THE FOLLOWING CHANGES ARE PRESENTED HERE FOR BONDING WORKSHEETS

1. Insert the attached Bonding Worksheet into the Application.

BONDING

Prepared 08/2023; Revised 10/2025

The bonding worksheets presented here have been revised to provide demonstration that the facility has the ability to remove and cleanup the pre-treatment area. Bonding Worksheets revised to reflect this information have been marked with a "10/2025" date.

Bonding - Table of Contents

COMPARISON OF APPROVED BONDING WORKSHEETS TO THOSE PRESENTED WITH THIS PERMIT RENEWAL

PADEP Bonding Worksheet ID	Approved Estimate Worksheet (1)	October 2025 Worksheet (2)
A – Decontaminating The Facility	$90,294	$90,706
B – Cap and Final Cover Placement	$3,964,133	$3,417,431
C – Groundwater Monitoring System	$1,078,127	$1,094,750
D – Surface Water Monitoring	$424,096	$424,096
E – Private Water Supply Monitoring	$0	$0
F – Gas Monitoring System	$263,348	$263,348
G – Gas Collection System	$5,111,724	$5,238,670
H – Other Monitoring and Reporting	$325,500	$325,500
I – Leachate Management	$5,661,426	$4,787,605
J – Borrow Area Closure	$74,338	$27,485
K – Facility Maintenance Costs	$1,791,596	$1,749,679
L – Summary of Cost Worksheet (Inflation)	$1,0130,832	$2,264,505
L – Summary of Cost Worksheet (Contingencies and Administrative Fees)	$2,348,073	$3,048,371
Totals	**$23,202,716**	**$22,732,146**

(1) These referenced Bond Worksheets reference the most recent bond determination for Westmoreland Sanitary Landfill approved as part of a Minor Permit Modification Application (Leachate Evaporator). The current funded financial assurance matches that for the scenario that includes trucking.

(2) These Bond Worksheets presented with this Minor Permit Modification Application for a Leachate Treatment Trial present an updated bonding scenario assuming leachate will be trucked off-site. The summary above presents costs items associated with leachate trucking result in a total bond of $22,732,146.

(3) The Bond Worksheets prepared with the Permit Renewal Submitted August 2023 without trucking of leachate included were not revised as part of the Minor Permit Modification Application.

Date Prepared	COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF LAND RECYCLING AND WASTE MANAGEMENT	I.D. Number
08/2023		100277

General Information

Permits: Please list all permits, approvals, licenses, registrations, other bonds, etc. for this facility.

I.D. # 1	Authority 2	Summary 3
100277	PaDEP Bureau of Solid Waste Management	
PAR506110	PaDEP Bureau of Water Quality	
OP-65-00767	Air Quality Permit	

1. List the permit I.D. number, registration number, etc. If there is no number, put in "none".
2. List the issuing authority's name, address and telephone number
3. List any closure features or monitoring requirements. As examples: For storage tanks, list the number, type and size of tanks. For NPDES permits list the number of outfalls to be monitored and ponds/plants to be maintained and/or closed.

Date Prepared		I.D. Number
08/2023 Revised 10/2025	COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT	100277

BONDING WORKSHEET A
DECONTAMINATING THE FACILITY

Project Sum **On-site equipment to be decontaminated includes:**
1 bulldozers, 2 compactors, 2 track highlifts, 2 pick-up trucks
See Calculation Brief attached to this Bonding Worksheet for a description of the determination of various cost estimates provided here.

1.	Maximum volume of solid waste required to be moved or disposed as part of closure (includes cost for solidification).	1,273	cy	Note (1)
2.	Estimated volume of contaminated soils or materials (from accidents, spills, prior remediations).	100	cy	Note (1)
3.	Total volume of waste (line 1 + line 2).	1,373	cy	
4.	Unit cost to dispose off-site (include any analyses or transportation cost).	$59.00	$/ton	Note (2)
5.	Total cost to dispose of waste (line 3 x line 4).	$76,552		Note (3)
6.	Estimated volume of contaminated liquid generated during decontamination.	8,000	gal	Note (4)
7.	Unit cost to treat/dispose of contaminated liquids (including any transportation)	0.0750	$/gal	Note (5)
8.	Total cost to dispose of contaminated liquids (line 6 x line 7).	$600		
9.	Estimated volume of fill material	1,273	cy	Note (6)
10.	Unit cost of acquiring, transporting, placing and stabilizing (I.e. revegetating) fill material (include costs for off-site purchase if soil not available on-site).	$6.06	$/cy	Note (7)
11.	Total cost to fill (line 9 x line 10).	$7,714		
12.	Equipment decontamination cost	$5,840	LS	Note (8)
	Total cost - all Worksheet A	$90,706		

(Put final total on summary cost sheet - line 1)

1 List the areas/equipment that will need to be decontaminated and include any assumptions made. Multiple sheets should be used to estimate the costs for different areas.

BONDING WORKSHEET A

(Notes and Additional Information)

(1) Waste to be disposed during closure is assumed to be generated from construction activities and employee waste. During closure construction it has been assumed that the disposal of construction debris and miscellaneous waste will be from Gas Well Drilling (399-tons), Leachate Tank Sludge (459.5-tons), Geosynthetic Scrap (20-tons) and general refuse (20-tons) for a total of 899-tons or 1,213-cy. Additionional waste volumes have been included to account for wastes which may be present within the proposed gas processing plant (40-cy) and the proposed leachate pre-treatment plant (20-cy) for a total volume of waste to be removed or disposed of 1,273-cy. A volume of 60-cy has been estimated for contaminated soils or materials, an additional 20-cy has been added for potential process residual at the proposed gas plant, and an additional 20-cy for the potetial waste from the proposed pre-treatment plant for a total of 100-cy. The 40-cy from the gas plant and pre-treatment plant are esitmated to include decontamination and disposal of all

(2) Disposal cost taken as current average gate rate for WM/Allied Waste in the Southwestern PA Area at 50.00-$/tn and a 2.00-hr hauling round trip at a typical unit cost of 65.00-$/hr and a typical load of 15-tn. Therefore, total unit disposal cost = 50.00-$/tn + (65.00-$/hr * 2.00-hr)/15-tn Average = 59-$/tn.

(3) Solid Waste / Contaminated Material disposal cost calculated utilizing density of 70.0-pcf and unit cost identified above. 1373-cy * 27-cf/cy * 70.0-lb/cf * 1-tn/2,000-lb * 59.00-$/tn = $76552

(4) Equipment decontamination cost is assumed to utilize a 100-gal/hr steam cleaner/pressure washer which will be run for 80-hrs for a total of 100-gal/hr * 80-hr = 8000-gal

(5) Contaminated liquid treatment costs based upon the estimated leachate disposal rates presented under Worksheet I.

(6) Volume of fill assumed to arbitrarily be the contaminated material removal presented in Line 1, to replaced excavated materials and improve grading/drainage

(7) Fill material unit costs include excavation, hauling loading, grading and compaction. See RS Means backup cost data in Exhibit 16 for individual unit rates.

(8) Equipment decontamination cost assumed to include material and labor costs necessary to decontaminate equipment. It is assumed that as identifed in Note 4 above, decontamination will include a 100-gal/hr steam cleaner / pressure washer and 1 Class II Laborer for a total of 40 hours or 5 days. The steam cleaner rental rate is $139.07/day and the Class II Laborer rate is $55.61/hr for total decontamination cost of $139.07/day * 5-days + 1 * $55.61/hr * 40-hrs = $2,919.75. Further, additional decontamination costs are presented here to account for the proposed gas processing facility and leachate evaporator. Equipment decontamination cost for the proposed gas processing facility decontamination equal to $139.07/day * 5-days + 1 * $55.61/hr * 40-hrs = $2,919.75. Therefore, total equipment decontamination for the facility is $2,919.75 + 2,919.75 = $5,839.5.

Date Prepared		I.D. Number
08/2023	COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT	100277

BONDING WORKSHEET B
CAP AND FINAL COVER PLACEMENT

How do I start? Select a likely "worst case" scenario where you would have a maximum amount of the facility open and in need of closure. Provide a description of the scenario with references to site development stages.

My approved cap and final cover design consists of (top to bottom):

The cap system for this landfill includes the following (from top to bottom): 1) 24-inch final cover soil, 2) geocomposite drainage layer consisting of 6-oz/sy nominal nonwoven geotextiles bonded to each side of a HDPE geonet, 3) a textured 40-mil nominal geomembrane, 4) (Optional 6-oz/sy nominal nonwoven geotextile cushion), 5) prepared 12-inch intermediate soil cover.

1. Volume of fill required for area not at final/intermediate grade, but would require filling prior to capping: **20,167 CY** Note (1)
2. Maximum area to be capped and covered (this should include all areas at final grade and not capped, intermediate grades and areas to be filled to get to intermediate grades then capped): **50.0 AC** Note (2)
3. Closure design, surveying and development of construction drawings (use $750.00/acre of number 2). **$37,500**
   a. Construction and maintenance of access roads. **$28,044 LS** Note (3)

Material Volumes/Areas:

4. Earthen Materials

a.	Structural Fill	2,500 CY	(Specification1)	24" Minus, 24"Lifts	Note (4)
b.	Intermediate Cover	40,333 CY	(Specification1)	6" minus, 1 lift	Note (5)
c.	Clay Cap Material	N/A CY	(Specification1)	N/A	
d.	Final Cover Soil	161,333 CY	(Specification1)	6" minus, 1 lift	Note (5)
e.	Sand/Stone	N/A CY	(Specification1)	N/A	
f.	Other	N/A CY	(Specification1)	N/A	

5. Synthetic Materials

a.	Geotextile	N/A Sq Ft	(Type)	6-oz/sy nom. Nonwoven	Note (6)
b.	FML	2,178,000 Sq Ft	(Type)	40-mil nom. textured (15)	Note (6)
c.	Drainage Layer	2,178,000 Sq Ft	(Type)	Composite (6-oz/sy DS) (15)	Note (6)
d.	Other	N/A Sq Ft	(Type)	N/A	

6. Cap Penetrations: Estimate the number of cap penetrations that will need to be installed for closure of the facility including, but not limited to gas extraction wells, cleanouts, valve pits, etc. **300** Note (7)

1 Provide a brief description of the material specification (I.e. 3/4" minus, 12" minus - 12" lifts, etc.)

Material Unit Costs:

7. Unit cost to place or regrade material to reach final grades (this may include additional waste placemen to reach grade) **$1.79** $/CY Note (8)

Are sufficient soils available in permitted on-site borrow areas to complete job? (Attach maps that identify sources and stockpiles) **Yes** Note (9)

8. Earthen Materials

	Stockpile	Borrow	Onsite	Offsite	Processing Req'd Yes	Processing Req'd No
a. Structural Fill	☐	☑	☑	☐	☐	☑
Unit cost to place 2 **$1.79** $/cy						Note (10)
b. Intermediate Cover	☐	☑	☑	☐	☐	☑
Unit cost to place 2 **$4.05** $/cy						Note (10)
c. Clay Cap Material	☐	☐	☐	☐	☐	☐
Unit cost to place 2 **N/A** $/cy						
d. Final Cover Soil	☐	☑	☑	☐	☑	☐
Unit cost to place 2 **$4.05** $/cy						Note (10)
e. Sand/Stone	☐	☐	☐	☐	☐	☐
Unit cost to place 2 **N/A** $/cy						
f. Other	☐	☐	☐	☐	☐	☐
Unit cost to place 2 **N/A** $/cy						

9. Synthetic Materials

a. Geotextile
Unit cost to place 3 **N/A** $/sq. ft Note (11)

b. FML
Unit cost to place 3 **$0.360** $/sq. ft Note (11)

c. Drainage Layer
Unit cost to place 3 **$0.500** $/sq. ft Note (11)

d. Other
Unit cost to place 3 **N/A** $/sq. ft

2 The unit costs include all associates costs including, but not limited to cost of material, excavation, transportation, processing and placement.

3 The unit price should include the material cost, transportation cost, handling and installation cost.

10. Cap Penetration Unit Cost

List the unit cost to fabricate and install each cap penetration

Unit cost to place **$56.00** $/ea Note (12)

11. Unit cost to construct E&S structures

(I.e. channels, letdowns, etc.) **6,189** $/ac Note (13)

12. Revegetation Cost

(Seeding rate used: **See Exhibit 3** lbs/acre)

(Lime rate used: **See Exhibit 3** tons/acre)

(Fertilizer rate used: **See Exhibit 3** tons/acre)

(Mulch rate used: **See Exhibit 3** tons/acre)

Unit cost to revegetate 3 **$2,650.00** $/ac Note (14)

13. Cost Summary

a. Fill (line 1 x line 7)	$	**36,099**
b. Construction Drawings (line 3)	$	**37,500**
c. Construction Roads (line 3a)	$	**28,044**
d. Structural Fill (line 4a x line 8a)	$	**4,475**
e. Intermediate Cover (line 4b x line 8b)	$	**163,349**
f. Clay Cap Material (line 4c x line 8c)	$	**0**
g. Final Cover (line 4d x line 8d)	$	**653,399**
h. Sand/Stone (line 4e x line 8e)	$	**0**
I. Other (line 4f x 8f)	$	**0**
j. Geotextile (line 5a x line 9a)	$	**0**
k. FML (line 5b x line 9b)	$	**784,080**
l. Drainage Layer (line 5c x line 9c)	$	**1,089,000**
m. Other (line 5d x line 9d)	$	**0**
n. Penetrations (line 6 x line 10)	$	**16,800**
o. E & S Structures (line 2 x line 11)	$	**309,450**
p. Revegetation (line 12 x line 2)	$	**132,500**
Subtotal	**$**	**3,254,696**
CQA cost (use 5% of subtotal)	$	**162,735**
Total	**$**	**3,417,431**

(Place this total on Summary Cost Worksheet - line 2)

BONDING WORKSHEET B

(Notes and Additional Information)

(1) During final closure or premature closure, it has been assumed that the majority of the landfill will be filled to final grades. However, some grading may be required to fill low areas and provide minimum slopes for surface water runoff. It has been assumed that grading will consist of an average of 0.50-ft of fill over one half of the 50.0-ac closure area. Grading Volume = 0.5 * 50.0-ac * 43,560-sf/ac * 0.50-ft * 1-cy/27-cf = 20167-cy.

(2) Maximum open area to represent largest open area at any time during landfill operation, prior to closure.

(3) This roadway is assumed to be a construction haulroad utilized for borrow area access or other related construction access. Maintenance of these interim access roads is usually considered incidental to an earthworks contract. However, as requested here a cost has been estimated from Means as 12.62$/sy (see Exhibit B). Additionally, a roadway with a length of 1000-lf and width of 20.0-ft have been utilized for estimating purposes. Roadway cost = (1000-lf * 20.0-lf) * 1-sy/9-sf * 12.62-$/sy = $28044

(4) A nominal fill quantity has been assumed here for the fine grading of surface water benches and downchute channels.

(5) Intermediate Cover has been assumed to be present over the closure area as part of normal landfill operations, prior to landfill closure construction. However, an additional average 0.50-ft thickness over the 50.0-acre closure area for fine grading of the intermediate cover soil. Final Cover soil has been taken to be a 2-ft thick layer over the 50.0-acre closure area. Intermediate Cover = 50.0-ac * 43,560-sf/ac * 0.50-ft * 1-cy/27-cf = 40333-cy and Final Cover = 50.0-ac * 43,560-sf/ac * 2-ft * 1-cy/27-cf = 161333-cy

(6) The area estimate for the FML and Drainage Layer has been taken to be the measurement of the 50-acre closure area reported in square feet. 43,560-sf/ac * 50 = 2178000-sf.

(7) To provide a conserative estimate of cap penetrations to be installed with this bonding estimate, it has been assumed that all future gas wells to be installed, from Bonding Worksheet G are located within the final closure area. Total penetrations have been estimated as 6 penetrations per acre, or 50.00 acres* 6 penetrations per acre = 300 total penetrations.

(8) Since this closure is assumed to take place when the facility has reached maximum capacity or premature closure when waste acceptance has ceased, it has been assumed that regrading will consist of minor in-place waste regrading (with the placement of no new waste) and the placement of structural fill. Therefore, the cost presented here is for the placement of soil structural fill, if needed. See Note 10 for calculation.

(9) For purposes of these bonding calculations, it has been assumed that premature closure at the time when the maximum open area is achieved, there will be sufficient soil materials on-site where off-site borrow will not be needed.

(10) Placement cost for Structural Fill, Intermediate Cover and Final Cover taken from Means with assumed 1.0-mile round trip haul distance. The material purchase cost was neglected since material will be generated on-site. Unit Cost has been calculated = Loading Cost + Hauling Cost + Grading Cost. (see Exhibit B for costing) This value is appropriate given the unit cost obtained from contractor bids for Landfill Cell/Cap projects in April, 2011 range from 2.65-$/cy to 8.00-$/cy. Bid Summaries for these projects are presented in Exhibit 13 for price comparison only. Actual cost used is taken to be the following.
Placement = 0.00-$/cy + 4.05-$/cy + [0.00-$/sy * 9-sf/sy * 2-ft thickness / 27-ft/cy] = 4.05-$/cy

(11) Geosynthetic Material costs provided by Noble Personel in June, 2022 are presented in Exhibit 2.

(12) It has been assumed that each cap penetration will take 1 skilled laborer 1-hour to fabricate and complete in the field. The laborer rate has been taken from the prevailing wage rate sheet for a Class III skilled laborer for Westmoreland county. (see Exhibit B) Penetration Cost = Class III Skilled Laborer * 1-hr * 56.00-$/hr = $56.00/Penetration.

(13) E&S structures have been estimated by the calculation of construction costs for construction of required ditches for final stage of closure. For conservative bonding calculations, the channels have been taken as half of the total construction cost as a worst-case scenario to be $263,587 as shown in the Channel Construction Cost Summary Table presented below. A unit price of 5,272-$/ac is calculated below by taking the worst-case scenario cost of $263,587 divided by 50.0-ac.

Channel Excavation Summary

Channel Designation	Bottom W(ft)	Side Slope	Depth (ft)	Length (lf)	Volume (cy)
B1, B2, B3, C1, C5, C9, D2, F3, F10	5.00	2.00	2.00	2,950	1,967
C2, C3, C4, C7, C8, F2	6.00	3.00	2.00	2,350	2,089
F7, F9	10.00	3.00	2.00	650	770
F4, F5, F6	7.00	3.00	1.60	1,300	909
C6	4.00	3.00	1.75	100	60
D1	8.00	1.50	1.00	650	229
E1	8.00	2.00	2.75	1,700	2,338
F1	4.00	3.00	1.70	125	72
F8	10.00	3.00	1.87	800	865
B1	8.00	3.00	1.50	100	69
				Total Excavation (cy)	9,367

Channel Lining Summary

Channel Designation	Area (sf/lf)	Lining Type	Riprap (sf)	Matting (sf)	Grass (sf)
B1, B2, B3, C1, C5, C9, D2, F3, F10	13.94	Riprap	41,136		
C2, C3, C4, C7, C8, F2	18.65	Riprap	43,825		
F7, F9	22.65	Riprap	14,722		
F4, F5, F6	17.12	Riprap	22,255		
C6	15.07	Riprap	1,507		
D1	11.61	Riprap	7,544		
E1	20.30	Riprap	34,507		
F1	14.75	Riprap	1,844		
F8	21.83	Matting		17,462	
B1	17.49	Matting		1,749	
Total Channel Lining Areas (sf)			167,340	19,211	0

Total Riprap Quantity = 167340-sf * Avg Thickness 1.25-ft * 1-cy/27-cf * 2.03-ton/cy = 15727-tn

Channel Construction Cost Summary

Construction Item	Qty	Unit	Cost	Unit	Ext.
Trenching Cost (From Means)	9,367	cy	$7.51	$/cy	$70,347
Riprap Cost (From Means)	15,727	tn	$33.48	$/tn	$526,540
Matting Cost (From Means)	19,211	sf	$1.15	$/sf	$22,007
Grass Cost (From Line 12)	N/A	sf	$2,650.	$/ac	
Total Channel Construction Cost					$618,894
As a worst-case scenario, half of the Total Channel Construction Cost will be carried for landfill closure					$309,447

Average channel construction cost = 618894-$ Total / 10725-lf = 57.71-$/lf

Worst-case average per acre E&S Construction cost = 309447-$ Total / 50.0-ac = 6189-$/ac

(14) Revegetation Cost quote estimated from Means.

Date Prepared

08/2023

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

I.D. Number

100277

BONDING WORKSHEET C
GROUNDWATER MONITORING SYSTEM

1.	Number of wells in the approved monitoring plan.		15	Note (1)
	a. Shallowest well depth	37.00 ft.		
	b. Deepest well depth	310.00 ft.		
	c. Average well depth	165.80 ft.		Note (1)
	d. Number with dedicated pumps	8		
2.	Unit cost to upgrade a well with a dedicated pump		$1,200 $/well	Note (2)
3.	Unit cost to install a well (assume average well depth, and include drilling, installation, developing and pump installation)		$12,511 $/well	Note (3)
4.	Number of wells to be installed (wells in the approved plan that haven't been installed)		0	Note (1)
5.	Number of wells to be replaced over the life of the monitoring period (use 10% of line 1 and round up)		2	
6.	Number of pumps to be replaced/repaired (use 25% of line 1 over the monitoring period)		4	
7.	Unit cost to purge and sample a well (assume average well depth, and include methane monitoring, record keeping and shipping)		$67 $/well	Note (4)
8.	Unit cost to upgrade a well with a dedicated pump			
	a. Quarterly (25 PA Code §273.284, §277.284 or §288.254)		$364.10 $/well	Note (5)
	b. Annually (25 PA Code §273.284, §277.284 or §288.254)		$631.80 $/well	Note (5)
9.	Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, statistical analysis and data review)		$70 $/well	Note (6)
10.	Cost to purge, sample and analyze - quarterly (line 7 + line 8a + line 9)		$501.10 $/well	
11.	Cost to purge, sample and analyze - annually (line 7 + line 8b + line 9)		$768.80 $/well	
12.	Number of years of sampling (30 + time to close)		31.0 years	Note (7)

13. Cost Summary -Groundwater Monitoring System

a. System upgrade ([line 1 - line 1d] x line 2)	$	**8,400**	
b. Wells to be Installed (line 3 x line 4)	$	**0**	
c. Wells to be replaced (line 3 x line 5)	$	**25,023**	
d. Pumps to be replaced (line 2 x line 6)	$	**4,800**	
e. Cost of Quarterly Monitoring (line 1 x "4" x line 10 x line 12)	$	**699,035**	Note (9)
f. Cost of Annual Monitoring (line 1 x line 11 x line 12)	$	**357,492**	
Subtotal	**$**	**1,094,750**	

Adjustment for resampling, assessments, etc.

a. Use 0% of subtotal if no assessments in last 2 yrs. b. Use 5% of subtotal if assessment in last 2 yrs. c. Use 10% if currently in assessment, abatement or increase monitoring	$	**0**	Note (8)
Total	**$**	**1,094,750**	

(Place this total on Summary Cost Worksheet - line 3)

BONDING WORKSHEET C

(Notes and Additional Information)

(1) Number of wells for the facility is taken to be the number of wells remaining from the approved groundwater monitoring network after those authorized to be abandoned during construction of the Southern Expansion Area (19 (total) - 4 (to be abandoned) = 15 (remaining wells)).

(2) Cost for dedicated pump system based on price quote from The Hutchinson Group of $1,200 per well (Exhibit 4).

(3) Cost to install a monitoring well, including drilling and well construction based on quote provided by Means of 71.48-$/lf (Exhibit 4) and the average well depth of 165.8-lf along with monitoring and well development. Monitoring of well drilling assumed to involve 8-hours and well development will involve 4-hours. Each activity is assumed to be charged at an hourly rate of 55.00-$/hr.

Well Installation = (Well Installation-$/lf * Average Well Depth-lf) + (Monitoring + Development Time) * Monitoring Rate-$/hr
Well Installation = (71.48-$/lf * 165.8-lf) + (8.0-hr + 4.0-hr) * 55.00-$/hr = $12511/well

(4) Unit cost to sample well and ship sample estimated to taken 1.0-hour by a Technician with hourly rate of 55.00-$/hour and an assumed pro-rated per sample shipping rate of 12.00-$/sample for a total sampling and shipping cost of 55.00-$/hr * 1.0-hr + 12.00-$/sample = 67-$/well

(5) Quarterly and Annual groundwater laboratory testing cost estimates provided by Geochemical Testing. Cost estimate provided here shows $364.1 for quarterly testing and $631.8 for annual testing.

(6) Unit cost to analyze data assumed to require 1 hour time for Engineer with a unit rate of 70-$/hr this includes QA efforts, form completion and other activities.

(7) Total number of sampling years taken as 30-year post-closure with 1.0 additional year to complete closure construction.

(8) This facility is not in assessment.

(9) Three Quarters used in summary calculation, not four since annual costs calculated on separate line.

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BONDING WORKSHEET D
SURFACE WATER MONITORING

Solid Waste Surface Water Sampling

1.	Number of surface points monitored for Solid Waste Permit	5		Note (1)
2.	Unit cost to sample a surface point (record keeping and shipping)	$40	$/point	Note (2)
3.	Unit cost to analyze sample(s)			
	a. Quarterly (25 PA Code §273.284 or §288.254)	$364.10	$/point	Note (3)
	b. Annually (25 PA Code §273.284 or §288.254)	$631.80	$/point	Note (3)
4.	Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, and data review)	$70	$/point	Note (4)
5.	Cost to sample and analyze - quarterly (line 2 + line 3a + line 4)	$474.10	$/point	
6.	Cost to sample and analyze - annually (line 2 + line 3b + line 4)	$741.80	$/point	
7.	Number of years of sampling (30 + time to close)	31.0	years	Note (6)

NPDES Surface Discharge Sampling

8.	Number of outfalls monitored	5		Note (7)
9.	Monitoring frequency (I.e. monthly, quarterly, etc)	Semi-Annual		Note (7)
10.	Number of samples to be taken per point/year	2		
11.	Unit cost to sample a surface point (record keeping and shipping)	$40	$/point	Note (2)
12.	Unit cost to analyze sample(s) (including data review and completing DMR)	$220	$/point	Note (4/5)
13.	Number of years of sampling (30 + time to close)	31.0	years	Note (6)
14.	Cost Summary -Surface Water Monitoring			
	a. Cost of Quarterly Surface Water Monitoring (line 1 x "4" x line 5 x line 7)	$ 220,457		Note (9)
	b. Cost of Annual Surface Water Monitoring (line 1 x line 6 x line 7)	$ 114,979		
	c. Cost of NPDES Monitoring (line 8 x line 10 x [line 11 + line 12] x line 13)	$ 80,600		
	d. NPDES renewals over post-closure period (includes application development, fees, etc.) use 10% of line 14c	$ 8,060		
	Subtotal	**$ 424,096**		

Adjustment for resampling, assessments, etc.

a. Use 0% of subtotal if no assessments in last 2 yrs.
b. Use 5% of subtotal if assessment in last 2 yrs.
c. Use 10% if currently in assessment, abatement or increase monitoring $ 0 Note (8)

Total $ **424,096**

(Place this total on Summary Cost Worksheet - line 4)

BONDING WORKSHEET D

(Notes and Additional Information)

(1) Number of wells for the facility taken from PADEP Permit.

(2) Unit cost to sample point and ship sample estimated to taken 0.5-hour by a Technician with hourly rate of 55.00-$/hour and an assumed pro-rated per sample shipping rate of 12.00-$/sample for a total sampling and shipping cost of 39.50-$/sample.

(3) Quarterly and Annual surface water sample laboratory testing cost estimates provided by Geochemical Testing. Cost estimate provided here shows $364.1 for quarterly testing and $631.8 for annual testing.

(4) Unit cost to analyze data assumed to require 1 hour time for Engineer with a unit rate of 70-$/hr this includes QA efforts, form completion and other activities.

(5) In addition to sampling costs, laboratory analysis provided as $150.0 for NPDES monitoring taken from a recent invoice from Geochemical Testing presented in Exhibit 6

(6) Total number of sampling years taken from Bonding Worksheet C - Item 12.

(7) Quantity of NPDES points assumed to include principal spillway discharges for ponds, monitorable discharge from emergency spillways not anticipated.

(8) This facility is not in assessment.

(9) Three Quarters used in summary calculation, not four since annual costs calculated on separate line.

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BONDING WORKSHEET E
PRIVATE WATER SUPPLY MONITORING

1. Number of private water supplies monitored.	0		Note (1)
2. Unit cost to sample a well (include methane monitoring, record keeping and shipping)	$67	$/well	Note (2)
3. Unit cost to analyze sample(s) quarterly (Act 101 Section 1103)	$364.10	$/well	Note (3)
4. Unit cost to analyze data (includes review of lab QA/QC data, database input, form completion, and data review)	$70	$/well	Note (4)
5. Total cost for quarterly sampling (line 2 + line 3 + line 4)	$501	$/well	
6. Number of years of sampling (30 + time to close)	31.0	years	Note (5)

7. Cost Summary -Private Water Supply Monitoring

a. Cost of quarterly monitoring (line 5 x 4 x line 6) $ 62,136

Total $ 0

(Place this total on Summary Cost Worksheet - line 5)

BONDING WORKSHEET E

(Notes and Additional Information)

(1) Confirmation that no private water supply wells are monitored was provided by The Hutchinson Group.

(2) See Worksheet C, Item 7.

(3) Quarterly private water supply monitoring sample laboratory testing cost estimates provided by Geochemical Testing. Cost estimate provided here shows $364.1 per test.

(4) See Worksheet C, Item 9.

(5) Total number of sampling years taken from Bonding Worksheet C - Item 12.

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BONDING WORKSHEET F
GAS MONITORING SYSTEM

1.	Number of probes in the approved monitoring plan.		172	Note (1)
	a. Shallowest probe depth	32.00 ft.		
	b. Deepest probe depth	140.00 ft.		
	c. Average probe depth	79.30 ft.		
	d. Number of probes installed	172		
2.	Unit cost to install a probe (including, drilling, and installation)		$1,800 /probe	Note (2)
3.	Number of probes to be installed (probes in the approved plan that haven't been installed		0	Note (1)
4.	Number of probes to be replaced over the life of the monitoring period (use 5% of line 1 and round up)		9	
5.	Unit cost to monitor a probe (include record keeping)		$11 /probe	Note (3)
6.	Number of probes and structure monitoring events per year		4	Note (4)
7.	Number of years of monitoring (30 + time to close)		31.0 years	Note (5)
8.	Cost Summary -Gas Monitoring System			
	a. System completion (line 3 x line 2) $		$ 0	
	b. Probe replacement (line 2 x line 4) $		$ 16,200	
	c. Probe Monitoring (line 1 x line 5 x line 6 x line 7)		$ 234,608	
	Subtotal		$ 250,808	(8a+8b+8c)

Adjustment for resampling, assessments, etc.

a. Use 0% of subtotal if no assessments in last 2 yrs.
b. Use 5% of subtotal if assessment in last 2 yrs.
c. Use 10% if currently in assessment, abatement or increase monitoring — $12,540 — Note (6)

Total $ 263,348

(Place this total on Summary Cost Worksheet - line 6)

BONDING WORKSHEET F

(Notes and Additional Information)

(1) The number of probes presented here represents the total for all existing probes, no additional probes are proposed as part of the future development for the site.

(2) The unit cost to install a gas monitoring probe is based upon the quote provided by the Hutchinson Group (Exhibit 4) to be $1,500/probe. The cost includes drilling and installation.

(3) Unit cost to monitor gas probe estimated to taken 0.2-hour by a Technician with hourly rate of 55.00-$/hour. Monitoring Cost = 0.2-hr * 55.00-$/hr = 11-$/probe.

(4) Gas probe monitoring is performed on a quarterly basis - 4 times per year.

(5) Total number of sampling years taken from Bonding Worksheet C - Item 12.

(6) A 5% contingency was added to account for a gas probe assessment within the last two years.

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BONDING WORKSHEET G
GAS COLLECTION SYSTEM

1. Number of wells in the approved monitoring plan.		9		Note (1)
a. Shallowest well depth	190.00 ft.			
b. Deepest well depth	345.09 ft.			
c. Average well depth	247.50 ft.			Note (1)
d. Number of wells installed	0			
e. Number of pumping wells	0			
2. Cost for flare or other control device installation		$ 528,600	LS	Note (2)
3. Unit cost to install a well (including, drilling, installation, and connection to active system)		$15,335	$/well	Note (3)
4. Unit cost to install a gas well requiring liquid removal (including, drilling, installation, and connection to active system)		$20,754	$/well	Note (3)
5. Number of wells to be installed (wells in the approved plan that haven't been installed)		9		Note (4)
6. Number of gas wells requiring liquid removal to be installed		0		Note (4)
7. Estimate the length of collection piping to be installed		4,060	LF	Note (5)
8. Unit cost to install collection piping (include excavation, pipe bedding, pipe, backfilling, regrading, revegetating, surveying and QA/QC)		$11.16	$/LF	Note (5)
9. Number of wells to be replaced/repaired over the life of the monitoring period (use 10% of line 1 and round up)		2		Note (5)
10. Unit cost to monitor well and balance system monthly (include monitoring of methane, oxygen, carbon dioxide or nitrogen, temperature, pressure, and NSPS record keeping)		$13	$/well	Note (6)
11. Unit cost to conduct surface monitoring (NSPS)		$2,200	$/event	Note (7)
12. Control System Information				
a. number and size of blowers	4 Blowers @ 2,750 scfm (11,000 scfm)			
b. flare dimensions and capacity	2 Flares @ 5,500 scfm (11,000 scfm)			
c. current flow rate	1400 scfm			
d. other features				
13. Cost of electricity to run system		$82,806	$/year	Note (8)
14. Cost to maintain system (including daily check, weekly charts, maintenance, etc.)		$33,600	$/year	Note (8)
15. Cost of annual blower maintenance (including greasing, bearing check and alignment)		$6,500	$/year	Note (8)
16. Cost of stack testing (once per five years)		$14,640	$/event	Note (9)
17. Estimate the volume of condensate generated per year		1,636,449	gallons	Note (10)
18. Cost of condensate management (including pumping, testing and treatment/disposal)		$4,909	$/year	Note (11)
19. Number of years to run system (30 + time to close)		31.0	years	Note (12)

20. Cost Summary -Gas Collection System

System Installation

a. Additional well installation (line 5 x line 3)	$	**15,335**	Note (14)
b. Additional pumping well installation (line 4 x line 6)	$	**0**	
c. Cost of collection piping (line 7 x line 8)	$	**45,310**	Note (5)
d. Well replacement (line 3 x line 9)	$	**30,670**	
e. Enclosed ground flare system (line 2)	$	**528,600**	
System	**$**	**619,915** (sum lines a to e)	
f. Cost of monitoring/balancing (line 1 x "12" x line 10 x line 19)	$	**43,524**	
g. Cost of surface monitoring (line 11 x "1.5" x line 19)	$	**102,300**	
h. Electric Cost (line 13 x line 19)	$	**2,566,986**	
I. System maintenance cost (line 14 x line 19)	$	**1,041,600**	
j. Blower maintenance cost (line 15 x line 19)	$	**201,500**	
k. Stack testing cost (line 16 x [line 19/5])	$	**90,768**	
l. Condensate management cost (line 18 x line 19)	$	**152,190**	
System	**$**	**4,198,868** (sum lines f to l)	

Adjustment for miscellaneous maintenance items (including; knockout pot maintenance, thermocouple replacement, flame detector replacement, flame arrester maintenance, flare maintenance, enrichment/startup gas replacement, pneumatic valve maintenance, sump maintenance, panel board maintenance, etc.)

a. Use 0% of subtotal if system < 2yrs old		**No**
b. Use 5% of subtotal if system1 is > 2 yrs old, but < 5yrs old		**No**
c. Use 10% if system1 is > 5 yrs old		**Yes**
	$ **419,887**	

Total (Installation subtotal + M & M subtotal + Misc. Maintenance) **$5,238,670**

(Place this total on Summary Cost Worksheet - line 7)

1 The age of the system would be considered from the date that the active system went on-line. Expansions of the systems are assumed to occur, however, this does not change the age of the system unless a majority of the system is replaced/upgraded.

BONDING WORKSHEET G

(Notes and Additional Information)

(1) The number of gas extraction wells has been taken from the previous bonding calculations.

(2) This facility currently has 1 Flare (5500 scfm) and 1 Blower (2750 scfm) installed. The lump sum here includes cost data for an additional flare (5500 scfm) and blower configuration to provide an 11,000 scfm capacity. A price quote of $440,500 has been provided by John Zink Company, LLC and is presented here in Exhibit 7 . The quote provided but John Zink did not include shipping, taxes or field services An additional 20% has been added to account for these items.

(3) Gas extraction well installation unit pricing taken to be the average of price quote based upon 2011 and 2012 costs for gas well installation at the facility and a previous price quote for gas well drilling. Copies of both quotes are provided here in Exhibit 7. Also, for line Item 4 the addition of a pump to an extraction well will include the additional costs of the pump and necessary hoses. As attached here a quote for pump supply has provided with a per pump cost of $5294.75 and a hose cost of 0.50-$/lf where the total additional cost is $5295 Pump + 0.50-$/lf Hose * 247.5-lf Average Well = $5419 Additional Cost.

(4) Number of wells to be installed (Line 5) reported as remaining wells in closure area which, Number of Wells requiring liquid removal (Line 6) reported as the subset of the wells reported on Line 5 which will require pump installation.

(5) The remaining length of collection pipe to be installed was taken from the approved bonding worksheet G. The total unit cost to install the collection pipe was estimated from Means cost data, typical hourly rates for CQA / surveyor and material cost data found online. Calculations and backup data for unit cost to install collection piping is presented in Exhibit 7.

(6) Unit cost to monitor/balance well and perform record keeping estimated to take 0.10-hour by a Technician with hourly rate of 55.00-$/hour and 0.10-hr for a Engineer to review data for system balancing at a hourly rate of 70.00-$/hour for a total of (0.10 * 55.00-$/hr) + (0.10 * 70.00-$/hr) = 13-$/well.

(7) NSPS Surface Monitoring assumed to take 40.0-hours by a Technician with hourly rate of 55.00-$/hour for a total of (40.0-hrs * 55.00-$/hr) = 2200-$/event.

(8) Annual electric cost for gas management system based on historical data to be $150556/yr (Exhibit 12). Annual maintenance cost for system based on historical data to be $33600/yr. Annual blower maintenance based on historical data to be $6500/yr. These annual operation/maintenance costs were provided by the facility and may be found in Exhibit A. It has been assumed that the annual electric load will be 1/4 of the current load at the end of the post-closure period. An average electric load for the 30-year post-closure period can be estimated as [Current 1 + End of Post-Closure 10%] / 2 = 0.550. Therefore, the average annual electric cost can be estimated to be 0.550 * 150556$/year = $82806/year.

(9) Cost of stack test based on typical proposal for landfill facility in Western PA. An additional 20% has been added to the the proposal cost as a conservative estimate of 14640-$/stack test.

(10) Condensate generation is calculated based upon LFG generation. A calculation is presented in Exhibit 7 to estimate an average LGF generation for the closure period and then calculate condensate generation based on this estimated LFG generation rate.

(11) Cost of condensate management and treatment is taken to be similar to the cost presented in Worksheet I as the cost to discharge to a POTW.

(12) Total number of years taken from Bonding Worksheet C, Item 12.

(13) The original portion of this gas system was installed longer than 5 years ago.

(14) Line 5 identifies the number of remaining wells to be installed as 9 this total quantity of future well installations are spread across the 110.30-ac future development area for the landfill, similar to the gas piping installation discussion in Note (5) above. Therefore, the per-acre future well installation density can be estimated as 9 / 110.30-ac = 0.08 wells/acre.

This facility is required to install gas extraction wells in accordance with the Title V permit and the NSPS requirements. Due to this, it is not anticipated that significant gas construction will be required at the time of final closure construction. To provide an estimate for these calculations it has been assumed that 20.00% of the gas wells shall be installed in the worst case closure area as part of this construction. Therefore, the quantity of wells to be installed shall be estimated as 50.00-ac * 0.08-wells/acre = 1 wells.

The cost on line 20a for future well installation is estimated as 1 wells * $15335/well = $15335.

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BONDING WORKSHEET H
OTHER MONITORING AND REPORTING

Please list the annual costs to maintain the following permits/registrations that apply. Additional space is provided for items applicable to your facility, but not listed.

1.	Title V or other air permit (include the annual permit fee, cost to complete emissions inventory and emissions fees)	$7,000	Note (1)
2.	NSPS Annual Report preparation cost	$2,500	Note (2)
3.	Local permit or Host Agreement requirements	N/A	
4.	UST/AST registration	N/A	
5.	Other — Annual Landfill Operations Report	$1,000	Note (4)
6.	Other		
7.	Other		
8.	Other		
9.	Other		
10.	Number of years of monitoring/maintenance (30 + time to close)	31.0	Note (3)

Total (sum of li $ **325,500**

(Place this total on Summary Cost Worksheet - line 8)

BONDING WORKSHEET H

(Notes and Additional Information)

(1) The annual reporting for the Title V permit has been assumed to be $4000 per year and $15000 for renewals every 5 years. The renewal cost was pro-rated to show 20% in the year amount of $4000 + 0.2 * $15000 = $7000-$/year average.

(2) NSPS annual report preparation included with gas monitoring costs on Bonding Worksheet G, Line 11.

(3) Total number of years taken from Bonding Worksheet C, Item 12.

(4) Typical cost for preparation of Closed Landfill Annual Operations Report, by Design Solutions.

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BONDING WORKSHEET I
LEACHATE MANAGEMENT

Leachate Management System Narrative: Provide a detailed description of the leachate management system. You need to include all features of the system including but not limited to landfill sumps (with number and size of pumps and controllers), length of conveyance system, number and type of storage facilities, and treatment/disposal method. A schematic should be attached as back up.

1. Number of years of leachate management (30 years + closure period)	**31.0**		Note (1)
2. Annual leachate volume generated	**1,391,989**	gal/yr	Note (2)
3. Annual cost to manage leachate volume (include pump and pipe maintenance, electricity and monitoring)	**$10,000**		Note (3)
Discharge to POTW			
4. Unit cost to discharge leachate to a POTW	**N/A**	$/gal	Note (4)
On-site Treatment (including pretreatment)			
5. Unit cost for treatment of leachate (include equipment maintenance, electricity, personnel, chemicals, sludge disposal, etc.)	**$0.0750**	$/gal	Note (5)
6. Annual cost to maintain NPDES permit (include sampling, analysis, report preparation, and factor in five year renewal application preparation and fees)	**N/A**		
Interim Trucking of Leachate			
7. Unit cost to transport and dispose of leachate	**N/A**	$/gal	Note (6)
8. NPDES Permit (cost to prepare application, fees and sampling/analysis)	**N/A**		
9. Cost to construct on-site treatment or pretreatment system or connection to POTW	**N/A**		
10. Unit cost for treatment of leachate (include equipment maintenance, electricity, personnel, chemicals, etc.)	**N/A**	$/gal	
11. Annual cost to maintain NPDES permit (include sampling, analysis, report preparation, and factor in five year renewal application preparation and fees)	**N/A**		

1 Does not include storage of leachate which is contained on Worksheet K.

12. Cost Summary

a. Cost to manage/convey leachate (line 1 x line 3)	$	**310,000**	
If discharge to POTW			
b. Discharge to POTW cost (line 1 x line 2 x line 4)	$	**N/A**	
If have on-site treatment			
c. Treatment cost (line 1 x line 2 x line 5)	$	**3,236,374**	Note (5)
d. NPDES maintenance cost (line 1 x line 6)	$	**N/A**	
If you currently truck leachate			
e. Cost of trucking leachate for three years (line 2 x "3" x line 7)	$	**N/A**	Note (6)
f. NPDES permit (line 8)	$	**N/A**	
g. Cost to construct on-site treatment system or connection to POTW (line 9)	$	**N/A**	
h. Treatment cost ([line 1 - 3] x line 2 x line 10)	$	**N/A**	
I. NPDES maintenance cost ([line 1 - 3] x line 11)	$	**N/A**	
If you currently store leachate in impoundments			
j. Size of pond(s)		**N/A** acres	Note (7)
k. Estimate volume of material to be removed (including liner system and minimum of 12" of soil)		**N/A** cy	Note (7)
l. Unit cost to dispose of materials (Worksheet A, line 4)	$	**N/A** $/ton	
m. Cost to dispose of materials (line k x line l)	$	**N/A**	Note (7)
n. Volume of structural backfill		**N/A** cy	
o. Cost for backfill (line n x Worksheet B, line 8a)	$	**N/A**	
p. Revegetation cost	$	**N/A**	Note (7)
Subtotal	**$**	**3,546,374** (sum of a-l)+m+o+p	

Adjustment for maintenance, equipment replacement and contingencies, etc.
Please note that these are cumulative and you must add all of the percentages that apply to arrive at the final adjustment percentage. The minimum adjustment is 10%.

a.	Add 10% of subtotal if pumps are used to convey leachate.	**Yes**
b.	Add 5 % of subtotal if flow volume to POTW is restricted.	**No**
c.	Add 10% of subtotal if leachate is stored in ponds	**No**
d.	Add 10% of subtotal if onsite treatment	**No**
e.	Add 15% if trucking leachate	**Yes**
f.	Add 10% if current leachate generation exceeds 5MG/year	**Yes**

Final adjustm **35** %

g. Adjustment (subtotal x factor) $ **1,241,231**

$

Total (subtotal $ **4,787,605**

(Place this total on Summary Cost Worksheet - line 9)

BONDING WORKSHEET I

(Notes and Additional Information)

Leachate Management System Narrative - A description and design of the leachate system for this facility is included with the permitted Form 25.

(1) See Worksheet C, Item 12.

(2) Annual leachate generation during the post-closure period estimated in Exhibit 8 taken to be a total of 1,391,989 gal/yr.

(3) The annual cost to manage leachate of $10000 (excluding treatment) has been taken from the historical past performance at this facility as provided in Exhibit A. Electric cost is included with the gas generation worksheet. Electric costs associated with operation of the proposed evaporator and HRT are estimated and included under Item 5.

(4) N/A - This facility does not discharge leachate to a POTW.

(5) The trucking of leachate off-site has been estimated in Exhibit D.

(6) N/A - These Bonding Worksheets have been prepared utilizing trucking of contaminated

(7) N/A - This facility does not have leachate storage ponds.

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BONDING WORKSHEET J
BORROW AREA CLOSURE

How do I start? Select a likely "worst case" scenario where you would have a maximum amount of the borrow area open and in need of closure. Provide a description of the scenario with references to site development stages.

1. Size of borrow area — **5.0** acres — Note (1)
2. Volume of material required for regrading: — **2,662** CY — Note (1)
3. Unit cost to regrade (provide equipment and rates) — **$2.24** $/CY — Note (2)

Are sufficient soils available to complete job?
(list deficit amount and attach maps that identify sources and stockpiles) — **Yes** — Note (2)

4. Earthen Materials

		Stockpile	Borrow	Onsite	Offsite	Processing Req'd Yes	Processing Req'd No
a. Structural Fill	**0** CY	☐	☐	☐	☐	☐	☐
b. Unit cost to place 1	**$2.24** $/CY						Note (2)
c. Topsoil	**2,662** CY	☐	☐	☐	☐	☐	☐
d. Unit cost to place 1	**$2.24** $/CY						Note (3)

5. Revegetation Cost
   - (Seeding rate used: **Worksheet B Item 12** lbs/acre)
   - (Lime rate used: **Worksheet B Item 12** tons/acre)
   - (Fertilizer rate used: **Worksheet B Item 12** tons/acre)
   - (Mulch rate used: **Worksheet B Item 12** tons/acre)
   - Unit cost to revegetate — **$2,650.00** $/ac — Note (4)
6. E & S Controls — **$1,000** $/acre — Note (5)
7. Bond Maintenance Cost (required if off-site borrow area) — **N/A** LS
8. Other costs (provide detail) — **$0**

1 The unit costs should include all associated costs including, but not limited to cost of material, excavation, transportation, processing and placement.

9. Cost Summary

a. Fill/Regrading (line 2 x line 3)	$	5,963
b. Structural Fill (line 4a x line 4b)	$	0
c. Topsoil (line 4c x line 4d)	$	5,963
d. Revegetation (line 1 x line 5)	$	13,250
e. E & S Controls (line 6)	$	1,000
f. Bond maintenance (line 7)	$	N/A
g. Other (line 8)	$	0
Subtotal	**$**	**26,176**
CQA/Project Management costs (use 5% of subtotal)	$	1,309
Total	**$**	**27,485**

(Place this total on Summary Cost Worksheet - line 10)

BONDING WORKSHEET J

(Notes and Additional Information)

(1) Borrow areas will change during the development and closure of the facility. The assumed 5.00-ac borrow area has been specified as an estimated maximum borrow area that would be open at one time. Regrading of the borrow area is assumed to require an average of 0.33-ft over 100% of the borrow area where Regrading = 100% * 5.00 * 43,560-sf/ac * 0.33-ft * 1-cy/27-cf = 2662-cy

(2) Cost for regrading of borrow area assumes that soils are present within the borrow area. Unit cost for borrow area regrading taken from Means with assumed 150.00-foot push for a dozer within the borrow area for a unit cost of $2.24-/cy.

Regrading = 0.00-$/cy + 2.24-$/cy + [0.00-$/sy * 3-ft/yd / 0.33-ft thickness] = 2.24-$/cy

(3) Top soil assumed to be placed in a 0.33-ft thickness over 100% of the open borrow area 100% * 5.00-ac * 1.00-ft thick * 1-cy/27-cf = 2662-cy. The unit rate for top soil placement has been taken as the same as the general regrading since top soil should stockpiled/located adjacent to the borrow area.

(4) Unit cost for revegetation taken from Bonding Worksheet B, Line 12.

(5) E&S Controls will be developed as borrow areas are opened, some additional E&S costs included here for closure of the borrow area.

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BONDING WORKSHEET K
FACILITY MAINTENANCE COSTS

1.	Size of facility	**270.00**	acres	Note (1)
2.	Size of waste placement footprint	**150.00**	acres	Note (1)
3.	Size of borrow areas on site	**5.00**	acres	Note (1)
4.	Size of leachate ponds on site	**N/A**	acres	Note (1)
5.	Size of sedimentation ponds on site	**8.00**	acres	Note (1)
6.	Length of stormwater conveyance ditches	**10,725**	LF	Note (1)
7.	Number of years of site management (30 years + closure period)	**31.0**	years	Note (2)
8.	Annual Cost to repair cap and final cover			
	a. Acres (use 1% of line 2)	**1.50**	acres	
	b. Unit cost2 to repair final cover	**$4,312**	$/acre	Note (3)
	c. Unit cost2 to repair cap	**$12,362**	$/acre	Note (4)
	d. Unit cost2 to repair vegetation	**$2,650.00**	$/acre	Note (5)
	e. Total unit cost (line b + line c + line d)	**$20,091**	$/acre	
9.	Annual Cost to repair and maintain E&S facilities1			
	a. Channel repair length (use 3% of line 6)	**322**	LF	
	b. Sedimentation pond repair volume (use 20% of line 5)	**1.60**	acres	
	c. Unit cost to repair channels	**$19.04**	$/LF	Note (6)
	d. Unit cost2 to repair ponds	**$2,100**	$/acre	Note (7)
	e. Total annual cost (line a x line c) + (line b x line d)	**$9,490.88**	$/YR	
10.	Annual Cost to repair and maintain leachate ponds1			
	a. Leachate pond repair volume (use 20% of line 4)	**N/A**	acres	
	b. Unit cost2 to repair leachate pond(s)	**N/A**	$/acre	Note (8)
11.	Annual cost to repair and maintain leachate tanks			
	a. Number and size of tanks	**3**		Note (9)
	b. Annual unit cost1 to maintain tanks	$ **$1,500**		Note (10)
12.	Annual cost to repair fences and gates (attach details)	$ **1,057**	$/YR	Note (11)

1 After the site is stabilized, the Department may allow a reduction in these requirements.
2 Please refer to the instructions. This estimate should reflect unit costs to bring in a contractor to complete the work and should include mobilization, equipment cost, operator costs, material costs

13. Annual cost to maintain site roads

a. Length of site roads2	**10,000**	LF	Note (1)
b. Annual length of site roads to be repaired (2% of line 13a)	**200**	LF	
c. Unit cost to repair roads1	**$9.25**	$/LF	Note (12)

14. Cost Summary - Facility Maintenance

a. Cost to repair cap/cover (line 7 x line 8a x line 8e)	**$934,232**
b. Cost to maintain E&S facilities (line 7 x line 9e)	**$294,217**
c. Cost to maintain leachate ponds (line 7 x line 10a x line 10b)	**$0**
d. Cost to maintain leachate tanks (line 7 x line 11a x line 11b)	**$139,500**
e. Cost to repair fences and gates (line 7 x line 12)	**$32,767**
f. Cost to maintain site roads (line 7 x line 13b x line 13c)	**$57,350**
Subtotal	**$ 1,458,066**

1. Please refer to the instructions. This estimate should reflect unit costs to bring in a contractor to complete the work and should include mobilization, equipment cost, operator costs, material costs and clean-up and inspection costs. Costs not incurred annually should be determine and divided among the years between events. The costs should also include replacements of pumps and meters, electricity used (pumps, heat tracing, etc.) valve

2. This should include access to all maintenance and monitoring areas including but not limited to the disposal area, ponds, leachate conveyance system, tanks, discharge locations, gas extraction system wells, gas probes, groundwater monitoring system and surface water

Adjustment for maintenance, equipment replacement and contingencies, etc. Please note that these are cumulative and you must add all of the percentages that apply to arrive at the final adjustment percentage. The minimum adjustment is 10%.

a. Add 5% of subtotal if final slopes or benches have been modified from what is specified in 25 PA Code §273.234(f)	**Yes**
b. Add 5% of subtotal if more than 30 % stormwater channels are unlined	**Yes**
c. Add 5% of subtotal if the length of site access roads exceeds 5 miles	**No**
d. Add 10% for mowing	**Yes**

Final adjustm **20** %

e. Adjustment (subtotal x factor)		**$291,613**
Total	(subtotal	**$ 1,749,679**

(Place this total on Summary Cost Worksheet - line 11)

1 After the site is stabilized, the Department may allow a reduction in these requirements.

2. Please refer to the instructions. This estimate should reflect unit costs to bring in a contractor to complete the work and should include mobilization, equipment cost, operator costs, material costs and clean-up and

BONDING WORKSHEET K

(Notes and Additional Information)

(1) Facility Limit and Area of Waste Placement taken from Form A. Sedimentation pond area (for all ponds) taken from permit drawings, Stormwater conveyance ditch length and roadway length summed from permit drawings. The total borrow area has been taken from Bonding Worksheet J, Item 1.

N/A - this facility does not have leachate ponds.

(2) See Worksheet C, Item 12.

(3) Unit cost for final cover repair (per acre) estimated by using the Final Cover rate presented on Bonding Worksheet B, Item 8d. As with other repair items, it has been assumed that the repair activities will be 33% of the original construction cost. Thefrefore, unit costs for final cover repairs can be estimated as 33% * 4.69-$/cy * 43,560-sf/ac * 2-ft * 1-cy/27-cf-$/ac. Cost backup presented in Exhibit B.

(4) Unit cost for geosynthetic repair (per acre) estimated by using unit costs for each material presented on Bonding Worksheet B, Items 9a through 9d. Repair cost assumed to be 33% of original construction cost. Geosynthetics Repair = 33% * 43,560-sf/ac * [Geotextile 0.00-$/sf + FML 0.36-$/sf + Drainage Layer 0.50-$/sf] = 33% * 43,560-sf/ac * 0.86-$/sf = $12362/ac. Cost backup provided in Exhibit 2.

(5) Revegetation Unit Cost taken from Bonding Worksheet B, Item 12.

(6) Unit Cost for ditch/channel repair taken from Bonding Worksheet B, Note (13). As with the other repair items, it has been assumed that the repair activities will be 33% of the original construction cost. Therefore, unit cost for channel repairs can be estimated as 33% * $618894 / 10725-lf = 19.04-$/lf.

(7) Cost for pond repair assumed to include regrading activities, outlet structure repair and removal of sediment accumulation. This has been assumed to be $2100 per acre based on site historical information provided by this facility and identified in Exhibit A.

(8) N/A - This facility does not have leachate ponds

(9) Consistent with the permitted Form 25 for this facility, there are a total of 3 tanks.

(10) Regular maintenance of the tanks will include cleaning and minor repairs, this is estimated to be $1500 per year per tank based on historical information provided by this facility and identified in Exhibit A

(11) Yearly fence replacement has been assumed to include the replacement of 0.5% of the 4000-lf of fencing for this facility at a unit cost of 46.36-$/lf and the replacement of a gate for $1295 once every 10.0 years. Yearly cost = (1% * 4000-lf * 46.36-$/lf) + (1295-$/gate * 1/10.0yr) = 1057-$/yr. Unit cost information presented in Exhibit B.

(12) Roadway repair is assumed to be 33% of the original roadway construction cost of 12.62-$/sy as taken from Means and discussed on Bonding Worksheet B Note 3. It has been assumed that the average roadway width will be 20.0-ft which yields a repair cost of 33% * 20.0-ft * 1-ft length * 1-sy/9-sf * 12.62-$/sy = 9.25-$/lf. Unit cost backup presented in Exhibit B.

Date Prepared
08/2023 Revised 10/2025

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

I.D. Number
100277

BONDING WORKSHEET L
SUMMARY OF COST WORKSHEET

Cost Summary - Landfills

1.	Decontaminating the Facility	$	90,706
2.	Capping/Closure	$	3,417,431
3.	Groundwater Monitoring System	$	1,094,750
4.	Surface Water Monitoring	$	424,096
5.	Private Water Supply Monitoring	$	0
6.	Gas Monitoring	$	263,348
7.	Gas Collection and Maintenance	$	5,238,670
8.	Other Monitoring	$	325,500
9.	Leachate Management	$	4,787,605
10.	Borrow Area Closure	$	27,485
11.	Maintenance Costs	$	1,749,679
12.	Other Costs 1	$	0
13.	Other Costs 1	$	0
	Subtotal	**$**	17,419,270

Inflation

14.	Inflation rate (projected inflation for the next three years based on the inflation for the prior three years).		13.00%
15.	Inflation cost for facility (subtotal x line 14)		$2,264,505

Contingency and administrative fees

16.	Administrative fees (5%) (subtotal x 0.05)		$870,963
17.	Project Management (5%) (subtotal x 0.05)		$870,963
18.	Contingency fee amount (subtotal x rate of contingency fee from Table 1) **7.5% Contingency utilized**		$1,306,445
	Total (subtotal + 15 + 16 + 17 + 18)	**$**	22,732,146

1 You should include any costs that would be incurred by the Department, but were not included in these sheets. Provide separate sheets for documentation.

BONDING WORKSHEET L

(Notes and Additional Information)

(1) Average Inflation for the four years 2021 to 2024 have been calculated from data reported by the Bureau of Economic Analysis, Gross National Product Implicit Price Deflator. A copy of the report data is included here.

	Year			
Index	**2021**	**2022**	**2023**	**2024**
Implicit price Deflator	110.108	117.939	122.301	125.338

Inflation = [(125.34-122.30) / (122.30)] + [(122.30-117.94) / (117.94)] + [(117.94-110.11) / (110.11)] = 2.48% + 3.70% + 7.11% = 13.29%

Use a Rounded Inflation of 13.00% for these Bonding Worksheets.

BONDING CALCULATIONS BACKUP

These exhibits provide backup cost and price quote information for the bonding calculations presented here.

Bonding - Table of Contents

BONDING CALCULATIONS BACKUP

EXHIBIT 1
PREVAILING WAGE RATE SUMMARY

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project Name:	2023 Demolition Program
Awarding Agency:	Tarentum Borough
Contract Award Date:	8/8/2023
Serial Number:	23-05975
Project Classification:	Heavy/Highway
Determination Date:	7/3/2023
Assigned Field Office:	Pittsburgh
Field Office Phone Number:	(412)565-5300
Toll Free Phone Number:	(877)504-8354
Project County:	Westmoreland County

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 23-05975 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Asbestos & Insulation Workers	8/1/2022		$41.40	$28.51	$69.91
Boilermakers	6/1/2016		$40.90	$27.61	$68.51
Bricklayer	12/1/2022		$36.55	$24.71	$61.26
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	7/1/2022		$37.67	$19.93	$57.60
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2023		$39.69	$19.93	$59.62
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2024		$41.49	$19.93	$61.42
Carpenters, Drywall Hangers, Framers, Instrument Men, Lathers, Soft Floor Layers	6/1/2025		$43.34	$19.93	$63.27
Cement Mason/Concrete Finisher	6/1/2019		$31.27	$19.39	$50.66
Cement Masons	6/1/2022		$32.57	$22.59	$55.16
Cement Masons	6/1/2023		$33.07	$23.59	$56.66
Drywall Finisher	6/1/2022		$32.00	$21.89	$53.89
Drywall Finisher	6/1/2023		$32.39	$23.75	$56.14
Drywall Finisher	6/1/2024		$34.01	$24.88	$58.89
Electricians & Telecommunications Installation Technician	12/26/2022		$48.31	$29.29	$77.60
Elevator Constructor	1/1/2023		$56.14	$42.83	$98.97
Glazier	9/1/2021		$32.61	$27.19	$59.80
Glazier	9/1/2022		$34.05	$28.65	$62.70
Iron Workers	6/1/2022		$38.39	$34.27	$72.66
Iron Workers	6/1/2023		$38.89	$35.02	$73.91
Laborers (Class 01 - See notes)	1/1/2023		$25.82	$19.46	$45.28
Laborers (Class 01 - See notes)	1/1/2024		$26.82	$19.46	$46.28
Laborers (Class 01 - See notes)	1/1/2025		$27.32	$19.96	$47.28
Laborers (Class 01 - See notes)	1/1/2026		$27.82	$20.46	$48.28
Laborers (Class 02 - See notes)	1/1/2023		$25.97	$19.46	$45.43
Laborers (Class 02 - See notes)	1/1/2024		$26.97	$19.46	$46.43
Laborers (Class 02 - See notes)	1/1/2025		$27.47	$19.96	$47.43
Laborers (Class 02 - See notes)	1/1/2026		$27.97	$20.46	$48.43
Laborers (Class 03 - See notes)	1/1/2023		$28.97	$19.46	$48.43
Laborers (Class 03 - See notes)	1/1/2024		$29.97	$19.46	$49.43
Laborers (Class 03 - See notes)	1/1/2025		$30.47	$19.96	$50.43
Laborers (Class 03 - See notes)	1/1/2026		$30.97	$20.46	$51.43
Laborers (Class 04 - See notes)	1/1/2021		$23.57	$19.32	$42.89
Landscape Laborer (Skilled)	1/1/2020		$21.64	$16.98	$38.62
Landscape Laborer (Tractor Operator)	1/1/2020		$21.94	$16.98	$38.92
Landscape Laborer	1/1/2020		$21.22	$16.98	$38.20
Millwright	6/1/2020		$41.68	$20.32	$62.00
Operators (Class 01 - see notes)	6/1/2022		$38.89	$23.69	$62.58
Operators (Class 01 - see notes)	6/1/2023		$40.69	$23.89	$64.58
Operators (Class 01 - see notes)	6/1/2024		$41.69	$24.39	$66.08
Operators (Class 02 -see notes)	6/1/2022		$32.82	$23.69	$56.51
Operators (Class 02 -see notes)	6/1/2023		$34.62	$23.89	$58.51

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 23-05975 - Building	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Operators (Class 02 -see notes)	6/1/2024		$35.62	$24.39	$60.01
Operators (Class 03 - See notes)	6/1/2022		$30.03	$23.69	$53.72
Operators (Class 03 - See notes)	6/1/2023		$31.83	$23.89	$55.72
Operators (Class 03 - See notes)	6/1/2024		$32.83	$24.39	$57.22
Painters Class 6 (see notes)	6/1/2022		$29.50	$22.82	$52.32
Pile Driver Divers (Building, Heavy, Highway)	1/1/2023		$58.70	$21.22	$79.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2024		$60.95	$21.97	$82.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		$62.82	$22.72	$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		$64.70	$23.47	$88.17
Piledrivers	1/1/2023		$39.13	$21.22	$60.35
Piledrivers	1/1/2024		$40.63	$21.97	$62.60
Piledrivers	1/1/2025		$41.88	$22.72	$64.60
Piledrivers	1/1/2026		$43.13	$23.47	$66.60
Plasterers	6/1/2022		$31.44	$19.74	$51.18
Plasterers	6/1/2023		$32.14	$20.54	$52.68
Plumbers and Steamfitters	6/1/2023		$39.32	$25.10	$64.42
Pointers, Caulkers, Cleaners	12/1/2022		$35.47	$20.88	$56.35
Roofers	6/1/2022		$36.04	$19.13	$55.17
Roofers	6/1/2023		$37.00	$19.92	$56.92
Sheet Metal Workers	7/1/2021		$38.76	$30.00	$68.76
Sheet Metal Workers	7/1/2022		$39.50	$31.43	$70.93
Sign Makers and Hangars	7/15/2022		$30.54	$24.35	$54.89
Sprinklerfitters	4/1/2023		$44.33	$28.04	$72.37
Steamfitters	6/1/2022		$44.15	$27.32	$71.47
Steamfitters	6/1/2023		$46.10	$28.37	$74.47
Stone Masons	12/1/2022		$38.56	$23.61	$62.17
Terrazzo Finisher	12/1/2022		$36.13	$18.03	$54.16
Terrazzo Mechanics	12/1/2022		$35.49	$20.32	$55.81
Tile Finisher	12/1/2022		$28.76	$17.34	$46.10
Tile Setter	12/1/2022		$35.64	$21.81	$57.45
Truckdriver class 1(see notes)	1/1/2023		$33.18	$22.21	$55.39
Truckdriver class 1(see notes)	1/1/2024		$34.93	$22.71	$57.64
Truckdriver class 1(see notes)	1/1/2025		$36.43	$23.21	$59.64
Truckdriver class 1(see notes)	1/1/2026		$37.93	$23.71	$61.64
Truckdriver class 2 (see notes)	1/1/2023		$33.64	$22.52	$56.16
Truckdriver class 2 (see notes)	1/1/2024		$35.39	$23.02	$58.41
Truckdriver class 2 (see notes)	1/1/2025		$36.89	$23.52	$60.41
Truckdriver class 2 (see notes)	1/1/2026		$38.39	$24.02	$62.41
Truckdriver class 3 (see notes)	1/1/2016		$28.23	$16.98	$45.21
Window Film / Tint Installer	10/1/2019		$25.00	$2.63	$27.63

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 23-05975 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Carpenter	1/1/2023		$38.60	$20.59	$59.19
Carpenter	1/1/2024		$40.10	$21.34	$61.44
Carpenter	1/1/2025		$41.35	$22.09	$63.44
Carpenter	1/1/2026		$42.60	$22.84	$65.44
Carpenter Welder	1/1/2023		$40.10	$20.59	$60.69
Carpenter Welder	1/1/2024		$41.60	$21.34	$62.94
Carpenter Welder	1/1/2025		$42.85	$22.09	$64.94
Carpenter Welder	1/1/2026		$44.10	$22.84	$66.94
Cement Finishers	1/1/2023		$34.14	$25.05	$59.19
Cement Finishers	1/1/2024		$35.14	$26.30	$61.44
Cement Finishers	1/1/2025		$35.94	$27.50	$63.44
Cement Masons	1/1/2020		$32.84	$21.10	$53.94
Electric Lineman	5/27/2019		$47.38	$26.30	$73.68
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2020		$37.29	$32.87	$70.16
Iron Workers (Bridge, Structural Steel, Ornamental, Precast, Reinforcing)	6/1/2023		$38.89	$35.02	$73.91
Laborers (Class 01 - See notes)	1/1/2023		$29.95	$25.50	$55.45
Laborers (Class 01 - See notes)	1/1/2024		$32.20	$25.50	$57.70
Laborers (Class 01 - See notes)	1/1/2025		$33.70	$26.00	$59.70
Laborers (Class 01 - See notes)	1/1/2026		$34.70	$27.00	$61.70
Laborers (Class 02 - See notes)	1/1/2023		$30.11	$25.50	$55.61
Laborers (Class 02 - See notes)	1/1/2024		$32.36	$25.50	$57.86
Laborers (Class 02 - See notes)	1/1/2025		$33.86	$26.00	$59.86
Laborers (Class 02 - See notes)	1/1/2026		$34.86	$27.00	$61.86
Laborers (Class 03 - See notes)	1/1/2023		$30.50	$25.50	$56.00
Laborers (Class 03 - See notes)	1/1/2024		$32.75	$25.50	$58.25
Laborers (Class 03 - See notes)	1/1/2025		$34.25	$26.00	$60.25
Laborers (Class 03 - See notes)	1/1/2026		$35.25	$27.00	$62.25
Laborers (Class 04 - See notes)	1/1/2023		$30.95	$25.50	$56.45
Laborers (Class 04 - See notes)	1/1/2024		$33.20	$25.50	$58.70
Laborers (Class 04 - See notes)	1/1/2025		$34.70	$26.00	$60.70
Laborers (Class 04 - See notes)	1/1/2026		$35.70	$27.00	$62.70
Laborers (Class 05 - See notes)	1/1/2023		$31.36	$25.50	$56.86
Laborers (Class 05 - See notes)	1/1/2024		$33.61	$25.50	$59.11
Laborers (Class 05 - See notes)	1/1/2025		$35.11	$26.00	$61.11
Laborers (Class 05 - See notes)	1/1/2026		$36.11	$27.00	$63.11
Laborers (Class 06 - See notes)	1/1/2023		$28.20	$25.50	$53.70
Laborers (Class 06 - See notes)	1/1/2024		$30.45	$25.50	$55.95
Laborers (Class 06 - See notes)	1/1/2025		$31.95	$26.00	$57.95
Laborers (Class 06 - See notes)	1/1/2026		$32.95	$27.00	$59.95
Laborers (Class 07 - See notes)	1/1/2023		$30.95	$25.50	$56.45
Laborers (Class 07 - See notes)	1/1/2024		$33.20	$25.50	$58.70
Laborers (Class 07 - See notes)	1/1/2025		$34.70	$26.00	$60.70
Laborers (Class 07 - See notes)	1/1/2026		$35.70	$27.00	$62.70

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 23-05975 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Laborers (Class 08 - See notes)	1/1/2023		$32.45	$25.50	$57.95
Laborers (Class 08 - See notes)	1/1/2024		$34.70	$25.50	$60.20
Laborers (Class 08 - See notes)	1/1/2025		$36.20	$26.00	$62.20
Laborers (Class 08 - See notes)	1/1/2026		$37.20	$27.00	$64.20
Millwright	6/1/2020		$41.68	$20.32	$62.00
Operators (Class 01 - see notes)	1/1/2023		$36.79	$23.58	$60.37
Operators (Class 01 - see notes)	1/1/2024		$38.59	$24.03	$62.62
Operators (Class 01 - see notes)	1/1/2025		$40.39	$24.23	$64.62
Operators (Class 02 -see notes)	1/1/2023		$36.53	$23.58	$60.11
Operators (Class 02 -see notes)	1/1/2024		$38.33	$24.03	$62.36
Operators (Class 02 -see notes)	1/1/2025		$40.13	$24.23	$64.36
Operators (Class 03 - See notes)	1/1/2023		$32.88	$23.58	$56.46
Operators (Class 03 - See notes)	1/1/2024		$34.68	$24.03	$58.71
Operators (Class 03 - See notes)	1/1/2025		$36.48	$24.23	$60.71
Operators (Class 04 - See notes)	1/1/2023		$32.42	$23.58	$56.00
Operators (Class 04 - See notes)	1/1/2024		$34.22	$24.03	$58.25
Operators (Class 04 - See notes)	1/1/2025		$36.02	$24.23	$60.25
Operators (Class 05 - See notes)	1/1/2023		$32.17	$23.58	$55.75
Operators (Class 05 - See notes)	1/1/2024		$33.97	$24.03	$58.00
Operators (Class 05 - See notes)	1/1/2025		$35.77	$24.23	$60.00
Operators Class 1-A	1/1/2023		$39.79	$23.58	$63.37
Operators Class 1-A	1/1/2024		$41.59	$24.03	$65.62
Operators Class 1-A	1/1/2025		$43.39	$24.23	$67.62
Operators Class 1-B	1/1/2023		$38.79	$23.58	$62.37
Operators Class 1-B	1/1/2024		$40.59	$24.03	$64.62
Operators Class 1-B	1/1/2025		$42.39	$24.23	$66.62
Painters Class 1 (see notes)	6/1/2022		$34.45	$22.82	$57.27
Painters Class 2 (see notes)	6/1/2019		$35.25	$20.06	$55.31
Painters Class 3 (see notes)	6/1/2022		$36.77	$22.82	$59.59
Painters Class 4 (see notes)	6/1/2019		$28.20	$20.06	$48.26
Painters Class 5 (see notes)	6/1/2019		$22.91	$20.06	$42.97
Pile Driver Divers (Building, Heavy, Highway)	1/1/2023		$58.70	$21.22	$79.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2024		$60.95	$21.97	$82.92
Pile Driver Divers (Building, Heavy, Highway)	1/1/2025		$62.82	$22.72	$85.54
Pile Driver Divers (Building, Heavy, Highway)	1/1/2026		$64.70	$23.47	$88.17
Piledrivers	1/1/2023		$39.13	$21.22	$60.35
Piledrivers	1/1/2024		$40.63	$21.97	$62.60
Piledrivers	1/1/2025		$41.88	$22.72	$64.60
Piledrivers	1/1/2026		$43.13	$23.47	$66.60
Steamfitters (Heavy and Highway - Gas Distribution)	5/1/2022		$48.43	$40.28	$88.71
Truckdriver class 1(see notes)	1/1/2023		$33.18	$22.21	$55.39
Truckdriver class 1(see notes)	1/1/2024		$34.93	$22.71	$57.64
Truckdriver class 1(see notes)	1/1/2025		$36.43	$23.21	$59.64
Truckdriver class 1(see notes)	1/1/2026		$37.93	$23.71	$61.64

BUREAU OF LABOR LAW COMPLIANCE
PREVAILING WAGES PROJECT RATES

Project: 23-05975 - Heavy/Highway	Effective Date	Expiration Date	Hourly Rate	Fringe Benefits	Total
Truckdriver class 2 (see notes)	1/1/2023		$33.04	$22.13	$55.17
Truckdriver class 2 (see notes)	1/1/2024		$34.79	$22.63	$57.42
Truckdriver class 2 (see notes)	1/1/2025		$36.29	$23.13	$59.42
Truckdriver class 2 (see notes)	1/1/2026		$37.79	$23.63	$61.42
Truckdriver class 3 (see notes)	1/1/2019		$29.59	$19.82	$49.41

BONDING CALCULATIONS BACKUP

EXHIBIT 2
FINAL COVER GEOSYNTHETICS COST BACKUP

The following final cover geosynthetic pricing was obtained from Noble in the form of a purchase order for a 2022 closure construction project and also represents current market pricing. A copy of the purchase order is included with this estimate.

Drainage Layer		
6-oz/sy Double Sided Geocomposite	**$0.36/SF**	**Supply & Install**
Flexible Membrane Layer		
40-mil textured HDPE Geomembrane	**$0.50/SF**	**Supply & Install**

BONDING CALCULATIONS BACKUP

EXHIBIT 3
GROSS NATIONAL PRODUCT INFORMATION (3-YEAR)

An updated Table 1.1.9 Implicit Price Deflators for Gross Domestic Product has been provided for the years 2021 through 2024.

Table 1.1.9. Implicit Price Deflators for Gross Domestic Product

[Index numbers, 2017=100]

Last Revised on: September 25, 2025 - Next Release Date October 30, 2025

Line		2021	2022	2023	2024
Line					
1	**Gross domestic product**	**110.186**	**118.023**	**122.390**	**125.428**
2	**Personal consumption expenditures**	**108.972**	**116.100**	**120.511**	**123.666**
3	Goods	104.599	113.639	115.037	114.538
4	Durable goods	102.182	108.792	107.979	105.751
5	Nondurable goods	105.830	116.269	118.956	119.493
6	Services	111.044	117.130	123.091	128.119
7	**Gross private domestic investment**	**107.661**	**115.757**	**119.059**	**121.001**
8	Fixed investment	108.039	116.507	120.036	122.085
9	Nonresidential	103.147	109.323	112.793	114.324
10	Structures	110.427	128.372	135.028	134.698
11	Equipment	99.908	106.065	110.865	113.173
12	Intellectual property products	102.609	103.551	104.419	106.144
13	Residential	125.161	141.779	145.415	149.655
14	Change in private inventories	---	---	---	---
15	**Net exports of goods and services**	**---**	**---**	**---**	**---**
16	Exports	111.820	122.830	120.949	122.090
17	Goods	111.702	124.724	119.361	118.920
18	Services	111.689	118.470	123.618	127.848
19	Imports	106.030	113.668	111.357	112.211
20	Goods	105.209	113.066	109.457	109.974
21	Services	109.566	116.096	119.675	121.990
22	**Government consumption expenditures and gross investment**	**113.177**	**121.386**	**124.745**	**127.775**
23	Federal	108.918	115.194	120.003	123.896
24	National defense	109.225	116.078	120.888	125.394
25	Nondefense	108.518	114.050	118.857	121.953
26	State and local	115.855	125.305	127.744	130.231
	Addendum:				
27	Gross national product	110.108	117.939	122.301	125.338

BONDING CALCULATIONS BACKUP

EXHIBIT 4
GROUNDWATER SAMPLE TESTING LABORATORY COSTS

Mike,

$364.10/Sample – PA Form 19Q – Quarterly Groundwater and Surface Water

$631.80/Sample – PA Form 19A – Annual Groundwater and Surface Water

Woody

Elwood "Woody" Kennell
Account Specialist
Geochemical Testing
2005 North Center Avenue
Somerset, PA 15501
Phone: (814) 443-1671
Fax: (814) 445-6729
Cell: (814) 279-8975

BONDING CALCULATIONS BACKUP

EXHIBIT 5
SURFACE WATER SAMPLE TESTING LABORATORY QUOTE

Mike,

$364.10/Sample – PA Form 19Q – Quarterly Groundwater and Surface Water

$631.80/Sample – PA Form 19A – Annual Groundwater and Surface Water

Woody

Elwood "Woody" Kennell
Account Specialist
Geochemical Testing
2005 North Center Avenue
Somerset, PA 15501
Phone: (814) 443-1671
Fax: (814) 445-6729
Cell: (814) 279-8975

BONDING CALCULATIONS BACKUP

EXHIBIT 6
GROUNDWATER WELL CONSTRUCTION

The following estimate was prepared to estimate the cost to drill and construct a groundwater well using average well depths obtained from the facility's Annual Operation Report (AOR) and unit rates obtained from RS Means. Groundwater well construction will include drilling the well, installed PVC piping (both solid and slotted), backfilling with grout and developing the well as follows.

The average well depth taken from the AOR is 165.8-ft and this depth will be utilized to estimate a linear foot cost for well construction. It is also assumed that there will be 20-ft of screened interval.

- Drilling – this unit cost was obtained from RS Means to be $29.15/ft.
- PVC Piping (solid) – this unit cost was obtained from RS Means to be $20.57/ft.
- Well Screen (slotted) – this unit cost was obtained from RS Means to be $25.41/ft.
- Grout Backfill – this cost has been estimated from past experience to be $7.00/ft.
- Well Development – this lump sum cost of $945.59 per well was obtained from RS Means.
- Well Pump – this lump sum cost was obtained from RS Means to be $1,405.84 per pump.

Total Well Construction = $29.15/ft * 165.8-ft + $20.57/ft * (165.8 – 20 ft) + $25.41/ft * 20-ft + $7.00/ft * 165.8-ft + $945.59 + $1,405.84 = $11,852.41 / well.

Therefore, the total unit rate for well construction is $11,852.41 / 165.8-ft = $71.48 / ft.

BONDING CALCULATIONS BACKUP

EXHIBIT 7
GAS COLLECTION SYSTEM BACKUP

BONDING CALCULATIONS BACKUP

EXHIBIT 7
GAS COLLECTION SYSTEM BACKUP

From: Josh Whetzel [mailto:jcw32@verizon.net]
Sent: Tuesday, May 15, 2012 7:22 AM
To: David Murray
Cc: Phil Custer II, P.E.
Subject: Per well costs 2012

I reviewed my invoices for well drilling costs for 2011 and 2012. There are no markup or profit or overhead in these numbers. I would add 20% to the total per well price. These prices give you a capped 8" well.

1. To drill the well, it is $33 per foot plus a $1000 mobilization fee per well. The mob fee was $6,000, so it would be more for fewer wells.
2. 8" DR17 pipe is $6.50 per foot from Lee Supply.
3. 8" cap - $32
4. Gravel, $20 per ton, 50 tons on average per well
5. Centralizers - $55 each, we used an average of 3 per well
6. Bentonite clay – We used approx 22 bags per well at $9.25 per bag
7. Boots – one per well, not tied into cap, $350 per boot.
8. Misc. Labor per well - $250

-

ITEM	UNIT PRICE (PER FOOT)	LUMP SUM (PER WELL)
1	$ 33.00	$ 1,000
2	$ 6.50	-
3	-	$ 32
4	-	$ 1,000
5	-	$ 165
6	-	$ 203.50
7	-	$ 350
8	-	$ 250
TOTALS	$ 39.50	$ 3000.50

Unit Price Before 20% Markup =
$ 39.50 + $3000.50 / 247.5-ft (avg. well depth) = $51.63 / ft

Total Unit Price = $51.63 + (20% * $51.63) = $61.96 (Worksheet G, Note 3)

BONDING CALCULATIONS BACKUP

EXHIBIT 7
GAS COLLECTION SYSTEM BACKUP
LEACHATE COLLECTION PIPE COST

312316 Excavation — Lines 1 - 50 of 223

Line Number	Description	Unit	Crew	Daily Output	Labor Hours	Bare Material	Bare Labor	Bare Equipment	Bare Total	Total O&P
312316130010	EXCAVATING, TRENCH									
312316130011	Or continuous footing									
312316130020	Common earth with no shee...									
312316130050	1' to 4' deep, 3/8 C.Y. excav...	B.C.Y.	B11C	150.00	0.107		4.36	2.23	6.59	9.10
312316130060	1/2 C.Y. excavator	B.C.Y.	B11M	200.00	0.080		3.27	1.82	5.09	6.97
312316130062	3/4 C.Y. excavator	B.C.Y.	B12F	270.00	0.059		2.46	2.40	4.86	6.38

Excavate Trench, 3/8 CY Excavator, 2' Deep, 18" Wide – 0.11 B.C.Y / LF = $1.00 / LF

312316133000	Backfill trench, F.E. loader,...									
312316133020	Minimal haul	L.C.Y.	B10R	400.00	0.030		1.28	0.67	1.95	2.68
312316133040	100' haul	L.C.Y.	B10R	200.00	0.060		2.56	1.34	3.90	5.37
312316133060	200' haul	L.C.Y.	B10R	100.00	0.120		5.15	2.68	7.83	10.75

Backfill Trench, Front End Loader – 0.11 C.Y / LF = $0.30 / LF

Search Results — Lines 1 - 1 of 1

Line Number	Description	Unit	Crew	Daily Output	Labor Hours	Bare Material	Bare Labor	Bare Equipment	Bare Total	Total O&P
329219130020	Seeding, mechanical seeding, 215 lb/acre	Acre	B66	1.50	5.333	605.00	239.00	165.00	1009.00	1206.00

Seeding, Mechanical Seeding - $0.25 / SY, 0.67 SY / LF = $0.17 / LF

Search Results — Lines 1 - 1 of 1

Line Number	Description	Unit	Crew	Daily Output	Labor Hours	Bare Material	Bare Labor	Bare Equipment	Bare Total	Total O&P
329113160200	Soil preparation, mulching, hay, 1" deep, hand spread	S.Y.	1 Clab	475.00	0.017	0.33	0.59		0.92	1.27

Mulching, hay, 1" thick – $1.27 / SY, 0.67 SY / LF = $0.85 / LF

Pipe Material Cost – 6-Inch HDPE SDR 17 (see attached quote) = $7.30 / LF
Pipe Installation Cost (see attached quote) = $0.74 / LF

CQA – Assume $50 / hr, 8-hr day, 1000-ft / day, = $0.40 / LF
Surveyer – Assume $50 / hr, 8-hr day, 1000-ft / day, = $0.40 / LF

Total installation cost = Excavate + Backfill + Seeding + Mulching + Pipe Material + Pipe Installation + CQA + Surveyor = 1.00/LF + 0.30/LF + 0.17/LF + 0.85/LF + 7.30/LF + 0.74/LF + 0.40/LF + 0.40/LF = **$11.16 / LF** (Collection Pipe Unit Cost, Worksheet G, Item 8)

BONDING CALCULATIONS BACKUP

EXHIBIT 7
GAS COLLECTION SYSTEM BACKUP
FLARE / BLOWER INSTALLATION QUOTE

BONDING CALCULATIONS BACKUP

EXHIBIT 7
GAS COLLECTION SYSTEM BACKUP
ANNUAL CONDENSATE GENERATION

Annual condensate generation is estimated below by utilizing the Landfill Gas Generation curve obtained from the "Maximum LFG Flow Calculations" presented in Form K, Attachment K-2.3-A to estimate a projected average LFG generation for the closure period. The average LFG generation rate was then used to estimate annual condensate generation.

The permitted Maximum Condensate Generation presented on page K-2.8 of Attachment K-2 in Form K was estimated using the estimated maximum landfill gas generation rate. However, As shown in the Landfill Gas Generation curve obtained from the "Maximum LFG Flow Calculations" presented in Form K, Attachment K-2.3-A landfill gas generation increases at an almost steady rate until it peaks at 10,889 scfm in the year 2035, and then immediately begins to decrease. For the purposes of providing an estimate of yearly condensate generation for bonding calculations, it is appropriate to calculate an average LFG generation rate over the bonding period (30 years + 1 year to close) of 31 years. Therefore, the following calculations have completed based on the permitted LFG generation curve and permitted methods for calculating condensate generation included here.

Maximum LFG Generation Rate = 10,899 scfm
Average LFG Generation Rate (2013 – 2043) = 8,973 scfm

Permitted Maximum Condensate Generation = 1,987,702.4 gal / year

Condensate Generation Rate for Bonding Purposes = (Average LFG Generation Rate) / (Maximum LFG Generation Rate) * (Permitted Maximum Condensate Generation) = (8,973 scfm) / (10,899 scfm) * (1,987,702.4 gal/year) = **1,636,449 gal / year** (Worksheet G, Item 17)

BONDING CALCULATIONS BACKUP

EXHIBIT 8
POST-CLOSURE LEACHATE GENERATION ESTIMATE

This estimate has been prepared to establish an annual post-closure leachate generation rate to be utilized in the bonding calculations on Worksheet I, Line 2. This calculation will consider the current configuration of the landfill, permitted footprint of the landfill and the remaining life of the landfill previously estimated in the 2018 Annual Operations Report (AOR). Post-closure leachate generation rates will be assigned to different areas of the landfill based upon their configuration (open, intermediate, closed) at the time of closure for post-closure year 1. For post-closure years 2 through 30, the estimate leachate generation rate for "closed" areas will be applied to the entire closed footprint.

Current and Permitted Landfill Configuration
The current configuration includes a total constructed footprint of 44.6-acres of which approximately 6.6-acres has been closed with the permitted final cover system. The landfill includes a total permitted waste disposal area of 150.0-acres.

Worst-Case Post-Closure Scenario
The worst-case post-closure leachate generation scenario would be near the end of the landfill life when the entire 150-acres has been constructed and the permitted maximum open area of 50.0-acres is accepting waste with the remaining 100.0-acres closed with the permitted final cover system. The estimated final landfill cell to be built (Cell N7) is 13.2-acres. As with typical landfill sequencing, this cell would not be constructed until the other remaining constructed "open" area of 50.0-acres – 13.2-acres = 36.8-acres has a few years of remaining airspace. Therefore, the estimated worst-case post-closure scenario would consist of the following at the beginning of the 1-year closure period.

<u>Worst-Case Post-Closure Scenario (at beginning of 1-year closure period)</u>
Closed Landfill Areas – 100.0-acres
Intermediate Cover Areas – 36.8-acres
Open Active Landfill – 13.2-acres

Airspace Life and Waste Age
As obtained from the 2018 AOR, the landfill has approximately 67.6-years of remaining life. Therefore, it could be estimated that the remaining landfill footprint could constructed at an overall average rate of (150-acres – 44.6-acres) / 67.6-years = 1.6-acres per year. Assuming the final landfill cell would include approximately 2 to 4 years of airspace, the worst-case post-closure scenario would then occur approximately 63.6 to 67.6 years from now. This would result in the closed portions of the landfill (100.0-acres) having permitted final cover system with an approximate age of 2-years to 71.6-years (existing closure area approximately 6-years old). Intermediate cover areas would develop a few years following completion of the baseliner within the 100.0-acre closed landfill area or approximately (100.0-acres – 44.6-acres) / 1.6-ac/yr = 34.6-years from now.

EXHIBIT 8
POST-CLOSURE LEACHATE GENERATION ESTIMATE
(CONTINUED)

Therefore, the intermediate cover areas would have been established for approximately 2-years to 31-years (65.6-yrs – 34.6-yrs) at the beginning of the 1-year closure period.

The worst-case closure area and corresponding age of configuration at the beginning of the post-closure period is as follows.

Worst-Case Post-Closure Scenario
Closed Landfill Areas – 100.0-acres (Closed for 2 to 71.6 years, average 36.8-yrs)
Intermediate Cover Areas – 36.8-acres (Established for 2 to 31 years, average 16.5-yrs)
Open Active Landfill – 13.2-acres (Constructed for 2-years to 4-years, average 3-yrs)

Initial Post-Closure Leachate Generation Rates
This calculation estimates an overall average annual generation rate to be applied to the entire 30-year post-closure period. In reality, upon completion of closure, leachate generation would significantly drop over the first few years where precipitation and surface water is no longer able to reach the waste and infiltrate into the collection system. The following generation rates have been applied to each area of the worst-case post-closure scenario described above for the first year of post-closure. For years 2 through 30, an overall average rate of 25.0-gal/ac/day will be applied.

Open Active Landfill [13.2-acres] – this active landfill area would be closed at the end of the 1-year closure period and therefore having an average closure age for the 30-year post-closure period of 15-years. This area has been assigned a leachate generation rate of 100-gal/ac/day for the first year of post-closure and 25-gal/ac/day for years 2 through 30.

Intermediate Cover Areas [36.8-acres] – this intermediate cover area would be closed at the end of the 1-year closure period. This area is estimated to have already had intermediate cover soil placed (and most likely vegetation established) for an average of approximately 16.5 years. This area will have an average closure age for the 30-year post-closure period of 15-years. Leachate generation is estimated to have already been reduced following placement of intermediate cover. This area has been assigned a leachate generation rate of 50-gal/ac/day for the first year of post-closure and 25-gal/ac/day for years 2 through 30.

Closed Landfill Areas [100.0-acres] – at the beginning of the post-closure period, these areas are estimated to have already been closed for an average of 36.8-years. For the 30-year post-closure period, these areas will have an average closure age of 51.8-years. For these areas, which infiltration and stormwater inflow will be restricted with the permitted final closure system, it is estimated that leachate generation would be minimal with an average closure age of 51.8-years. This area has been assigned a leachate generation rate of 25-gal/ac/day for the first year of post-closure as well as for years 2 through 30.

BONDING CALCULATIONS BACKUP

EXHIBIT 8
POST-CLOSURE LEACHATE GENERATION ESTIMATE
(CONTINUED)

The overall average leachate generation rate for the post-closure period may be estimated by the total estimated leachate generation for the first year of post-closure combined with the total estimated leachate generation for post-closure years 2 through 30 divided by the total 30-year post-closure period as follows.

Year 1 Post-Closure Generation = **Open Active Areas (13.2-acres * 100-gal/ac/day) + Intermediate Cover Areas (36.8-acres * 50-gal/ac/day) + Closed Landfill Areas (100.0-acres * 25-gal/ac/day) = 5,660-gallons / day or 2,065,900-gal/year.**

Years 2 through 30 Post-Closure Generation = Closed Landfill Area (150.0-acres * 25-gal/ac/day) = 3,750-gallons/day or 1,368,750-gal/year.

Overall Average Post-Closure Leachate Generation = (1-year * 2,065,900-gal + 29-years * 1,368,750-gal/year) / 30-years = **1,391,989-gal/year.** (Worksheet I, Item 2)

BONDING CALCULATIONS BACKUP

EXHIBIT 9
STACK TEST PROPOSAL

The stack test proposal included is for a western Pennsylvania landfill issued in January, 2010. For conservancy, 20-percent has been added to the proposal amount for use in the bonding calculation worksheets.

BONDING CALCULATIONS BACKUP

EXHIBIT 10
GAS COLLECTION SYSTEM ELECTRICITY COSTS

Hi Mike,

Meter # 32743025 represents the flare/wheel wash/office/scale.
Meter # 34948258 represents the garage.
Meter # 41375859 represents the leachate pumps.
Meter # 24933264 represents the parking area/fuel tanks.

Rose

From: mzucatti@civildesign.org [mailto:mzucatti@civildesign.org]
Sent: Tuesday, November 06, 2012 8:43 AM
To: Vrabel, Rose
Cc: David Murray
Subject: RE: electric bills

Hi Rose,

I'm sorting through the electric bills now and it looks like there are 4 different Meters. Can you please provide some clarification as to which of the following meters represent the Flare?

- Meter # 41375859
- Meter # 32743025
- Meter # 24933264
- Meter # 34948258

From conversations in the past I believe the meter for the Flare also includes wheel wash, office trailer, truck wash and scale house….

Thanks for your help!

Michael Zucatti
Civil Design Solutions, Inc.
1015 State Avenue
Coraopolis, PA 15108
Office Phone: 412-299-2700 ext. 157
Cell Phone: 717-448-5613
Office Fax: 412-299-2922

BONDING CALCULATIONS BACKUP

EXHIBIT 10
GAS COLLECTION SYSTEM ELECTRICITY COSTS (CONTINUED)

Since the electric meter includes other items than the flare, the monthly cost of electricity for the flare system will be taken as 80% of the monthly bill averaged between the March 13, 2012 to October 17, 2012 metering period shown on the bills included here. In addition, the electric costs for the system will be prorated to account for the system operating at capacity.

Therefore the cost of electricity to run the control system per year is equal to [(average of current electric bills $/month) * (80%) * ((maximum permitted flow scfm) / (current flow scfm)) * (12 months/year)]

Cost of Electricity = [(1,996 $/month) * (80%) * ((10,899 scfm) / (1400 scfm)) * (12 months/year)] = $150,556 / Year (Worksheet G, Note 8)

BONDING CALCULATIONS BACKUP

EXHIBIT 11
LANDFILL CAP / CELL CONSTRUCTION BID SUMMARIES

WESTMORELAND SANITARY LANDFILL
PHASE II CLOSURE SOILS CONSTRUCTION - BID FORM

	Work Item	Unit	Unit Cost ($)	Estimated Quantity	Subtotal Cost ($)
1	Mobilization and Demobilization	LS	$17,875.00	1	$17,875.00
2	General Fill Placement	CY	$12.00	1,000	$12,000.00
3	Waste Grading	SY	$3.85	1,000	$3,850.00
4	Place / Augment Intermediate Cover Soil [3, 4]	CY	$16.00	1,500	$24,000.00
5	Intermediate Cover Surface Prep	AC	$2,500.00	4.5	$11,250.00
6	Final Cover System Tie-In	LF	$10.85	1,000	$10,850.00
7	Waste Seep Drain Installation	LF	$12.95	1,000	$12,950.00
8a	Final Cover Soil - Lower 18-inches Pre-Processed	CY	$3.95	6,100	$24,095.00
8b	Final Cover Soil - Upper 6-inches Pre-Processing	CY	$4.15	4,600	$19,090.00
9	Cap Drainage Bench Piping	LF	$10.90	750	$8,175.00
10	Temporary Anchor Trench	LF	$11.25	900	$10,125.00
11	Installation of Erosion Control Matting on Benches	LF	$14.30	750	$10,725.00
12	Stormwater Channel 1	LF	$12.30	1,400	$17,220.00
13	Stormwater Culvert A	LF	$26.95	80	$2,156.00
14	Manhole and Control Panel Removal	LS	$2,050.00	1	$2,050.00
					$186,411.00

Notes:

(1) The estimated soils quantities provided on this Bid Form are to be utilized by all parties for bidding purposes only and are not to be utilized for the ordering, purchasing, or billing of materials and services provided for the completion of this project. CONTRACTOR is responsible for determination of their own quantities to be utilized for material supply and/or installation for construction purposes to complete the scope of work for this project. All final payment quantities provided to OWNER by CONTRACTOR shall be verified in the field based on as-built project conditions by OWNER or OWNER's representative prior to issuance of payment to CONTRACTOR.

(2) Bid quantities are provided as an estimate only and actual quantities may vary from that shown. Final payment will be determined by field survey in accordance with the specifications.

BONDING CALCULATIONS BACKUP

EXHIBIT A
CLIENT SUPPLIED COST BACKUP

BONDING BACKUP SUMMARY - CLIENT INFORMATION

Client:	**Noble, Inc**
Facility Name:	**Sanitary Landfill**
Facility Location:	**Westmoreland County, Rostraver Township, Pennsylvania**
Facility ID:	**100277**

Bonding Cost Item	Worksheet ID	Worksheet Reference	Backup Reference	Quantity	Unit
Assumed Duration to Complete Last Closure Stage	C	Note 7		**1.0**	yr
Permitted Facility Limit Area	K	Line 1		**270.00**	ac
Permitted Total Waste Footprint Area	K	Line 2		**150.00**	ac
Maximum Closure Area (for bonding purposes)	B	Line 2		**50.0**	ac
Area Waste Disposal Gate rate	A	Note 2		**$50.00**	$/tn
Waste Disposal Gate rate vicinity	A	Note 2		**Southwestern PA**	
Hauling cost	A	Note 2		**$65.00**	$/hr
Hauling Round Trip	A	Note 2		**2.00**	hr
Waste Unit Weight	A	Note 2		**70.00**	PCF
Gas System Operation Annual Electric cost	G	Line 13		**$150,556**	$/yr
Gas System Annual Maintenance cost	G	Line 14		**$33,600**	$/yr
Gas System Annual blower maintenance cost	G	Line 15		**$6,500**	$/yr
Gas System Stack test cost	G	Line 16		**$14,640**	$/ea
Annual cost to manage leachate (w/o treatment)	I	Line 3		**$10,000**	$/yr
Leachate POTW Discharge Name	I	Note 4	Exhibit 9	**N/A**	
Leachate POTW Unit Discharge Cost	I	Line 4	Exhibit 9	**N/A**	$/gal
Leachate On-Site Unit Leachate Treatment Cost	I	Line 5		**$0.0700**	$/gal
Leachate On-Site Plant NPDES Permitting Cost	I	Note 5		**$0**	$/5-yr
Repair Cost for Sedimentation Ponds	K	Item 9d		**$2,100**	$/ac
Repair Cost for Leachate Storage Tanks-per Tank	K	Line 11b		**$1,500**	$/yr
Final Cover Haul Length (round trip)	B	Note 10		**1.00**	mile
Final Cover Unit Hauling Cost	B	Note 10		**$4.05**	$/cy

BONDING CALCULATIONS BACKUP

EXHIBIT A
CLIENT SUPPLIED COST BACKUP

- **Worksheet A – Note 2**. The disposal cost for general refuse and typical hauling rates provided in the Pittsburgh market.

- **Worksheet G – Line 14.** The cost to maintain the control system for the gas collection system at this facility will include well field monitoring ($1,300/month) and typical maintenance fees ($1,500/month. Thus, the total cost to maintain the system will be $1,300/month(well field monitoring) * 12 months/year + $1,500/month(maintenance)*12 months/year = $33,600/Year.

> From: Rose Vrabel [mailto:rvrabel@wwllcgroup.com]
> Sent: Friday, June 10, 2011 3:57 PM
> To: David Murray
> Subject: Re: Gas System Operation
>
> Hi Dave,
>
> Shaw billed $1300.00 for monthly wellfield monitoring for April 2011.
> The must be behind in their billing because that is the last one I received.
>
> Thanks - Rose

- **Worksheet G – Line 15**. The annual blower maintenance cost for this facility is assumed to include two components 1) for minor blower repairs and 2) for blower replacement. The annual cost for blower repairs is assumed to include the cleaning and lubrication with an approximate annual cost of $1,000 per year. The other component of this cost for the replacement of a blower has been estimated based on a recent replacement of a blower at a different Western Pennsylvania Landfill. The replaced blower is anticipated to have an operational life of approximately 10-years and the replacement cost $50,000 which yields an average annual cost of $5,000. This provides a total annual maintenance cost of $5,500 (Blower Replacement) + $1,000 (Blower Maintenance) = $6,500/year.

BONDING CALCULATIONS BACKUP
EXHIBIT B

"MEANS" COST BACKUP

BONDING BACKUP SUMMARY - MEANS/PREVAILING WAGE

Client:	**Noble, Inc**
Facility Name:	**Sanitary Landfill**
Facility Location:	**Westmoreland County, Rostraver Township, Pennsylvania**
Facility ID:	**100277**

Bonding Cost Item	Worksheet ID	Worksheet Reference	Backup Reference	Quantity	Unit
Prevailing Wage Cost County Location	Various	Various		**Westmoreland**	
Unskilled Laborer Classification	A	Note 8		**Class II**	
Unskilled Laborer Prevailing Wage	A	Note 8		**$55.61**	$/hr
Semi Skilled Laborer Classification	B	Note 12		**Class III**	
Semi Skilled Laborer Prevailing Wage	B	Note 12		**$56.00**	$/hr
Steam Cleaner Rental for Equipment Decon	A	Note 8		**$139.07**	$/day
Haul Road Unit Construction/Grading Cost	B	Note 3		**$12.62**	$/sy
Structural Fill Compaction Cost	B	Note 4		**$0.36**	$/cy
Borrow Area Regrading Haul Length (round trip)	J	Note 2		**150.00**	feet
Borrow Area Regrading Unit Haul Cost	J	Note 2		**$2.24**	$/cy
Surface Water Channel Unit Trenching Cost	B	Note 13		**$7.51**	$/cy
Surface Water Channel Unit Riprap Lining Cost	B	Note 13		**$33.48**	$/tn
Surface Water Channel Unit Matting Lining Cost	B	Note 13		**$1.15**	$/sf
Gas Management System Unit Collection Pipe C	G	Note 5		**$11.16**	$/lf

BONDING CALCULATIONS BACKUP

EXHIBIT C
GENERAL BONDING CALCULATION INFORMATION

BONDING BACKUP SUMMARY - ENGINEERING/MONITORING

Client:	**Noble, Inc**
Facility Name:	**Sanitary Landfill**
Facility Location:	**Westmoreland County, Rostraver Township, Pennsylvania**
Facility ID:	**100277**

Bonding Cost Item	Worksheet ID	Worksheet Reference	Backup Reference	Quantity	Unit
Total Sedimentation Pond Area at Time of Closure	3	Line 5		**8.00**	ac
Total Length of Channels/Ditches at Time of Closure	K	Line 6		**10,725**	lf
Total Length of roadways at Time of Closure	K	Line 13a		**10,000**	lf
Field Technician for Well, Gas and Surface Water	C & Others	Note 4		**Technician**	
Field Technician Unit Rate (Monitoring)	C & Others	Note 4		**$55.00**	$/hr
Field Technician/Field Geologist Unit Rate (Groundwater Well Ins	C & Others	Note 3		**$55.00**	$/hr
Office Review/Coordination for Sampling/Monitoring	C & Others	Note 6		**Engineer**	
Unit Rate for Office Review/Coordination	C & Others	Note 6		**$70.00**	$/hr
Groundwater Well Drilling Unit Cost Provided by	C	Note 3	Exhibit 4	**Means**	
Groundwater Well Drilling & Construction Unit Cost	C	Note 3		**$71.48**	$/lf
Technician Field Monitoring Time for Well Drilling & Construction	C	Note 3		**8**	hr
Technician Field Time for Well Development	C	Note 3		**4**	hr
Per Sample Packing/Shipping Rate	C	Note 4		**$12.00**	$/sample
Groundwater Testing Laboratory Quote from	C	Note 5	Exhibit 5	**Geochemical Testing**	
Groundwater Unit Cost for Quarterly Laboratory Testing	C	Note 5	Exhibit 5	**$364.10**	$/sample
Groundwater Unit Cost for Annual Laboratory Testing	C	Note 5	Exhibit 5	**$631.80**	$/sample
Groundwater per Well Purging/Sampling Field Time for Technicia	C	Note 4		**1.0**	hr/well
Private Well Testing Laboratory Quote from	E	Note 3	Exhibit 5	**Geochemical Testing**	
Private Well Unit Cost for Quarterly Laboratory Testing	E	Note 3	Exhibit 5	**$364.10**	$/sample
Surfacewater Testing Laboratory Quote from	D	Note 3	Exhibit 6	**Geochemical Testing**	
Surfacewater Unit Cost for Quarterly Laboratory Testing	D	Note 3	Exhibit 6	**$364.10**	$/sample
Surfacewater Unit Cost for Annual Laboratory Testing	D	Note 3	Exhibit 6	**$631.80**	$/sample
Surfacewater Unit Cost for NPDES Testing	D	Note 5	Exhibit 6	**$150.00**	$/sample
Surfacewater per location Sampling Field Time for Technician	D	Note 2		**0.5**	hr
Gas Management System Unit Cost for Gas Well Construction	G	Note 3	Exhibit 7	**$61.96**	$/lf
Gas Management System Unit Cost for Leachate Pump	G	Note 3	Exhibit 7	**$5,294.75**	$/ea
Gas Management System Unit Cost for Leachate Pump Cabling	G	Note 3	Exhibit 7	**$0.50**	$/lf
Gas Management System Well Balancing Field Time	G	Note 6		**0.10**	hr/well
Gas Management System Well Balancing Office Time for Review	G	Note 6		**0.10**	hr/well
Gas Management System Total time for NSPS Surface Monitoring	G	Note 7		**40.00**	hr
Gas Management - Annual Cost for Title V Reporting	G			**$4,000**	$/yr
Gas Management - Cost for 5-year Title V Permit Renewal	G			**$15,000**	$/5-yr
Gas Management System Flare / Blower Quote from	G	Note 2	Exhibit 7	**John Zink Company, LLC**	
Gas Management System Annual Condensate Generation	G	Note 10	Exhibit 7	**1636449.00**	gal/yr
Closure Support - Borrow Area Haul roads, average roadway widt	B	Note 3		**20.0**	ft
Closure Support - Borrow Area Haul roads, roadway length	B	Note 3		**1,000**	lf
Closure Area Grading - Avg thickness of Grading for S/W	B	Note 1		**0.50**	ft
Closure Area Grading - Avg thickness of Intermediate Cover Adde	B	Note 5		**0.50**	ft
Borrow Area - Maximum open area	J	Line 1		**5.00**	ac
Borrow Area - average regrading thickness of borrow area	J	Note 1		**0.33**	ft
Borrow Area - Portion of borrow area to be regraded	J	Note 1		**100%**	
Borrow Area - average top soil placement thickness	J	Note 3		**0.33**	ft
Closure - Revegetation Quote From	B	Line 12	Exhibit 3	**Noble**	
Closure - Unit Revegetation Quote	B	Line 12	Exhibit 3	**$2,650.00**	$/ac
Geosynthetics - Unit cost for geotextile	B	Line 9a	Exhibit 2	**N/A**	$/sf
Geosynthetics - Unit cost for FML	B	Line 9b	Exhibit 2	**$0.36**	$/sf
Geosynthetics - Unit cost for geocomposite	B	Line 9c	Exhibit 2	**$0.50**	$/sf
Geosynthetics - Average Cap Penetrations per Acre	B	Note 7		**6**	ea/ac
Leachate - Average post-closure leachate generation	I	Line 2	Exhibit 8	**1,391,989**	ga/yr
Leachate - Total Storage Pond Area	K	Line 12j		**0.00**	ac
Leachate - Storage Pond Liner Thickness	I	Note 6		**0.00**	ft

Leachate - Storage Pond Liner Unit Weight for removal	I	Note 6	**50.00**	pcf
Leachate - Total Number of Tanks at Closure	K	Line 12a	**3**	ea
Repair - % of construction cost (roads, ponds, channels, etc.)	K	Lines 4,6&8	**33%**	
Fencing - Total Length at Time of Closure	K	Note 11	**4,000**	lf
Fencing - Unit Fence Installation Cost	K	Note 11	**$46.36**	$/lf
Fencing - Gate Cost	K	Note 11	**$1,294.87**	$/ea
Fencing - Gate Replacement Frequency.	K	Note 11	**10.0**	yr

BONDING CALCULATIONS BACKUP

EXHIBIT D
LEACHATE TRUCKING BONDING ESTIMATE
UNIT RATES FOR LEACHATE TRUCKING

The following estimate has been prepared to calculate costs associated with hauling leachate for offsite disposal. These estimates will be entered onto the PADEP Bonding Worksheet I for item 7 for the bonding scenario considering leachate trucking as the sole method of disposal.

As presented in the PADEP bonding worksheet for Item 7, "Unit cost to transport and dispose of leachate" will include transportation costs as well as disposal fees from the facility where the leachate is hauled to. The costs will be broken down according to these items as follows.

- **Transportation** – WSL currently owns sufficient trucks to be able to perform all trucking in-house. The estimated costs associated with transportation include labor, fuel, repair & maintenance. Understandably, if an outside vendor was used similar costs would be expected but most likely and overall unit rate would be provided. WSL is currently hauling leachate to four different facilities. The average round-trip haul time to these facilities is 3 hours. Each truck is able to transport approximately 5,000-gallons per trip. Using this average haul-time, the following transportation costs may be calculated.

  Labor - $26 / hr * (3-hrs) = $78 / trip
  Fuel - $90 / trip for 3-hour trip
  Repair & Maintenance - $37.50 / trip

  This results in a total cost per trip of $78 (Labor) + $90 (Fuel) + $37.50 (Maintenance) = $205.50.

  Transportation Unit Rate = $205.50 / 5,000-gal = $0.05 / gal.

  Therefore, the estimated total cost of maintenance and personnel is $32,207 + $6,000 = $38,207.

- **Disposal** – WSL is currently hauling leachate to four different facilities. The average disposal rate across all four facilities is $0.023 / gal.

Total Leachate Trucking and Disposal Rate = $0.05 (Trucking) + $0.023 (Disposal) = $0.073 / gallon.