Establishment 38 has recently expanded its production of cured product to include curing and slicing bacon. The establishment's pickle formula and written processing procedure on file is provided below. The Labeling-Product Standards task appears on your schedule today. Review the establishment's procedure chart and answer the questions related to this bacon processing procedure.

Processing Procedure for Smoked Bacon

STYLE Heat Treated
EST. # 38 PRODUCT Bacon Weight Ranges 10/12

BACON PICKLE FORMULA			USUAL PROCEDURES	
SKIN OFF X / SKIN ON ___	LB	OZS	% PUMP	12
WATER	1990.30		LB. PRESSURE	60
SALT	300.20		DRAIN TIME	30 minutes
SUGAR (DEXTROSE)	150.30		TIME IN SMOKE	7-7.5 hours
SODIUM PHOSPHATE	31.25		S.H. HUMIDITY	70-75%
NATURAL FLAVORINGS	14.00		SMOKEHOUSE TEMP	125-130°F
SODIUM ERYTHORBATE	11.45		BACON INTERNAL TEMP	126-128°F
SODIUM NITRITE	2.50		TIME HELD	1-7 Days
			% COOLER SHRINK	2-4%
TOTALS	2500			

EST. REP. Rue De Bagga

Based on the bacon pickle formula identified in the chart, calculate ingoing parts per million (ppm) for:

3. Sodium erythorbate

549.6 ppm

4. Sodium nitrite

120 ppm

(Ery) $X = \frac{11.45 \times 0.12 \times 1{,}000{,}000}{2{,}500}$

$X = \frac{1{,}374{,}000}{2{,}500}$

$X = 549.6$ ppm

(Nitrite) $X = \frac{2.5 \times 0.12 \times 1{,}000{,}000}{2{,}500}$

$X = \frac{300{,}000}{2{,}500}$

$X = 120$ ppm

The establishment is producing bacon using the processing procedure above, so you decide to proceed to the pumping machine and select 50 pork bellies from lot 1A1 (weight range 10-12 lb). The 50 bellies weigh 545 lb before pumping. After pumping, the same bellies weigh 604.5 lb.

NOTE: Base your calculations on the amount of sodium nitrite in the bacon pickle formula in the processing procedure above.

5. The actual % of pump is _____%

10.9%

6. The ppm of ingoing nitrite (based on the actual pump) is _____ppm.

109 ppm

604.5 – 545 = 59.5 ÷ 545 = 0.1091 or 10.9%

2.5 ÷ 2,500 = 0.001 x 0.109 (10.9%) = 0.000109 or 109 ppm

OR

$$\frac{2.5 \times 0.109\ (10.9\%) \times 1{,}000{,}000}{2500} = 109 \text{ ppm}$$

The ppm [based on actual pump of 10.9%] is within the 96-144 ppm criteria.

7. The pump procedure will produce bacon in compliance?

Yes

The % Yield/Shrink task appears on the task calendar today. You select 50 uncured pork bellies from lot 2B3 (12-14 lb. weight range). The 50 pork bellies weigh 635 lb. (green weight). Then you select 50 cured/smoked bellies from the cooler. These bellies range in weight from 12-14 lb. each, and weigh 649 lb. The establishment does not routinely perform and document bacon yield determinations.

8. The % yield is _____:

102

9. Is the bacon in compliance with 9 CFR 319.107?

No

649 ÷ 635 = 1.022 x 100 = 102.2% yield

Note: IPP round to the nearest whole percent—102.2% is 102%

Not in Compliance. The establishment has no data to demonstrate that it produces pork bellies that return to green weight.