

# Nutrien Fort Saskatchewan & Redwater Operations

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April 18, 2018



As the world's largest provider of crop inputs and services, Nutrien plays a critical role in Feeding the Future by helping growers to increase food production in a sustainable manner.

#### **Providing Crop Nutrients**



#### **Partners with Growers**



#### Focusing on Sustainability



### Meeting the Needs of our Shareholders





## Meeting the Needs of a Growing World

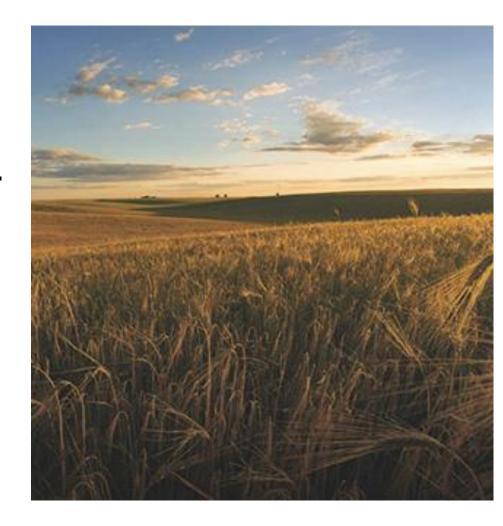
Produces and distributes over 26 million tonnes of **potash**, **nitrogen and phosphate** products for agricultural, industrial and feed customers world-wide

Agriculture retail network servicing over 500,000 growers



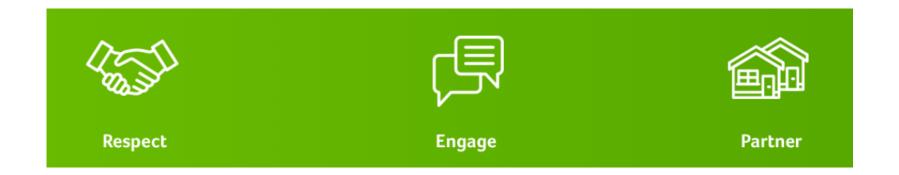
Responsibly feeding a growing population is one of the world's greatest opportunities and challenges.

We help growers produce more per acre in a socially, environmentally and economically responsible way.



- Nutrien takes its Environmental Stewardship very seriously. Not only on site but the downstream use of our products.
- Nutrien supports our industries 4R<sup>™</sup> Nutrient
   Stewardship System of best management practices in
   the field: Right Source, Right Rate, Right Time, Right
   Place. We work with growers on how our products
   can be best applied to reduce greenhouse gas
   emissions and losses to water.
- Promote community involvement like the "Caring for our Watersheds" program.
- We developed and produce Environmentally Smart Nitrogen - ESN®
- We also promote science based educational programs and materials like our "Seed Survivor" program.





- ~\$17 million invested in community initiatives in 2017
- ~2,000 organizations supported annually by our community investment program
- ~195,000 youth educated on food security, sustainable agriculture and farm safety in 2016
- ~\$2 million employee donations matched in 2016

### Nutrien Fort Saskatchewan Site & Surrounding Area N 8



#### Fort Saskatchewan Nitrogen Operations (FNO)



- Produces;
  - 465,000 tonnes of Ammonia
  - 430,000 tonnes of Urea
  - 70,000 tonnes of aqua ammonia
- ~140 employees & contractors Over \$20 million/year in direct payroll
- \$54 million per year in natural gas costs.
- \$25 million per year in goods & services purchases.
- \$5 million per year in electricity.

# Fort Saskatchewan and Redwater are proud supporters of our communities

- United Way employee & corporate matching donations of ~ \$450,000 a year
- ~ \$100,000 given annually in local charitable donations
  - Families First Society
  - Gibbon Cultural Center (Youth Center)
  - Furniture Bank
  - Christmas Hampers
  - Scholarships for High School Students
  - Minor Sports Programs
  - Music Festival Association

#### Fort Saskatchewan Operating Approval Renewal

#### Operating Approval - Nutrien Fort Saskatchewan Nitrogen Operations



- Historical Production of Phosphate Fertilizer ceased in mid 80s
  - Produced by acidifying phosphate rock
  - The gypsum by-product produced during the production of phosphate fertilizer is called 'phosphogypsum' (PG)
  - 5 tonnes of PG produced for every tonne of  $P_2O_5$  fertilizer, therefore large stockpiles exist anywhere phosphate fertilizer is produced
  - PG stacks in at least 80 countries of the world







- Potential uses for construction, road base and agriculture
- Only about 5% of PG is currently reused worldwide, mostly for agriculture, but reuse is gaining momentum
- Nutrien continues to investigate reuse opportunities but our primary research focus has been on the best way to reclaim the PG stacks









- Partnered with the University of Alberta since 2005 to do research for the best way to close the gypsum stacks
- To date, six students have earned Masters Degrees doing research on Nutrien PG stacks







### What can you grow on PG?









- Based on the success of the tree experiments, Nutrien closed and forested two gypsum stacks (50 acres) in Fort Saskatchewan in the last two years
- About 20,000 hybrid poplar and 10,000 willows were planted, along with some white spruce





- Trees are growing better on phosphogypsum than they would be on regular soil
- Trees sequester carbon to offset climate change (approximately 30 t CO<sub>2</sub> e ha/year)
- Trees can be harvested and used for green energy or wood chips
- Trees can be used to remediate plant nutrients and prevent water infiltration into the PG stacks
- Trees look great and create increased wildlife habitat



- The largest integrated fertilizer producer in Canada.
- We occupy 372 hectares along the North Saskatchewan River
- Each year RFO produces;
  - 1.4 million tonnes of nitrogen-based fertilizers
  - 610,000 tonnes of monoammonium phosphate (MAP)
  - 340,000 tonnes of ammonium sulphate
- Phosphate sales from this site account for 50% of the Canadian market and 5% of the North American market.
- The largest corporate employer in Sturgeon County.

### Direct Economic Impacts of Redwater



- 450 regular employees \$73 million/year in direct payroll
- ~100 contractors valued at \$15 million/year.
- ~\$95 million per year in natural gas costs.
- ~\$85 million per year in goods & services purchases.
- $\sim$ \$20+ million per year in electricity.
- ~\$6+ million in municipal property tax.

- Target of \$500M in synergies
- Excess ammonium phosphate (MAP) capacity at White Springs Florida Operations
- Results in the shutdown of Redwater's Phosphate Operations:
  - 1 Sulphuric Acid Plant
  - the Phosphoric Acid Plant:
    - no further gypsum production
- Redwater will convert our MAP production unit to ammonium sulphate (AS) production

- Shutdown of the phosphoric acid and small sulphuric acid plant in mid 2019
- Capital expenditure of \$30M to convert to AS.
- 3 months of construction period
- Manpower Impact minimal
- Community Partners no change
- MAP supply to Western Canada Sourced from our US facilities
- Nutrien focused on long term Operations, positively impacting the Community in which we operate.

