

Exide FOP Corrective Action Monitoring

Frisco, TX
 RAP Cost Estimate 30-yr Post Closure Care
 5/24/2019

item	description	qty	u.o.m.	unit price	total cost	subtotals	fqcy/30yr project	total task	capital or annual cost	notes
1	NEW MONITORING WELL INSTALLATION	1	EA			\$90,030		\$90,030.00	\$90,030.00	18 wells
1a	Subcontractors					\$43,300		\$43,300		
	private utility locate	1	dy	\$1,600.00	\$1,600		1	\$1,600		
	drilling and well installation, turn-key	18	ea	\$2,200.00	\$39,600		1	\$39,600		
	surveying	1	dy	\$2,100.00	\$2,100		1	\$2,100		
1b	Field Oversight of Monitoring Well Installation & Development					\$34,620		\$34,620.00		
	field work, incl. travel from Dallas, Level 2	252	hr	\$105.00	\$26,460		1	\$26,460.00		
	meals & lodging	23	dy	\$195.00	\$4,485		1	\$4,485.00		Rate based on FY 2019 Per Diem Rates produced by GSA
	pickup truck	3.5	wk	\$400.00	\$1,400		1	\$1,400.00		
	misc. field expenses and equipment	3.5	wk	\$650.00	\$2,275		1	\$2,275.00		
1c	Project Management & Professional Services					\$5,360		\$5,360.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	20	hr	\$115.00	\$2,300		1	\$2,300.00		
	admin support, Level B1	4	hr	\$60.00	\$240		1	\$240.00		
	CADD services, Level D1	12	hr	\$75.00	\$900		1	\$900.00		
	project oversight/senior review, Level 5	12	hr	\$160.00	\$1,920		1	\$1,920.00		
1d	Waste Transportation & Disposal					\$6,750		\$6,750.00		
	wastewater transportation & disposal (1 drum per well)	18	ea	\$375.00	\$6,750		1	\$6,750.00		
2	GROUNDWATER MONITORING & REPORTING	30	YR					\$2,102,151.00	\$70,071.70	
	(quarterly for 2 years, semi-annually for 28 years, 64 events total)									
2a	Labor and Labor Related Expenses					\$26,685		\$1,707,840.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	16	hr	\$115.00	\$1,840		64	\$117,760.00		16 hrs @ \$115/hr (per event)
	sampling, incl. travel from Dallas, Level T3	120	hr	\$90.00	\$10,800		64	\$691,200.00		120 hrs @ \$90/hr (per event)
	meals & lodging	10	dy	\$195.00	\$1,950		64	\$124,800.00		10 days, 10 nights (per event)
	pickup truck	1.5	wk	\$400.00	\$600		64	\$38,400.00		
	misc. field expenses and equipment	1.5	wk	\$650.00	\$975		64	\$62,400.00		
	reporting, data evaluation & validation, Level 2	80	hr	\$105.00	\$8,400		64	\$537,600.00		80 hrs @ \$105/hr (per event)
	admin support, Level B1	4	hr	\$60.00	\$240		64	\$15,360.00		4 hrs @ \$60/hr (per event)
	CADD services, Level D1	8	hr	\$75.00	\$600		64	\$38,400.00		8 hrs @ \$75/hr (per event)
	project oversight/senior review, Level 5	8	hr	\$160.00	\$1,280		64	\$81,920.00		8 hrs @ \$160/hr (per event)
2b	Laboratory Analytical Expenses: 33 wells and 4 QA/QC samples					\$1,184		\$75,776.00		
	groundwater analysis (5 metals) incl. QA/QC	37	ea	\$32.00	\$1,184		64	\$75,776.00		incl. containers, shipping, & analysis
2c	Waste Transportation & Disposal					\$2,250		\$144,000.00		
	waste transportation & disposal (6 drums waste per event)	6	ea	\$375.00	\$2,250		64	\$144,000.00		
2d	Monitoring Well Maintenance/Replacement					\$174,535		\$174,535.00		replace all wells once in 30 years
	plugging and abandonment	32	ea	\$500.00	\$16,000		1	\$16,000.00		
	private utility locate	1	dy	\$1,600.00	\$1,600		1	\$1,600		
	drilling and well installation, turn-key	32	ea	\$2,200.00	\$70,400		1	\$70,400		
	surveying	2	dy	\$2,100.00	\$4,200		1	\$4,200		
	field work, incl. travel from Dallas, Level 2	462	hr	\$105.00	\$48,510		1	\$48,510.00		
	meals & lodging	39	dy	\$195.00	\$7,605		1	\$7,605.00		Rate based on FY 2019 Per Diem Rates produced by GSA
	pickup truck	6	wk	\$400.00	\$2,400		1	\$2,400.00		
	misc. field expenses and equipment	6	wk	\$650.00	\$3,900		1	\$3,900.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	32	hr	\$115.00	\$3,680		1	\$3,680.00		
	admin support, Level B1	8	hr	\$60.00	\$480		1	\$480.00		
	CADD services, Level D1	16	hr	\$75.00	\$1,200		1	\$1,200.00		
	project oversight/senior review, Level 5	16	hr	\$160.00	\$2,560		1	\$2,560.00		
	wastewater transportation & disposal (1 drum per well)	32	ea	\$375.00	\$12,000		1	\$12,000.00		

Exide FOP Corrective Action Monitoring

Frisco, TX

RAP Cost Estimate 30-yr Post Closure Care

5/24/2019

item	description	qty	u.o.m.	unit price	total cost	subtotals	fqcy/30yr project	total task	capital or annual cost	notes
3	INSPECTIONS AND REMOVAL OF SLAG AND BATTERY CASE FRAGMENTS ON STEWART CREEK	5	YR			\$15,085		\$150,850.00	\$5,028	
	(semi-annually for 5 years, 10 events total)									
3a	Labor and Labor Related Expenses					\$14,710		\$147,100.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	8	hr	\$115.00	\$920		10	\$9,200.00		8 hrs @ \$115/hr (per event), reporting cost included in groundwater reporting cost (item 2a)
	field work, incl. travel from Dallas, Level T3	120	hr	\$90.00	\$10,800		10	\$108,000.00		assume two Golder staff for field program, 60 hrs @ \$90/hr (per event)
	meals & lodging	10	ea	\$195.00	\$1,950		10	\$19,500.00		Rate based on FY 2019 Per Diem Rates provided by GSA
	pickup truck	1	wk	\$400.00	\$400		10	\$4,000.00		1 week (per event)
	project oversight/senior review, Level 5	4	hr	\$160.00	\$640		10	\$6,400.00		4 hrs @ \$160/hr (per event)
3b	Waste Transportation & Disposal					\$375		\$3,750.00		
	sediment transportation & disposal (1 drum per event)	1	ea	\$375.00	\$375		10	\$3,750.00		
4	PRB REJUVENATION (e.g. acid wash)	1	est	\$35,000.00	\$35,000		3	\$105,000.00	\$3,500.00	
	(three times in 30 years)									
									\$90,030.00	total capital
									\$78,599.70	total annual
								\$2,448,031.00		

Exide RCA Corrective Action

Frisco, TX

RAP Cost Estimate PRB Installation

5/20/2019

item	description	qty	u.o.m.	unit price	total cost	frequency	total task	notes
1	Funnel & Gate Permeable Reaction Barrier						\$3,471,214.21	
	Mobilization/Demobilization	1	LS	\$84,952.14	\$84,952.14	1		
	Erosion Control - Install and Remove Silt Fence	1,000	lf	\$2.73	\$2,730.00	1		
	Remove ~5' Diameter Drainage Pipe at North End - Clearing, Remove Pipes and Headwalls, Backfill and Compact. Assumed ~100 feet of Removal.	1	LS	\$61,371.58	\$61,371.58	1		
	Budget to Weld Caps on Open End of 2 Culvert Pipes	1	LS	\$7,500.00	\$7,500.00	1		
	Additional Erosion Control Along Stewart Creek	1	LS	\$10,000.00	\$10,000.00	1		
	Remove RR Track and Ties	1	LS	\$35,000.00	\$35,000.00	1		
	Clearing Along Creek Bank	1	LS	\$35,000.00	\$35,000.00	1		
	Grind and Move Chips to Onsite Location	1	LS	\$12,500.00	\$12,500.00	1		
	Fill along RR Track to Construct Work Area	1	LS	\$235,000.00	\$235,000.00	1		
	Remove Fill at Completion and Stockpile Onsite	1	LS	\$100,000.00	\$100,000.00	1		
	Install Seed and Erosion Blanket on Slope	1	LS	\$22,500.00	\$22,500.00	1		
	Construct Berms and Install Liners For Saturated Soils (use onsite soil for berms)	1	LS	\$30,543.92	\$30,543.92	1		
	Removal of Concrete Overlying Trench and Misc. Concrete Walls and Place Onsite	1	LS	\$64,124.78	\$64,124.78	1		
	Excavate and Plug Sewer and Other Utility Lines at Trench Limit	1	LS	\$20,000.00	\$20,000.00	1		
	Prepare Trench Areas - Cut and Fill as needed to prepare Trench Areas. Strip and Stockpile Topsoil	1	LS	\$85,069.53	\$85,069.53	1		
	Frac Tank Mobilization	8	EA	\$672.09	\$5,376.72	1		
	Frac Tank Rental	640	days	\$53.13	\$34,003.20	1		
	Frac Tank Cleaning	8	EA	\$1,023.75	\$8,190.00	1		
	Frac Tank Demobilization	8	EA	\$672.09	\$5,376.72	1		
	Liquid Transportation and Disposal	160,000	gal	\$0.435	\$69,600.00	1		
	Construct PRB Wall with Sliderrail - Qty. is Total Length and Depth of Trench	2,200	sf	\$201.06	\$442,332.00	1		
	Install 2 Discharge Secant Walls	1	LS	\$80,285.00	\$80,285.00	1		
	Zero Valent Iron with Tax and Delivery (August 2018 Pricing)	156	tons	\$1,174.65	\$183,245.40	1		
	Sand for media mix with Tax and Delivery	197	tons	\$8.50	\$1,674.50	1		
	PRB Piping in Trench	1	LS	\$50,000.00	\$50,000.00	1		
	Pipe Installation from Manhole to PRB Wall - Directional Drilling	1	LS	\$80,500.00	\$80,500.00	1		
	Install Sump Reactor, Manhole and Piping	1	LS	\$73,025.00	\$73,025.00	1		
	Electrical for Pump	1	LS	\$20,000.00	\$20,000.00	1		
	Sheet Pile at Battery Storage Area - Includes Adeka Water Stop in Joints	1	LS	\$378,439.76	\$378,439.76	1		
	3,100' x 2' x 20' Bentonite Slurry Wall	62,000	sf	\$16.74	\$1,037,880.00	1		
	Install Geotextile and Import Clay in Upper 4 Feet. Replace Stripped Topsoil	3,100	lf	\$34.04	\$105,524.00	1		
	Install 6" Thick Concrete with 6" Compacted Baserock- Assumed 5 feet wide Doweled into Adjacent Slabs	4,375	sf	\$9.98	\$43,662.50	1		
	Seed and Mulch	75,000	sf	\$0.07	\$5,250.00	1		
	Taxes	1	LS	\$40,557.46	\$40,557.46	1		
						Subtotal	\$3,471,214.21	
	Program Management						\$424,779.20	
						Total	\$3,895,993.41	

Exide North CAMU Compliance Plan

Frisco, TX
 RAP Cost Estimate 30-yr Post Closure Care
 5/14/2019

item	description	qty	u.o.m.	unit price	total cost	subtotals	fqcy/30yr project	total task	capital or annual cost	notes
1	NEW MONITORING WELL INSTALLATION	0	EA			\$0		\$0.00	\$0.00	
1a	Subcontractors					\$0		\$0		
	private utility locate	0	dy	\$1,600.00	\$0		0	\$0		
	drilling and well installation, turn-key	0	ea	\$2,200.00	\$0		0	\$0		
	surveying	0	dy	\$2,100.00	\$0		0	\$0		
1b	Field Oversight of Monitoring Well Installation & Development					\$0		\$0.00		
	field work, incl. travel from Dallas, Level 2	0	hr	\$105.00	\$0		0	\$0.00		
	meals & lodging	0	dy	\$195.00	\$0		0	\$0.00		Rate based on FY 2019 Per Diem Rates produced by GSA
	pickup truck	0	wk	\$400.00	\$0		0	\$0.00		
	misc. field expenses and equipment	0	wk	\$650.00	\$0		0	\$0.00		
1c	Project Management & Professional Services					\$0		\$0.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	0	hr	\$115.00	\$0		0	\$0.00		
	admin support, Level B1	0	hr	\$60.00	\$0		0	\$0.00		
	CADD services, Level D1	0	hr	\$75.00	\$0		0	\$0.00		
	project oversight/senior review, Level 5	0	hr	\$160.00	\$0		0	\$0.00		
1d	Waste Transportation & Disposal					\$0		\$0.00		
	wastewater transportation & disposal (1 drum per well)	0	ea	\$375.00	\$0		0	\$0.00		
2	GROUNDWATER MONITORING & REPORTING	30	YR					\$181,984.00	\$6,066.13	
	(quarterly for 2 years, semi-annually for 28 years, 64 events total)									
2a	Labor and Labor Related Expenses					\$2,680		\$171,520.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	2	hr	\$115.00	\$230		64	\$14,720.00		2 hrs @ \$115/hr (per event)
	sampling, incl. travel from Dallas, Level T3	5	hr	\$90.00	\$450		64	\$28,800.00		5 hrs @ \$90/hr (per event)
	meals & lodging	1	dy	\$195.00	\$195		64	\$12,480.00		1 day, 1 night (per event)
	pickup truck	1	dy	\$75.00	\$75		64	\$4,800.00		1 day (per event)
	misc. field expenses and equipment	1	ea	\$300.00	\$300		64	\$19,200.00		
	reporting, data evaluation & validation, Level 2	8	hr	\$105.00	\$840		64	\$53,760.00		8 hrs @ \$105/hr (per event)
	admin support, Level B1	2	hr	\$60.00	\$120		64	\$7,680.00		2 hrs @ \$60/hr (per event)
	CADD services, Level D1	2	hr	\$75.00	\$150		64	\$9,600.00		2 hrs @ \$75/hr (per event)
	project oversight/senior review, Level 5	2	hr	\$160.00	\$320		64	\$20,480.00		2 hrs @ \$160/hr (per event)
2b	Laboratory Analytical Expenses: 3 wells					\$336		\$10,464.00		
	groundwater analysis (5 metals) incl. QA/QC	3	ea	\$32.00	\$96		34	\$3,264.00		
	groundwater analysis (11 metals) incl. QA/QC	3	ea	\$80.00	\$240		30	\$7,200.00		
2c	Waste Transportation & Disposal					\$0		\$0.00		
	waste transportation & disposal (N/A, included with other IDW)	0	ea	\$375.00	\$0		64	\$0.00		
3	MONITORING WELL MAINTENANCE/REPLACEMENT	30	YR					\$22,355.00	\$745.17	
3a	Monitoring Well Maintenance/Replacement					\$22,355		\$22,355.00		replace all wells once in 30 years
	plugging and abandonment	3	ea	\$500.00	\$1,500		1	\$1,500.00		
	private utility locate	1	dy	\$1,600.00	\$1,600		1	\$1,600.00		
	drilling and well installation, turn-key	3	ea	\$2,200.00	\$6,600		1	\$6,600.00		
	surveying	1	dy	\$2,100.00	\$2,100		1	\$2,100.00		
	field work, incl. travel from Dallas, Level 2	48	hr	\$105.00	\$5,040		1	\$5,040.00		
	meals & lodging	4	dy	\$195.00	\$780		1	\$780.00		Rate based on FY 2019 Per Diem Rates produced by GSA
	pickup truck	1	wk	\$400.00	\$400		1	\$400.00		
	misc. field expenses and equipment	1	wk	\$650.00	\$650		1	\$650.00		
	PM, planning, contracting, regulatory interface, etc., Level 3	12	hr	\$115.00	\$1,380		1	\$1,380.00		
	admin support, Level B1	4	hr	\$60.00	\$240		1	\$240.00		
	CADD services, Level D1	4	hr	\$75.00	\$300		1	\$300.00		
	project oversight/senior review, Level 5	4	hr	\$160.00	\$640		1	\$640.00		
	wastewater transportation & disposal (1 drum per well)	3	ea	\$375.00	\$1,125		1	\$1,125.00		
									\$0.00	total capital
									\$6,811.30	total annual
							Total for 30 Years	\$204,339.00		