RECORD OF PROCEEDINGS

MINUTES
OF A REGULAR MEETING OF
THE BOARD OF DIRECTORS OF THE
GREATROCK NORTH WATER AND SANITATION DISTRICT
HELD
AUGUST 6, 2013

A regular meeting of the Board of Directors (referred to hereafter as "Board") of the Greatrock North Water and Sanitation District (referred to hereafter as "District") was convened on Tuesday, August 6, 2013 at 5:30 P.M., at United Power, 500 Cooperative Way, Brighton, Colorado. The meeting was open to the public.

ATTENDANCE

Directors In Attendance Were:
Terry Krayenhagen
Robert William Fleck
Jeffrey Polliard
Brian Rogers
John D. Wyckoff

Also In Attendance Were:
Lisa A. Johnson; Special District Management Services, Inc.

Brad Simons, P.E.; TST Inc. of Denver

Jeff Rabas; Ramey Environmental Compliance

Walraven Ketellapper; Stillwater Resources & Investments, Inc.

DISCLOSURE OF POTENTIAL CONFLICTS OF INTEREST

Disclosures of Potential Conflicts of Interest: Ms. Johnson advised the Board that, pursuant to Colorado law, certain disclosures may be required prior to taking official action at the meeting. The Board reviewed the Agenda for the meeting, following which Directors Krayenhagen, Fleck, Polliard, Rogers and Wyckoff each confirmed that they had no conflicts of interest in connection with any of the matters listed on the Agenda.

ADMINISTRATIVE MATTERS

Agenda: Ms. Johnson distributed for the Board's review and approval a proposed Agenda for the District's regular meeting.

Following discussion, upon motion duly made by Director Polliard, seconded by Director Wyckoff and, upon vote, unanimously carried, the Agenda was approved.

Board of Directors' Report: It was noted that there was not a Board of Directors' Report.

Manager's Report: Ms. Johnson presented and the Board reviewed the July Manager's Report. A copy of the report is attached hereto, and incorporated herein, by this reference.

Presentation from Walraven Ketellapper with Stillwater Resources & Investments, Inc. Regarding Water Sourcing Operation and Water Rights Acquisition Opportunity: Mr. Ketellapper reported to the Board on the status of the oil and gas water sourcing project and on the status of the Castle Rock Water Source Development Project. The Board asked questions and then thanked Mr. Ketellapper for his time in attending the meeting and updating the Board.

Mr. Ketellapper left the meeting at this time.

CONSENT AGENDA

The Board considered the following actions:

- Approval of the Minutes from the July 2, 2013 regular meeting.
- Ratify approval of payment of claims through the period ending July 12, 2013 totaling $36,251.16.
- Ratify of the following termination letter with Olsson Associates, Inc. as follows:
  - Agreement for the performance of a Reserve Study.
- Approval of the First Addendum to Independent Contractor Agreement with Water Technology Group for Rockinghorse Farms Vertical Multistage Pump Installation.
- First Addendum to Independent Contractor Agreement with TST, Inc. of Denver Consulting Engineers for Public Water System Facilities Support Engineering Services.

Following discussion, upon motion duly made by Director Wyckoff, seconded by Director Rogers and, upon vote, unanimously carried, the Board approved the consent agenda items.

FINANCIAL MATTERS

Financial Statements: Ms. Johnson presented the cash position schedule and unaudited financial statements for the period ending June 30, 2013.

Following review and discussion, upon motion duly made by Director Polliard, seconded by Director Wyckoff and, upon vote, unanimously carried, the Board accepted the unaudited financial statements for the period ending June 30, 2013.

ENGINEER'S REPORT

Engineer's Report: Mr. Simons presented the July 23, 2013 Engineer's Report to the Board. A copy of the Report is attached hereto and is incorporated herein by this reference.

Evaporation Ponds:

Analysis for Evaporative Ponds and Concentrate Matters: Mr. Simons presented to the Board his August 6, 2013 Summarization of "Irrigation Water Quality Criteria". Mr. Simons reported that he has invited the CSU extension representative to the September Board meeting to discuss his opinion on blending a percentage of the concentrate water with the irrigation water provided by Box Elder Creek Ranch Water Company ("BECRWC") and the effect that water may have on the landscaping in Box Elder Creek Ranch.

Installation of Pumps and Variable Frequency Drive at Rocking Horse Farms Facility: It was noted that the project is scheduled to be completed the week of August 12, 2013.

Purchase and Installation of a Variable Frequency Drive on Greatrock North Pump No. 2: The Board reviewed and discussed the proposals provided by Timber Line Electric and Control Corporation ("TLECC") and Water Technology Group for the purchase and installation of a variable frequency drive on the Greatrock North Pump No. 2.

Following discussion, upon motion duly made by Director Polliard, seconded by Director Rogers and, upon vote, unanimously carried, the Board approved the proposal from Water Technology Group for the purchase and installation of a variable frequency drive on the Greatrock North Pump No. 2 in the amount of $5,341.55.

CAPITAL IMPROVEMENT PORJECTS

Capital Improvement Projects: There was nothing new to report.

OPERATIONS AND MAINTENANCE MATTERS

Operations and Maintenance Update and Completed Work Order List: The Board reviewed the operations and maintenance update and the completed work order list. A copy of the report is attached hereto and incorporated herein by this reference.

Monthly Flow Report: The Board reviewed the monthly flow report covering June 6, 2013 through July 5, 2013.

Water Quality Issues in Box Elder Creek Ranch and Rocking Horse Farms: The Board reviewed the monthly water quality report.

Generator Maintenance Services Provided by Rocky Mountain Power Generation ("RMPG"): Ms. Johnson reported to the Board that RMPG repaired the generator at Box Elder Creek Ranch facility in error and not at the Greatrock North facility. She further reported that Mr. Rabas spoke to them about the error and RMPG is scheduled to repair the Greatrock North facility generator on August 6, 2013. Mr. Rabas will confirm the repair occurred. It was noted that Mr. Rabas has requested a meeting with RMPG to discuss this issue and service to the District to date.

The Board then inquired if the SCADA system monitors when the generators are used and/or exercised. Staff will look into the matter and if not, will follow up with TLECC to add to the monitoring. There was also discussion on whether there are backup powers sources on all of the electrical cabinets in the three facilities. It was noted that Mr. Rabas will investigate the matter further and report back to the Board. If not, he will provide a cost to install these backup power sources.

LEGAL MATTERS

Legal Matters: There was nothing new to report.

WATER MATTERS

Water Matters: There was nothing new to report.

OTHER BUSINESS

District Website: Ms. Johnson reported that SIPA has provided a training video and that staff will have a draft website to present to the Board by the middle of August.

COMMUNITY COMMENTS

Community Comments: There were no community comments.

ADJOURNMENT

There being no further business to come before the Board at this time, upon motion duly made, seconded and, upon vote, unanimously carried, the meeting was adjourned.

Respectfully submitted,

By _____
Secretary for the Meeting

THESE MINUTES APPROVED AS THE OFFICIAL AUGUST 6, 2013 MINUTES OF THE GREATROCK NORTH WATER AND SANITATION DISTRICT BY THE BOARD OF DIRECTORS SIGNING BELOW:

_____
Terry Krayenhagen

_____
Robert William Fleck

_____
Jeffrey L. Polliard

_____
Brian K. Rogers

_____
John D. Wyckoff

GREATROCK NORTH
WATER & SANITATION DISTRICT

Date: July 30, 2013

To: Greatrock North Water and Sanitation District, Board of Directors

From: Lisa A. Johnson, District Manager

Re: August 6, 2013 Manager's Report

Agenda Action Items

II. A. Consent Agenda

1. July 2, 2013 Regular Meeting Minutes.
2. July 12, 2013 claims.
3. Termination with Olsson Associates for Reserve Study.
4. First Addendum to Independent Contractor Agreement with Water Technology Group for Rocking Horse Farms Vertical Multistage Pump and Installation.
5. First Addendum to Independent Contractor Agreement with TST, Inc. of Denver for Public Water System Facilities Support Engineering Services (Completion of Reserve Analysis).

I recommend approval of the consent agenda items.

III. A. Consider acceptance of June 30, 2013 financial statements

I will present the June 30, 2013 financial statements which reflect activity through the 2nd quarter.

I recommend acceptance of the June 30, 3013 financial statements

Updates on Other District Related Items

Summary of Discussions from mid-month meeting with Directors Wyckoff and Fleck – Brad and I met with Directors Wyckoff and Fleck on July 25, 2013. Discussions centered on the status of the Rocking Horse Farms pump replacement project, options for the purchase and installation of a VFD at the Greatrock Facility and the research completed to date on the blending of concentrate water with irrigation water to serve Box Elder Creek Ranch. Water quality samples were taken and results and analysis were shared at the meeting. Brad will discuss this in more detail with the Board at the meeting in August.

We also discussed scheduling a meeting with operations staff, engineering staff, myself and interested Board Members to discuss how the overall system works including SCADA and to identify any improvements needed and then a follow-up meeting to discuss planning and budget. This will be discussed in more detail at the Board meeting.

Total Water Production from May 6, 2013 through June 5, 2013 = 7,072,698

Total Usage billed from May 6, 2013 through June 5, 2013 = 6,355,510

TTG TST
CONSULTING ENGINEERS

GREATROCK NORTH WATER AND SANITATION DISTRICT
ENGINEER'S REPORT
July 23, 2013

Flow Meter for Concentrate Line

Engineering has determined the costs associated with procuring a new flow meter and integrating it into the water treatment plant and telemetry system exceed the benefits of collecting this information. The current SCADA reports identify the following flows:

- Daily alluvial wells (Well 1 and Well 2)
- Upper Arapahoe wells to Box Elder tanks
- Reverse Osmosis bypass
- Flow to Box Elder tanks

As a result, a review of the daily SCADA reporting can identify the amount of concentrate produced.

VFD for Greatrock North Pump No. 2

On June 19, 2013, Timber Line Electric and Control Corporation (TLECC) provided a quote ($8,325.00) for the installation of a new VFD on Greatrock North Pump No. 2. In response to Engineering's request, TLECC has itemized the quote as follows:

- 40 HP VFD .....$ 4,800.00
- Field service (estimated 1 day) .....$ 1,250.00
- SCADA system support (estimated 1 day) .....$ 1,250.00
- In shop startup, project management, CAD updates, freight:.....$ 1,025.00

On July 1, 2013, Water Technology Group (WTG) provided a proposal ($5,341.65) for the installation of a new VFD on Greatrock North Pump No. 2 that was itemized as follows:

- Vertical Turbine VFD for on-site pump .....$ 4,000.00
- Labor for Technical Services Group.....$ 880.00
- Conduit, wire and miscellaneous equipment .....$ 461.55

In consideration of the SCADA system support ($1,250.00) that is necessary for the installation, I recommended TLECC be awarded the work for the VFD for Greatrock North Pump No. 2. TLECC's labor the project will be charged on a time and materials basis with a not to exceed price of $8,325.00. If WTG's performance on the pending Rocking Horse Farms pump station project is satisfactory, the District can consider WTG for any future pump station projects.

Concentrate Disposal and Evaporation Options

On July 10, Operations sounded the bottom of each concentrate evaporation pond. The south pond generally had three to six inches of sediments with water depths from six to eight feet. The north pond generally had four to six inches of sediments with water depths from five to six feet.

On July 10, Engineering composited samples of water from the south concentrate evaporation pond and blended the composited water with Box Elder Creek Ranch's irrigation pond. The blend ratios were 10:1 and 15:1 (irrigation pond water to evaporation pond water). Results of the water quality analysis are summarized below:

Test	10:1 Blend	15:1 Blend
TDS (mg/l)	1217	1014
Conductivity (umhos/cm)	1837	1616
Sodium Adsorption Ratio (units)	5.1	4.3
Chloride (mg/l)	255.64	227.15
Boron (mg/l)	0.38	0.34
pH (units)	8.47	8.32
Total Nitrogen (mg/l)	6.1	5.7
Bicarbonate (mg/L)	199.7	176.9
Sulfate (mg/l)	378.14	335.82
Total Alkalinity (mg/l at CaCO3)	163.7	145.0

I hope to meet with Eric Hammond, of CSU's Extension Program, in advance of the Board meeting to discuss these results.

In response to my inquiry to Ron Falco, WQCD's Drinking Water Program Manager, regarding the management of drinking water waste streams, Mr. Falco has informed me that although WQCD has an awareness of the approaches used by some public water systems, the State's database does not address residuals management and disposal. Mr. Falco did offer to meet the District and include WQCD's counterparts from the Division's Permits Section and the Solid Waste Program. In addition, Mr. Falco provided a copy of Chapter 9 of the State's drinking water design criteria for review.

RHF Low Pressure Issue

WTG has informed Engineering of the following:

- The motors and piping are in WTG's shop
- The pumps are expected to ship out July 26 following WTG's modifications to the suction and discharge configuration
- Installation is tentatively scheduled for the later part of the week of July 29

Reserve Analysis Completion

Based upon the information developed by Olsson Associates to date, Engineering estimates it can complete the Reserve Analysis for a cost of $600, which includes four hours of Brad Simons' time to normalize the annual amounts and make a recommendation to the Board for consideration at the September Board meeting.

CHAPTER 9
WASTE RESIDUALS

9.0 GENERAL

All residual waste discharges and waste disposal must be in accordance with all federal, state and/or local laws and ordinances. The requirements outlined herein must, therefore, be considered minimum requirements as federal, state, and/or local water pollution control authorities may have more stringent requirements.

For all projects, the BDR must include an evaluation and plan that includes a discussion of residuals management considerations, including as applicable:

a. Expected waste stream generation quantities and anticipated physical and chemical characteristics for both wastewater discharges and waste materials.

b. Calculations, filter run time assumptions, wash water assumptions, pilot study data, or other information to estimate capacity of designed waste material handling units (e.g., pipes, pumps, containers, basins, storage volumes). For example, capacity to maintain reliable water plant operation capable of containing the volume of wash water produced based on the schedule for filter cleaning.

c. Design for appropriate process waste concentrations based on proposed water treatment percent solids unless higher concentrations are documented with full-scale operational data or pilot study results.

d. Adequate capacity to store and process the waste materials under maximum and minimum flow conditions. BDR must include a summary of operating considerations for those designs where capacity is dependent on specific operating scenarios and must identify operating plan(s) or standard operating procedures (SOPs) that will be developed.

e. Redundant waste handling systems (e.g., two pumping units, containers, basins) or other methods providing operating flexibility to conduct waste system maintenance without impacting the ability to produce treated water (e.g., parallel units).

f. If waste handling includes storage in open units located outside the water treatment plant that are exempt from or are not classified as an impoundment under Section 9 (Waste Impoundment) of the Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities 6 CCR 1007-2 (e.g., backwash ponds with recycle exempted as water treatment process units) the design must provide:

   i. Documentation that the waste handling units will be accessible and protected from physical damage during the 100-year flood (e.g., floodplain as designated by FEMA or other local flood mapping management agency) so the drinking water treatment facility can continue to function

   ii. Methods to divert storm water runoff around the unit

   iii. Methods to dissipate flow velocity at unit inlet

   iv. Freeboard of at least 2 feet from the normal design water surface elevation to the crest of the embankment

   v. Documentation of appropriate depth for maximum and minimum design operating conditions to ensure ability to produce treated water

   vi. Volume of at least 10 times the total quantity of wash water discharged during a 24-hour period (unless lower volumes are documented with full-scale operational data or pilot study results)

   vii. Weir overflow device at outlet with weir length equal to or greater than unit depth

g. If recycling of decant water is anticipated, provide adjustable decant methods and adjustable decant return rates, and recycle to the raw water side of the treatment process. Maximum design recycle rate less than 10 percent of the instantaneous raw water flow rate entering the water treatment plant.

h. A discussion of the method(s) used to convey, remove, and handle waste sludge and anticipated method of final sludge disposal.

Design approval will not be provided if appropriate waste handling is not described including identification of anticipated discharge or impoundment permits, if needed. Provisions must be made for proper disposal or discharge of all anticipated water treatment plant wastes such as sanitary and laboratory wastes, clarification sludge, softening sludge, iron sludge, filter backwash water, backwash sludge, and brines (including softener, ion exchange regeneration wastes, and membrane wastes). Pilot studies may be warranted to determine waste handling and management strategies. Discharge of treated potable water from distribution overflow pipes/outlets does not require a discharge permit from the Department if the provisions in the Low Risk Discharge Guidance: Discharges of Potable Water are followed. In locating sewer lines and waste disposal facilities, consideration must be given to preventing potential contamination of the water supply. Appropriate backflow prevention measures must be provided on waste discharge piping as needed to protect the public water supply.

9.1 SANITARY WASTE

The sanitary waste from water treatment plants, pumping stations, and other waterworks installations must receive treatment. Waste from these facilities must be discharged directly to a sanitary sewer system, when available and feasible, or to an adequate on-site waste treatment facility approved by the appropriate Department. The appropriate federal, state, and local officials must be notified when designing treatment facilities to ensure that the local sanitary sewer system can accept the anticipated wastes.

9.2. TREATMENT WASTE DISCHARGES

Treatment process waste discharges vary in quantity and in chemical characteristics depending on the treatment process and the chemical characteristics of the water being treated. Requirements for proper discharge management similarly vary by the wastewater discharge, the amount of pretreatment (e.g., dewatering, holding/flow equalization), and the type of discharge (e.g., to sanitary sewer, to surface water, to groundwater, to an impoundment). Potential requirements to be considered in the waste disposal and discharge evaluation and plan are described in this section.

9.2.1 Discharges to Sanitary Sewer

Discharge of drinking water treatment process wastes to a sanitary sewer is an industrial discharge subject to acceptance, possibly through a pretreatment permit, by the respective domestic wastewater treatment facility. For designs expecting sanitary sewer discharge of industrial wastes, the BDR must include acceptance of the industrial wastewater by the domestic wastewater treatment facility and any pretreatment processes necessary for the discharge (e.g., flow equalization, chemical pretreatment, filtering) with a management plan for associated pretreatment wastes, if any. For a domestic wastewater treatment facility without an EPA-approved pretreatment program, the industrial discharge may need to receive a pretreatment permit from the Water Quality Control Division (WQCD) Permits Section in accordance with 5 CCR 1002-63, Regulation No. 63 Pretreatment Regulations. Information regarding surface discharge permits is available at http://www.colorado.gov/CDPHE/WQCD.

9.2.2 Discharges to Surface Water

The WQCD remains the sole regulatory authority over discharges to surface water. Discharge to surface water from: 1) a treatment facility, 2) an intermediate waste impoundment (as clarified below), or 3) from an unlined impoundment that is hydraulically connected with an adjacent creek/stream, requires a discharge permit from the Permits

Section of the WQCD. Information regarding surface discharge permits is available at http://www.colorado.gov/CDPHE/WQCD. Discharges from an intermediate impoundment vary depending on design intent at the particular facility. Discharges to surface water that are anticipated during normal operations (e.g., expected, regular, periodic, seasonal) require a discharge permit. For impoundments that have design provisions for an emergency overflow during an extreme event (e.g., a high level spillway, extremely rare precipitation events) but are designed to not have a planned discharge to surface water, a discharge permit is not required. An overflow from this type of impoundment, if any, would be expected to be handled as a spill or unauthorized discharge with State notification at the time of the discharge. Please note that these requirements are related to the discharge to surface water from the impoundments. Impoundment requirements are discussed further in Section 9.2.4 below.

9.2.3 Discharges to Groundwater

Industrial (i.e., non-domestic) waste discharge to groundwater through an on-site wastewater treatment system distribution field or an injection well, are subject to regulation by the U.S. Environmental Protection Agency under the Underground Injection Control (UIC) program. Additional information is available at the EPA Region 8 UIC website at: http://www.epa.gov/region8/water/uic/classv.html.

9.2.4 Discharges to Impoundments

Industrial waste impoundments, including water treatment backwash ponds, sludge drying beds and sludge drying pads, are subject to regulation by the Hazardous Materials Waste Management Division (HMWMD) of CDPHE under Section 9 (Waste Impoundment) of the Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities 6 CCR 1007-2. The Section 9 regulations require water treatment systems managing waste impoundments to be evaluated to determine the appropriate design and permitting requirements for the impoundment. If an impoundment is not exempted in the Section 9 regulations, residual discharge and handling must be evaluated in accordance with the Section 9 regulations. Additional information is available at: http://www.colorado.gov/cdphe, select Boards/Commissions, Solid and Hazardous Waste Commission, Solid and Hazardous Waste Regulations, Colorado Solid Waste Regulations 6 CCR 1007-2, and Part 1.

9.2.5 Beneficial Reuse

Beneficial reuse of water treatment sludges is subject to regulation by the HMWMD of CDPHE under "Regulations Pertaining to the Beneficial Use of Water Treatment Sludge and Fees Applicable to the Beneficial Use of Sludges," 5 CCR 1003-7. Beneficial reuse of industrial waste materials other than sludges is subject to regulation under Section 8 (Recycling and Beneficial Use) of the Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities 6 CCR 1007-2. Additional information is available at: http://www.colorado.gov/cdphe, select Boards/Commissions, Solid and Hazardous Waste Commission, Solid and Hazardous Waste Regulations, Colorado Solid Waste Regulations 6 CCR 1007-2, and Part 1.

9.2.6 Land Application

Land application of industrial wastes, including process wastewater, is subject to regulation by the HMWMD as beneficial reuse (see Section 9.2.5 above) when the application rate is less than the evapotranspiration rate. Land application regulated by HMWMD does not require a discharge permit through WQCD. Land application at a rate greater than the evapotranspiration rate requires a discharge permit from the Permits Section of the WQCD. Information regarding surface discharge permits is available at http://www.colorado.gov/CDPHE/WQCD.

9.2.7 Radioactive Materials

Drinking water treatment processes may remove and/or concentrate radioactive elements directly (e.g., lower element concentration) or indirectly (e.g., iron filtration which removes precipitated iron and a portion of radium from the drinking water prior to distribution). Residuals from these treatment processes likely contain radioactive constituents, including precipitated iron that may also include radium. In these situations, the equipment (e.g., filters, impoundments) may also contain Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) and the system or their contractors may need licensure by the CDPHE's Radiation Management Program of the HMWMD to ensure the treatment and waste handling is conducted in accordance with the pertinent regulations. Additional information regarding TENORM is available at: http://www.colorado.gov/cdphe/wqcd, enter TENORM in the Search box at the top of the page. If licensure is needed, Radiation Program information is available at: http://www.colorado.gov/cdphe, select Divisions/Programs, select Radiation Program under the HMWMD.

Ramey Environmental Compliance, Inc.
Management and Operation Solutions for
Water and Wastewater Treatment
303-833-5505

PO Box 99, Firestone, Colorado 80520
email: contact.us@RECinc.net
www.RECinc.net

Greatrock North W & S District
Monthly Activities
June 24th – July 19th

6/24/13: Regular checks and readings. Installed new valve on pump #4 at Rocking Horse Farms. Collected last lead & cooper sample and delivered to the lab.

6/26/13: Regular checks and readings. Picked up trash around the pump houses. Exercised the valves at Boxelder. Pone levels = north 1"; south 7".

6/28/13: Regular checks and readings. Flushed the hydrant on Kenuil Ct. Mixed the RO antiscalent.

7/1/13: Regular checks and readings.

7/3/13: Regular checks and readings. Changed the RO pre-filters.

7/5/13: Regular checks and readings.

7/8/13: Regular checks and readings. Filled the chlorine day tank. Ordered more chlorine. Collected and delivered monthly sample.

7/10/13: Regular checks and readings. Completed sludge survey in the ponds.

7/12/13: Regular checks and readings.

7/15/13: Regular checks and readings.

7/16/13: Responded to alarm.

7/17/13: Regular checks and readings. Rocky Mtn. Pump Generator onsite to check generator at Greatrock North. Pond levels = north >0"; south 6".

7/19/13: Regular checks and readings.

June 24th – July 24th

RO Run Time Hrs	237 hrs.
RO Concentrate Flow – 2 ponds	426,600 gallons

CONCENTRATE PONDS:

North Pond 7-5-13

South Pond 7-5-13

North Pond 7-12-13

South Pond 7-12-13

North Pond 7-19-13

South Pond 7-19-13