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ECONOMIC FEASIBILITY SUMMARY (EFS) INSTRUCTIONS

(REVISED 7/1/2022)

General Information

This standardized economic feasibility summary (EFS) format must be included with all Corrective Action Plans (CAPs) and CAP Modifications (CAP Mods) submitted to the Division of Oil and Public Safety (OPS).

The EFS is a tab within the Corrective Action Plan (CAP). The CAP and other report formats are available for download from the [OPS website](#).

Purpose

The purpose of the EFS is to establish a reimbursement budget for costs associated with an approved CAP or CAP Mods for release Events eligible for reimbursement from the Petroleum Storage Tank Fund. Prior to preparing the CAP, OPS requires the owner/operator and consultant to discuss potential remediation approaches with OPS in order to agree on the approach or combination of approaches that will be proposed in the CAP or CAP Mod.

Applicability

An EFS is required to be completed and submitted to OPS in the approved format with all reimbursable CAPs or CAP Mods.

Structure

Below is a summary description of the two tabs used to create the EFS form.

- **EFS Form and Summary:** This form (Figure 1) includes all costs associated with the proposed CAP or CAP Mod and must be completed in full. Each cost must include a code from all of the three categories (Phase of Work Codes [PWC], Activity Codes [AC] and Task and Labor Codes [TLC]). The EFS is structured such that ACs are subcategories under PWCs and TLCs are subcategories of ACs. Each must be listed in its individual cell on the form. The costs compiled into the EFS represent all the costs of the associated CAP or CAP Mod that will be requested for reimbursement upon completion of the work.
- **Task and Labor Codes:** This tab provides all established TLCs with associated reasonable cost guidelines (RCGs), if established. The rows in this tab are in the same format as the EFS Form and Summary (including cell formulas) and can be copied and pasted directly from the TLC tab into the EFS Form and Summary tab. After the rows are copied into the EFS Form and Summary, the appropriate PWC, AC, TLC, detailed description, unit, quantity, and unit rates must be input. Units and unit rates are pre-populated for certain TLCs.

1. COMPLETING THE REMEDIATION EFS SUMMARY FORM

The header of the EFS (rows 2 through 6) should be completed with the appropriate information listed below.

- Enter the Site Name, Site Address, Event ID, EFS Submittal Date and proposed Remediation Method(s).
- Enter the EFS Effective Date. The EFS effective date is the beginning date of work for PWC 3 costs and end of PWC 1 and 2 costs. An effective date will only be determined during preparation of the original EFS. All subsequent CAP Mods will be based on the original effective date.
- Enter the name and number of the Recognized Environmental Professional (REP) for the Event.
- Enter the EFS Start Date and EFS End Date (beginning/end of the calendar quarters of field work included in the CAP). These dates are associated with the scope of work in the submitted CAP or CAP Mod. Limit the scope timeframe to a remedial milestone (preferably within three years).

2. PHASE OF WORK CODES

The purpose of Phase of Work Codes (PWCs) is to group costs into broad categories. Costs associated with emergency response (PWC 1), site assessment (PWC 2), and Reimbursement Application (RAP) preparation (PWC 4z.) will not be included on the EFS, although they may be on electronic reimbursement applications.

The following six PWCs are pre-populated in the Remediation EFS Summary form associated with PWC 3.

- **PWC – 3A (Pilot Tests):** Include costs associated with pilot testing for CAP Mods here. TLC costs associated with conducting the pilot test, i.e. pilot test design, equipment, labor, analytical, subcontractors, materials etc. would be listed under this activity. Prior to planning pilot tests, OPS requires that the owner/operator and their consultant discuss with and get approval from the OPS technical reviewer regarding the scope and costs for PWC 3A. Start and end dates for the work must be entered into the space provided.
- **PWC – 3C (Remediation system design and CAP report preparation):** Include costs associated with the preparation of the CAP and the EFS here. All TLC costs including designing the remediation approach, soliciting and collecting bids and costs, determining all required permits, selecting the required equipment, calculating the time and costs to achieve the remediation goals, estimating the operational life span of major equipment/components, evaluating remediation options, labor and drafting, would be listed under this activity. The approval of 3C costs will be based on the anticipated level of effort associated with the selected remediation method.
- **PWC – 3D (Remediation system installation/excavation):** Include costs associated with remediation system installation and excavation here. Portions or all of PWC D may be required by OPS to be solicited for competitive bids to determine the reimbursement budget for this PWC as described in Policy #27. The bid solicitation and responses must be provided for approval of these costs and inclusion in the reimbursement budget. Start and end dates for the work must be entered into the spaces provided, as applicable.
- **PWC – 3F (Remediation system operation and maintenance):** Include costs associated with remediation system startup, operation and maintenance here. Start and end dates for the work must be entered into the spaces provided.
- **PWC – 3G (Monitoring plan implementation and report preparation; additional assessment):** Include costs associated with periodic monitoring of soil, water and vapor, and reporting here. Start and end dates for the work and the number of monitoring events must be entered into the spaces provided.
- **PWC – 3H (Decommissioning):** Include costs associated with remediation system decommissioning, monitoring point plugging and abandoning, and associated reporting here.

FIGURE 1. EFS FORM OUTLINE

REMEDATION ECONOMIC FEASIBILITY SUMMARY

Site Name: _____ Event ID: (Enter ID)
 Site Address: _____ Submittal Date: (Enter Date)
 Remediation Method(s): _____ CAP Effective Date: _____
 Event REP: _____

EFS Start Date: _____

EFS End Date: _____

PHASE OF WORK CODE (P/W/C)	ACTIVITY CODE (AC)	TASK OR LABOR CODE (TLC)	TASK DESCRIPTION	UNITS	QUANTITY	UNIT RATE	SUBTOTAL	MARKUP	SUBTOTAL BY ACTIVITY AND TASK GROUP	TOTAL
3A Pilot testing (CAP Mods only)										
Start Date:			End Date:							
a. Pilot testing										
3A	a.									
Activity Code a. Subtotal									\$	-
j. Direct push										
Number of points:										
3A	j.									
Activity Code j. Subtotal									\$	-
k. Drilling										
Number of wells:										
3A	k.									
Activity Code k. Subtotal									\$	-
o. Soil vapor/indoor air sampling										
3A	o.									
Activity Code o. Subtotal									\$	-
q. Aquifer testing										
3A	q.									
Activity Code q. Subtotal									\$	-
r. Access request										
3A	r.									
Activity Code r. Subtotal									\$	-
TOTAL 3A COSTS:										\$ -
3C Remediation system design, bid specifications & CAP report preparation										
i. CAP design and reporting										
3C	i.									
Activity Code i. Subtotal									\$	-
TOTAL 3C COSTS:										\$ -
3D Remediation system installation/excavation										
d. System installation			Start Date:		End Date:					
3D	d.									
Activity Code d. Subtotal									\$	-
j. Direct push										
Number of points:										
3D	j.									
Activity Code j. Subtotal									\$	-
k. Drilling										
Number of wells:										
3D	k.									
Activity Code k. Subtotal									\$	-
l. Excavation			Start Date:		End Date:					
3D	l.									
Activity Code l. Subtotal									\$	-
m. Trenching										
Linear feet of trench:										
3D	m.									
Activity Code m. Subtotal									\$	-
n. System enclosure										
3D	n.									
Activity Code n. Subtotal									\$	-
r. Access request										
3D	r.									
Activity Code r. Subtotal									\$	-
TOTAL 3D COSTS:										\$ -
3F Remediation system operation & maintenance										
Start Date:			End Date:		# Events:					
Detail visit schedule:										
f. System O & M										
3F	f.									
Activity Code f. Subtotal									\$	-
TOTAL 3F COSTS:										\$ -

3G Monitoring plan implementation & report preparation; additional assessment									
Start Date:			End Date:			# Events:			
List wells:									
Sampling:					Reporting schedule:				
g. Monitoring plan implementation									
3G	g.								
Activity Code g. Subtotal								\$	-
i. Data review & reporting									
3G	i.								
Activity Code i. Subtotal								\$	-
j. Direct push					Number of points:				
3G	j.								
Activity Code j. Subtotal								\$	-
k. Drilling					Number of wells:				
3G	k.								
Activity Code k. Subtotal								\$	-
o. Soil vapor/indoor air sampling					Number of points:				
3G	o.								
Activity Code o. Subtotal								\$	-
r. Access request									
3G	r.								
Activity Code r. Subtotal								\$	-
TOTAL 3G COSTS:								\$	-
3H Decommissioning									
Start Date:			End Date:						
h. Decommissioning									
3H	h.								
Activity Code h. Subtotal								\$	-
i. Data review & reporting									
3H	i.								
Activity Code i. Subtotal								\$	-
j. Direct push					Number of points:				
3H	j.								
Activity Code j. Subtotal								\$	-
k. Drilling					Number of wells:				
3H	k.								
Activity Code k. Subtotal								\$	-
m. Trenching					Linear feet of trench:				
3H	m.								
Activity Code m. Subtotal								\$	-
TOTAL 3H COSTS:								\$	-

PHASE OF WORK COST SUMMARY

PHASE OF WORK CODE AND DESCRIPTION	EFS TOTAL COSTS
3A Pilot testing	\$ -
3C Remediation system design, bid specifications & CAP report preparation	\$ -
3D Remediation system installation/excavation	\$ -
3F Remediation system operation & maintenance	\$ -
3G Monitoring plan implementation & report preparation; additional assessment	\$ -
3H Decommissioning	\$ -
GRAND TOTAL	\$ -

3. ACTIVITY CODES

The purpose of the Activity Codes (ACs) is to group all costs associated with performing a specific activity associated with a particular PWC. Figure 2 lists the ACs and indicates under which PWC the ACs can be completed. Only allowable ACs per PWC can be included on the EFS (e.g., AC a – pilot testing can be included under PWC 3A but cannot be included under PWC 3D).

FIGURE 2. ALLOWABLE ACs UNDER PWCs

Phase of Work (PWC)	PWC Description	AC Description													
		a. Pilot Testing	d. System Installation	f. System O&M	g. Monitoring	h. System Decommissioning	i. Data Review and Reporting	j. Direct Push	k. Drilling	l. Excavation	m. Trenching	n. System Enclosure	o. Soil Vapor/Indoor Air Sampling	q. Aquifer Testing	r. Access Request
3A	Pilot Testing	X						X	X				X	X	X
3C	Design and CAP preparation						X								
3D	Remediation system installation/excavation		X					X	X	X	X	X	X		X
3F	Remediation system O&M			X											
3G	Monitoring and reporting				X		X	X	X				X		X
3H	Decommissioning					X	X		X		X				

- **AC a (Pilot testing):** TLC costs associated with designing and conducting the pilot test (equipment, labor, analytical, subcontractors, materials, etc.) would be listed under this activity. Portions of pilot testing that have activity codes such as direct push and drilling would be listed under those ACs.
- **AC d (Remediation system installation/excavation):** TLC costs associated with acquiring, permitting, and installing a remediation system (equipment, labor, subcontractors, field instrumentation, materials, etc.) would be listed under this activity. Portions of AC d that are based on competitive bidding should be clearly described and reference the supporting documentation supplied in the CAP.
- **AC f (Remediation system operation & maintenance):** All TLC costs associated with starting, operating and periodic maintenance of the remediation system (labor, analytical for off-gas and influent and effluent samples, field instrumentation, onsite telephone and utilities, etc.) would be listed under this activity. Tasks associated with free product recovery such as by hand bailing or skimmer would also be listed under this activity (active recovery such as vacuum enhanced recovery or recovery pumps belong in 3D). Reporting of O&M data is included in 3Gi, Monitoring and Remediation Report data review and reporting.
- **AC g (Monitoring plan implementation & report preparation; additional assessment):** TLC costs associated with performing periodic monitoring of soil, water and vapor (labor, analytical, waste disposal, field instrumentation, equipment and materials, etc.) would be listed under this activity. Reporting fees are based on a “level of effort”.
- **AC h (Decommissioning):** TLC costs associated with remediation system and monitoring apparatus decommissioning (labor, equipment, subcontracted services, waste disposal, etc.) would be listed under this activity.
- **AC i (Report Submittals):** All TLC costs associated with data review and preparing the CAP, Monitoring and Remediation Reports, and Decommissioning reports would use AC i.
 - For the CAP, AC i would include designing the remediation approach or combination of approaches, soliciting and collecting bids and costs, determining all required permits, selecting the required equipment,

estimating the operational life span of major equipment/components, calculating the time and costs to achieve the remediation goals, evaluating remediation options, labor and drafting, would be listed under this activity. The approval of 3C costs will be based on the anticipated level of effort associated with the selected remediation method.

- For Monitoring and Remediation Reports, AC i would include evaluating remediation system performance, monitoring and O&M data, updating the conceptual site model, evaluating empirical data against modeling predictions, evaluating remediation progress toward cleanup goals and time frames, plume stability, evaluating exposure pathways, and an evaluation of risk of exposure to all potential points of exposure.
- For Decommissioning Reports, AC i would include labor associated with documenting the decommissioning of remediation and/or monitoring equipment.
- **AC j (Direct Push):** All TLC costs associated with using direct push equipment to collect soil samples and/or install temporary or permanent monitoring wells or vapor points would be included in AC j. If direct push or similar apparatuses are used for remediation injections, AC j may be used to add detail to the presentation of associated costs. Analyses of samples collected at the time of installation would be included in AC j.
- **AC k (Drilling):** All TLC costs associated with using drill rigs to collect soil samples and/or installing temporary or permanent monitoring or remediation wells or vapor points would be included in AC k. Analyses of samples collected at the time of installation would be included in AC k.
- **AC l (Excavation, Transportation and Disposal of Contaminated Soil):** All TLC costs associated with bulk-scale excavation of contaminated soil would be included in AC l. Analyses of samples collected at the time of excavation would be included in AC l. AC l would include costs associated with landfarming, transporting and disposal of contaminated soil. Excavation and loading is for in-place yardage; transportation and disposal is for transported and disposed volume/weight. Backfill is for material, delivery and compaction of the excavated in-place volume.
- **AC m (Trenching):** If trenching is necessary to install the system, all costs associated with trenching, including consultant oversight, saw-cutting, waste handling, backfilling, asphalt replacement, etc., would be listed under AC m. Costs associated with plumbing or materials such as piping that would be installed into the trench would be listed under AC d. Costs for trenching conducted using an excavator or backhoe can be listed either under TLC 3.4 (excavation and loading) or 8.3 (backhoe), but not both. If the costs for trenching were based on competitive bidding, those costs should be clearly described and reference the supporting documentation supplied in the CAP.
- **AC n (System Enclosure):** If a remediation system requires an enclosure, all costs for the enclosure, labor, materials, prefabricated structure and delivery costs, etc. would be placed under the activity AC n.
- **AC o (Soil Vapor/Indoor Air Sampling):** If soil vapor or indoor air sampling is performed, all costs associated with the sampling and sample analyses would be included in AC o.
- **AC q (Aquifer Testing):** All costs associated with aquifer testing would be placed under AC q. For determining the hydraulic conductivity of an unconfined aquifer, aquifer testing costs are inclusive and include testing three wells, testing equipment, and labor.
- **AC r (Access Requests):** All costs associated with requesting access to contaminated offsite properties would be placed under AC r. Time preparing access letters, communicating by telephone or email, interviewing offsite property owners, or other types of communication would be examples of costs coded to AC r.

4. TASK/LABOR CODES

The purpose of the TLCs is to provide a description, quantity and unit of measure for each item, service, report, activity or labor effort associated with an activity within a phase of work. The Task and Labor Codes tab includes all TLCs and associated RCGs, if established. The rows in this tab are in the same format as the Remediation EFS Summary form (including cell formulas) and can be copied and pasted directly into the EFS from under the appropriate AC. Do not alter cell formulas.

TLCs must be listed numerically under the associated AC. A subtotal cost for each TLC group utilized must be included on the EFS Form and Summary under the appropriate AC (e.g., TLC-5 group – Labor Subtotal must be included under AC c. – CAP Preparation under PWC 3C – CAP Report Preparation). Care should be taken to ensure that the totals and subtotals are summed correctly.

Additional description to a TLC can be given in the Task Description cell (Column D in the Remediation EFS Summary form and the Task and Labor Codes tab). For example, labor hours for a staff engineer/scientist (5.5) can be further broken down to describe the various tasks associated with remediation system installation. RCG Overview and Assumptions, Article 4 Rates (found on the OPS website) must coincide with labor code descriptions. When using any “other” TLC, the item should be identified within the Task Description cell.

Some TLC items have Reasonable Cost Guidelines (RCGs) or other guidance for their use. Refer to [RCG Policies and Rates](#).

Anticipated Start Dates and End Dates should be completed for the proposed phases of work, as should other requested information listed under each PWC.

Below is an example of the groundwater monitoring portion of a completed EFS.

Start Date: 07/01/22		End Date: 06/30/24		# Events: 8						
List wells: MW-1 through 7, MW-9 through 11, and new well south of MW-10 (MW-11)										
Sampling: Quarterly			Reporting schedule: Semi-annual (2Q and 4Q)							
g. Monitoring plan implementation										
3G	g.	4.1	sample wells-includes all labor and equipment (bailer, water level indicator/interface probe, temp, conductivity, pH, DO, ORP meter(s), hand tools, cones, safety equipment, PPE, etc.)	wells	88	\$ 130.00	\$ 11,440.00			\$ 11,440.00
TLC-4 group - Groundwater Sampling Subtotal									\$ 11,440.00	
3G	g.	5.2	senior engineer/scientist	hours	8.00	\$ 160.00	\$ 1,280.00			\$ 1,280.00
3G	g.	5.3	project manager	hours	24.00	\$ 148.00	\$ 3,552.00			\$ 3,552.00
3G	g.	5.4	project engineer / scientist	hours	20.00	\$ 127.00	\$ 2,540.00			\$ 2,540.00
3G	g.	5.5	staff engineer / scientist	hours	32.00	\$ 108.00	\$ 3,456.00			\$ 3,456.00
TLC-5 group - Labor Subtotal									\$ 22,268.00	
3G	g.	6.9	BTEX/MTBE/TVPH (in-state lab)	samples	88	\$ 70.00	\$ 6,160.00	\$ 924.00		\$ 7,084.00
TLC-6 group - Laboratory Analyses									\$ 29,352.00	
3G	g.	9.4	mileage (current IRS rate)	miles	100	\$ 0.625	\$ 62.50			\$ 62.50
TLC-9 group - Travel Subtotal									\$ 10,602.50	
		12.1	misc field supplies	days	8	\$ 12.00	\$ 96.00			\$ 96.00
TLC-12 group - Field Instrumentation Subtotal									\$ 29,510.50	
Activity Code g. Subtotal									\$ 29,510.50	

It is important to note that the TLCs listed in the TLC items tab are formatted to calculate subtotals, markup (if appropriate) and totals. These cells must not be manipulated. Additionally, it is important to note that formatting and punctuation of ACs and TLCs as they are presented in the EFS template should be followed or issues may arise in the processing of the EFS and subsequent electronic reimbursement applications if these formats are altered. Data validation should be completed by the preparer prior to submitting the EFS to OPS.

The following assumption apply for lump-sum TLC items:

TLC 4.1: Sampling method is by bailer only. Other methods must report a time-and-materials (T&M) cost breakdown.

TLC 4.3: Complete slug testing data collection (RISING HEAD tests) and analysis to determine hydraulic conductivity (K) value of aquifer by calculating the GEOMETRIC MEAN of the three values. Choose three wells completed within native soil, preferably within or at the leading edge of the known contaminant plume. Water level changes must be appropriately measured until either 1) 30 minutes have elapsed or 2) water recovery is 90% of the displaced volume. Traffic control using cones/barricades assumed. Analysis is typically done using commercially available software utilizing the Bouwer & Rice technique. Exclusions: consultant travel time and mileage, traffic control if within public right-of-way.

TLC 7.1: Complete and submit the MRR for up to 15 wells including all required information as directed in the MRR instructions.

TLC 7.2: Complete and submit the MRR for up to 15 wells including all required information as directed in the MRR instructions. In addition, complete tables for corrective actions (e.g. excavation or injection) or remedial system operational data and provide a brief summary of activities and equipment operation in the MRR narrative, including recommendations for optimizing the system and opinions regarding the rate and extent of remedial effect compared to the anticipated closure timeline. Note if the system is running 100% or is being pulsed (include the schedule), causes for equipment failure (detail repair activities), and system start and stop dates. This TLC may also be used to provide a CAP Implementation report, at OPS' discretion.

5. EFS NEGOTIATION

Following the submittal of the CAP with its associated EFS, OPS will review the submittal for technical and economic feasibility. If the CAP and/or EFS are not approvable, OPS will respond to the owner/operator with a CAP Denial letter that describes what is required. If the CAP and EFS are approvable with minor technical and/or economic changes, a negotiation process begins. OPS will inform the consultant (or CAP submitter) of any technical and/or economic changes deemed necessary for CAP approval. The economic changes will be made and highlighted on the electronic version of the CAP/EFS, and then returned to the preparer via email. The preparer then replies via email to the **OPS reviewer** with agreement of the changes or with justification of the original costs or modified changes. This process continues until an agreement is reached on a CAP and EFS that can be approved.