SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau

2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Phone (505) 476-6000 Fax (505) 476-6030
www.nmenv.state.nm.us

RYAN FLYNN
Cabinet Secretary-Designate

BUTCH TONGATE
Deputy Secretary

TOM BLAINE, P. E.
Director
Environmental Health Division

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

August 23, 2013

John Hale, P. E.
Technical Project Manager
PNM Resources
Alvarado Square
Albuquerque, NM 87158-2104

RE: APPROVAL
PERSON GENERATING STATION – CLASS I PERMIT MODIFICATION
REQUEST FOR MONITORING WELL REPLACEMENT, MARCH 2013
PNM RESOURCES, EPA ID# NM360010342
HWB-PNM-13-001

Dear Mr. Hale:

The New Mexico Environment Department (NMED) has reviewed the document entitled *Person Generating Station – Class 1 Modification Request for Monitoring Well Replacement, March 2013,* submitted by PNM Resources (the Permittee) on March 29, 2013. Supplemental information in support of the March 29, 2013 modification request was submitted by PNM to NMED on May 21, 2013.

The Permittee has proposed to replace groundwater monitoring well PSMW-08A with PSMW-08B, which requires changes to the Post-Closure Care Permit as follows:

1) Part 3, Section 3.4.1, Table 3-2, Page 37: Informational change to remove PSMW-08A and replace it with PSMW-08B from the list of monitoring and extraction wells in Table 3-2. The list documents the sampling requirements for the monitoring and extraction wells. This is a Class 1 permit modification under Item A.1 of Appendix 1 to 20.4.1.900 NMAC incorporating 40 C.F.R. § 270.42 that does not require prior approval by NMED.

2) Part 3, Section 3.4.1, Table 3-3, Page 38: Informational change to remove PSMW-08A and replace it with PSMW-08B from the list of monitor and extraction wells in Table 3-3. The list documents the sampling schedule for the monitoring and extraction wells. This is a Class 1 permit modification under Item A.1 of Appendix 1 to 20.4.1.900 NMAC incorporating 40 C.F.R. § 270.42that does not require prior approval by NMED.

3) Part 3, Section 3.4.1, Page 39: Change to remove PSMW-08A from the monitoring well network used to assess shallow groundwater and replace it with PSMW-08B, an equivalent monitor well. The well screen in PSMW-08A is stainless steel, corroded and is likely the source of elevated total metal concentrations in groundwater. PSMW-08B is within 10 feet of PSMW-08A, is similar in design but has a PVC screen and has a screened interval completed at the water table. Water levels have dropped at the Facility and the water table elevation at PSMW-08A is within three feet of the bottom of the screened interval. The water level at PSMW-08B is within 4 feet of the top of the screened interval. This change does not substantially alter the permit conditions or lessen the protection of human health and the environment. This is a Class 1 permit modification under Item C.1.b of Appendix 1, to 20.4.1.900 NMAC incorporating 40 C.F.R. § 270.42 that does not require prior approval by NMED.

4) Attachment A, Table A-1, Page 8: Informational change to remove PSMW-08A and replace it with PSMW-08B from the list of monitoring and extraction wells construction details in Table A-1. The list documents the total depth of the well, the casing diameter, casing material and screen length. The information for PSMW-08B will replace that for PSMW-08A. This is a Class 1 permit modification under Item A.1 of Appendix 1 to 20.4.1.900 NMAC incorporating 40 C.F.R. § 270.42 that does not require prior approval by NMED.

5) Attachment A, Table A-2, Page 9-10: Informational change to remove PSMW-08A and replace it with PSMW-08B from the status list of monitoring and extraction wells in Table A-2. The list documents the current and future status of groundwater monitoring and extraction wells at PNM. The listed future status for PSMW-08A was replacement if the well goes dry. PSMW-08B will serve as the replacement monitoring well. This is a Class 1 permit modification under Item A.1 of Appendix 1 to 20.4.1.900 NMAC incorporating 40 C.F.R. § 270.42 that does not require prior approval by NMED.

As per Permit Part 3, Section 3.6, PNM shall plug and abandon any well no longer required in the monitoring well network or when they are damaged beyond repair. The Permittee shall abandon PSMW-08A in accordance with the procedures specified at Permit Part 4, Section 4.11.6.

NMED hereby approves the subject permit modification request to make the above five modifications to the Post-Closure Care Permit. Enclosed are replacement pages for the Post-Closure Care Permit.

If you have any questions regarding this letter, please contact Mr. Brian L. Salem of my staff at (505) 222-9576.

Sincerely,

John E. Kieling
Chief
Hazardous Waste Bureau

cc: D. Cobrain, NMED HWB
W. Moats, NMED HWB
B. Salem, NMED HWB
C. Hendrickson, EPA 6PD-F
File: PNM 2013 and Reading

Enclosure: Replacement Pages for the Post-Closure Care Permit

TABLE 3-2
Monitor and Extraction Well Network Sampling Requirements

Well ID	Semi-annual Sampling prior to GWTS Shutdown	Semi-annual Sampling during GWTS Shutdown	Reason for Selection as Key Well
PSMW-01Ra[a]	X	X	Point of compliance well
PSMW-07R[b]	X	X	Background well
PSMW-08B	X	X	Plume center well
PSMW-10[a]	X	X	Plume center well
PSMW-11[c]	X		Plume boundary well
PSMW-13A[a]	X	X	Plume center well
PSMW-17	X		Southern plume boundary well
PSMW-18	X		Northern plume boundary well
PSMW-20[c]	X		Plume boundary well
PSMW-22	X		Plume center well
PSMW-27	X		Downgradient plume boundary well
PSMW-37[c]	X		Plume boundary well
VEW (Extraction well)	X	X	Extraction well
EW-1 (Extraction well)	X	X	Extraction well
EW-2 (Extraction well)	X	X	Extraction well
EW-3 (Extraction well)	X	X	Extraction well
EW-4 (Extraction well)	X	X	Extraction well
PSMW-24C-500[c]	X	X	Deeper Aquifer Assessment Monitor Well
PSMW-27C-500[c]	X	X	Deeper Aquifer Assessment Monitor Well
PSMW-27C-600[c]	X		Deeper Aquifer Assessment Monitor Well

[a]Will be sampled annually for Appendix IX constituents.

[b]Monitoring well PSMW-07R is a background well that will be sampled annually for Appendix IX constituents.

[c]Annual sampling.

GWTS = Groundwater treatment system.

ID = Identification.

3.4 GROUNDWATER MONITORING

The requirements of Section 3.4 apply to groundwater monitoring for purposes of conducting both corrective action and compliance monitoring under Post-Closure Care.

3.4.1 Groundwater Monitoring and Extraction Well Network

The groundwater monitoring and extraction well network shall include all the wells listed on Table 3-2 above.

TABLE 3-3
Groundwater Monitoring and Extraction Well Network and Sampling Schedule

Well Name	April	October
Shallow MWs		
PSMW-01R	COCs	COCs, App IX
PSMW-07R*	COCs	App IX
PSMW-08B	COCs	COCs, App IX
PSMW-10	COCs	COCs, App IX
PSMW-11		COCs
PSMW-13A	COCs	COCs, App IX
PSMW-17		COCs
PSMW-18		COCs
PSMW-20		COCs
PSMW-22		COCs
PSMW-27		COCs
PSMW-37		COCs
Deep MWs		
PSMW-24C-500	COCs	COCs
PSMW-27C-500	COCs	COCs
PSMW-27C-600	COCs	COCs
Extraction Wells		
VEW	COCs	COCs
EW-1	COCs	COCs
EW-2	COCs	COCs
EW-3	COCs	COCs
EW-4	COCs	COCs

* Upgradient background well
App IX Appendix IX analytes, enhanced sampling (40 CFR Part 264)
COCs Hazardous constituents (Tables 3-4 and 3-5)

The Permittee shall ensure that monitoring wells PSMW-01R, PSMW-07R, PSMW-08B, PSMW-10, PSMW-11, PSMW-13A, PSMW-17, PSMW-18, PSMW-20, PSMW-22, PSMW-27, and PSMW-37 are retained in the monitoring network to assess shallow groundwater contamination.

The Permittee shall ensure that monitor wells PSMW-24C-500, PSMW-27C-500, and PSMW-27C-600 are retained in the monitoring network to assess deep groundwater contamination.

Should any monitor or extraction well be incapable of producing a representative sample of groundwater or perform its intended purpose for any reason, the Permittee shall submit a permit modification request to the Department for approval within 90 days of discovery for replacement of that monitor or extraction well and the abandonment of the faulty well.

3.4.2 Sampling and Analysis

The Permittee shall, as part of the groundwater monitoring program, perform groundwater sampling and analysis in accordance with this Permit Section and Permit Part 4. The data quality objective (DQO) for groundwater monitoring is to collect accurate and defensible data of high quality to assess the concentrations of hazardous constituents in the groundwater in the shallow and deep aquifers such that they can be compared to the concentration limits in Tables 3-4 and 3-5. The Permittee shall evaluate accuracy, precision, representativeness, completeness, and comparability of the groundwater data to verify that data are of high quality and ensure that data quality objectives are met. Water samples shall be collected from wells in accordance with the schedule in Table 3-3.

3.4.3 Groundwater Analytes

The Permittee shall analyze groundwater samples for the hazardous constituents specified in Tables 3-4 and 3-5. Aqueous samples shall be reported in units of micrograms per liter (µg/L).

Secondary hazardous constituents which have not been consistently detected above applicable EPA Maximum Contaminant Levels (MCLs) or the NMWQCC standards include chloroform and 1,1-dichloroethane. The Permittee shall ensure that any additional hazardous constituent that is detected, but not detected above the applicable EPA MCL or the NMWQCC standard is included on Table 3-5 via a Class 1 permit modification, if the hazardous constituent exceeds background. Any additional hazardous constituent that is detected above the applicable EPA MCL or the NMWQCC standard must be included on Table 3-4 via a Class 1 permit modification, if the hazardous constituent exceeds background. Background levels shall be established using the concentration levels present in groundwater at the background well, PSMW-7R.

The Permittee shall also collect and analyze groundwater samples annually from the wells identified on Table 3-2 for all metal, volatile organic constituents, and semivolatile organic constituents identified in 40 CFR Part 264 Appendix IX which are not pesticides, herbicides, or pharmaceuticals, to determine whether additional hazardous constituents are present (*see* 40 CFR §§ 264.100(d) and 264.99(g)). If the Permittee detects any Appendix IX constituents in the groundwater that are not already identified in Tables 3-4 and 3-5, the Permittee shall resample the well and repeat the analysis for the constituents within one month. If the second analysis confirms the presence of a new constituent, the Permittee must report the concentrations of the new constituent to the Department within seven days of receipt of the results of the second analysis. If a constituent is detected that must be added to either Table 3-4 or 3-5, the

TABLE A-1
Groundwater Monitor and Extraction Well Construction Details

Well ID	Total Depth of Well (ft)	Casing Size (in)	Casing Material	Screen Length (ft)
PSMW-01R	137	2	PVC	20
PSMW-07R	133	2	PVC	29
PSMW-08B	169	2	PVC	20
PSMW-10	171	2	PVC	20
PSMW-11	165	2	PVC	20
PSMW-13A	164.3	2	PVC	20
PSMW-17	191	4	PVC	20
PSMW-18	185	4	PVC	20
PSMW-20	226	4	PVC	20
PSMW-22	227	4	PVC	20
PSMW-27	269	4	PVC	20
PSMW-37	111	2	PVC	20
VEW (Extraction well)	135	4	PVC	125
EW-1 (Extraction well)	158	4	PVC	22
EW-2 (Extraction well)	197	4	PVC	30
EW-3 (Extraction well)	253	4	PVC	30
EW-4 (Extraction well)	231	4	PVC	10
PSMW-24C-500	577	2	Stainless Steel	10
PSMW-27C-500	717	2	Stainless Steel	10
PSMW-27C-600	717	2	Stainless Steel	10

A.5.3 Groundwater Treatment System

The groundwater treatment system (GWTS) (Figures E-5, E-11 and E-12) was installed in 1995. Currently, the GWTS uses activated carbon to treat approximately 61 gpm of groundwater from five groundwater recovery wells. Figure E-7 presents a process flow diagram for the GWTS. Prior to modification of the GWTS in 2002, the primary treatment involved air stripping followed by activated carbon treatment.

Routine monitoring of the GWTS provides information needed to schedule preventative maintenance and to detect conditions that require repair or replacement. Maintenance procedures for the strainer, equalization tank, influent tank, pump, bag filter, GAC unit, and effluent surge tank are described fully in the O & M manual.

Sampling ports are located throughout the system to allow for collection and analysis of samples to characterize influent and effluent water, and to verify the level of treatment between the GAC

units. The objectives of sampling and analysis are to ensure that groundwater cleanup levels are achieved and to provide operational data needed for routine system maintenance.

Specific sampling collection, analysis, evaluation, and documentation procedures presented in the O&M manual were developed in accordance with the Discharge Plan. Samples will be collected in discrete events to provide a data set representative of actual operating conditions.

Treated groundwater is discharged to two University of New Mexico Championship Golf Course irrigation lagoons under a groundwater discharge permit (DP-1006) from the NMED Ground Water Quality Bureau. The permit allows the discharge of up to 144,000 gallons per day of treated groundwater. Monthly sample collection includes influent and effluent from the two carbon units. All samples are analyzed by EPA Method 8260. The monthly discharge volume is calculated from totalizer readings. Results are reported to NMED semi-annually.

TABLE A-2
Groundwater Monitoring and Extraction Well Status

Well Name	Current Status	Future Status/Comments
Post-Closure Care and Compliance Groundwater Monitoring Wells		
PSMW-01R	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-07R	Post-closure care upgradient monitoring well (background well)	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW- 08B	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-10	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-11	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-13A	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-17	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-18	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-20	Post-closure care down gradient monitoring well	Plug and abandon following completion of compliance groundwater monitoring. Replace if well goes dry.
PSMW-22	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-27	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-37	Post-closure care down gradient monitoring well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.

Well Name	Current Status	Future Status/Comments
Extraction Wells Approved for Plug and Abandonment		
PSMW-25	Wells not suited for monitoring due to lack of water	Plug and abandon
PSMW-26	Wells not suited for monitoring due to lack of water	Plug and abandon
EW-5	Wells not suited for extraction due to lack of water	Plug and abandon
Deep Aquifer Monitor Wells		
PSMW-24C-500	Deep regional monitor well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
PSMW-27C-500 and 600	Deep regional monitor well	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
Extraction Wells		
EW1	Supplies groundwater to the Pump and Treat system	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
EW-2	Supplies groundwater to the Pump and Treat system	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
EW-3	Supplies groundwater to the Pump and Treat system	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
EW-4	Supplies groundwater to the Pump and Treat system	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.
VEW	Supplies groundwater to the Pump and Treat system	Plug and abandon following completion of Post-Closure Care. Replace if well goes dry.