STATE OF COLORADO

Lennberg - DNR, Patrick <patrick.lennberg@state.co.us>

Notice of Formal Complaint, CT-5, Lyons Quarry, M1977-208

Scott A Harcus <scotta.harcus@cemex.com> Fri, Mar 10, 2023 at 5:39 PM
To: "patrick.lennberg@state.co.us" <patrick.lennberg@state.co.us>
Cc: Cita Cisse <cita.cisse@cemex.com>, Erik Estrada <erik.estrada@cemex.com>, Robin Bay <rbay@habitatmanagementinc.com>, Maribel B Aguilos <maribelb.aguilos@cemex.com>

Hello Patrick –

In response to CT-5, please find the attached Cover Letter and attached Reclamation Cost Analysis for Lyons Quarry Permit No. M-1977-208.

Let us know if you have any questions/concerns throughout your review.

Regards,

Scott

Scott A. Harcus
Lyons Cement Plant

Environmental Manager
Office : +1(303)823-2124

Mobile: +1(614)306-8838
Address: 5134 Ute Highway, Longmont, CO 80503

From: Lennberg - DNR, Patrick <patrick.lennberg@state.co.us>
Sent: Thursday, January 12, 2023 3:48 PM
To: Scott A Harcus <scotta.harcus@cemex.com>; Maribel B Aguilos <maribelb.aguilos@cemex.com>; Cita Cisse <cita.cisse@cemex.com>; Erik Estrada <erik.estrada@cemex.com>
Subject: Notice of Formal Complaint, CT-5, Lyons Quarry, M1977-208

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2 attachments

DRMS - CX Response Letter - CT5 Filed 01-11-2023 - Final 03.10.23-signed.pdf
215K

Lyons Quarry (DRMS Permt# M-1977-208) Bond Calculation 03.10.23.pdf
1215K

March 10, 2023

VIA E-MAIL

Patrick Lennberg
Environmental Protection Specialist
Colorado Department of Natural Resources
Division of Reclamation, Mining and Safety
patrick.lennberg@state.co.us

RE: Response to Citizen Complaint, CT-5, Lyons Quarry; Permit File No. M-1977-208

Dear Patrick Lennberg:

We acknowledge receipt of your Notice of the referenced Citizen Complaint, CT-5, dated January 12, 2023 (the "CT-5 Notice"), and would like to respond to the complainant's assertions.

Complainant Issue 1: The current surety bond of $8.9MM is inadequate for the reclamation to occur at the Lyons Quarry site.

RESPONSE: Although the complainant asserts that the bond is based on estimates from "nearly 20 years ago," the last surety bond increase was associated with Technical Revision #13 and undertaken in 2015. While we are unaware of DRMS previously indicating that, "[T]his bond amount is likely inadequate in present day dollars and needs to be re-assessed," as stated in the Complaint, we have undertaken an internal analysis of the reclamation costs to produce the Reclamation Cost Estimate requested in the CT-5 Notice, which is attached for your review.

Complainant Issue 2: The reclamation plan for Lyons Quarry calls for the burial of concrete rubble and the onsite disposal of "various materials," which is a significant modification to the plan that should have been approved via the amendment process, requiring a public hearing.

RESPONSE: Complainant is correct that Technical Revision #2 (2003) permits the on-site burial of concrete, which by letter dated April 28, 2003, DRMS confirmed to CEMEX ". . . is classified by the Division as 'inert material.'" DRMS regulations §1.1(22) defines "Inert Material" and states, "The term includes, but is not limited to, earth, sand, gravel, rock, ***concrete which has been in a hardened state for at least sixty (60) days***, masonry, asphalt paving fragments, and other inert solids" [*emphasis added*]. Other than spent kiln bricks that were permitted to be used in C-Pit (Technical Revision #9, 2007), CEMEX is unaware of the other "various materials" to which complainant may be referring that may be disposed of on site.

DRMS considers concrete rubble an inert material and "inert structural fill," if generated onsite, may be used as backfill without notice to DRMS of its use (*see* DRMS regulations §3.1.5(9)). As confirmed by the Division's response to Citizen Complaints, CT-3 and CT-5, dated February 7, 2023, TR #2 and this activity do not necessitate a revision to the Lyons Quarry Permit.

Please let us know if you require any additional information, documentation or discussion for this response.

Sincerely,

CEMEX

By: _____

Scott Harcus
Environmental Manager
Lyons Cement Plant

Attachment – Reclamation Cost Analysis

March 10, 2023

Scott Harcus
Environmental Manager
CEMEX, Inc.
Via Email: scotta.harcus@cemex.com

RE: CEMEX Lyons Quarry (DRMS Permit #M-1977-208) Bonding Cost Estimate

Scott,

Habitat Management, Inc. was asked to provide an approximate cost estimate for the CEMEX Lyons Quarry reclamation bond based on the current Colorado Division of Reclamation Mining and Safety (DRMS) Mining and Reclamation Permit (M-1977-208). The attached tables detail the quantities and calculations used to develop this estimate. A summary of the cost estimate is provided in Table 1 using subtotaled costs that are detailed in Table 2 through Table 9. Specific assumptions used in developing this cost estimate are detailed below. A map of the property showing reclamation areas is also attached.

Cost Estimate Assumptions

Most costs are based on a CIRCES cost estimate completed by DRMS for the CEMEX Dowe Flats Quarry in 2020 with an inflation factor of 114% applied per the US Bureau of Labor Statistics. Several of the costs were also used from the 2003 and 2015 bond calculations with appropriate inflation factors applied. Some equipment and materials costs are based on actual current quotes.

Plant Demolition

The plant demolition costs include demolition, transportation, and disposal costs for buildings (Table 2), steel structures (Table 3), and concrete structures (Table 4). In 2003, the site was divided into two areas for the cost estimate; the Grading Area to the north, and the Burning Area to the south. For consistency with previous calculations, the same division was used for the present calculation. Most plant facilities have not changed since the 2003 cost estimate was made, and the same quantities were used for the present calculation with the following exceptions:

1. Several Federally-mandated emissions control systems were added in 2015 per Technical Revision (TR) #13. These facilities were added to the attached tables in their own section.
2. The concrete associated with the construction of the flood wall that was constructed around the administrative building in 2014 was added to the quantity for that building in Table 4.

The line item costs included for building demolition (Table 2) were calculated based on the air volume of the buildings as they stand. Many of these buildings have concrete and or steel components that will have to be disposed of separately from the other building materials and were thus included in the steel

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and concrete demolition costs as well. All line item costs in Table 2 and Table 3 assume disposal in an offsite location; however, concrete (Table 4) will be disposed of onsite as permitted by TR#2.

Concrete Disposal Cell

All concrete will be disposed of in an onsite disposal area as described in TR#2. The quantities used in the present estimate are the same as those used in TR#2 (Table 5). However, additional excavation was added to the present cost estimate to produce sufficient backfill material for C-Pit in the event that it is not completely filled by currently planned fill materials. This would result in a slightly smaller rise at the location of the disposal cell than was originally designed without a change in the surface footprint. It is expected that C-Pit will already be filled at the time of final reclamation and the extra excavation will not be required. Thus, the disposal cell was not redesigned at this time.

Site Reclamation

Backfilling and capping quantities and estimated costs are detailed in Table 6. The only area remaining to be backfilled on the Lyons Quarry property is C-Pit, which is currently being used for CKD disposal. Any areas not already filled with CKD and capped with compacted shale and clay as permitted by TR#1 (1999) at the time of final reclamation will be backfilled with material excavated from the concrete disposal cell area.

Ripping and grading activities will be performed on all areas that will be reclaimed including the plant area, C-Pit, concrete disposal cell, reclaimed roads, and the topsoil stockpile (Table 7). All these areas except the topsoil stockpile will also be covered with topsoil prior to seeding (Table 8).

Revegetation

Table 9 details the materials and equipment required to revegetate all areas of the Lyons Quarry property that require reclamation based on the methods included in the DRMS permit.

The total cost of the reclamation based on the quantities present today is approximately $11.6 million (Table 1). I hope that this submittal provides DRMS with sufficient information to process the bond calculation. Please direct any questions to me at rbay@habitatmanagementinc.com or 719-928-1717. I appreciate the opportunity to assist CEMEX with this project.

Sincerely,

Robin F. Bay
Principal Environmental Scientist

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Table 1: Cost Estimate Summary

Task			Cost
Direct Costs			
Reclamation Tasks			
Demolition/Disposal of Buildings/Structures		(Table 2)	$ 1,027,167
Steel Demolition/Disposal		(Table 3)	$ 1,812,376
Concrete Demolition/Disposal		(Table 4)	$ 3,961,845
Backfill & Capping of C Pit area		(Table 5)	$ 372,193
On-Site Concrete Disposal Cell		(Table 6)	$ 592,549
Grading & Ripping		(Table 7)	$ 12,047
Growth Media Application		(Table 8)	$ 328,756
Revegetation		(Table 9)	$ 144,081
Mobilization/Demobilization	2.5%	of Reclamation Tasks	$ 206,100
		Total Direct Costs	**$ 8,457,289**
Indirect Costs			
Overhead & Profit			
Liability Insurance	2.02%	of Direct Costs	$ 170,837
Performance Bond	1.05%	of Direct Costs	$ 88,802
Profit	10%	of Direct Costs	$ 845,729
Superintendent	0.25%	of Direct Costs	$ 21,143
		Total Overhead & Profit	**$ 1,126,511**
Legal, Engineering, & Project Management			
Financial Warranty			$ 500
Engineering Work	4.25%	of Contract Amount	$ 407,311
Reclamation Management	5%	of Contract Amount	$ 479,190
		Total Indirect Costs	**$ 2,013,512**
Total Contract Amount (Direct Costs + Overhead & Profit)			**$ 9,583,800**
Total Bond Amount			**$ 11,597,312**

Table 2: Building Demolition

Structures	Length LF	Width LF	Height LF	Airspace CF	Unit Cost $/CF	Total Cost
Grinding Area						
	150	72	25	270,000	$ 0.354	$ 95,580.00
Pack house	45	41	36	66,420	$ 0.354	$ 23,512.68
	120	65	24	187,200	$ 0.354	$ 66,268.80
Administration building	105	46	14	67,620	$ 0.354	$ 23,937.48
Mill Building	168	97	53	863,688	$ 0.354	$ 305,745.55
Pump house	25	25	15	9,375	$ 0.354	$ 3,318.75
	88	37	38	123,728	$ 0.354	$ 43,799.71
Control Center	37	34	20	25,160	$ 0.354	$ 8,906.64
Wash house	10	10	8	800	$ 0.354	$ 283.20
Electrical Room	26	15	15	5,850	$ 0.354	$ 2,070.90
Mobile Equipment Shed	96	32	30	92,160	$ 0.354	$ 32,624.64
Burning Area						
	120	91	53	578,760	$ 0.354	$ 204,881.04
Burner Building	48	91	25	109,200	$ 0.354	$ 38,656.80
Bag house	130	60	45	351,000	$ 0.354	$ 124,254.00
Crusher control building	10	10	10	1,000	$ 0.354	$ 354.00
Coal Unloading Building	71	36	30	76,680	$ 0.354	$ 27,144.72
Labor shed	96	40	18	69,120	$ 0.354	$ 24,468.48
TR-13 Emissions Systems						
Blower Building	32	12	10	3,840	$ 0.354	$ 1,359.36
Total				**2,901,601**		**$ 1,027,166.75**

Table 3: Steel Demolition

Structures	Quantity		Unit Cost $/CF	Total Cost
Grinding Area				
Tanks/Hoppers	508,344	CF	$ 1.24	$ 630,346.56
Utility Lines	2,680	LF	$ 43.00	$ 115,240.00
Conveyors	800	LF	$ 51.27	$ 41,016.00
Metal Buildings	131,000	CF	$ 0.66	$ 86,460.00
Stairs	18,300	CF	$ 1.06	$ 19,398.00
Fencing	300	LF	$ 3.12	$ 936.00
Grating	19,600	CF	$ 1.06	$ 20,776.00
Burning Area				
Tanks/Hoppers	85,357	CF	$ 1.24	$ 105,842.68
Utility Lines	2,680	LF	$ 43.00	$ 115,240.00
Conveyors	2,700	LF	$ 51.27	$ 138,429.00
Metal Buildings	748,000	CF	$ 0.66	$ 493,680.00
Stairs	4,600	CF	$ 1.06	$ 4,876.00
Fencing	700	LF	$ 3.12	$ 2,184.00
Grating	8,600	CF	$ 1.06	$ 9,116.00
TR-13 Emissions Systems				
SNCR Steel Tank	4,679	CF	$ 1.24	$ 5,801.96
Lime Silo	11,545	CF	$ 1.24	$ 14,315.80
Carbon Silo	2,087	CF	$ 1.24	$ 2,587.88
Fencing	192	LF	$ 3.12	$ 599.04
Piping	370	LF	$ 14.95	$ 5,531.50
Total				**$ 1,812,376.42**

Table 4: Concrete Demolition

Structures		Quantity CY	Unit Cost $/CY	Total Cost
Grinding Area				
Administration building				
	Walls/Roof	740	$ 11.50	$ 8,510.00
	Foundation/Floors	7	$ 54.21	$ 379.47
Mill Building				
	Walls/Roof	1,180	$ 11.50	$ 13,570.00
	Foundation/Floors	1,446	$ 54.21	$ 78,387.66
	Beams/Columns	509	$ 54.21	$ 27,592.89
Control Center				
	Walls/Roof	103	$ 11.50	$ 1,184.50
	Foundation/Floors	160	$ 54.21	$ 8,673.60
Raw Materials Silo				
	Silos	1,170	$ 108.42	$ 126,851.40
Pack house				
	Walls/Roof	757	$ 11.50	$ 8,705.50
	Foundation/Floors	442	$ 54.21	$ 23,960.82
	Beams/Columns	22	$ 54.21	$ 1,192.62
Clinker Storage Building				
	Walls/Roof	2,629	$ 11.50	$ 30,233.50
	Foundation/Floors	214	$ 54.21	$ 11,600.94
Finished Cement Silo				
	Silos	7,329	$ 108.42	$ 794,610.18
Pump house				
	Walls/Roof	37	$ 11.50	$ 425.50
Wash house				
	Walls/Roof	8	$ 11.50	$ 92.00
Electrical Room				
	Walls/Roof	38	$ 11.50	$ 437.00
Mobile Equipment Shed				
	Walls/Roof	190	$ 11.50	$ 2,185.00
Pavement				
	Pavement	22,222	$ 54.21	$ 1,204,654.62

Table 4: Concrete Demolition (continued)

Burning Area				
Burner Building				
	Walls/Roof	931	$ 11.50	$ 10,706.50
	Foundation/Floors	35	$ 54.21	$ 1,897.35
	Beams/Columns	3,091	$ 54.21	$ 167,563.11
Primary Crusher				
	Walls/Roof	688	$ 11.50	$ 7,912.00
	Beams/Columns	24	$ 54.21	$ 1,301.04
Secondary Crusher				
	Silos	342	$ 108.42	$ 37,079.64
	Foundation/Floors	60	$ 54.21	$ 3,252.60
Homogenizing Silos				
	Silos	1,637	$ 108.42	$ 177,483.54
Coal Facilities				
	Silos	1,115	$ 108.42	$ 120,888.30
	Walls/Roof	159	$ 11.50	$ 1,828.50
	Foundation/Floors	51	$ 54.21	$ 2,764.71
Stack				
	Silos	976	$ 108.42	$ 105,817.92
Bag House				
	Walls/Roof	422	$ 11.50	$ 4,853.00
	Beams/Columns	276	$ 54.21	$ 14,961.96
Raw Material Dryer				
	Walls/Roof	30	$ 11.50	$ 345.00
	Foundation/Floors	231	$ 54.21	$ 12,522.51
Pavement				
	Pavement	22,222	$ 54.21	$ 1,204,654.62
TR-13 Emissions Systems				
SNCR				
	Foundation/Floors	65	$ 54.21	$ 3,523.65
Lime Injection				
	Foundation/Floors	52	$ 54.21	$ 2,818.92
Activated Carbon				
	Foundation/Floors	29	$ 54.21	$ 1,572.09
Total		**66,324**		**$ 3,961,844.64**

Table 5: On-Site Concrete Disposal Cell

Reclamation Area/Task	Equipment	Quantity	Distance (ft)	Materials		Productivity			Operating Costs		
				Product	$/Unit	Units/Hr	Hours	$/Unit	$/Hr	$/Unit	Total Cost
On-Site Concrete Disposal Cell											
Excavation	CAT637G Push-Pull Scraper Fleet	309,963 CY	500			1,214	255.3	$ 1.120	$ 1,359.68	$ 1.120	$ 347,158.56
Geosynthetic Clay Liner	CAT988G Loader/4 Laborers	378,000 SF		GCL	$ 0.354	9,300	40.6	$ 0.042	$ 388.96	$ 0.396	$ 149,688.00
3 Ft Clay Liner Protective Cover	D9 Dozer	42,000 CY	300			844	49.8	$ 0.878	$ 741.03	$ 0.878	$ 36,876.00
Interstitial Fill	D9 Dozer	27,000 CY	300			844	32.0	$ 0.878	$ 741.03	$ 0.878	$ 23,706.00
30 Inch Cover[1]	D9 Dozer	40,000 CY	300			844	47.4	$ 0.878	$ 741.03	$ 0.878	$ 35,120.00
Stormwater Diversion Ditch	CAT345 Excavator	4,000 LF				100	40.0	$ 2.500	$ 250.00	$ 2.500	$ 10,000.00
10 Ft x 10 Ft Riprap Pad	CAT345 Excavator/CAT988G Loader	7 CY		9" minus	$ 35.00	7	1.0	$ 72.64	$ 753.48	$ 107.64	$ 753.48
Totals											**$ 592,548.56**

[1] Topsoil not included

Table 6: Backfill & Capping

Reclamation Area/Task	Equipment	Quantity	Distance	Productivity		Operating Costs		
			LF	CY/Hr	Hours	$/Hr	$/CY	Total Cost
C-Pit								
Backfill	Cat992G Loader/CAT 777F Trucks	200,963 CY	5,000	1,304	154.1	$ 2,141.17	$ 1.642	$ 329,981.25
2Ft Shale Cap	D9 Dozer	48,077 CY	300	844	57.0	$ 741.03	$ 0.878	$ 42,211.61
Totals		**249,040 CY**						**$ 372,192.85**

Table 7: Ripping & Grading

Reclamation Area/Task	Equipment	Quantity	Productivity		Operating Costs		
			Ac/Hr	Hours	$/Hr	$/Ac	Total Cost
Plant Area							
Rough Grade	16G Grader	31.1 Ac	8.44	3.7	$ 371.11	$ 43.97	$ 1,367.47
Fine Grade	16G Grader	31.1 Ac	3.89	8.0	$ 370.60	$ 95.27	$ 2,962.90
C-Pit							
Rough Grade	16G Grader	27.0 Ac	8.44	3.2	$ 371.11	$ 43.97	$ 1,187.19
Fine Grade	16G Grader	27.0 Ac	3.89	6.9	$ 370.60	$ 95.27	$ 2,572.29
Other Roads & Facilities							
Ripping	16G Grader	4.0 Ac	4.58	0.9	$ 391.96	$ 85.58	$ 342.32
Fine Grade	16G Grader	4.0 Ac	3.89	1.0	$ 370.60	$ 95.27	$ 381.08
On-Site Concrete Disposal Cell							
Ripping	16G Grader	13.3 Ac	4.58	2.9	$ 391.96	$ 85.58	$ 1,138.21
Fine Grade	16G Grader	13.3 Ac	3.89	3.4	$ 370.60	$ 95.27	$ 1,267.09
Topsoil Stockpile							
Fine Grade	16G Grader	8.7 Ac	3.89	2.2	$ 370.60	$ 95.27	$ 828.85
Totals		**159.5 Ac**					**$ 12,047.40**

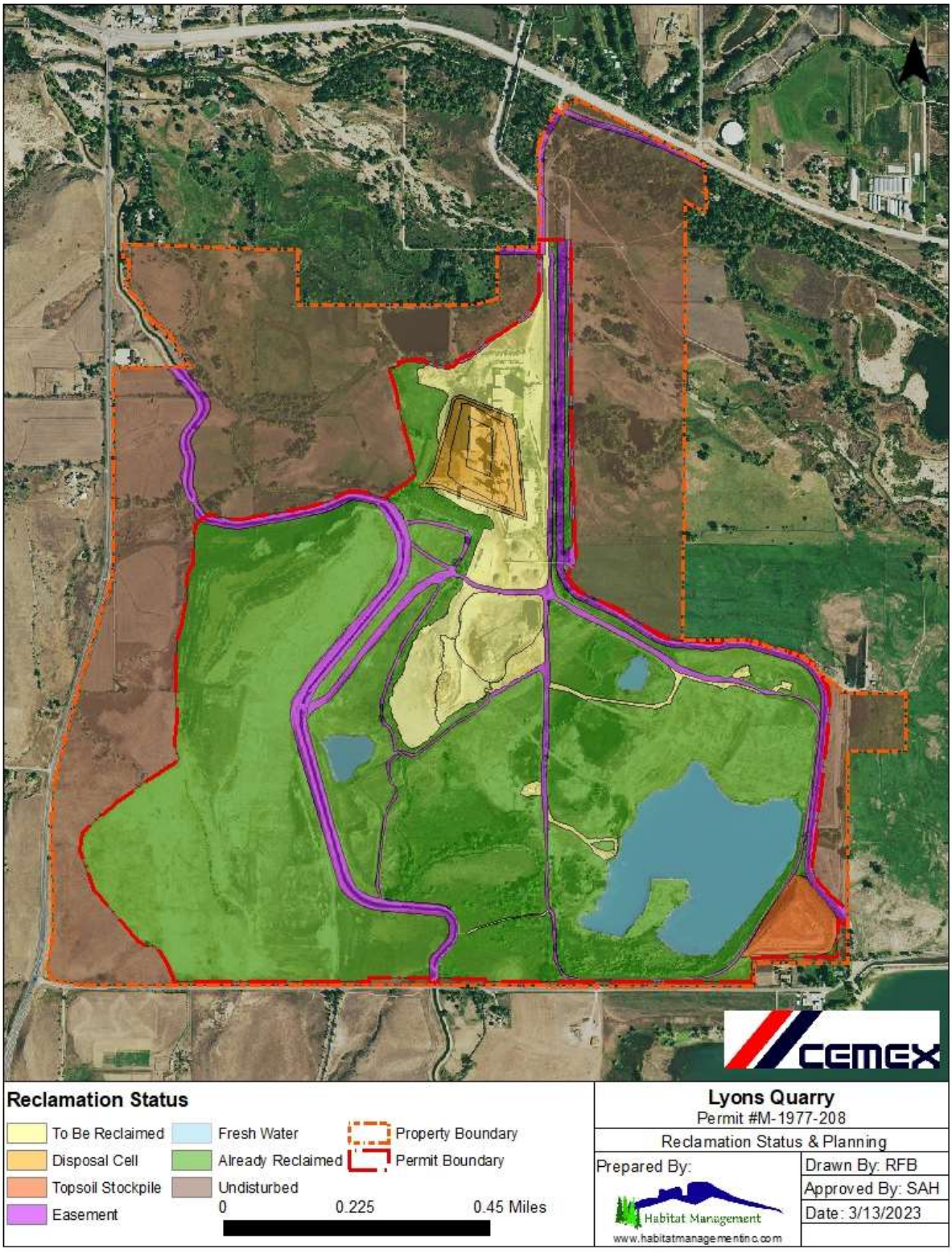
Table 8: Topsoil Application

Reclamation Area/Source	Equipment	Quantity	Distance	Productivity		Operating Costs		
			LF	CY/Hr	Hours	$/Hr	$/CY	Total Cost
Plant Area								
31.1 acres	CAT637G Push-Pull Scraper Fleet	50,175 CY	5,000	531	94	$ 1,549.46	$ 2.918	$ 146,410.65
C Pit								
27 acres	CAT637G Push-Pull Scraper Fleet	43,561 CY	5,000	531	82	$ 1,549.46	$ 2.918	$ 127,111.00
Other Roads & Facilities								
4 acres	CAT637G Push-Pull Scraper Fleet	6,453 CY	2,500	783	8	$ 1,549.56	$ 1.979	$ 12,770.49
On-Site Concrete Disposal Cell								
13.3 acres	CAT637G Push-Pull Scraper Fleet	21,457 CY	2,500	783	27	$ 1,549.56	$ 1.979	$ 42,463.40
Totals		**121,646 CY**						**$ 328,755.54**

Table 9: Revegetation

Reclamation Area/Task	Acres	Equipment	Materials				Productivity			Operating Costs		
			Product	Rate		$/Ac	Ac/Hr	Hours	$/Ac	$/Hr	$/Ac	Total Cost
Plant Area												
Seed Bed Preparation	31.1	Tractor & Disk					2	15.55	$ 122.17	$ 244.34	$ 122.170	$ 3,799.49
Fertilizer Application	31.1	Tractor & Spreader	Fertilizer	67	lb/ac	$ 32.47	4	7.775	$ 42.22	$ 298.76	$ 74.690	$ 2,322.86
Upland Seed Application	31.1	Tractor & Drill	Upland Seed	17.28	lb/ac	$ 291.19	2	15.55	$ 264.48	$ 1,111.34	$ 555.670	$ 17,281.34
Straw Mulch Application	31.1	Tractor & Crimper	Straw	2	ton/ac	$ 687.00	2	15.55	$ 79.99	$ 1,533.98	$ 766.990	$ 23,853.39
C-Pit												
Seed Bed Preparation	27.0	Tractor & Disk					2	13.5	$ 122.17	$ 244.34	$ 122.170	$ 3,298.59
Fertilizer Application	27.0	Tractor & Spreader	Fertilizer	67	lb/ac	$ 32.47	4	6.75	$ 42.22	$ 298.76	$ 74.690	$ 2,016.63
Upland Seed Application	27.0	Tractor & Drill	Upland Seed	17.28	lb/ac	$ 291.19	2	13.5	$ 264.48	$ 1,111.34	$ 555.670	$ 15,003.09
Straw Mulch Application	27.0	Tractor & Crimper	Straw	2	ton/ac	$ 687.00	2	13.5	$ 79.99	$ 1,533.98	$ 766.990	$ 20,708.73
Other Roads & Facilities												
Seed Bed Preparation	4.0	Tractor & Disk					2	2	$ 122.17	$ 244.34	$ 122.170	$ 488.68
Fertilizer Application	4.0	Tractor & Spreader	Fertilizer	67	lb/ac	$ 32.47	4	1	$ 42.22	$ 298.76	$ 74.690	$ 298.76
Upland Seed Application	4.0	Tractor & Drill	Upland Seed	17.28	lb/ac	$ 291.19	2	2	$ 264.48	$ 1,111.34	$ 555.670	$ 2,222.68
Straw Mulch Application	4.0	Tractor & Crimper	Straw	2	ton/ac	$ 687.00	2	2	$ 79.99	$ 1,533.98	$ 766.990	$ 3,067.96
On-Site Disposal Cell												
Seed Bed Preparation	15.4	Tractor & Disk					2	7.7	$ 122.17	$ 244.34	$ 122.170	$ 1,881.42
Fertilizer Application	15.4	Tractor & Spreader	Fertilizer	67	lb/ac	$ 32.47	4	3.85	$ 42.22	$ 298.76	$ 74.690	$ 1,150.23
Upland Seed Application	15.4	Tractor & Drill	Upland Seed	17.28	lb/ac	$ 291.19	2	7.7	$ 264.48	$ 1,111.34	$ 555.670	$ 8,557.32
Straw Mulch Application	15.4	Tractor & Crimper	Straw	2	ton/ac	$ 687.00	2	7.7	$ 79.99	$ 1,533.98	$ 766.990	$ 11,811.65
Topsoil Stockpile												
Seed Bed Preparation	8.7	Tractor & Disk					2	4.35	$ 122.17	$ 244.34	$ 122.170	$ 1,062.88
Fertilizer Application	8.7	Tractor & Spreader	Fertilizer	67	lb/ac	$ 32.47	4	2.175	$ 42.22	$ 298.76	$ 74.690	$ 649.80
Upland Seed Application	8.7	Tractor & Drill	Upland Seed	17.28	lb/ac	$ 291.19	2	4.35	$ 264.48	$ 1,111.34	$ 555.670	$ 4,834.33
Straw Mulch Application	8.7	Tractor & Crimper	Straw	2	ton/ac	$ 687.00	2	4.35	$ 79.99	$ 1,533.98	$ 766.990	$ 6,672.81
Revegetation Maintenance												
Re-seeding	10%	Failure rate										$ 13,098.26
Totals	**86.2**											**$ 144,080.88**

CEMEX Lyons Quarry – Permit #M-1977-208
Bond Calculation



March 10, 2023