PERMIT TO OPERATE EVALUATION

Applicant name: Frito-Lay North America, Inc. (FACILITY ID# 346)

Mailing address: 9535 Archibald Ave.
Rancho Cucamonga, CA 91730

Equipment Location: 9535 Archibald Ave.
Rancho Cucamonga, CA 91730

EQUIPMENT DESCRIPTIONS:

Additions are shown in Bold and Deletions are Struck-through.

A/N 551284, 551289 – Modification to oven D85, D86 by adding natural gas infrared burners:

Equipment	ID No.	Connected to	RECLAIM Source Type/ Monitoring Unit	Emission and Requirements	Conditions
Process 1: SNACK FOOD PRODUCTION					
System 5: TORTILLA CHIP LINE NO. A1					
OVEN, BAKING, CASA HERRERA, MACH4XW, NATURAL GAS, ~~4.77~~ **5.7736** MMBTU/HR **BURNER, NATURAL GAS, CASA HERRERA, ENSIGN, RIBBON BURNERS, 4.032 MMBTU/HR TOTAL** **BURNER, INFRARED, NATURAL GAS, IET COMBUSTIONS, ULTRA-GLO 7D-400P, 1.7416 MMBTU/HR TOTAL**	D85		**Process Unit**	SEE PERMIT	SEE PERMIT
OVEN, BAKING, CASA HERRERA, MACH4XW, NATURAL GAS, ~~4.77~~ **5.7736** MMBTU/HR **BURNER, NATURAL GAS, CASA HERRERA, ENSIGN, RIBBON BURNERS, 4.032 MMBTU/HR TOTAL**	D86		**Process Unit**	SEE PERMIT	SEE PERMIT

BURNER, INFRARED, NATURAL GAS, IET COMBUSTIONS, ULTRA-GLO 7D-400P, 1.7416 MMBTU/HR TOTAL					

PERMIT CONDITIONS: (SEE PERMIT)

BACKGROUND:

Frito-Lay North America, Inc. (Frito-Lay) is in the business of manufacturing snack food products. Frito-Lay Rancho Cucamonga facility manufactures tortilla corn chips, fried and baked snack chips. The facility is a RECLAIM and Title V Facility.

On May 14, 2013, Frito-Lay submitted applications to modify ovens D79, D80, but later informed the district this was an error and the correct ovens are supposed to be D85 and D86. Three applications were submitted as follows:

A/N: 551284	Process 1, System 5 – Adding natural gas infrared burners, increasing the total heat input from 4.77 MMBtu/hr to 5.7736 MMbtu/hr (D85).
A/N: 551289	Process 1, System 5 – Adding natural gas infrared burners, increasing the total heat input from 4.77 MMBtu/hr to 5.7736 MMbtu/hr (D86).
A/N: 551285	Facility Title V/RECLAIM Permit Revision associated with the modification.

PROCESS DESCRIPTION:

D85 and D86 are rated at 4.77 MMbtu/hr each (pre-mod). The proposed oven has approximately 60 existing Ensign Ribbon Natural Gas Burners totaling 4.032 MMbtu/hr and approximately 81 IET Infrared Burners totaling 1.7416 MMbtu/hr for a total of 5.7736 MMbtu/hr (post-mod).

EMMISSION EVALUATION:

OVEN EMISSIONS (D42) –

Emissions due to Combustion (D85,D86).

1. **Products of Combustion**

Default emission factors are as follows (Information from "General Instruction Book for the AQMD Annual Emission Reporting Program", Appendix A):

ROG: 7 lbs/mmscf
SOx: 0.6 lbs/mmscf
PM10: 7.5 lbs/mmscf
CO: 35 lbs/mmscf
NOx: (Pre-Mod): 64 ppm (Previous Source Test)
***NOx** (POST-MOD): 54 ppm (Source Test – Highest Result)

PRE-MOD (4.77 MMbtu/hr) – Each oven

Device	Pollutant	Lb/hr	Lb/day	Lb/year	30 day ave.	30 Day NSR
D85,86 Oven 4.77 MMbtu/hr	ROG	0.0318	0.76	274	0.76	1
	SOX	0.0027	0.07	25	0.07	0
	PM10	0.0341	0.82	295	0.82	1
	NOX	0.37	8.86	3,189	9	9
	CO	0.1590	3.82	1,375	3.82	4

POST-MOD (5.7736 MMbtu/hr) – Each oven

Device	Pollutant	Lb/hr	Lb/day	Lb/year	30 day ave.	30 Day NSR
D85,86 Oven 5.7736 MMbtu/hr	ROG	0.0385	0.93	335	0.93	1
	SOX	0.0033	0.08	29	0.08	0
	PM10	0.0412	0.9898	356	0.9898	1
	NOX	0.3772	9.05	3,258	9	9
	CO	0.1925	4.619	1,663	4.619	5

Project Emissions (Pre–Mod vs. Post–Mod) – Total (Both ovens)

Pollutant	Pre-Mod (lbs/day)	Post-Mod (lbs/day)	Increase (lbs/day)
ROG	1.52	1.86	0.34
SOX	0.14	0.16	0.02
PM10	1.64	1.98	0.32
NOX	17.72	18.10	0.38
CO	7.64	9.24	1.6

RULES EVALUATION:

Rule 212 - Standard for Approving Permits

Paragraph 212(c)(1): Requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. According to the website geodistance.com the nearest school, Rancho Cucamonga Middle School, is approximately 4,805 feet from the property line. A 30-Day Public Notice is not required under this paragraph.

Paragraph 212(c)(2): The equipment will not result in on-site emission increasing exceeding the daily maximum emissions as specified in the table in Rule 212(g). Therefore, a 30-day public notice period will not be required under this paragraph.

Paragraph 212(c)(3): Public notice will not be required under this paragraph. See Rule 1401 evaluation section.

Rule 401- Visible Emission: No visible emission is expected if the equipment is well maintained and properly operated. Therefore, compliance is expected.

Rule 402- Nuisance: Frito-Lay North America Inc. does not have any Notice of Violations in the last 2 years. The facility was issued a Notice to Comply on 05/15/12 for failure to submit semi-annual reports. This issue has been resolved. In addition, there are no complaints in the District Compliance CLASS data base alleging Frito-Lay North America, Inc. of any nuisances. Compliance with this rule is expected without any nuisance problems.

Rule 405- Solid Particulate Matter – Weight: The calculated PM emissions are well below the allowable emissions rate. Compliance with Rule 405 expected.

Rule 407 – Liquid and Gaseous Air Contaminants: Emissions resulting from this project are well below the discharge limits of 500 ppm for SOx and 2,000 ppm for CO.

Rule 409 – Combustion Contaminants: Compliance with this rule is expected since calculated PM emission is below the limit of 0.1 grain per cubic foot.

Reg XIII and Rule 2005 – New Source Review:

REG XIII –BACT: 10/20/2000 Rev.0 - BACT Guideline Requirements for the Oven:

	Criteria Pollutants				
Subcategory/Rating/ Size	**VOC**	**NOX**	**SOX**	**CO**	**PM10**
Other Dryers and Ovens - Direct and Indirect Fired		30 ppmvd corrected to 3% 02 (04-10-98)	Natural Gas (10-20-2000)		Natural Gas (10-20-2000)

Emissions from each food oven are expected to be less than 1 lb/day for all criteria pollutants, therefore BACT is not triggered. The source test conducted on December 16 and 17, 2009 measured 39.9 ppm NOx at 3% O2 for D85 and 53.7 ppm NOx at 3% O2 for D86. Based on a new NOx limit of 54 ppm for each oven, the emission increase is less than 1 lb/day. Another source test for NOx and CO is required after we issue the permit. Compliance is expected.

Reg XIII –Modeling: CO and PM10 emissions are less than the emissions specified in appendix A of Rule 1303. NOx emissions are less than what is specified in appendix A of Rule 1303. No further detailed analysis is required.

Reg XIII -Offsets: No offsets required since the emission increase for PM10 and VOC is less than 0.5 lbs/day and CO is in attainment. There is an increase in NOx if the facility opts to use the default reporting factor. The facility has sufficient RTC allocation.

Rule 1401: There is an increase in natural gas usage due to the addition of burners on each oven. The increase in toxics is negligible. Compliance is expected.

Reg XXX - Title V Permits: Applications for De minimis Significant Permit Revisions require EPA 45-day review.

CONCLUSIONS AND RECOMMENDATIONS:

Based on the evaluation contained herein, the subject equipment is expected to comply with all of the applicable District's rules and regulations; therefore, I recommend the Permit to Operate be granted for the two food ovens as described above.

EMISSIONS FOR FIRING ON NATURAL GAS
(OVENS, FURNACES, HEATERS, ETC.)

Emission factors are from form B-1
Except NOx which is calculated from the ppm of NOx

Maximum Burner Rating in BTU/hr =	5,773,600	BTU/hr
Max conditioned fuel usage =		CF/mo
Previously conditioned fuel usage =		CF/mo
Average Operating Schedule =	24	hr/day
Maximum Operating Schedule =	24	hr/day
Expected emission of NOx=	54	ppm
Average Loading=	100.0%	
Maximum Loading =	100.0%	
Maximum operating days per month =	30	days

AVERAGE EMISSIONS

RHC =	0.0385	lb/hr	0.9238	lb/day
NOx =	0.3772	lb/hr	9.0539	lb/day
SO2 =	0.0033	lb/hr	0.0792	lb/day
CO =	0.1925	lb/hr	4.6189	lb/day
PART =	0.0412	lb/hr	0.9898	lb/day

MAXIMUM EMISSIONS

RHC =	0.0385	lb/hr	0.9238	lb/day
NOx =	0.3772	lb/hr	9.0539	lb/day
SO2 =	0.0033	lb/hr	0.0792	lb/day
CO =	0.1925	lb/hr	4.6189	lb/day
PART =	0.0412	lb/hr	0.9898	lb/day

Thirty day average emissions

RHC =	1	lb/dy	333	lb/yr
NOx =	9	lb/dy	3259	lb/yr
SO2 =	0	lb/dy	29	lb/yr
CO =	5	lb/dy	1663	lb/yr
PART =	1	lb/dy	356	lb/yr

Monthly Emissions

RHC =	0.00	lb/mo
NOx =	0.00	lb/mo
SO2 =	0.00	lb/mo
CO =	0.00	lb/mo
PART =	0.00	lb/mo