NEW MEXICO ENVIRONMENT DEPARTMENT

Surface Water Quality Bureau

Jemez Mountains, Rio Puerco, and Zuni – Supplemental Sampling

FIELD SAMPLING PLAN

Prepared by

SWQB

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Approvals

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OVERVIEW

Further sampling and analysis is required in the Jemez Mountains and in the Rio Puerco and Zuni watersheds to evaluate the current dissolved aluminum impairment listings, status of AUs with metals TMDLs already completed, and to fill TMDL data needs. The Surface Water Quality Bureau (SWQB) will sample for basic field parameters, total Aluminum and hardness or the full dissolved metals suite to assess the AUs using the assessment protocols for the draft 2016-2018 Integrated List (Tables 1 and 2). Sampling will begin in August 2015 with expected completion in September 2015. A new station will be established on Nacimiento Ck (Perennial prt HWY 126 to San Gregorio Rsvr), above the existing station. It will be located on USFS land and will provide insight into water quality above the Nacimiento Mine. SWQB will not collect samples for nutrient analysis or *E. coli*. Sufficient surplus in the FY16 chemistry analysis budget allows for sample analysis at the New Mexico State Laboratory Division (SLD), and monitoring responsibilities will be relegated to Assessment team staff.

DOCUMENTATION

Project documents include this field sampling plan, calibration records, sonde download data, validation and verification records, sample collection data, records of analytical data in hard copy or in electronic form and quality control (QC) records. Documents will be maintained in accordance with the requirements of the SWQB Quality Assurance Project Plan (QAPP). Project documentation will include narrative descriptions of progress throughout the life of the project relating to planning and implementation efforts, including deviations from the original plan and issues that arise along with any associated corrective actions. Project activities will be documented in SWQB Monitoring Section Field Sheets. Information from the field sheets is entered and organized in the SWQB database (SQUID). Analytical results are electronically transferred into the SQUID database and eventually moved to STORET WQX. All data are verified and validated for completeness and accuracy. Project data housed in the SQUID database are organized in reports and assessed by the SWQB TMDL and Assessment Team to determine if water quality standards are being attained.

CHEMISTRY SAMPLING

Water quality samples will be collected and analyzed in accordance with procedures as outlined in the SWQB Standard Operating Procedures for Data Collection (SOPs) https://www.env.nm.gov/swqb/SOP. Metals samples will be submitted to SLD. An estimated chemical cost summary is available in Table 3.

Table 1.
Jemez Mountains AUs and parameters to be monitored in 2015.

Assessment Unit	Station	Total Al	Dissolved Metals, Ca + Mg	Ca + Mg	Priority
Jemez Mountains					
East Fork Jemez (San Antonio Creek to VCNP bnd)	31EFkJem000.1	1	1	0	High
Jaramillo Creek (East Fork Jemez to headwaters	31Jarami008.0	1	0	1	High
Jemez River (Jemez Pueblo bnd to Rio Guadalupe)	31JemezR046.6	1	1	0	High
Jemez River (Rio Guadalupe to Soda Dam nr Jemez Springs)	31JemezR049.2	1	1	0	Low
Jemez River (Zia Pueblo bnd to Jemez Pueblos bnd)	31JemezR037.0	0	1	0	Low
Jemez River (Soda Dam nr Jemez Springs to East Fork)	31JemezR064.9	1	1	0	Low
La Jara Creek (East Fork Jemez to headwaters)	31LaJara005.0	2	0	2	High
Redondo Creek (VCNP bnd to headwaters)	31Redond001.2	2	0	2	High
Rio Guadalupe (Jemez River to confl with Rio Cebolla)	31RGuada000.1	1	0	1	Low
Rito de los Indios (San Antonio Creek to headwaters)	31Rindio000.2	1	0	1	High
San Antonio Creek (East Fork Jemez to VCNP bnd)	31SanAnt000.1	1	1	0	Low
Sulphur Creek (San Antonio Creek to Redondo Creek)	31Sulphu000.1	2	0	2	High
Sulphur Creek (VCNP to headwaters)	31Sulphu003.4	2	0	2	High
Vallecito Ck (Perennial Prt Div abv Ponderosa to headwaters)	31Vallec012.2	2	0	2	High
Blanks (Equipment)		0	1	2	
Totals		18	7	15	

Table 2.
Upper Rio Puerco AUs and parameters to be monitored in 2015.

Assessment Unit	Station	Total Al	Dissolved Metals, Ca + Mg	Ca + Mg	Physical Habitat	Priority
Rio Puerco/Zuni						
Nacimiento Ck (Perennial prt HWY 126 to San Gregorio Rsvr)	33Nacimi008.0	1	1	0	0	High
Nacimiento Ck (Perennial prt HWY 126 to San Gregorio Rsvr)	Above 33Nacimi008.0	1	1	0	0	High
Senorito Creek (Nacimiento Mine to headwaters)	33Senori008.8	1	0	1	0	High
Senorito Creek (San Pablo Canyon to Nacimiento Mine)	33Senori006.8	1	1	0	0	High
Rio Moquino (Laguna Pueblo to Seboyettia Creek)	36RMoqui006.4	0	0	0	1	High
Blanks (Equipment)		0	1	0	0	
Totals		4	4	1	1	

Table 3.
Chemical Cost Summary

Analyate	Total # Samples	Cost per Sample (WTU or $)	Total Expenditure (WTU or $)
Total Al	22	20	440 WTU
Dissolved Metals + Ca, Mg	11	195	2145 WTU
Hardness (Ca, Mg)	16	40	640 WTU
10 micron Filters	22	17.50	$385
0.45 micron Filters	27	13.50	$364.50
TOTALS	**49**	**WTU**	2585
		DOLLAR $	749.50

Notes:
10 micron filters will only be utilized to collect total Al samples where turbidity values are greater than 30 NTU, as per the applicable assessment protocols