

# Appendix 19: Closure and Reclamation Cost Estimate

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# **CAPITAL COST ESTIMATE**

**EnCana**

**Facility Closure & Reclamation Estimate**

**Erie Liquids Handling HUB Facility**

Class V

Rev B



**Redi Engineering Services, LLC.**

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## **Estimate Basis**

### **Executive Summary:**

The Basis of Estimate is to document the scope and methodology used to develop the cost estimate for the decommissioning and dismantling of the Erie Liquids Handling HUB Facility in Weld County, Colorado.

It is understood that the purpose of this Class V Estimate (+40 /-30%) is to provide sufficient information to ensure compliance with Colorado Oil and Gas Commission regulations that mandate oil and gas operators post a bond to cover "Greenfield" restoration of an operating facility in the event of operator insolvency.

### **Methodology**

The estimate for the decommissioning and dismantling of the facility is based on the February 2014 estimate for the quantification of equipment and materials. Estimates for the cost of decommissioning and dismantling are factored based on the quantity and types of equipment and materials to be removed and on expected productivity and costs for performing the work, excluding labor escalation.

### **Scope Overview**

Reclaim the Erie Liquids Handling HUB Facility to compliance of the Oasis Closure & Reclamation Plan supplied by Encana. The scope includes the demolition and removal of all improvements to the site and the restoration of the site to a "Greenfield" condition, including re-contour and vegetation.

The following estimate includes the Liquids Handling HUB Facility and not the transmission pipelines or the well sites.

### **Exclusions**

The estimate does not include:

- Lead Abatement (we expect there will be none on this site)
- Asbestos Abatement (we expect there will be none on this site)
- Agent's Fees
- Escalation

### **General Estimating Approach**

The February 2014 total installed cost estimate was utilized to quantify construction quantities and plant equipment. A credit / debit approach was also utilized to realize salvage value as follows:

- Mechanical Equipment was salvaged at 5% of the original 2014 budgeted costs
- The dismantling of the field erected tanks was a significant effort which resulted in the majority of the Mechanical hours. A 2% salvage value was included on the produced water and oil tanks.
- The estimate includes a 5 cent per material dollar salvage credit for pipe and copper wire materials.
- A salvage value of \$150 per ton of structural steel has been included.
- No salvage value is included for other electrical materials, electrical equipment, instrument materials or other instrument tagged devices.
- A 10% salvage value has been included for logic centers and control panels.

- Original construction man hours estimates were adjusted downward as follows:
  - 40% for Civil
  - 55% for Concrete
  - 75% for Structural and Buildings
  - 75% for Pipe
  - 80% for Electrical
  - 80% for Controls
  - 80% for Insulation

### **Pricing**

All pricing has been established in US Dollars (USD).

### **Professional Services**

An allowance for the costs associated with Engineering, Professional Services and Project Management has been included in the estimate.

An allowance for 3<sup>rd</sup> party inspectors and pre-demo plant cleaning and safe-out has been included in the estimate.

### **Owner's Costs**

An allowance has been included in the estimate for other Owner's Costs. Costs to consider include, but are not limited to:

- Client Construction Management
- Pre-work cleaning of Equipment and materials
- Permitting
- Insurances

### **Escalation**

The base year of the estimate is 2014. No estimate for escalation is included.

### **Contingency**

Contingency should be established for the project to account for known but not quantified expenditures and not changes in project scope.

Based on the deliverables provided, the Estimator has assigned a Contingency Allowance of 20% of the Total Demolition Cost.

### **Estimate Accuracy**

The accuracy of the estimate is targeted to be + 40%/-30% (after the addition of appropriate contingency allowance) based on the documentation, quantity and pricing information, and estimating methodology used in the estimate.



**Reclamation Estimate  
for  
Encana  
Erie Liquids Handling HUB Facility**

**March 12, 2014  
CO 160 30 010  
16010-TIC-002, Rev 2**

ROW #	DESCRIPTION	PM:	PE:	CM:	CE:	SE:	QTY	UOM	REMARKS				LABOR		MATERIAL		OTHER		OVERALL TOTAL	% of TIC	ROW #	
									METRIC HRS	METRIC UNITS	TOTAL HRS	LABOR RATE	LABOR TOTAL	MAT'RL UNIT	MAT'RL TOTAL	OTHER UNIT	OTHER TOTAL					
1	Directs																					
2																						
3	50 - Remove / Salvage Equipment						40	ea	140.52		5.981	\$100.51	\$601,118							\$304,015	7.00%	3
4	52 - Earthmoving (Compaction, Land Reconstruction)						7,480	cy	0.35		2,614	\$85.29	\$222,982							\$222,982	5.14%	4
5	53 - Remove of Site Improvements (Fencing & Paving)										2,605	\$75.64	\$196,999							\$423,635	9.76%	5
6	55 - Remove / Dispose Buildings / Canopies										200	\$85.46	\$17,092							\$17,092	0.39%	6
7	56 - Demo / Dispose Concrete						1,322	cy	3.85		5,132	\$79.12	\$406,051							\$406,051	9.35%	7
8	56 - Remove / Salvage Structural Steel						27	ton	6.00		188	\$90.31	\$16,969							\$12,882	0.30%	8
10	62 - Remove / Salvage Piping						4,600	lf	1.17		5,386	\$109.21	\$588,173							\$570,494	13.14%	10
11	63 - Remove / Dispose Insulation						1,375	elf	0.10	144	144	\$108.01	\$15,562							\$15,562	0.36%	11
12	64 - Remove / Dispose / Salvage Controls						158	ea	4.15		648	\$112.92	\$73,173							\$67,573	1.56%	12
13	65 - Remove / Dispose / Salvage Electrical						20,725	lf	0.01	227	882	\$112.92	\$99,594							\$136,176	3.14%	13
14	XX - Construction Support										798	\$85.29	\$68,076							\$883,633	20.36%	14
15																						15
16	Allowances																					16
16	Industrial Waste Disposal																			\$90,000	2.07%	16
17	Soils Sampling																			\$17,500	0.40%	17
17	Hydro Seed																			\$70,000	1.61%	17
18	Post Reclamation Site Monitoring																			\$35,000	0.81%	18
18	Top Soil & Mulch																			\$140,000	3.23%	18
19																						19
20	Directs Sub-Total										24,578	\$93.81	\$2,305,788							\$1,106,805	78.61%	20
21	Indirects																					21
22	Engineering Planning Support																			\$68,252	1.57%	22
23																						23
24																						24
25																						25
26																						26
27	Water Allowance for Dust Control																			\$105,000	2.42%	27
28																						28
29																						29
30	General Freight Allowance																			\$90,000	2.07%	30
31																						31
32																						32
33	Escalation																					33
34	Contingency																					34
35	In-Directs Sub-Total																			\$664,669	15.31%	35
36	Round Off																			\$275	0.01%	36
37	COA Summary										24,578	\$93.81	\$2,306,000							\$2,035,000	100.00%	37
																				\$486	0.01%	
																				\$46.9%	100.0%	