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Serving the Pacific Northwest

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Lyons & Lakewood Packaged Booster Stations

Don Carlile, PumpTech Canby

2014 has been an excellent year for packaged booster stations sales at PumpTech. We have designed and built many pump & control skids for installation in new and existing systems. We have also designed and built several packaged boosters that were preinstalled in a Blazer CMU pump house. These systems are trucked to the construction site and set on a concrete pad. Once in place, piping and power is connected to the pump house and it is ready to go.

Two that were installed recently are the Lyons - Mehama (East of Salem) and Lakewood Dr (city of Newport) stations. Both are shown in the right hand column (Lyons top).

Lyons/Lakewood continues on Page 2

Kiona Diversion Project Booster Pump Station

Ed Smith, PumpTech Moses Lake

In 2013 the Office of Columbia River (OCR) and the Kennewick Irrigation District (KID) put together a plan to move KID's diversion point from Prosser to Kiona. The project allows for the irrigation of an additional 1,785 acres of vineyards in the Red Mountain American Viticulture Area. This could create an additional 103 jobs and inject about $9.2 million into the economy annually. It will also provide 11,005 acre feet of water to increase stream flows in a low flowing stretch of the Yakima river which will benefit the steelhead and salmon population and protect about 1200 acres of shrub steppe habitat.

Kiona continues on Page 3

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Lyons & Lakewood Packaged Booster Stations continues

The **Lyons - Mehama** station provides domestic water to higher elevations and fire hydrant flow. It consists of two Grundfos CR series pumps that provide domestic water and two vertical PACO pumps for fire flow. The picture below shows the pumps and controls inside the Blazer building during start up. Individual controls were used for domestic and fire flow. The completed package was installed by

Clackamas Construction.

PumpTech worked with water superintendent, Bill Grimes and CH2M Hill on the system design. The bid specification stated that the complete system would be built and supplied by PumpTech.

The **Lakewood Dr** system is designed for domestic water boosting and required NSF61 compliance. It included a Grundfos Boosterpaq and controls. The picture below shows the pumps, piping and controls prior to installation in the Blazer building. The system

also included a Cummings standby generator for emergency power. In addition PumpTech supplied a temporary bypass booster pumping system to supply water pressure during installation of the building.

PumpTech worked with water superintendent Lanny Schulze and public works project manager Tim Gross during the early stages of the project. They were convinced that a package system was the way to go and wanted something similar to the South Beach station that PumpTech installed in 2006. PumpTech worked with Civil West Engineering during the design phase of the project. Installation of the building was done by Clackamas Construction.

Once Blazer constructs the building, PumpTech installs the pump system and controls prior to delivery. The picture below shows the complete system being lowered on the concrete base pad. The one at the bottom shows the finished system during start up.

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Kiona Diversion Booster Station Continues

The Kiona intake and booster pump station was designed by RH2 Engineering and went to bid in the summer of last year. Pacific Crest Construction was the successful bidder and began construction last fall. PumpTech provided all of the vertical turbine pumps for the station. These included three, 300 HP and two, 20 HP Peerless VTP's all of which run on VFD's.

All of the Peerless VTP's incorporated special lineshaft bearings made of Vesconite. Vesconite is a specialized thermoplastic that is made from internally

lubricated polymers. It incorporates PTFE (polytetrafluoroethylene) as an internal lubricant. It has a high dimensional stability and does not swell in water. For example, nylon can swell up to 3% when in contact with water. It also has a very low coefficient of friction and can last ten times longer than rubber or bronze. It was developed to solve wear problems in dirty applications and those where lubrication is not ideal. Vesconite was chosen as the bearing material due to high seasonal levels of silt which could substantially reduce bearing life.

The picture on the front page and the one below show the completed intake and booster station. Both of these were taken in August of this year. The picture at the top of the right hand column, taken in December of last year, shows the station's intake piping. The picture in the middle shows the pump station in May of this year. The picture at the bottom shows the interior of the station after pump and piping installation.

For more information on this project contact Ed Smith in our Moses Lake office.

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Grundfos DDA Wins Metering Pump Trial at NORPAC

Shawna Andrews, PumpTech Canby

Over the years PumpTech has had the opportunity to work with many chemical companies. Typically we provide equipment, service, and sometimes rental skids for trial metering applications. Most of these companies either provide the equipment required to inject their chemicals or advise their customer as to which particular type of equipment they should purchase. Changing a pump brand or type is a rare occurrence as the chemical companies do not profit from the sale of the equipment and it is difficult to recapture these capital costs. Frequent maintenance or difficulty maintaining accurate metering can, however, be compelling reasons to consider alternative equipment options.

Joe Merkwan (pictured below with his wife Pam), is an onsite Senior Technical Service Rep, for a company that supplies and manages chemicals for the NORPAC (North Pacific Paper Corporation) plant in Longview, WA. He has supported this mill for over seven years and one of his responsibilities includes servicing the equipment as necessary. During his years at NORPAC, Joe has had many opportunities to repair the six LMI solenoid pumps used for a 12.5% bleach application. The bleach is used in conjunction with biocides to kill bacteria that can grow in the pulp mixture. The LMI pumps have had frequent problems with air locking, leaking at the ferrules, and failing check valves. The safety hazard of leaking bleach, the cost of the lost product, parts replacements, and the time required to check and service the LMI pumps were compelling reasons to consider an alternative metering pump. Joe began asking his suppliers what they would suggest as an alternative. At this point in time, PumpTech had not worked with Joe's group and Matt Browne, our outside sales person, jumped at the opportunity to introduce the Grundfos DDA Smart pump (picture top right column) to Joe and his team. After Matt's presentation, the DDA Smart Pump was selected as one of the pumps to be considered as an alternative solution.

In order to verify if an alternative pump option would be more reliable, a six month trial between two pump technologies was conducted. The competing technologies to replace the LMI solenoid pump were a Watson Marlow peristaltic tubing pump and a Grundfos DDA 7.5-16 stepper motor pump. The two pumps are similarly priced, however, several standard features of the Grundfos DDA were not available on this version of the tubing pump. The DDA Smart Pump features included 4-20 ma I/O and automatic air bleed. After the six month trial both pumps were found to work well, however, the additional options for the same price was a determining factor in choosing the Grundfos DDA pump. It is now the metering pump of choice for this chemical provider at NORPAC. Joe was so pleased that he has since encouraged the mill to purchase Grundfos DDA pumps for other chemical applications.

The picture below shows a metering skid that was designed and manufactured by our MeterMan division in Canby, Oregon. It incorporates five Grundfos Smart Pumps. For more information on Grundfos metering pumps contact Shawna Andrews at the email address below.

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LOTT ALLIANCE Break Tank Booster System

Jack Boyd, PumpTech Bellevue

The Lott Alliance Group operates an extensive network of water and wastewater treatment facilities in Olympia, Lacey and Tumwater Washington. The Budd Inlet Treatment Plant primary sedimentation basins project was a huge undertaking. PumpTech was contacted to provide a large break tank system for the operational water requirements for the entire plant.

Break tank systems provide an air gap between a potable water source and the WWTP non-potable water system. A true "workhorse", a break tank system is on-line 24/7 providing water to various plant process systems. As such, it is a critical and essential requirement for many WWTP equipment systems.

SYSTEM DESIGN CRITERIA: PumpTech was contacted by HDR Engineering to assist them with their design requirements for this portion of the Budd Inlet WWTP expansion project. The goal of the system design was two-fold:

1) Supply all plant demand over a wide range of flow while insuring a safe pressure zone range to protect critical plant process operational criteria.
2) Provide a method to respond to sudden high flow demand which would correspond to a rapid change in tank level.

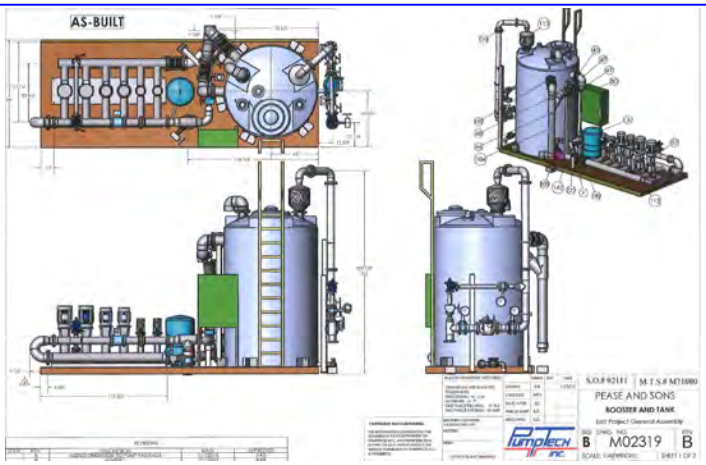
The second criterion was accomplished by utilizing "FILL" valves of two different sizes - the smaller valve being hydraulically operated and the larger valve being electronically controlled.

One of the challenges was the entire break tank system package had to be designed to fit within a specific dimensional footprint. The equipment was installed on a raised concrete housekeeping pad that was about 20 feet long by 8.5 feet wide. PumpTech's solution was to provide a modular, component based design which would incorporate the following components:

1) A skid-based, six pump system using Grundfos Vertical Multistage pumps
2) ClaVal Automatic Control Valves for modulating level control
3) Panel, controls & related Instruments by L2 Systems
4) 3000 gallon water tank

The drawing at the top of the right hand column shows several views of the system design.

The entire package was assembled in PumpTech's



Canby, Oregon assembly and fabrication facility. It was then labeled and disassembled for shipping to the project as several modular components. The mechanical contractor (PEASE & SONS) did a fine job reassembling and installing the system. Finally the big day came when operational testing began. The operational testing that followed simulated a wide range of expected plant conditions to demonstrate the integrity and performance of the automatic controls and monitor the level tracking ability of the tank level controls.

With the successful conclusion of the break tank system test period all auxiliary potable water connections used during the construction period were abandoned. The transition was made to the only water source which would remain – the potable water connection to the PumpTech Break Tank System. The Grundfos pumps run continuously to provide the WWTP water from the storage (break) tank, in what is a dynamic and constantly changing system. The photo below shows the break tank system installed.

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7th Avenue Pump Station Upgrades Their Cornell Pumps

Zach Weeks, PumpTech Bellevue

The 7th Avenue pump station is one of the largest in the Midway Sewer District located in Kent, WA. It had been operating with four Cornell solids handling pumps for many years with great success. Due to increasing infiltration and inflow within the system, as well as an increased number of utility customers, the station has been upgraded. PACE Engineers was brought in by the district to find an efficient pump design to handle the two main flow conditions: average daily flow (ADF), and occasional wet weather peak flow. PumpTech worked with PACE and determined that one Cornell 4NHTA solids pump, equipped with a 50 Hp motor, would most efficiently handle the ADF. We decided to coat the impellers of these pumps with a Belzona™ coating to increase the life span and efficiency of these pumps. The peak flow is handled by two Cornell 8NHTA duty pumps (with one standby), equipped with 125 Hp motors. Midway also made the decision to purchase one backup 4NHTA to have on site in case of a catastrophic failure. The pumps were delivered and installed in November.

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Ice? GridBee to the Rescue

Ice formation in potable water storage tanks during the winter can be a challenge for northern water utilities. Layers of ice can stretch seams and fastener holes, causing structural damage and leakage, while vertical movement of ice chunks may damage cathodic protection equipment and access ladders. With GS-9 pricing under $5,000 and GS-12 pricing under $8,000, many cities are installing GridBee tank mixers for ice protection. These reliable mixers offer a 5-year warranty with a strong customer service program to back it up. Customer installation is easy and straightforward. At these prices, why risk the chance of ice damage? Below is a testimonial from a customer in Minnesota.

"We have four mixers installed in our potable system. We also had trouble with the mixer SCADA panel at our Country Club Manor tank, so it went for a week or so without being in service. The mixer was repaired and put back in service the afternoon of Friday, January 10, 2014. We climbed all of these tanks on Friday, January 10, 2014, to see if they had any ice build-up. We felt that since we had such a prolonged cold spell with temperatures reaching 20 below zero the week previous, we would see ice in these tanks even with the mixers installed. The Country Club Manor tank was completely iced over as of Friday, January 10, 2014, although there was no way of knowing how deep the ice was. The other three tanks did not have any ice in the tank what so ever. Since we knew the mixer was now in operation at the Country Club Manor tank, we climbed the tank again on Monday, January 13, 2014. In only three days of the mixer running, nearly all the ice was removed. To say I am surprised that there was no ice in the three tanks would be an understatement. And the fact we removed virtually all the ice from an iced over tank in three days of running the repaired mixer is amazing." CJ, in Minnesota

For more information on GridBee and SolarBee products contact your local PumpTech branch.

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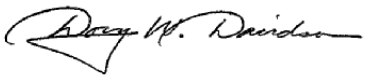
PumpTech PumpChat - From the Presidents Desk

Doug Davidson, PumpTech Bellevue

Our commitment to providing a constantly improving working environment and increasing benefits to our team members has resulted in us selecting our first Director of Human Resources. Barb Lall joined PumpTech as Director of Human resources and she has been busy. As evidenced by the new faces below, Barb has been busy with recruiting efforts as well as introduction of new team members. Behind the scenes Barb is updating our employee handbook, introducing our Performance Improvement Plan, implementing an educational reimbursement policy and reviewing the PumpTech benefit package. The addition of our Director of Human Resources is a reflection of our commitment to continually provide a great working environment for our team members so that they in turn will provide Premier Customer Service to our customers.



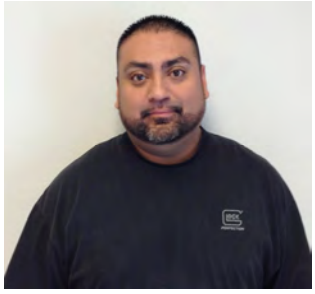
New Employees At PumpTech

Lynn Knapp joined the Bellevue branch in February as Director of First Impressions (aka front office admin assistant). She is a graduate of Western WA University and holds a degree in environmental science.

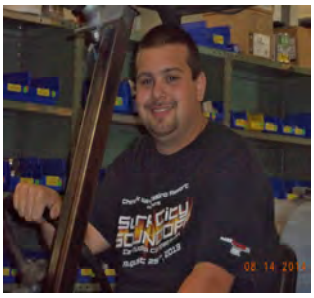
Jack DePalma joined the Bellevue branch in February and handles shipping and receiving. Prior to coming to PumpTech Jack was retired but Doug convinced him to come back to work. Prior to retirement Jack worked as a welder.

Miles Beach joined the PumpTech team in February as our new Municipal Specialist and reports to the Bellevue office. Miles recently retired after 36 years with the city of Ocean Shores as their Waterworks Superintendent.

Jake Juarez joined the Moses Lake branch in March as a Technical Assistant. Before coming to PumpTech, he worked in sales at Motion Industries. Jake lives in Moses Lake with his wife Candice and their two kids.



Keith Coffman joined our Canby manufacturing team in July. Prior to PumpTech he worked in customer service. Keith was born in Portland, raised in Milwaukie and currently lives in Gladstone.



Bill Smith joined the Canby service crew in July. He has many years experience as a pump technician and is happy to be back in the pump industry. Bill lives in Woodburn with his significant other, Martine.

Ashley Suter joined the Canby branch in July as our Director of First Impressions (aka front office admin assistant). She graduated from Concordia College in April with a BA in English and a minor in Business & Marketing. Ashley lives in Gresham and is engaged to her future husband Matthew.

Ben Santiago joined our Bellevue service crew in September. Prior to coming to PumpTech he worked in the railway and auto parts industry. Ben lives Renton with wife Erica and their two children.

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12/11 - OAWU Short School - Hood River
1/12 - 14 - NWFP Convention & Show - Portland
2/16 - 18 - ERWOW Conference - Yakima
3/9 - 11 - Cascade to Coast Short School - Eugene
3/24 - 26 - Water Environment School - Clackamas CC
3/30 - 4/1 - Eastern Oregon Short School - Pendleton
4/15 - SWIOS Training - Boise
4/29 - 5/1 - PNWS-AWWA Conference - Bellevue
6/2 -3 - PNCWA - AWWA Short School - Lynnwood

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