



JORDAN VALLEY WATER
CONSERVANCY DISTRICT

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Richard P. Bay, *General Manager/CEO*
Barton A. Forsyth, *Assistant General Manager, Water Supply/Water Quality*
Alan E. Packard, *Assistant General Manager, Chief Engineer*

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March 20, 2012

Hand-delivered

Brad T Johnson
State of Utah National Resource Damages Trustee
Utah Department of Environmental Quality
P.O. Box 144830
Salt Lake City, UT 84114-4830

SCANNED

Subject: Notice of Zone B Facilities Completion

DERR 2012-002807

Dear Mr. Johnson:

In 2004, Jordan Valley Water Conservancy District (JWWCD) agreed with the Trustee for Natural Resources for the State of Utah and with Kennecott Utah Copper Corporation to pursue a project to remediate contaminated groundwater in the Salt Lake Valley. The parties entered two agreements: the Project Agreement Between Kennecott Utah Copper Corporation and Jordan Valley Water Conservancy District, dated August 31, 2004 (the "Project Agreement"), and the Agreement Among the Trustee for Natural Resources for the State of Utah, Jordan Valley Water Conservancy District and Kennecott Utah Copper Corporation, dated August 31, 2004 (the "State Agreement"). Both agreements were amended by the parties in 2009 to extend construction completion dates for the project and to confirm JWWCD commitments to deliver Zone B and Lost Use water.

JWWCD hereby notifies you as the State of Utah National Resource Damages Trustee that the Zone B Facilities have reached "Completion" and that they are "Complete and Operational" as defined by the Agreements, as amended. JWWCD has received operating permits from the Utah Department of Environmental Quality, Division of Drinking Water, under its normal rules and regulations.

The Division of Drinking Water, as it has worked closely with JWWCD staff during the construction of the Zone B Facilities, has issued several operating permits for the various components of the Zone B Facilities during the progress of their completion. Attached to this letter are copies of operating permits issued to JWWCD by the Division of Drinking Water for the following Zone B components:

Zone B Facility	Operating Permits
Zone B Feed Water Pipelines	1 permit
Nine Project Wells	4 permits
Southwest Groundwater Treatment Plant (Jordan Valley Membrane Plant)	1 permit
Zone B Finished Water Pipeline	2 permits

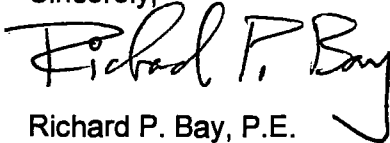
JORDAN VALLEY WATER CONSERVANCY DISTRICT

Brad Johnson, State of Utah National Resource Damages Trustee
March 20, 2012
Page 2

This Notice of Completion is provided to you, as Trustee, in accordance with Section IV of the State Agreement. You are hereby requested to verify that operating permits have been issued by the Division of Drinking Water and then, on or before April 4, 2012, to issue a notice to Kennecott and JWWCD acknowledging that the Zone B Facilities have reached "Completion" and that they are "Complete and Operational" as defined by the Project Agreement and the State Agreement, as amended. If you need additional information or assistance, please contact me directly.

We have appreciated the close coordination of your staff during the design, construction and completion of the Zone B Facilities. Reaching the Complete and Operational status of Zone B Facilities is an important benchmark which will benefit everyone in Salt Lake Valley. Thank you for your oversight and assistance with this project.

Sincerely,



Richard P. Bay, P.E.
General Manager/CEO

cc: w/encs: Douglas Bacon, Utah Department of Environmental Quality
Paula H. Doughty, Kennecott Utah Copper LLC
Kelly Payne, Kennecott Utah Copper LLC
Director, Environmental Affairs, Kennecott Utah Copper LLC
Director, Sustainable Development, Kennecott Utah Copper LLC
General Counsel, Kennecott Utah Copper LLC
Reid Lewis, JWWCD, General Counsel
Alan Packard, JWWCD, Chief Engineer
Mark Atencio, JWWCD, Engineering Department Manager



State of Utah

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Amanda Smith
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
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David Stevens, Ph.D.
James Webb
Kenneth H. Bousfield, P.E.
Executive Secretary

March 19, 2012

Richard Bay, General Manager
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: **Operating Permit**, Southwest Groundwater Treatment Plant (TP001 SWGWTP RO),
System #18027, File #07222

On February 23, 2012, the Division of Drinking Water (the Division) received a request for an operating permit for the Southwest Groundwater Treatment Plant (SWGWTP) project from Mark Atencio, P.E., the District's Engineering Department Manager. The Division issued conditional plan approval for the project in a letter dated December 22, 2010. The Division issued plan approval for the use of Graver Cartridge Filters, which was one of the conditions in the conditional plan approval, in a letter dated November 29, 2011.

The purpose of the SWGWTP project is to provide remediation of groundwater contamination from historical mining activities of Kennecott Utah Copper Corporation (Kennecott). The SWGWTP project uses reverse osmosis membrane technology (RO) to remove sulfate and other total dissolved solids (TDS) to below the primary and secondary maximum contaminant drinking water standards. The treated water is then utilized by the District as a source of drinking water. A series of eight deep wells have been drilled to provide source water for the SWGWTP project. In addition, there is one existing shallow well that provides replacement water for water lost in the RO process. It is anticipated that additional shallow wells will be drilled in the future. The existing shallow well and future shallow wells will be considered to be ground water under the direct influence of surface water, and therefore must meet the treatment requirements of the surface water treatment rules, as incorporated into Utah's Rules in R309.

The Division's understanding of the SWGWTP project is that this water treatment plan consists of four process trains:

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- Treatment trains **DWRO #1 and DWRO #2** use RO membrane technology to remove sulfate and other total dissolved solids from the series of deep wells followed by a common chlorination disinfection system.
- The third train **SWRO #1** uses RO membrane technology to remove total dissolved solids from the series of shallow wells, followed by UV disinfection, and a common chlorination disinfection system.
- The fourth train **SWBP** treats water from the existing shallow well and future shallow water wells using two stages of cartridge filters, followed by UV disinfection and a common chlorination disinfection system. The purpose of the SWBP train is to provide water with higher TDS content, for blending purposes with the RO filtrate water so that the combined water from the treatment plant will have TDS content of approximately 250 mg/l TDS, similar to the other sources of the District.

We have received the following information for the SWGWTP project:

1. Design engineer's statement of conformance with plan approval conditions from Thomas F. Seacord, P.E. of Carrollo engineers, dated February 17, 2012, was received on February 23, 2012.
2. Design engineer's statement of conformance with the Rule for any deviation from the plan approval from Thomas F. Seacord, P.E. of Carrollo engineers, dated February 17, 2012, was received on February 23, 2012.
3. The O&M manual, prepared by Carollo Engineers and dated February 2012, was received from Mark Atencio on February 7, 2012.
4. As-built drawings, prepared by Carollo Engineers, were received from Mark Atencio on February 7, 2012.
5. Disinfection Report, showing satisfactory bacteriological results, was received from Shazelle Terry on March 15, 2012.
6. Water quality data for each train was received from Mark Atencio on March 13, 2012.
7. "Calculation of the Bioassay Dose" for Jordan Valley WCD, prepared by Trojan Technologies, received via email on March 15, 2012.

We have determined that all conditions for operating permit issuance have been met. On this basis, an **Operating Permit for SWGWTP project is hereby issued as constituted by this letter.** You may now place Southwest Groundwater Treatment Plant (TP001 SWGWTP RO) in service in your water system.

The Southwest Groundwater Treatment Plant (TP001 SWGWTP RO) is required to meet the following operational requirements:

DWRO #1 and DWRO #2 Trains

The DWRO #1 and DWRO #2 trains are used for deionization treatment of ground water from the series of deep wells. The purpose is primarily sulfate and total dissolved solids removal, in order to meet the primary and secondary MCL standards. Compliance is evaluated through the routine sampling and monitoring of the combined finished drinking water. The District is required to monitor the performance of these two trains by monitoring the conductivity of the effluent of each train. If the conductivity of the combined permeate water from either train exceeds 200 $\mu\text{S}/\text{cm}$, the District is required to determine cause of the decrease in performance and perform corrective action.

SWRO #1 Train

The SWRO #1 train is used as alternative filtration technology for primary filtration under the surface water treatment rules to treat water from the series of shallow wells. In addition, supplemental water feed water for this train may come from the series of deep wells via an interconnection line with back flow protection. The Division grants **2-Log₁₀ credit for *Giardia lamblia* removal and 2-Log₁₀ credit for *Cryptosporidium* removal** for this train's RO membrane, dependent on continuous turbidity monitoring and conductivity monitoring as integrity tests. Per *R309-200-5(a)(ii)* and *R309-530-9*, the turbidity performance standard for the SWRO #1 train is that the turbidity shall be less than 0.3 NTU 95% of the time and shall not exceed 1 NTU. The conductivity of the combined permeate water from SWRO #1 train shall be less than 175 $\mu\text{S}/\text{cm}$. If either the turbidity standard or the conductivity standard is exceeded, the District is required to shut down the train, determine the cause of the decrease in performance, and perform corrective action.

In order to provide the additional Log₁₀ credits for *Giardia lamblia* and *Cryptosporidium* required for surface water treatment for the SWRO #1 train, there is a Trojan UVSwift 4L12 UV reactor following the RO unit of the SWRO #1 train. The Trojan UVSwift 4L12 UV reactor for the SWRO #1 train is required to be operated to provide a minimum validated dose of 15 mJ/cm^2 , which provides 3.5-Log₁₀ credit for *Giardia lamblia* inactivation and 3.5-Log₁₀ credit *Cryptosporidium* inactivation. Per *R309-520-8(3)*, the Division accepts the calculated UV dose approach proposed by Trojan Technologies. The RO unit and the UV reactor provide a total removal/inactivation for *Giardia lamblia* greater than the 3.0-Log₁₀ credit required, and provides a total removal/inactivation for *Cryptosporidium* greater than the 5.5-Log₁₀ credit required. This meets the required treatment for *Cryptosporidium* for surface water classified as in Bin 4 under *R309-215-15* of Utah's Rules. If the District decides to perform the source water sampling for *Cryptosporidium* under *R309-215-15*, a lower Bin classification may result, depending upon the sampling results, reducing the total removal and inactivation for *Cryptosporidium* required per *R309-215-15*.

SWBP Train

The SWBP train is used as alternative filtration technology for primary filtration under the surface water treatment rules to treat water from the series of shallow wells. In addition, supplemental water feed water for this train may come from the series of deep wells via an interconnection line with back flow protection. The SWBP train consists of a prefilter, and the Graver Technologies QCR Cyst Reduction Filter, which is rated at 1 micron, for final filtration. One prefilter vessel, MC Series Housing P/N 103MC4, with bolt down closures contains 103 40-inch cartridges, followed by one final filter vessel, MC Series Housing P/N 105MC3, with bolt down closures that contains 105 30-inch Graver Technologies QCR1-30P8E cartridges. The maximum flow through the vessels is 15 gpm per 30-inch QCR1-30P8E cartridge, or 1545 gpm total. The maximum differential pressure is 35 psid across the prefilter vessel, per the recommendation of the manufacturer. For the final filter, the maximum differential pressure is 35 psid across the QCR1-30P8E vessel housing the QCR Cyst Reduction Filter cartridge, per the recommendation of the manufacturer. There is a redundant set of the prefilter vessel with prefilters and the final filter vessel with final filters for use when one set of filters is off-line for filter change outs.

The Division grants **2-Log₁₀ credit for *Giardia lamblia* removal and 2-Log₁₀ credit for *Cryptosporidium* removal** for the Graver Technologies QCR Cyst Reduction Filter system, dependent on continuous turbidity monitoring, and differential pressure monitoring and particle count monitoring as integrity tests. Per *R309-200-5(a)(ii) and R309-530-9*, the turbidity performance standard for the SWBP train is that the turbidity shall be less than 1 NTU 95% of the time and shall not exceed 5 NTU. If either the turbidity standard is exceeded, or the differential pressure or particle count monitoring indicate a breach, the District is required to shut down the train, determine the cause of the decrease in performance, and perform corrective action.

In order to provide the additional Log₁₀ credits for *Giardia lamblia* and *Cryptosporidium* required for surface water treatment for the SWBP train, there are two Trojan UVSwift 4L12 UV reactors following the Graver Technologies QCR Cyst Reduction Filter system of the SWBP train. One of the reactors is an in-place spare. The Trojan UVSwift 4L12 UV reactor in service for the SWBP train is required to be operated to provide a minimum validated dose of 15 mJ/cm², which provides 3.5-Log₁₀ credit for *Giardia lamblia* inactivation and 3.5-Log₁₀ credit *Cryptosporidium* inactivation. Per *R309-520-8(3)*, the Division accepts the calculated UV dose approach proposed by Trojan Technologies. The Graver Technologies QCR Cyst Reduction Filter system and the UV reactor in service provide a total removal/inactivation for *Giardia lamblia* greater than the 3.0-Log₁₀ credit required, and provide a total removal/inactivation for *Cryptosporidium* greater than the 5.5-Log₁₀ credit required. This meets the required treatment for *Cryptosporidium* for surface water classified as in Bin 4 under *R309-215-15* of Utah's Rules. If the District decides to perform the source water sampling for *Cryptosporidium* under *R309-215-15*, a lower Bin classification may

result, depending upon the sampling results, reducing the total removal and inactivation for *Cryptosporidium* required per R309-215-15.

Chlorine Contact Basin

The combined RO permeate water from the DWRO #1, DWRO #2, and SWRO #1 trains goes through the decarbonation tower and into the chlorine contact basin. The filtered water from the SWBP train goes directly into the chlorine contact basin. The chlorine dosage and the contact time in the chlorine contact basin are required to be operated to provide a "CT" value (Residual Concentration multiplied by Contact Time) resulting in a 4.0-Log₁₀ inactivation for viruses. The "CT" values for inactivation of viruses by free chlorine is found in Appendix E, Table E-7, of EPA's "Guidance Manual for Compliance with the Filtration and Disinfection Requirements for Public Water Systems Using Surface Water Sources," March 1991 Edition.

Finished Water Pump Station

Per R309-215-9(1), the District is required to continuously monitor turbidity of the combined finished water from the plant at the discharge of the finished water pump station. The turbidity performance standard for the combined finished water is that the turbidity shall be less than 0.3 NTU 95% of the time and shall not exceed 1 NTU.

Per R309-215-10, the District is required to continuously monitor the residual chlorine concentration of the combined finished water from the plant at the discharge of the finished water pump station. The minimum residual chlorine concentration is 0.2 mg/L. The District is required to notify the Division as soon as possible, but no later than by the end of the next business day, if the residual chlorine concentration falls below 0.2 mg/l. The District also shall notify the Division by the end of the next business day whether or not the residual was restored to at least 0.2 mg/L within four hours.

Monthly Treatment Plant Report

Per R309-215-6, R309-215-8, R309-215-9, and R309-215-10, the District is required to submit a monthly treatment plant report to the Division. The District has developed a new treatment plant report template that includes reporting for surface water treatment, RO membranes, cartridge filters, UV disinfection, chlorine disinfection, residual chlorine concentration, dates of UVT analyzer checks, and dates of calibration of turbidimeters, conductivity meters, and UV sensors. The Division approves this new report template to be used by the District.

Sampling Monitoring Requirements

An updated monitoring schedule for the District is enclosed with this letter, which includes TP001 SWGWTP. The District is required to sample sodium, sulfate, and TDS quarterly. The nitrate, pesticides and radionuclides begin at a quarterly sampling frequency but may be reduce after one year if the results are satisfactory. The inorganics & metals, and volatile

Richard Bay
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organics are at a yearly sampling frequency. All chemical sampling should be labeled as TP001 SWGWTP. If you have any questions about your monitoring requirements please contact Rachael Cassady at (801)536-4467 or rcassadv@utah.gov.

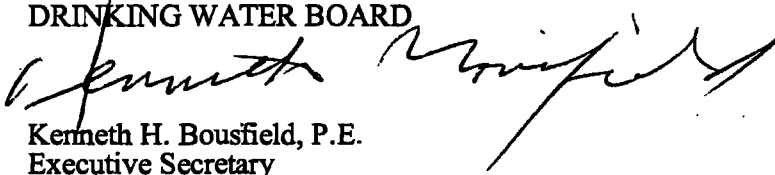
Discharges to Waters of the State

The District is required to comply with discharge requirements set by the Utah Division of Water Quality (DWQ) for any treatment process wastewater discharges to the waters of the State.

Please maintain a copy of this letter with your permanent records for future reference. If you have any question regarding this operating permit, please contact Bob Hart, of this office, at (801) 536-0054, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



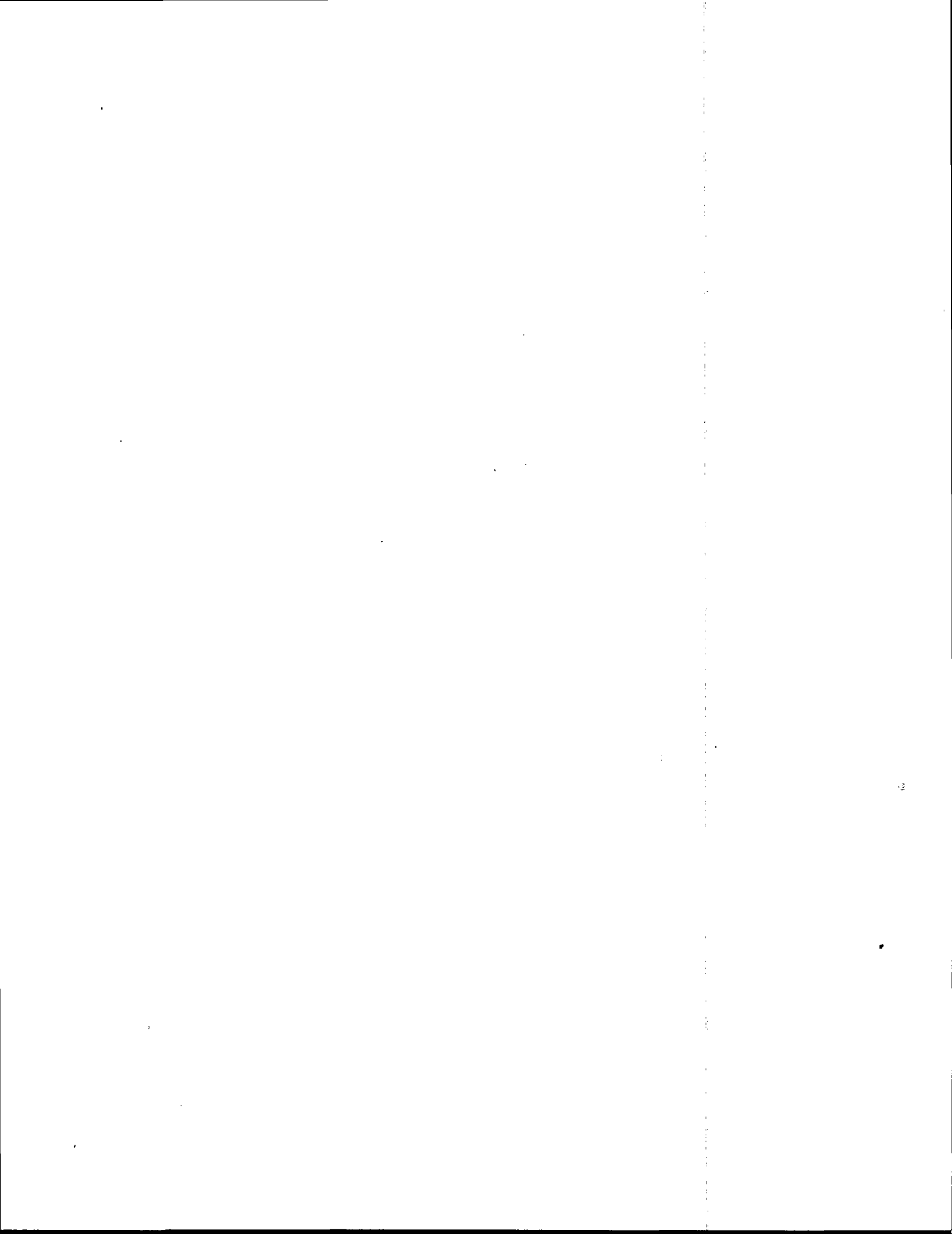
Kenneth H. Bousfield, P.E.
Executive Secretary

REH

Enclosure – Monitoring Schedule

cc: Royal Delegge, Env. Director, SLV Health Dept, 788 E Woodoak Lane, #104 Murray, Utah 84123, rdelegge@slco.org
Mark Atencio, P.E., JWCD, 8215 South 1300 West, West Jordan, UT 84088, MarkA@jvwcd.org
David McLean, P.E., JWCD, 8215 South 1300 West, West Jordan, UT 84088, DMcLean@jvwcd.org
Shazelle Terry, JWCD, 8215 South 1300 West, West Jordan, UT 84088, ShazelleT@jvwcd.org
Marie Owens, JWCD, 8215 South 1300 West, West Jordan, UT 84088, MarieO@jvwcd.org
Tom Seacord, Carollo Engineers, 12592 West Explorer Drive Suite 200, Boise, ID 83713, TSeacord@carollo.com
Bob Hart, Utah Division of Drinking Water
Patti Fauver, Utah Division of Drinking Water
Kim Shelley, Utah Division of Water Quality
Douglas Bacon, Utah Division of Emergency Response and Remediation

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State of Utah

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James Webb
Kenneth H. Bousfield, P.E.
Executive Secretary

March 14, 2012

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: Operating Permit for Five Wells Supplying the Southwest Groundwater RO Treatment Plant, DW 1 (WS054), DW 2 (WS055), DW 3 (WS056), DW 5 (WS058), and SW 1 (WS062), System #18027, Files #07454-6, 07458 and 07460

On February 29, 2012, the Division of Drinking Water (the Division) received your request for the operating permits for wells DW 1 (identified as WS054 in our inventory), DW 2 (WS055), DW 3 (WS056), DW 5 (WS058), and SW 1 (WS062), from Mark Atencio, P.E. your Engineering Department Manager. Plan approvals to drill the wells were issued on August 10, 2009 for DW 1 and DW 5, March 24, 2008 for DW 2 and DW 3, and April 9, 2008 for SW 1. Plan approval to equip these wells was issued on January 12, 2011.

Our understanding of the project is that these five wells provide feed water to the Southwest Groundwater Treatment Plant (TP001) and are equipped with submersible pumps, pitless adapters, well valve vaults and associated piping and appurtenances.

We have received the following information for DW 1 (WS054), DW 2 (WS055), DW 3 (WS056), DW 5 (WS058), and SW 1 (WS062) Wells:

1. Documentation of valid water rights.
2. Well Driller report.
3. Design engineer's statement of conformance with approval conditions.
4. Design engineer's statement of conformance with the Rule for any deviation from the plan approval or plan review exemption.
5. Evidence of O&M manual delivery.
6. As-built drawings.
7. Recorded land use agreements.
8. Satisfactory bacteriological results.

Richard Bay
Page 2
March 14, 2012

We have determined that all conditions of operating permit issuance have been met. On this basis, **an Operating Permits for DW 1 (WS054), DW 2 (WS055), DW 3 (WS056), DW 5 (WS058), and SW 1 (WS062) Wells are hereby issued as constituted by this letter.** You may now place these wells in service in your water system.

The listed well pump capacity of DW 1 (WS054) is 675 gallons per minute (gpm). The safe yield of DW 1 (WS054) is rated at 635 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 952 gpm. The safe yield of 635 gpm is the basis for determining the maximum number of connections that DW 1 (WS054) can serve.

The listed well pump capacity of DW 2 (WS055) is 210 gallons per minute (gpm). The safe yield of DW 2 (WS055) is rated at 200 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 300 gpm. The safe yield of 200 gpm is the basis for determining the maximum number of connections that DW 2 (WS055) can serve.

The listed well pump capacity of DW 3 (WS056) is 175 gallons per minute (gpm). The safe yield of DW 3 (WS056) is rated at 163 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 245 gpm. The safe yield of 163 gpm is the basis for determining the maximum number of connections that DW 3 (WS056) can serve.

The listed well pump capacity of DW 5 (WS058) is 730 gallons per minute (gpm). The safe yield of DW 5 (WS058) is rated at 800 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 1200 gpm. The safe yield of 800 gpm is the basis for determining the maximum number of connections that DW 5 (WS058) can serve.

The listed well pump capacity of SW 1 (WS062) is 500 gallons per minute (gpm). The safe yield of SW 1 (WS062) is rated at 546 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 820 gpm. The safe yield of 546 gpm is the basis for determining the maximum number of connections that SW 1 (WS062) can serve.

For DW 5 (WS058) and SW 1 (WS062), the equipped pump capacity is rated below the safe yield. The pump capacity is the physical limiting factor of well capacity for both these wells.

The Preliminary Evaluation Report developed for these sources must be refined and a complete Drinking Water Source Protection Plan submitted within one year of the date of this letter.

The inventory report showing the facilities currently listed in our database for your system and the monitoring schedule are enclosed. Please note that the sampling for these wells is listed under TP001 SWGWTP. The nitrate, pesticides and radionuclides begin at a quarterly sampling frequency but will reduce after a year if the results are satisfactory. All chemical sampling for these sources should be labeled as TP001. If you have any questions about your monitoring requirements please contact Rachael Cassady at (801)536-4467 or rcassady@utah.gov.

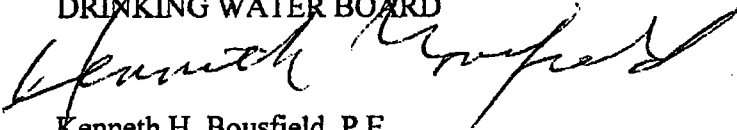
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Please maintain a copy of this letter with your permanent records for future reference.

If you have any questions regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039 or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



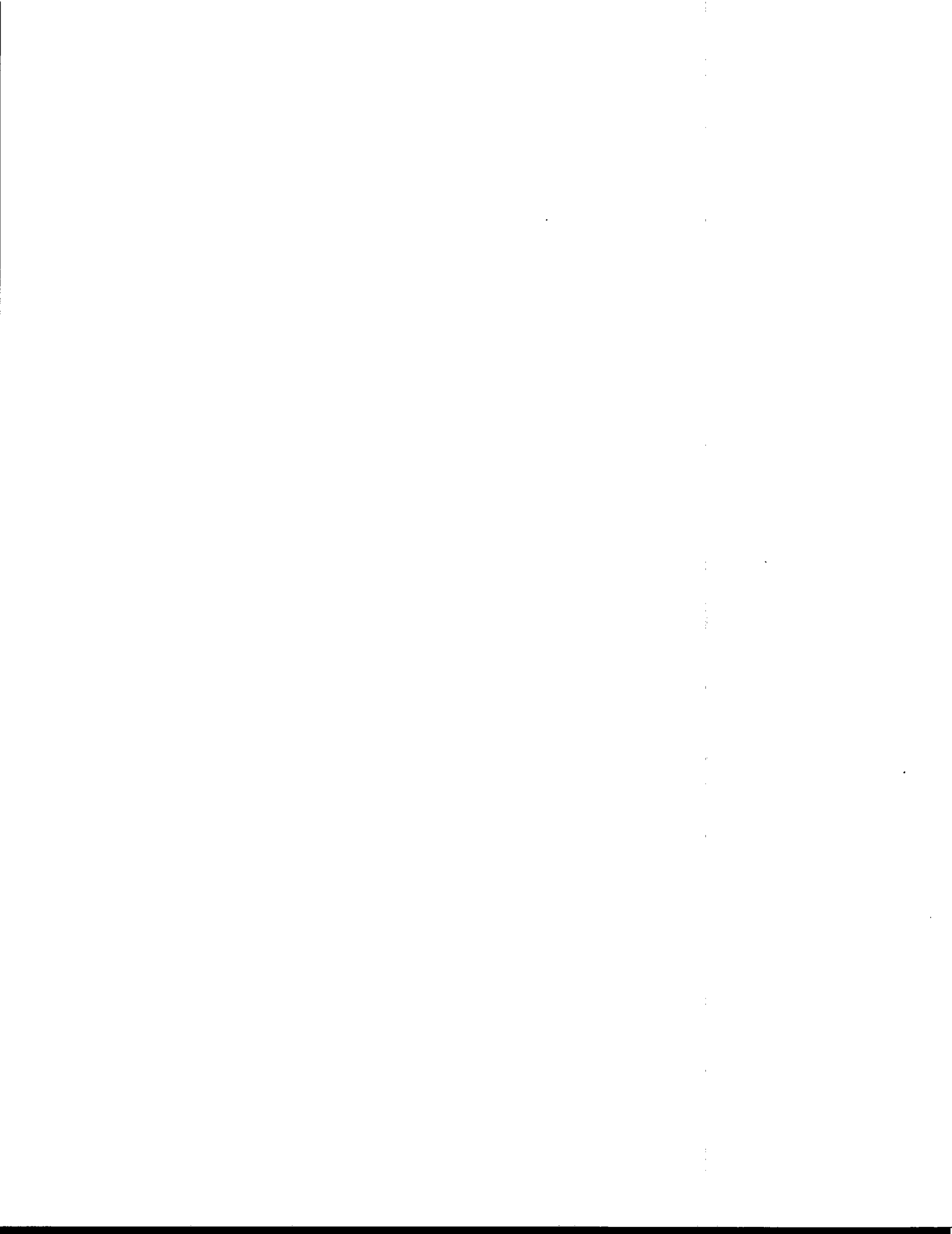
Kenneth H. Bousfield, P.E.
Executive Secretary

nl

Enclosures — Inventory Report & Monitoring Schedule

cc: Chris Mikell, Bowen, Collins & Associates, cmikell@bowencollins.com
Tena Campbell, P.E., Bowen, Collins & Associates, tcampbell@bowencollins.com
Mark Atencio, P.E., JWCD, MarkA@jvwcd.org
Todd Marti, P.E., JWCD, ToddM@jvwcd.org
Royal Delegee, Env. Director, Salt Lake Valley Health Dept., rdelegee@sico.org
Nathan Lunstad, P.E., Division of Drinking Water
Kate Johnson, Division of Drinking Water
Rachael Cassidy, Division of Drinking Water

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James Webb
Kenneth H. Bousfield, P.E.
Executive Secretary

March 15, 2012

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: Operating Permit for DW 4 Well (WS057) Supplying the Southwest Groundwater RO Treatment Plant, System #18027, File #07457

On March 9, 2012, the Division of Drinking Water (the Division) received your request for the operating permit for DW 4 Well (identified as WS057 in our inventory) from Mark Atencio, P.E., your Engineering Department Manager. Plan approval to drill the well was issued on August 10, 2009, and plan approval to equip the well was issued on January 12, 2011.

Our understanding of the project is that the DW4 Well provides feed water to the Southwest Groundwater Treatment Plant (TP001) and is equipped with a submersible pump, pitless adapter, well valve vault and associated piping and appurtenances.

We have received the following information for DW 4 Well (WS057):

1. Documentation of valid water right.
2. Well Driller report.
3. Design engineer's statement of conformance with approval conditions.
4. Design engineer's statement of conformance with the rule for any deviation from the plan approval or plan review exemption.
5. Evidence of O&M manual delivery.
6. As-built drawings.
7. Recorded land use agreements.
8. Satisfactory bacteriological results.

We have determined that all conditions of operating permit issuance have been met. On this basis, an **Operating Permit for DW 4 Well (WS057) is hereby issued as constituted by this letter.** You may now place this well in service in your water system.

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144830 • Salt Lake City, UT 84114-4830
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The listed well pump capacity of DW 4 Well (WS057) is 454 gallons per minute (gpm). The safe yield of DW 4 Well is rated at 533 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 800 gpm. The safe yield of 533 gpm is the basis for determining the maximum number of connections that DW 4 Well can serve. The equipped pump capacity is rated below the safe yield. The pump capacity is the physical limiting factor of well capacity for this well.

The Preliminary Evaluation Report developed for these sources must be refined and a complete Drinking Water Source Protection (DWSP) Plan submitted within one year of the date of this letter. If the DWSP plan is not received according to that schedule, Improvement Priority System points will be applied.

The inventory report showing the facilities currently listed in our database for your system and the monitoring schedule are enclosed. Please note that the sampling for DW 4 Well (WS057) is listed under TP001 SWGWTP. The nitrate, pesticides and radionuclides begin at a quarterly sampling frequency but will reduce after a year if the results are satisfactory. All chemical sampling for these sources should be labeled as TP001. If you have any questions about your monitoring requirements please contact Rachael Cassady at (801)536-4467 or rcassady@utah.gov.

Please maintain a copy of this letter with your permanent records for future reference. If you have any questions regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039 or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



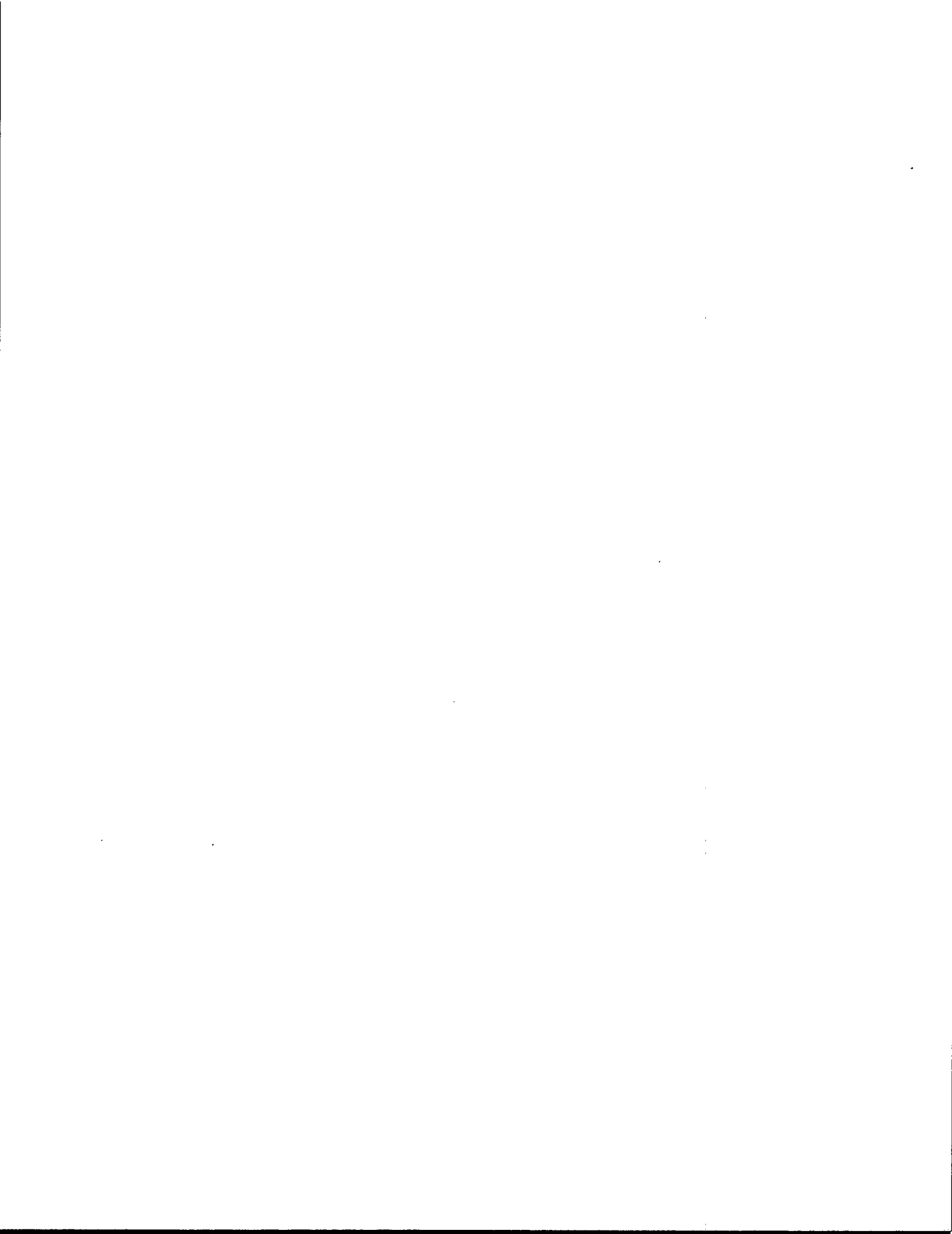
Kenneth H. Bousfield, P.E.
Executive Secretary

nl

Enclosures — Inventory Report & Monitoring Schedule

cc: Chris Mikell, Bowen, Collins & Associates, cmikell@bowencollins.com
Tena Campbell, P.E., Bowen, Collins & Associates, tcampbell@bowencollins.com
Mark Atencio, P.E., JWCD, MarkA@jvwcd.org
Todd Marti, P.E., JWCD, ToddM@jvwcd.org
Royal Delegee, Env. Director, Salt Lake Valley Health Dept., rdelegee@slco.org
Nathan Lunstad, P.E., Division of Drinking Water
Kate Johnson, Division of Drinking Water
Rachael Cassady, Division of Drinking Water

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State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of
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Amanda Smith
Executive Director

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Amanda Smith
David Stevens, Ph.D.
James Webb
Kenneth H. Bousfield, P.E.
Executive Secretary

March 5, 2012

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: **Operating Permit** for Two Wells Supplying the Southwest Groundwater RO Treatment Plant, DW 6 (WS059) and DW 7 (WS060), System #18027, File #07462 and File #07463

On February 2, 2012, the Division of Drinking Water (the Division) received your request for the operating permits for wells DW 6 (identified as WS059 in our inventory) and DW 7 (WS060) from Mark Atencio, P.E. your Engineering Department Manager. Plan approval was issued on March 24, 2008 to drill the wells and approval to equip the wells was issued on January 12, 2011.

Our understanding of the project is that the wells provide feed water to the Southwest Groundwater Treatment Plant (TP001) and are equipped with vertical turbine pumps, new well houses and associated piping and appurtenances.

We have received the following information for DW 6 (WS059) and DW 7 (WS060):

1. Documentation of valid water right(s).
2. Design engineer's statement of conformance with approval conditions.
3. Design engineer's statement of conformance with the Rule for any deviation from the plan approval or plan review exemption.
4. Evidence of O&M manual delivery.
5. As-built drawings.
6. Recorded land use agreements.
7. Satisfactory bacteriological results.

We have determined that all conditions of operating permit issuance have been met. On this basis, an **Operating Permits for DW 6 (WS059) and DW 7 (WS060) are hereby issued as constituted by this letter.** You may now place DW 6 (WS059) and DW 7 (WS060) in service in your water system.

Richard Bay
Page 2
March 5, 2012

The listed well pump capacity of DW 6 (WS059) is 850 gallons per minute (gpm). The safe yield of DW 6 (WS059) is rated at 933 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 1400 gpm. The safe yield of 933 gpm is the basis for determining the maximum number of connections that DW 6 (WS059) can serve.

The listed well pump capacity of DW 7 (WS060) is 1500 gallons per minute (gpm). The safe yield of DW 7 (WS060) is rated at 1666 gpm, which is calculated based on two-thirds of the constant-rate well pump test results at 2500 gpm. The safe yield of 1666 gpm is the basis for determining the maximum number of connections that DW 7 (WS060) can serve.

In both these cases the equipped pump capacity is rated below the safe yield. The pump capacity is the physical limiting factor of well capacity for both DW6 and DW7 Wells.

The Preliminary Evaluation Report developed for these sources must be refined and a complete Drinking Water Source Protection Plan submitted within one year of the date of this letter.

The inventory report showing the facilities currently listed in our database for your system and the monitoring schedule are enclosed. Please note that the sampling for these two wells is listed under TP001 SWGWTP. The nitrate, pesticides and radionuclides begin at a quarterly sampling frequency but will reduce after a year if the results are satisfactory. All chemical sampling for the WS059 and WS060 should be labeled as TP001. If you have any questions about your monitoring requirements please contact Rachael Cassady, of this office, at (801) 536-4467 or rcassady@utah.gov.

Please maintain a copy of this letter with your permanent records for future reference. If you have any questions regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039 or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



Kenneth H. Bousfield, P.E.
Executive Secretary

nl

Enclosures — Inventory Report & Monitoring Schedule

cc: Chris Mikell, Bowen, Collins & Associates, cmikell@bowencollins.com
Tena Campbell, P.E., Bowen, Collins & Associates, tcampbell@bowencollins.com
Mark Atencio, P.E., JWWCD, MarkA@jvwcd.org
Todd Marti, P.E., JWWCD, ToddM@jvwcd.org
Royal Delegee, Env. Director, Salt Lake Valley Health Dept., rdelegee@slco.org
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Rachael Cassady, Division of Drinking Water



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Kenneth H. Bousfield, P.E.
Executive Secretary

February 24, 2012

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: Operating Permit, 8400 S 1000 W - DW8 Well (WS061), System #18027, File #07459

On February 2, 2012, the Division of Drinking Water (the Division) received your request for the operating permit for well DW8 (WS061) from Mark Atencio, P.E., your Engineering Department Manager. Plan approval was issued on August 10, 2009, to drill the well, and approval to equip the well was issued on January 12, 2011.

Our understanding of the project is that the well will provide feed water to the Southwest Groundwater Treatment Plant (identified as TP001 in our inventory database) and is equipped with a vertical turbine pump, new well house and associated piping and appurtenances.

We have received the following information for 8400 S 100 W - DW8 Well (WS061):

1. Documentation of valid water right(s).
2. Design engineer's statement of conformance with approval conditions.
3. Design engineer's statement of conformance with the Rule for any deviation from the plan approval or plan review exemption.
4. Evidence of O&M manual delivery.
5. As-built drawings.
6. Documentation that the requirements for coverage under the West Jordan City source protection ordinance have been met.
7. Satisfactory bacteriological results.

We have determined that all conditions of operating permit issuance have been met. On this basis, an **Operating Permit for 8400 S 100 W - DW8 Well (WS061)** is hereby issued as constituted by this letter. You may now place this well in service in your water system.

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144830 • Salt Lake City, UT 84114-4830
Telephone (801) 536-4200 • Fax (801) 536-4211 • T.D.D. (801) 536-4414

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Richard Bay
Page 2
February 24, 2012

The listed well pump capacity of DW8 (WS061) is 1035 gallons per minute (gpm). **The safe yield of DW8 (WS061) is rated at 866 gpm**, which is calculated based on two-thirds of the constant-rate well pump test results at 1300 gpm. The safe yield of 866 gpm is the basis for determining the maximum number of connections that DW8 (WS061) can serve.

The Preliminary Evaluation Report developed for these sources must be refined and a complete Drinking Water Source Protection Plan submitted within one year of the date of this letter.

The inventory report showing the facilities currently listed in our database for your system and the monitoring schedule are enclosed. Please note that **in order to use this well without treatment it must have a separate monitoring schedule from the treatment plant**. It is setup in the attached monitoring schedule under WS061, and the items to be aware of are **the quarterly pesticides and radionuclides**. If you have any questions about your monitoring requirements please contact Rachael Cassady, of this office, at (801) 536-4467 or rcassady@utah.gov.

Please maintain a copy of this letter with your permanent records for future reference.

If you have any questions regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039 or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



Kenneth H. Bousfield, P.E.
Executive Secretary

nl

Enclosures — Water System Inventory Report & Monitoring Schedule

cc: Chris Mikell, Bowen, Collins & Associates, cmikell@bowencollins.com
Tena Campbell, P.E., Bowen, Collins & Associates, tcampbell@bowencollins.com
Mark Atencio, P.E., JWCD, MarkA@jvwcd.org
Todd Marti, P.E., JWCD, ToddM@jvwcd.org
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Rachael Cassady, Division of Drinking Water

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Kenneth H. Bousfield, P.E.
Executive Secretary

December 8, 2011

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

**Subject: Operating Permit, Southwest Jordan Valley Groundwater Project - Feedwater
Collection Pipelines, System #18027, File #07154**

On December 4, 2011, the Division of Drinking Water (the Division) received a request for an operating permit for the Southwest Jordan Valley Groundwater Project - Feedwater Collection Pipelines from Mark Atencio, P.E. your Engineering Department Manager. Plan approval was issued on May 21, 2007 for this project.

We understand that this project consists of the construction of approximately 35,000 linear feet of PVC pipe ranging in diameter from 8 to 24 inches and approximately 4,000 feet of 16-inch diameter ductile iron pipe, along with associated valves and appurtenances. These pipelines will deliver the water from seven wells to the new Southwest Groundwater Reverse Osmosis Water Treatment Plant (identified as TP001 in our database).

We have received the following information for the above referenced project:

1. Design engineer's statement of conformance with plan approval conditions.
2. Design engineer's statement of conformance with the Rule for any deviation from the plan approval or plan review exemption.
3. Evidence of O&M manual delivery – in process.
4. As-built drawings.
5. Satisfactory bacteriological results.

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Mr. Richard Bay
Page 2
December 8, 2011

We have determined that all conditions for operating permit issuance have been met. On this basis, an **Operating Permit for the Southwest Jordan Valley Groundwater Project - Feedwater Collection Pipelines** are hereby issued as constituted by this letter. You may now place these facilities in service in your water system.

Please maintain a copy of this letter with your permanent records for future reference. If you have any question regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



Kenneth H. Bousfield, P.E.
Executive Secretary

nl

cc: Jason Luettinger, P.E., Bowen, Collins & Associates, jluettinger@bowencollins.com
Mark Atencio, P.E., JWCD, MarkA@jvwcd.org
Royal Delegee, Env. Director, Salt Lake Valley Health Dept., rdelegee@slco.org
Nathan Lunstad, P.E., Division of Drinking Water

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Executive Secretary

February 23, 2012

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: **Operating Permit**, SWGWTP 7800 South Finished Water Pipeline – Phase I and II,
System #18027, File #06150

On February 21, 2012, the Division of Drinking Water (the Division) received your request for the operating permit for the SWGWTP 7800 South Finished Water Pipeline – Phase I and II project from Mark Atencio, P.E. your Engineering Department Manager. The portion of the pipeline is from 7800 South and Bangerter Highway to 1300 West and 8300 South. Plan approval was issued on March 25, 2003.

Our understanding of the project is that Phase I included approximately 5,040 feet of Class 150 Ductile Iron Pipe and one main line valve vault near the South Jordan Canal at 2250 West 7800 South. Phase II included approximately 3,025 feet of Class 150 Ductile Iron Pipe and one main line valve vault near the intersection of 1300 West and 7800 South. Phase I was constructed with UDOT's roadway reconstruction project between May 2003 and March 2005. Phase II was constructed with West Jordan City's utility construction project between March 2003 and January 2004.

We have received the following information for the SWGWTP 7800 South Finished Water Pipeline – Phase I and II project:

1. Design engineer's statement of conformance with plan approval conditions.
2. Design engineer's statement of conformance with the Rule for any deviation from the plan approval or plan review exemption.
3. Evidence of O&M manual delivery.
4. As-built drawings.
5. Satisfactory bacteriological results.

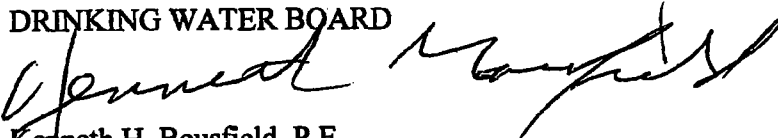
Richard Bay
Page 2
February 23, 2012

We have determined that all conditions for operating permit issuance have been met. On this basis, an **Operating Permit for the SWGWTP 7800 South Finished Water Pipeline – Phase I and II project is hereby issued as constituted by this letter.** You may now place this facility in service in your water system.

Please maintain a copy of this letter with your permanent records for future reference. If you have any question regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



Kenneth H. Bousfield, P.E.
Executive Secretary

nl

cc: Mark Atencio, P.E., JWCD, MarkA@jvwcd.org
Todd Marti, P.E., JWCD, ToddM@jvwcd.org
Royal Delegee, Env. Director, Salt Lake Valley Health Dept., rdelegee@slco.org
Nathan Lunstad, P.E., Division of Drinking Water

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David Stevens, Ph.D.
James Webb
Kenneth H. Bousfield, P.E.
Executive Secretary

February 23, 2012

Richard Bay
Jordan Valley Water Conservancy District
8215 South 1300 West
West Jordan, UT 84088

Dear Mr. Bay:

Subject: After-the-Fact Plan Approval & Operating Permit, SWGWTP 7800 South Finished Water Pipeline – Phase III and 1300 West Section, System #18027, File #08907

On February 21, 2012, the Division of Drinking Water (the Division) received your request for an after-the-fact plan approval and operating permit for the SWGWTP 7800 South Finished Water Pipeline – Phase III and 1300 West Section project from Mark Atencio, P.E. your Engineering Department Manager. The portion of the pipeline is from 7800 South and from 2700 West to Bangerter Highway and the 1300 West Section.

Our understanding of the project is that it was a continuation of Phases I and II. Phase I was constructed with UDOT's roadway reconstruction project between May 2003 and March 2005. Phase II was constructed with West Jordan City's utility construction project between March 2003 and January 2004. Phase I and II received plan approval on March 25, 2003.

We have completed our review of the as-built plans and specifications and find they basically comply with the applicable portions of Utah's Administrative Rules for Public Drinking Water Systems in R309. On this basis, **the plans for the SWGWTP 7800 South Finished Water Pipeline – Phase III and 1300 West Section project are hereby given an after-the-fact approval.**

We have received the following information for the SWGWTP 7800 South Finished Water Pipeline – Phase III and 1300 West Section project:

1. Design engineer's statement of conformance with plan approval conditions.
2. Design engineer's statement of conformance with the Rule for any deviation from the plan approval or plan review exemption.

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Richard Bay
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February 23, 2012

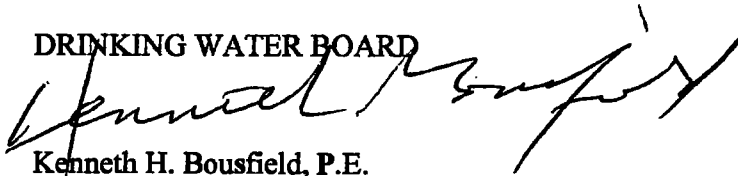
3. Evidence of O&M manual delivery.
4. As-built drawings.
5. Satisfactory bacteriological results.

We have determined that all conditions for operating permit issuance have been met. On this basis, an **Operating Permit for the SWGWTP 7800 South Finished Water Pipeline – Phase III and 1300 West Section project is hereby issued as constituted by this letter.** You may now place this facility in service in your water system.

Please maintain a copy of this letter with your permanent records for future reference. If you have any question regarding this operating permit, please contact Nathan Lunstad, P.E., of this office, at (801) 536-0039, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

DRINKING WATER BOARD



Kenneth H. Bousfield, P.E.
Executive Secretary

nl

cc: Mark Atencio, P.E., JWCD, MarkA@jvwcd.org
Todd Marti, P.E., JWCD, ToddM@jvwcd.org
Royal Delegee, Env. Director, Salt Lake Valley Health Dept., rdelegee@slco.org
Nathan Lunstad, P.E., Division of Drinking Water

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