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candidates for accelerated actions, requires that a certain baseline of information be collected on that area. Over the past year, the IA OUs have completed only a very small portion of the scope as required in the approved Phase I RFI/RI workplans for the IA OUs. To date, the IA OU IHSSs have been characterized primarily for surface soil contamination within the IHSS boundaries. Only limited subsurface investigation has been performed utilizing soil gas analysis. Additionally, source characterization is underway mainly in OU 9 as part of the tank investigation. The nature and extent, however, of possible contamination is essentially unknown for the IA OUs, making it very difficult to adequately identify and quantify possible accelerated action sites, particularly for those sites that pose a risk and warrant early remediation. The purpose of the intrusive field work planned for this summer is to confirm and quantify the nature and extent of contamination in the subsurface. Accelerated actions, especially in the outyears (i.e. fiscal year 1996 and 1997) will rely heavily on the data collected from the intrusive field work performed by the IA OUs. The data will be quite important for accelerated activities. This is especially true for removal actions where the estimates of the potential waste generation are vitally important (e.g. underground tank or pipeline removals). Additionally, IHSSs that otherwise were thought (via process knowledge) to be quite benign may, following investigation, prove to have significant contamination present. Recent examples include the discovery of high levels of TOE contaminated waste oils in the subsurface in OU 13, and the previously thought "low risk" process waste tanks in OU 9 which have been found to contain significant levels of both hazardous and radioactive contamination.

Enclosed, please find a summary Impacts Analysis associated with the IA OU SWO. Included are general programmatic impacts, as well as individual OU project effects. EG&G is committed to achieving the goals set out by DOE/RFFO for environmental restoration, and we are eager to continue our involvement in the dialog as it relates to the IA OU SWO. If you have any questions or require any additional information, please contact B. D. Peterman of my staff, at extension 8659.



S. G. Stiger, Director
Environmental Restoration Program Division

SGS:mmm

Attachment:
As Stated

cc:
Ravi Batra - DOE/RFFO

Impacts Analysis Industrial Area Stop Work Order

The recent stop work order (SWO) that was issued for the Industrial Area Operable Units (OUs 8, 9, 10, 12, 13, and 14) will have far reaching affects relative to the completion of current obligations under the Interagency Agreement, and could have impacts on the Rocky Flats Cleanup Agreement negotiations that are currently underway.

A key requirement outlined in the SWO, is to provide for ensuring that the quality and history of all work accomplished to date, are readily discernible. In order to maintain project history and ensure data continuity and quality (especially when the SWO is lifted), it is recommended that a core group of both EG&G staff and subcontracted project staff be retained for the duration of the SWO. It is in the best interest of the project to maintain a core group of individuals who have intimate knowledge of the project. No amount of file documentation could reproduce two years of hands-on intensive technical work. The core group of individuals proposed for preparing the final documentation of the project are those individuals who have the most history and knowledge of the project events.

Other factors relating to programmatic impacts associated with the SWO include phasing out current field staff, lease terminations, equipment return and inventory, etc. In addition to close out and de-mobilization costs, will be the eventual costs of re-mobilizing the entire field effort sometime later during FY95 or into FY96. These costs include:

RE-MOBILIZATION OF CORE AND SUBCONTRACTED FIELD STAFF

An intangible effect of the SWO that will bear considerable impact on the cost of re-mobilization is the cost of time lost to overcoming of the "Rocky Flats inertia". For example, internal requirements such as Operational Readiness Reviews would be required to be reopened. Other direct costs for re-mobilizing would include significant expenditures for Rocky Flats Environmental Technology Sites (RFETS) specific training, both for EG&G and subcontracted field teams. Based on past experience with training, and depending upon the sampling task required, it takes on average 3 to 6 months to fully train individuals for environmental projects so that they can sample at RFETS. Some training classes are held on an infrequent basis and when they are available there are limited spaces and may require other training classes to be completed prior to acceptance. An example of these are Radiation Worker II, and confined space entry. This refers to the re-start cost of field activity, for example: schedule delay caused by irregular required training cycles, an unfamiliar person completing and routing a Soil Disturbance Permit correctly the first time, a new team going through the utility clearance process, new people entering the Protected Area. It could be expected the "Rocky Flats inertia" could account for the sample collection rate for the first 30 days sampling activity at zero, the 60 day sample collection rate to 1/2 per sample per day, and the 90 sample collection rate to be, perhaps, at two samples per day. Having overcome the "Rocky Flats inertia" the current sample collection rate has averaged 5 samples per day over 18 months (Refer to Tables 1 and 2).

An additional intangible effect of the SWO is the lack of availability of Health and Safety Specialists (HSS). Due to the unique requirements of RFETS only a site certified HSS can perform specific tasks required by all sampling efforts. These individuals are certified by RFETS and due to a change in the requirements, certification is becoming increasingly difficult to obtain. EG&G currently has access to 5 HSSs for the IA OUs. If the SWO becomes fully effective the HSS support along with the rest of the trained field staff, will be lost due to reassignment by the subcontractor. This may mean that the number of simultaneous field activities that can be accomplished on a given day will be impacted and ultimately will affect the overall project schedule.

The estimated cost of re-mobilization of field staff and core staff is shown on Table 3. Generally, the re-mobilization is defined as providing the staff, training and equipment required to complete the specified requirements at RFETS.

For costing purposes it will be assumed that 100% of the trained and experienced staff, both field and core group, and perhaps EG&G project personnel, have been lost. However, in the event the stop work is short in duration, every effort will be made to return RFETS trained and experienced personnel to the project.

Additional programmatic delays as a result of the SWO that will have significant impact on the IA OU investigation schedule will be attributed to new procurement lead times to secure a new subcontractor for implementation of the remaining field activities. In the past, this has taken approximately 3-4 months to complete all of the steps required under the current procurement regulations. With the implementation of a new integrating contractor, the time frame for securing any new subcontracts could be from 1 to as many a 6 months to complete the procurement process.

The proposed steps for re-mobilizing is as follows:

- The re-mobilization for both the subcontracted field staff and core group will have to be a phased process that involves the new-hiring process, extensive training, three day on the job and RFETS specific training, site-specific health and safety training, and site orientation.
- The core group would be first to re-mobilize followed by the field staff mobilization. The core group will provide the necessary direction and guidance to field staffing and data gathering activities.

In addition to overall programmatic impacts, there will be OU specific impacts from implementation of the SWO. These specific impacts are listed below.

OU8 - 700 Area

Impacts that will occur in OU8 due to the current stop work order issued by DOE will include, but not be limited to:

- Incomplete assessment of OU8 IHSSs and proposed accelerated action sites. Without completion of the remaining non-intrusive and intrusive field activities, it will be difficult to adequately identify accelerated action sites within OU8.
- Delay in completion of the Non-Intrusive Technical Memorandum. Development of technical memoranda will not occur, as outlined in the SWO. Stopping the data summary and analysis activities for this project will ultimately delay the completion of the TM and subsequent recommendations for future stages of work.
- Delays in implementing intrusive field work. By including the planned field work in the SWO, the completion of this task will not occur until such time as re-mobilization can occur. This could take approximately 6 months after the SWO is lifted.

OU9 - Original Process Wastelines(OPWL)

Impacts that will occur in OU9 due to the current stop work order issued by DOE will include, but not be limited to:

- Delays in rescoping the pipeline investigation activities. Prior to the issuance of the SWO, EG&G was in the process of rescoping the technical approach and overall scope to the process waste pipeline investigation. The stop work will result in delays in development of a rescoped pipeline investigation. This rescoping effort involved replacing test pit excavation for pipeline investigation with less intrusive geoprobe sampling. In fact the improvement has been verbally agreed to by both regulatory agencies.
- Delays to the pipeline TM#1, Vol. 2. In addition to the delays in rescoping the pipeline field investigations, the development and submittal of the Draft and Final Pipeline Technical Memorandum #1, Volume 2, will also be affected by the SWO.
- With the cessation of all intrusive field activities planned for OU 9, a significant impact to selecting suitable sites for the OU9 accelerated actions will result. This is due primarily to the fact that little data is available regarding the nature and extent of contamination associated with OU9. Delaying investigative field work, and not fully characterizing the subsurface conditions, will result lost time and money pursuing accelerated actions in areas where the extent of contamination may be much less than may be present elsewhere within the Industrial Area.
- Delays in the preparation of Technical Memorandum #2, Volume 1. This document will be delayed and cannot be prepared until completion of TM#1, Volume 2.

OU10 - Other Outside Closures

Impacts that will occur in OU10 due to the current stop work order issued by DOE will include, but not be limited to:

- Delay in completion of Phase I RFI/RI assessment work. The completion of the remaining Stage 1 field investigations and subsequent future activities will be delayed until such time as the SWO is lifted. This will include eventual development of remedial alternatives and methodologies.

- Delay in development of future Technical Memoranda. Due to the application of the observational approach that has been adopted in OU10, future phases of work will be based on analysis of prior field data and recommendations based on that data. Without completion of TM#1, and the development of the Stage 1 Phase II workplan, additional work planned for this OU will be significantly delayed.
- Inaccurate accelerated action decisions. Due to the limited amount of analytical data collected on OU10, the exact nature and extent of contamination is unknown. Without additional data, particularly subsurface data, it will be extremely difficult to clearly define areas within OU10 for accelerated clean up.

OU12 - 400/800 Area

Impacts that will occur in OU12 due to the current stop work order issued by DOE will include, but not be limited to:

- Delays in completion of the Final Phase I non-intrusive technical memorandum. The Preliminary Draft technical memorandum (TM) summarizing the results of the non-intrusive activities has been completed and reviewed internally. In order to complete this document, additional review and comment would be necessary to develop and complete the Final TM for agency and DOE approval.
- Delay in future activities. By delaying completion of the non-intrusive TM, this will further delay the recommendation and implementation future intrusive work based on the non-intrusive TM.
- Delay in completion of the Surface Water/Sediment sampling. If the SWO is to take effect immediately, the impacts on EG&G's subcontractor to effectively complete the surface water and sediment sampling would not allow them to complete this sampling task. This would also have a carry over effect for all of the LAOU, as this data is being collected and included in each OU non-intrusive TM.

OU13-100 Area

Impacts that will occur in OU13 due to the current stop work order issued by DOE will include, but not be limited to:

- Delays in initial characterization. As in other OU's, OU13 is poorly characterized, particularly in the subsurface. The recent discovery TCE contaminated waste oils in OU13 would support this assertion. Additional investigation is required to fully understand that nature and extent of contamination in OU13.
- Other delays would be imposed on OU13 relative to scheduling and human resources. Resources are wasted if we need to pull crews out of the field, and remobilize later. In addition, turn over in the ranks of the subcontractors based on a lengthy delay may require additional training for new replacements, thereby affecting project schedules.
- Delays in completion of the Final Phase I non-intrusive technical memorandum. Delays in completion of the Non-intrusive TM will ultimately delay the later stages of work.

OU14-Radioactive Sites

Impacts that will occur in OU14 due to the current stop work order issued by DOE will include, but not be limited to:

- Delays in initial characterization. Considerably more data needs to be collected if we are to fully understand the nature and extent of contamination in OU14.
- Other delays would be imposed on OU14 relative to scheduling and human resources. Resources are wasted if we need to pull crews out of the field, and remobilize later. In addition, turn over in the ranks of the subcontractors based on a lengthy delay may require additional training for new replacements, thereby affecting project schedules.
- Delays in completion of the Final Phase I non-intrusive technical memorandum. Delays in completion of the Non-intrusive TM will ultimately delay the later stages of work.
- Completion of final data compilation. Significant analytical data remains to be assimilated into the RFEDS, for later evaluation. Discontinuing work on this project now could jeopardize data continuity and quality in the future.

Stop Work Order Alternative Plan

In an effort to enhance the positive progress achieved through the pending reconfiguration of the IA Operable Units, an alternative plan is proposed. In order to reconfigure the IA into OUs which reduce the redundancy and provide for a more cost effective basis for study and shortens the schedule, transition documentation from the existing six OUs will be required. As indicated in the Stop Work Order, this documentation would take the form of Data Summary Reports with information collected to date, with evaluations for reconfiguration into the new plan for the Industrial Area. Each IHSS should be evaluated for placement into the yet to be negotiated OU designation per the Rocky Flats Cleanup Working Group. Those IHSSs which were sampled for additional parameters for adjacent and overlap analysis will also provide invaluable information for the transition plan.

It is in the best interest of the project to maintain the individuals who have the most history on the IA. As part of the overall IA project, an Integrated Field Sampling Plan was developed. In preparation of this plan, extensive evaluation of the overlapping and adjacent individual hazardous substance sites (IHSS) was performed. This effort is the first in determining the reconfiguration of the IA OUs. The individuals involved in the preparation of this plan have intimate knowledge of the background and history of the IA IHSSs that can not be duplicated on paper.

TABLE 1
SUMMARY OF ESTIMATED SUBCONTRACTOR DEMOBILIZATION / RE-MOBILIZATION COST

	Task	Extended Cost	Notes/Comments
	Core Staff Demobilization	\$ 503,880.00	
	Field Staff De-Mobilization	\$ 56,015.00	
	Field Staff Re-Mobilization	\$ 258,000.00	
	Core Staff Re-Mobilization	\$ 226,200.00	
	Equipment Re-Mobilization	\$ 31,600.00	
	Subcontractor Re-Mobilization	\$ 50,085.00	
	TOTAL	\$ 1,125,780.00	

TABLE 2
Estimated Subcontractor De-mobilization Cost

	Task	Number of FTE	Number of Hours/FTE	Average Cost/HR	Extended Cost	Notes/Comments
FIELD STAFF DE-MOBILIZATION						
A	De-Mob Driller	N/A	0	\$ 3,215.00	\$ 3,215.00	
A	File Mgt, Data QA/QC, Inv	3	40	\$ 50.00	\$ 6,000.00	
B	File Mgt, Data QA/QC, Inv	3	40	\$ 50.00	\$ 6,000.00	
B	GPS-Locate/Survey Sample Pts	2	40	\$ 50.00	\$ 4,000.00	
B	Personnel lost to project	6	8	\$ 50.00	\$ 2,400.00	Exit interview/physical
C	File Mgt, Data QA/QC, Inv	3	80	\$ 50.00	\$ 12,000.00	
C	GPS-Locate/Survey Sample Pts	2	80	\$ 50.00	\$ 8,000.00	
C	Personnel lost to project	5	8	\$ 50.00	\$ 2,000.00	Exit interview/physical
D	Decon/Rad Survey Equipment	3	16	\$ 50.00	\$ 2,400.00	
D	Site/Project Closure/Record Trans	2	80	\$ 50.00	\$ 8,000.00	
D	Personnel lost to project	3	8	\$ 50.00	\$ 1,200.00	Exit interview/physical
E	Project Closure	2	8	\$ 50.00	\$ 800.00	Exit interview/physical
Subtotal cost for de-mobilization of field staff:					\$ 56,015.00	
CORE GROUP DE-MOBILIZATION						
E	Oversee and direct field staff de-mob	4	160	\$ 65.00	\$ 41,600.00	
	Sample&Data management trans	4	160	\$ 65.00	\$ 41,600.00	
	Data Compilation/5 remaining OUs	12	320	\$ 65.00	\$ 249,600.00	
	Personnel lost to RFETS project	3	8	\$ 65.00	\$ 1,560.00	Exiting & Equip return
	Summary reports 4 OUs	9	320	\$ 65.00	\$ 187,200.00	
	Personnel lost of RFETS project	3	8	\$ 65.00	\$ 1,560.00	Exiting & Equip return
	Field Activity OU12 & 8	6	80	\$ 65.00	\$ 31,200.00	
	Personnel lost to RFETS project	3	8	\$ 65.00	\$ 1,560.00	Exiting & Equip return
	Project closure	3	160	\$ 65.00	\$ 31,200.00	
Subtotal cost for de-mobilization core group:					\$ 503,880.00	
TOTAL DE-MOBILIZATION COST:					\$ 559,895.00	
Note: Activity duration code provide the estimate time frame for activity to occur						
A = 7 days						
B = 14 days						
C = 30 to 45 days						
D = Up to 60 days						
E = Greater than 60 days						

Table 3
Estimated Subcontractor Re-mobilization Cost

Dur. Code	Task	Number of FTE	Number of Hours/FTE	Average Cost/HR	Extended Cost	Notes/Comments
RE-MOBILIZATION OF CORE SUBCONTRACTOR GROUP						
C	Project Staffing	12	5	\$ 65.00	\$ 3,900.00	
C	Site preview/project briefing	12	8	\$ 65.00	\$ 6,240.00	
D	Train (RFETS)	12	41	\$ 65.00	\$ 31,980.00	
	Rad Worker		12			
	GET / GERT		24			
	RCRA		4			
	Fit Test		1			
	Computer		0			
E	Site Specific H&S Training	12	16	\$ 65.00	\$ 12,480.00	
E	Review WP/FSP/HSP/IMP	12	60	\$ 65.00	\$ 46,800.00	
E	RFETS Procedures/OP/Contr.	12	160	\$ 65.00	\$ 124,800.00	
Subtotal cost for re-mobilization of Core group					\$ 226,200.00	
RE-MOBILIZATION OF FIELD STAFF						
D	Project Staffing	12	5	\$ 50.00	\$ 3,000.00	
D	Site preview/project briefing	15	8	\$ 50.00	\$ 6,000.00	
D	Program oversight	15	8	\$ 50.00	\$ 6,000.00	
E	Train (RFETS)	15	100	\$ 50.00	\$ 75,000.00	
	Rad Worker		24			
	GET / GERT		24			
	RCRA		4			
	WSRIC		8			
	Core Logger		8			
	Waste Generator		16			
	DOT		8			
	Decon / Buffer		3			
	Fit Test		1			
	Computer		4			
E	Site Specific H&S Training	15	24	\$ 50.00	\$ 18,000.00	
E	Procedures/SOP/WP review	15	40	\$ 50.00	\$ 30,000.00	
E	On the Job Training	15	160	\$ 50.00	\$ 120,000.00	
Subtotal cost for re-mobilization of field staff					\$ 258,000.00	
RE-MOBILIZATION OF EQUIPMENT AND SUPPLIES						
E	Trailer Set-up	2	40	\$ 50.00	\$ 4,000.00	
E	Identification of GFE, Disposable, Rentals, H&S Equipment and supplier	3	80	\$ 50.00	\$ 12,000.00	
E	Acquire Disposables and Rental	2	40	\$ 50.00	\$ 4,000.00	
E	Property Control/Inventory/ Tagging	1	40	\$ 50.00	\$ 2,000.00	
E	Support - Clerical	2	80	\$ 30.00	\$ 4,800.00	
E	Field Readiness	4	24	\$ 50.00	\$ 4,800.00	
Subtotal for re-mobilization of equipment & supplies					\$ 31,600.00	

Table 3 (cont.)
Estimated Subcontractor Re-mobilization Cost

Dur. Code	Task	Number of FTE	Number of Hours/FTE	Average Cost/HR	Extended Cost	Notes/Comments
RE-MOBILIZATION OF SUBCONTRACTORS						
E	Prepare SOW	4	40	\$ 50.00	\$ 2,000.00	
E	Distribute RFPs	2	24	\$ 50.00	\$ 1,200.00	
E	Review/Award Subcontracts	4	36	\$ 50.00	\$ 1,800.00	
E	Mobilization*				\$ 3,125.00	
E	Train (RFETS)	4	37	\$ 50.00	\$ 1,850.00	
	Rad Worker	4	12	\$ 50.00	\$ 600.00	
	GET / GERT	4	24	\$ 50.00	\$ 1,200.00	
	Fit Test	4	1	\$ 50.00	\$ 200.00	
E	Site Specific H&S Training	4	16	\$ 65.00	\$ 2,600.00	
E	RFETS Procedures/OP/Contr.	4	40	\$ 65.00	\$ 2,600.00	
Subtotal cost for re-mobilization of subcontractors					\$ 50,085.00	
TOTAL RE-MOBILIZATION COST					\$ 565,885.00	
Note: Activity duration code provides the estimate time frame for activity to occur						
A = 7 days						
B = 14 days						
C = 30 to 45 days						
D = Up to 60 days						
E = Greater than 60 days						

Table 3 (cont.)

Equipment

Re-mobilization Costs

	Task	Number of FTE	Number of Hours	Average Cost	Extended Cost	Notes/Comments
A	Trailer Set-up	2	40	\$ 50.00	\$ 4,000.00	
B	Identification of GFE, Disposable, Rentals, H&S				\$ -	
	Equipment and supplier	3	80	\$ 50.00	\$ 12,000.00	
C	Acquire Disposables and Rental	2	40	\$ 50.00	\$ 4,000.00	
C	Property Control/Inventory/ Tagging	1	40	\$ 50.00	\$ 2,000.00	
C	Support - Contracting/Payroll	2	80	\$ 50.00	\$ 8,000.00	
D	Field Readiness	4	24	\$ 50.00	\$ 4,800.00	
			0			
	TOTAL				\$ 34,800.00	
	Note:					
	A = 7 Days					
	B = 14 Days					
	C = 30 to 60 Days					

Table 3 (cont)
 Other Subcontractor
 Re-mobilization Costs

	Task	Number of FTE	Number of Hours	Average Cost	Extended Cost	Notes/Comments
A	Prepare SOW	4	40	\$ 50.00	\$ 8,000.00	
B	Distribute RFPs	2	24	\$ 50.00	\$ 2,400.00	
B	Review/Award Subcontracts	4	36	\$ 50.00	\$ 7,200.00	
C	Mobilization*				\$ 3,125.00	
C	Train (RFETS)	4	37	\$ 50.00	\$ 7,400.00	
	Rad Worker	4	12	\$ 50.00	\$ 2,400.00	
	GET / GERT	4	24	\$ 50.00	\$ 4,800.00	
	Fit Test	4	1	\$ 50.00		
C	Site Specific H&S Training	4	16	\$ 65.00	\$ 4,160.00	
C	RFETS Procedures/OP/Contr.	4	40	\$ 65.00	\$ 10,400.00	
					\$ -	
	TOTAL				\$ 49,885.00	
	* Cost is weighted average of drill rig mobilization					
	Note:					
	A = 7 Days					
	B = 14 Days					
	C = 30 to 60 Days					