



NEW MEXICO
ENVIRONMENT DEPARTMENT



Ground Water Quality Bureau

SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

Harold Runnels Building
1190 St. Francis Drive, P.O. Box 5469
Santa Fe, NM 87502-5469
Phone (505) 827-2918 Fax (505) 827-2965
www.nmenv.state.nm.us

DAVE MARTIN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

MEMORANDUM

TO: Dave Martin, Cabinet Secretary, New Mexico Environment Department
Jim Davis, Director, Resource Protection Division

THROUGH: Jerry Schoeppner, Acting Chief, Ground Water Quality Bureau (GWQB)
Mary Ann Menetrey, Manager, Mining Environmental Compliance Section,
GWQB

FROM: Dana Bahar, Manager, Superfund Oversight Section, GWQB

SUBJECT: **Background Information Pertaining to the Johnny M Mine Area Site
(CERLIS ID: NMN000607139), McKinley County, New Mexico**

DATE: November 30, 2011

The Johnny M Mine Area (Site) consists of approximately 260 acres of land located in McKinley County off of New Mexico Highway 605 N, approximately 2 miles west of San Mateo, New Mexico. The Site includes the former mine which is part of the Lee Ranch (67 acres) in the northeastern quarter of the Site, and the Jackson Ranch Small Business (193 acres), a primary residence and small livestock breeding and training business.

EPA relocated the homeowner and the Jackson Ranch Small Business on April 7, 2011 in response to the discovery of elevated concentrations of several radio-isotopes in uranium mine waste/uranium mill waste and soil/debris adjacent to the mine. Further characterization of the nature and extent of surface and groundwater contamination is warranted based on available data, and the history of mining operations and reclamation activities on and adjacent to the former mine site.

EPA has approached the former mine operator and owner of the mineral estate, Hecla Mining Company (Hecla) to take over response actions at the Site and has recently issued an Administrative Order on Consent (AOC) that seeks to recover all past and future response costs. Hecla has until December 6, 2011 to respond. There is a need to address this quickly because the relocation cannot be ended until physical response measures are taken to address the immanent and substantial endangerment (ISE), and temporary relocations are generally limited to one year. In the meantime, Hecla contacted the Mining and Minerals Division (MMD) of the Energy, Minerals and Natural Resources Department (EMNRD) to discuss its responsibilities under the Mining Act.

The Ground Water Quality Bureau has determined that a Stage 1 Abatement Plan, in accordance with New Mexico Water Quality Control Commission (WQCC) regulations is required. However, in light of EPA issuing the AOC, the GWQB recommends that NMED work closely with EPA and MMD to address the threats to human health and the environment as efficiently and expeditiously as possible. Should an agreement with EPA not be forthcoming in a timely manner or should the agreement not satisfactorily

address the substantive requirements of the WQCC regulations, GWQB shall require that Hecla submit an Abatement Plan in accordance with WQCC regulations.

Site Description

Elevated concentrations of several radio-isotopes in uranium mine/mill waste and soil/debris have been documented at the Site. Radium-226, radon-222, uranium-238 (and their associated progeny), and associated gamma and other forms of ionizing radiation generated from various mining activities including surface discharge of mine process water and transport of ore across the Site, are present throughout the surface, near-surface soils, and ground water present beneath the Site.

Historical analysis of ground water indicates that leakage from the overlying Dakota Formation into the Westwater Canyon has occurred at the Site, which is attributed to ore-body dewatering, despite separation of the two formations by a thick shale sequence. NMED collected water samples on November 8, 2010 from the Jackson property private wells on the land adjacent to and west of the Johnny M Mine. Results indicate elevated levels of contaminants in the groundwater. NMED also noted that gamma surface soil radioactivity readings were above background concentrations around the Jackson residential structure. The analytical results of a grab sample of water collected from the Johnny M Mine north vent hole that was collected by Roca Honda Resources in November 2010 indicates that ground water in the shaft is significantly elevated in gross alpha radioactivity and uranium.

In October 2009 EPA conducted an Aerial Radiometric Survey of the Johnny M Mine area which indicated the surface soil exceeds 13,000 counts per minute (cpm) or approximately 75 micro Roentgens per hour (uR/hr). Similarly, during a site visit to the Johnny M Mine on July 26, 2010 surface radioactivity levels were above 10,000 cpm and possibly higher in places. Background gamma radioactivity ranges between approximately 10-20 uR/hr in the area.

Regulatory History Summary

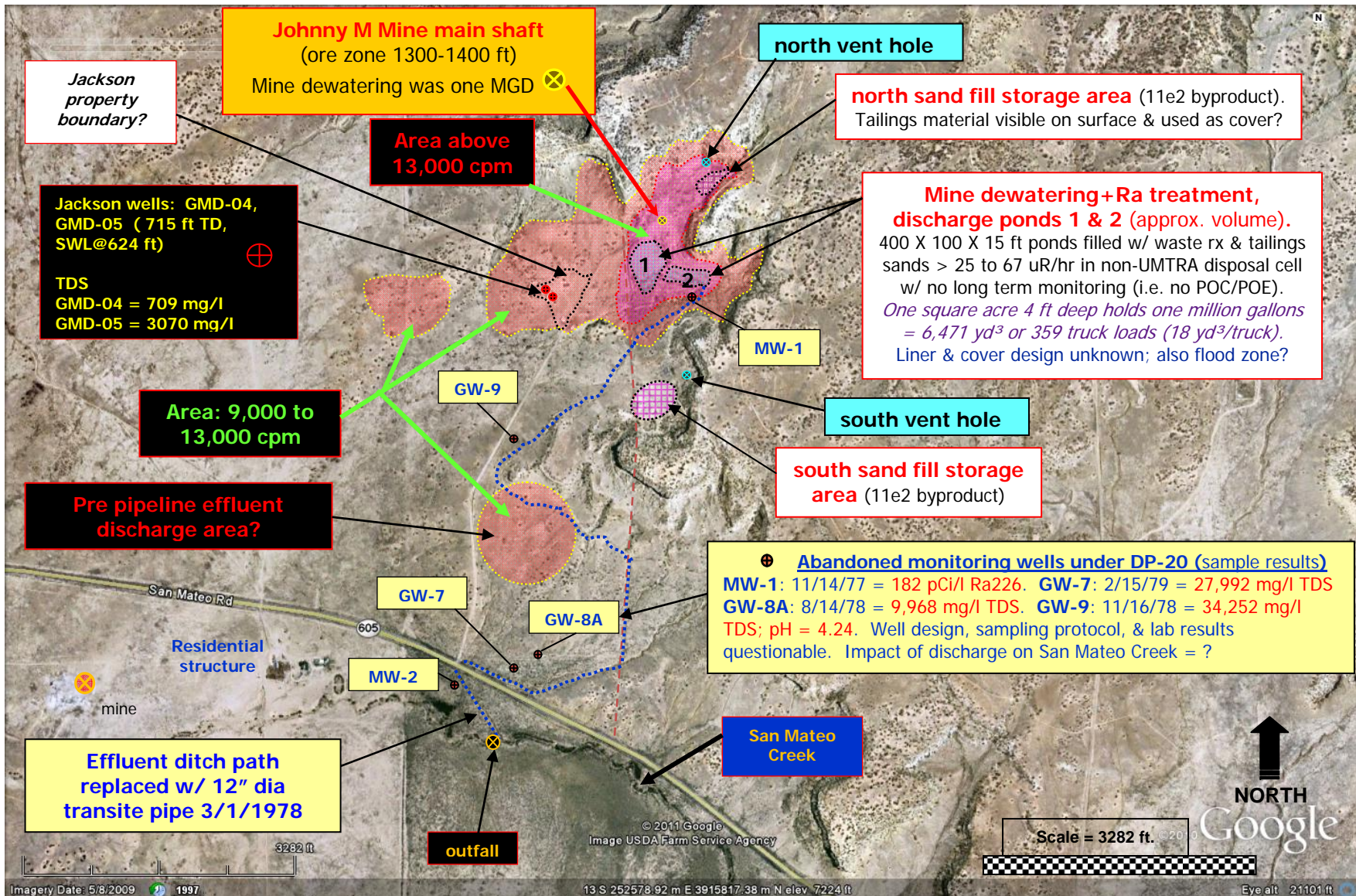
Ranchers Exploration and Development Corporation (Ranchers) operated the mine between 1976 through 1982. In 1984 Ranchers merged with Hecla.

Ranchers operated the mine between 1972-1977 without a ground water discharge permit (n.b., the New Mexico Water Quality Control Commission Regulations which regulate discharges to ground water were promulgated in 1977). The mine discharged effluent (without treatment to remove contaminants) to an unlined ditch at a flow rate of approximately 738 gallons per minute (gpm) during 1977 which equates to 1,062,720 gallons per day (gpd) or about 1 million gallons per day (MGD). This flow was conveyed approximately one mile in an unlined ditch from Pond No. 2 to the outfall where the ditch discharges into San Mateo Creek.

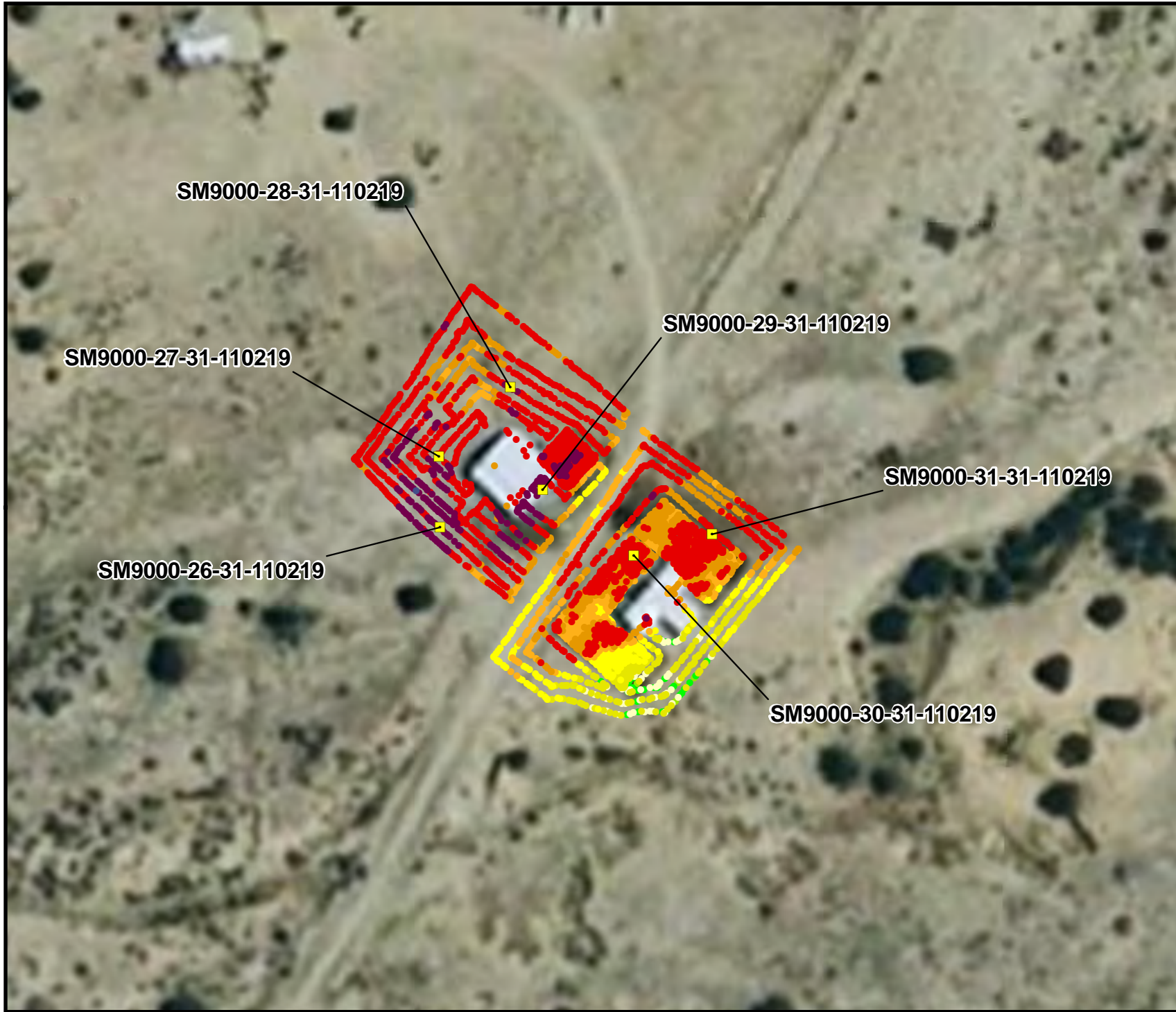
Beginning in 1978, the Johnny M Mine was required to get a discharge permit from the NM Environmental Improvement Agency (NMEID--predecessor agency of NMED). The monitoring requirements for the Johnny M Mine were proposed, modified, and finalized from March 27, 1978 through June 16, 1978 (final plan approved date for DP-20). Discharge plan application DP-20 references current discharge of approximately 1 MGD to two settling ponds and thence to San Mateo Creek via a one-mile open ditch across Section 18 that was to be replaced by a 12-inch pipe. Each of the ponds was approximately 100 ft by 400 ft by 15 ft deep, and was constructed subgrade between the base of the Gallup formation and the top of the Mancos Shale. Operations also were conducted under Radioactive Materials License NM-RED-MB-00 between 1978 and 1984. A map accompanying the discharge plan indicates that the pipe was to lead to an arroyo which then flowed to San Mateo Creek in Section 19.

On May 31, 1977, Ranchers submitted a notice of urgent intent to NMEID to discharge mine tailings, in slurry form, underground to prevent already mined sections of Johnny M Mine from caving in and affecting the Dakota water above it. Backfilling of open mine shafts with tailing slurry to mitigate subsidence was conducted between 1977 and 1982.

Ranchers issued a Notice of Intent to Cease Operations and to Vacate Premises at the Johnny M Mine on January 14, 1982 and submitted a Termination Report on August 13, 1983. In 1984 Ranchers merged with Hecla. In 1985 NMEID advised Hecla that efforts by Ranchers to reclaim the site for Radioactive Material License NM-RED-MB-15 (Johnny M Mine) have been unsuccessful. The Nuclear Regulatory Commission resumed the role of lead regulatory agency for radioactive material and licensing in 1986 and terminated Johnny M Mine site source material license under Amendment No. 4 in 1993. The NRC action was limited to the licensed area and thus was limited in scope and area, and did not address identified areas of concern or ground water (see attached figures). No further action was conducted by Hecla under DP-20.



Generalized map of the Johnny M Mine area depicting the approximate location of features & information that characterize the magnitude & extent of possible contaminant releases, Ambrosia Lake Sub-District, Grants Mining District, New Mexico.



NEW MEXICO

0 50 100
SCALE IN FEET

LEGEND

- Soil Samples

Readings Below EPA Action Level

- 0 - 10999
- 11000 - 12999
- 13000 - 15130
- 15131 - 16131

Readings Exceeding EPA Action Level

- 16132 - 16999
- 17000 - 19999
- 20000 - 29999
- 30000 - 39999
- 40000 - 49999
- 50000 - 99999
- 100000 - 199999
- 201794

NOTE: RESULTS IN COUNTS PER MINUTE (CPM)

TDD NO: TO-0005-09-02-01
CERCLIS: NMN000606847
SOURCE: ESRI World Imagery

US EPA REGION 6
START-3

FIGURE 1
STABLES ASSESSMENT MAP
SAN MATEO URANIUM ASSESSMENT
PROPERTY - SM9000
ASSESSMENT DATE: 2/18/2011
SAN MATEO, CIBOLA COUNTY,
NEW MEXICO

DATE FEB 2011	PROJECT NO 20406.012.005.0397.01	SCALE AS SHOWN
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