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**MEMO**

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From:  
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Date:  
January 6, 2014

ARCADIS Project No.:  
B0014505

Subject:  
Aberdeen MGP Site Remedial Program: 2014-2018 Projected Cash Flow

This memorandum presents estimated environmental remediation expenditures for NorthWestern Energy (NWE)'s former manufactured gas plant site in Aberdeen, South Dakota. The remedial program, approved by the SDDENR in a letter dated June 14, 2010, consists of enacting institutional controls restricting property development and groundwater use, recovery of coal tar free product from the subsurface, long-term perimeter groundwater monitoring, and ongoing operational maintenance on current and future groundwater/free product remediation systems. The cost components used to develop this estimate were initially prepared as part of a Remedial Alternative Evaluation intended to provide an engineering-level cost comparison between various alternatives that were being considered in 2010. Remedial activities have taken place on the NWE property, and future remediation efforts are planned for third-party properties to the north, south, east, and west of NWE's property. The remedial approach to be employed in the offsite areas will likely differ from the approach used to date based on projected cost, effectiveness, impacts to the local community, and available access. As such, actual costs may differ once contractor bids are received and evaluated and third party negotiations take place.

<b>ABERDEEN MGP REMEDIATION SCHEDULE</b>		
<b>Month</b>	<b>Projected Expenditures</b>	<b>Anticipated Project Activities and Related Assumptions</b>
2014	\$1.7M	Remedial design and construction in northern offsite area, 25% of institutional controls execution (assumes total of \$1MM for third-party property owner compensation), operation and maintenance

		costs for existing Booster Station remediation system continued O&M for onsite remediation systems, and annual groundwater monitoring.
2015	\$1.3M	Optimization and evaluation of remedial system performance in northern offsite area, 25% of institutional controls execution, operation and maintenance costs for existing Booster Station remediation system and annual groundwater monitoring. Initial O&M on offsite remediation systems (northern area) and continued O&M for onsite remediation systems.
2016	\$2.2M	Remedial design and construction in southern offsite area, 25% of institutional controls execution, O&M for existing Booster Station remediation system and onsite collection systems and annual groundwater monitoring. Additional O&M for northern and southern offsite remediation systems.
2017	\$2.2M	Remedial design and construction in eastern offsite area, 25% of institutional controls execution, O&M of Booster Station remediation system and onsite collection systems, and annual groundwater monitoring. Additional O&M for northern/southern offsite remediation systems.
2018	\$1.6M	Remedial design and construction in western offsite area, O&M of Booster Station remediation system, onsite collection systems, additional O&M for northern/southern/eastern offsite collection systems, and annual groundwater monitoring. Remedial construction expected to be completed for all areas in 2018.

**5-Year Subtotal for 2014-2018: \$9.0M**

**Non-discounted liability value identified in December 2013 reserve update: \$13.1M**

Remedial construction is expected to be completed in 2018, and annual costs in 2019 will consist of O&M and monitoring on the in-place systems. Annual expenditures are expected to be approximately \$500k in 2019 and remain stable or gradually decrease in forthcoming years.