AIR COMPLIANCE ANALYSIS SUMMARY SHEET

COMPANY/FACILITY: Luck Stone Corporation – Luck Cherokee
LOCATION (COUNTY): Gaffney (Cherokee) **DATE:** DRAFT
PERMIT NUMBER: 0600-0144 **REVIEWED BY:** WRB

REQUEST:	Y	**CONSTRUCTION PERMIT**		**STATE PERMIT**
		OPERATING PERMIT – NEW		**CONDITIONAL MAJOR**
		OPERATING PERMIT – RENEWAL		**GENERAL CM**
		PERMIT - MODIFICATION		**TITLE V PERMIT**
		AIR COMPLIANCE DEMO		**PSD MAJOR**
ANALYSIS:	Y	**AMBIENT AIR QUALITY STANDARDS**		**PSD INCREMENT**
		TOXIC AIR POLLUTANTS		**DE MINIMIS**
	Y	**EXEMPTION**		**DEFERRAL**
OTHER:		**EXPEDITED**	N	**COLLOCATED (Y or N)**

PROJECT DESCRIPTION: Luck Cherokee proposes to operate a portable, aggregate mine and processing facility that will be capable of crushing aggregate at a rate of 595 tons per hour from the primary crusher. The facility will be installing a portable 595-kilowatt diesel-fired generator that is not subject to air permitting, since the generator will be a non-road engine.

SUMMARY OF ANALYSIS & RESULTS: GEL Engineering, LLC submitted a modeling analysis on behalf of the facility.
Standard 2: Emissions of PM_{10} were modeled for the mining and material handling operations, and it passed AERMOD analysis. Emissions of $PM_{2.5}$ were below the 1.14 lbs/hr threshold and thus, no modeling was required. No other pollutants are being emitted for this standard.
Standard 7: Since this is not a PSD project, no further Standard 7 analysis is required.
Standard 8: The facility is not expected to emit toxic air pollutants and thus, a modeling demonstration for this standard is not required.

This is a complete modeling summary and the first summary for this permit number.

STANDARD NO. 2 - AMBIENT AIR QUALITY STANDARDS ANALYSIS							
Pollutant	**Averaging Time**	**Basis**	**Maximum Concentration (μg/m³)**	**Background Concentration (μg/m³)**	**Total (μg/m³)**	**Standard (μg/m³)**	**% of Standard**
PM_{10}	24-Hour	AERMOD	72.2(1)	35.0	107	150	71
1) The sixth-high over five years of met data.							

BACKGROUND MONITORING DATA (μg/m³)									
Pollutant	**Site Name**	**County**	**Year**	**1-Hr**	**3-Hr**	**8-Hr**	**24-Hr**	**3-Mo**	**Annual**
PM_{10}	Greenville ESC	Greenville	21-23				35.0		
PM_{10} 24-hr is the fourth-high over 3-year period.									

STANDARD NO. 2 – AMBIENT AIR QUALITY STANDARDS EMISSION RATES (LB/HR)						
Emission Point ID	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_x**	**CO**	**Lead**
V1	0.321					
V2	0.440					
V3	0.027					
V4	0.321					
V5	0.440					
V6	0.027					
V7	0.027					
V8	0.321					
V9	0.440					
V10	0.027					
V11	0.027					
V12	0.027					
V13	0.027					
V14	0.027					
V15	0.027					
V16	0.027					
V17	0.027					
V18	0.027					
V19	0.027					
V20	0.027					
V21	0.027					
V22	0.027					
V23	0.027					
V24	0.027					
V25	0.027					
V26	0.027					
V27	0.027					
V28	0.027					
V29	0.027					
V30	0.027					
V31	0.027					
V32	0.060					
V33	0.048					
V34	0.010					
FACILITY TOTAL	3.076					

STANDARD NO. 7 - PSD INCREMENT EMISSION RATES (LB/HR)						
Emission Point ID	Minor Source Baseline Date(s)					
	06/18/99	N/A			6/18/99	6/18/99
	PM_{10}	$PM_{2.5}$			SO_2	NO_x
		Primary	SO_2	NO_x		
V1	0.321	--	--	--	--	--
V2	0.440	--	--	--	--	--
V3	0.027	--	--	--	--	--
V4	0.321	--	--	--	--	--
V5	0.440	--	--	--	--	--
V6	0.027	--	--	--	--	--
V7	0.027	--	--	--	--	--
V8	0.321	--	--	--	--	--
V9	0.440	--	--	--	--	--
V10	0.027	--	--	--	--	--
V11	0.027	--	--	--	--	--
V12	0.027	--	--	--	--	--
V13	0.027	--	--	--	--	--
V14	0.027	--	--	--	--	--
V15	0.027	--	--	--	--	--
V16	0.027	--	--	--	--	--
V17	0.027	--	--	--	--	--
V18	0.027	--	--	--	--	--
V19	0.027	--	--	--	--	--
V20	0.027	--	--	--	--	--
V21	0.027	--	--	--	--	--
V22	0.027	--	--	--	--	--
V23	0.027	--	--	--	--	--
V24	0.027	--	--	--	--	--
V25	0.027	--	--	--	--	--
V26	0.027	--	--	--	--	--
V27	0.027	--	--	--	--	--
V28	0.027	--	--	--	--	--
V29	0.027	--	--	--	--	--
V30	0.027	--	--	--	--	--
V31	0.027	--	--	--	--	--
V32	0.060	--	--	--	--	--
V33	0.048	--	--	--	--	--
V34	0.010	--	--	--	--	--
FACILITY TOTAL	3.076	--	--	--	--	--
Standard 7 is not required to be modeled for non-PSD projects. This table is included to keep track of the increment inventory for future PSD project use.						

STANDARD NO. 2 AND 7 – EXEMPTED AMBIENT AIR QUALITY STANDARDS EMISSION RATES (LB/HR)						
Emission Point ID	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**NO_x**	**CO**	**Lead**
V1	--	0.060	--	--	--	--
V2	--	0.030	--	--	--	--
V3	--	0.008	--	--	--	--
V4	--	0.060	--	--	--	--
V5	--	0.030	--	--	--	--
V6	--	0.008	--	--	--	--
V7	--	0.008	--	--	--	--
V8	--	0.060	--	--	--	--
V9	--	0.030	--	--	--	--
V10	--	0.008	--	--	--	--
V11	--	0.008	--	--	--	--
V12	--	0.008	--	--	--	--
V13	--	0.008	--	--	--	--
V14	--	0.008	--	--	--	--
V15	--	0.008	--	--	--	--
V16	--	0.008	--	--	--	--
V17	--	0.008	--	--	--	--
V18	--	0.008	--	--	--	--
V19	--	0.008	--	--	--	--
V20	--	0.008	--	--	--	--
V21	--	0.008	--	--	--	--
V22	--	0.008	--	--	--	--
V23	--	0.008	--	--	--	--
V24	--	0.008	--	--	--	--
V25	--	0.008	--	--	--	--
V26	--	0.008	--	--	--	--
V27	--	0.008	--	--	--	--
V28	--	0.008	--	--	--	--
V29	--	0.008	--	--	--	--
V30	--	0.008	--	--	--	--
V31	--	0.008	--	--	--	--
V32	--	0.009	--	--	--	--
V33	--	0.007	--	--	--	--
V34	--	0.001	--	--	--	--
FACILITY TOTAL	--	0.487	--	--	--	--

EMISSION POINT DESCRIPTIVE INFORMATION				
Emission Point ID	**Source Identification & Description**	**Date Installed (Modified)**	**Status**	**Other**
P5	595-kilowatt diesel-fired generator	2025	Non-road engine; not subject to permitting	
V1	Portable LT120 Jaw Crusher (CR1/F1)	2025	Volume Source	
V2	52 x 20 VGF Screen (F1)	2025	Volume Source	
V3	Feed Screen Conveyor (C1)	2025	Volume Source	
V4	Cone Crusher (CR2)	2025	Volume Source	
V5	Static Screen Secondary (S1)	2025	Volume Source	
V6	Under Crusher Conveyor (C3)	2025	Volume Source	
V7	Under Crusher Conveyor (C8)	2025	Volume Source	
V8	Cone Crusher (CR3)	2025	Volume Source	
V9	Static Screen Tertiary (S2)	2025	Volume Source	
V10	Screen Feed Conveyor (C11)	2025	Volume Source	
V11	Under Screen Conveyor (C12)	2025	Volume Source	
V12	Screen Feed Conveyor (C13)	2025	Volume Source	
V13	Screen Feed Conveyor (C14)	2025	Volume Source	
V14	Under Screen Conveyor (C2)	2025	Volume Source	
V15	GAB Stacker Feed Conveyor (C4)	2025	Volume Source	
V16	GAB Stacker Conveyor (C5)	2025	Volume Source	
V17	3s Stacker Conveyor (C7)	2025	Volume Source	
V18	OTR Bin Feed Conveyor/Surge Bin (C9)	2025	Volume Source	
V19	Crusher Feed Conveyor (C10)	2025	Volume Source	
V20	Crusher Feed Conveyor (C15)	2025	Volume Source	
V21	57s Stacker Feed Conveyor (C17)	2025	Volume Source	
V22	Wash Screen Feed (C20)	2025	Volume Source	
V23	3s Stacker Feed Conveyor (C19)	2025	Volume Source	
V24	C33 Stacker Feed Conveyor (C18)	2025	Volume Source	
V25	C33 Stacker Conveyor (C21)	2025	Volume Source	
V26	10s Stacker Conveyor (C16)	2025	Volume Source	
V27	10s Stacker Feed Conveyor (C22)	2025	Volume Source	
V28	Future Product Stacker Conveyor (C23)	2025	Volume Source	
V29	57s Stacker Conveyor (C24)	2025	Volume Source	
V30	789s Stacker Conveyor (C26)	2025	Volume Source	
V31	789s Stacker Feed (C25)	2025	Volume Source	

EMISSION POINT DESCRIPTIVE INFORMATION				
Emission Point ID	**Source Identification & Description**	**Date Installed (Modified)**	**Status**	**Other**
V32	Final Product Truck (T-load)	2025	Volume Source	
V33	Drilling inside the quarry (Drill)	2025	Volume Source	
V34	Truck Loading at the quarry (Haul Load)	2025	Volume Source	

EXEMPTIONS/DEFERRALS	
Source Identification	**Exemption/Deferral Basis**
P5	Standards 2 and 7 – Internal Combustion Engine (ICE) considered a portable, "non-road" engine (i.e. ICE that is portable and does not remain stationary for greater than 12 months). Does not apply to stationary or fixed internal combustion engines.
V1 through V34	Standards 2 and 7 – Sources with controlled or uncontrolled emission rates as shown below: • $PM_{2.5}$ - Less than 1.14 pounds per hour

VOLUME SOURCE PARAMETERS									
Emission Point ID	Date Last Modeled	Location (UTM)		Release Height AGL (ft)	Physical Horizontal Dimension (ft)	Initial Horizontal Dimension σ_Y (ft)	Physical Vertical Dimension (ft)	Initial Vertical Dimension σ_Z (ft)	Distance To Property Line (ft)
		East (m)	North (m)						
V1	Current	431955	3882063	8.0	16.4	3.81	10.0	2.33	(1)
V2	Current	431955	3882063	8.0	3.2	0.75	10.0	2.33	(1)
V3	Current	431950	3882048	6.5	4.0	0.93	3.0	0.70	(1)
V4	Current	431945	3882036	8.0	10.9	2.54	10.0	2.33	(1)
V5	Current	431953	3882056	7.0	3.0	0.71	8.0	1.86	(1)
V6	Current	431946	3882032	5.5	5.0	1.16	5.0	1.16	(1)
V7	Current	431945	3882036	7.5	4.0	0.93	5.0	1.16	(1)
V8	Current	431930	3881996	8.0	10.9	2.54	10.0	2.33	(1)
V9	Current	431928	3881993	7.0	3.0	0.71	8.0	1.86	(1)
V10	Current	431928	3881993	8.0	3.0	0.70	4.0	0.93	(1)
V11	Current	431928	3881993	7.5	3.0	0.70	5.0	1.16	(1)
V12	Current	431928	3881993	6.0	3.0	0.70	8.0	1.86	(1)
V13	Current	431928	3881993	5.5	3.0	0.70	5.0	1.16	(1)
V14	Current	431944	3882033	5.5	3.0	0.70	1.0	0.23	(1)
V15	Current	431965	3882032	6.0	2.5	0.58	4.0	0.93	(1)
V16	Current	431978	3882028	5.0	3.0	0.70	8.0	1.86	(1)
V17	Current	431929	3882039	5.5	3.0	0.70	5.0	1.16	(1)
V18	Current	431945	3882010	5.0	3.0	0.70	6.0	1.40	(1)
V19	Current	431950	3882019	6.0	3.5	0.81	8.0	1.86	(1)
V20	Current	431928	3881989	4.0	2.5	0.58	4.0	0.93	(1)
V21	Current	431923	3881975	3.5	2.5	0.58	5.0	1.16	(1)
V22	Current	431930	3881981	3.0	3.0	0.70	4.0	0.93	(1)
V23	Current	431937	3882036	3.5	2.5	0.58	5.0	1.16	(1)
V24	Current	431941	3881990	5.0	2.5	0.58	6.0	1.40	(1)
V25	Current	431954	3881986	4.5	3.0	0.70	5.0	1.16	(1)
V26	Current	431967	3881996	3.5	3.0	0.70	5.0	1.16	(1)
V27	Current	431955	3881999	6.0	2.5	0.58	8.0	1.86	(1)
V28	Current	431943	3881973	3.5	3.0	0.70	5.0	1.16	(1)
V29	Current	431918	3881967	4.0	3.0	0.70	4.0	0.93	(1)
V30	Current	431907	3881979	3.5	3.0	0.70	3.0	0.70	(1)

VOLUME SOURCE PARAMETERS									
Emission Point ID	Date Last Modeled	Location (UTM)		Release Height AGL (ft)	Physical Horizontal Dimension (ft)	Initial Horizontal Dimension σ_Y (ft)	Physical Vertical Dimension (ft)	Initial Vertical Dimension σ_Z (ft)	Distance To Property Line (ft)
		East (m)	North (m)						
V31	Current	431916	3881980	3.5	2.5	0.58	3.0	0.70	(1)
V32	Current	431937	3881930	6.0	5.0	1.16	4.0	0.93	(1)
V33	Current	431872	3882358	22.5	2.5	0.58	15.0	3.49	(1)
V34	Current	431874	3882390	8.0	5.0	1.16	4.0	0.93	(1)
1) See modeling files.									

AERMOD/AERMAP SPECIFICATIONS TABLE								
MET DATA	GSP-GSO 2015-2019 [Surface = Greenville-Spartanburg, SC (972 ft MSL); Upper Air = Greensboro, NC]							
	ADJ_U*	Y	(Y/N)					
NED TERRAIN FILES	Cherokee							
PROJECTION DATUM	NAD27		NAD83	Y	WGS-84		NWS-84	
RURAL or URBAN?	Rural	Y	Urban					
ELEVATIONS EXTRACTED	Buildings	N/A	Sources	Y	Tanks	N/A	Receptors	Y

HISTORY			
Date	By	Reason	Description
Current	WRB	New C/P	Emissions of PM_{10} were modeled for the mining and material handling operations and it passed AERMOD analysis. Emissions of $PM_{2.5}$ were below the 1.14 lbs/hr threshold and thus, no modeling was required. No other pollutants are being emitted for this standard. Since this is not a PSD project, no further Standard 7 analysis is required. The facility is not expected to emit toxic air pollutants and thus, a modeling demonstration for this standard is not required.