

NPDES PERMIT NO. NM0031020

STATEMENT OF BASIS

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
(NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

I. APPLICANTS

Strathmore Resources U.S. Ltd.
Roco Honda Monitoring Wells
4001 Office Court, Ste 102
Santa Fe, NM 87507

II. ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

III. PREPARED BY

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IV. DATE PREPARED

August 5, 2008

V. PERMIT ACTION

First-time issuance of a National Pollutant Discharge Elimination System (NPDES) permit.

Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, Code of Federal Regulations, revised as of August 1, 2008.

VI. DISCHARGE LOCATION

The Roco Honda Monitoring Wells (RHMW) site is located in the vicinity of Section 16, Township 13N, Range 8W approximately 5 miles northwest of San Mateo in McKinley County, NM. The discharge from the facility is through Outfalls 001 through 003 which are located at:

Outfall 001: Latitude 35° 21' 38" North, Longitude 107° 40' 55" West (S1b)
Outfall 002: Latitude 35° 21' 17" North, Longitude 107° 41' 05" West (S3)
Outfall 003: Latitude 35° 21' 32" North, Longitude 107° 41' 30" West (S4)

The outfalls are discharging groundwater, expected to have similar levels of pollutants. The draft permit limits will be established for one outfall, with all outfalls being limited to the same limits, and reported collectively on the Discharge and Monitoring Report (DMR) as Outfall 001.

VII. APPLICANT ACTIVITY

The applicant has specified that its operations are under the Standard Industrial Classification (SIC) Code 1094, a uranium mine site. However, this permit will only authorize the discharge of water well testing to be used in assessing baseline groundwater sampling in support of a New Mexico State Mining and Minerals Division (MMD) permit application for a uranium mine. Should a mine permit be applied for and granted by the MMD, any and all mine wastewater discharges including subsequent monitoring well discharges shall require a new NPDES permit.

VIII. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in "New Mexico State Standards for Interstate and Intrastate Surface Waters" (20.6.4 NMAC amended through August 1, 2007).

The effluent from the water well testing will be discharged into an unnamed arroyo, thence to San Mateo Creek, thence to the Rio San Jose thence the Rio Puerco thence to the Rio Grande in Segment No. 20.6.4.105 of the Rio Grande Basin in McKinley County, NM. Segment No 20.6.4.105 states "The main stem of the Rio Grande from the headwaters of Elephant Butte reservoir upstream to Alameda Bridge (Corrales Bridge) and intermittent water below the perennial reaches of the Rio Puerco that enters the main stem of the Rio Grande." (Emphasis added).

The unnamed arroyo, San Mateo Creek and the Rio San Jose are assigned the designated uses of irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and secondary contact.

IX. EFFLUENT CHARACTERISTICS

The applicant provided pollutant data from the wells after they were drilled. A sample collected April 7, 2008, was reported on May 10, 2008, and the following is a summarization of those results.

POLLUTANT	mg/l unless noted	POLLUTANT	mg/l unless noted
Alkalinity	166	Iron, Dissolved	ND
Bicarbonate, (as HCO ₃)	203	Iron, Total	0.51
Fluoride	0.7	Lead, Dissolved	ND
Hardness, as CaCO ₃	51	Manganese, Total	0.03
pH, (Standard units, su)	7.94	Mercury, Dissolved	ND
Sulfate, Total (as SO ₄)	210	Molybdenum, Dissolved	ND
Temperature	14° C	Nickel, Dissolved	ND
Total Dissolved Solids	506	Selenium, Dissolved	ND
Aluminum, Dissolved	ND	Silver, Dissolved	ND
Arsenic, Dissolved	0.003	Thallium, Dissolved	ND
Barium, Dissolved	ND	Uranium, Dissolved	0.0032
Beryllium, Dissolved	ND	Vanadium, Dissolved	ND
Boron, Dissolved	0.2	Zinc, Dissolved	ND
Cadmium, Dissolved	ND	Adjusted Gross Alpha, Total	418 pCi/l
Chromium, Dissolved	ND	Radium 226, Total	62.9 pCi/l
Copper, Dissolved	ND	Radium 228	0.9 pCi/l
Cyanide, Total	ND	Radium 226 + Radium 228	63.8 pCi/l

X. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

The proposed effluent limitations for those pollutants proposed to be limited are based on regulations promulgated at [40 CFR 122.44]. The draft permit limits are based on either technology-based effluent limits pursuant to [40 CFR 122.44(a)], on BPJ in the absence of guidelines, NM WQS and/or requirements pursuant to [40 CFR 122.44(d)], whichever are more stringent.

A. Reason for Permit Issuance

It is proposed that the permit be issued for a 5-year term following regulations promulgated at [40 CFR 122.46(a)]. The proposed permit expiration date will coordinate with the EPA Basin Statewide Management Approach to Permitting in New Mexico, adopted March 2, 2000. This program also known as the Statewide Basin Management Approach to permitting is a comprehensive framework to better coordinate and integrate water resource management activities geographically by river basin.

Comment [1]: COMMENT If the permit is for a 5-year term, citation should be 40 CFR 122.46(a)
If the permit is for less than 5-years, citation should be 40 CFR 122.46(c)

The permit application was received on July 7, 2008 and was determined to be administratively complete July 11, 2008.

B. Operation And Reporting

The MHMW must submit discharge monitoring reports (DMR's) quarterly, beginning on the effective date of the permit, lasting through the expiration date of the permit, to report on all limitations and monitoring requirements in the permit.

C. Technology-Based Effluent Limitations/Conditions

Regulations promulgated at [40 CFR 122.44(a)] require technology-based effluent limitations to be placed in NPDES permits based on effluent limitations guidelines where applicable, on BPJ

(best professional judgment) in the absence of guidelines, or on a combination of the two. Technology-based effluent limitations for water well monitoring activities have not been promulgated for this type of activity. Permit limits will be established using BPJ procedures.

EPA establishes limitations based on the following technology-based controls: Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT). Best Practicable Control Technology Currently Available (BPT) - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory. Best Conventional Pollutant Control Technology (BCT) - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, and oil & grease (O&G). Best Available Technology Economically Achievable (BAT) - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

EPA proposes to limit pH in discharges from each outfall within the range 6-9 su, as appropriate BCT technology based on BPJ of the permit writer.

D. Technology-Based Versus Water Quality Standards-Based Effluent Limitations and Conditions

Following regulations promulgated at [40 CFR 122.44], the draft permit limits are based on either technology-based effluent limits pursuant to [40 CFR 122.44(a)] or on State WQS and requirements pursuant to [40 CFR 122.44(d)], whichever are more stringent.

E. Water Quality Based Limitations

1. General Comments

Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards and the applicable water quality management plan.

2. Water Quality Standards

The NM WQCC adopted WQS for the State. The revised WQS as amended through August 1, 2007, are available on the NMED's website at: <http://www.nmenv.state.nm.us/>. The WQCC established the revised WQS in accordance with, and under authority of, the NM Water Quality Act [Chapter 74, Article 6, NMSA 1978 Annotated].

3. Toxics

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at

[40 CFR 122.44 (d)] state that if a discharge poses the reasonable potential (RP) to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. NMED uses the following equation to determine effluent limitations for toxics that discharge to streams:

$$C_e = C_s [FQ_a + Q_e] / Q_e - C_a [FQ_a / Q_e]$$

Where:

Ce is the allowable daily maximum effluent concentration

Cs is the WQS

Ca is the ambient stream concentration

Qe is the effluent flow

Qa is the critical low-flow

F is the fraction of stream allowed for mixing, generally 1.0

The attached spreadsheet, “Fact Sheet Appendix” shows the results of the pollutants using the above relationship for determining RP for a pollutant to exceed WQS and the resulting permit limit for those pollutants that demonstrate a RP to exceed WQS. The summarized results are as follows:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/day		pCi/l	
	DAILY AVG	DAILY MAX	DAILY AVG	DAILY MAX
POLLUTANT				
Radium, 226 + 228	N/A	N/A	20	30
Adjusted Gross alpha	N/A	N/A	10	15

Since the discharges are radiation in nature, the draft permit will not establish mass loading limits and concentration limitations will be protective of the environment. This is consistent with 40 CFR 122.45(f)(1)(i) which states:

“Mass limitations. (1) All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass except:
 (i) For pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass...”

4. Segment Specific Water Quality-Based Limits

Segment specific standards for 20.6.4.105 require pH to be between 6.6 – 9.0 su’s, which is more restrictive than the technology-based limitations developed above. The draft permit will reflect pH to be within 6.6 to 9.0 su’s.

The segment has requirements for TDS, sulfate and chlorides when discharge rates exceed 100 cfs (64.6 MGD). Since the flow rate is expected at no more than 0.216 MGD, these conditions are not needed in the draft permit.

Additional segment specific requirements for temperature and bacteria are not required to be limited in the draft permit since neither temperature nor bacteria are expected pollutants for this discharge.

5. Additional Pollutant Testing

Discharges from industrial facilities for permits issued to protect New Mexico WQS need to analyze at a minimum certain human health pollutants. The following pollutants need to be sampled, analyzed and reported on the first discharge. A reopener clause will allow the permits to be reopened and additional limitations placed in the permit if these results indicate that a reasonable potential exists to exceed applicable WQS. Those pollutants are: Antimony (dissolved), Cyanide, weak acid dissociable, 2,3,7,8-TCDD (Dioxin), Acrolein, Acrylonitrile, Benzene, Bromoform, Carbon Tetrachloride, Chlorobenzene, Chlorodibromomethane, Chloroform, Dichlorobromomethane, 1,2- Dichloroethane, 1,1-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropene, Ethylbenzene, Methyl Bromide, Methylene Chloride, 1,1,2,2-Tetrachloroethane, Tetrachloroethylene, Toluene, 1,2--trans-Dichloroethylene, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, 2-Chlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2-Methyl-4, 6-Dinitrophenol, 2,4-Dinitrophenol, Pentachlorophenol, Phenol, 2,4,6-Trichlorophenol, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Bis (2-chloroethyl) Ether, Bis (2-chloroisopropyl) Ether, Bis (2-ethylhexyl) Phthalate, Butyl Benzyl Phthalate, 2-Chloronaphthalene, Chrysene, Dibenzo (a,h)anthracene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 3,3-Dichlorobenzidine, Diethyl Phthalate, Dimethyl Phthalate, Dibutyl Phthalate, 2,4-Dinitrotoluene, 1,2-Diphenylhydrazine, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Hexachloroethane, Indeno (1,2,3-cd)Pyrene, Isophorone, Nitrobenzene, n-Nitrodimethylamine, n-Nitrosodi-n-Propylamine, n-Nitrosodiphenylamine, Pyrene, 1,2,4-Trichlorobenzene, Aldrin, Alpha-BHC, Beta-BHC, Gamma-BHC, Chlordane, 4, 4'-DDT and derivatives, Dieldrin, Alpha-Endosulfan, Beta-Endosulfan, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs and Toxaphene.

From the table in Part IX above, low levels of uranium concentrations have been reported. Section 308 of the Clean Water Act, "Inspections, Monitoring and Entry", allows broad discretion in requiring monitoring requirements in support of 40 CFR 122.44(i). The draft permit will propose "Report" requirements for uranium.

6. Monitoring Frequency For Limited Parameters

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, [40 CFR 122.48(b)], and to assure compliance with permit limitations, [40 CFR 122.44(i)(1)]. Flow is proposed to be estimated daily when discharging. Monitoring for pH, gross alpha particles, radium and uranium are once per week, by grab sample, when discharging.

XI. 303(d) LIST

The Rio Grande, from San Marcial to the Rio Puerco and the non-tribal Rio Puerco from the Rio Grande to Arroyo Chijuilla, are not identified as impaired on the "State of New Mexico Part 303(d) List for Assessed Stream and River Reaches, 2006-2008." Both waterbody's Integrated Report (IR) Category are both assessed as Category 2 with both "fully supporting" irrigation, marginal warmwater aquatic and wildlife habitat, and both "not assessed" for livestock watering and secondary contact. The standard reopener language in the permit allows additional permit conditions if a future TMDL is done.

XII. ANTIDegradation

The NMAC, Section 20.6.4.8 "Antidegradation Policy and Implementation Plan" sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

XIII. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, <http://ifw2es.fws.gov/EndangeredSpecies/lists/>, four species in McKinley County are listed as Endangered (E) or Threatened (T). They are the Black-footed ferret (*Mustela nigripes*) (E), Mexican spotted owl (*Strix occidentalis lucida*) (T), Southwestern willow flycatcher (*Empidonax traillii extimus*) (E) and the Zuni fleabane (*Erigeron rhizomatus*) (T). Additionally, since the location of the project site is within a couple miles of Cibola County, those species were also evaluated. One species unique to Cibola County not found on the McKinley County list is the Pecos Sunflower (*Helianthus paradoxus*) (T). After a review of the available literature, identified below, EPA has determined that the discharge will have *no effect* on either the E or T species or their habitat.

The black-footed ferret research finds that the species has diminished due to the eradication of prairie dogs, the primary source of the ferret's habitat and food. Main causes of the decline in the ferret population included habitat conversion for farming; efforts to eliminate prairie dogs, which competed with livestock for available prairie forage; and sylvatic plague, a disease that wiped out large numbers of prairie dogs and has also killed ferrets. Reintroduced black-footed ferrets have been designated as "non-essential experimental" populations under the Endangered Species Act. This designation allows, Federal, State, and Tribal resource managers, and private citizens more flexibility in managing new populations. The "non-essential, experimental" designation does not limit land uses such as forest management, agricultural practices, sport hunting, and non-consumptive outdoors recreation. The NPDES program regulates discharge of pollutants and does not regulate forest management practices and agricultural practices. Issuance of this permit will have *no effect* on the Black-footed Ferret food source or habitat.

Owls use areas that contain a number of large trees of different types including mixed-conifer and pine-oak with smaller trees under the canopy of the larger trees. The primary owl prey species are woodrats, peromyscid mice and microtine voles. A diverse prey base is dependant on availability and quality of diverse habitats. Owls have not been reported to drink water, so it is likely that owls meet much of their biological water requirements through the prey they consume. However, the presence of water does provide related benefits to owls as the availability of water may contribute to improved vegetation diversity and structure which improves cover and possibly prey availability. The primary cause for the population decreases leading to threatened status for the Mexican Spotted Owl is destruction of habitat. No pollutants are identified which might affect species habitat or prey species and are not reviewed by the permitting process. Catastrophic fires and elimination of riparian habitat also were identified as threats to species habitat. The NPDES program regulates the discharge of pollutants and does not regulate forest management practices and agricultural practices, which contribute to catastrophic fires and elimination of riparian habitat, and thus, species habitat. The issuance of this permit is found to have *no effect* on the habitat of this species.

Southwestern Willow Flycatchers habitat occurs in riparian areas along streams, rivers, and other wetlands where dense willow, cottonwood, buttonbush and arrowweed are present. The primary reason for decline is the reduction, degradation and elimination of the riparian habitat. Other reasons include brood parasitism by the brown-headed cowbird and stochastic events like fire and floods that destroy fragmented populations. The discharge is not located in a riparian area and should not provide a suitable habitat for the flycatchers. The permit does not authorize activities that may cause destruction of the flycatcher habitat, and issuance of the permit will have *no effect* on this species.

The Zuni fleabane (rhizome fleabane) is found on barren detrital clay hillsides with soils derived from shale's of the Chinle or Baca formations (often seleniferous); most often on north or east facing slopes in open piñon juniper woodlands at 7,100 - 8,000 ft. It never occurs on southern slopes. Most of the populations are close to inactive uranium claims. If exploration or mining is reactivated, there may be adverse impacts to the plants. The primary threat to Zuni fleabane is disturbance due to habitat destruction and heavy equipment resulting in surface disturbance. The discharge from this facility will have *no effect* on this species.

The Pecos sunflower is an annual species that must re-establish populations of adult plants each year from seed produced during previous years' reproductive efforts. Habitats with suitable alkaline soils and perennially wet hydrologic conditions for all of the life functions of the Pecos sunflower are typically small areas around springs and ponds. Therefore, populations tend to grow in crowded patches of dozens or even thousands of individuals. The loss or alteration of wetland habitat continues to be the main threat to the Pecos sunflower. There is evidence these habitats have been historically, and are presently being, reduced or eliminated by aquifer depletion, and severely impacted by agricultural activities and encroachment by exotic plants. The lowering of water tables through aquifer withdrawals for irrigation and municipal use, diversion of water from wetlands for agriculture and recreational uses, and wetland filling for conversion to dry land uses destroy or degrade desert wetlands. Although water contamination is a significant threat for the Roswell springsnail or the Koster's springsnail, when the Pecos

sunflower was listed in 1999, reduced water quality was not seen to be a threat to the species. The issuance of this permit is found to have *no effect* on the habitat of this species.

XIV. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The issuance of the permit should have no impact on historical and/or archeological sites since no construction activities are specified in the application.

XV. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of New Mexico's Water Quality Standards for Interstate and Intrastate Streams are revised or remanded by the New Mexico Water Quality Control Commission. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the Water Quality Standards are either revised or promulgated by the New Mexico Environment Department. Should the State adopt a State water quality standard, and/or develop or amend a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with [40 CFR 122.44(d)]. Modification of the permit is subject to the provisions of [40 CFR 124.5].

XVI. VARIANCE REQUESTS

No variance requests have been received.

XVII. CERTIFICATION

The permit is in the process of certification by the State agency following regulations promulgated at [40 CFR 124.53]. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XVIII. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XIX. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. Application(s)

EPA Application received July 7, 2008.

B. 40 CFR Citations

Sections 122, 124, 125, 133, 136

C. State of New Mexico References

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 1, 2007.

Statewide Water Quality Management Plan, December 17, 2002.

Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Stream, May 1995.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2006 - 2008.

D. Miscellaneous References

EPA Region 6 "Policy for Post Third Round NPDES Permitting" and "Post Third Round NPDES Permit Implementation Strategy," October 1, 1992.