STATEMENT OF WORK
FOR ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR REMOVAL SITE EVALUATION

Homestake Mining Company Mines
Ambrosia Lake Study Area
McKinley County, New Mexico

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1 INTRODUCTION

1.1 Purpose

This Statement of Work ("SOW") sets forth the procedures and requirements for conducting a Removal Site Evaluation ("RSE") for the mines in the Ambrosia Lake Study Area of the San Mateo Creek Basin Legacy Uranium Mines Site listed in Section 1.2 and step out areas defined in Section 1.2 (collectively, the "Mines," and each individually, a "Mine") to investigate actual or threatened releases of hazardous substances. This SOW specifies actions required to be completed by Homestake Mining Company of California ("Respondent") pursuant to the Administrative Settlement Agreement and Order on Consent ("AOC"), CERCLA Docket No. 06-04-21, entered into voluntarily with the United States Environmental Protection Agency ("EPA"). All terms used in this SOW shall be interpreted in a manner consistent with the definitions provided in the AOC. In the event of any conflict between this SOW and the AOC, the AOC shall control.

1.2 Site Description

The Mines are located in the Ambrosia Lake Sub-District ("ALSD"), McKinley County, New Mexico approximately 25 miles northwest of Grants, and 3.5 miles northwest of the intersection of New Mexico State Highways 509 and 605 (Figure 1).

The Mines to be addressed by this SOW include:

- Dysart No. 1 (Figure 2),
- Dysart No. 2 (Figure 3),
- Mary No. 1, aka Dysart No. 3 (Figure 4),
- Section 13 (Figure 5),
- Section 15 (Figure 6),
- Section 23 (Figure 7),
- Section 25 (Figure 8),
- Section 32 (Figure 9).

In addition, Respondent must characterize additional areas adjacent to the Mines (i.e., "step out areas") that exceed specified background threshold values (BTV) established at the 95% upper tolerance limit (95% UTL) in the applicable background reference area(s) consistent with Section 5.3. These step out areas, if any, will be identified during Field Investigation ("FI") as described in Section 5.4.

The Respondent shall not be responsible for characterizing, evaluating, or remedying any mine-related impacts within the boundaries of any adjacent mine permit or lease area not associated with the Respondent under this AOC.

For clarity, the term "Mines" used herein shall include the step out areas.

2 GENERAL REQUIREMENTS

The RSE and associated deliverables required under this SOW shall be consistent with the National Contingency Plan ("NCP") 40 CFR 300.415(b)(4)(i) (EE/CA), the *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA* (U.S. EPA Office of Solid Waste and Emergency Response (OSWER) 9360.0-32, August 1993), all other guidance used by EPA in general or specific to the Site area for conducting a RSE (Attachment 2), and the requirements of this SOW. In conducting the RSE, EPA expects the Respondent to propose the most appropriate procedures and methodologies using accepted engineering practices and controls.

The radiological investigation activities conducted as part of this RSE shall be conducted in a manner consistent with the methods described in the Multi-Agency Radiation Survey and Site Investigation Manual ("MARSSIM") to facilitate implementation of a final status survey at the completion of all mitigation activities**.** MARSSIM is not intended to replace or conflict with the existing CERCLA Removal Process defined in 40 CFR 300.415 (NCP subpart E – Hazardous Substance Response) but is intended to provide supplemental guidance for specific situations involving radioactive contamination. For example, MARSSIM includes scanning for radioactive materials, which is not discussed in the more general CERCLA guidelines.

2.1 Priority Media

Priority media at the Mines are soils.

2.2 Priority Contaminants of Concern

The primary Potential Contaminant of Concern ("PCOC") is radium-226 ("^{226}Ra"). ^{226}Ra and its associated gamma emission is the primary risk driver associated with uranium ore extraction. In addition to ^{226}Ra, Respondent shall analyze soil samples from selected locations for additional PCOCs frequently associated with uranium mining activities. The contaminants for these analyses shall include ^{226}Ra, uranium, arsenic, molybdenum, selenium and vanadium

2.3 Communication

A summary of the major deliverables and schedule for submittals is in Attachment 1. This summary and schedule can be used as the basis for the Respondent's proposed deliverables and schedules included in the work plan.

A list of primary guidance, and reference material is attached (Attachment 2). In all cases, the Respondent shall use the most recently issued guidance.

Respondent shall communicate at least bi-weekly with the EPA, either in face-to-face meetings or through conference calls. Respondent shall document all decisions that are made in meetings and conversations with EPA via the monthly progress reports. EPA will provide oversight of Respondent activities throughout the RSE. EPA review and approval of deliverables is a tool to assist this process and to satisfy, in part, EPA's responsibility to provide effective protection of public health, welfare, and the environment. EPA will review deliverables to assess the likelihood

that the RSE will achieve its goals and that its performance and operations requirements have been met.

Respondents shall direct all deliverables to the U.S. EPA Primary Contact listed below. All deliverables must be submitted by the deadlines specified in this SOW, the EPA-approved RSE Work Plan, or as otherwise agreed by EPA, as applicable, in the form specified by the U.S. EPA Primary Contact.

2.4 U.S. EPA Primary Contact

The primary contact for this RSE is Site Assessment Manager ("SAM") Michelle Delgado-Brown. Ms. Brown can be reached at (214) 665-3154 or via e-mail at delgadobrown.michelle@epa.gov. The alternative contact for this RSE is Federal On-Scene Coordinator ("FOSC") Anish Patel. Mr. Patel can be reached at (214) 665-2288 or via email at patel.anish@epa.gov. Mailing address is US EPA Region 6, 1201 Elm Street, Suite 500, Dallas, Texas 75270-2102.

2.5 Record Keeping Requirements

The Respondent shall maintain all technical records for the RSE. At the completion of the work, submit an official record of the RSE in an electronic form to the EPA. Electronic data shall be provided as described in the Data Management Plan (Section 3.2). Maps should be provided as ArcGIS shape files, map packages or file geodatabases.

3 RSE WORK PLANNING

3.1 RSE Work Plan

The Respondent shall prepare and submit a RSE work plan that includes a detailed description of study objectives, implementation activities, performance monitoring, and overall management strategy for the RSE. The Respondent shall:

- Contact the EPA SAM within five calendar days after the Effective Date to schedule the scoping meeting or work plan development conference call to be conducted between EPA and the Respondent. The EPA/SAM will be available to meet with the Respondent after the initial scoping meeting to discuss and clarify any issues the Respondent may have regarding this project.

- Prepare and submit a draft RSE Work Plan within 90 calendar days the Effective Date of the AOC. The RSE Work Plan shall include a detailed description of the objectives and technical approach for RSE activities and plans for implementing all RSE activities identified in this SOW. Specify the necessary procedures, inspections, deliverables, key personnel, and schedules. Include a comprehensive implementation management schedule for completion of each major activity and submittal.

3.2 Site-Specific Plans

The Respondent shall prepare, update, and/or maintain, as necessary, site-specific plans for RSE implementation. Incorporate the plans and procedures received from any subcontractor(s) into the overall site plans. Should the Respondent fail to meet the required standards in accordance with the appropriate legal, regulatory, and/or EPA guidance, EPA will provide review comments and the Respondent will revise site-specific plans accordingly. Site-specific plans include the following:

- Field Sampling ("FSP") is required by 40 CFR 300.415(b)(4)(ii) for all sites where environmental samples are collected. The FSP is composed of two elements: (1) the FSP which defines a Conceptual Site Model (CSM) for contaminate fate and transport, along with applicable field sampling and survey designs that specify the number, type, locations and methodologies for collection of field measurements and soil sampling data; (2) The quality assurance project plan ("QAPP") which describes data quality objectives ("DQOs") and plans for obtaining the appropriate type(s) of data and data of sufficient, quantity and quality to meet the DQOs.

- Site-specific Health and Safety Plan ("HSP") that specifies employee training, protective equipment, standard operating procedures, and an emergency response plan in accordance with 29 CFR 1910.120(l)(1) and (l)(2).

- Data Management Plan shall present a framework for the generation, validation, and distribution of the RSE data deliverables. At a minimum, the Data Management Plan will address the following topics: (1) a description of the data management process, including the data management team and management of new and existing data; (2) a description of the data management system, including databases, software and specification of acceptable electronic data deliverable ("EDD") format(s); and (3) a description of the management and administration of the data management system, including access, security and data backup. Note: currently, EPA requires the use of the Scribe software tool for sample data collection.

4 PROJECT MANAGEMENT AND REPORTING

4.1 Project Management

The Respondent shall perform activities required to effectively manage the RSE. These activities include the following:

- Monitoring progress.

- Preparing and submitting monthly progress reports that document monthly performance status, and technical progress.

- Participating in meetings and preparing and submitting meeting summaries.

- Accommodating any external audit or review mechanism that EPA requires.

5 RSE PROJECT ELEMENTS

5.1 Project Initiation

The Respondent shall perform project initiation and support as needed to obtain the site characterization data required to support the determination whether a removal action is necessary, and if so, the site characterization data necessary to perform an Engineering Evaluation/Cost Analysis (EE/CA) to select a removal action that eliminates, reduces, or controls the excess radiological risks to human health and the environment posed by the Facilities. Project initiation activities include the following:

- Reviewing existing site related data and reports from all available sources.
- Identifying significant data gaps in existing site related data.
- Developing a preliminary CSM for environmental fate and transport of PCOCs based on existing data.
- Identifying potential radiological exposure scenarios.

5.2 Site Access

Respondent will use best efforts to work with the landowners to obtain property access approvals within sixty (60) days of the Effective Date of the AOC.

5.3 Background Study

Respondent shall conduct a study to characterize background conditions in a manner consistent with MARSSIM protocols. Respondent shall propose one or more background reference areas (BRA) based on similarity in soils, geology and geomorphic setting, upgradient and upwind orientation relative to the Facilities as determined by available topographical maps and regional meteorological data. Background reference areas may include areas exhibiting anthropogenic conditions created by activities such as mining or milling.

Selection criteria for background samples are provided in Section 4.5 of MARSSIM and include absence of contamination from the area being evaluated and similarity in physical, chemical, geological, radiological, and biological characteristics to the contaminated areas being evaluated. Because the Mines are spread across a relatively large area within the Ambrosia Lake Study Area of the San Mateo Creek Basin, considerable variability in background radiological conditions is possible. To help ensure that one or more background reference areas are identified as representative of each Mine, preliminary screening measurements shall be used to help determine an appropriate number of background reference area(s), their size and locations, and which background area(s) are representative of each individual Mine.

A gamma scan of the background reference area(s) shall be performed, in addition to collection and testing of surface soil for ^{226}Ra activity, total uranium, arsenic, molybdenum, selenium, and vanadium. For the BRA, background threshold values ("BTVs") in pCi/g of ^{226}Ra and counts per

minute (cpm) shall be derived. BTVs shall be calculated at the 95% upper tolerance limit with 95% coverage (UTL95-95). Site areas where ^{226}Ra soil concentrations exceed the corresponding BTV will initially be considered potentially impacted by historic mining operations. Confirmation of impacts in excess of background conditions may be based on a number of additional criteria including visual indications, historical information, CSM considerations (e.g. geographic, geomorphic and meteorological site characteristics), and/or analytical evidence reflected in radiological or geochemical data collected during the Field Investigations.

5.4 Field Investigation/Data Acquisition (FI)

The Respondent shall collect environmental data required to characterize background conditions, the nature and extent of mining impacts (the term "mining impacts" means impacts associated with surface water discharge from mining operations, windblown transportation of mine related wastes and investigation of any impacts to the soil at the Mine site that may have arisen from windblown 11(e)2 tailings material associated with uranium mill processing that occurred during the same operational time frame as the uranium mining operations), and geotechnical properties of the Mines in support of the RSE. For preliminary estimates of contaminated soil volume, this shall be evaluated based on a gross removal action level (RAL) determined as the calculated site-specific PRG for ^{226}Ra as described in Section 7, inclusive of the applicable BTV for ^{226}Ra at each mine site. Data acquisition begins with EPA's approval of the FSP. The FI will include the following elements:

- Mobilization/demobilization.

- GPS-based gamma radiation surveys.

- Study to evaluate statistical correlations between gamma radiation and ^{226}Ra soil concentrations (and possibly concentrations of other PCOCs).

- Environmental sampling.
    - Surface soil sampling: laboratory analysis of soil samples to confirm gamma survey evidence of mine impacts and/or to statistically correlate gamma survey data.
    - Subsurface soil sampling: laboratory analysis of subsurface soil samples to establish the maximum depth of contamination to be used in calculation of contamination volume.
        - Laboratory PCOC metals analysis to establish the concentration of PCOC metals to be used in, or excluded from, future risk evaluation and to establish depth of metals contamination to be used in the calculation of contamination volume as appropriate.

- Establish Site specific or geographic sub-area specific (for clustered mines) radiological background values (^{226}Ra, and possibly ^{230}Th concentrations in soil (depending on mine proximity to historic uranium mills in the area], along with gamma radiation levels).

- Establish Site specific or geographic sub-area specific (for clustered mines) for PCOC metals in soil (including uranium).

- Air monitoring near any historic vents, shafts or utility raises for radon (^{222}Rn) to verify the

effectiveness of historic reclamation measures for preventing radon emissions from the underground mine workings.

- Geotechnical survey:
    - Siting of potential on-site consolidation and management repository options for any potential future remediation efforts, which will include an understanding of the near-surface geology.
    - Identification of historic mine closure operation disposal and/or debris consolidation pits utilizing appropriate geotechnical methodologies.

- Site reconnaissance:
    - Historical Preservation Act (106) phase 1 eligibility survey
    - Soil sampling
    - Field screening utilizing appropriate gamma survey technologies

- Ecological Characterization:
    - Habitat delineation and value assessment
    - Wildlife observations
    - Identification of endangered species and others of special concern

6 OFF-SITE LABORATORY ANALYSIS

6.1 Sample Analysis

The Respondent shall have analyzed**,** at a certified off-site laboratory**,** the multi-media samples collected during the RSE to determine concentrations of ^{226}Ra, possibly ^{230}Th (depending on mine proximity to historic uranium mills in the area), and PCOC metals concentrations in soil, ^{222}Rn concentrations in air, and geotechnical parameters as specified in the FSP and QAPP. Specific sampling purposes include:

- Establishing site specific background ^{226}Ra and possibly ^{230}Th (depending on mine proximity to any historic uranium mills in the area), along with PCOC metals (including uranium) in soil
- Determination of ^{226}Ra and possibly ^{230}Th (depending on mine proximity to any historic uranium mills in the area), along with PCOC metals (including uranium) concentrations across the Facilities.
- Development of statistical correlations between ^{226}Ra soil concentrations and gamma radiation, and verification and quantification of soil impacts in areas where gamma readings exceed background levels.
- Ambient ^{222}Rn levels in air near historic conduits to the underground mine workings.
- Various geotechnical parameters as needed to support the RSE.

Respondent shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with the appropriate EPA guidance. Respondent shall follow, as appropriate, "Quality Assurance/Quality Control Guidance for Removal Activities: Sampling QA/QC Plan and Data Validation Procedures" (OSWER Directive No. 9360.4-01, April 1, 1990), as guidance for QA/QC and sampling. Respondent shall only use laboratories that have a documented Quality System that complies with ANSI/ASQC E-4 2004, "Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use" (American National Standard), and "EPA Requirements for Quality Management Plans (QA/R-2) (EPA/240/B-01/002, March 2001)," or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program ("NELAP") as meeting the Quality System requirements.

6.2 Split Samples

Upon request from EPA, Respondent shall provide 10% splits to EPA to be analyzed by EPA's laboratory for corroboration analysis. EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow Respondent to take split or duplicate samples of any samples it takes as part of its oversight of Respondent's implementation of the Work.

6.3 Laboratory Results

A copy of all laboratory results shall be provided to EPA within 5 days of Respondent's, or Respondent's consultants, receipt of such results. Laboratory results need not be validated for this submittal.

6.4 Analytical Data Validation

The Respondent shall request sample analyses and validate analytical results as specified in the FSP and QAPP. Activities include the following:

- Preparing and/or shipping environmental samples in accordance with the QAPP. The following types of environmental sampling shall be required:
    - Surface and subsurface soil sampling for off-site laboratory analysis of ^{226}Ra and possibly ^{230}Th (depending on mine proximity to any historic uranium mills in the area), along with PCOC metals (including uranium).
    - Ambient ^{222}Rn gas monitoring near any open vents, shafts or utility raises for verification of historic sealing to prevent radon emissions from the underground mine workings.
    - Geotechnical sampling as needed to support the RSE.
- Developing data quality objectives ("DQO") for and in support of the FSP; the CSM will inform sampling designs and DQOs shall specify analytical acceptance criteria for future use of the data.
- Maintain and update SOPs for field survey and sampling procedures.

- Verification that off-site analytical services comply with EPA quality assurance requirements, and that the methods used are consistent with DQO and QAPP specifications.

- Providing sample management including chain of custody procedures, information management, sample retention, and 10-year data storage.

- Performing data validation, the process by which the quality and usability of the data, the defensibility of the data, and the chain of custody are verified. Performing data validation in accordance with approved QAPP specifications.

6.5 Data Evaluation (DE)

The Respondent shall compile analytical and field data. Provide data in format that is compatible with EPA Regional or EPA National electronic data management network. Activities include the following:

- Data usability evaluation and field QA/QC.
- Data reduction and tabulation.
    - Field radiological screening data.
    - Geotechnical data.
    - Analytical results from off-site laboratories.

7 EXCESS RADIOLOGICAL RISK EVALUATION - ASSESSMENT (RA)

The Respondent shall conduct streamlined human health and ecological risk evaluations. The objective of these evaluations (assessments) is to characterize and quantify, where appropriate, the current and potential human health and environmental risks for excess radiation exposure and/or any excess metals exposure that would prevail if no further action is taken on the Site. Respondents shall prepare an Interim Risk Evaluation Report which establishes a proposed removal action level ("RAL"). RAL shall be developed using risk-based cleanup criteria based on a land-use scenario that accounts for reasonably expected use of the Site following removal activities and site-specific input parameters for computer-based exposure/risk modeling. An incremental (above background [BTV]) preliminary remediation goal (PRG) for mine-impacted soil shall be based on a target risk level of $1x10^{-4}$. The RAL shall then be based on the sum of the PRG for mine impacts and the BTV and will be used to define areas that warrant a removal action. The EPA defines an increased cancer morbidity risk range of 10^{-4} to 10^{-6} to be an acceptable risk criterion for the radionuclides of concern. The total risk that the RAL represents will be the sum of $1x10^{-4}$ and the risk of the BTV; the risk of the BTV will be calculated using the PRG Calculator. For U-238 contaminated sites, EPA precedent is to allow for a RAL that represents a total risk between 1 and $3x10^{-4}$.

The excess gamma radiation and metals Risk Evaluation - Assessment must be done in accordance with applicable Agency guidance, directives and procedures specific to determining excess radiation and/or metals risks on non-NPL CERCLA sites.

The Interim Risk Evaluation Report shall be submitted to EPA within 30 days of completing FI and receipt of all validated analytical data.

8 FINAL RSE REPORT

Respondent shall submit a Draft RSE Report within 60 calendar days after following EPA approval of the Interim Risk Evaluation Report. Respondent shall submit the Final RSE Report within 30 calendar days after receipt of EPA comments on draft RSE Report. The Final RSE Report shall include all the data collected during the investigations, an estimate of the total volume of contaminated soil that can be visually, geographically, radiologically, or geochemically linked to mining impacts as defined in Section 5.4 from historic operations at each of the Mines.

Attachment 1 - Summary of Major Milestones for Removal Site Evaluation- Homestake Mining Company Mines

DELIVERABLE/MILESTONE	NO. OF COPIES	DUE DATE (calendar days)	EPA TARGET REVIEW PERIOD
Scoping meeting or work plan development conference call	--	Within 5 calendar days after the Effective Date of the AOC	--
RSE Work Plan	1EC	Within 90 calendar days of Effective Date of the AOC.	21 calendar days after receipt of work plan
Monthly Progress Reports	1EC	Monthly and as required	NA
Health and Safety Plan (HSP)	1EC	Within 90 calendar days of Effective Date of the AOC.	7 calendar days after receipt of plan
Field Sampling Plan (FSP)	1EC	Within 90 calendar days of Effective Date of the AOC.	14 calendar days after receipt of plan
Initiation of field investigation (FI)	--	Within 21 calendar days after EPA approval of the RSE Work Plan	--
Interim Risk Evaluation Report	1EC	Within 30 calendar days after completing FI and receipt of all validated analytical data	14 calendar days after receipt of Interim Risk Evaluation Report
Draft RSE Report	1EC	60 calendar days after EPA approval of Interim Risk Evaluation Report	30 calendar days after receipt
Final RSE Report	1EC	30 calendar days after receipt of EPA comments on draft RSE Report	14 calendar days after receipt

Attachment 2 - Regulations and Guidance Documents

The following list, although not comprehensive, consists of many of the regulations and guidance documents that apply in general to the RSE process:

1. American National Standards Practices for Respiratory Protection. American National Standards Institute Z88.2-1980, March 11, 1981.
2. CERCLA Compliance with Other Laws Manual, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (DRAFT), OSWER Directive No. 9234.1-01 and -02.
3. Community Relations in Superfund C A Handbook, U.S. EPA, Office of Emergency and Remedial Response, January 1992, OSWER Directive No. 9230.0-3C.
4. A Compendium of Superfund Field Operations Methods, Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.
5. Construction Quality Assurance for Hazardous Waste Land Disposal Facilities, U.S. EPA, Office of Solid Waste and Emergency Response, October 1986, OSWER Directive No. 9472.003.
6. Data Quality Objectives for Remedial Response Activities, U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.
7. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual, U.S. EPA Region IV, Environmental Services Division, April 1, 1986 (revised periodically).
8. Federal Acquisition Regulation, Washington, DC: U.S. Government Printing Office (revised periodically).
9. Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.
10. Health and Safety Requirements of Employees Employed in Field Activities, U.S. EPA, Office of Emergency and Remedial Response, July 12, 1982, EPA Order No. 1440.2.
11. Interim Guidance on Compliance with Applicable of Relevant and Appropriate Requirements, U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.
12. Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.
13. Methods for Evaluating the Attainment of Cleanup Standards: Vol. 1, Soils and Solid Media, February 1989, EPA 23/02-89-042; vol. 2, Ground water (Jul 1992).
14. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, Federal Register 40 CFR Part 300, March 8, 1990.
15. NIOSH Manual of Analytical Methods, 2nd edition. Volumes I-VII for the 3rd edition, Volumes I and II, National Institute of Occupational Safety and Health.
16. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, National Institute of Occupational Safety and Health/Occupational Health and Safety Administration/United States Coast Guard/Environmental Protection Agency, October 1985.
17. Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, February 19, 1992, OSWER Directive 9355.7-03.
18. Procedure for Planning and Implementing Off-Site Response Actions, Federal Register, Volume 50, Number 214, November 1985, pages 45933-45937.
19. Quality in the Constructed Project: A Guideline for Owners, Designers and Constructors, Volume 1, Preliminary Edition for Trial Use and Comment, American Society of Civil Engineers, May 1988.
20. Standard Operating Safety Guides, U.S. EPA, Office of Emergency and Remedial Response, November 1984.
21. Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.
22. Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.
23. Superfund Response Action Contracts (Fact Sheet), May 1993, OSWER Publ. 9242.2-08FS.
24. TLVs-Threshold Limit Values and Biological Exposure Indices for 1987-88, American Conference of Governmental Industrial Hygienists.
25. Value Engineering (Fact Sheet), U.S. EPA, Office of Solid Waste and Emergency Response, Publication 9355.5-03FS, May 1990.

The following list, although not comprehensive, consists of many of the regulations, guidance and TBC documents that apply in general to radiological risk and risk abatement of uranium mine and mine related waste:

1. Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination, OSWER No. 9200.4-18, August 22, 1997
2. 40 CFR 300.415. *National Oil and Hazardous Substances Pollution Contingency Plan*. U. S. Environmental Protection Agency, Washington, D.C., July 1, 1999
3. **MicroShield®** comprehensive photon/gamma ray shielding and dose assessment software. Version 6.02. Grove Software, Inc. Lynchburg, VA, 2008
4. EPA-402-R-97-016, revision 1. *Multi Agency Radiation Survey and Site Investigation Manual (MARSSIM)*, U. S. Environmental Protection Agency, Washington, D.C., August 2000.
5. Title 40 CFR Part 192, Health and Environmental Protection Standards For Uranium and Thorium Mill Tailings.
6. Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA sites, OSWER No. 9200.4-25 August, 1999
7. Radiation Risk Assessment at CERCLA Sites, Q&A, OSWER No. 9200.4-31 U. S. Environmental Protection Agency, December, 1999.
8. Radiation Risk Assessment at CERCLA Sites, Q&A, OSWER No. 9285.6-20, U. S. Environmental Protection Agency, June, 2014.
9. 40 CFR Part 61 Subpart R, National Emissions Standards for Radon Emissions from Phosphogypsum Stacks.
10. 10 CFR Part 20, Standards for Protection Against Radiation, subpart E, Radiological Criteria for License Termination, U.S. Nuclear Regulatory Commission.
11. OSWER 9295.8-06a, Distribution of Memorandum of Understanding between EPA and the Nuclear Regulatory Commission, October, 2002.
12. 10 CFR Part 40, Domestic Licensing of Source Material, Appendix A. Criteria Relating to the Operation of Uranium Mills and the Disposition of Tailings or Waste Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content., U.S. Nuclear Regulatory Commission.
13. OSWER No. 9200.4-35P, Remediation goals for Radioactively Contaminated Sites Using the Benchmark Dose Cleanup Criteria in 10CFR Part 40, Appendix A.1. Criterion 6, U.S. Environmental Protection Agency, April 2000.
14. 10 CFR Part 61, Licensing Requirements for Land Disposal of Radioactive Waste, subpart 41, Protection of the General Population from Releases of Radioactivity. U.S. Nuclear Regulatory Agency.
15. Title 19, chapter 10, Part 3, Draft Guidance for Meeting Radiation Criteria Levels and Reclamation at New Mexico Uranium Mining Operations. New Mexico Energy, Minerals, and Natural Resources Department, April, 2014.
16. New Mexico Energy Minerals and Natural Resources Department and New Mexico Environment Department, Joint Guidance for the Cleanup and Reclamation of Existing Uranium Mining Operations in New Mexico. March, 2014.
17. Title 25, Chapter 289, Radiation Control. Texas Administrative Code.
18. N13.53 Control and Release of Technologically Enhanced NORM., American National Standards Institute / Health Physics Society. August, 2009.
19. Midnite Mine Superfund Site Record of Decision, U.S. Environmental Protection Agency, September, 2006.
20. Northeast Church Rock Mine Record of Decision. U.S. Environmental Protection Agency, March 2013.
21. **RESRAD** computer software. US Department of Energy, US Nuclear Regulatory Commission, and Argonne National Laboratory. https://web.evs.anl.gov/resrad/. February 2014.
22. EPA-402-R-08-005, Technologically Enhanced Naturally Occurring Radioactive Materials From Uranium Mining, Volume 2: Investigation of Potential Health, Geographic, and Environmental Issues of Abandoned Uranium Mines, USEPA, Washington D.C., April, 2008.
23. PRG Calculator for Radionuclides. http://epa-prgs.ornl.gov/radionuclides/. U.S. Environmental Protection Agency, March 2015

See the following Ambrosia Lake Sub-district and/or Tronox NAUM Sections 35/36 mines related information, historic reports, etc:

1. Old Stope Leach permit # MK009RE submitted by Rio Algom to EMNRD, January 29, 2015. Report has a compilation of all available Rio Algom recent and historic data for the Section 17, 19, 24, 30, 30W, 33, 35 and 36 mines. See the EMND website at http://www.emnrd.state.nm.us/MMD/MARP/MK009RE.html.
2. Pre-CERCLIS Screening Assessment of Section 35 Mine, New Mexico Environment Department October 31, 2011
3. Pre-CERCLIS Screening Assessment of Section 36 Mine, New Mexico Environment Department October 31, 2011
4. Geology and Technology of the Grants Uranium Region, New Mexico Bureau of Mines Vincent C. Kelley, Memoir 15, 1963
5. Uranium Mines and Deposits in the Grants District, Cibola and McKinley County, New Mexico, New Mexico Bureau of Mines and Mineral Resources, Virginia T. McLemore and William L. Chenoweth, Open-File Report 353, December 1991
6. Airborne Spectral Photometric Environmental Collection Technology Exposure Rate Contour Map of Ambrosia Lake Mining District, U.S. Environmental Protection Agency, 2011
7. Evaluation of Impacts from Section 35 and 36 Mine Dewatering, Ambrosia Lake Valley, New Mexico, Rio Algom Mining, LLC, Intera Incorporated, 2007

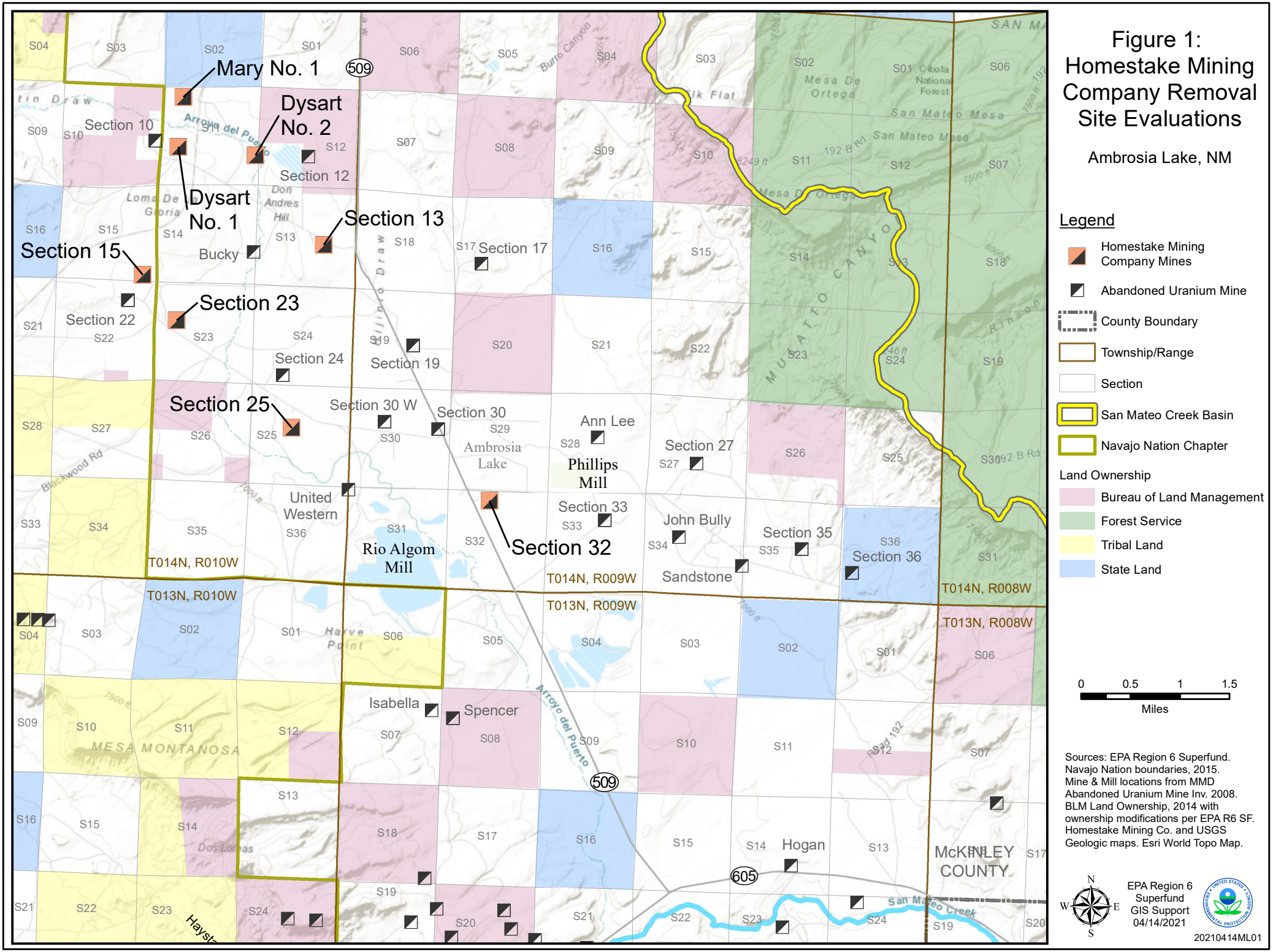


Figure 1: Homestake Mining Company Removal Site Evaluations

Ambrosia Lake, NM

Legend

- Homestake Mining Company Mines
- Abandoned Uranium Mine
- County Boundary
- Township/Range
- Section
- San Mateo Creek Basin
- Navajo Nation Chapter

Land Ownership

- Bureau of Land Management
- Forest Service
- Tribal Land
- State Land

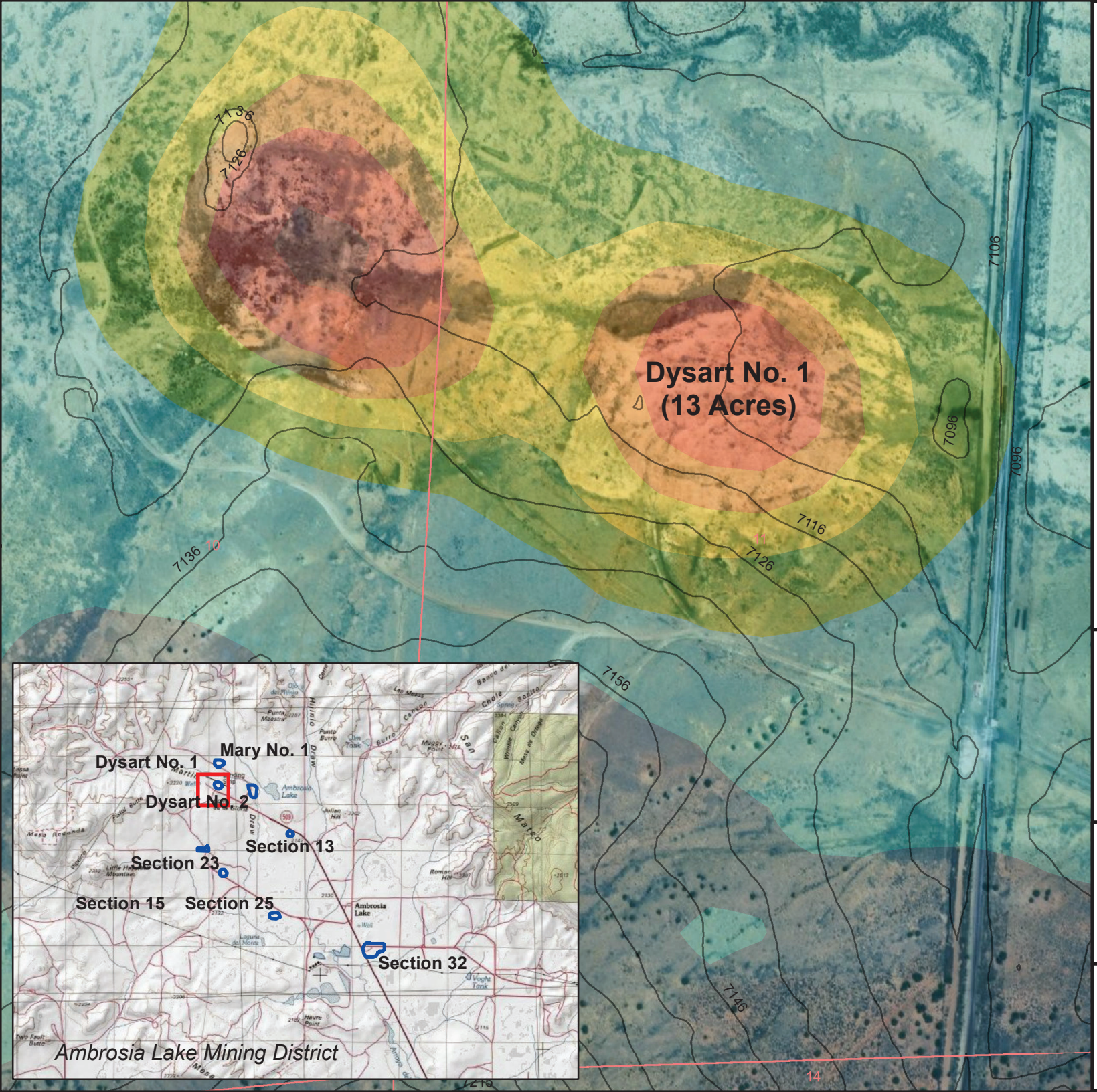
0 0.5 1 1.5
Miles

Sources: EPA Region 6 Superfund. Navajo Nation boundaries, 2015. Mine & Mill locations from MMD Abandoned Uranium Mine Inv. 2008. BLM Land Ownership, 2014 with ownership modifications per EPA R6 SF. Homestake Mining Co. and USGS Geologic maps. Esri World Topo Map.

N W E S

EPA Region 6 Superfund GIS Support 04/14/2021

20210414ML01



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 2

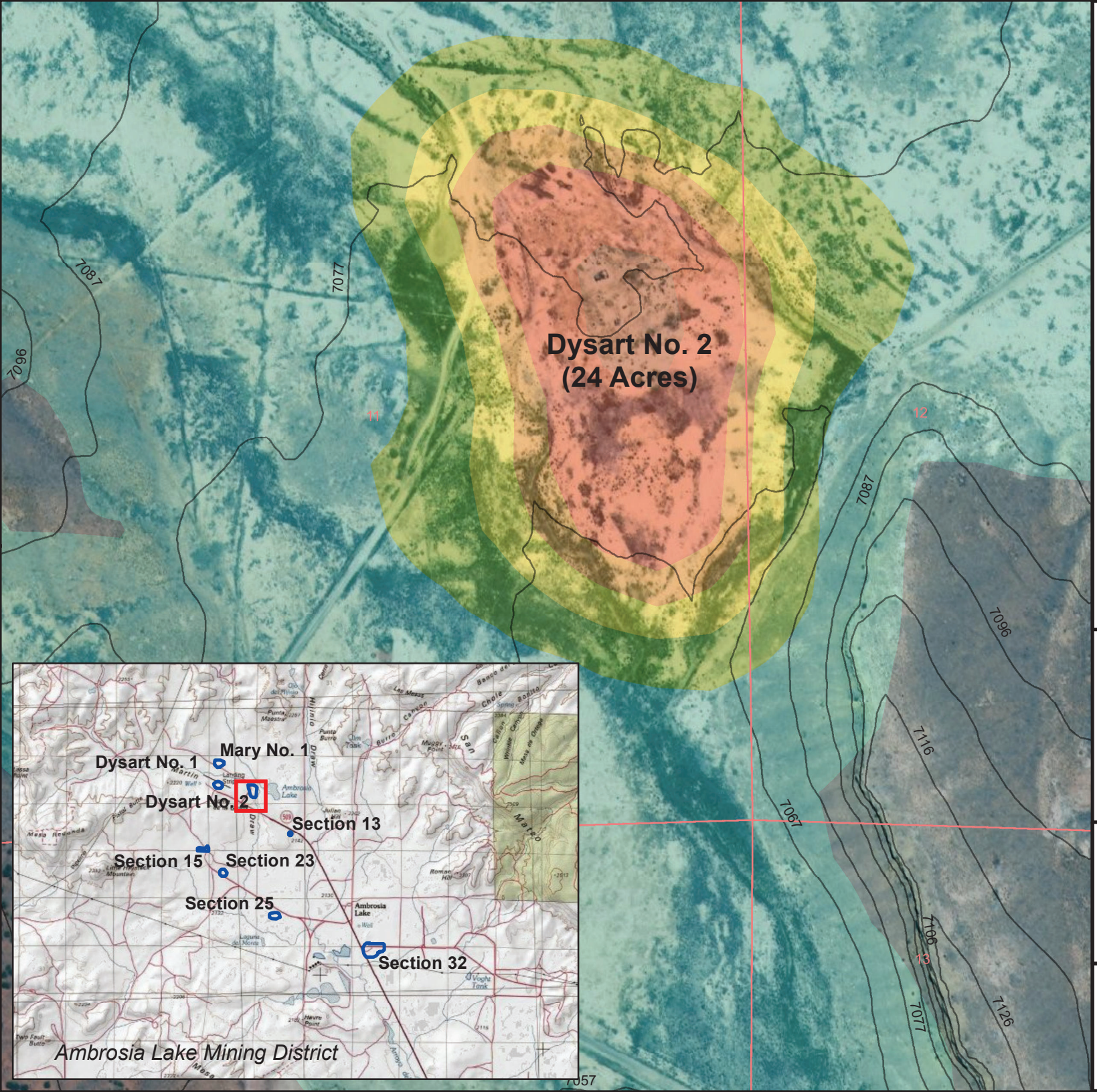
0 25 50 100 150 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of Califoria

Dysart No. 1 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 3

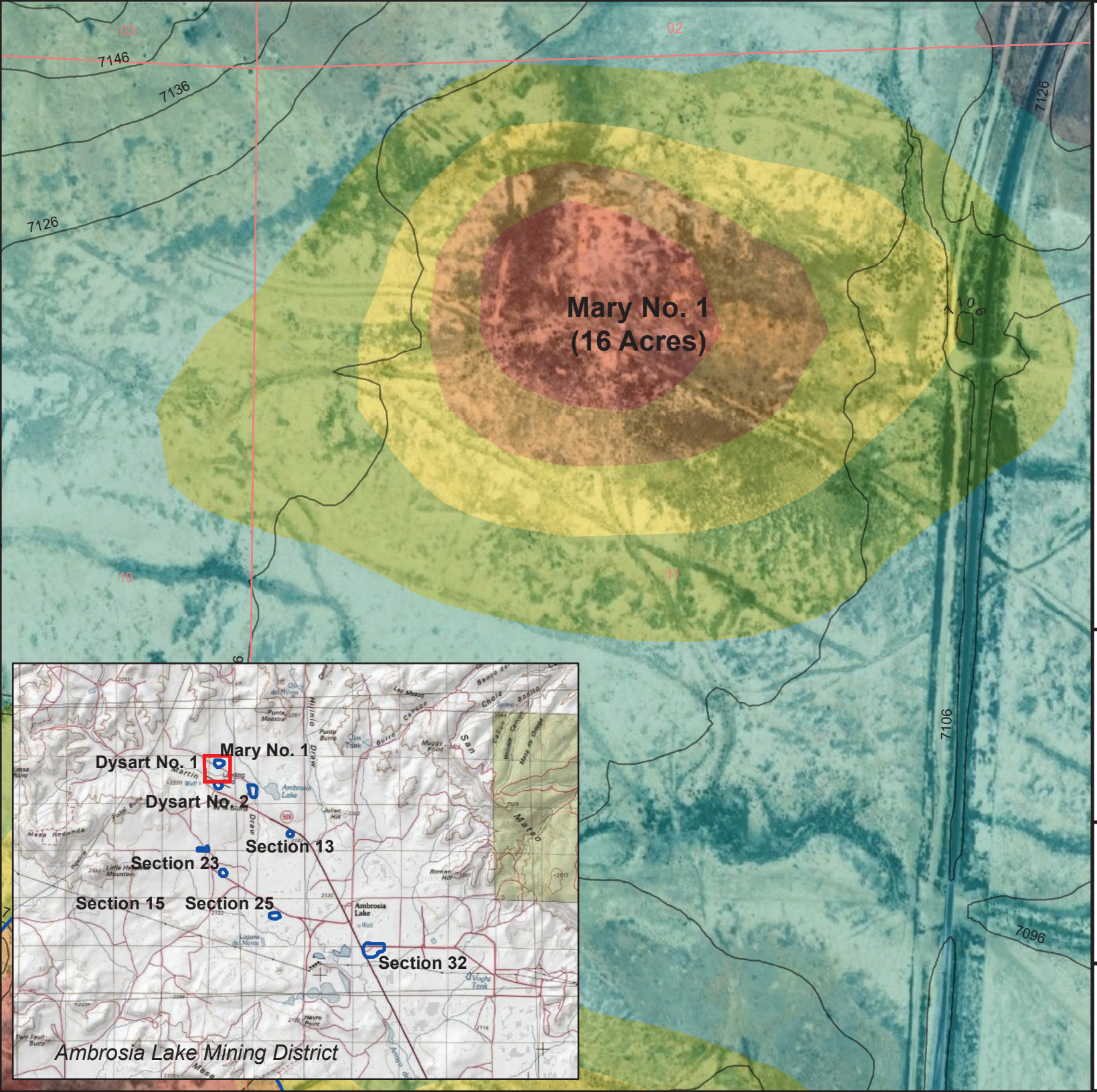
0 25 50 100 150 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of California

Dysart No. 2 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 4

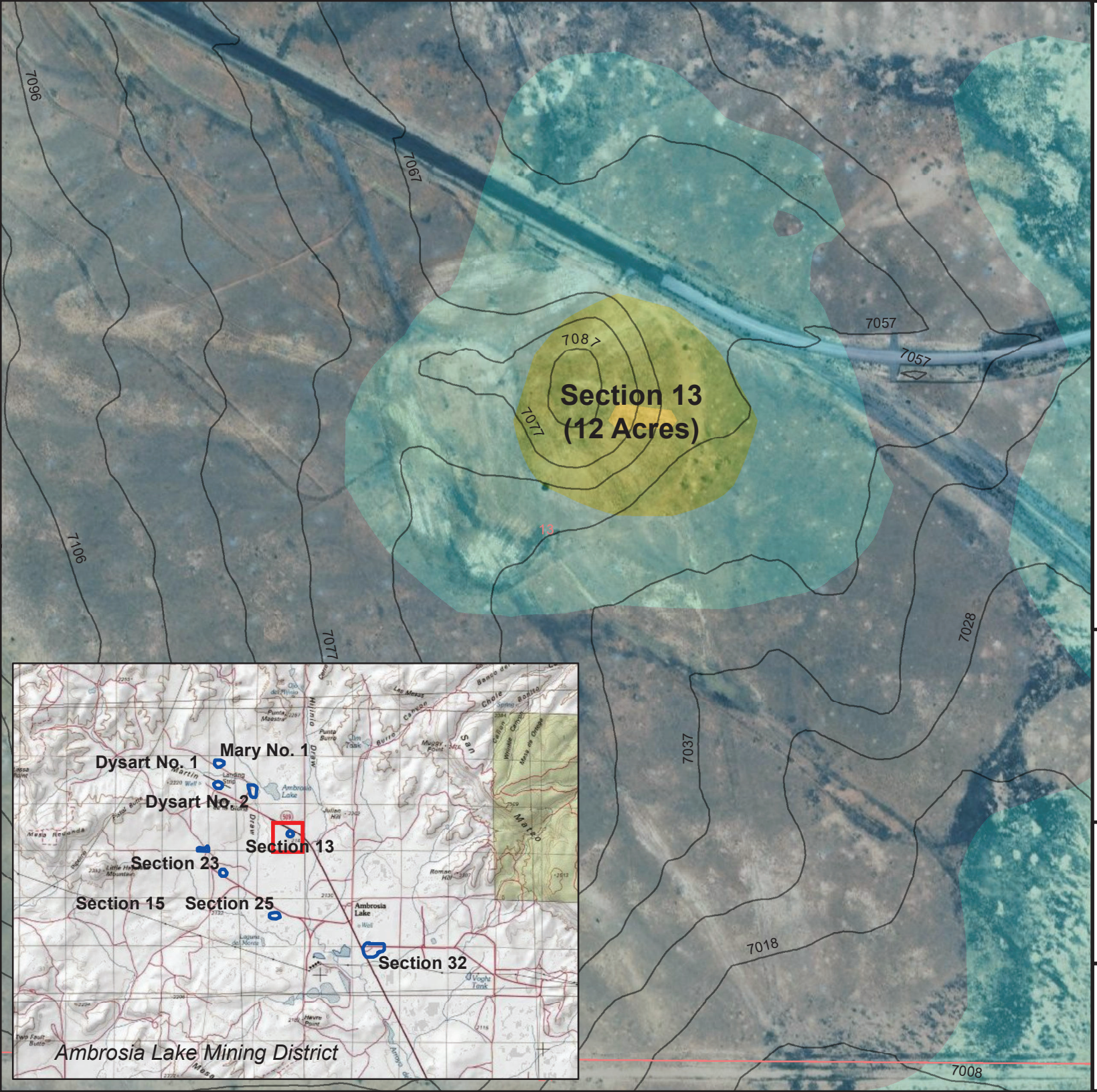
0 20 40 80 120 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of Califoria

Mary No. 1 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 5

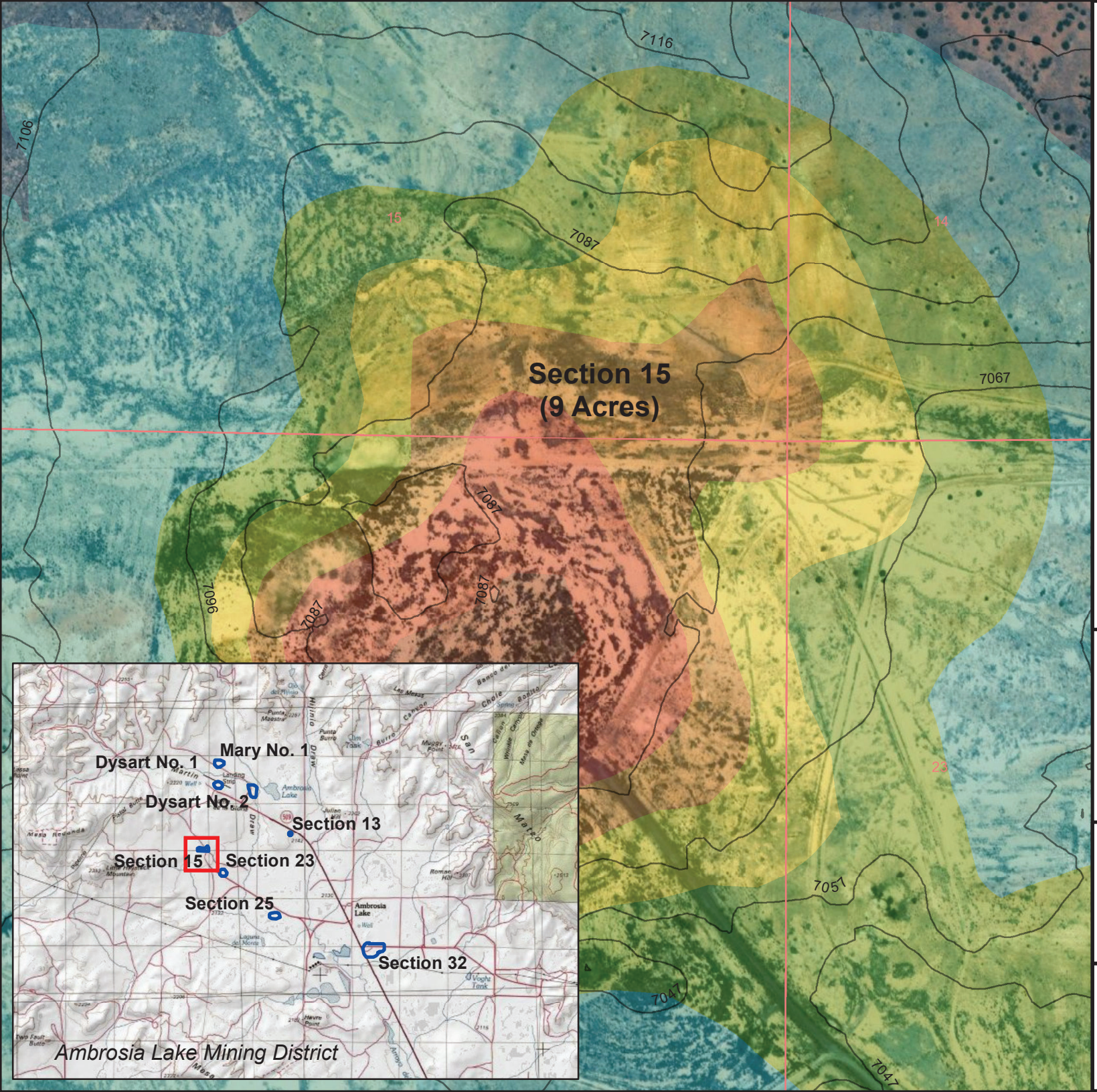
0 25 50 100 150 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of California

Section 13 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 6

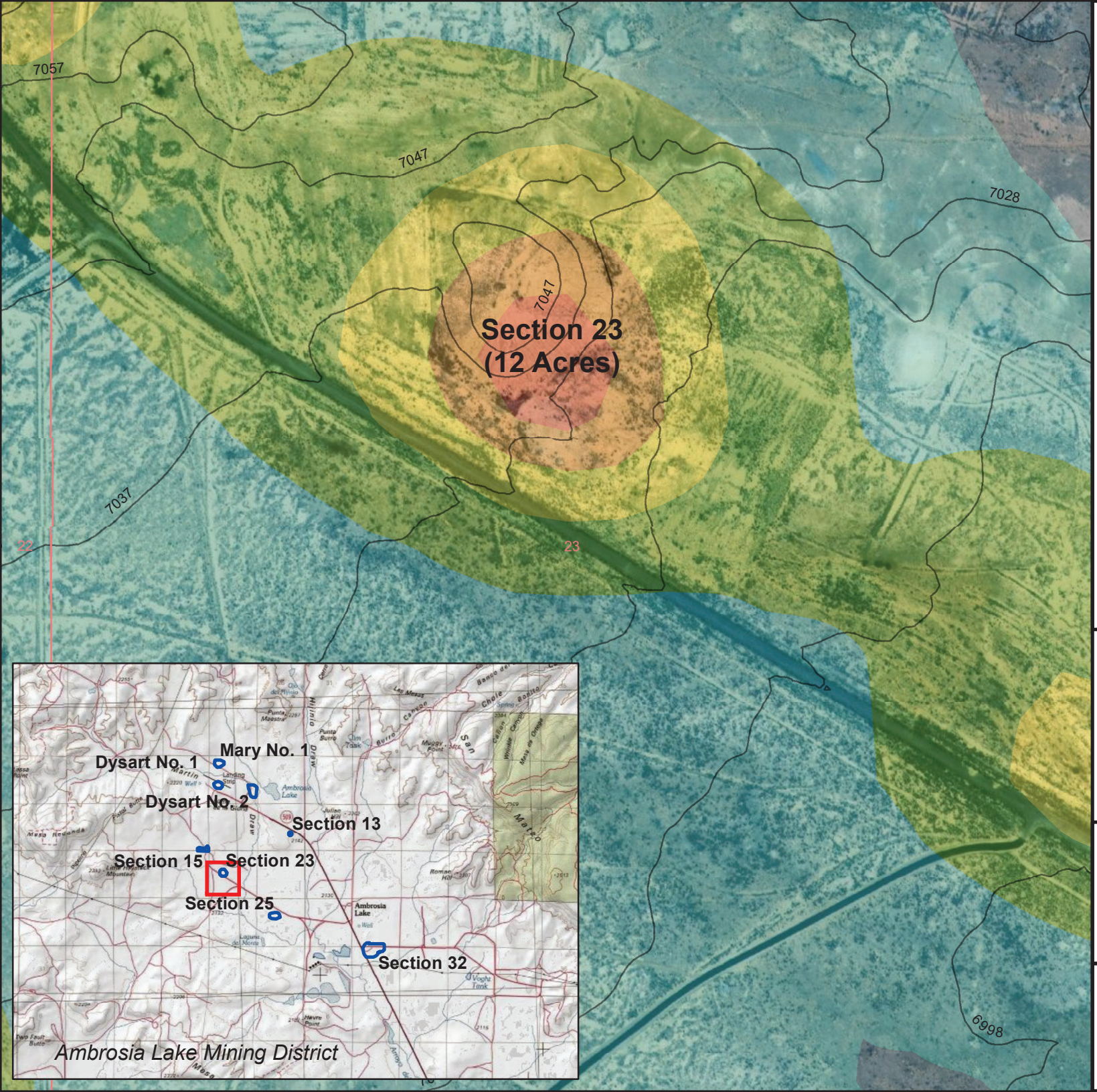
0 25 50 100 150 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of California

Section 15 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 7

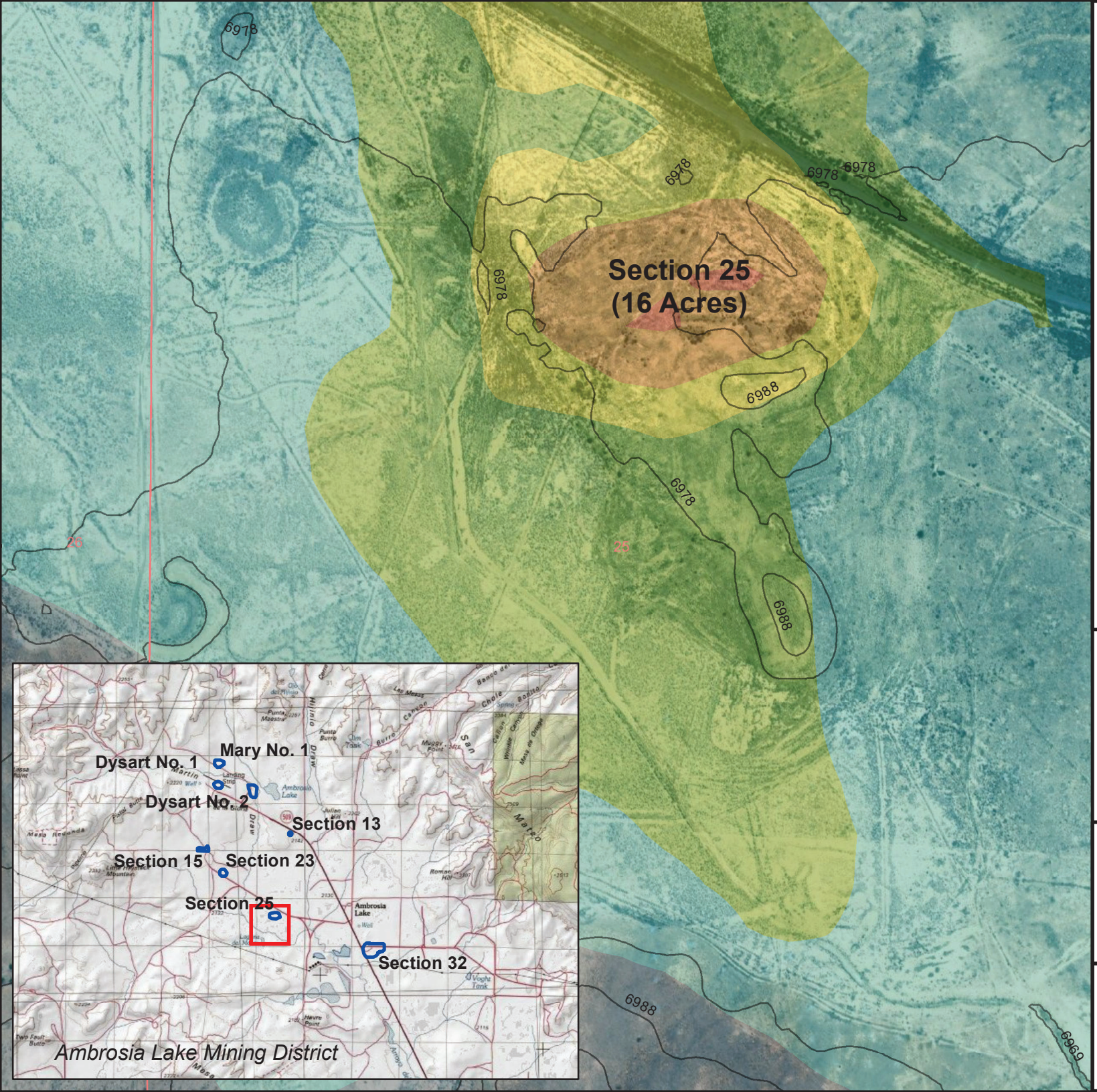
0 25 50 100 150 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of California

Section 23 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 8

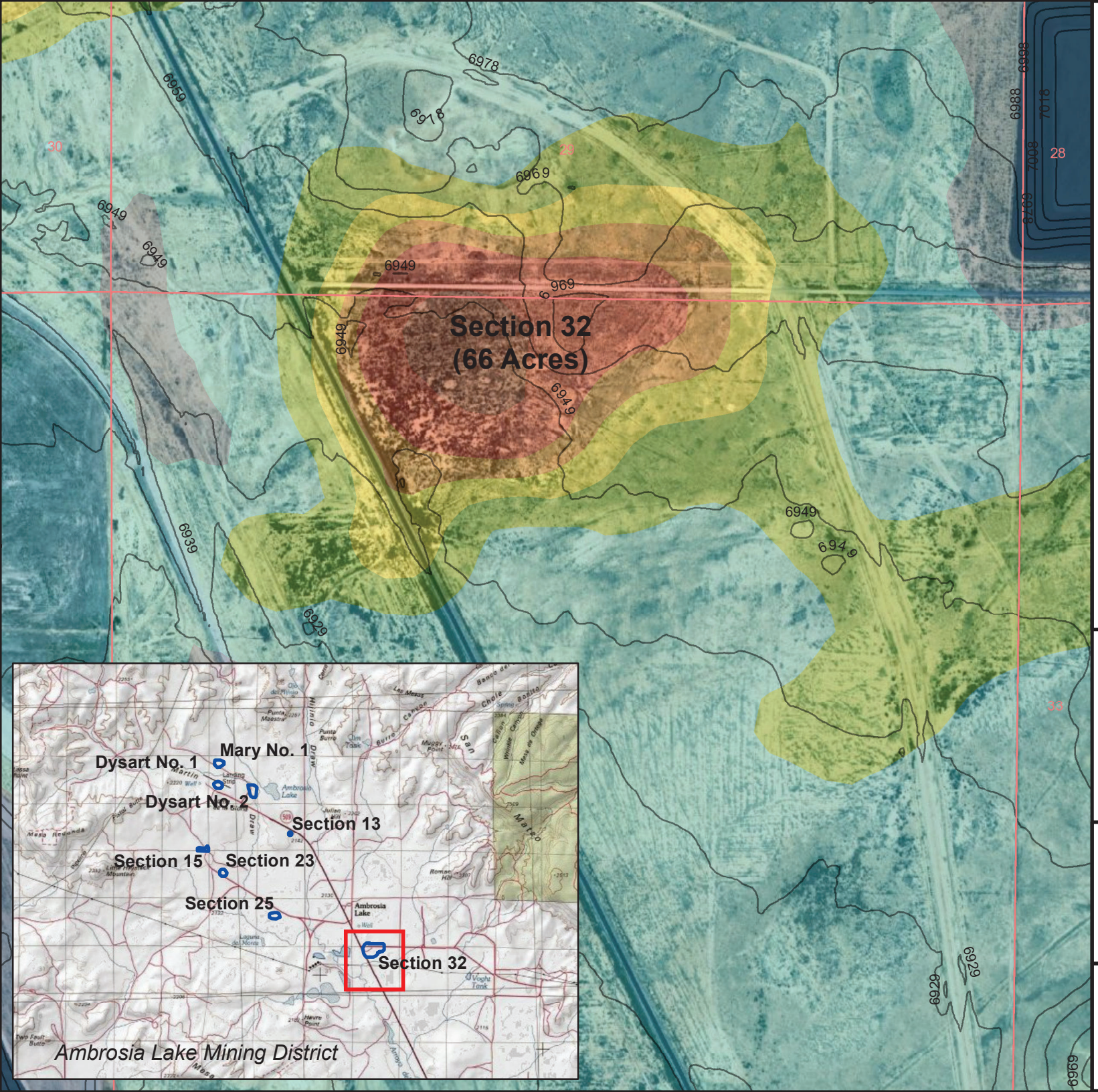
0 30 60 120 180 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of California

Section 25 Mine
McKinley County, NM

HOMESTAKE



Gamma Exposure Rate (µR/hr)

- <10
- 10-15
- 15-20
- 20-25
- 25-30
- 30-40
- >40

N
W E
S

FIGURE 9

0 50 100 200 300 Meters

Gamma exposure rate data are predicted data based on US Environmental Protection Agency (EPA) Airborne Spectral Photometric Environmental Collection Technology (ASPECT) data

Homestake Mining Company of California

Section 32 Mine
McKinley County, NM

HOMESTAKE