

Date: 10/10/2016

By: WPM - Western Project Management

WPM western project management
WE BUILD CONFIDENCE

Item	Description	Quantity	Unit	Direct Unit Cost	Direct Total Cost	Contingency (15-20%)	Subtotal	Payment & Performance Bonds (1.5%)	Subtotal	Contractor Overhead & Profit (15%)	Total
A.	Construction Contractor Costs										
1	Mobilization / Demobilization	1	Lump Sum	\$ 13,000.00	\$ 13,000.00	\$ 1,950.00	\$ 14,950.00	\$ 224.25	\$ 15,174.25	\$ 2,276.14	\$ 17,450.39
2	Soil Sampling for Contamination	4	Locations	\$ 1,145.04	\$ 4,580.16	\$ 687.02	\$ 5,267.18	\$ 79.01	\$ 5,346.19	\$ 801.93	\$ 6,148.12
3	Surface and Stored Water Sampling for Contamination	10	Samples	\$ 390.03	\$ 3,900.32	\$ 585.05	\$ 4,485.37	\$ 67.28	\$ 4,552.65	\$ 682.90	\$ 5,235.55
4	Monitoring well Abandonment	4	Wells	\$ 897.54	\$ 3,590.16	\$ 538.52	\$ 4,128.68	\$ 61.93	\$ 4,190.61	\$ 628.59	\$ 4,819.21
5	Disposal of Fluids (Assumed to be non-hazardous)	3,507,467	Gallons	\$ 0.02	\$ 79,727.91	\$ 11,959.19	\$ 91,687.10	\$ 1,375.31	\$ 93,062.40	\$ 13,959.36	\$ 107,021.76
6	Decommission and Demolish Operating Equip	1	Lump Sum	\$ 28,475.33	\$ 28,475.33	\$ 4,271.30	\$ 32,746.63	\$ 491.20	\$ 33,237.83	\$ 4,985.67	\$ 38,223.50
6.5	Removal & Disposal of Operating Equip, tanks, piping, haul waste	1	Lump Sum	\$ 110,757.53	\$ 110,757.53	\$ 16,613.63	\$ 127,371.16	\$ 1,910.57	\$ 129,281.73	\$ 19,392.26	\$ 148,673.99
7	Remove & Dispose of Pond Liners	256,390.00	Square feet	\$ 0.22	\$ 55,897.47	\$ 8,384.62	\$ 64,282.09	\$ 964.23	\$ 65,246.32	\$ 9,786.95	\$ 75,033.27
8	Backfill, Compact, & Restore Site	4,200.00	Cubic yards	\$ 13.90	\$ 58,367.62	\$ 8,755.14	\$ 67,122.76	\$ 1,006.84	\$ 68,129.61	\$ 10,219.44	\$ 78,349.05
9	Site Management Costs	4	Weeks	\$ 10,084.19	\$ 40,336.76	\$ 6,050.51	\$ 46,387.28	\$ 695.81	\$ 47,083.09	\$ 7,062.46	\$ 54,145.55
	Subtotal Construction				\$ 398,633.27	\$ 59,794.99	\$ 458,428.26	\$ 6,876.42	\$ 465,304.68	\$ 69,795.70	\$ 535,100.38
B.	Administrative and Engineering Costs										
1	Construction Management Fee (5% of Construction)										\$ 26,755.02
Grand Total											\$ 642,120

Facility ID # 159504

Soil Sampling for Contamination -		4 Locations			
Labor		Quantity	Unit	Unit Price	Total
Soils Technician		50	hrs	\$ 65.00	\$ 3,250.00
					\$ 3,250.00
Equipment					
Hand Auger - for testing at perimeter of pits		2	days	\$ 85.00	\$ 170.00
					\$ 170.00
Expenses					
Transportation (44 mi. from Grand Junction, Co to site)		88	mi	\$ 0.57	\$ 50.16
Misc. supplies (gloves, cleaners, containers etc.)		1	ls	\$ 450.00	\$ 450.00
					\$ 500.16
Laboratory Cost					
Sample processing		4	ea	\$ 165.00	\$ 660.00
					\$ 660.00
Soil Testing:					\$ 4,580.16
Cost per location					\$ 1,145.04

Facility ID # 159504

Surface and Ground Water Well Testing for Contamination

Sample types		Quantity	Unit		
	Domestic Water Well	1	ea		
	Monitoring Well	4	ea		
	Surface water sample	2	ea		
	Stored water sample	1	ea	pits, tanks, pipelines etc	
	Subsurface sample	0	ea		
	Seeps/springs	2	ea		
				10	Total Samples
Labor		Quantity	Unit	Unit Price	Total
	Technician	20	hrs	\$ 60.00	\$ 1,200.00
	Technician	20	hrs	\$ 60.00	\$ 1,200.00
					\$ 2,400.00
Expenses					
	Transportation (44 mi from Grand Junction to site) - 2 trips	176	mi	\$ 0.57	\$ 100.32
	Misc. supplies and shipping of samples	2	ls	\$ 275.00	\$ 550.00
					\$ 650.32
Laboratory Cost					
	BTEX (8015B)	10	ea	\$ 60.00	\$ 600.00
	Chlorides	10	ea	\$ 25.00	\$ 250.00
					\$ 850.00
Water Testing:					\$ 3,900.32
Cost per location					\$ 390.03

Facility ID # 159504

Monitoring well abandonment			4 Wells		
Mobilization & Demobilization from Grand Junction (2 hrs each way)					
	Quantity	Unit	Unit Price		Total
Transportation (44 mi. from Grand Junction to site)	88	mi	\$	0.57	\$ 50.16
Technician	8	hrs	\$	60.00	\$ 480.00
Abandonment					
Abandonment of monitoring well (4 x 90' wells)	360	ft	\$	8.50	\$ 3,060.00
				\$	3,060.00
Total cost:				\$	3,590.16
	Cost per locations				\$ 897.54

Facility ID # 159504

Disposal of Pond Fluids (Assumed to be non-hazardous)

Assumed water elevation in the pit (ft)	
Volume of pit fluid at operating elevation (bbl)	82,574
Volume of on site tanks / equipment (bbl)	937
Volume in gallons	3,507,466

Pond is 90% capacity at time of reclamation
Tanks and misc pipeline fluids included in this line

Description	Qty.	Unit	Trips		Time	Unit	Time	Unit	Rate	Total
Pump fluid into local injection wells (99% of factored volume)	3,332,093	gallons	0	ea	56	hrs	2	days	\$ 3,206.91	\$ 7,420.65
or Pump fluid to other local pits via existing infrastructure (90% of factored volume)	0	gallons	0	ea	0	hrs	0	days	\$ 1,282.77	\$ -
Fuel for Pumps	1	ls					30	days	\$ 225.00	\$ 6,750.00
Pump, fill, and dispose of pit fluid at treatment plant (1% of factored volume)	175,373	gallons	16	ea	68	hrs	3	days	\$ 10,579.41	\$ 30,087.08
Remove and Haul Tank Sludge / Sediment	2,850	cubic ft	4	ea	4	hrs	0	days	\$ 4,231.76	\$ 1,798.50
Total Gallons removed	3,507,467	gallons								
Disposal at permitted facility fee (\$0.19/gallon - 7.98/bbl)	175,373	gallons							0.192	\$ 33,671.68
Total cost estimated to remove all fluids									\$	79,727.91
Cost per gallon to dispose of fluids (\$/gallon)									\$	0.0227

2 pumps 500 gpm

2 pumps 500 gpm total

Crew Rate - For pit fluid returned to local wells or other pits via existing infrastructure

Laborer - Common	2	ea	\$	26.82	\$	53.64
Laborer - Foreman	1	ea	\$	31.53	\$	31.53
Truck Driver	0	ea	\$	35.27	\$	-
					\$	85.17
Equipment & Fee Rates						
Work Truck - Crew Cab	1	ea	\$	13.50	\$	13.50
Water Truck - 130 barrel vac. Truck	0	ea	\$	136.00	\$	-
					\$	13.50
Hourly Rate					\$	98.67
13 hr				Daily Rate	\$	1,282.77
2 shifts / including premium					\$	3,206.91

175,373 gallons total to haul
4.25 hours per trip per (130 bbls = 5460 gallons)
32 trips total (130 bbl trucks)
2 number of trucks
68 hours
2.84 days 24 hour trucking

Crew Rate (2 trucks) - Disposal at permitted facility

	Qty.	Unit	Rate	Total
Laborer - Common	2	ea	\$ 26.82	\$ 53.64
Truck Driver	2	ea	\$ 35.27	\$ 70.54
			Subtotal	\$ 124.18
Equipment & Fee Rates				
Water Truck - 130 barrel vac. Truck	2	ea	\$ 136.00	\$ 272.00
Work Truck - Crew Cab	2	ea	\$ 13.50	\$ 27.00
			Subtotal	\$ 299.00
			Total Hourly Rate	\$ 423.18
10 hr			Daily Rate	\$ 4,231.76
2 shifts / including premium				\$ 10,579.41

Estimate Cycle Time - Permitted Facility

Fill Water Truck	25 minutes
Travel time to disposal facility	60 minutes
Empty Water Truck at Well or facility	30 minutes
Return to Pit	120 minutes
Avg. down time for items such as fuel	20 minutes
Total Cycle time per truck	255 minutes

4.25 hours per trip
5.65 trips per 24 hpour period

Facility ID # 159504

Decommissioning, Demolishing / Remove & Dispose of Operating Equipment

Crew Rate				
	Qty.	Unit	Rate	Total
Electrician	1	ea	\$ 49.33	\$ 49.33
Pipefitter	1	ea	\$ 54.02	\$ 54.02
Labor - Foreman	1	ea	\$ 31.53	\$ 31.53
Laborer - Common	2	ea	\$ 28.72	\$ 57.45
Equipment Operator - Level 2	1	ea	\$ 52.55	\$ 52.55
				\$ 244.88
Equipment & Fee Rates (Quantities are by the hour)				
	Qty.	Unit	Rate	Total
Work Truck - Crew Cab	2	ea	\$ 13.50	\$ 27.00
Reach Fork	1	ea	\$ 150.00	\$ 150.00
Backhoe -446B	1	ea	\$ 140.00	\$ 140.00
Crane	0	ea	\$ 400.00	\$ -
Dump/Flatbed Truck & Driver	1	ea	\$ 150.00	\$ 150.00
Trackhoe - PC220	0	ea	\$ 200.00	\$ -
				\$ 467.00
Hourly Rate				\$ 711.88
Daily Rate				\$ 5,695.07
Weekly Rate				\$ 28,475.33
Waste/ Recycle load and trucking only				
	Qty.	Unit	Rate	Total
Lowboy Truck and Driver	1	ea	\$ 225.00	\$ 225.00
Dump Truck and Driver	1	ea	\$ 150.00	\$ 150.00
Reach Fork	1	ea	\$ 150.00	\$ 150.00
Equip Operator	1	ea	\$ 34.50	\$ 34.50
Hourly Crew Rate				\$ 559.50
Load and haul time	374	hours		\$ 73,289.66
Capacity - Tons per hour	24	tons		\$ -
Mileage	44 miles to Grand Junction			\$ 669.41
Total waste/recycle tonnage to haul	365			
Total				\$ 73,959.07

- All metal items such as fencing & tanks will be recycled if available.
- Disposal includes (pipes, culverts, bird netting, concrete post cases, equipment, etc.)
- Disposal cost reduced due to recycling of steel
- 21 tons per truck load of waste
- Equipment will be loaded and hauled to Grand Junction for recycle or repurposing/sale

Total 6 Decommissioning and Demolish \$ 28,475.33
 Total 6.5 Removal and Disposal \$ 110,757.53 (discounted for recycle and scrap value)
 Total D and D \$ 139,232.86

Operating Equipment Decommissioning				
Valve, pipe, elect decommissioning			160 crew hrs	
Crew time/equip	hourly	\$ 711.88	per hour	
Time for crew	5 crew days	\$ 28,475.33		
		total		\$ 28,475.33

Demolition Items

Equipment & Tanks (including labor)

Tanks	Misc tanks	0 tons
Equipment		2 tons
		0 tons
Const debris		32 tons
Concrete		45 tons
		79 total tons

Pipe Crew / ho
 \$ 195.55
 Pipe equip / hr
 \$ 467.00

total crew and equip per hour \$ 662.55

Demo - other total labor and equip summary

Pipe	Size	Matl	wt ea or per lf	quan	tot wt	prod/day	Cost
Perf pipe	4"	S40 PVC		2.01	960	1929.6	500 \$ 7,173.12
Riser pipe	8"	S40 PVC		5.38	50	269	300 \$ 883.40
HDPE	6"	HDPE		7.36	650	4784	300 \$ 11,484.20
HDPE	10"	HDPE		13.15	0	0	300 \$ -
Monitor	2"	Steel		0	0	0	500 \$ -
12" culvert	12"	Galv.		11	120	1320	450 \$ 883.40
18" culvert	18"	Galv.		18		0	450 \$ -
Fence							
Chain link	6'0	galv mesh		500	1040	520000	200 \$ 14,807.17
Poultry fabric	3'0 - 1"	galv mesh		0.067	1040	69.68	1000 \$ 2,961.43
Wood posts		Wood		0		0	0 0.00
Steel posts	6"	Steel		104	106	10973	50 \$ 6,036.77
3/8" cable	3/8"	Steel		0.26	10000	0.00	5000 \$ 7,118.83
Netting	2"	poly prop	lump sum		0	5000	20000 \$ 2,500.00
Tanks / Misc							
90 BBL		Steel		2000	0	0	1 \$ -
200 BBL		Steel		0	0	0	0 \$ -
400 BBL		Steel		8960	2	17920	2 \$ 5,300.40
500 BBL		Steel		0	0	0	\$ -
750 BBL		Steel		16800	0	0	2 \$ -
1000 BBL		Steel		18800	0	0	0.5 \$ -
1500 BBL		Steel		0	0	0	\$ -
2000 BBL		Steel		0	0	0	\$ -
3000 BBL		Steel		37200	0	0	0.25 \$ -
Steel Cont	3'0	Galv Steel			0	0	400 sf \$ -
Cattle Guards	20'	Steel		2000	5	10000	4 \$ 5,339.12
					total		\$ 64,487.84

572265.4 total lbs waste / recycle
 286 total tons waste

Remove & Dispose of Pond Liners (2-60 mil HDPE liners, 1-300 mil 6oz geocomposite liner)							
3 layers of liners and associated membranes							
Description	Qty.	Unit	Production	Unit	Days	Unit Cost	Total
Cut and remove liners	256,390.00	sf	60,000	sf/day	4.3	\$ 8,412.24	\$ 35,946.91
(2) Flatbed Truck, Trailer, & Driver	85	hrs	4	trips/day	3.6	\$ 182.74	\$ 15,617.57
Disposal**	83	tons				\$ 52.00	\$ 4,332.99
Subtotal							\$ 55,897.47
Unit Price (Remove & Dispose per sf)							\$ 0.2180
Liner Demolition & Loading, Trucking							\$0
Total							\$55,897.47

** Assumes 0.5 lbs/sf for the membranes and a 30% increase amount in contaminant (such as sludge or clay) waste.

Crew Rate (2 cut & roll crews)				
	Qty.	Unit	Rate	Total
Laborer - Common	4	ea	\$ 28.72	\$ 114.90
Laborer - Foreman	1	ea	\$ 31.53	\$ 31.53
Equipment Operator - Level 2	2	ea	\$ 52.55	\$ 105.10
Equipment & Fee Rates				
Reach Fork	1	ea	\$ 500.00	\$ 500.00
Compressor, hose, & tools	1	ea	\$ 150.00	\$ 150.00
Dump/small flatbed truck and driver	1	ea	\$ 150.00	\$ 150.00
Subtotal				\$ 1,051.53
Daily Rate (8hrs)				\$ 8,412.24

Facility ID # 159504

Backfill, Compact Site, & Restore Site								
Description	Qty.	Unit	Production	Unit	Days	Unit Cost	Cost	
Rip Clay Layer	40	hrs	25,000	sf	5	\$ 355.10	\$	14,203.88
Push Soil (Dozer Crew 150ft max)	2700	cy	2,500	cy/day	2	\$ 2,423.34	\$	4,555.87
Place Soils and Compact**	4200	cy	4,500	cy/day	1	\$ 6,390.58	\$	5,964.54
Finish work	4.60	Acres			2	\$ 1,750.00	\$	8,050.00
Disc, Seed & Mulch	4.60	Acres			1	\$ 3,500.00	\$	16,100.00
Post Closure Weed Control (1 days of spraying)	1.00	ls				\$ 4,500.00	\$	4,500.00
Compaction Tests	10	tests			1	\$ 85.00	\$	793.33
Subtotal - Backfill & Compaction							\$	54,167.62
Unit Price (Backfill & Compact per cubic yard)							\$	13.90

Bulldozer & Scraper Crew					# of Dozers	1
Crew Rate	Qty.	Unit	Rate	Total		
Laborer - Common	1	ea	\$ 28.72	\$ 28.72		
Equipment Operator - Level 2	2	ea	\$ 52.55	\$ 105.10		
Equipment & Fee Rates						
Blade	1	ea	\$ 175.00	\$ 175.00		
Scraper (627G)	1	ea	\$ 240.00	\$ 240.00		
Bulldozer (D8T)	1	ea	\$ 250.00	\$ 250.00		
Subtotal				\$ 798.82		
Daily Rate (8hrs)				\$ 6,390.58		

Crew Rate (Spread & Compact)					# of S&C teams	1
	Qty.	Unit	Rate	Total		
Truck Driver	1	ea	\$ 25.37	\$ 25.37		
Equipment Operator - Level 2	1	ea	\$ 52.55	\$ 52.55		
Equipment & Fee Rates						
Water Truck - 2500 gallon (1,250 gals/hr usage)	1	ea	\$ 75.00	\$ 75.00		
Compactor, Vibratory (815F)	1	ea	\$ 150.00	\$ 150.00		
Subtotal				\$ 302.92		
Daily Rate (8hrs)				\$ 2,423.34		

**6 in lift with (3 passes per lift), @ 1,000 cy/hr w/6 hrs per day = 3000 cy/day (for 1 crew)

*** Road base and Type L Riprap to be mixed in with soils and compacted.

Facility ID # 159504

Site Management Costs							
	Staff	Time	Unit	Duration	Unit	Rate	Total
	Site Superintendant	4	wks	160	hrs	\$ 55.00	\$ 8,800.00
	Project Manager	4	wks	32	hrs	\$ 67.00	\$ 2,144.00
	Equipment Operator - Level 2	4	wks	160	hrs	\$ 52.55	\$ 8,407.76
	Equipment						
	Portable Toilets	1.25	mos			\$ 180.00	\$ 225.00
	Water Truck	3	wks			\$ 3,400.00	\$ 10,200.00
	Work Truck - Crew Cab	4	wks			\$ 540.00	\$ 2,160.00
	Field Expenses						
	Erosion Control materials	1	ls			\$2,500.00	\$ 2,500.00
	SWPP and Erosion Control Mgt	4	wks			\$ 850.00	\$ 3,400.00
	Site reseeding	incl in "Dirt" tab					
	Subcontractor Costs						
	Survey - staking and as-builts	1	ls			\$ 2,500.00	\$ 2,500.00
							\$ 40,336.76
	Weekly Rate						\$ 10,084.19

Facility ID # 159504

Labor Rates										
Labor Group		Rate	Fringe	Subtotal	Basic Payroll Tax (10.73%)	Worker's Comp. Ins. (13%)	Subtotal	Liability Ins. (1.5%)	Per diem	Total
Electrician		\$ 24.00	\$ 7.32	\$ 31.32	\$ 3.36	\$ 4.07	\$ 38.75	\$ 0.58	\$ 10.00	\$ 49.33
Ironworker		\$ 24.58	\$ 10.47	\$ 35.05	\$ 3.76	\$ 4.56	\$ 43.37	\$ 0.65	\$ 10.00	\$ 54.02
Laborer - Common		\$ 11.11	\$ 3.80	\$ 14.91	\$ 1.60	\$ 1.94	\$ 18.45	\$ 0.28	\$ 10.00	\$ 28.72
Laborer - Foreman										
Foreman (Add 15% to Common)		\$ 12.78	\$ 4.37	\$ 17.15	\$ 1.84	\$ 2.23	\$ 21.22	\$ 0.32	\$ 10.00	\$ 31.53
Truck Driver										
Semi & Water		\$ 16.29	\$ 3.83	\$ 20.12	\$ 2.16	\$ 2.62	\$ 24.89	\$ 0.37	\$ 10.00	\$ 35.27
Equipment Operator - Level 2										
Bulldozer, Backhoe & Reach Fork		\$ 24.73	\$ 9.15	\$ 33.88	\$ 3.64	\$ 4.40	\$ 41.92	\$ 0.63	\$ 10.00	\$ 52.55
Equipment Operator - Level 3										
Excavator & Scraper		\$ 24.88	\$ 9.15	\$ 34.03	\$ 3.65	\$ 4.42	\$ 42.11	\$ 0.63	\$ 10.00	\$ 52.74

Rates taken from the Davis Bacon Wage Decision Numbers:

1/22/16 - CO-12 Determination CO160012 - Mesa and surrounding Counties

Heavy

Any rates not shown were derived by decisions issued for adjacent counties.

Per diem per man per day			
hotel per man			
\$ 45.00	with 2 men/rm	\$ 35.00	Food & Incidentals