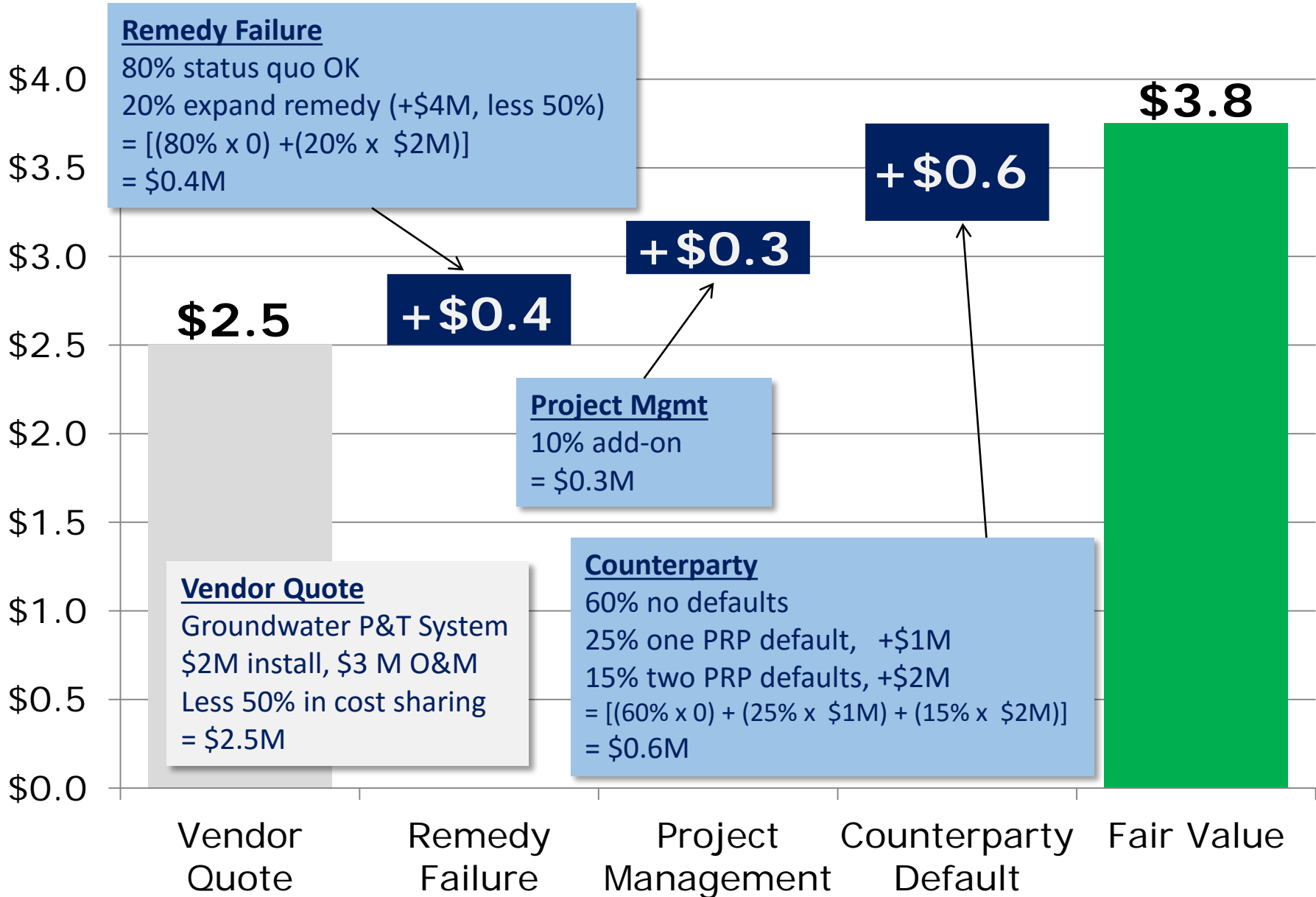


Fair Value Reserve Calculation Example



Best Practices: Watch List v1

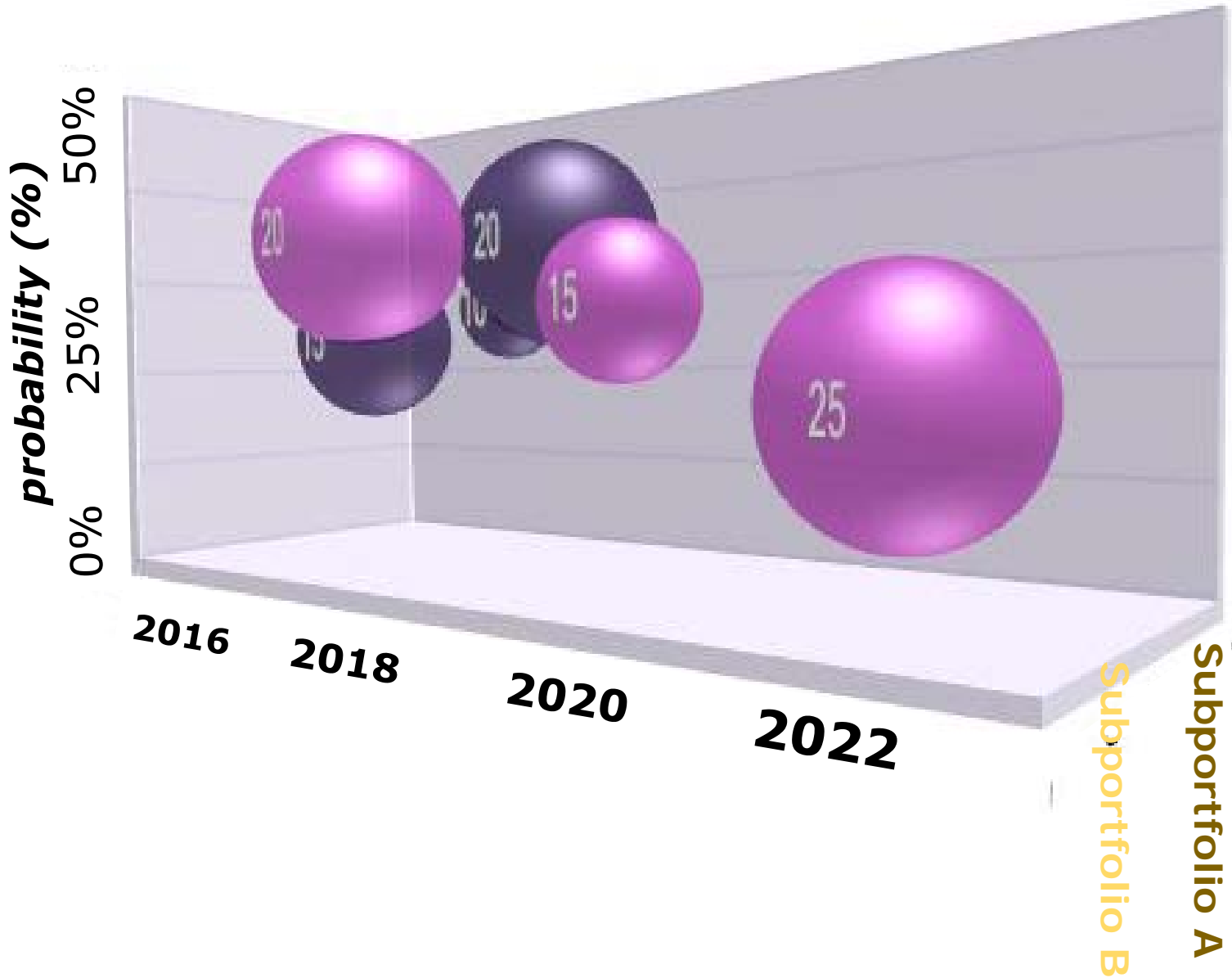


Site	Recognition Trigger	Prob	Low Value	Expected Value	High Value	Timing
Site 1	CAMU size and installation year	100%	28	40	60	3/31/2014
Site 2	Remedy selection: SVE for 10 years	100%	7	10	15	2014-2015
Site 3	√ Insurer denies coverage	50%	49	70	105	1/1/2015
Site 3	30% design of soil removal 20,000 MT (lead)	50%	35	50	75	2016-2018
Site 4	Scope of investigation	100%	3.5	5	7.5	1/1/2014
Site 5	NRDA claim/damages	80%	7	10	15	2015-2018
Site 5	√ 25% PRP defaults	33%	21	30	45	7/1/2016
Site 5	Remedy selection for 195,000 MT (solvents)	100%	28	40	60	7/1/2016
Site 6	Spill excavation, pipeline areas A-1 to C-10	100%	14	20	30	2015-2016
...	Others...		...	975
Sum of Loss Contingencies				1250		

Takeaways

- It displays “reasonably possible” reserve changes
- Site-specific
- Clear “recognition benchmark” or “obligating event” for tracking
- Range of costs, range of timing
- This table is described in **ASC 410-30-50-9** as “disclosures that are encouraged but not required”

Watch List by Likeliest Recognition Year

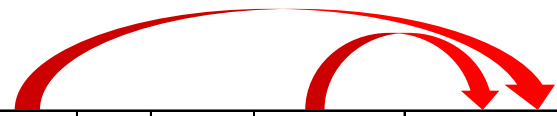


Best Practices: Tabular Reconciliation



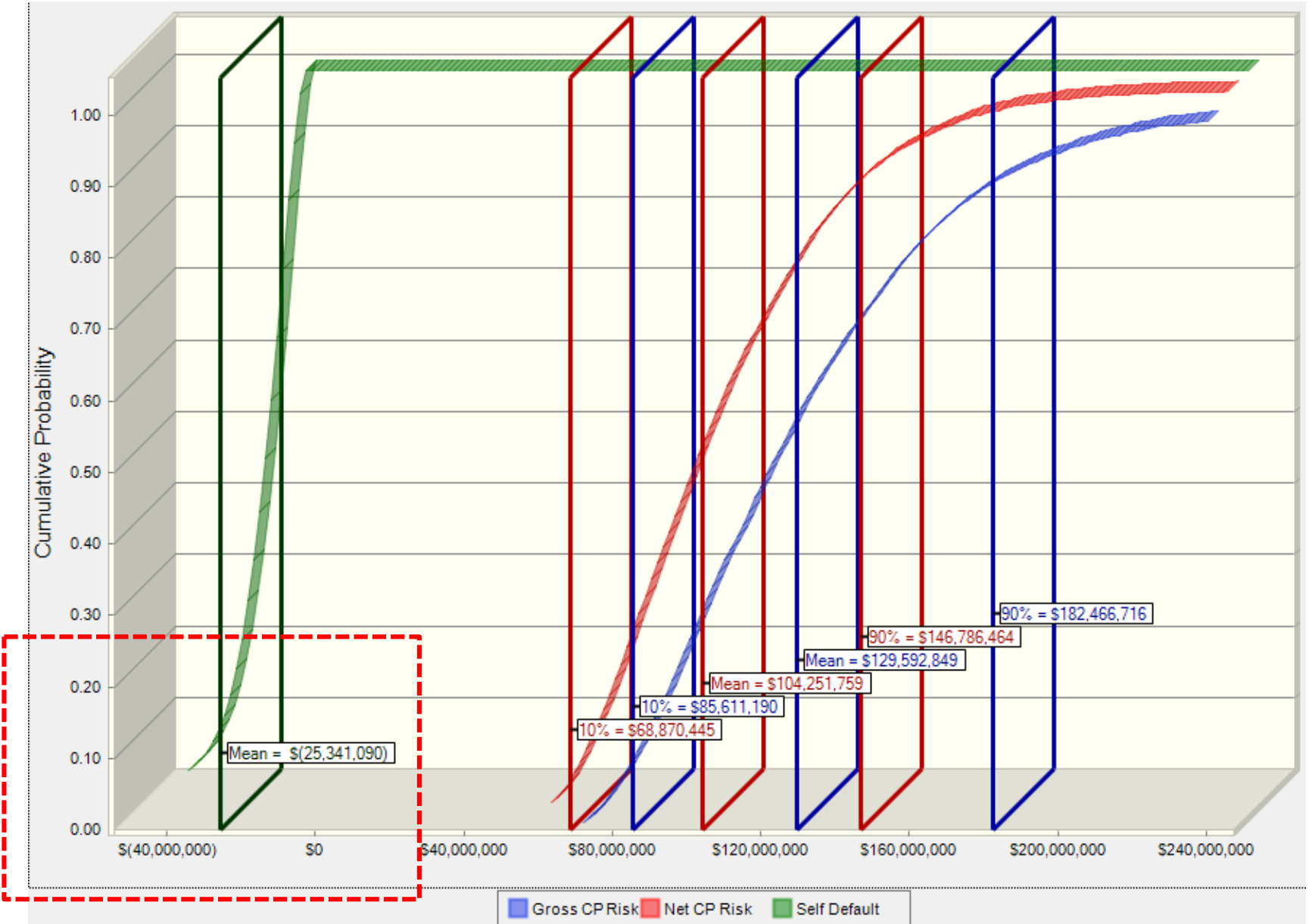
ASC 410-30 Environmental Obligation Reserve	2016	2015	2014
	Clear Trend		
Opening Reserve Balance [Liability]	1000	900	800
+ Reserve Increases [New Sites]	100	100	100
+/- Updated Estimates [Existing Sites]	100	100	100
- Spending	(200)	(200)	(200)
= End of Year Reserve	1100	1000	900
Loss Contingencies [see previous page]	1250	1400	1500
	Good downward trend		
Opening Recoveries Balance [Contra Liability]	200	200	200
+ Recoveries Recognized	100	100	100
- Recoveries Received	(100)	(100)	(100)
= End of Year Recoveries	200	200	200
Recoveries Contingencies	100	200	300
	Good downward trend		

Counterparty Risk Portfolio Valuation



Site	Recognition Benchmark	Type	Current CP Score (max = 1600)	10-year prob(default)	Risk opens	Risk closes	Loss Given Default	Gross E-CP Risk	Less: Self Default	Net E-CP Risk
A	Counterparty defaults on new	ASC 410-20 ARO	1586	20%	Now	1/1/2020	\$9,020,000	\$ 1,804,000	\$ (135,300)	\$ 1,668,700
C	35% counterparty fails	ASC 410-20 ARO	1319	40%	Now	Never	\$11,275,000	\$ 4,510,000	\$ (1,014,750)	\$ 3,495,250
D	Insurer denies coverage	ASC 410-20 ARO	1138	15%	Now	1/1/2020	\$13,530,000	\$ 2,029,500	\$ (152,213)	\$ 1,877,288
E	JV partner fails, four sites revert, RCRA closures	ASC 410-20 ARO	752	35%	Now	Never	\$28,187,500	\$ 9,865,625	\$ (2,219,766)	\$ 7,645,859
E	Insurer for JV denies coverage	ASC 410-20 ARO	1186	50%	Now	1/1/2020	\$28,187,500	\$ 14,093,750	\$ (1,057,031)	\$ 13,036,719
F	Landfill operator CH11, 11 NPL sites	ASC 410-20 ARO	920	35%	Now	Never	\$45,100,000	\$ 15,785,000	\$ (3,551,625)	\$ 12,233,375
H	10 AROs for asbestos, enforcement	ASC 410-20 ARO	696	60%	Now	Never	\$22,550,000	\$ 13,530,000	\$ (3,044,250)	\$ 10,485,750
A	20% counterparty fails by 2020	ASC 410-30 ERL	713	99%	Now	1/1/2021	\$225,500	\$ 223,245	\$ (16,743)	\$ 206,502
B	GW P&T add'l 5 years	ASC 410-30 ERL	1083	80%	Now	Never	\$2,255,000	\$ 1,804,000	\$ (405,900)	\$ 1,398,100
B	GW P&T add'l 5 years	ASC 410-30 ERL	1063	75%	Now	Never	\$2,818,750	\$ 2,114,063	\$ (475,664)	\$ 1,638,398
B	GW P&T add'l 5 years	ASC 410-30 ERL	1465	70%	Now	Never	\$3,382,500	\$ 2,367,750	\$ (532,744)	\$ 1,835,006
B	20% counterparty fails by 2020	ASC 410-30 ERL	998	20%	Now	1/1/2021	\$2,255,000	\$ 451,000	\$ (33,825)	\$ 417,175
B	10% counterparty fails by 2015	ASC 410-30 ERL	601	40%	Now	1/1/2016	\$2,818,750	\$ 1,127,500	\$ (39,463)	\$ 1,088,038
B	25% counterparty fails by 2020	ASC 410-30 ERL	1450	75%	Now	1/1/2021	\$3,382,500	\$ 2,536,875	\$ (190,266)	\$ 2,346,609
C	Buy back property	ASC 440 Commitment	1472	90%	Now	Never	\$11,275,000	\$ 10,147,500	\$ (2,283,188)	\$ 7,864,313
G	Low-profile strategy fails	ASC 440 Commitment	1207	33%	Now	Never	\$5,637,500	\$ 1,860,375	\$ (418,584)	\$ 1,441,791
A	Remedy fails, new remedy	ASC 450 Contingency	1270	50%	Now	Never	\$9,020,000	\$ 4,510,000	\$ (1,014,750)	\$ 3,495,250
C	Deminimis not pursued	ASC 450 Contingency	1595	80%	Now	Never	\$2,255,000	\$ 1,804,000	\$ (405,900)	\$ 1,398,100
D	Remedy fails, new remedy	ASC 450 Contingency	1460	33%	Now	1/1/2020	\$4,510,000	\$ 1,488,300	\$ (111,623)	\$ 1,376,678
F	Counterparty pool shrinks	ASC 450 Contingency	1242	60%	Now	Never	\$22,550,000	\$ 13,530,000	\$ (3,044,250)	\$ 10,485,750
C	Provide financial assurance for entire group	ASC 460 Guarantees	1180	50%	Now	Never	\$33,825,000	\$ 16,912,500	\$ (3,805,313)	\$ 13,107,188
SUM								\$ 122,494,983	\$ (23,953,146)	\$ 98,541,837
p10								\$ 85,611,190	\$ (16,740,745)	\$ 68,870,445
Mean								\$ 129,592,849	\$ (25,341,090)	\$ 104,251,759
p90								\$ 182,466,716	\$ (35,680,252)	\$ 146,786,464

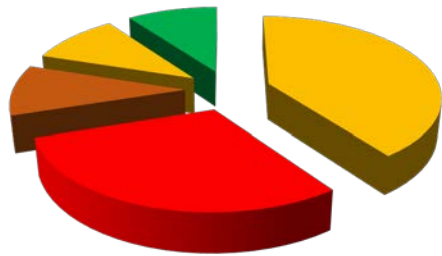
Counterparty Risk Portfolio Valuation



How to Value Counterparty Risk (Portfolio)



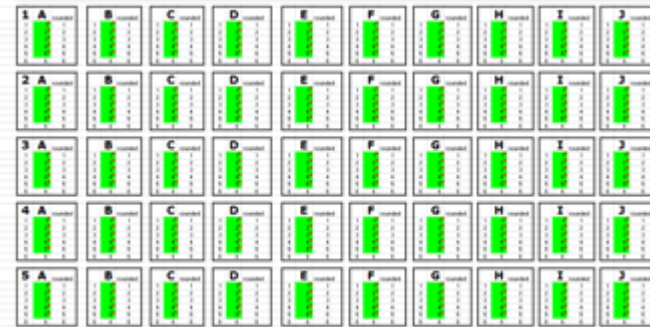
1 2 3 4 5



Allocation by Each Site

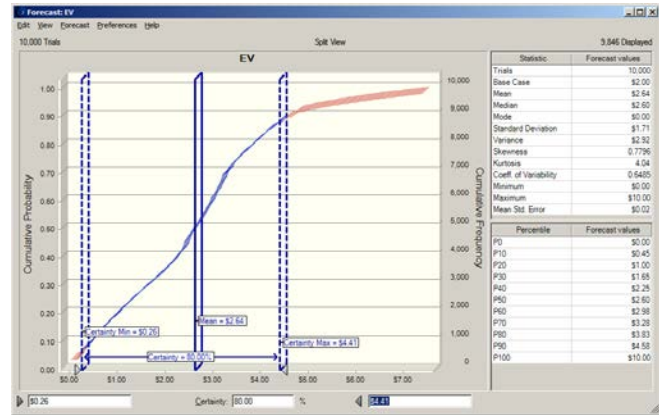
x

Forecasting Engine



Cash Flows by Each Site

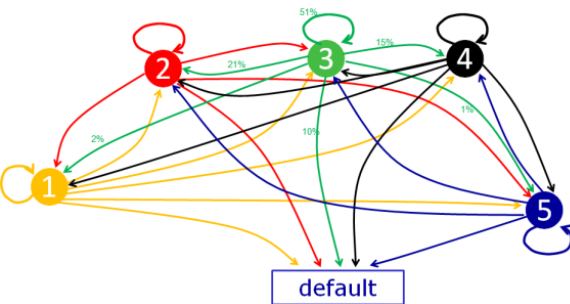
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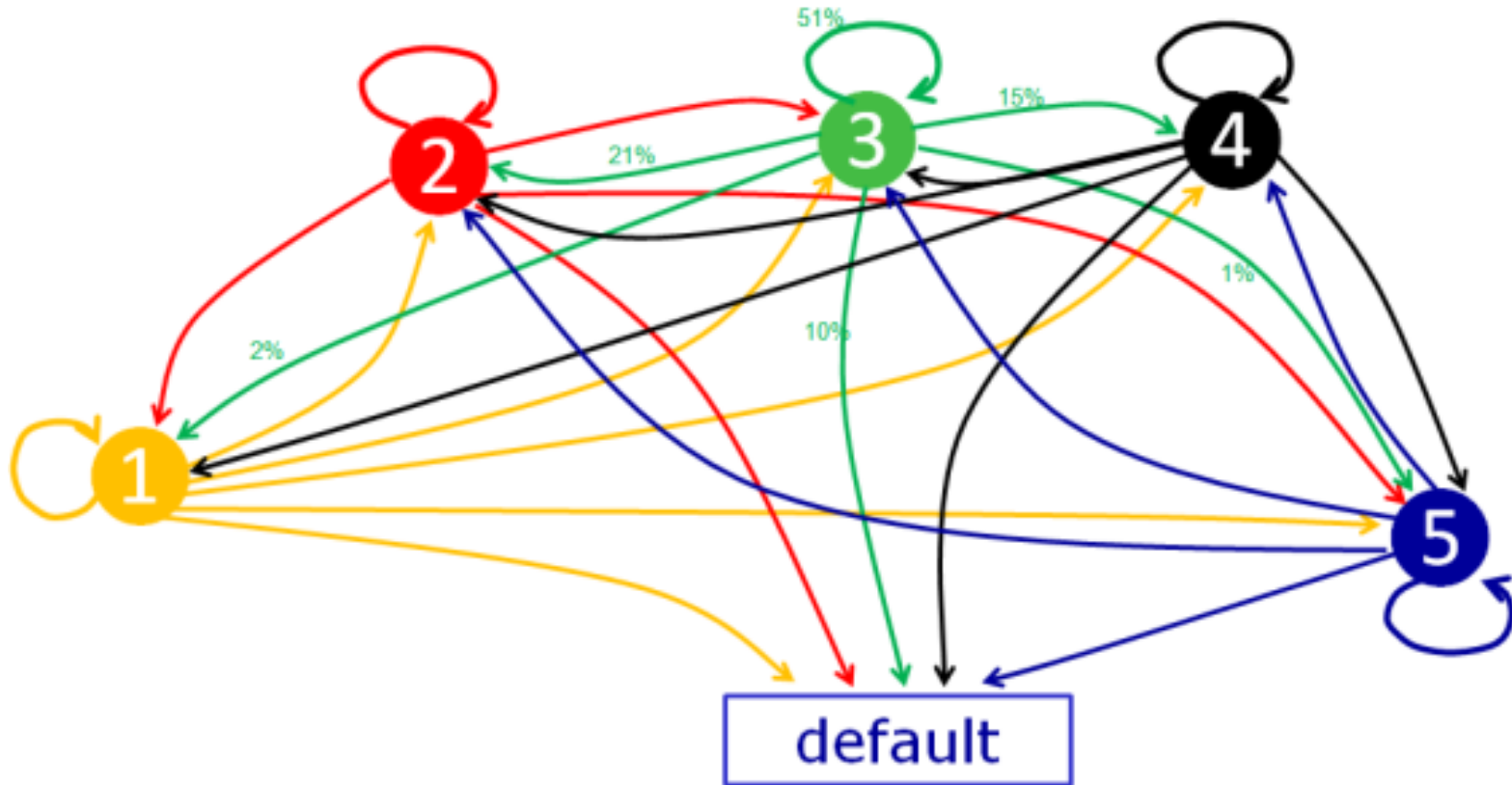
Portfolio Forecast

Index	ASTM	2013	2014	2015	2016	2017	2018	2019	2020
Reserve Case	WBS Code								
Project Management									
Project Management (Internal)	02.30	\$0,000	\$25,000	\$25,000	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
Project Management/Support/Admin (External)	02.01	\$0	\$25,000	\$25,000	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
Subcontractor/Instruments (External)	02.02	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Technical Team Support	02.01	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Contractor Construction Management (Includes Incent)	02.02	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$ 5,000,000	\$0,000	\$50,000	\$50,000	\$0,000	\$0,000	\$0,000	\$0,000	\$0,000
Assessment / Study									
Environmental Investigation Report	04.01	\$25,000	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0
Human Health Risk Assessment	04.02	\$0	\$200,000	\$150,000	\$0	\$0	\$0	\$0	\$0
Remedial Design / Design									
Remedial Design/Facility Design Engineering	04.12	\$0	\$0	\$150,000	\$150,000	\$0	\$0	\$0	\$0
Document Feasibility Study (Corrective Measure Staff)	04.10	\$0	\$25,000	\$25,000	\$0	\$0	\$0	\$0	\$0
Subtotal	\$ 300,000	\$25,000	\$225,000	\$175,000	\$150,000	\$0	\$0	\$0	\$0
Construction / Remediation									
Excavating	18.03	\$0	\$0	\$150,000	\$150,000	\$175,000	\$0	\$0	\$0
Dredging/Excavating	17.01	\$0	\$0	\$46,500	\$46,500	\$325,000	\$325,000	\$0	\$0
Subtotal	\$ 1,122,500	\$0	\$0	\$644,750	\$744,750	\$644,750	\$325,000	\$0	\$0
Operations, Maintenance, and Monitoring									
Sampling and Analysis Plan	08.03	\$0	\$0	\$0	\$0	\$50,000	\$0	\$0	\$0
Monitoring Well Installation	08.01	\$0	\$0	\$0	\$0	\$0	\$50,000	\$0	\$0
Groundwater Sampling/Monitoring (Includes Well Dev)	08.02	\$0	\$0	\$0	\$0	\$0	\$0	\$50,000	\$0
Groundwater Sample Analysis	08.04	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000
Installation and Site Preparation	08.05	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000
Material/Waste Sampling	08.06	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$25,000
Subtotal	\$ 250,000	\$0	\$0	\$0	\$0	\$100,000	\$100,000	\$100,000	\$250,000

Default Probabilities [Transition Matrix]



Computation of Counterparty Risk



Calculation model: time-homogenous absorbing Markov chain

Counterparty Risk Example

- Five PRPs, all have 20% share
- \$1 million/year in cash calls, lasting ten years
- Random mix of credit ratings, ours is FSS Class 1 (best)
- Question: do we reserve above our cash calls? If so, how much?

PRP	Credit Group (FSS)	2015 credit percentile (100 = best)	Prob(failure) in 2015 (EV)	Prob(failure) by 2025 (EV)	Initial Cash Call Allocation	"Loss to A" Given Default of Others (EV)	Offset for Default by A (EV)
A	1	97.50%	3.78%	31.98%	\$ 2,000,000		\$ (152,993)
B	2	81.50%	6.96%	51.39%	\$ 2,000,000	\$ 263,214	
C	3	51.00%	10.43%	66.76%	\$ 2,000,000	\$ 367,192	
D	4	17.50%	12.44%	73.51%	\$ 2,000,000	\$ 420,660	
E	5	1.00%	26.58%	95.45%	\$ 2,000,000	\$ 693,207	
						\$ 1,744,273	\$ (152,993)

- Recalculation of reserve:

+\$2,000,000 cash calls

+\$1,744,273 EV of default by others, in any order (range \$0 - \$8M)

- \$ 152,993 EV of our own default (range \$0 - \$2M)

= \$3,591,280 [*80% higher than original \$2M*]

ERCI Views on Counterparty Risk Trends



	2005	2015
<p><u>Lower average scores</u> ✓ Downward trend is continuing</p>	<p>A bell-shaped curve with a vertical line at the peak. Three points are marked: 'a' (green) on the left tail, 'b' (red) at the peak, and 'c' (blue) on the right tail.</p>	<p>A bell-shaped curve with a vertical line at the peak. Points 'a' (green), 'b' (red), and 'c' (blue) are marked. Arrows show 'a' moving left, 'b' moving left, and 'c' moving left, indicating a downward trend in scores.</p>
<p><u>No longer stable</u> ✓ Larger companies used to be stable; now all are in flux</p>	<p>A bell-shaped curve with a vertical line at the peak. A single point 'b' (red) is marked at the peak.</p>	<p>A bell-shaped curve with a vertical line at the peak. A point 'b' (red) is marked at the peak. Arrows show 'b' moving left and right, indicating instability.</p>
<p><u>Moving across a wider range</u> ✓ Larger swings are normal</p>	<p>A bell-shaped curve with a vertical line at the peak. A point 'b' (red) is marked at the peak.</p>	<p>A bell-shaped curve with a vertical line at the peak. A point 'b' (red) is marked at the peak. Arrows show 'b' moving further left and right, indicating a wider range of scores.</p>
<p><u>Moving more often</u> ✓ More frequent swings are now normal</p>	<p>A bell-shaped curve with a vertical line at the peak. A point 'b' (red) is marked at the peak.</p>	<p>A bell-shaped curve with a vertical line at the peak. A point 'b' (red) is marked at the peak. Multiple arrows show 'b' moving frequently between points, indicating more frequent swings.</p>

Takeaways: expect more issues; continuous monitoring and shorter action cycle.

Fair Value Term Sheet

(Reserve = A through F)



Variable	Level 1/2/3 inputs: site-specific conditions, KPIs, unit costs	FVM Level	Income Impact
A. Lifecycle cost projection	12 years pump & treat, 10 gpm from 5 wells, three pore volumes of 19 acres	2	-\$5.5 million
B. Contingencies for changes to scope, schedule and vendor	25% cost increase for fourth pore volume, doubling well count (to 10) in years 8-12	2	-\$1.2 million
C. Premium for full/partial strategy failure	Additional ten years pump & treat for fifth and sixth pore volume	3	-\$3.8 million
D. Premium for project management	12 years oversight, legal, contracting, cost recovery work	2	-\$2.8 million
E. Premium/discount for counterparty risk	Successor owner has diesel generator onsite; credit rating 620	1	-\$1.5 million
F. Premium/discount for <u>your company's</u> own ability to pay	Fortune 200, credit rating 1085	1	+\$0.5 million
G. Insurance for cost cap, etc	Self-insuring all cost escalation, reopeners	3	+\$0.0 million
H. Income for brownfield	Ground lease \$500K/yr to 2025	2	+\$5.0 million
I. Recovery - current/future costs Asserted and unasserted claims	50% recoverable under Federal contract 20% recoverable from legacy owner	2	+\$7.4 million +\$3.0 million
J. Recovery – sunk costs Asserted and unasserted claims	50% recoverable under Federal contract 20% recoverable from legacy owner	1	+\$0.5 million +\$3.0 million
K. Value of deferred tax assets	30% of items A through F	1	+\$4.3 million
Fair Value Components Total	Outflows Inflows Net		-\$14.8 million +\$23.7 million +\$8.9 million

RemedyDefender – Plan Page

Index



ENVIRONMENTAL BUSINESS PLAN

RESERVE CASE: **(\$28,238,668)**

I. SITE SUMMARY

Site / project specific data, contact information, and critical dates

Site Name	Sediment Site
Project Manager	Luke Vermeire
Project Code	01TACSED
Street	475 Sansome Street
City	San Francisco
State	California
Zip Code	94111
Lead Regulatory Agency	EPA
Lead or NPL Site	WA 123456789
PRP Participant	Yes
PRP Share	75%
USEPA Regulatory Contact	Jane Doe
USEPA Generator ID	n/a
State Regulatory Contact	n/a
State Generator ID	n/a
US EPA Region	9
Project Cause	Port Operations

Business Unit	1001
Lead Internal Attorney	Ryan Lafrenz
Additional Internal Attorney	n/a
Business Unit or Owner Contact	n/a
Public Affairs Coordinator	n/a
Real Estate Coordinator	n/a
External Counsel	n/a
Offsite Landowner	n/a
Third Parties	n/a
Consultant (study)	Consultant 1
Consultant (remediation/O&M)	Consultant 2
Property Tax Status	n/a
Adjoining Property Owners	Tire shop
Date Notified	5/12/2012
Date Added	6/29/2012
Estimated Project Closure Date	7/4/2052
Regulator's Contaminants of Concern	CAM 17, VOCs, SVOCs, PCBs

Last Update Date **8/31/2012**

Budget Approval Date **6/30/2012**

II. GASB 49 Obligor Events and Recognition Benchmarks

Remediation Commencement	(Yes / No)	Obligor Event Comments
Pollution/Imminent Endangerment	(Yes / No)	Obligor Event Comments
Permit Violation	(Yes / No)	Obligor Event Comments
Recognized as a PRP	(Yes / No)	Obligor Event Comments
Lawsuit Recognition	(Yes / No)	Obligor Event Comments

Information regarding compliance with ASC 410-30 Obligor Events

RemedyDefender – Plan Page (cont.)

Receipt of Administrative Order	(Yes / No)	Recognition Benchmark Comments
PRP Member in study/investigation	(Yes / No)	Recognition Benchmark Comments
Completion of CMS or FS	(Yes / No)	Recognition Benchmark Comments
Issuance of Authorization to Proceed	(Yes / No)	Recognition Benchmark Comments
Remedial Design & Imp. of O&M	(Yes / No)	Recognition Benchmark Comments

Information regarding compliance with ASC 410-30 Recognition Benchmarks

III. STRATEGIC ALTERNATIVES		BUDGET VALUE	
Reserve Case	(\$28,238,668)	Reserve case, most likely	Strategic alternatives comparison
Decision Analysis Case 2	(\$47,128,133)	High cost scenario; delayed 5	
Decision Analysis Case 3	(\$22,057,546)	Low cost scenario; 10% more recovery from recalcitrant PRPs	
Financial Assurance Case	(\$13,279,101)	Financial Assurance Case	

Case Number Selected	Site Type	Priority	Status
Case R	PRP Site	Active: High	Env/Assm

IV. HISTORICAL SUMMARY	
Site History	Comment fields for site / project information
Project History	Comment fields for site / project information
Release History	Comment fields for site / project information
Remediation / O&M History	Comment fields for site / project information

Historical notes and summaries

RemedyDefender – Case R (for reserves)



Standardized WBS

Index

Reserve Case	ASTM WBS Code	2013	2014	2015	2016	2017	2018	2019	2020
Project Management									
Project Management (internal)	02.90	\$ 50,000	\$ 25,000	\$ 25,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 5,000
Project Management/Support/Admin (external)	02.01	\$ -	\$ 25,000	\$ 25,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	\$ 5,000
Stakeholder Interactions (external)	02.02	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Technical Team Support	02.91	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Contractor Construction Management (Includes Health)	02.08	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(Double Click to Select Subtask)									
Subtotal:	\$ 550,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 85,000				10,000
Assessment / Study									
Environmental Investigation Report	04.05	\$ 25,000	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Human Health Risk Assessment	04.02	\$ -	\$ 100,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
Subtotal:	\$ 300,000	\$ 25,000	\$ 125,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -	\$ -
Feasibility / Design									
Remedial Design/Facility Design Engineering				\$ 150,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
Document Feasibility Study (Corrective Measure)				\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
Subtotal:	\$ 350,000	\$ -	\$ 25,000	\$ 175,000	\$ 150,000	\$ -	\$ -	\$ -	\$ -
Construction / Remediation									
Dewatering	18.03	\$ -	\$ -	\$ -	\$ 150,000	\$ 250,000	\$ 125,000	\$ -	\$ -
Dredging/Excavating	17.01	\$ -	\$ -	\$ -	\$ 494,706	\$ 494,706	\$ 329,804	\$ 329,804	\$ -
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
(Double Click to Select Subtask)									
Subtotal:	\$ 2,174,019	\$ -	\$ -	\$ -	\$ 744,706	\$ 744,706	\$ 454,804	\$ 329,804	\$ -
Operation, Maintenance, and Monitoring									
Sampling and Analysis Plan	03.03	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000	\$ -
Monitoring Well Installation	07.15	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 500,000	\$ -
Groundwater Sampling/Monitoring (Includes Well Dev)	07.09	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 165,085
Groundwater Sample Analysis	08.02	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 50,000
Mobilization and Site Preparation	05.01	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Material/Waste Sampling	07.13	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000
Subtotal:	\$ 7,442,209	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 550,000	\$ 265,085

Cost estimates

User selected subtasks from drop-down menus

Expected values from modeling sheet

RemedyDefender – Reserve Case (cont.)



Legal																	
Litigation Support	02.19	\$	15,000	\$	15,000	\$	15,000	\$	15,000	\$	15,000	\$	15,000				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
Subtotal:		\$	150,000	\$	150,000	\$	150,000	\$	150,000	\$	150,000	\$	150,000				
Regulatory Requirements																	
Regulatory Interaction	02.03	\$		\$		\$		\$	25,000	\$	-	\$	-				
(Double Click to Select Subtask)		\$		\$		\$		\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$		\$		\$		\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$		\$		\$		\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$		\$		\$		\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$		\$		\$		\$	-	\$	-	\$	-				
Subtotal:		\$	150,000	\$	150,000	\$	150,000	\$	25,000	\$	-	\$	-				
Settlements / Other																	
Health and Safety Plan	03.04	\$	5,000	\$	5,000	\$	5,000	\$	5,000	\$	5,000	\$	5,000				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
(Double Click to Select Subtask)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-				
Subtotal:		\$	50,000	\$	50,000	\$	50,000	\$	5,000	\$	5,000	\$	5,000				
BUDGET TOTAL		\$	(95,000)	\$	(220,000)	\$	(395,000)	\$	(3,753,094)	\$	(4,854,271)	\$	(3,688,335)	\$	(1,410,089)	\$	(445,085)
COST RECOVERIES IN CALCULATION																	
PRP PRIMARY																	
REIMBURSABLE COST BASIS (GROSS)		\$	(95,000)	\$	(220,000)	\$	(395,000)	\$	(3,753,094)	\$	(4,854,271)	\$	(3,688,335)	\$	(1,410,089)	\$	(445,085)
PRP RECOVERY %	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	
VALUE OF % RECOVERY (\$)		\$	23,750	\$	55,000	\$	98,750	\$	938,273	\$	1,213,568	\$	922,084	\$	352,522	\$	111,271
FLAT FEE RECOVERY (SETTLEMENT TO CO.)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
PRP PRIMARY RECOVERY SUBTOTAL		\$	23,750	\$	55,000	\$	98,750	\$	938,273	\$	1,213,568	\$	922,084	\$	352,522	\$	111,271
PRP SECONDARY OR POOL																	
REIMBURSABLE COST BASIS (GROSS)		\$	(95,000)	\$	(220,000)	\$	(395,000)	\$	(3,753,094)	\$	(4,854,271)	\$	(3,688,335)	\$	(1,410,089)	\$	(445,085)
PRP RECOVERY %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
VALUE OF % RECOVERY (\$)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
FLAT FEE RECOVERY (SETTLEMENT TO CO.)		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
PRP SECONDARY RECOVERY SUBTOTAL		\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-	\$	-
COST RECOVERIES TOTAL		\$	23,750	\$	55,000	\$	98,750	\$	938,273	\$	1,213,568	\$	922,084	\$	352,522	\$	111,271

Automatic WBS code lookup from company-defined Work Breakdown Structure (ASTM WBS shown)

Cost recovery / PRP share calculations

RemedyDefender – Monte Carlo Modeling

Index

Probabilistic Cost Modeling (Monte Carlo)



	p10	p50	p90	Expected Value	Chart #
Case R: Reserve Case					
Remedial Costs	\$ 1,000,000	\$ 1,500,000	\$ 2,500,000	\$ 1,649,019	R01
Dredging Acres	75	100	125	100.1	R02
Dredging Cost / Acre	\$ 70,000	\$ 85,000	\$ 100,000	\$ 85,043	R03
Material Cost	\$ 1,000,000	\$ 1,500,000	\$ 2,000,000	\$ 1,501,426	R04
Yearly Monitoring Cost	\$ 125,000	\$ 150,000	\$ 225,000	\$ 165,085	R05

Click to Add Row

Case 1: Delay Project 5 Years					
Remedial Costs	\$ 1,080,000	\$ 1,620,000	\$ 2,700,000	\$ 1,780,941	101
Dredging Acres	75	108	135	108.1	102
Dredging Cost / Acre	\$ 75,600	\$ 91,800	\$ 108,000	\$ 91,846	103
Material Cost	\$ 1,080,000	\$ 1,620,000	\$ 2,160,000	\$ 1,621,540	104
Yearly Monitoring Cost	\$ 135,000	\$ 162,000	\$ 243,000	\$ 178,292	105

Click to Add Row

Case 2: Increased PRP Recoveries					
Remedial Costs	\$ 1,130,000	\$ 1,695,000	\$ 2,825,000	\$ 1,863,392	201
Dredging Acres	75	96	113	113.1	202
Dredging Cost / Acre	\$ 75,180	\$ 96,850	\$ 113,000	\$ 96,098	203
Material Cost	\$ 1,130,000	\$ 1,695,000	\$ 2,260,000	\$ 1,696,612	204
Yearly Monitoring Cost	\$ 141,250	\$ 169,500	\$ 254,250	\$ 186,548	205

Click to Add Row

Case 3: Complete Coverage with Asphalt Cap					
Remedial Costs	\$ 960,000	\$ 1,440,000	\$ 2,400,000	\$ 1,583,059	301
Dredging Acres	72	96	120	96.1	302
Dredging Cost / Acre	\$ 67,200	\$ 81,600	\$ 96,000	\$ 81,641	303
Material Cost	\$ 960,000	\$ 1,440,000	\$ 1,920,000	\$ 1,441,369	304
Yearly Monitoring Cost	\$ 128,000	\$ 160,000	\$ 160,000	\$ 158,482	305

Click to Add Row

Notes: p10, p50 and p90 assumptions refer to the lower bound, likely, and higher bound estimates for any given scenario, respectively.

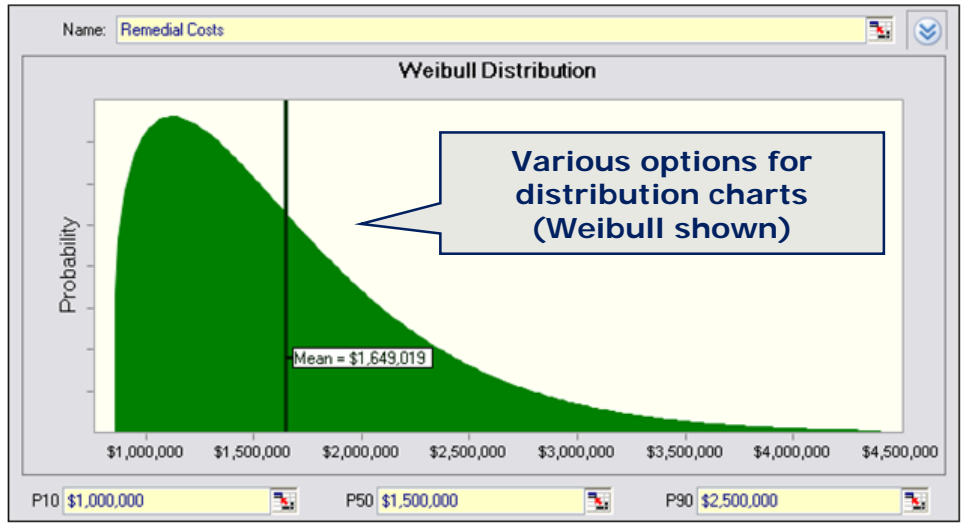
User inputs for ranges to be modeled

User inputs line items, unit cost, or units for analysis

Modeled expected values flow to individual case estimates

DISTRIBUTION CHARTS

R01



R02

