

Assumptions
Willow Run CVO

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Investigation, Reporting, Free Product Recover, GW Extraction/Treatment, Soil Capping and Deed Restriction					
Item No.	Description	Quantity	Unit	Unit Cost	Estimated Cost
RCRA Investigation/Reporting					
1	Work plans	1	LS	\$ -	\$ 100,000
3	Supplemental Investigations	1	LS	\$ -	\$ 225,000
4	Risk Assessment	1	LS	\$ -	\$ 150,000
5	Reporting - includes qtrly progress rpts to agency	1	LS	\$ -	\$ 150,000
Subtotal RCRA Investigation Cost					\$ 625,000
TOTAL RCRA INVESTIGATION COST					\$ 625,000
					\$ 625,000
Corrective Measures					
13	Corrective Measures Study/Proposal	1	LS	\$ 100,000	\$ 100,000
14	Bids/Permits/Set up FP recovery	1	LS	\$ 40,000	\$ 40,000
15	Free Product Recovery Systems	1	LS	\$ 200,000	\$ 200,000
16	Install Full Fluid Extraction Wells	20	well	\$ 10,000	\$ 200,000
17	Treatment System Design/Construct	1	LS	\$ 2,500,000	\$ 2,500,000
18	Barrier Wall	6000	ft2	\$ 25	\$ 150,000
19	IRZ Treatment - pilot and full scale (PAOC 23)	1	LS	\$ 250,000	\$ 250,000
20	IRZ Treatment - pilot and full scale (PAOC 24)	2	LS	\$ 250,000	\$ 500,000
22	Deed Restriction Prep/Filing/Closure Report	0	LS	\$ 55,000	\$ -
Subtotal Corrective Measures Cost					\$ 3,940,000
TOTAL CORRECTIVE MEASURES COST					\$ 3,940,000
ROUNDED TO					\$ 3,940,000
Operation, Maintenance and Monitoring					
28	OMM FP recovery systems (4 systems)	5	year	\$ 140,000	\$ 700,000
29	Groundwater Monitoring (semi-annual) - year 0 to 10	10	yr.	\$ 80,000	\$ 800,000
30	Groundwater Monitoring (semi-annual) - year 10 to 20	10	year	\$ 75,000	\$ 750,000
31	GW Monitor IRZ Areas	5	yr.	\$ 40,000	\$ 200,000
32	Well abandonment/FP System Decommissioning	1	LS	\$ 200,000	\$ 200,000
Subtotal Operation and Maintenance Cost					\$ 2,650,000
TOTAL OPERATION AND MAINTENANCE COST					\$ 2,650,000
ROUNDED TO					\$ 2,650,000
FINAL REMEDY COSTS					
38	Subtotal RCRA Investigation Cost				\$ 625,000
39	Subtotal Corrective Measures Cost				\$ 3,940,000
40	Subtotal Operation, Maintenance and Monitoring				\$ 2,650,000
TOTAL RFI/CM/OMM COST					\$ 7,215,000

- Notes:**
- 1

Various Supplemental work plans
- 3

Supplemental field investigations
- 4

Risk Assessment
- 5

Reports to Agency
- Cost estimates are based on 2009 dollars.
- Cost estimates based on ARCADIS US, Inc. past experience and other automotive manufacturing sites
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CMP - Submitted and review by agency with minimal comments
- 14

Permitting/bids for multiphase extraction system
- 15

1 FP recovery system
- 16

Installation of extraction wells
- 17

Treatment system - design/construct
- 18

Extend Barrier wall (300 ft. X 20 feet @ \$25/ft2
- 19

IRZ - pilot and full scale
- 20

IRZ - pilot and full scale
- 22

Deed restrictions
- 28

5 year free product recovery systems
- 29

GW monitoring program - semi annual for 10 years
- 30

GW monitoring program - annual for 10 years
- 31

GW - IRZ applications
- 32

Extraction well abandonment and FP recovery system decommissioning