Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 Jun 90
Accomplishments	Submit Final Phase I RFI/RI Work Plan	02 Jan 92

Future IAG Milestones Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Sep 94		18 Apr 95

May Work Activity Status OU 11 is being reevaluated to determine resource requirements and schedule for the remainder of FY93.

A meeting was held May 25, 1993, with Statistical Applications, Risk Assessment, and Project Management staff to begin revision of the FSP.

DOE and CDH were informed by DOE on the direction the OU 11 project is proceeding with respect to identifying preliminary remediation goals via back calculations of COC concentrations to identify ARAR exceedance or risk exceedance with the OU boundary. EPA or CDH have not yet supported the rescope OU 11 project.

Technical Memoranda

Project

OU 11 - West Spray Field

TM #1

TM Title:

Revised Field Sampling Plan and Data Quality Objectives.

TM Status :

Under development. HHRA Technical Memoranda scheduled to begin in FY94

Planned Work for June

- Complete revised FSP.
- Continue negotiations on OU 11 streamlining.
- Complete draft FY94 work package.

Problems

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

None

2.12 OU 12 - 400/800 AREA

The 400/800 Area involves assessment and remediation of the 11 IHSSs at the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - Northeast, South, and West of Building 460 (IHSSs 136.1, 136.2, and 136.3); Process Waste Leak - Owen Area (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes None
This Period

Technical Approach None
Changes This Period

IG Milestone	Submit Draft Phase I RFI/RI Work Plan	08 May 92
Accomplishments	Submit Final Phase I RFI/RI Work Plan	05 Oct 92

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	20 Apr 94		11 Mar 99
Submit Final Phase I RFI/RI Report	15 Sep 94		17 Nov 99

May/ Work Activity Status In order to limit the schedule impacts, a letter contract was issued on May 13, 1993. The letter contract was awarded for limited scope including development of the subcontractor's HSP and Implementation Plan. The anticipated award date of the full contract will be June 15, 1993. This delay has pushed the field work schedule by approximately 3 weeks. The implementation of the IA OU field work is being expedited in an attempt to recover some of the delay.

Informal discussions among the Project Managers for the Integrated OUs regarding the estimate of work that will be completed at year's end and IHSS intrusive activities that could be performed during 1994 have been in progress.

2.13 OU 13 - 100 AREA

Cleanup of the 100 Area involves the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); and the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will consist of preparing a Phase I RFI/RI Work plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes None
This Period

Technical Approach None
Changes This Period

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	15 May 92
Accomplishments	Submit Final Phase I RFI/ RI Work Plan	12 Oct 92

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	8 Aug 94		24 Mar 99

May Work Activity Status RCRA training has been completed. A meeting was held with RCRA Underground Storage Tanks (UST) representatives to develop a plan to allow for the partial remediation of the area around the gasoline leak in IHSS 134S. The leak has been fixed. A sampling plan for the analytes listed in the OU 13 Work Plan will be developed. The dirt removed from a small excavation will be treated as investigative derived material (IDM). The results of the samples taken will be used to characterize the IDM, which will be placed in 63 drums and stored on the IHSS until the results of the sampling are known.

A new issue is developing in several of the industrial area OUs including OU 13. Several of the IHSSs within OU 13 (IHSS #s

DOE, Rocky Flats Plant

117.1, 117.2, 158, 186, 197) are used as storage areas for a variety of materials, such as scrap metal, building supplies and other various items. These items will need to be relocated out of the IHSS (or at least shuffled about) in order for remedial investigations to begin. It appears that RFP will be able to work around many of the stored items. Schedule problems may arise from having to relocate materials.

Technical Memoranda None

Planned Work for June

- Schedule a meeting with the regulatory agencies to resolve differences in statistical approach to the FSP.
- Continue to develop the HSP and Integrated FSP.
- Prepare SOPs required for field work.
- Complete draft FY94 work package.

Problems

The revised OU 13 Work Plan submitted to the regulatory agencies on March 10, 1993, was rejected. The main issue to be resolved is the revised Surficial Soils Sampling Plan.

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

Approval of the OU 13 Phase I RFI/RI Work Plan, development of the new SOPs, and approval of a subcontract to begin nonintrusive field activities. Some work is being performed using a letter contract. Full approval is scheduled for June.

Acceptance of the O/IRAP, which will include OUs 8, 9, 10, 12, 13, and 14, is pending EPA and CDH approval.

2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites involves the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills, and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will consist of preparing a Phase I RFI/RI Work Plan, which will include both an EE and an HHRA. After implementation of this Work Plan, field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. An FS to determine the best methods to remediate the area will be conducted as a subsequent phase to the assessment phase.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and feasibility study of the project. This process includes review and approval by EPA and CDH, followed by a ROD, release to the public, and implementation of the plan.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone Accomplishments	Submit Draft Phase I RFI/RI Work Plan	26 Jun 92
	Submit Final Phase I RFI/RI Work Plan	19 Oct 92

Future IAG Milestones Through FY94 None

May Work Activity Status A letter contract kick-off meeting was held between the Integrated OU managers and the subcontractor to discuss the timeline for preparation of the HSP, the status of pending SOPs and for introductions between the staff employee counterparts at EG&G and the subcontractor. After the meeting, a vehicle tour was conducted on a variety of the IHSSs in the IA outside the PA.

Technical Memoranda Current Five-Year Plan indicates TM #1, *Human Health Risk Assessment-Exposure Assessment*, and TM #2, *Human Health Risk Assessment-Modeling* are scheduled for completion in March 1994.

DOE, Rocky Flats Plant

Planned Work for June

- Conduct walking tour of OU 14 IHSS for confirmation of physical features, presence of utilities, and site accessibility.
- Prepare FY94 plans including scope development, resource loading and budget allocation.
- Complete of draft FY94 work package.

Problems

Submittal of Draft and Final Phase I RFI/RI Reports will require milestone extensions due to assessment activity delays.

Open Items

OU 14 Final Work Plan is pending agency approval.

Acceptance of the O/IRAP, which will include OUs 8, 9, 10, 12, 13, and 14, is pending EPA and CDH approval.

2.15 OU 15 - INSIDE BUILDING CLOSURES

OU 15 is composed of seven IHSSs: IHSS 178, Building 881 - Drum Storage Area; IHSS 179, Building 865 - Drum Storage Area; IHSS 180, Building 883 - Drum Storage Area; IHSS 204, RCRA Unit 45 - Original Uranium Chip Roaster; IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area; IHSS 212, RCRA Unit 63, Building 374 Drum Storage Area; and IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench Scale Treatment. The seven IHSSs currently have interim status under RCRA.

Closure Plans for the IHSSs were submitted to CDH during 1988 and 1989. The IHSSs were also included within the IAG to undergo a RCRA Facility Investigation/Remedial Investigation (RFI/RI). During scoping meetings for preparation of the Phase I RFI/RI Work Plan for Operable Unit 15 conducted among EPA, CDH, and DOE during April 1992, the Closure Plan and RFI/RI Processes were combined. In affect, Clean Closure Performance Standard (6 CCR 1007-3, Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings and Closure Plans will no longer be prepared. The Public comment period required for the Closure Plan process will be fulfilled through the IM/IRA process of the IAG.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants and solvents containing chlorinated hydrocarbons (RCRA F001 and F002 wastes) and waste paints and waste metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. The major activity proposed is characterization of contamination associated with the OU 15 IHSSs both inside and outside buildings; and, if applicable, decontamination of the concrete floors at the indoor facilities and remediation of contamination outside buildings.

During April 1992, IHSS 215, Unit 55.13-Tank T-40, was deleted from OU 15 and added to OU 9 as part of an IHSS realignment pursuant to Part 32, Paragraph 191 (Additional Work or Modification to Work) of the IAG. This change was recommended by DOE in the OU 9 Phase I RFI/RI Work Plan approved by CDH and EPA in April 1992. Similarly, IHSS 212, RCRA Unit 63 was removed from the OU 15 RFI/RI process since it is currently active as a Drum Storage Area and has been included in the RFP RCRA Part B TRU Mixed Waste permit application.

Scope of Work Changes None
This Period

Technical Approach None
Changes This Period

IAG Milestone	Submit Draft Phase I RFI/RI Work Plan	01 Jun 92
Accomplishments	Submit Final Phase I RFI/RI Work Plan	26 Oct 92

Future IAG Milestones
Through FY94

<u>Milestone Name</u>	<u>IAG Date Scheduled</u>	<u>Extension Status</u>	<u>Planned Accomplishment Date</u>
Submit Draft Phase I RFI/RI Report	1 Aug 94		1 Aug 94

DOE, Rocky Flats Plant

May Work Activity Status Unconditional approval of the Phase I RFI/RI Work Plan for OU 15 was received from EPA and CDH on May 4, 1993.

The next work package milestone for OU 15 is scheduled for June 1, 1993, and consists of submittal of the Health and Safety Plan, Implementation Plan, and a status report to DOE.

The HSP is essentially complete; however, the SOP is not complete. Draft comments for DOE/Headquarters (HAZWRAP) have been received via DOE, RFO and addressed. At DOE's direction, EG&G sent draft SOPs to EPA and CDH for preliminary review. EPA and CDH responded with comments on the SOPs. EG&G submitted the finalized SOP on May 21, 1993, to DOE for formal transmittal and approval by EPA and CDH.

Technical Memoranda Preparation of the Field Sampling Plan TM and the Human Health Risk Assessment TM is not anticipated to begin until FY94.

Planned Work for June

- Obtain approval of the SOP for the collection of floor and equipment rinsate samples.
- Initiate the Integrated Work Control Package review and approval process.
- Complete of draft FY94 work package.

Problems None

Open Items None

2.16 OU 16 - LOW PRIORITY SITES

This assessment activity consists of preparing a No Further Action Justification (NFAJ) Document for seven IHSSs: Solvent Spill, Antifreeze Discharge, Steam Condensate Leaks, Nickel Carbonyl Disposal, Water Treatment Plant Backwash Pond, and Scrap Metal Sites. In addition, the draft document must be reviewed, comments resolved, and the draft finalized.

Scope of Work Changes This Period None

Technical Approach Changes This Period None

IAG Milestone	Submit Draft NFAJ Document	04 Mar 92
Accomplishments	Submit Final NFAJ Document	30 July 92
	Submit Revised Final NFAJ Document	16 Oct 92

Future IAG Milestones Through FY94 None

May Work Activity Status CDH granted approval of the NFAJ Document in March 1993. A working meeting was held May 19, 1993, at EPA to finalize the Proposed Plan (PP) and layout schedules for the public comment period and ROD development.

The target date for releasing the Final Approved Proposed Plan/Draft RCRA Permit Modification (PP/DRPM) to the public is Tuesday, July 6, 1993. The Public Comment period is tentatively scheduled to begin on July 12, 1993, and continue for a 60-day period ending on September 10, 1993.

Development of the ROD will begin when the PP is issued for public comment. The timeline for developing and approving the ROD could extend into CY94.

Technical Memoranda None

Planned Work for June

- Finalize draft Proposed Plan and review of plan by DOE, EPA, and CDH.
- Perform administrative Record document review and record search.

Problems None

Open Items The work being performed beyond submittal of the revised final NFAJ in October 1992 is not within the scope of the FY93 work package. The Five-Year Plan and Activity Data Sheets indicate no proposed funding for FY94. Funding will be necessary in

FY94 to complete the administrative process for reaching a ROD for OU 16. DOE and EG&G are evaluating options for funding this unanticipated activity ahead of lower priority projects.

2.17 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that encompass a wide variety of plans, procedures, reports, studies, and other activities required by the IAG and that apply to RFP environmental restoration activities in general. The activities include, but are not limited to, the HSP, a Sampling and Analysis Plan, a Plan for Prevention of Contaminant Dispersion, the Community Relations Plan, the Discharge Limits for Radionuclides Work Plan, Treatability Study deliverables, the Background Study Plan, Administrative Record, State Response (support for CDH oversight), Historical Release Report, Operations Management, Decontamination Facilities, Contractor yard support, ER Waste handling facilities, geologic characterization, hydrogeologic characterization, and ground water monitoring.

Scope of Work Changes None

This Period

Technical Approach None
Changes This Period

IAG Milestone	Submit Draft Background Study Report (Water)	15 Dec 89
Accomplishments	Submit Draft Background Study Report (Soils)	15 Dec 89
	Submit Draft Community Survey Plan	23 Jan 90
	Submit Final Community Survey Plan	22 Mar 90
	Submit Draft Health and Safety Plan	15 Aug 90
	Submit Draft Quality Assurance Project Plan	29 Aug 90
	Submit Draft Standard Operating Procedures	29 Aug 90
	Submit Draft Plan for Prevention of Contaminant Dispersion	19 Sep 90
	Submit Draft Treatability Study Plan	21 Sep 90
	Submit Draft Community Relations Plan	01 Nov 90
	Submit Final Health and Safety Plan	12 Nov 90
	Submit Revised Background Study Report	21 Dec 90
	Submit Final Community Relations Plan	22 Jan 91
	Submit Final Quality Assurance Project Plan	01 Mar 91
	Submit Final Standard Operating Procedures	01 Mar 91
	Submit Draft Radionuclides Discharge Limits Plan	05 Apr 91
	Submit Community Relations Plan Responsiveness Summary	21 Jun 91
	Submit Final Treatability Study Plan	03 Jun 91
	Submit Final Plan for Prevention of Contaminant Dispersion	22 Jul 91
	Submit Final Plan Discharge Limits Radionuclides	16 Sep 91
	Submit Final PPCD and Responsiveness Summary	25 Nov 91
	Submit Draft Historical Release Report	08 Jan 92
	Submit Responsiveness Summary for DLRP	31 Jan 92
	Submit Final Historical Release Report	03 Jun 92
	Submit Annual Treatability Study Report	8 Mar 93

Future IAG Milestones None
Through FY94

May Work Activity Status

Sitewide Treatability Studies

Pu in Soils - Physical Separation (TRU/Clean) - The TRU/Clean process (physical separation) was identified in the Final Sitewide Treatability Plan for further test work and evaluation to determine how effectively it might remove plutonium contamination from RFPs soils. Initially, this test work was planned to be a part of the Plutonium in Soils Integrated Demonstration (ID). However, the ID has been put on hold. Therefore, RFP has contracted with Lockheed Environmental Systems and Technologies Company to conduct testing of the TRU/Clean process.

Pu-contaminated soil samples were sent to Lockheed Environmental in five 55 gallon drums. Each drum was packaged as low-level radioactive environmental sample, according to directions received from the Traffic Department. Aquasorb was added to each drum to adsorb free liquids. During transportation aquasorb mixed with the soil in some of the drums, which required that the aquasorb and soil be separated before the test work could begin. Not all of the aquasorb was recovered. This may have an effect on the test results. Due to this potential contamination, additional samples may need to be sent to Lockheed in order to finish the test work.

Soil characterization testing using samples free of aquasorb was started on May 10, 1993.

Colloid Polishing Filter Method (Techtran)- This process uses a proprietary chemical complexing agent to remove heavy metals and/or radionuclides contaminants from waste water or ground water. The contaminants are removed from the water by precipitation and filtration. Ultimately, the contaminants are contained in a dried filter cake and the treated water is returned to the environment. Preliminary tests at RFP in 1991 were favorable. EPA's Risk Reduction Engineering Laboratory (Cincinnati) is interested in supporting a demonstration of this technology at RFP through their Superfund Innovative Technology Evaluation (SITE) program.

The EPA SITE project will have highest priority in the sitewide treatability program. Further, every effort will be made to have this project completed by the end of August 1993. EPA has promised to fund the study, but some period of time may elapse before their funding arrives. In light of this guidance, plans are being made to divert funds from other tasks to begin the necessary preparation work for the project. This will allow the preparation for the SITE project to begin in a timely fashion. The impact is that several tasks within the work package will be delayed until the SITE project is completed.

The existence of a NEPA categorical exclusion was investigated for the project under the sitewide treatability exclusion, RFO/CD031-92. Although the referenced exclusion has been granted for the treatability studies, the CFPM technology is not specifically listed as a technology that will be tested as a part of the study. The NEPA issue will require additional investigation.

Uranium Analyzer - The uranium analyzer has been installed and is operational in the treatability laboratory. Calibration studies have shown that the analyzer is capable of determining uranium concentrations on the order of 10 ppb. The uranium analyzer will be used to determine uranium concentrations in the influent and effluent streams from various treatability study projects. The results will be used to measure the efficiency of the treatability process for removing uranium.

Community Relations

The Environmental Restoration Update newsletter was completed and sent out for review on May 21, 1993.

Community Relations personnel met with EPA and CDH representatives on May 19, 1993, to discuss how to consolidate public meetings and other tri-party community relations efforts.

The Technical Review Group (TRG) monthly meeting was held on May 19, 1993, and included a tour of the Wind Site. The next meeting is June 24, 1993, and will include discussions on the *Draft Compendium of In Situ Radiological Methods and Applications at the Rocky Flats Plant*.

Administrative Record (AR)

The May 27, 1993, quarterly deliverable to put the AR index out and to update the repositories was made. The AR indices were delivered to DOE on May 18, 1993, and EPA on May 27, 1993.

Planned Work for June

- Continue work on the Sitewide Treatability Studies including the Colloid Polishing Filter Method (Techtran) associated with the SITE program.
- Continue ongoing community relations meetings and activities including the ER Quarterly Public Information meeting on June 22, 1993.
- Continue updates to the Administrative Record.
- Complete of draft FY94 work packages.

DOE, Rocky Flats Plant

Problems None

Open Items None

SECTION 3. ROUTINE ENVIRONMENTAL MONITORING

The following generalized sampling schedule for routine environmental monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDH upon request from the EM Department and EG&G Rocky Flats, Inc. The schedules are lengthy; therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and to obtain split or duplicate samples.

3.1 SURFACE WATER AND SEDIMENTS

- Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.
- Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.
- Each surface water and sediment sample is analyzed for the following parameters:

CLP TCL VOAs	Metals CLP TAL and Non-TAL
Field Parameters	Specific Conductivity
Dissolved Oxygen	Major Anions
Radionuclides	Temperature
TDS/TSS	pH
Nutrients	

- Additionally, sediment samples are analyzed for CLP-Semi VOAs, CLP-Pesticides/PCBs and Herbicides-619.

3.2 SOILS

- Each of the Soil Stations (located at 1- and 2-mile radii from the plant center) is sampled annually.
- Each soil sample is analyzed for Pu and Am.

3.3 GROUND WATER

A total of 410 ground water stations are sampled quarterly; this includes alluvial wells, bedrock wells, and pre-1986 wells. Approximately one-third of the wells are monitored monthly for water levels.

Each ground water sample is analyzed for CLP, TCL, VOAs, TAL, and metals, as well as the following parameters:

<u>Radiochemical Parameters</u>	<u>Inorganic Parameters</u>	<u>Field Parameters</u>
Gross Alpha	Nitrate/Nitrite	DO
Gross Beta	Total Phosphorous	Specific Conductivity
Plutonium	Ortho-Phosphate	Temperature
Americium	Ammonia	Turbidity
Strontium	TDS	pH
Tritium	Fluorine	
Uranium	Sulfate	
Cesium	Carbonate	
	Bicarbonate	

Radiochemical Parameters

Inorganic Parameters

Field Parameters

TSS
Total CLP Metals & additional metals
Dissolved CLP & additional metals
Cyanide
CLP Volatile Organic Compounds

SECTION 4. CONTRACTOR/SUBCONTRACTOR IDENTIFICATION

Contractors and subcontractors being used on the RFP ER Program and the work they are performing are identified on the following list as required by paragraph 13 of the IAG.

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
1	Assessment	Ebasco	Dames & Moore Stoller Corp.	OU 1 RFI/RI field work (drilling, well development/ completion, sampling) and RI report and GMS/FS report	Apr 91
1	Assessment	Roy F. Weston		Revise RI Report, respond to agency comments	Feb 93
1	Remediation	Bruner		OU 1 IRA ion exchange system	Feb 91
1	Remediation	E.T. LaFore		Installation of Phase II-A treatment system equipment for OU 1 IRA	Jun 91
1	Remediation	IT Corporation	CH2MHill/OMT	B-891 Treatment System Operations	
1	Remediation	Jennison		Construct Phase II-B French drain at OU 1 IRA	Aug 91
1	Remediation	P.S.I.		OU 1 IRA UV/Peroxide System	Aug 91
2	Assessment	Woodward-Clyde		OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development)	Sep 90
2	Assessment	Ebasco	S.M. Stoller Corp.	Environmental Evaluation	Feb 91
2	Remediation	Reider (RFG in April)		Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA	Dec 91
3	Assessment	IT Corporation	CH2M Hill	OU 3 Field Work and RI Report	Apr 92
3	Assessment	MRI		Wind Tunnel/Soil Resuspension Study	Aug 92
4	Remediation	HNUS	Halliburton Spec.	Process 'C' and 'A/B' Pond waste streams to a certifiable form of final disposition	Sep 91
4	Assessment	Applied Environment	Gerashby & Miller Wright Water, Stoller Doty & Associates	Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.	Aug 92
4	Assessment	Dames & Moore	UE&C	Management consulting to implement DOE Order 4700.1 and 4700.5	Jan 93

DOE, Rocky Flats Plant

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
4	Assessment	CEES	NFTI	Management consulting to assess the effectiveness of HNUS cost and schedule controls. Recommend improvements	Jan 93
4	Remediation	ICF/Kaiser		Technical analysis of program strategic planning options. Support to work package development to implement processing option #2A	Jan 93
5	Assessment	ASI	Dames & Moore Blackhawk GeoscienceWalsh & Assoc. Fugro Geosciences Lagne Envir. Service Utility Mgmt. Service S.M. Stoller Adv. Terra Testing	Implementation of OU 5 Work Plan (excluding EE)	Jun 92
5	Assessment	S.M. Stoller		Implementation of EE section of OU 5 Work Plan	Sep 92
6	Assessment	Woodward-Clyde	Lane, Ogden Geo Environmental	OU 6 RFV/RI Work Plan and Quality Assurance Addendum	Feb 90
6	Assessment	S.M. Stoller		EE	Sep 92
7	Assessment	S.M. Stoller	Walsh & Assoc.	OU 7 RFV/RI Work Plan including EE Plan and QA Addendum	Apr 90
15	Assessment	S.M. Stoller		OU 15 RFV/RI Work Plan	May 92
15	Assessment	ERM-Rocky Mtn.	G.S. Miller, Inc.	Implementation of the RFV/RI Work Plan	Mar 93
SW	HRR	IT Corporation	Doty & Assoc.	Prepare HRR	Feb 91
SW	Adm. Record	QuantaLex		Maintain IAG Administrative Record	Oct 90
SW	Geo. Char.	ASI		Geologic Characterization, Data Base, and graphics	Feb 90
SW	Geo. Char.	S.M. Stoller		Prepare 1992 Annual RCRA Report and Addendum	Jan 93
SW	Geo. Char.	Colorado School of Mines		Masters level training program in ES and Engineering	Aug 92 Dec 94
SW	Geo. Char.	Woodward-Clyde		Support for the SSWMS	Feb 93
SW	Gio. Char.	CSU		Sequential Extraction	April 92
SW	Geo. Char.	CU		Soil Monitoring Vadose Zone	Jun 92

Contractor/Subcontractor Identification

<u>OU</u>	<u>Project</u>	<u>Subcontractor</u>	<u>Sub-Subcontractor</u>	<u>Work Description</u>	<u>Start Date</u>
SW	Geo. Char.	S.M. Stoller		Spatial Analysis/Computer Support	Mar 93
SW	Geo. Char.	Woodward Clyde	SAIC/Wright Water		Jan 93
SW	Monitoring	IT Corporation		Analytical Services for ground water, surface water, and sediment	Jul 90
SW	PPCD	Ebasco		PPCD	Jun 90
SW	QA	SAIC		Develop and implement QA program and field operations oversight	Dec 90
PM	Support	S.M. Stoller		Program Management Support	Feb 90
PM	QA Support	SAIC		Provide QA/QC support to ER Program	Nov 92

ACRONYMS

ADS	Activity Data Sheet
AIP	Agreement In Principle
ARAR	Applicable or Relevant and Appropriate Requirements
BAT	Best Available Technology
BRAP	Baseline Risk Assessment Plan
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CMS	Corrective Measures Study
COC	Contaminant Of Concern
CPT	Cone Penetrometer Testing
CRP	Community Relations Plan
CSU	Colorado State University
D&D	Decontamination & Decommissioning
DCN	Document Change Notice
DLRP	Discharge Limits Radionuclides Plan
DOE	Department of Energy
DQO	Data Quality Objectives
E&WM	Environmental and Waste Management
EA	Environmental Assessment
EE	Environmental Evaluation
EM	Environmental Management
EPA	Environmental Protection Agency
ER	Environmental Restoration
FS	Feasibility Study
FSP	Field Sampling Plan
FTU	Field Treatability Unit
FYP	Five-Year Plan
GAC	Granular Activated Carbon
GPR	Ground Penetrating Radar
H&S	Health and Safety
H&SP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HPGe	High Purity Germanium
HRR	Historical Release Report
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM	Interim Measure
IRA	Interim Remedial Action
IRAP	Interim Remedial Action Plan
ITS	Interceptor Trench System
IWCP	Integrated Work Control Package
LATO	Los Alamos Technology Office
LL	Low-level
LLMW	Low-level Mixed Waste
MTS	Master Task Subcontract
MVEU	Mobile Vapor Extraction Unit
NEPA	National Environmental Policy Act
NFAJ	No Further Action Justification
NTS	Nevada Test Site
OPWL	Original Process Waste Line

OTD	Office of Technology Development
OU	Operable Unit
PA	Protected Area
PAC	Potential Area of Concern
PPCD	Plan for Prevention of Contaminant Dispersion
PPE	Personal Protective Equipment
PU&D	Property Utilization and Disposal
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
RCA	Radiological Control Area
RCRA	Resource Conservation and Recovery Act
RFEDS	Rocky Flats Environmental Database System
RFI	RCRA Facilities Investigation
RFP	Rocky Flats Plant
RI	Remedial Investigation
ROD	Record of Decision
RPT	Radiological Protection Technician
SAR	Safety Analysis Report
SOP	Standard Operating Procedure
SOW	Statement of Work
SPPO	Solar Ponds Program Office
TDS	Total Dissolved Solids
TM	Technical Memorandum
TSS	Total Suspended Solids
UBC	Under Building Contaminations
USFWS	United States Fish and Wildlife Service
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compound
WBS	Work Breakdown Structure
WS	Waste Solidification