

The Remediation of Abandoned Iron Ore Mine Subsidence in Rockaway Township, New Jersey

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Abstract

This report represents the sixth Semi-Annual Technical Progress Report issued in connection with the subsidence remediation projects undertaken by Rockaway Township in Morris County, New Jersey. This report provides a summary of the major project work accomplished during this reporting period and contemplated for the subsequent reporting period. This report is issued as part of the project reporting provisions set forth in the Cooperators Agreement between the United States Government - Department of Energy, and Rockaway Township.

The purpose of the Cooperators Agreement is for the Department of Energy to provide technical and financial assistance in a coordinated effort with Rockaway Township to develop and implement a multi-phased plan to remediate ground stability problems associated with abandoned mining activity. Primarily during the 1800's, extensive iron ore mining and prospecting was undertaken in Rockaway Township, part of the Dover District Mining region in Morris County. The abandoned mining activity has resulted in public safety hazards associated with ground collapse and surface subsidence features evolving in both developed and undeveloped areas within Rockaway Township.

At the White Meadow Mine site, after amended specifications were prepared and continued negotiations took place with the Property Owner, the property ownership was transferred during the reporting period. As a result in the change in property ownership, the remediation project was then to be done by the new Property Owner out of the responsibility of Rockaway Township under this Cooperators Agreement.

At the Mt. Hope Road subsidence, surface monitoring was conducted at the work area and adjacent areas after the January 2000 construction effort.

At the Green Pond Mine site at the Township Compost Storage Facility, no additional field work was undertaken during this reporting period subsequent to the previous completion of the geophysical survey. With the termination of the White Meadow Mine project, work began toward development of a remedial design for the Green Pond Mines.

Summary

The Agreement between the Property Owner of the 189 White Meadow Road property which contains portions of the White Meadow Mine, and Rockaway Township had been previously suspended. During this reporting period negotiations were conducted between the Property Owner and the Township in an attempt to re-establish the cost sharing agreement with the Township. During this reporting period, ownership of the 189 White Meadow Road property was transferred through a real estate sale to another owner. This resulted in the funding and responsibility for the project now being that of the new property owner, not Rockaway Township

Monitoring of the Mt. Hope Road subsidence project occurred during this reporting period. No observations of subsidence were noted at the area of concern.

With regard to the Green Pond Mines Project, no additional work was conducted during this reporting period subsequent to the completion of the resistivity geophysical survey at the site. With the termination of the White Meadow Mine project, design and analysis work began at the Green Pond Mines site.

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Results and Discussion

The following information provides the results of the major issues, work items and areas of investigation considered during the reporting period of this Technical Progress Report.

General Project Communications and Fundamentals

During this semi annual reporting period various communications and coordination occurred as was necessary during this portion of the project. These include meetings and correspondence in connection with reestablishing the agreement between the Property Owner and Rockaway Township at the White Meadow Mine site.

During this reporting period, the semi-annual Technical Progress Report for previous period was prepared and forwarded to the United States Department of Energy on behalf of Rockaway Township in accordance with the requirements set forth in the Cooperators Agreement.

White Meadow Mine – Project Status

Just prior to this progress reporting period, Construction Plans and Technical Specifications were amended and reissued forming the Bid Package to solicit competitive bids for the proposed remedial work.

At the beginning of the reporting period, the White Meadow Mine remediation project had been temporarily suspended awaiting a renewed agreement between the Property Owner and Rockaway Township. Previously, the project had been advertised and bidders were solicited from the public for the remedial work. After bids were received and a contractor was selected, the Property Owner withdrew from the agreement. This resulted in the voiding of the cost sharing arrangement with the Township and the Property Owner.

During this reporting period after extensive negotiations, and an new agreement was established, the Property Owner transferred ownership through real estate sale to a new Owner. This action resulted in the termination of the agreement with the financial responsibility of the remediation to be solely borne by the new Property Owner. The result was the end of the cost sharing arrangement with the Township for the remedial work.

Remedial work at the White Meadow site was undertaken during this reporting period by the Property Owner, without any financial responsibility or cost sharing with Rockaway Township.

Green Pond Mines – Project Status

During this reporting period no field work was conducted at the Green Pond Mine site or related to this remedial site. To allow for the possible financial implications of other subsidence remediation work with abandoned magnetite mines within the Township, no additional work was undertaken during this reporting period at this site pending the financial implications of other work, primarily the White Meadow Mine site.

With the termination of the White Meadow Mine project, research initial design work began toward the completion of the plans and specifications for this project.

Mt. Hope Road – Subsidence Remediation

In January 2000, the remedial construction work was undertaken and completed at the Mt. Hope Road subsidence site. The remediation work at the Mt. Hope Road site involved excavation of the subsidence area to approximately ten (10') feet to inspect for near surface evidence of a shaft or other near surface mining features. The diameter of the excavated hole was approximately twenty (20') feet with a three (3') foot wide shelf excavated down at six (6') feet around the perimeter. Fifty five (55 ton) tons of shot rock was placed to form a foundation for a sixteen (16 cy) cubic yard concrete safety plug/cap which was then backfilled.

The Mt. Hope subsidence area is located between the Elizabeth shaft and the Brown shaft along the general north east geologic trend which is typical of the Dover Mining District in Morris County. The area is approximately one half mile southwest of the the principal operating shaft of the Mt. Hope mine, the most prolific magnetite producer in the Dover District.

With the completion of the subsidence remediation work at the Mt. Hope, monitoring observations were conducted during this period of the work area and adjacent areas.

Subsequent Reporting Period Activity Plan

Since the remediation at the White Meadow Mine project was terminated, it is anticipated that work toward the preparation of plans and Technical Specifications for the Green Pond Mines remediation, including completion of research and preliminary engineering design, will be conducted.

At the Mt. Hope Road subsidence site, after completion of the remedial work in January 2000, surface monitoring will be conducted during this and subsequent reporting periods to examine subsurface conditions at this location and adjacent areas along the geologic trend.

Conclusions

No additional field survey, completed research or design, or physical construction was undertaken during this reporting period. Consequently, no additional conclusions are set forth during reporting period.

Appendix

This Report does NOT contain an Appendix
