



# ECONOMIC FEASIBILITY SUMMARY (EFS) INSTRUCTIONS

(REVISED 7/22/13)

## General Information

This standardized economic feasibility summary (EFS) format must be included with all Corrective Action Plans (CAPs) and CAP Mods (CAP Mod) 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

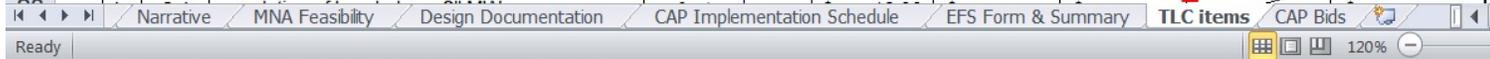
An EFS is required to be completed and submitted to OPS in the approved format with all CAPs or CAP Mods.

## Structure

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

- EFS Form and Summary:** This form includes all costs associates 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 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.

Row	Code	Activity	Description	Unit	Rate	Quantity	Amount	Amount	Amount	Amount
16			<b>Drilling</b>							
17	k. 2.1	drilling (2" well, auger, < 50')	feet	\$ 18.00		\$ -	\$ -		\$ -	
18	k. 2.1	drilling (2" well, auger, portion > 50')	feet	50	\$ -	\$ -			\$ -	
19	k. 2.1	drilling (4" well, auger, < 50')	feet	50	\$ -	\$ -			\$ -	
20	k. 2.1	drilling (4" well, auger, portion > 50')	feet	20.50	\$ -	\$ -			\$ -	
21	k. 2.1	drilling (other, submit bids)	feet		\$ -	\$ -			\$ -	
22	k. 2.2	mobilization / demobilization	miles	\$ 4.00		\$ -	\$ -		\$ -	



## 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 Projected Closure Date for the Event as determined by the proposed remediation method and subsequent post-remediation monitoring.
- Enter the EFS Start Date and EFS End Date. These dates are associated with the scope of work in the submitted CAP or CAP Mod.

## 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 4) 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 input in 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, arranging property access, 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 input in 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 input in the space 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 input in the space provided.
- **PWC – 3H (Decommissioning):** Include costs associated with remediation system decommissioning, monitoring point plugging and abandoning and associated reporting here.

## REMEDATION ECONOMIC FEASIBILITY SUMMARY

Site Name:

Event ID:

Site Address:

Submittal Date:

Remediation Method(s):

Effective Date:

Projected Closure

Date:

EFS Start Date:

EFS End Date:

PHASE OF WORK CODE (PWC)	ACTIVITY CODE (AC)	TASK OR LABOR CODE (TLC)	TASK DESCRIPTION	UNITS	QUANTITY	UNIT RATE	SUBTOTAL	MARKUP	SUBTOTAL BY ACTIVITY AND TASK GROUP	TOTAL
<b>3A Pilot tests &amp; pumping/slug tests</b>										
Start Date:			End Date:							
								<b>TOTAL 3A COSTS:</b>		
<b>3C CAP report preparation</b>										
								<b>TOTAL 3C COSTS:</b>		
<b>3D Remediation system installation/excavation</b>										
								<b>TOTAL 3D COSTS:</b>		
<b>3F Remediation system operation &amp; maintenance</b>										
Start Date:			End Date:			# Events:				
								<b>TOTAL 3F COSTS:</b>		
<b>3G Monitoring plan implementation &amp; report preparation</b>										
Start Date:			End Date:			# Events:				
List wells:										
								<b>TOTAL 3G COSTS:</b>		
<b>3H Remediation system decommissioning</b>										
								<b>TOTAL 3H COSTS:</b>		

## PHASE OF WORK COST SUMMARY

PHASE OF WORK CODE AND DESCRIPTION	EFS TOTAL COSTS
3A Pilot tests & pumping/slug tests	\$ -
3C CAP report preparation	\$ -
3D Remediation system installation/excavation	\$ -
3F Remediation system operation & maintenance	\$ -
3G Monitoring plan implementation & report preparation	\$ -
3H Remediation system decommissioning	\$ -
<b>GRAND TOTAL</b>	<b>\$ -</b>

### 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. The following table 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).

		AC Description													
Phase of Work (PWC)	PWC 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 (CAP Mods)	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 [CAP Mods only]):** 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.
- **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, arranging property access, 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 (excavator), 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.

EFS with PWCs and ACs

**REMEDIATION ECONOMIC FEASIBILITY SUMMARY**

Site Name: \_\_\_\_\_ Event ID: (Enter ID)  
 Site Address: \_\_\_\_\_ Submittal Date: (Enter Date)  
 Remediation Method(s): \_\_\_\_\_ Effective Date: \_\_\_\_\_  
 Projected Closure Date: \_\_\_\_\_  
 EFS Start Date: \_\_\_\_\_ EFS End Date: \_\_\_\_\_

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

**EFS with PWCs and ACs, continued**

<b>3G Monitoring plan implementation &amp; report preparation; additional assessment</b>									
<b>Start Date:</b>		<b>End Date:</b>			<b># Events:</b>				
<b>List wells:</b>									
<b>g. Monitoring plan implementation</b>									
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	\$ 100.00	\$ -	/	/	\$ -
3G	g.								
Activity Code g. Subtotal									\$ -
<b>i. Data review &amp; reporting</b>									
3G	i.			report		\$ -	/	/	\$ -
3G	i.			report		\$ -	/	/	\$ -
3G	i.			report		\$ -	/	/	\$ -
Activity Code i. Subtotal									\$ -
<b>j. Direct push</b> <span style="float:right"><b>Number of points:</b></span>									
3G	j.								
3G	j.								
Activity Code j. Subtotal									\$ -
<b>k. Drilling</b> <span style="float:right"><b>Number of wells:</b></span>									
3G	k.								
3G	k.								
Activity Code k. Subtotal									\$ -
<b>o. Soil vapor/indoor air sampling</b> <span style="float:right"><b>Number of points:</b></span>									
3G	o.								
3G	o.								
Activity Code o. Subtotal									\$ -
<b>r. Access request</b>									
3G	r.								
3G	r.								
Activity Code r. Subtotal									\$ -
<b>TOTAL 3G COSTS:</b>									\$ -
<b>3H Decommissioning</b>									
<b>h. Decommissioning</b>									
3H	h.								
3H	h.								
Activity Code h. Subtotal									\$ -
<b>i. Data review &amp; reporting</b>									
3H	i.	7.5	Site Decommissioning Report	report	1	\$ -	/	/	\$ -
Activity Code i. Subtotal									\$ -
<b>j. Direct push</b> <span style="float:right"><b>Number of points:</b></span>									
3D	j.								
3D	j.								
Activity Code j. Subtotal									\$ -
<b>k. Drilling</b> <span style="float:right"><b>Number of wells:</b></span>									
3H	k.								
3H	k.								
Activity Code k. Subtotal									\$ -
<b>m. Trenching</b> <span style="float:right"><b>Linear feet of trench:</b></span>									
3H	m.								
3H	m.								
Activity Code m. Subtotal									\$ -
<b>TOTAL 3H COSTS:</b>									\$ -

**PHASE OF WORK COST SUMMARY**

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

#### 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.

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.

3G Monitoring plan implementation & report preparation										
Start Date: 08/01/10			End Date: 07/01/16			# Events: 23				
List wells: MW-1 through MW-7, MW-9 through MW-11, and MW-13R + newly install well south of MW-10										
g. Monitoring plan implementation										
3G	g.	4.1	sample wells-includes labor and equipment.	wells	276	\$ 76.00	\$20,976.00			\$20,976.00
TLC-4 group - Groundwater Sampling Subtotal									\$20,976.00	
3G	g.	5.3	project manager (1hr/qtr x 23 qtrs)	hours	23.00	\$ 106.00	\$ 2,438.00			\$ 2,438.00
3G	g.	5.5	staff engineer / scientist (1hr/qtr x 23 qtrs - field work prep)	hours	23.00	\$ 75.00	\$ 1,725.00			\$ 1,725.00
3G	g.	5.6	senior technician (2 hrs/qtr x 23 qtrs - travel and operate field/monitoring equip.)	hours	46.00	\$ 59.00	\$ 2,714.00			\$ 2,714.00
TLC-5 group - Labor Subtotal									\$ 6,877.00	
3G	g.	6.9	BTEX/MTBE/TVPH (water - 8260/8015)	samples	276	\$ 65.00	\$17,940.00	\$ 2,691.00		\$20,631.00
TLC-6 group - Laboratory Analyses									\$20,631.00	
3G	g.	9.4	mileage (200 mi/qtr x 23 qtrs)	miles	4600	\$ 0.55	\$ 2,530.00			\$ 2,530.00
TLC-9 group - Travel Subtotal									\$25,875.00	
3G	g.	12.1	misc field supplies (1/qtr x 23 qtrs)	days	23	\$ 12.00	\$ 276.00			\$ 276.00
TLC-12 group - Field Instrumentation Subtotal									\$ 276.00	
Activity Code g. Subtotal									\$ 51,290.00	

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 should 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 as 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.

#### 5. EFS NEGOTIATION

Following the submittal of the CAP with its associated EFS, OPS will review the submittals 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.