

GROUND WATER DISCHARGE PERMIT RENEWAL AND MODIFICATION

San Juan Generating Station, DP-1327

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit Renewal and Modification (Discharge Permit), DP-1327, to Public Service Company of New Mexico (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the San Juan Generating Station (facility) into ground and surface water, so as to protect ground and surface water for present and potential future use as domestic and agricultural water supply and other uses and protect public health. In issuing this Discharge Permit, NMED has determined that the requirements of Subsection C of 20.6.2.3109 NMAC have been met.

The activities which produce the discharge, the location of the discharge, and the quantity, quality and flow characteristics of the discharge are briefly described as follows:

Up to 2,600,000 gallons per day of process waters, storm water, recovery trench return water and miscellaneous process upset-related surface flows from an 1,800-megawatt coal-fired electrical generating plant are discharged to 17 cells or ponds/basins, including North Evaporation Cells 2-3, South Evaporation Cells 1-5, Process Pond 1 (A & B), Process Pond 2 (A & B), Process Pond 3 (A, B & C), Coal Pile 1&2 Runoff Basin, Runoff Basin Pre-pond, and Coal Pile 3&4 Runoff Basin. The evaporation cells are for final disposal through evaporation. The process ponds operate as holding ponds for water prior to reuse within the facility. The Coal Pile Runoff Basins and Pre-pond operate to catch storm water runoff and plant process upsets so the water can be transferred to the plant process ponds for use. All process ponds are plumbed to enable transfer of water from one pond to any other for management of water at the facility. Discharges include: brine concentrator wastes, pond cleanings, boiler cleanings, sump cleanings, recovery trench return water, clarifier blow down, drain upsets and blow down from the sulfur dioxide removal system (SDRS), limestone preparation area drains, power block drains including area wash down and pump seal water blow down and upset flows, neutralized demineralizer wastes, storm water, boiler blow down, cooling tower blow down, treated domestic effluent, ash system upsets and overflows, and intermittent flows from coal pile runoff basins. Up to 150 gallons per day of domestic wastewater from the facility's guard shack is discharged to a septic-tank/leachfield system. The permittee is authorized to maintain up to 150,000 cubic yards of plant generated residual waste onsite for disposal provided that applicable closure and financial assurance requirements in this permit are met. The modification consists of adding the discharge of the recovery trench return water to the South Evaporation Cells, the incorporation of discharges associated with DP-157 and DP-176 (discussed below), and the authorization to maintain up to 150,000 cubic yards of plant generated residual waste onsite for disposal. The facility is located approximately 15 miles west of Farmington, in Sections 17 and 20, Township 30N, Range 15W, San Juan County. Ground water most likely to be impacted by the discharge occurs in saturated

alluvium along the Westwater Arroyo at depths between 10 and 40 feet, and has a total dissolved solids concentration ranging from 4,000 milligrams per liter to 13,000 milligrams per liter.

The original Discharge Permit was issued on July 31, 2002. This Discharge Permit Renewal and Modification incorporates Discharge Permit DP-157 (discharges to Coal Pile 1&2 Runoff Basin) issued on May 7, 1981 and subsequently renewed or modified on April 18, 1986, October 25, 1991, June 11, 1997, and June 5, 2003; and Discharge Permit DP-176 (discharges to Coal Pile 3&4 Runoff Basin) issued on June 23, 1983 and subsequently renewed or modified on December 8, 1987, June 28, 1988, June 28, 1993, September 23, 1997, and June 5, 2003. The permittee's application consists of the materials submitted by the permittee dated February 1, 2007 and additional information received on May 30, 2007 (submitted on PNM's behalf by Metric Corporation), October 22, 2007, and December 8, 2011. The discharge shall be managed in accordance with all conditions and requirements of this Discharge Permit.

Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of ground water quality, and that more stringent requirements to protect and/or remediate ground water quality may be required by NMED. These requirements may include: lining/relining lagoons; changing waste management practices; expanding monitoring requirements; installing an advanced treatment system(s); and/or implementing abatement of water pollution.

Issuance of this Discharge Permit does not relieve the permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state and/or local laws and regulations, such as zoning requirements and nuisance ordinances.

The following abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation	Abbreviation	Explanation
BOD ₅	biochemical oxygen demand (5-day)	NTU	nephelometric turbidity units
CFR	Code of Federal Regulations	Org	organisms
Cl	chloride	TDS	total dissolved solids
LADS	land application data sheet(s)	TKN	total Kjeldahl nitrogen
mg/L	milligrams per liter	total nitrogen	TKN+NO ₃ -N
mL	milliliters	TRC	Total Residual Chlorine
NMAC	New Mexico Administrative Code	TSS	total suspended solids
NMED	New Mexico Environment Department	WQA	New Mexico Water Quality Act
NMSA	New Mexico Statutes Annotated	WQCC	Water Quality Control Commission
NO ₃ -N	nitrate-nitrogen		

II. FINDINGS

In issuing this Discharge Permit, NMED finds:

1. The permittee is discharging effluent or leachate from the facility so that such effluent or leachate may move directly or indirectly into ground water within the meaning of Section 20.6.2.3104 NMAC.
2. The permittee is discharging effluent or leachate from the facility so that such effluent or leachate may move into ground water of the State of New Mexico which has an existing concentration of 10,000 milligrams per liter or less of total dissolved solids within the meaning of Subsection A of 20.6.2.3101 NMAC.
3. The discharge from the facility is not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

III. CONDITIONS

The following conditions shall be complied with by the permittee and are enforceable by NMED. The permittee is authorized to discharge water contaminants subject to the following conditions:

OPERATIONAL PLAN

#	Terms and Conditions
1.	The permittee shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 1 and 2 NMAC. [20.6.2.3106.C NMAC, 20.6.2.3107 NMAC]
2.	The permittee shall operate in a manner such that standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC]
3.	<p>The permittee is authorized to discharge up to 2,600,000 gallons per day of process waters, storm water, recovery trench return water, and miscellaneous process upset-related surface flows from a 1,800-megawatt coal-fired electrical generating plant to seven evaporation cells, seven process ponds, and two coal pile runoff basins as follows:</p> <ol style="list-style-type: none">a) North Evaporation Cells 2-3 and South Evaporation Cells 1-5: Waste streams include brine concentrator wastes, clarifier blow down, thickener blow down, process pond water, plant upset water, pond cleanings, boiler cleanings, sump cleanings, recovery trench return water, and SDRS blow down. All evaporative cells are constructed with 100-mil high density polyethylene (HDPE) liners. The north cells utilize ground water monitoring wells for leak detection while the south cells are equipped with French drain leak detection systems.b) Process Pond 1 (A & B), Process Pond 2 (A & B), and Process Pond 3 (A, B & C): Waste streams include cooling tower blow down, wash down water, floor drain water, overflows and upsets from the entire plant, coal pile runoff basin water,

	<p>storm water flows, neutralizer regeneration waste, and treated domestic effluent. Process ponds are plumbed such that water from any process pond can be transferred to any other process pond. Pond 1 (A & B) is constructed with a soil-cement liner, Pond 2 (A & B) and Pond 3 (A, B, & C) are constructed with 100-mil HDPE liners. Pond 1 (A & B), Pond 2 (A & B), and Pond 3 (A, B, & C) utilize monitoring wells for leak detection.</p> <p>c) Coal Pile Runoff Basins and Pre-pond (Coal Piles 1&2 and Coal Piles 3&4): Waste streams include secondary crusher wash down water, reclaim sump water, ash system wash down water and upsets, and miscellaneous process upset-related surface flows. The basins are constructed with a 15-inch minimum compacted clay liner. The Runoff Basin Pre-pond is synthetically lined with HDPE. The coal pile runoff basins utilize monitoring wells for leak detection.</p> <p>The permittee is authorized to discharge up to 150 gallons per day of domestic wastewater from the facility's guard shack to a septic-tank/leachfield system.</p> <p>The permittee is authorized to maintain up to 150,000 cubic yards of plant generated residual waste onsite for disposal provided that applicable closure and financial assurance requirements in this permit are met. [20.6.2.3104 NMAC, 20.6.2.3106 NMAC]</p>
4.	<p>The evaporation cell, process pond, and runoff basin liners shall be maintained in such a manner as to avoid conditions which could affect the structural integrity of the cells/ponds/basins and/or their liners. Such conditions include, but are not limited to:</p> <ul style="list-style-type: none"> • Erosion damage; • Animal activity/damage; • The presence of vegetation, such as; aquatic plants, weeds, woody shrubs or trees growing within five feet of the cell/pond/basin edge or within the cell/pond/basin itself; • Evidence of seepage; • Evidence of berm subsidence; and/or • The presence of large pieces or large quantities of debris in the cell/pond/basin. <p>The permittee shall visually inspect the cells/ponds/basins and surrounding berms on a monthly basis to ensure proper maintenance. Vegetation growing around the cells/ponds/basins shall be routinely controlled by mechanical removal in a manner that is protective of the cell/pond/basin liner. Any evidence of damage to the cell/pond/basin berm or liner shall be reported to NMED immediately upon discovery. [20.6.2.3107 NMAC]</p>
5.	<p>The permittee shall maintain a minimum of two feet of freeboard between the liquid level in the cells/ponds/basins and the top elevation of the liners at all times. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]</p>
6.	<p>The permittee shall operate the recovery trench system continuously, except as maintenance and repairs necessitate. [20.6.2.3107 NMAC]</p>

MONITORING, REPORTING, AND OTHER REQUIREMENTS

#	Terms and Conditions
7.	The permittee shall conduct the following monitoring, reporting, and other requirements listed below. [20.6.2.3107 NMAC]
8.	<p>METHODOLOGY – Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents:</p> <ol style="list-style-type: none"> a) American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th or current) b) U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and Waste c) U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey d) American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water e) U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition f) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations g) Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy <p>[Subsection B of 20.6.2.3107 NMAC]</p>
9.	<p>The permittee shall submit quarterly monitoring reports to NMED for the most recently completed quarterly period by the 1st of February, May, August and November each year.</p> <p>Quarterly monitoring shall be performed during the following periods:</p> <ul style="list-style-type: none"> • January 1st through March 31st (first quarter) – due by May 1st • April 1st through June 30th (second quarter) – due by August 1st • July 1st through September 30th (third quarter) – due by November 1st • October 1st through December 31st (fourth quarter) – due by February 1st <p>Monitoring requirements detailed in this Discharge Permit are summarized on the sheet titled <i>Summary of Required Actions, Monitoring and Reporting</i>. [20.6.2.3107 NMAC]</p>
10.	<p>The permittee shall determine the monthly volume of wastewater discharged by the facility by recording the discharged wastewater volumes at the following locations by the indicated methods:</p> <ul style="list-style-type: none"> • Process Pond 3A inlet—record readings for the one inlet line totalizing flow meter (this discharge represents volumes discharged to all process ponds) • South Evaporation Cells—record readings for the three inlet line totalizing flow

	<p>meters that discharge into these cells</p> <ul style="list-style-type: none"> • North Evaporation Cells—record readings for the two inlet line totalizing flow meters that discharge into Cells 2 and 3 (Cell 1 is no longer in use) • Coal Pile Runoff Basins 3 and 4—record readings for the one transfer line totalizing flow meter to Process Pond 3C • Coal Pile Runoff Basins—Use standard engineering methods to estimate discharge volumes into these basins • All locations listed above—any estimated volumes of wastewater transferred into a listed location by vacuum truck or other method. <p>Monthly discharge volumes shall be recorded and submitted for each location listed above. The sum of the monthly discharges for each location listed above shall represent the facility discharge. The monthly meter readings and monthly discharge volumes shall be submitted to NMED in the quarterly monitoring reports. The flow meter shall be calibrated to within +/- 10% of actual flow and kept operational at all times. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]</p>
11.	<p>The permittee shall perform monthly inspections of the French drain leak detection systems for the South Evaporation Cells. Summaries of inspection reports shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]</p>
12.	<p>Once prior to the expiration date of this Discharge Permit, NMED shall have the option to require the permittee to temporarily remove the dedicated pump from each monitoring well to provide access for a complete well inspection by NMED personnel. NMED shall establish the inspection date and provide at least 60 days notice to the permittee by certified mail. Dedicated pumps shall be removed at least 48 hours prior to NMED inspection to allow adequate settling time for sediment agitated from pump removal. [20.6.2.3107 NMAC]</p>
13.	<p>Within 18 months of the effective date of this Discharge Permit (by DATE), the permittee shall install one new monitoring well and one piezometer, likely to be located on BLM property. The permittee shall install:</p> <ul style="list-style-type: none"> • One monitoring well (MW-Westwater) hydrologically upgradient of both the generating station and areas affected by mining, and • One Piezometer (PZ-RTWW3) located 300 to 400 feet hydrologically downgradient of the capture trench. <p>All monitoring well and piezometer locations shall be approved by NMED prior to installation. The well shall be completed in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011. Construction and lithologic logs shall be submitted to NMED within 30 days of well and piezometer completion. [20.6.2.3107 NMAC]</p>
14.	<p>Following well development and no more than five days after installation of the new monitoring well required by this Discharge Permit, the permittee shall sample ground water in the new wells and analyze the samples for arsenic (As), boron (B), cadmium (Cd), calcium (Ca), chloride (Cl), chromium (Cr), cobalt (Co), copper (Cu), fluoride (F), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), molybdenum (Mo), nickel (Ni),</p>

	<p>potassium (K), selenium (Se), , sodium (Na), uranium (U), carbonate (CO₃), bicarbonate (HCO₃), nitrate (NO₃), sulfate (SO₄), total dissolved solids (TDS), and pH. The permittee shall sample:</p> <ul style="list-style-type: none"> • MW-Westwater, intended to be located hydrologically upgradient of both the generating station and areas affected by mining and <p>Ground water sample collection, preservation, transport and analysis shall be performed according to the following procedure:</p> <ol style="list-style-type: none"> a) measure the depth-to-ground water from the top of well casing to the nearest hundredth of a foot; b) purge three well volumes of water from the well prior to sample collection; c) obtain samples from the well for analysis; d) properly prepare, preserve and transport samples; and e) analyze samples in accordance with the methods authorized in this Discharge Permit. <p>Depth-to-water measurements, analytical results, including the laboratory QA/QC summary report, and a facility layout map showing the location and number of each well shall be submitted to NMED within 45 days of the installation of the monitoring well and piezometer. [20.6.2.3107 NMAC]</p>
15.	<p>Within 60 days of well completion, the permittee shall survey all wells and piezometer approved by NMED for Discharge Permit monitoring purposes to a U.S. Geological Survey (USGS) or other permanent benchmark. Survey data shall include northing, easting and elevation to the nearest hundredth of a foot or in accordance with the "Minimum Standards for Surveying in New Mexico" (12.8.2 NMAC). A survey elevation shall be established at the top-of-casing, with a permanent marking indicating the point of survey. The survey shall be completed and certified by a licensed New Mexico professional surveyor. Depth-to-water shall be measured to the nearest hundredth of a foot in all surveyed wells and piezometer, and the data shall be used to develop a map showing the location of all monitoring wells and piezometer and the direction and gradient of ground water flow at the facility. The data and map of ground water flow direction at the facility shall be submitted to NMED within 30 days of survey completion. [20.6.2.3107 NMAC]</p>
16.	<p>The permittee shall perform quarterly ground water sampling in 24 monitoring wells/boreholes/piezometer and analyze the samples for arsenic (As), boron (B), cadmium (Cd), calcium (Ca), chloride (Cl), chromium (Cr), cobalt (Co), copper (Cu), fluoride (F), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), molybdenum (Mo), nickel (Ni), potassium (K), selenium (Se), sodium (Na), uranium (U), carbonate (CO₃), bicarbonate (HCO₃), nitrate (NO₃), sulfate (SO₄), total dissolved solids (TDS), and pH. The permittee shall sample:</p> <ul style="list-style-type: none"> • MW-Westwater, intended to be located hydrologically upgradient of both the generating station and areas affected by mining; • KPC, intended to be screened in, and representative of, the aquifer contained in the Pictured Cliffs Formation; • QNT, intended to be located hydrologically upgradient of both the generating station

and areas affected by mining;

- M1, (Borehole to Pictured Cliffs Formation--normally dry), intended to intercept leakage from Process Pond 1;
- M2, (Borehole to Pictured Cliffs Formation--normally dry), intended to intercept leakage from Process Pond 2;
- M3.1, intended to be located hydrologically downgradient of Process Pond 3;
- M3.2, intended to be located hydrologically downgradient of Process Pond 3;
- M3.3, intended to be located hydrologically downgradient of Process Pond 3;
- QAL1, intended to be located in a buried surface drainage and hydrologically downgradient of the south process contaminant sources;
- QAL2, intended to be located in a buried surface drainage and hydrologically downgradient of the central process contaminant sources;
- QAL3, intended to be located in a buried surface drainage and hydrologically downgradient of the north process contaminant sources;
- QAL4, intended to be located in a buried surface drainage and hydrologically downgradient of Process Pond 2;
- MW4, intended to be located hydrologically downgradient of south process contaminant sources that potentially impact groundwater in the Duck Pond Arroyo;
- NEP1 (Borehole to Pictured Cliffs Formation--normally dry), intended to intercept leakage from North Evaporation Cell 1;
- NEP2 (Borehole to Pictured Cliffs Formation--normally dry), intended to intercept leakage from North Evaporation Cell 2;
- NEP3, (Borehole to Pictured Cliffs Formation—contains groundwater), intended to detect impacts from North Evaporation Cells;
- NEP4, (Borehole to Pictured Cliffs Formation—contains groundwater), intended to detect impacts from North Evaporation Cells;
- NEP5 (Borehole to Pictured Cliffs Formation--normally dry), intended to intercept leakage from North Evaporation Cell 2;
- CBI, intended to detect impacts from Coal Pile 3&4 Runoff Basin;
- CBII, intended to detect impacts from Coal Pile 3&4 Runoff Basin;
- RTWS1, intended to be located within recovery trench;
- RTWE2, intended to be located 200 feet hydrologically upgradient of recovery trench;
- RTWW2, intended to be located 100 feet hydrologically downgradient of recovery trench; and
- PZ-RTWW3, intended to be located 300-400 feet hydrologically downgradient of recovery trench (depth-to-ground water measurement only).

Ground water sample collection, preservation, transport and analysis shall be performed according to the following procedure:

- a) measure the depth-to-ground water from the top of well/piezometer casing to the nearest hundredth of a foot;
- b) purge three well volumes of water from the well prior to sample collection;
- c) obtain samples from the well for analysis;
- d) properly prepare, preserve and transport samples; and

	<p>e) analyze samples in accordance with the methods authorized in this Discharge Permit.</p> <p>Depth-to-water measurements, analytical results, including the laboratory QA/QC summary report, and a facility layout map showing the location and number of each well and piezometer shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]</p>
17.	<p>The permittee shall develop a ground water elevation contour map on a quarterly basis using the monitoring well and piezometer survey data and quarterly depth-to-water measurements required by this Discharge Permit. The ground water elevation contour map shall depict the ground water flow direction based on the ground water elevation contours. The data and ground water elevation contour maps shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]</p>
18.	<p>The permittee shall sample wastewater sources on a semi-annual basis. The permittee shall obtain one composite liquid sample from each pond group (North Evaporation Cells, South Evaporation Cells, Process Ponds) by combining equal volumes of grab samples collected from each cell and individual grab samples from Cooling Towers 1&2, Cooling Tower 3, Cooling Tower 4, Coal Pile 1&2 Runoff Basin, Runoff Basin Pre-pond Coal Pile 3&4 Runoff Basin, and the recovery trench sump. Samples shall be analyzed for the following parameters: arsenic (As), boron (B), cadmium (Cd), calcium (Ca), chloride (Cl), chromium (Cr), cobalt (Co), copper (Cu), fluoride (F), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), molybdenum (Mo), nickel (Ni), potassium (K), selenium (Se), sodium (Na), uranium (U), carbonate (CO₃), bicarbonate (HCO₃), nitrate (NO₃), sulfate (SO₄), total dissolved solids (TDS), and pH. Samples shall be properly prepared, preserved, transported and analyzed in accordance with the methods authorized in this Discharge Permit. Analytical results shall be submitted to NMED in the monitoring reports due by May 1st and November 1st. [20.6.2.3107 NMAC]</p>
19.	<p>The permittee shall log all time periods when the recovery trench system is not operating. A copy of the log shall be submitted to NMED in the quarterly monitoring reports. [20.6.2.3107 NMAC]</p>

CONTINGENCY PLAN

#	Terms and Conditions
20.	<p>In the event that monitoring indicates ground water standards are violated during the term of this Discharge Permit, upon closure of the facility or during post-closure monitoring, the permittee may be required to submit to NMED a corrective action plan that proposes additional measures to mitigate damage from the discharge including, at a minimum, source control measures and an implementation schedule. The permittee may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC, if the corrective action plan will not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC. [20.6.2.1203 NMAC, 20.6.2.4105.A(8) NMAC]</p>
21.	<p>In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notifications and corrective actions as required in Section 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and</p>

	remove or mitigate the damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of Subsection A of 20.6.2.1203 NMAC. Within 7 days of discovering the discharge, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]
22.	In the event NMED or the permittee identifies any other failures of the Discharge Permit or system not specifically noted herein, NMED may require the permittee to develop for NMED approval contingency plans and schedules to cope with the failures. [20.6.2.3107.A(10) NMAC]
23.	In the event that a minimum of two feet of freeboard cannot be maintained in the cells/ponds/basins at all times, the permittee shall submit a corrective action plan for NMED approval within 30 days of the date when the two feet of freeboard limit was initially exceeded. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
24.	In the event that inspection findings reveal significant damage likely to affect the ability of the lined cells/ponds/basins to contain contaminants, the permittee shall submit a corrective action plan for the repair or replacement of the liners to NMED for approval within 30 days of discovery by the permittee or following notification from NMED that significant liner damage is evident. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
25.	In the event that leachate is discovered in the French drain leak detection systems of the South Evaporation Cells, the permittee shall sample the leachate and analyze it for arsenic (As), boron (B), cadmium (Cd), calcium (Ca), chloride (Cl), chromium (Cr), cobalt (Co), copper (Cu), fluoride (F), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), molybdenum (Mo), nickel (Ni), potassium (K), selenium (Se), sodium (Na), uranium (U), carbonate (CO ₃), bicarbonate (HCO ₃), nitrate (NO ₃), sulfate (SO ₄), total dissolved solids (TDS), and pH. If the analytical results demonstrate that the leachate is chemically similar to the wastewater in the impoundments the permittee shall follow the contingency plan outlined in the January 29, 2007 renewal application and submit the analytical results along with a corrective action plan for NMED approval within 30 days of receiving analytical results. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
26.	In the event leaks are detected from the North Evaporation Cells, Process Ponds, or Coal Pile Runoff Basins the permittee shall follow the contingency plan outlined in the January 29, 2007 renewal application and submit a corrective action plan to NMED within 30 days of discovering the leak. [20.6.2.3107 NMAC, 20.6.2.3109 NMAC]
27.	In the event that information available to NMED indicates that a well(s) is not appropriately constructed to effectively monitor ground water quality, contains insufficient water to allow the collection of representative ground water samples, or is not completed in a manner that is protective of ground water quality, the permittee shall install a replacement well(s) within 90 days of notification from NMED. Replacement well location(s) shall be approved by NMED prior to installation and completed in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i> , Revision 1.0, July 2008. Construction and lithologic logs shall be submitted to NMED within 30 days of well completion.

	Upon completion of the replacement monitoring well(s), the monitoring well(s) requiring replacement shall be properly plugged and abandoned. The well(s) shall be plugged and abandoned in accordance with the abandonment details in the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i> , Revision 1.0, July 2008, and any applicable local, state, and federal regulations. Documentation describing the plugging and abandonment procedures, including photographic documentation, shall be submitted to NMED within 30 days of completed well abandonment. [20.6.2.3107 NMAC]
28.	In the event that ground water flow information obtained pursuant to this Discharge Permit indicates that a monitoring well(s) was not installed hydrologically downgradient of the intended discharge location(s), the permittee shall install a replacement well(s) within 90 days of notification from NMED. The well location(s) shall be approved by NMED prior to installation and completed in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i> , Revision 1.0, July 2008. Construction and lithologic logs shall be submitted to NMED within 30 days of well completion. [20.6.2.3107 NMAC]

CLOSURE PLAN

#	Terms and Conditions
29.	<p>Ground water impacts have occurred in the shallow alluvial Shumway Arroyo aquifer due to San Juan Generating Station operations. Therefore, NMED is imposing closure, post-closure activities, and financial assurance requirements (Conditions 29 to 32) to ensure proper closure of all evaporation cells, process ponds, coal pile runoff basins, and any other wastewater related infrastructure to prevent future ground water impacts resulting from releases of ground water contaminants. Additionally, these conditions are imposed to ensure operation of the facility’s ground water capture trench and the facility’s ground water monitoring system until such time that all impacted ground water from the northern boundary of the plant to the capture trench located downgradient of the plant is intercepted and disposed, and all ground water monitoring wells are plugged and abandoned. For the purposes of this permit, collectively, the activities in this paragraph are referred to as “Complete Closure”).</p> <p>Upon cessation of discharges to each evaporation cell, process pond, and/or coal pile runoff basin, the permittee shall implement the relevant parts of the initial closure-plan outline submitted in the January 29, 2007 renewal application and the detailed closure plan as described below in condition 30. Additionally, after all wastewater related infrastructure is closed, the permittee shall perform the following post-closure activities:</p> <ul style="list-style-type: none"> a) Continue operation of the ground water capture trench and ground water monitoring system (except for any monitoring wells or boreholes closed with NMED approval in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011 as necessitated by the closure of any evaporation cells, process ponds, coal pile runoff basins, and any other wastewater related infrastructure) until WQCC ground water

	<p>standards or background concentrations have been met for at least eight consecutive quarters. All continuing post-closure monitoring data and results shall be submitted to NMED in accordance with the monitoring section of this discharge permit.</p> <p>b) Following notification from NMED that post-closure activities may cease, the permittee shall plug and abandon all remaining monitoring well(s) and borehole(s) in accordance with the attachment titled <i>Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions</i>, Revision 1.1, March 2011.</p> <p>When Complete Closure and all required post-closure activities have been completed, the permittee may request to terminate the Discharge Permit. [20.6.2.3107.A(11) NMAC]</p>
<p>30.</p>	<p><u>Submission of Detailed Plan for Complete Closure:</u> Within 6 months of the effective date of this Discharge Permit (by DATE), the permittee shall submit a detailed closure plan with sufficient detail to estimate the cost of Complete Closure of all wastewater related infrastructure for financial assurance. The detailed closure plan shall address the steps necessary to close (and the proposed order of closure for) the evaporation cells, process ponds, coal pile runoff basins, and any other wastewater related infrastructure. The detailed closure plan shall contain plans and specifications signed and stamped by a New Mexico professional engineer for construction of the store-and-release covers for the Evaporation Cells, process ponds, and coal pile runoff basins along with a schedule of time durations for construction and completion that is not based on a specific date. Further, the detailed closure plan shall address de-watering (as necessary), characterization of wastes to be disposed on-site, restoration of vegetation, and ongoing maintenance for all evaporation cell, process pond, coal pile runoff basin store and release covers and all post-closure activities and plugging and abandonment of monitoring wells.</p> <p>The detailed closure plan shall also provide sufficient detail to estimate the cost of operating, maintaining, and closing the capture trench and ground water monitoring system. Inherent in this detail is an estimate of the time (after the cessation of facility operation) that the capture trench and ground water monitoring system will have to remain in place and in operation, i.e., until WQCC ground water standards or background concentrations have been met for at least eight consecutive quarters.</p>
<p>31.</p>	<p><u>Submission of Detailed Estimate for Complete Closure Cost for Financial Assurance Purposes:</u> Within 12 months of the effective date of this Discharge Permit (by DATE), the permittee shall submit a detailed cost estimate (“Estimate”) based on the initial closure-plan outline submitted in the January 29, 2007 renewal application and the detailed closure plan for Complete Closure required by Conditions 29 and 30 above. The Estimate shall be based on the cost of hiring a third party to conduct Complete Closure. The Estimate shall include direct costs associated with all third party implementation of the closure plan, contingency costs in the amount of 15 percent of the direct costs, the cost of an independent project manager and contract administration, and NMED oversight and administration costs, including indirect costs. The Estimate shall forecast the worst case scenario for Complete Closure over the five year period of this permit; if a new permit is not issued</p>

	<p>after five years, the Estimate for the worst case scenario shall be updated annually each year after five years and any financial assurance shall be adjusted accordingly.</p> <p>The Estimate shall be adjusted for inflation over the five year period for Complete Closure and shall project the amount needed for each of the five years for the worst case scenario for all activities included in Complete Closure.</p>
32.	<p><u>Submission of Financial Assurance:</u> Within 18 months of the effective date of this Discharge Permit (by DATE), the permittee shall submit to NMED for approval a draft of its proposed financial assurance instrument(s) that meet the requirements below.</p> <ul style="list-style-type: none">a) The amount of financial assurance shall be sufficient to cover the cost of implementing Complete Closure as described in the closure plan and cost estimate required by Conditions 29, 30 and 31 of this Discharge Permit. The permittee shall not propose any form of self-guarantee. The financial assurance shall ensure that funds will be available to implement Complete Closure if at any time the permittee is unable, unwilling, or otherwise fails to implement any portion of the closure plan as required by this Discharge Permit. If the form of financial assurance entails incremental costs of maintaining it, i.e., costs for a trustee, the amount of the financial assurance shall be increased to include all such costs.b) Within 30 days after NMED approves the draft financial assurance proposal, the permittee shall execute the financial assurance instrument and submit it to NMED for final acceptance.c) NMED shall be named as the sole beneficiary in each financial assurance instrument(s).d) Within 30 days of execution, NMED acceptance, and implementation of the financial assurance instrument(s), the permittee shall establish a trust to receive and disburse funds, which may arise as the result of forfeiture of financial assurance. The trust shall name NMED as the beneficiary. The trust agreement shall be in a form satisfactory to the State Board of Finance and shall be subject to approval by the Governor pursuant to NMSA 1978, § 46-4-1 through 9. The trust shall be maintained until the Complete Closure has occurred, NMED has released the financial assurance, and NMED has agreed to terminate this permit. Upon forfeiture of financial assurance, the forfeited amount shall be deposited directly into the trust and shall be used for any activities or costs related to Complete Closure.e) The permittee may propose alternative financial assurance instruments from time to time subject to NMED's prior written approval and acceptance. The permittee shall not replace any approved financial assurance instrument without NMED's prior written approval.f) The financial assurance instrument(s) shall remain in effect until Complete Closure

and final termination of this permit and shall remain in place at all times, including lapses in discharge permit coverage, late discharge permit renewal or temporary shutdown of facilities covered under DP-1327 unless released by NMED in writing.

- g) The financial assurance shall include a method for adjustments due to changes in inflation, new technologies, and NMED approved revisions to the closure plan based on continued investigations or other information and shall be adjusted no less frequently than every five years such that, at all times, the amount of financial assurance provided by the permittee shall be sufficient to perform Complete Closure at any time during the following five years from the update. Should circumstances warrant more frequent adjustments, NMED may require them in writing and the permittee shall make the adjustment within 180 days.
- h) No more than once every 12 months the permittee may request that NMED review remaining activities required for Complete Closure including alternate closure activities that NMED has approved. The request for review shall describe the activities which have been completed and shall contain an updated cost estimate for remaining Complete Closure activities. If NMED approves the description of activities which have been completed, the remaining activities of Complete Closure, and the cost estimate for remaining Complete Closure activities, NMED will notify the permittee of appropriate adjustments that the permittee may make to the amount of financial assurance.
- i) The financial assurance shall be evaluated, and if necessary, revised to comply with applicable WQCC financial assurance regulations, if and when such regulations are promulgated and become effective.
- j) Cancellation or Non-renewal: Each financial assurance instrument shall require the financial assurance provider to give at least 120 days written notice to NMED and the permittee prior to cancellation or non-renewal of the financial assurance instrument. If such notice is received, the permittee shall propose an alternate financial assurance mechanism to NMED within 30 days of the notice. If NMED approves the alternate financial assurance mechanism, the permittee shall execute it and submit it to NMED for final acceptance within 60 days of cancellation. If the permittee fails to obtain alternate financial assurance acceptable to NMED within 60 days, the current financial assurance shall be subject to forfeiture.
- k) Forfeiture: If NMED determines that implementation of all or any part of Complete Closure is required and that the permittee is unable or unwilling or will otherwise fail to conduct all or any part of Complete Closure as required by this Discharge Permit, then NMED may proceed with forfeiture of all or part of the financial assurance. Prior to beginning a forfeiture proceeding, NMED will provide written notice, by certified mail return receipt requested, to the permittee and to all financial assurance providers, if applicable, informing them of the determination to forfeit all or a portion of the financial assurance, provided that if NMED's access to the

	<p>financial assurance is threatened due to time constraints, NMED may begin a forfeiture proceeding, and provide written notice contemporaneously with that proceeding. The written notice will state the reasons for the forfeiture and the amount to be forfeited. The amount shall be based on the total cost of performing Complete Closure, in accordance with this Discharge Permit and all applicable laws and regulations. NMED will also advise the permittee and all financial assurance providers, if applicable, of the conditions under which forfeiture may be avoided. Such conditions may include, without limitation, an agreement by the permittee, by a financial assurance provider, or by an NMED approved third party, to perform Complete Closure in accordance with this Discharge Permit and all applicable laws and regulations, and a demonstration that such person has the financial ability and technical qualifications to do so. All financial assurance forfeited shall become immediately payable to the trust or as otherwise provided in the NMED approved instrument. Forfeited funds shall be used to perform Complete Closure. If the forfeited amount is insufficient, the permittee shall be liable for the remaining costs. If the amount forfeited is more than necessary, the excess amount shall be refunded to the person from whom it was collected.</p> <p>l) The financial assurance shall be released or modified when NMED determines that all activities of Complete Closure have been performed according to the closure plan requirements of this Discharge Permit and the Discharge Permit has been terminated. [20.6.2.3107A(11) NMAC]</p>
--	---

GENERAL TERMS AND CONDITIONS

#	Terms and Conditions
33.	<p>RECORD KEEPING – The permittee shall maintain a written record of the following information:</p> <ul style="list-style-type: none"> a) Information and data used to complete the application for this Discharge Permit. b) Records of any releases (commonly known as “spills”) not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC. c) Records of the operation, maintenance, and repair of all facilities/equipment used to treat, store or dispose of wastewater. d) Facility record drawings (plans and specifications) showing the actual construction of the facility and bear the seal and signature of a licensed New Mexico professional engineer. e) Copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit. f) The volume of wastewater or other wastes discharged pursuant to this Discharge Permit. g) Ground water quality and wastewater quality data collected pursuant to this Discharge Permit. h) Copies of construction records (well log) for all ground water monitoring wells required to be sampled pursuant to this Discharge Permit. i) Records of the maintenance, repair, replacement or calibration of any monitoring

	<p>equipment or flow measurement devices required by this Discharge Permit.</p> <p>j) Data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and shall be made available to NMED upon request:</p> <ul style="list-style-type: none"> i) The dates, location and times of sampling or field measurements; ii) The name and job title of the individuals who performed each sample collection or field measurement; iii) The sample analysis date of each sample; iv) The name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; v) The analytical technique or method used to analyze each sample or collect each field measurement; vi) The results of each analysis or field measurement, including raw data; vii) The results of any split, spiked, duplicate or repeat sample; and viii) A copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used. <p>The written record shall be maintained by the permittee at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection or measurement and shall be made available to the department upon request. [Subsections A and D of 20.6.2.3107 NMAC]</p>
34.	<p>INSPECTION and ENTRY – The permittee shall allow inspection by NMED of the facility and its operations which are subject to this Discharge Permit and the WQCC regulations. NMED may upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which are located any records required to be maintained by regulations of the federal government or the WQCC.</p> <p>The permittee shall allow NMED to have access to and reproduce for their use any copy of the records, and to perform assessments, sampling or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations.</p> <p>Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state or federal regulations. [Subsection D of 20.6.2.3107 NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]</p>
35.	<p>DUTY to PROVIDE INFORMATION – The permittee shall, upon NMED’s request, allow for NMED’s inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records. [Subsection D of 20.6.2.3107 NMAC]</p>
36.	<p>MODIFICATIONS and/or AMENDMENTS – In the event the permittee proposes a change to the facility or the facility’s discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated or discharged by the facility, the permittee shall notify</p>

	<p>NMED prior to implementing such changes. The permittee shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. [Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]</p>
<p>37.</p>	<p>PLANS and SPECIFICATIONS – In the event the permittee is proposing to construct a wastewater system or change a process unit of an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the permittee shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction.</p> <p>In the event the permittee implements changes to the wastewater system authorized by this Discharge Permit which result in only a minor effect on the character of the discharge, the permittee shall report such changes (including the submission of record drawings, where applicable) as of January 1 and June 30 of each year to NMED. [Subsections A and C of 20.6.2.1202 NMAC]</p>
<p>38.</p>	<p>CIVIL PENALTIES – Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the permittee to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1]</p>
<p>39.</p>	<p>CRIMINAL PENALTIES – No person shall:</p> <ol style="list-style-type: none"> 1) make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA; 2) falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or 3) fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation. <p>Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this</p>

	<p>condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that he is creating a substantial danger of death or serious bodily injury to any other person is guilty of a second degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. [20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]</p>
40.	<p>COMPLIANCE with OTHER LAWS – Nothing in this Discharge Permit shall be construed in any way as relieving the permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders. [NMSA 1978, § 74-6-5.L]</p>
41.	<p>RIGHT to APPEAL – The permittee may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.O]</p>
42.	<p>TRANSFER of DISCHARGE PERMIT – Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the permittee shall:</p> <ol style="list-style-type: none"> 1) notify the proposed transferee in writing of the existence of this Discharge Permit; 2) include a copy of this Discharge Permit with the notice; and 3) deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. <p>Until both ownership and possession of the facility have been transferred to the transferee, the permittee shall continue to be responsible for any discharge from the facility. [20.6.2.3111 NMAC]</p>
43.	<p>PERMIT FEES – Payment of permit fees (\$11,500) is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date.</p> <p>Permit fees are associated with <u>issuance</u> of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the permittee of the obligation to pay all permit fees assessed by NMED. A permittee that ceases discharging or does not commence discharging from the facility during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated if the facility fails to remit an installment payment by its due date. [Subsection F of 20.6.2.3114 NMAC, NMSA 1978, § 74-6-5.K]</p>

San Juan Generating Station, **DP-1327**

Effective Date

Page 19

EFFECTIVE DATE: effective date

EXPIRATION DATE: expiration date

JERRY SCHOEPPNER

Chief, Ground Water Quality Bureau

New Mexico Environment Department

draft