FACT SHEET/STATEMENT OF BASIS

Request for Corrective Action Complete Status

For

Two Solid Waste Management Units

White Sands Missile Range

New Mexico

RCRA Permit No. NM2750211235

December 2025

Fact Sheet/Statement of Basis

Notice of Intent to Approve a Class 3 Permit Modification to Grant Corrective Action Complete Status for Two Solid Waste Management Units Listed in the White Sands Missile Range Resource Conservation and Recovery Act (RCRA) Hazardous Waste Permit

Under the authority of the New Mexico Hazardous Waste Act (Section 74-4-1 et seq., New Mexico Statutes Annotated (NMSA) 1978, as amended, 1992) and the New Mexico Hazardous Waste Management Regulations (20.4.1 New Mexico Administrative Code, NMAC), the New Mexico Environment Department (NMED) can approve or deny hazardous waste permits, closure plans, permit modifications, and amendments. Under this authority, NMED intends to approve, pending public input into this decision, a Class 3 Permit Modification Request received from the U.S. Army White Sands Missile Range (WSMR or the Permittee) for the WSMR RCRA Hazardous Waste Permit, pursuant to 20.4.1.900 NMAC (incorporating 40 CFR 270.42(c)).

Since the receipt of the permit modification request, NMED has issued a renewal RCRA Hazardous Waste Permit (the Permit), effective July 2025. All references to the Permit in this Fact Sheet/ Statement of Basis pertain to the 2025 Permit.

If approved by the NMED, the proposed modification would grant Corrective Action Complete (CAC) with Controls status for two Solid Waste Management Units (SWMUs) listed in Table 8-1 in Permit Attachment 8 of the Permit: SWMU 86 and 87. Table 8-1 lists SWMUs and Areas of Concern (AOCs) where corrective action is required to characterize and remediate, as necessary, past releases of hazardous wastes or hazardous constituents.

As a consequence, Table 8-2 in Permit Attachment 8 will be split into two tables:

- Table 8-2-1: SWMUs and AOCs Corrective Action Complete With Controls; and
- Table 8-2-2: SWMUs and AOCs Corrective Action Complete Without Controls

SWMUs 86 (Main Post Sanitary Landfill) and 87 (Main Post Construction Landfill) will be moved from Table 8-1 to Table 8-2-2. Proposed changes to Table 8-1, Table 8-2-1, and Table 8-2-2 are shown in redline/strike-out pages provided in the Attachment to this Fact Sheet/Statement of Basis (FS/SOB).

Section 1. Facility Description

White Sands Missile Range is a United States Army Installation Management Command installation first established on July 9, 1945 as White Sands Proving Ground. WSMR is the largest land area military installation in the United States and the nation's testing range for the newly developed missile weapons. Encompassing approximately 3,200 square miles of land in Doña Ana, Socorro, Lincoln, Otero, and Sierra counties in south-central New Mexico, the installation is approximately 99 miles north to south, and 25 to 40 miles wide

east to west. WSMR is located within the Tularosa Basin of south-central New Mexico, and portions of WSMR extend west into the Jornada del Muerto Basin. The headquarters (Main Post) area of WSMR is located at the southwestern corner of the installation, approximately 27 miles east-northeast of Las Cruces, New Mexico, and 45 miles north of El Paso, Texas. The main entrance of WSMR is on U.S. Highway 70, east from Interstate 25 at Exit 6.

Section 2. History of Investigation

The Permit requires investigation of SWMUs and AOCs listed in Permit Attachment 8, Table 8-1. Section 10 of this Fact Sheet briefly describes the location, history, evaluation of relevant information, and the basis for determination for each of the SWMUs proposed for Corrective Action Complete. More detailed descriptions of the SWMUs can be found in the permit modification request submitted by the Permittee and the references listed at the end of this fact sheet, which constitute the Administrative Record for this action.

The following SWMUs are the subject of the proposed permit modifications:

SWMU	Description in Permit
86	Main Post Sanitary Landfill
87	Main Post Construction Landfill

Section 3. Public Review of the Administrative Record

The Administrative Record for this proposed action consists of this Fact Sheet/Statement of Basis, the Public Notice, the July 2025 RCRA Permit, and the Petition to Perform Class 3 Permit Modification to Change the Status of Solid Waste Management Units 86 and 87 from Corrective Action Required to Corrective Action Complete with Controls, dated July 2019.

The Administrative Record may be reviewed at the following locations during the public comment period:

Print and Digital access:	Digital access only:
NMED – Hazardous Waste Bureau 2905 Rodeo Park Drive East, Building 1 Santa Fe, New Mexico 87505-6303 Ph: (505) 476-6000 Hours: Monday - Friday from 8:00 a.m. to 5:00 p.m.	NMED Las Cruces Field Office 2301 Entrada Del Sol Las Cruces, NM 88001 Ph:(575) 288-2050 Hours: Monday - Friday from 8:00 a.m. to 5:00 p.m

A copy of the CAC petition, this Public Notice, and the Fact Sheet/Statement of Basis are also available on the NMED Hazardous Waste Bureau, WSMR webpage (https://www.env.nm.gov/hazardous-waste/wsmr/) listed under the Contents section, as "Corrective Action Complete Proposal". The above documents are also available on the NMED Public Notices website (https://www.env.nm.gov/public-notices).

To obtain a copy of the Administrative Record or a portion thereof please contact Ms. Naomi Gonzalez at (505) 476-6000, or at the NMED office addresses provided above. NMED will provide requested copies, or portions thereof, of the Administrative Record at a cost to the requestor.

Section 4. Public Participation

The Permittee issued public notice in three newspapers for the proposed Permit Modification Request. The public notice was published on June 10, 2019 in the Las Cruces Sun News, June 11, 2019 in the Alamogordo Daily News, and in the June 2019 issue of the White Sands Missile Ranger. The 60-day comment period began on June 10, 2019, and ended on August 10, 2019. A public meeting was held on July 2, 2019, at the Thomas Branigan Memorial Public Library in Las Cruces, NM in accordance with NMAC 20.4.1.901, as part of the 60-day public comment period on the permit modification request required by the regulations at 40 CFR §270.42(c)(5). There were no attendees at the public meeting and no comments were received during the comment period.

NMED issued a public notice on **January 30, 2026** to announce the beginning of a 60-day public comment period that will end at 5:00 p.m. on **March 31, 2026**. Any person who wishes to comment on this action or request a public hearing should submit written or electronic mail (e-mail) comments with the commenter's name and address to the address listed below. Only comments or requests received on or before 5:00 p.m. **March 31, 2026** will be considered. Written comments must be sent to the Bureau Contact:

Neelam Dhawan, Permits Program Manager
Hazardous Waste Bureau - New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505-6303
Or via e-mail: neelam.dhawan@env.nm.gov
Subject: WSMR Class 3 Permit Modification Request, SWMUs 86 and 87

Written comments must be based on the Administrative Record. Documents in the Administrative Record need not be re-submitted if expressly referenced by the commenter. Requests for a Public Hearing shall provide: (1) A clear and concise factual statement of the nature and scope of the interest of the person requesting the hearing; (2) The name and address of all persons whom the requester represents; (3) A statement of any objections to the proposed action, including specific references; and (4) A statement of the issues which the commenter proposes to raise for consideration at the hearing. Written comments and public hearings requests must be submitted to the Bureau Contact on or before 5:00 p.m. **March 31, 2026**. NMED will provide a minimum 30-day notice of a public hearing, if scheduled.

All written comments submitted will be considered in formulating a final decision and may result in NMED modifying or disapproving the CAC proposal. NMED will respond in writing to all public comments received. This response will specify which provisions, if any, of the CAC proposal have been changed in the final decision and the reasons for the change, and

will provide a brief description of all public comments. All persons presenting written comments or who request notification in writing will be notified of the decision by mail. The final decision will also be posted on the NMED WSMR website (https://www.env.nm.gov/hazardous-waste/wsmr/).

Section 5. Next Steps

After consideration of all public comments received, NMED will issue a final decision that will approve, modify or deny the request. If NMED modifies or denies the request, NMED will provide written justification for the decision to the Permittee by mail. NMED will make the final decision publicly available and will notify the Permittee and each person who submitted written comments of the final decision. The final decision will constitute a final agency decision and may be appealed as provided in the Hazardous Waste Act (Chapter 74, Article 4 NMSA 1978).

Section 6. Contact Person for Additional Information

To learn more about RCRA Hazardous Waste Permits and the permitting process, or to be placed on a facility-specific mailing list, please reach out to the Bureau Contact provided above.

NMED maintains a Public Involvement Plan (PIP) for permitted facilities to provide for public participation opportunities and information that may be needed for the community to participate in permitting actions. The WSMR PIP may be viewed online at https://www.env.nm.gov/hazardous-waste/wsmr/ or at NMED offices where the administrative record is accessible. NMED also maintains facility-specific mailing lists for persons wishing to receive associated notices for a permit action.

Section 7. Arrangements for Persons with Disabilities

Any person with a disability requiring assistance or auxiliary aid to participate in this process should contact the Bureau Contact listed above no less than 10 days prior to the end of the public comment period.

Telephone conversation assistance is available through New Mexico Relay Network at no charge for persons who are deaf, hard of hearing, or have difficulty speaking on the phone, by calling 1-800-659-1779 (English); 1-800-327-1857 (Spanish); TeleType (TTY) users: 1-800-659-8331.

Section 8. Language Services

Any non-English speaker may call the Bureau contact listed above and request language assistance in order to learn more about this Class 3 permit modification request. Arrangements may be made for document translation or interpretation related to this permit modification as necessary and as resources allow.

Real-time translation is now available on the NMED website, including on the HWB WSMR webpage. NMED's new Weglot translation tool has been implemented and uses artificial intelligence translation services to achieve high-quality machine translation in real-time for

the entire NMED website. Please notice a small drop-down box at the top of webpages on the right-hand side. This drop-down can currently be used to display the website in Spanish, Vietnamese, and English.

Section 9. Non-Discrimination Statement

NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Parts 5 and 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact:

Kate Cardenas, Non-Discrimination Coordinator
New Mexico Environment Department
1190 St. Francis Dr., Suite N4050
P.O. Box 5469
Santa Fe, NM 87502
Phone: (505) 827-2855
Email: nd.coordinator@env.nm.gov

You may also visit our website at https://www.env.nm.gov/non-employee-discrimination-complaint-page/ to learn how and where to file a complaint of discrimination.

Section 10. Descriptions of SWMUs Proposed for CAC with Controls

The following subsections describe the location, history, and a summary of relevant information from previous investigations. A basis for determination for each of the SWMUs proposed for Corrective Action Complete with Controls is also presented in this section.

10.A History

The Main Post Landfills (MPL), SWMUs 86 and 87, were registered with NMED in April 1982, and operated from 1983 to 1996. Although the MPL is approximately 82.9 acres, only 38.6 acres were actually utilized. The MPL used the trenching method for landfilling: trenches were excavated, waste materials such as municipal solid waste or construction and debris waste were placed within the unlined cells, and the waste was covered with soil per the solid waste regulations (Title 20 NMAC 9.5.8 through 9.5.10). Depths of disposal cells are reported to be 25 to 35 feet below ground surface (WTS, 2008).

The MPL is located approximately three miles east-southeast of the Main Post Headquarters. The immediate area around the MPL is undeveloped, with the exception of the Scrap Yard (metal recycling) just to the south (Figure 1). Approximately two miles west

of the MPL is another hazardous waste management unit referenced as “SWMU 82” in the WSMR RCRA Permit. SWMU 82 consists of two former Sewage Treatment Plant (STP) drainage ditches. Figure 2-1 shows the MPL landfill cell arrangement and its relative location to the SWMU 82 and its effluent impoundment area. The drainage ditches channeled treated effluent from the secondary clarifiers at the STP into an effluent impoundment area located approximately a quarter-mile southwest of SWMU 86. Prior to the excavation of the ditches, from 1958 to 1967, effluent was discharged from the STP and flowed in an easterly direction along a natural surface drainage channel into two effluent impoundment areas south of the MPL landfills (Figure 2-2). The effluent was diverted into SWMU 82 from 1967 to 1986 (MEVATEC, 1999).

Previous investigations and site disposal records indicate that MPL received the following types of waste:

1. Estimated 378,400 cubic yards of municipal solid waste consisted of household waste from 850 residences, office waste, and green waste (WTS, 2008);
2. Estimated 269,500 cubic yards of construction and debris waste consisted of concrete, brick, wood, stone, and soil (WTS, 2008);
3. Approximately 4,109 cubic yards of soil excavated in early 1995, as part of the Phase 1 RCRA Facility Investigation activities below the Sewage Treatment Plant (STP) Sludge Waste Pile (SWMU 80) consisted of sludge and rubble from a destroyed sludge bed in 1978 (Dow Environmental, 1996); and
4. Approximately 4,000 cubic yards of surface soils excavated from the former STP Drainage Ditches and Effluent Impoundment Area from March through April 1997 in response to Phase 1 and 2 RCRA Facility Investigation activities (Radian, 1997).

Concentrations of contaminants in the soils from both excavation events were characterized as below EPA Land Disposal Treatment Standards pursuant to 40 CFR §261.24 (Radian, 1997).

SWMUs 86 and 87 were capped and closed in 2011, in accordance with NMED Resource Recovery Bureau (RRB) requirements, formerly the Solid Waste Bureau. NMED RRB subsequently approved the closure report on June 15, 2011 (NMED, 2011). The current cover thickness per the soil cap design is at least 30 inches of native low permeability soil and 6 inches of erosion resistant soil capable of supporting vegetation (CH2M Hill, 2011).

10.B Evaluation of Investigation Results

Hydrologic Evaluation of Landfill Performance (HELP)

The HELP model was used to determine the potential for contamination of groundwater from leachate generated from the Main Post Landfill (MPL) in 1995 (MEVATEC, 1995). This study was conducted prior to the installation of groundwater monitoring wells at the landfill. The model incorporated site-specific parameters such as annual temperature, precipitation, wind speed, average annual humidity, and latitude. Due to low annual

precipitation and high evapotranspiration rates, the model results indicated a minimal potential for the generation of leachate from the landfill (MEVATEC, 1995).

Groundwater Monitoring 1996 – 1997

Four groundwater monitoring wells (MPL-01 through MPL-04) were installed by WSMR at the perimeter of the MPL during May and June 1996 (MEVATEC, 1996). The purpose of these monitoring wells was to establish and monitor the physical and chemical parameters of groundwater in the vicinity of the MPL. The analytical results showed that no volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), or phenols were detected in any of the groundwater samples from the four wells. All reported concentrations of metals in groundwater samples were below New Mexico Water Quality Control Commission (NMWQCC) standards (NMAC 20.6.2.3103) (MEVATEC, 1997a).

However, cyanide was detected in all four wells. All individual total cyanide concentrations reported during the sampling events between 1996 and 1997 exceeded the NMWQCC standard of 0.2 mg/L and the US Environmental Protection Agency (USEPA) Primary Drinking Water Maximum Contaminant Limit (MCL) of 0.2 mg/L. Total cyanide concentrations ranged from 0.23 to 0.64 mg/L. The highest concentrations of total cyanide were consistently reported in wells MPL-03 and MPL-04 (MEVATEC, 1997a). At the conclusion of the monitoring event, additional groundwater studies were recommended to delineate the plume, determine the source area(s), and evaluate contaminant migration pathways.

Groundwater Contamination Delineation Studies 1997 and 1999

Under the EPA guidelines for groundwater classification (EPA, 1988), the aquifer below the Main Post Landfill is considered Class 1 ground water (MEVATEC, 1997b; MEVATEC, 1999). The total dissolved solids concentration in this aquifer is well below 10,000 mg/L. A Class 1 Groundwater is defined as special groundwater which is:

1. Highly vulnerable to contamination because of the hydrological characteristics of the area in which it occurs and,
2. Irreplaceable because no reasonable alternative source of drinking water is available to substantial populations or ecologically vital.

The objective of the 1997 and 1999 studies was to provide additional hydrologic information regarding the possible source area and extent of cyanide contamination under the MPL. In 1997, six (6) additional groundwater monitoring wells (MPL-05, -06, -07, -08, -09, -10) were installed upgradient and downgradient from SWMU 86 and 87 (MEVATEC, 1997b; Figure 2-1). To further delineate the contaminant plume, in 1999 seventeen (17) additional wells were installed: MPL-11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, and -27. (METVAC, 1999).

The results of the 1997 study indicated that the highest total cyanide concentrations in groundwater is below the southern boundary of the MPL, at the approximate location of the

former effluent impoundment areas. The highest concentrations of total cyanide, total dissolved solids (TDS), chloride, sulfate, and nitrate were detected in the vicinity of wells MPL-03, -04, -07 and a U.S. Geological Survey well T-34. Cyanide concentrations and related constituents decreased in all directions away from this central area (MEVATEC, 1997b). While there may have been some downward percolation from the impoundment areas, the 1997 study reported that most of the effluent percolated down and outwards from the effluent impoundment areas through the fine-grained sediments of the vadose zone before reaching the upper portion of the aquifer.

The nature and distribution of cyanide and other groundwater constituents suggested that the former effluent drainage and impoundment areas were the sources of groundwater contamination rather than leachate from SWMU 86 & 87. The source of cyanide in the effluent was believed to be the result of disposing spent photo development chemicals into the sink drains, which then discharged to the STP, and subsequently discharged to the STP Drainage Ditches and Impoundment Area (MEVATEC, 1999).

Groundwater Monitoring Corrective Measure Study Addendum 2005

At NMED's request to fill data gaps at the southern edge of the contaminant plume, WSMR installed three additional wells between monitoring wells MPL-07 and -08 (MPL-29), MPL-16 and -17 (MPL-30), and between monitoring well MPL-07 and a nested cluster of wells MPL-03, -19, -20 (MPL-28). (WTS, 2005; Figure 5).

Groundwater Monitoring 2001 to 2012

WSMR conducted groundwater monitoring of the full network of wells at the MPL between September 2001 to December 2012. The groundwater analytical program included:

- Field parameters (pH, conductivity, turbidity, dissolved oxygen, temperature, oxidation/reduction potential);
- Water quality (pH, specific conductance, total dissolved solids, total alkalinity);
- Total cyanide;
- Dissolved ions (chloride, fluoride, sulfate);
- Dissolved metals were discontinued in 2007 when NMED revised the monitoring program at SWMU 82;
- Total metals including the RCRA metals and target analyte list (TAL) metals[1] (2008 to present);
- Volatile organic compounds (VOCs);
- Semi-volatile organic compounds (SVOCs); and
- Nutrients (ammonia, nitrate/nitrite).

No data from previous investigations indicated that dioxins/furans, perchlorate, or

[1] RCRA metals and Target Analyte List (TAL) included: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Uranium, Vanadium, and Zinc.

explosives are an issue (Shaw Environmental, 2014).

Groundwater monitoring results confirmed that cyanide is the main constituent of concern. Groundwater analytical data showed no significant changes in water quality parameters over the years. No detections of dissolved ions, nutrients, VOCs, and SVOCs were above EPA's Primary Drinking Water Maximum Contaminant Levels (MCLs) or New Mexico Water Quality Control Commission (NMWQCC) standards. Total arsenic was detected slightly above the EPA Primary Drinking Water regulatory standards of 0.010 mg/L in monitoring wells MPL-03 and MPL-04 in August 2010 and January 2011. And one exceedance of dissolved arsenic above the EPA Primary Drinking Water regulatory standard of 0.010 mg/L was detected at MPL-03, MPL-04 and MPL-06 in February 2003.

SWMU 82 Closure Plan, 2016

To satisfy requirements in 40 CFR Part 264, Subpart G–Closure and Post-Closure, WSMR submitted a Closure Plan for SWMU 82 on July 26, 2011. In response to NMED's second notice of disapproval by letter dated August 5, 2014, two additional wells (MPL-31 and MPL-32) were installed as part of the closure activities to further characterize the extent of cyanide plume south and east of MPL-17.

Groundwater Analytical Results 2012 to 2024

The RFI Report (Shaw Environmental, 2014) included two groundwater sampling events that took place between July of 2012 and January of 2013 from seven monitoring wells (MPL-01, MPL-02, MPL-03, MPL-04, MPL-06, MPL-19, and MPL-20) as required by the approved RFI Work Plan (Shaw Environmental, 2012). Figure 6 shows the respective locations of the monitoring wells sampled during the RFI and the potentiometric surface map. Based on the groundwater level measurements taken in December 2012 and January 2013, the groundwater flow direction is east-southeast.

The data from the 2012/2013 RFI Report confirms previously reported groundwater data for SWMU 86 and 87: exceedances of total cyanide above the NMWQCC standards (2002) at monitoring wells MPL-01, MPL-02, MPL-03, MPL-04, and MPL-20. Concentrations above the NMWQCC standard of 10 mg/L for nitrate/nitrite (as nitrogen) were detected in MPL-06 (14.4 mg/L), and in a duplicate groundwater sample at MPL-03 (11.4 mg/L) in December 2012. Data did not indicate the presence of volatile organic compounds (VOCs), nor exceedances of sulfates, or RCRA metals and target analyte list (TAL) metals[2] above the NMWQCC or EPA MCL limits.

The cyanide plume beneath the Main Post Landfill (MPL) is continuously delineated and monitored under the post-closure care plan for SWMU 82 (WSMR, 2020; Figure 4; Figure 5). The results of the RFI indicated that the closed MPLs (SWMU 86 and 87) have not contributed to additional environmental impacts to the environmental media (soil and groundwater) in the vicinity of MPL (Shaw Environmental, 2014). The cyanide contamination beneath the MPL is a remnant of past sewage treatment waste

[2] See previous footnote specifying RCRA metals and TAL metals.

management practices at the former STP Drainage Ditches and Impoundment Area (SWMU 82). The groundwater contamination beneath the site is addressed separately under a Post-Closure Care Permit for SWMU 82 (NMED, 2025).

Methane Soil Gas Survey in 2007, and 2010 to 2024

WSMR performed four methane soil gas surveys annually between 2010 and 2012 as part of the RCRA Facility Investigation (RFI) Report (Shaw Environmental, 2014). Methane is often a constituent of concern in inactive landfills. The purpose of the investigation was to determine the presence of methane gas (CH_4) in the soil adjacent to the landfill and whether landfill gas is migrating from the landfill area. The survey consisted of measuring the methane concentration at a depth of 3 feet below ground surface at 275-foot sampling intervals along an approximately 7,700-foot perimeter of the landfill (Figure 3). Since the completion of the RFI Report in 2012, WSMR continued to monitor methane on an annual basis as a requirement of the approved post-closure care plan.

The 2012 RFI Report indicated that there was no detection of methane around the perimeter of SWMUs 86 & 87; consistent with previous methane surveys taken in 2011, 2010, and 2007. Methane detection data in all subsequent annual surveys from 2013 to 2024 also indicated no presence of methane at the landfill perimeter.

Section 11. Basis of Determination

Based on 20-plus years of groundwater monitoring data spanning from 2001 to 2024, and methane detection surveys spanning from 2007 to 2024 taken along the perimeter of the Main Post Landfill (MPL), NMED has determined that the closed landfills, SWMU 86 and 87, have not impacted the soil and local groundwater and are not the sources of contamination beneath the site.

White Sands Missile Range (WSMR) will continue methane detection monitoring and landfill cap inspections at SWMUs 86 and 87 as part of the post-closure care plan approved by the NMED Resource Recovery Bureau (RRB), formerly the Solid Waste Bureau. The annual groundwater monitoring of the MPL will continue under the SWMU 82 post-closure care plan. WSMR will also install eleven (11) additional monitoring wells (Figure 7) to further delineate the contaminant plume as a post-closure care condition under the 2025 RCRA Permit.

The elevated concentrations above the New Mexico Water Quality Control Commission (NMWQCC) standard of 10 mg/L for nitrate/nitrite (as nitrogen) was detected in December 2012 at monitoring wells MPL-03 (11.4 mg/L) and MPL-06 (14.4 mg/L). These detections are deemed anomalies for these wells. The nitrate/nitrite groundwater concentrations at MPL-03 ranged between 6.7 to 9.4 mg/L, according to data reported in monitoring reports from 2013 to 2024. MPL-06 groundwater concentration of nitrate/nitrite consistently ranged between 1.5 to 2.7 mg/L, according to data from 2013 to 2024.

No other constituents of concern (CoCs) have been detected in groundwater samples underlying SWMUs 86 and 87, except cyanide, which originated from the former Sewage

Treatment Plant (SWMU 82). The absence of CoCs in the groundwater indicates that no contaminant migration has occurred via rainwater infiltration into the landfill waste and down to the underlying soil. NMED has determined that SWMU 86 and 87 do not pose a potential risk for release, nor unacceptable risk to human health or the environment.

References

CH2M Hill. 2011. *Final Cover Construction Completion Report, Closure of White Sands Missile Range Main Post and Asbestos Landfills, Dona Ana County, New Mexico*, Contract No. W91238-06-D-0013. Task Order DS04.

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EPA. 1988. *Guidelines for Ground-Water Classification Under the EPA Ground-Water Protection Strategy*. United States Environmental Protection Agency

MEVATEC, 1995. *Demonstration for Groundwater Monitoring Suspension Request, Main Post Landfill, White Sands Missile Range*.

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MEVATEC. 1997b. *Delineation of Groundwater Contamination Near the Main Post Landfill and Former STP Effluent Discharge Areas, White Sands Missile Range*.

MEVATEC. 1999. *Site Characterization report for the Former Sewage Treatment Plant (STP) Percolation Ditches, White Sands Missile Range, New Mexico*.

NMED. 2011. *Closure Notification for WSMR Main Post & Asbestos Landfill*, Hazardous Waste Bureau, New Mexico Environment Department, Santa Fe, New Mexico.

NMED. 2025. *Resource Conservation and Recovery Act Permit USEPA ID No. NM2750211235 to U.S. Department of Army for White Sands Missile Range Located in Doña Ana, Lincoln, Otero, Sierra and Socorro Counties, New Mexico*. Hazardous Waste Bureau, New Mexico Environment Department, Santa Fe, New Mexico.

Radian.1997. *Closeout Report SWMUs 82 and 83. Sewage Treatment Plant Former Drainage Ditches, White Sands Missile Range, New Mexico*. Prepared for the United States Army Corps of Engineers.

Shaw Environmental. 2012. *RCRA Facility Investigation Work Plan, SWMUs 86 and 87 Main Post Sanitary Landfill (WSMR -81) and Construction Landfill (WSMR-82)*.

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WTS, White Sands Technical Services, LLC. 2005. *Former Sewage Treatment Plant Percolation Ditches: Work Plan to Install Additional Monitor Wells*. *White Sands Missile Range, New Mexico*.

WTS, White Sands Technical Services, LLC. 2008. *Closure and Post-Closure Care Plan for the Municipal and Asbestos Areas of the Main Post Landfill, White Sands, New Mexico*.

FIGURES

Figure 1. SWMU 86 and SWMU 87 Site Location

Figure 2-1. Landfill Cell Locations; SWMU 82 two earthen drainage ditches and Effluent Impoundment Area

Figure 2-2. 1963 Aerial Photo of Natural Drainage Area and Effluent Impoundment Areas

Figure 3. Methane Gas Sampling Locations

Figure 4. Fall 2024 Analytical Exceedances, SWMU 82 Frequent Monitoring Report

Figure 5. 2024 Cyanide Plume, SWMU 82 Frequent Monitoring Report

Figure 6. Potentiometric Surface Map, RFI Report

Figure 7. Site Map with Current Monitoring Well Network and Proposed Groundwater Monitoring Wells (MPL-33 to MPL-43).

ATTACHMENT

Redline-Strikeout of Proposed Changes to WSMR 2025 RCRA Permit, Attachment 8

Main Post

SWMU 86

SWMU 87

0 1,000 2,000 4,000 Feet

LEGEND:

- Site Boundary
- WSMR Installation Boundary
- Building

NOTES:

1. Background aerial imagery and building, road, and site boundary data layers were provided by WSMR.
2. Main basemap source: ESRI National Geographic World Map.

N W E S

0 5 10 20 Miles

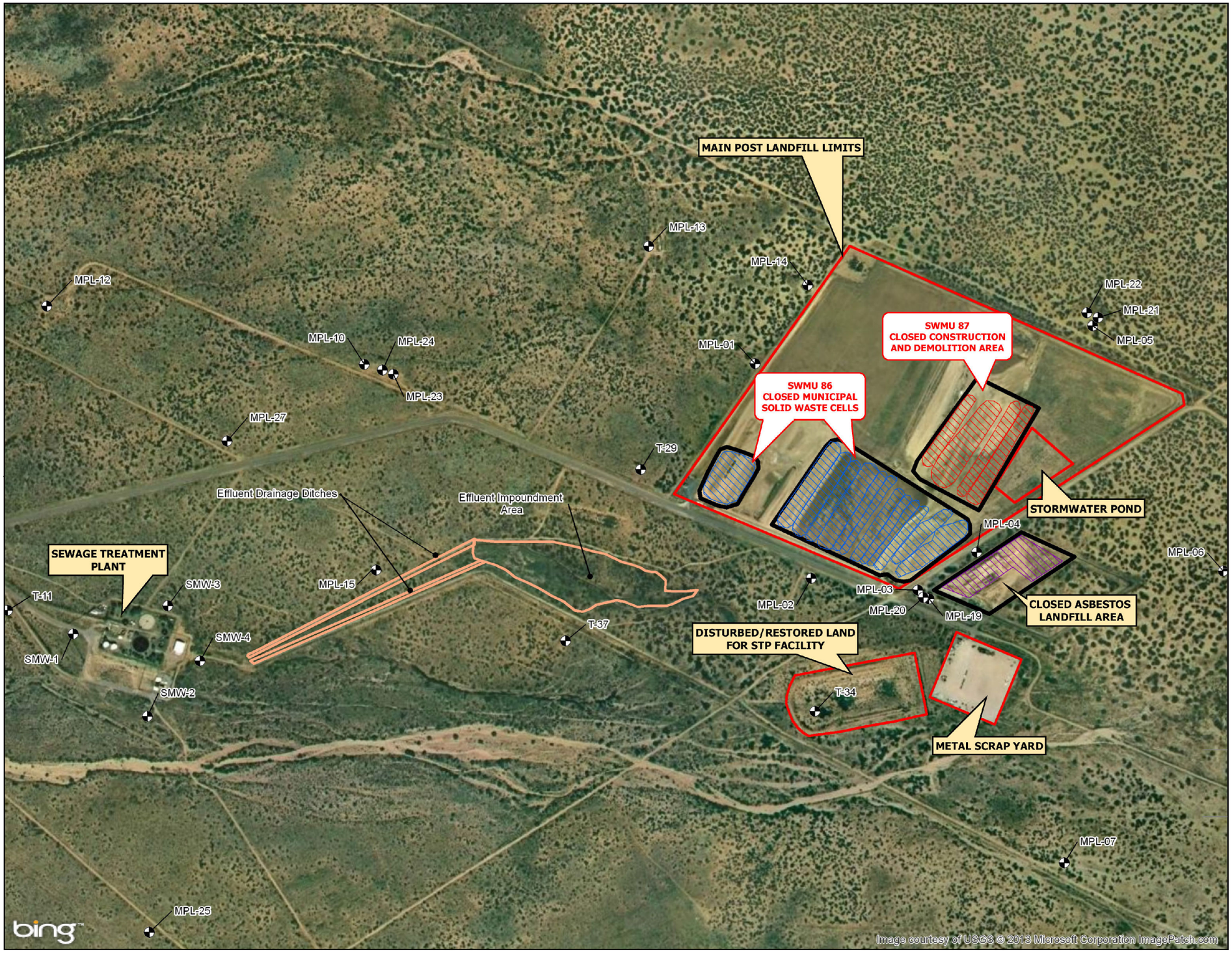
ECC leidos

WHITE SANDS MISSILE RANGE
NEW MEXICO

SWMU 86 (WSMR 81) AND
SWMU 87 (WSMR 82)
SITE LOCATION

FIGURE: 1 | DATE: 11/1/2018

PROJECT: \\WSMR\Projects\CAC_Petition_WSMR-81-82\Figure_1_WSMR_Site_Location_11x17.mxd



LEGEND:

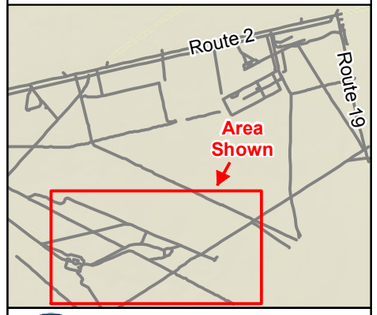
- Groundwater Monitoring Well Location
- Approximate Areas of Landfill Closure (CH2M Hill, 2011)
- Approximate Location of Former Solid Waste Cells
- Approximate Location of Former Construction Debris Cells
- Approximate Location of Former Asbestos Cell
- Other Land Use Areas
- Effluent Drainage Ditches/ Impoundment Area (SWMU 82)

NOTES:

1. Adapted from Figure 2-2 of the RCRA Facility Investigation Report SWMUs 86 and 87, Main Post Sanitary and Construction Landfills (April 2014).

RCRA = Resource Conservation and Recovery Act
RFI = RCRA Facility Investigation
STP = Sewage Treatment Plant
SWMU = Solid Waste Management Unit
WSMR = White Sands Missile Range

0 300 600
Feet
0 50 100 200
Meters
N
WGS 84 UTM ZONE 13N
METERS



ECC leidos

WHITE SANDS MISSILE RANGE
NEW MEXICO

LANDFILL CELL LOCATIONS;
TWO EARTHEN DRAINAGE
DITCHES AND EFFLUENT
IMPOUNDMENT AREA

FIGURE: 2-1 | DATE: 11/1/2018

PROJECT: \WSMR\Projects\CAC_Petition_WSMR-81-82\Figure_2_WSMR_81and82_Site_Location_11x17.mxd

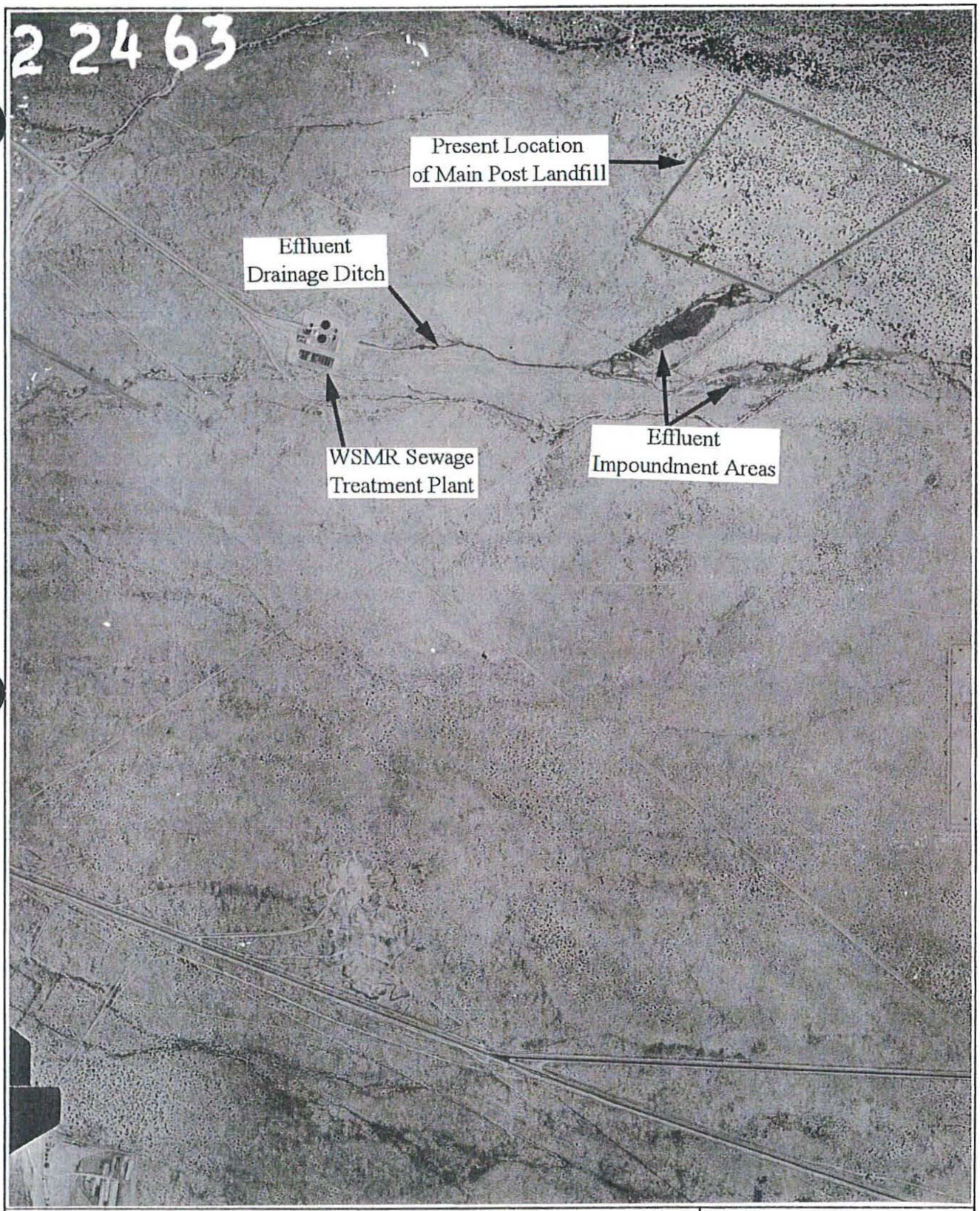
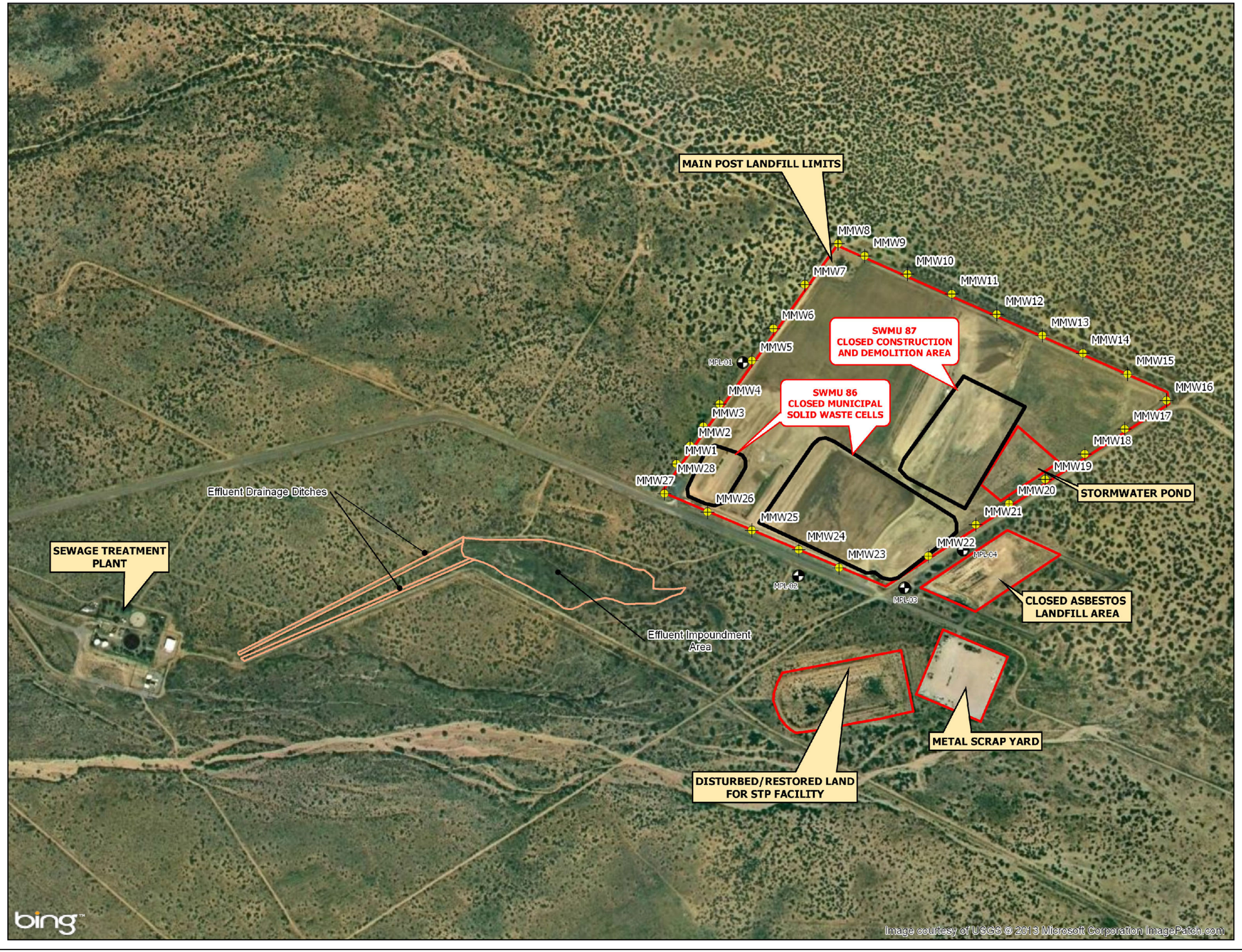


Figure 2-2 1963 WSMR aerial photograph showing location of sewage treatment plant effluent drainage ditches, and effluent impoundment areas. Main Post Landfill is now situated northeast of former northern impoundment area.

MEVATEC CORPORATION



LEGEND:

- Groundwater Monitoring Well Location
- Methane Survey Location
- SWMU's 86 and 87
- Effluent Drainage Ditches/ Impoundment Area (SWMU 82)
- Other Land Use Areas

NOTES:

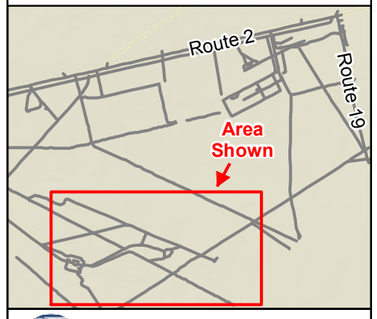
1. Adapted from Figure 6-1 of the RCRA Facility Investigation Report SWMUs 86 and 87, Main Post Sanitary and Construction Landfills (April 2014).

RCRA = Resource Conservation and Recovery Act
RFI = RCRA Facility Investigation
SWMU = Solid Waste Management Unit
WSMR = White Sands Missile Range

0 300 600
Feet
0 50 100 200
Meters

N

Wgs 84 Utm Zone 13N Meters



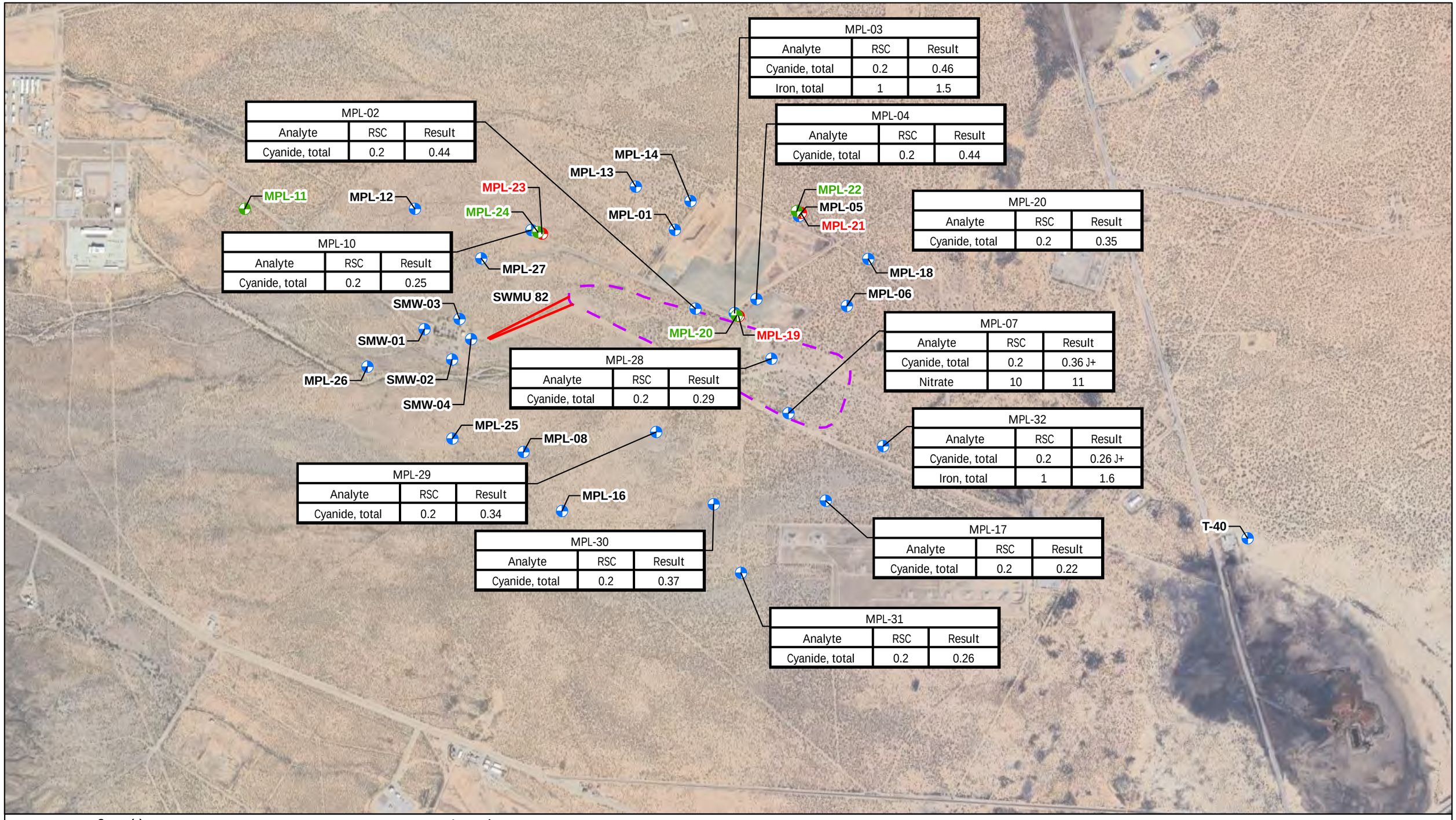
ECC leidos

WHITE SANDS MISSILE RANGE
NEW MEXICO

METHANE GAS SAMPLING LOCATIONS

FIGURE: 3 | DATE: 11/1/2018

PROJECT: \WSMR\Projects\CAC_Petition_WSMR-81-82\Figure_3_WSMR_81and82_Methane_Gas_Sampling_Locations_11x17.mxd



Path: C:\Users\eadams\northwindgrp.com\060090 USAEC - White Sands Missile Range - Technical Files\GIS Files 2024 FMRs\ArcPro\STP\STP_2024\STP_2024.aprx

Source(s):
Aerial imagery from 11/25/2023 : Google Earth Pro,
Airbus Earth Observation Satellite Imagery Services
Elevations reported in NAVD 88 feet above mean sea level

Acronym(s) and Abbreviation(s):
SWMU = Solid Waste Management Unit

Note(s)
All Results in mg/L

Legend

- Interface Well
- Mid-Level Well
- Deep-Level Well
- Solid Waste Management Unit Percolation Ditches
- Impoundment Area

N

0 1,500 3,000 Feet

1 inch equals 1,500 feet

Scale: 1:18,000

FIGURE 4
FALL 2024
ANALYTICAL EXCEEDANCES
SWMU 82 FORMER SEWAGE TREATMENT PLANT
PERCOLATION DITCHES
WHITE SANDS MISSILE RANGE, NEW MEXICO

MPL-24
Cyanide: 0.2 mg/L

MPL-13
Cyanide: 0.19 mg/L

MPL-12
Not Detected

MPL-14
Not Detected

MPL-21
Not Detected

MPL-11
Not Detected

MPL-10
Cyanide: 0.25 mg/L

MPL-23
Not Detected

MPL-22
Not Detected

MPL-05
Cyanide: 0.0089 mg/L

MPL-01
Cyanide: 0.19 mg/L

MPL-27
Not Detected

MPL-18
Not Detected

MPL-03
Cyanide: 0.46 mg/L

MPL-04
Cyanide: 0.44 mg/L

SMW-03
Not Detected

SMW-01
Not Detected

MPL-02
Cyanide: 0.44 mg/L

MPL-06
Cyanide: 0.011 mg/L

MPL-19
Not Detected

MPL-26
Cyanide: 0.0073 mg/L

MPL-20
Cyanide: 0.35 mg/L

SMW-04
Not Detected

MPL-28
Cyanide: 0.29 mg/L

MPL-07
Cyanide: 0.36 mg/L

SMW-02
Not Detected

MPL-25
Cyanide: 0.012 mg/L

MPL-29
Cyanide: 0.34 mg/L

MPL-32
Cyanide: 0.26 mg/L

MPL-08
Not Detected

MPL-30
Cyanide: 0.37 mg/L

MPL-17
Cyanide: 0.22 mg/L

T-40
Not Detected

MPL-16
Cyanide: 0.19 mg/L

MPL-31
Cyanide: 0.26 mg/L

Path: C:\Users\eadams\northwindgrp.com\060090 USAEC - White Sands Missile Range - Technical Files\GIS Files 2024 FMRs\ArcPro\STP\STP_2024\STP_2024.aprx

Source(s):
Aerial imagery from 11/25/2023 : Google Earth Pro,
Airbus Earth Observation Satellite Imagery Services
Elevations reported in NAVD 88 feet above mean sea level

Acronym(s) and Abbreviation(s):
SWMU = Solid Waste Management Unit
RSC = Regulatory screening criterion

Note(s):
Deep-Level Wells not used for Contours

Legend

- Interface Well
- Mid-Level Well
- Deep-Level Well
- Solid Waste Management Unit Percolation Ditches
- Impoundment Area

Cyanide Concentration (mg/L)
Cyanide RSC is 0.2 mg/L

- 0.201 - 0.3
- 0.301 - 0.4
- 0.401 - 0.5

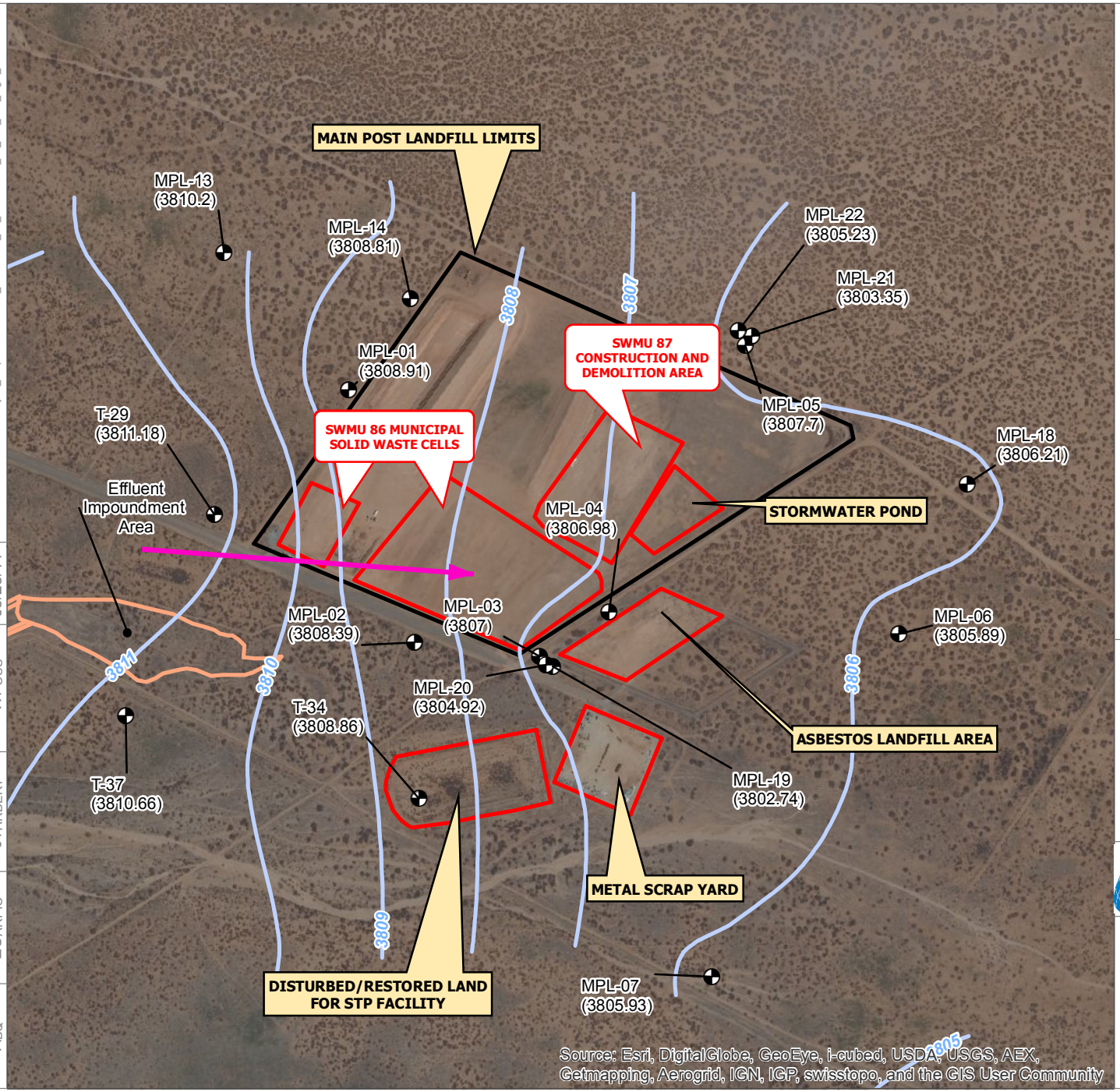
N

0 1,500 3,000 Feet

1 inch equals 1,500 feet

Scale: 1:18,000

FIGURE 5 **FALL 2024 CYANIDE PLUME**
SWMU 82 FORMER SEWAGE TREATMENT PLANT PERCOLATION DITCHES
WHITE SANDS MISSILE RANGE, NEW MEXICO



LEGEND

- MPL-11 (3877.56) — Groundwater Monitoring Well Location (Groundwater Elevation in Feet AMSL, November 2012)
- Effluent Drainage Ditches/ Impoundment Area (SWMU 82)
- Landfills and Other Disturbed Areas
- Main Post Landfill Limits Before Cover
- Groundwater Elevation Contours (1-foot intervals)
- Groundwater Flow Direction

NOTES

AMSL = Above Mean Sea Level
RCRA = Resource Conservation and Recovery Act
RFI = RCRA Facility Investigation
SWMU = Solid Waste Management Unit
WSMR = White Sands Missile Range

Wells MPL-19, MPL-21, MPL-23, and T-11 were not included in the potentiometric surface model

0 400 800
Feet
0 50 100 200
Meters

N

WGS 84 UTM ZONE 13N METERS

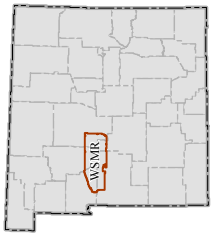
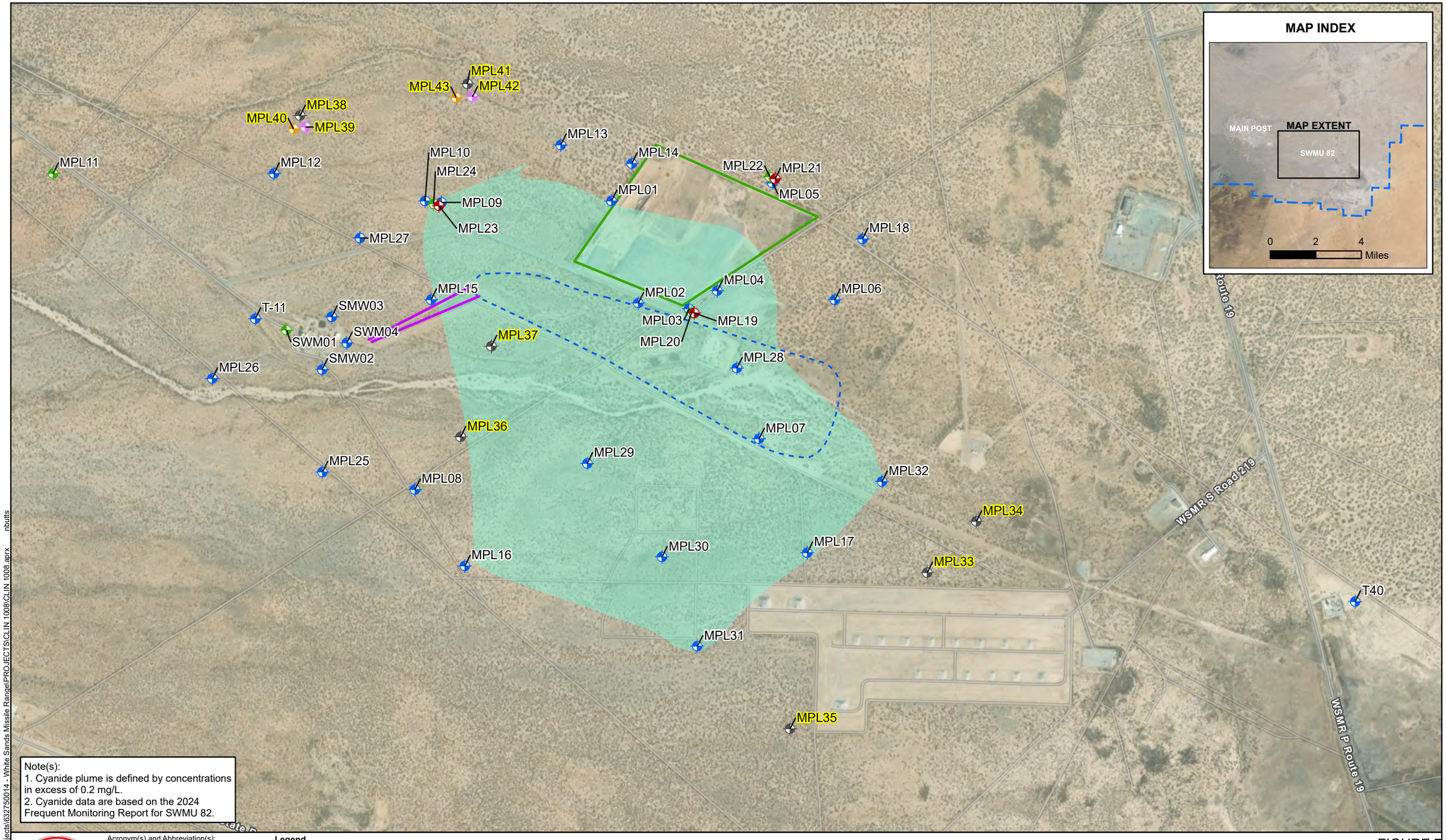


FIGURE 6
POTENTIOMETRIC SURFACE MAP
SWMU 86 (WSMR-81)
MAIN POST SANITARY LANDFILL AND
SWMU 87 (WSMR-82)
CONSTRUCTION LANDFILL
RFI REPORT
WHITE SANDS MISSILE RANGE, NM

FILE PATH	G:\WSMR\GISDocuments\Project_Maps\MXD\WSMR_81\WSMR_81_RFI\WSMR_81_RFI_005_FigX_MPL.mxd
DATE	03/28/14
APPROVED BY	WFOSS
CHECKED BY	JTARBERT
DRAWN BY	ECARPIO
OFFICE	ABQ



Note(s):
1. Cyanide plume is defined by concentrations in excess of 0.2 mg/L.
2. Cyanide data are based on the 2024 Frequent Monitoring Report for SWMU 82.

Acronym(s) and Abbreviation(s):
MPL = Main Post Landfill
SWMU = Solid Waste Management Unit
WSMR = White Sands Missile Range

Source(s): Aerial Imagery from ESRI, 2025

Legend

Proposed Groundwater Monitoring Well by Aquifer Depth
- Interface
- Mid-level
- Deep-level

Existing Groundwater Monitoring Well by Aquifer Depth
- Interface
- Mid-level
- Deep-level

- Former Sewage Treatment Plant Percolation Ditch
- Main Post Landfill
- Impoundment Area
- Cyanide Plume Extent greater than 0.2 mg/L Fall 2024

N

0 600 1,200 US Feet

1 in = 0 miles

FIGURE 7

SITE MAP WITH CURRENT MONITORING WELL NETWORK AND PROPOSED GROUNDWATER MONITORING WELLS

FREQUENT MONITORING PLAN, SWMU 82, FORMER SEWAGE TREATMENT PLANT PERCOLATION DITCHES
WHITE SANDS MISSILE RANGE, NEW MEXICO

\\lincoln\GISData\Projects\632750014 - White Sands Missile Range\PROJECTS\CLIN 1008\CLIN 1008.aprx nbutts

Attachment
Red-line strikeout of Proposed Changes to
WSMR 2025 RCRA Permit, Attachment 8

UNIT ID NUMBER	UNIT DESCRIPTION	COMMENTS
SWMU 79	Former Sludge Beds at the STP	Also identified as WSMR-29
SWMU 80	STP Sludge Waste Pile Main Post	Also identified as WSMR-30
SWMU 81	Boiler at the STP	Active, Deferred
SWMU 84	Effluent Pipeline at the STP	Active, Deferred
SWMU 85	STP Discharge at Playa Lake	Also identified as Davies Tank, WSMR-42. Active, Deferred
~~SWMU 86~~	~~Former Sanitary Landfill at the Main Post~~	~~Also identified as WSMR-81~~
~~SWMU 87~~	~~Former Construction Landfill~~	~~Also identified as WSMR-82~~
SWMU 102	Burn Pan South of Building 21547	
SWMU 103	Scrap Metal Yard at Building 21280	Active, Deferred
SWMU 109	Drum Storage Area (Splash Pan) at TTF	Also identified as CCWS-82 Active, Deferred
SWMU 110	Methylene Chloride Catchment System at TTF	Also identified as CCWS-82 Active, Deferred
SWMU 111	Methylene Chloride Separation System at TTF	Also identified as CCWS-82 Active, Deferred
SWMU 112	Methylene Chloride Separation System at TTF	Also identified as CCWS-82 Active, Deferred
SWMU 113	Salt Water Evaporation Tanks at TTF	Also identified as CCWS-82
SWMU 119	Former Stallion Range Landfill	Also identified as WSMR-70
SWMU 120	Former Stallion Center Landfill	Also identified as WSMR-70
SWMU 121	Stallion Asphalt Tank	Also identified as WSMR-67
SWMU 122	Stallion Asphalt Tank	Also identified as WSMR-67
SWMU 123	Stallion Asphalt Tank	Also identified as WSMR-67
SWMU 124	Waste Oil Storage Tank @ Stallion North of Building 34250	Also identified as CCWS-83
SWMU 127	Autoclave at McAffee Clinic Building 530	

TABLE ~~8-2~~8-2-1
SWMUs & AOCs
CORRECTIVE ACTION COMPLETE WITHOUT CONTROLS

UNIT ID NUMBER	UNIT DESCRIPTION	COMMENTS
SWMU 116	Rhodes Canyon Subgrade Asphalt Tanks	SWMUs 116, 117, & 118 were combined into SWMU 116, Also identified as WSMR-75
SWMU 125	Veterinary Clinic Incinerator	Also identified as WSMR-77
SWMU 126	McAffee Clinic Incinerator	
SWMU 137	Paint Shop Sump	Also identified as WSMR-56
SWMU 162	Stallion Range Center Former Firefighter Training Area	Also identified as WSMR-66
SWMU 219	Hawk Facility, Building 204548 at LC-38	3,000-gallon UST
SWMU 220	Rhodes Canyon Range Center POL Station, Building 30725-1 & 2)	
SWMU 139		No corresponding SWMU unit assigned to this number
AOC C	Areas where heavy pesticides and/or herbicides were used	
AOC F	Methane Vent (Flare) at STP	
AOC M	Exploded / Unexploded Low Level Radioactive Ordnance	
AOC N	Process Spills at HELSTF	
AOC O	Miscellaneous Areas ID'd by Aerial Photos	
AOC Q	HELSTF Lab Drains	
AOC T	Collection Lines to the STP	
AOC U	Miscellaneous Spills	
SWMU 21	Main Post Former Fire Fighting Training Area & Pit	
SWMU 140	LC-37 Paint Dump	Also identified as WSMR-84
SWMU 107	Storage Tank at Temperature Test Facility (TTF)	Also identified as WSMR-35
SWMU 108	Vapor Extraction Well at TTF	Also identified as WSMR-41

SWMU 137	Paint Shop Sump at Building 1742	Also identified as WSMR-56
SWMU 156	Former Golf Course Pesticide Storage Shed @ Building T-1348	Also identified as WSMR-57
SWMU 163	Abandoned Disposal Trench @ New Commissary	Also identified as WSMR-72

TABLE 8-2-2
SWMUs and AOCs
CORRECTIVE ACTION COMPLETE
WITH CONTROLS

UNIT ID NUMBER	UNIT DESCRIPTION	COMMENTS
SWMU 86	Former Sanitary Landfill at the Main Post	Also identified as WSMR 81
SWMU 87	Former Construction Landfill	Also identified as WSMR 82