

Kerdiffstown Landfill, Scenario A: restore existing waste only, water monitoring only

Summary Sheet

	Base Cost ('000s)	Euros ('000s)	Upper Rate ('000s)	Euros ('000s)	Best Estimate ('000s)	Euros ('000s)
Landfill Gas	£1,357	€1,588	£5,609	€6,562	£2,790	€3,264
Restoration	£4,277	€5,004	£12,541	€14,673	£7,247	€8,479
Leachate	£570	€667	£2,344	€2,742	£1,234	€1,444
Management	£150	€176	£5,050	€5,909	£1,350	€1,580
Total	£6,355	€7,435	£25,543	€29,886	£12,621	€14,766

Currency = 1.17

Landfill Gas Scenario A, restore existing waste only, water monitoring only

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Perimeter gas well	per well	51	1300	£66,300	€77,571.00	102	3000	£306,000	€358,020.00	61	2000	£122,000	€142,740.00
	Waste body Well	per well	54	1300	£70,200	€82,134.00	108	3000	£324,000	€379,080.00	65	2000	£130,000	€152,100.00
	Pipework per metre	m	2970	20	£59,400	€69,498.00	5940	40	£237,600	€277,992.00	3564	30	£106,920	€125,096.40
	Pump and Flare	number	1	100000	£100,000	€117,000.00	2	200000	£400,000	€468,000.00	1	200000	£200,000	€234,000.00
	Boundary Monitoring Borehole	per borehole	67	500	£33,500	€39,195.00	134	1500	£201,000	€235,170.00	80	1000	£80,000	€93,600.00
	condensate Trap	per hectare	14	2000	£28,000	€32,760.00	28	5000	£140,000	€163,800.00	17	3000	£51,000	€59,670.00
	Well field balancing	per annum	50	10000	£500,000	€585,000.00	100	20000	£2,000,000	€2,340,000.00	70	15000	£1,050,000	€1,228,500.00
	Monitoring	per annum	50	10000	£500,000	€585,000.00	100	20000	£2,000,000	€2,340,000.00	70	15000	£1,050,000	€1,228,500.00
Total			-	-	£1,357,400	€1,588,158.00	-	-	£5,608,600	€6,562,062.00	-	-	£2,789,920	€3,264,206.40

Restoration Scenario A, restore existing waste only, water monitoring only

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Reprofiling	sum	1	10000	£10,000	€11,700.00	1	250000	£250,000	€292,500.00	1	100000	£100,000	€117,000.00
	Enkamat synthetic	m2	140000	8	£1,120,000	€1,310,400.00	140000	15	£2,100,000	€2,457,000.00	140000	12	£1,680,000	€1,965,600.00
	Geo-grid	m2	140000	4.35	£609,000	€712,530.00	140000	7	£980,000	€1,146,600.00	140000	6	£840,000	€982,800.00
	Sub-soil	m3	119000	8	£952,000	€1,113,840.00	119000	20	£2,380,000	€2,784,600.00	119000	10	£1,190,000	€1,392,300.00
	Topsoil	m3	21000	2	£42,000	€49,140.00	42000	30	£1,260,000	€1,474,200.00	42000	10	£420,000	€491,400.00
	Field Drainage	m2	140000	4.5	£630,000	€737,100.00	140000	10	£1,400,000	€1,638,000.00	140000	7	£980,000	€1,146,600.00
	Tree planting and seeding	number	140000	0.3	£42,000	€49,140.00	140000	1	£140,000	€163,800.00	140000	0.5	£70,000	€81,900.00
	Hedge Planting	m		0.6	£0	€0.00	1000	1.5	£1,500	€1,755.00	200	0.9	£180	€210.60
	gas collection layer	number	42000	2	£84,000	€98,280.00	84000	4	£336,000	€393,120.00	50400	4	£201,600	€235,872.00
	Design etc	number	1	25000	£25,000	€29,250.00	1	50000	£50,000	€58,500.00	1	35000	£35,000	€40,950.00
	Surface water interception	m	1666	8	£13,328	€15,593.76	3332	28	£93,296	€109,156.32	1999	15	£29,985	€35,082.45
	Annual topographic survey	number	25	10000	£250,000	€292,500.00	70	15000	£1,050,000	€1,228,500.00	50	12000	£600,000	€702,000.00
	Security	years	25	20000	£500,000	€585,000.00	100	25000	£2,500,000	€2,925,000.00	50	22000	£1,100,000	€1,287,000.00
			0	0	£0	€0.00	0	0	£0	€0.00	0	0	£0	€0.00
Total			-	-	£4,277,328	€5,004,473.76	-	-	£12,540,796	€14,672,731.32	-	-	£7,246,765	€8,478,715.05

Leachate Scenario A, restore existing waste only, water monitoring only

	Item	Unit	Base Cost				Upper Rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Install monitoring borehole	number	20	500	£10,000	€11,700.00	40	1000	£40,000	€46,800.00	24	750	£18,000	€21,060.00
	Monthly monitoring	Event	200	2800	£560,000	€655,200.00	480	4800	£2,304,000	€2,695,680.00	320	3800	£1,216,000	€1,422,720.00
			0	0	£0	€0.00	0	0	£0	€0.00	0	0	£0	€0.00
Total			-	-	£570,000	€666,900.00	-	-	£2,344,000	€2,742,480.00	-	-	£1,234,000	€1,443,780.00

Scenario A Management, restore existing waste only, water monitoring only

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Management	sum	25	2000	£50,000	€58,500.00	100	5000	£500,000	€585,000.00	50	2000	£100,000	€117,000.00
	Licence fees	sum	25	1000	£25,000	€29,250.00	100	3000	£300,000	€351,000.00	50	2000	£100,000	€117,000.00
	Manpower for work on site	sum	25	5000	£125,000	€146,250.00	100	15000	£1,500,000	€1,755,000.00	50	10000	£500,000	€585,000.00
	Compensation for disruption during works	sum	1	0	£0	€0.00	1	500000	£500,000	€585,000.00	1	200000	£200,000	€234,000.00
	Bad weather oncosts	sum	1	0	£0	€0.00	1	250000	£250,000	€292,500.00	1	50000	£50,000	€58,500.00
	Landscape Management	per annum	50	-1000	-£50,000	-€58,500.00	100	10000	£1,000,000	€1,170,000.00	50	3000	£150,000	€175,500.00
	Contingencies	sum	1	0	£0	€0.00	1	1,000,000	£1,000,000	€1,170,000.00	1	250,000	£250,000	€292,500.00
						€0.00				€0.00				€0.00
Total			-	-	£150,000	€175,500.00	-	-	£5,050,000	€5,908,500.00	-	-	£1,350,000	€1,579,500.00

Kerdiffstown Landfill, Scenario B: Restore existing waste only with leachate controls

Summary Sheet

	Base Cost ('000s)	Euros ('000s)	Upper Rate ('000s)	Euros ('000s)	Best Estimate ('000s)	Euros ('000s)
Landfill Gas	£1,357	€1,588	£5,609	€6,562	£2,790	€3,264
Restoration	£4,267	€4,993	£12,291	€14,380	£7,147	€8,362
Leachate	£2,092	€2,447	£17,908	€20,952	£8,103	€9,480
Management	£150	€176	£6,050	€7,079	£1,600	€1,872
Total	£7,866	€9,203	£41,857	€48,973	£19,639	€22,978

Currency = 1.17

Landfill Gas Scenario B, Restore existing waste only with leachate controls

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Perimeter gas well	per well	51	1300	£66,300	€77,571.00	102	3000	£306,000	€358,020.00	61	2000	£122,000	€142,740.00
	Waste body Well	per well	54	1300	£70,200	€82,134.00	108	3000	£324,000	€379,080.00	65	2000	£130,000	€152,100.00
	Pipework per metre	m	2970	20	£59,400	€69,498.00	5940	40	£237,600	€277,992.00	3564	30	£106,920	€125,096.40
	Pump and Flare	number	1	100000	£100,000	€117,000.00	2	200000	£400,000	€468,000.00	1	200000	£200,000	€234,000.00
	Boundary Monitoring Borehole	per borehole	67	500	£33,500	€39,195.00	134	1500	£201,000	€235,170.00	80	1000	£80,000	€93,600.00
	condensate Trap	per hectare	14	2000	£28,000	€32,760.00	28	5000	£140,000	€163,800.00	17	3000	£51,000	€59,670.00
	Well field balancing	per annum	50	10000	£500,000	€585,000.00	100	20000	£2,000,000	€2,340,000.00	70	15000	£1,050,000	€1,228,500.00
	Monitoring	per annum	50	10000	£500,000	€585,000.00	100	20000	£2,000,000	€2,340,000.00	70	15000	£1,050,000	€1,228,500.00
Total			-	-	£1,357,400	€1,588,158.00	-	-	£5,608,600	€6,562,062.00	-	-	£2,789,920	€3,264,206.40

Restoration Scenario B, Restore existing waste only with leachate controls

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Enkamat synthetic		140000	8	£1,120,000	€1,310,400.00	140000	15	£2,100,000	€2,457,000.00	140000	12	£1,680,000	€1,965,600.00
	Geo-grid	m2	140000	4.35	£609,000	€712,530.00	140000	7	£980,000	€1,146,600.00	140000	6	£840,000	€982,800.00
	Sub-soil	m3	119000	8	£952,000	€1,113,840.00	119000	20	£2,380,000	€2,784,600.00	119000	10	£1,190,000	€1,392,300.00
	Topsoil	m3	21000	2	£42,000	€49,140.00	42000	30	£1,260,000	€1,474,200.00	42000	10	£420,000	€491,400.00
	Field Drainage	m2	140000	4.5	£630,000	€737,100.00	140000	10	£1,400,000	€1,638,000.00	140000	7	£980,000	€1,146,600.00
	Tree planting and seeding	number	140000	0.3	£42,000	€49,140.00	140000	1	£140,000	€163,800.00	140000	0.5	£70,000	€81,900.00
	Hedge Planting	m		0.6	£0	€0.00	1000	1.5	£1,500	€1,755.00	200	0.9	£180	€210.60
	gas collection layer	number	42000	2	£84,000	€98,280.00	84000	4	£336,000	€393,120.00	50400	4	£201,600	€235,872.00
	Design etc	number	1	25000	£25,000	€29,250.00	1	50000	£50,000	€58,500.00	1	35000	£35,000	€40,950.00
	Surface water interception	m	1666	8	£13,328	€15,593.76	3332	28	£93,296	€109,156.32	1999	15	£29,985	€35,082.45
	Annual topographic survey	number	25	10000	£250,000	€292,500.00	70	15000	£1,050,000	€1,228,500.00	50	12000	£600,000	€702,000.00
	Security	years	25	20000	£500,000	€585,000.00	100	25000	£2,500,000	€2,925,000.00	50	22000	£1,100,000	€1,287,000.00
			0	0	£0	€0.00	0	0	£0	€0.00	0	0	£0	€0.00
Total			-	-	£4,267,328	€4,992,773.76	-	-	£12,290,796	€14,380,231.32	-	-	£7,146,765	€8,361,715.05

Leachate Scenario B, Restore existing waste only with leachate controls

	Item	Unit	Base Cost				Upper Rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Excavate existing waste	sum	1	100000	£100,000	€117,000.00	1	500000	£500,000	€585,000.00	1	300000	£300,000	€351,000.00
	Install monitoring boreholes	per borehole	20	500	£10,000	€11,700.00	40	1000	£40,000	€46,800.00	30	750	£22,500	€26,325.00
	Monitoring	per occasion	220	2800	£616,000	€720,720.00	620	4800	£2,976,000	€3,481,920.00	420	3500	£1,470,000	€1,719,900.00
	Groundwater slurry cut-off	m2	12000	40	£480,000	€561,600.00	30000	80	£2,400,000	€2,808,000.00	20000	60	£1,200,000	€1,404,000.00
	Pumping Bhs thru wastes	number	14	2000	£28,000	€32,760.00	28	4000	£112,000	€131,040.00	17	3000	£51,000	€59,670.00
	Treatment plant	number	1	250000	£250,000	€292,500.00	1	750000	£750,000	€877,500.00	1	500000	£500,000	€585,000.00
	pump and treat operation	year	5	50000	£250,000	€292,500.00	100	50000	£5,000,000	€5,850,000.00	50	50000	£2,500,000	€2,925,000.00
	injection boreholes	number	5	1500	£7,500	€8,775.00	10	3000	£30,000	€35,100.00	7	2000	£14,000	€16,380.00
	Analysis	year	5	10000	£50,000	€58,500.00	100	10000	£1,000,000	€1,170,000.00	50	10000	£500,000	€585,000.00
	Design and consultancy	number	1	50000	£50,000	€58,500.00	1	100000	£100,000	€117,000.00	1	75000	£75,000	€87,750.00
	Discharge payment	m3	125000	2	£250,000	€292,500.00	1000000	5	£5,000,000	€5,850,000.00	490000	3	£1,470,000	€1,719,900.00
			0	0	£0	€0.00	0	0	£0	€0.00	0	0	£0	€0.00
Total			-	-	£2,091,500	€2,447,055.00	-	-	£17,908,000	€20,952,360.00	-	-	£8,102,500	€9,479,925.00

Management Scenario B, Restore existing waste only with leachate controls

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Management	sum	25	2000	£50,000	€58,500.00	100	5000	£500,000	€585,000.00	50	2000	£100,000	£117,000
	Licence fees	sum	25	1000	£25,000	€29,250.00	100	3000	£300,000	€351,000.00	50	2000	£100,000	£117,000
	Manpower for work on site	sum	25	5000	£125,000	€146,250.00	100	15000	£1,500,000	€1,755,000.00	50	10000	£500,000	£585,000
	Compensation for disruption during works	sum	1	0	£0	€0.00	1	500000	£500,000	€585,000.00	1	200000	£200,000	£234,000
	Bad weather oncosts	sum	1	0	£0	€0.00	1	250000	£250,000	€292,500.00	1	50000	£50,000	£58,500
	Landscape Management	per annum	50	-1000	-£50,000	-€58,500.00	100	10000	£1,000,000	€1,170,000.00	50	3000	£150,000	£175,500
	Contingencies	sum	1	0	£0	€0.00	1	2,000,000	£2,000,000	€2,340,000.00	1	500,000	£500,000	£585,000
						€0.00				€0.00				£0
Total			-	-	£150,000	€175,500.00	-	-	£6,050,000	€7,078,500.00	-	-	£1,600,000	€1,872,000.00

ANNEX 2: Kerdiffstown Landfill, Scenario C

Summary Sheet

	Base Cost ('000s)	Euros ('000s)	Upper Rate ('000s)	Euros ('000s)	Best Estimate ('000s)	Euros ('000s)
Landfill Gas	£1,417	€1,658	£6,819	€7,978	£3,329	€3,895
Restoration	£3,672	€4,297	£12,599	€14,741	£6,332	€7,409
Leachate	£8,732	€10,217	£21,912	€25,636	£13,275	€15,532
Management	£625	€731	£8,050	€9,419	£2,600	€3,042
Total	£14,446	€16,902	£49,379	€57,774	£25,536	€29,877

Currency = 1.17

Landfill Gas Scenario C, new lined landfill, half site restored

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Perimeter gas well	per well	51	2000	£102,000	€119,340.00	102	4000	£408,000	€477,360.00	61	3000	£183,000	€214,110.00
	Waste body Well	per well	54	2000	£108,000	€126,360.00	108	4000	£432,000	€505,440.00	65	3000	£195,000	€228,150.00
	Pipework per metre	m	2970	20	£59,400	€69,498.00	5940	40	£237,600	€277,992.00	3564	37	£131,868	€154,285.56
	Pump and Flare	number	1	100000	£100,000	€117,000.00	2	200000	£400,000	€468,000.00	1	200000	£200,000	€234,000.00
	Boundary Monitoring Borehole	per borehole	67	500	£33,500	€39,195.00	134	1500	£201,000	€235,170.00	80	1000	£80,000	€93,600.00
	condensate Trap	per hectare	14	1000	£14,000	€16,380.00	28	5000	£140,000	€163,800.00	£17	£1,125	£19,125	€22,376.25
	Well field balancing	per annum	50	10000	£500,000	€585,000.00	100	30000	£3,000,000	€3,510,000.00	70	21000	£1,470,000	€1,719,900.00
	Monitoring	per annum	50	10000	£500,000	€585,000.00	100	20000	£2,000,000	€2,340,000.00	70	15000	£1,050,000	€1,228,500.00
Total			-	-	£1,416,900	€1,657,773.00	-	-	£6,818,600	£7,977,762	-	-	£3,328,993	€3,894,921.81

Scenario C Restoration new lined landfill, half site restored

	Item	Unit	Base Cost				Upper rate				Best estimate			
				Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Imported clay capping	m3		2	£0	£0.00		4	£0	£0.00		4	£0	£0.00
	Enkamat synthetic	m2	140000	8	£1,120,000	€1,310,400.00	140000	15	£2,100,000	€2,457,000.00	140000	12	£1,680,000	€1,965,600.00
	Geo-grid	m2	140000	4.35	£609,000	€712,530.00	140000	7	£980,000	€1,146,600.00	140000	6	£840,000	€982,800.00
	Sub-soil	m3	119000	3	£357,000	€417,690.00	119000	20	£2,380,000	€2,784,600.00	119000	5.25	£624,750	€730,957.50
	Topsoil	m3	21000	2	£42,000	€49,140.00	42000	30	£1,260,000	€1,474,200.00	42000	3.75	£157,500	€184,275.00
	Field Drainage	m2	140000	4.5	£630,000	€737,100.00	140000	10	£1,400,000	€1,638,000.00	140000	6	£840,000	€982,800.00
	Tree planting and seeding	m2	140000	0.3	£42,000	€49,140.00	140000	3	£420,000	€491,400.00	140000	1.5	£210,000	€245,700.00
	Hedge Planting	m	0	0.6	£0	€0.00	1700	3	£5,100	€5,967.00	1000	2.25	£2,250	€2,632.50
	gas collection layer	number	42000	2	£84,000	€98,280.00	84000	4	£336,000	€393,120.00	50400	4	£201,600	€235,872.00
	Design etc	number	1	25000	£25,000	€29,250.00	1	75000	£75,000	€87,750.00	1	40000	£40,000	€46,800.00
	Surface water interception	m	1666	8	£13,328	€15,593.76	3332	28	£93,296	€109,156.32	1999	18	£35,982	€42,098.94
	Annual topographic survey	number	25	10000	£250,000	€292,500.00	70	15000	£1,050,000	€1,228,500.00	50	12000	£600,000	€702,000.00
	Security	years	25	20000	£500,000	€585,000.00	100	25000	£2,500,000	€2,925,000.00	50	22000	£1,100,000	€1,287,000.00
			0	0	£0	€0.00	0	0	£0	€0.00	0	0	£0	€0.00
Total			-	-	£3,672,328	€4,296,623.76	-	-	£12,599,396	€14,741,293.32	-	-	£6,332,082	€7,408,535.94

Leachate Scenario C new lined landfill, half site restored

	Item	Unit	Base Cost				Upper Rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Excavate and place existing waste	sum	1	500000	£500,000	€585,000.00	1	2000000	£2,000,000	€2,340,000.00	1	1000000	£1,000,000	€1,170,000.00
	Engineer Landfill base and sides	sum	1	200000	£200,000	€234,000.00	1	1000000	£1,000,000	€1,170,000.00	1	600000	£600,000	€702,000.00
	Artificial liner base	m2	128000	10	£1,280,000	€1,497,600.00	128000	20	£2,560,000	€2,995,200.00	128000	15	£1,920,000	€2,246,400.00
	Artificial liner, sides	m2 of wall	366850	15	£5,502,750	€6,438,217.50	366850	30	£11,005,500	€12,876,435.00	366850	20	£7,337,000	€8,584,290.00
	Leachate collection (herringbone)	m	14000	40	£560,000	€655,200.00	14000	60	£840,000	€982,800.00	14000	53	£742,000	€868,140.00
	Leachate pump	item	14	1000	£14,000	€16,380.00	28	4000	£112,000	€131,040.00	17	2600	£44,200	€51,714.00
	Electricity cable	m	1400	20	£28,000	€32,760.00	5600	40	£224,000	€262,080.00	3360	30	£100,800	€117,936.00
	Delivery pipe	m	250	30	£7,500	€8,775.00	1000	70	£70,000	€81,900.00	600	45	£27,000	€31,590.00
	Leachate lagoon construction	number	1	400000	£400,000	€468,000.00	1	1000000	£1,000,000	€1,170,000.00	1	600000	£600,000	€702,000.00
	Leachate system operation	m3	175000	1	£175,000	€204,750.00	350000	3	£1,050,000	€1,228,500.00	350000	1.13	£395,500	€462,735.00
	Connection to sewer	m	250	10	£2,500	€2,925.00	500	100	£50,000	€58,500.00	350	53	£18,550	€21,703.50
	Discharge payment	m3	125000	0.5	£62,500	€73,125.00	1000000	2	£2,000,000	€2,340,000.00	490000	1	£490,000	€573,300.00
			0	0	£0	€0.00	0	0	£0	€0.00	0	0	£0	€0.00
Total			-	-	£8,732,250	€10,216,732.50	-	-	£21,911,500	€25,636,455.00	-	-	£13,275,050	€15,531,808.50

Management Scenario C new lined landfill, half site restored

	Item	Unit	Base Cost				Upper rate				Best estimate			
			Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros	Quantity	Rate	Cost	Euros
	Design and supervision	sum	1	400000	£400,000	€468,000.00	1	1000000	£1,000,000	€1,170,000.00	1	600000	£600,000	€702,000.00
	Management	sum	25	5000	£125,000	€146,250.00	100	15000	£1,500,000	€1,755,000.00	50	10000	£500,000	€585,000.00
	Licence fees	sum	25	1000	£25,000	€29,250.00	100	3000	£300,000	€351,000.00	50	2000	£100,000	€117,000.00
	Manpower for work on site	sum	25	5000	£125,000	€146,250.00	100	15000	£1,500,000	€1,755,000.00	50	10000	£500,000	€585,000.00
	compensation for disruption during works	sum	1	0	£0	€0.00	1	500000	£500,000	€585,000.00	1	200000	£200,000	€234,000.00
	Bad weather oncosts	sum	1	0	£0	€0.00	1	250000	£250,000	€292,500.00	1	50000	£50,000	€58,500.00
	Landscape Management	per annum	50	-1000	-£50,000	-€58,500.00	100	10000	£1,000,000	€1,170,000.00	50	3000	£150,000	€175,500.00
	Contingencies	sum	1	0	£0	€0.00	1	2,000,000	£2,000,000	€2,340,000.00	1	500,000	£500,000	€585,000.00
						€0.00				€0.00				€0.00
Total			-	-	£625,000	€731,250.00	-	-	£8,050,000	€9,418,500.00	-	-	£2,600,000	€3,042,000.00