DATE: October 26, 2018
TO: Directors & Members
FROM: Kevin Abernathy, General Manager

MPC Friday Market Update

<table>
<thead>
<tr>
<th>CHICAGO CHEDDAR CHEESE</th>
<th>CHICAGO AA BUTTER</th>
<th>NON-FAT DRY MILK</th>
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</thead>
<tbody>
<tr>
<td>Blocks (+) $0.0175</td>
<td>Weekly Change - $0.0275</td>
<td>Week Ending 10/19 &amp; 10/20</td>
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<tr>
<td>Barrels - $0.0175</td>
<td>Weekly Average - $0.0520</td>
<td>Calif. Plants $0.8526 8,117,971</td>
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<tr>
<td>Weekly Average, Cheddar Cheese</td>
<td>Dairy Market News w/e 10/26/18 $0.750</td>
<td>Nat’l Plants $0.8756 12,439,683</td>
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<tr>
<td>Blocks - $0.0750</td>
<td>National Plants w/e 10/20/18 $0.4588</td>
<td>Prior Week Ending 10/12 &amp; 10/13</td>
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<tr>
<td>Barrels - $0.0645</td>
<td></td>
<td>Calif. Plants $0.8554 6,776,561</td>
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<td>Nat’l Plants $0.8732 11,370,690</td>
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</tbody>
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Fred Douma’s price projections…

Oct ’18 Final: Quota cwt. $16.72 Overbase cwt. $15.02 Cls. 4a cwt. $14.51 Cls. 4b cwt. $15.43
Last Week: Quota cwt. $16.73 Overbase cwt. $15.03 Cls. 4a cwt. $14.53 Cls. 4b cwt. $15.45

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Market commentary

By Sarina Sharp, Daily Dairy Report, sarina@dailydairyreport.com

Milk & Dairy Markets

It was a wild week on LaSalle Street. On Wednesday CME spot Cheddar barrels plunged to $1.2075 per pound. That’s within a tick of the 2018 lows set in June, at the height of the trade-war panic. The dairy complex was awash in red ink. But bargain-basement barrels attracted some buyers, and capitulation eventually gave way to rehabilitation. Barrels closed at $1.25 per pound, down 1.75ȼ on the week. Barrels aren’t supposed to be this low at this time of year. This week they logged their lowest weekly average for October since 2006. CME spot Cheddar blocks also suffered a mid-week slump, but they managed a full recovery. At the closing bell, blocks settled at $1.515, up 1.75ȼ.

Cheese demand did not impress last month. Stocks of cheese in cold storage warehouses on September 30 reached 1.366 billion pounds, 4.5% more than the year before. Cheese inventories almost always decline from August to September, but this year stocks jumped 7.8 million pounds, driven by a 6-million-pound increase in American cheese stocks. Higher tariffs on U.S. cheese destined for China and Mexico continues to weigh on exports, but the bulk of U.S. cheese is consumed domestically. The highly unusual August-to-September stock build suggests that the domestic appetite for cheese has waned.
Manufacturers tell USDA’s *Dairy Market News* that demand for cheese “is good, but not great.” Given the record-breaking stockpile and the volume of milk moving to cheese vats, “good” is not good enough. But perhaps things will pick up. According to *Dairy Market News*, “It has taken some time for the Q4 holiday retail demand to get started. Export sales seem to ebb and flow according to price, with cheese processors’ phones ringing more as cheese prices fall.” At today’s prices cheese should be moving at a faster clip. European cheese prices are slowly climbing, making U.S. cheese extremely competitive.

The whey powder market has been a bastion of strength, holding its ground even as cheese prices retreated. But this week CME spot dry whey turned tail and ran. Spot whey dropped to 47¢ per pound, down a whopping 10.5¢ since last Friday. An impressive 24 loads changed hands in Chicago, far more than in any other week in whey’s short tenure at the spot market. Other indications of whey prices did not suffer such dramatic declines; the *Dairy Market News* mostly price ranges held steady this week after steady-to-higher performances in each week since mid-April. CME spot whey had advanced far ahead of the other whey markets, so this week’s decline may have been overdue. But it did not help Class III futures. The November contract dropped 45¢ this week to $15.08, the lowest weekly close in the life of the soon-to-expire contract. December through April Class III futures lost 20¢ or more.

The Class IV markets were calmer in comparison. Most Class IV futures contracts finished 15¢ to 20¢ in the red. CME spot nonfat dry milk (NDM) slipped a half-cent to 86.75¢. Spot butter lost 2.75¢ and finished at $2.2325. Overseas butter prices are also slipping.

U.S. butter inventories barely budged in September, declining just 7.8 million pounds from August 31 to September 30. That is much smaller than the typical August-to-September drawdown, which has averaged 30 million pounds over the past five years. There were 283.1 million pounds of butter in cold storage on September 30, the highest volume for the month since 1993. Inventories are now 10.6% greater than they were a year ago, the largest year-over-year increase in 18 months. These figures suggest that demand is far from robust.

The milk powder market is in balance. Buyers back away when prices top 90¢, but they are quick to return in the mid-80¢ range. Milk is tighter in the Southeast and Upper Midwest, and there are fewer trucks standing in line at the drier. Although U.S. NDM exports have reportedly slowed from the heady pace set in August, sales volumes to buyers abroad remain respectable. We’re likely chipping away at stockpiles in both the U.S. and Europe. However, New Zealand continues to report anemic exports. In January through September, New Zealand sent 12% less skim milk powder (SMP) overseas than in the first nine months of 2017 and 25% less than in 2016. Shipments of Kiwi SMP to
China are down 19% from a year ago hinting at poor demand from one of the world’s most important milk powder buyers.

New Zealand will likely have plenty of milk powder to move. September milk collections reached 2.68 million metric tons, or 5.9 billion pounds, up 6% from a year ago. On a milk solids basis, September collections were up 5.8% from a year ago. Milk solids collections are up 5.6% for the season to date.

In the United States dairy producers are despondent, sellouts continue, and slaughter volumes remain high. This week’s rout was a psychological blow. But cow numbers are finally falling and prices are at least better than they were for much of 2018. In the first nine months of this year, Class III futures averaged $14.64 per cwt. and Class IV futures averaged $13.95. Even after this week’s thrashing, Class III is projected to average $15.28 in the fourth quarter and $15.95 next year. The futures forecast a Class IV average of $14.95 in the fourth quarter and $15.61 in 2019. The industry continues to struggle, but hopefully the worst is behind us.

Grain Markets
It was a rather tempestuous week in the grain markets, but after much back-and-forth corn futures were little changed. The December contract settled at $3.6775 per bushel, up 0.75ȼ from last Friday. November soybeans dropped 11.75ȼ to $8.45 per bushel. The weather has been favorable for harvest in the U.S. heartland and for planting in South America. Brazilian and Argentine crops are off to an excellent start.

Combines are rolling, barges are moving, and stevedores are busy loading U.S. corn and soybeans onto cargo ships. But crop export volumes are light for this time of year, particularly for soybeans. Farm incomes are a casualty in the trade war.

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If you depend on agriculture to eat, Proposition 3 – The Water Bond is the most important vote you will make on November 6
By Geoff Vanden Heuvel, Director of Regulatory and Economic Affairs

I know this title seems a bit melodramatic, but it’s true. I know many ag folks don’t like bonds, but I believe you can with a clear conscience make an exception for Proposition 3.

Water from both the surface and ground are vital to sustaining California’s agriculture resources, including the dairy industry as we know it in California. Whatever your politics, the fact is that as a society we need to invest in more water infrastructure. All of the easy to build and fund water projects have already been done. What opportunities remain to shore up our water supply are expensive. If they are going to be done, the public – through the government – is going to have to help finance them.

The Sustainable Groundwater Management Act is being implemented right now. The native available water supply for most of the critically overdrafted sub-basins of the Central Valley is going to be between 1/2- to 1-acre foot, per acre per year. This reality is going to bite hard on us within the next few years. We need to maximize every opportunity to grab any surplus waters that emerge, particularly in wet years and recharge that water into the ground.
It's going to take money and Proposition 3 has billions of dollars targeted to provide real new water for California. Please vote yes on Proposition 3.

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What Does President Trump's water memo mean?
By Geoff Vanden Heuvel, Director of Regulatory and Economic Affairs

On October 19, President Trump called a press conference, and with Congressmen Valadao, Nunes, McCarthy, Denham and McClintock looking on, signed a Presidential Memorandum on promoting reliable supply and delivery of water in the West. You can read the memorandum here. I learned much more about the implications of this memorandum at the meeting of the Friant Water Authority yesterday.

There are two major surface water delivery systems in California that move water through the Bay Delta. One is the federally operated Central Valley Project (CVP) and the other is the State of California-operated State Water Project (SWP). There are multiple levels of regulations governing the operations of these two projects. Under normal conditions, the regulation would be carried out by the State Water Resources Control Board (SWRCB), and they do have rules in place to protect the environment and the other uses of water in the Delta.

In addition to SWRCB regulations, the operation of both of these projects is being restricted by Biological Opinions authored by two Federal Agencies who implement the Endangered Species Act (ESA). The federal Department of Interior, through the U.S. Fish and Wildlife Agency, is responsible for enforcing regulations to protect the Delta Smelt and the U.S. Department of Commerce, through the National Marine Fisheries Agency, is responsible for enforcing regulations to protect certain species of salmon that traverse through the Delta.

The Biological Opinions, which form the basis for the pumping restrictions on the two water projects, are well over 10 years old. Those restrictions are estimated to cost the water projects on average 1.2 million acre-feet of water per year OVER what would be necessary to comply with the water regulations of the SWRCB. In the more than 10 years that these Biological Opinions have been in place there has been NO improvement in the health of either the Delta Smelt or the Salmon.

So sending millions of acre feet of otherwise usable water to the ocean to protect these fish has not succeeded. And in fact, millions of dollars of scientific research has been conducted on what would actually help the fish and the consensus is that there are other factors impacting the health of the fish apart from simply water flow issues that could be effective in helping them survive. The water user community has been pleading with the two federal agencies for some time to revisit the Biological Opinions and take into consideration the new science without much success. The Presidential Memorandum orders the Secretary of Commerce and the Secretary of the Interior to do just that. Quoting from the Memo:

"The Secretary of the Interior shall issue final biological assessments for the long term coordinated operations of the Central Valley Project and the California State Water Project not later than January 31, 2019". "The Secretary of the Interior and the Secretary of Commerce shall ensure the issuance of their respective final biological opinions for the long-term coordinated operations of the Central Valley Project and the California Water Project within 135 days of the deadline provided in section 2 (c)(ii) of this memorandum. [January 31, 2019]. To the extent practicable and consistent with law, these shall be joint opinions."

This memo is a potential game changer. Certainly there are lots of obstacles to overcome, but getting the President’s attention on an issue that has caused so much pain for so many people without doing any good for the fish is a very good thing. Maybe science can trump politics and lead the way to a better day for both the fish and the rest of us.

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MPC sponsors SGMA Survival Strategies – A Roundtable Discussion  
*By Geoff Vanden Heuvel, Director of Regulatory and Economic Affairs*

In an effort to equip our members with the latest up-to-date information regarding the implementation of the Sustainable Groundwater Management Act (SGMA), MPC is cosponsoring a free event open to public on October 31.

For release: contact – Don A. Wright (559) 355-2389 or don@waterwrights.net

**What:** SGMA Survival Strategies Roundtable discussion, a free event  
**When:** Wednesday, October 31st from 2pm-4pm  
**Where:** CSU Fresno’s Center for Irrigation Technology, Southeast corner Barstow & Chestnut, 5370 N Chestnut Ave, Fresno, CA 93740

Waterwrights.net and DisinfectWater present a discussion about the Sustainable Groundwater Management Act of 2014; What are some of the possible pitfalls that can be avoided? How can Valley growers, suppliers and all ag related products and services prepare for SGMA’s implementation?

As Sustainable Groundwater Agencies throughout California’s San Joaquin Valley prepare Groundwater Sustainability Plans several questions are being raised. How much water can be pumped? Will it be enough to grow my crops? What products, services and strategies can prepare my operations to take a hit from SGMA? And most important; what questions should I be asking?

A panel of experts will be discussing these and other questions and facts. Joining the talk will be:

- **Daniel Hartwig** – Director of Water Procurement & Compliance, Woolf Farms  
- **Keith Hennesay** – Chief Agronomist, Gar Tootelian, Inc.  
- **Chris Johnson** – Hydrogeologist/owner, Aegis Groundwater  
- **Lauren Layne** – Partner/Water law, Baker Manock & Jensen  
- **Ron Samuelian** – President/Engineer, Provost & Pritchard Engineering  
- **Don A. Wright** – Moderator/Publisher, www.waterwrights.net

Growers, suppliers, manufacturers; anyone involved in agriculture from accountants to farmers to welders are encouraged to attend. Bring your questions and suggestions. Together we can begin preparing a path to remain viable.

The SGMA Survival Roundtable will take place at the CSU Fresno’s Center for Irrigation Technology Conference Room located on the Southeast corner of Barstow and Chestnut in Fresno, on Wednesday, October 31st from 2:00 to 4:00 pm.

For more information and reservations to this free event go to: www.waterwrights.net or www.sgmastrategy.com
California Dairy Sustainability Summit: Further improving economic and environmental sustainability

_Courtesy of Dairy Cares_

Leading dairy organizations have united to host the inaugural California Dairy Sustainability Summit on November 27-28, 2018 at the Sacramento Convention Center. The summit will showcase California’s innovative and sustainable dairy farm practices, while highlighting cost-effective ways to meet ongoing challenges. A key focus will be developing partnerships and strategies to improve the economic sustainability of the state’s family dairy farms.

“California dairy farmers have a long history of raising the bar,” said Charles “Chuck” Ahlem, a dairy farmer in Hilmar and a board member for three of the hosting organizations. “In good times, and even now with difficult market conditions, our farmers continue to improve by supporting research and adopting new technologies. The California Dairy Sustainability Summit will help develop strong partnerships and solutions that are good for the environment and can help sustain our family farms.”

California leads the world in planet-smart dairy practices—reducing greenhouse gas emissions, cleaning the air, protecting and conserving water, and more. Dairy families have made great strides through their dedication to continual improvement, producing more milk using fewer natural resources, while providing hundreds of thousands of in-state jobs. Recent progress is due in large part to the implementation of cost-effective technologies through incentive programs. California is the first dairy region in the world to set a goal for a 40% reduction of methane emissions from dairy manure. Through ongoing research and funding incentives, dairy farmers are well on their way to achieving the state’s goal.

With continued funding through the Dairy Digester Research and Development Program (DDRDP), the state is on its way to having between 100 and 120 dairy digesters operating within the next four to five years. These digesters are capturing methane and creating clean, renewable energy. At a cost of $8 per metric ton of CO2 equivalent reduced (not including the matching private funding), the DDRDP is the third most cost-effective out of the state’s 48 climate action programs.

The **Alternative Manure Management Program (AMMP)** has now awarded funding to a total of 58 dairy farms across the state. A variety of technologies and strategies are being funded through the AMMP, all aimed to decrease methane emissions by reducing the amount of manure solids stored in wet conditions. Ongoing research continues to verify and quantify how these technologies can reduce methane emissions, while improving overall air and water quality.
California’s dairy farms continue to reduce reliance on fossil fuels and improve the air. A growing number of dairy farms are working with the San Joaquin Valley Air Pollution Control District to convert diesel-powered feed mixers to electric. Each conversion can save up to 20 tons of nitrogen oxides (NOx) per year—equivalent to taking more than 1,200 cars off the road. Additionally, dairy farmers are partnering with their local utility providers and utilizing incentive and rebate programs to invest in the most energy-efficient technologies—reducing energy use up to 20%. More than 100 California dairy farms have also installed solar energy systems to meet their energy needs and help the state meet its clean energy goals.

While incentive programs are helping dairies to clean the air and reduce greenhouse gases, similar programs to help with water quality challenges must still be developed. The dairy community is working in an organized and collaborative manner to chart a path toward improvements to the protection of groundwater resources. Since 2010, Central Valley dairy farmers have been funding and managing a comprehensive water monitoring program. They plan to continue working with academic institutions, private industry innovators, and other partners to find new and enhanced ways to minimize the costs of enhancing water protection on dairies, and to maximize the value of manure and manure-based products. The goal is to identify cost-effective long-term strategies. These will take time and financial commitments to implement.

California dairy farms have a long history of increasing water-use efficiency. With fast-approaching groundwater management regulations and the threat of significant decreases of both surface and groundwater availability, farmers know they must do more to best utilize this increasingly scarce resource. They are working collaboratively with technology companies and non-profit organizations to develop innovative models for water conservation.

California’s dairy farms are making technological advancements that will allow them to continue their way of life. This includes investing in robotic milking equipment and other automated technologies that help reduce costs and address ongoing labor challenges. While these decisions are difficult and costly, dairy families are planning for long-term success, aiming to pass their farms to the next generation.

“California dairy farms adhere to the strictest environmental regulations in the nation,” said Cornell Kasbergen, a dairy farmer in Tulare. “It’s a tough place to dairy farm, but California is our home. We’re committed to working with our state’s leaders to find economically and environmentally sustainable solutions.”

California dairy farmers continue to improve the environment and provide nutritious and affordable foods, creating a model of sustainable farming for the world to follow. It is critical that continued progress be made in a way that is sustainable for the environment and for our farms. To be a part of the conversation, join California dairy farmers, state leaders, and other stakeholders at the California Dairy Sustainability Summit.

To learn more about how California dairy farmers are leading the way in planet-smart farming and to register, visit CADairySummit.com.