



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

APR 11 2011

ACTION MEMORANDUM

SUBJECT: Request for Approval and Funding for a Removal Action and 12-Month Emergency Exemption for the York PCE Site, York, York County, Nebraska

FROM: Jason Heitman, On-Scene Coordinator
Planning and Preparedness North Section
Emergency Response and Removal North Branch

THRU: Don Lininger, Chief
Planning and Preparedness North Section
Emergency Response and Removal North Branch

TO: Cecilia Tapia, Director
Superfund Division

SSID: A7X7
CERCLIS ID: NEN000706200
Category of Removal: Time-critical
Nationally Significant/Precedential: No

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval of a time-critical removal action for the York PCE Site (the "Site"), located in the southeast portion of the city of York, in York County, Nebraska. The general objective of this removal action is to eliminate, through the provision of a permanent alternate water supply or through the installation of whole-house filtration systems, human exposures resulting from the inhalation, dermal contact, and/or ingestion of tetrachloroethene (PCE), and/or other hazardous substances present in the groundwater at the Site. An emergency exemption from the 12-month limitation on response imposed by section 104(c)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is also being sought in this Action Memorandum.



2.0



II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal site evaluation

In conducting downgradient sampling pertaining to another Superfund site in the area – the York Northeast Groundwater site (SSID A7T6, CERCLIS ID NEN000706105; Action Memorandum signed August 6, 2010) – a distinct groundwater contaminant plume in York was discovered by the U.S. Environmental Protection Agency (EPA) in the fall of 2010. As a result of this discovery, EPA completed an Abbreviated Preliminary Assessment (APA) for the Site in November 2010. Sampling conducted during the preparation of the APA identified eight residential drinking wells with concentrations of PCE ranging from 9.6 to 32 micrograms per liter ($\mu\text{g/L}$). Of these wells, one also contained trichloroethene (TCE) at a concentration of 5.9 $\mu\text{g/L}$. These levels exceed EPA's maximum contaminant level (MCL)¹ of 5 $\mu\text{g/L}$ for these hazardous substances.

2. Physical location

The city of York is located in the west-central portion of York County in southeast Nebraska. The Site is located to the southeast of the city of York, near the intersection of Road N and Road 12. Land use in the area is primarily residential.

3. Site characteristics

Groundwater contamination in the York area has been an ongoing issue since sampling by the Nebraska Department of Health in March 1990 discovered volatile organic compounds (VOCs) in some of York's municipal wells. Subsequent sampling of 20 private wells in northeast York found eight residential wells with levels of VOCs above the Removal Action Level (RAL) used by the EPA at that time for drinking water. In addition to sampling by the Nebraska Department of Health, carbon tetrachloride (CCL_4), another VOC, was found in the groundwater during sampling conducted for the U.S. Department of Agriculture (USDA) in 1993 and 1994. Residences whose drinking water was affected by the plume at that time were connected by EPA to the municipal water supply. This action was the subject of the York Northeast Groundwater removal action referred to above.

Currently, each of the residences affected by the PCE contamination is too far from the city's municipal water supply system to allow for cost-effective connection. Installing whole-house drinking water filtration systems would be the most effective way to eliminate the threat from the contaminated drinking water wells. In the event that the city's water supply system is extended and that option becomes viable, that option may be selected in the future.

¹ The MCL is defined in the Safe Drinking Water Act, 42 U.S.C. § 300f, as the maximum permissible level of a contaminant in water which is delivered to any users of a public water system.

While the source of the contamination is still being investigated by EPA, there are several industries in York that could have caused or contributed to this groundwater contamination.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

A release of PCE into the groundwater at the Site has been documented by EPA. PCE is a “hazardous substance” as defined by section 101(14) of CERCLA, and is a designated and listed hazardous substance pursuant to 40 CFR § 302.4, as provided for in section 102(a) of CERCLA.

5. National Priorities List (NPL) status

The Site is not on the NPL, nor is it proposed for inclusion at this time.

6. Maps, pictures and other graphic representations

The purple shaded area of Attachment 1 depicts the general Site location.

B. Other Actions to Date

1. Previous actions

As discussed above, EPA completed an APA at the Site in November 2010, which demonstrated the presence of PCE in residential drinking water wells at the Site.

2. Current actions

EPA has discussed the results of the APA with affected residents, as well as alternatives for addressing the contamination. The residents have been made aware by EPA that whole-house filtration may be provided by EPA (or a potentially responsible party [PRP], if located) to address this exposure, and they have been advised by EPA of the possibility of future connection to municipal water. The affected residents appear to be agreeable to this response.

Future assessment work will likely be conducted by EPA to ascertain whether the contaminant plume is migrating, resulting in additional exposures.

C. State and Local Authorities' Roles

1. State and local actions to date

The Nebraska Department of Environmental Quality (NDEQ) has conducted assessments at other groundwater sites in York, but not at this Site. EPA will coordinate any additional assessment activities with NDEQ to further characterize the extent of contamination at the Site.

2. Potential for continued State/local response

Following EPA's initial response to provide a source of safe drinking water for affected residents, discussions with NDEQ on additional assessment and/or response will be conducted. Further assessment activities will likely be conducted to gather additional information about the source of the release, contaminant migration, and whether additional exposure pathways exist. All Site activities will be coordinated with NDEQ.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Groundwater at the Site is contaminated with PCE at levels above the MCL of 5 µg/L, resulting in unacceptable exposures to area residents. Eight residential wells have been identified, to date, as being contaminated with PCE at levels ranging from 9.6 to 32 µg/L. Site conditions pose a significant threat to public health and welfare, which meet the following criteria for a removal action, as required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), at 40 CFR § 300.415(b)(2):

40 CFR § 300.415(b)(2)(i) – Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.

Eight residential drinking water wells at the Site have been identified by EPA as containing PCE at levels exceeding health-based action levels (the MCLs). Water from these wells is used by the residents for domestic uses, which results in exposures to PCE through ingestion, inhalation, and dermal contact. Contamination in these wells presents an actual exposure to these residents.

40 CFR § 300.415(b)(2)(ii) – Actual or potential contamination of drinking water supplies or sensitive ecosystems.

PCE levels exceeding health-based action levels have been identified at eight residential drinking water wells at the Site. The exact length of time that these residents have been exposed to contaminated water is unknown. It is possible that residents have been exposed to contaminated water for years or decades.

40 CFR § 300.415(b)(2)(vii) – The availability of other appropriate federal or state response mechanisms to respond to the release.

The State has requested that EPA respond to this release. There are no other known appropriate federal or state response mechanisms available to respond to this release.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from the Site may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. EXEMPTION FROM STATUTORY LIMIT

As described further below, the presence of PCE in the residential drinking water at the Site poses an immediate risk to public health, or welfare, or the environment. Residents at the Site are currently exposed to PCE at levels in excess of the MCL and RAL for PCE. It is unknown how long this exposure has lasted, but the exposure may have existed for several years, which would increase the human health risk and the potential for harm. Response actions are immediately required to prevent, limit, or mitigate an emergency, and these response actions may be required beyond the statutory 12-month period provided for in section 104(c)(1) of CERCLA, to prevent further unacceptable exposures. In the absence of this removal action, assistance will not otherwise be provided on a timely basis, as neither the State or local authorities have the resources to address this situation.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

This removal action would provide connection to the York municipal drinking water system, when available, or point-of-entry drinking water filtration systems to residences or businesses where PCE, or another hazardous substance, in that resident or business' well exceeds the MCL (see "Health Consultation and Removal Action Level Concentration Discussion" below). Connection to municipal water would include hardware and installation required to connect the residence or business to the water supply. The property owner would be responsible for paying for water used. Filter installation would include all installation hardware and an initial supply of filters, but would not include any future operation and maintenance. Currently, eight residences are eligible to obtain drinking water filtration systems. There are additional residences in the area, which have not yet been sampled. If contamination is found in any of those wells above action levels, they too, would be eligible for drinking water filtration. It is not yet known how many wells may be affected by this contamination, but given the residential density in the area and the estimated extent of the groundwater contamination, it is estimated that there would likely be no more than 12 residences/businesses affected by the groundwater contamination at this Site.

Health Consultation and Removal Action Level Concentration Discussion

EPA guidance for determining threshold concentrations in private drinking water wells is provided in EPA's Final Guidance on Numeric Removal Action Levels for Contaminated Drinking Water Sites (OSWER Directive 9360.1-02, October 1993). RALs are defined in this directive as "drinking water concentrations of contaminants that are considered, along with other factors, in determining whether to provide alternate water supplies under Superfund removal authority." This guidance further defines two types of RALs: (1) numeric levels for individual substances, which apply generally across most sites, and (2) site-specific levels, which are determined on a case-by-case basis, using a more detailed analysis of conditions at a particular site.

In discussing site-specific RALs, the guidance provides that a significant health threat may exist at a site even if no substance is currently present in drinking water at a concentration exceeding its numeric RAL. If the health risk at a site is analyzed in detail and the analysis indicates that a serious risk is present due to site-specific factors, a removal action may be initiated.

In addition to risk assessment considerations, the guidance also provides that costs should be considered. This removal action offers a reliable, protective, permanent solution to affected private well owners in the area at a relatively low cost, and should future work include the installation of a treated water supply line, the supply line would eliminate the need for the future sampling (and associated costs) of affected wells.

While the health risk at this Site has not been analyzed in detail, EPA Region 7 recently considered RALs with regard to a removal action conducted at a site with similar contaminants and exposures.² With regard to that site, EPA's human health risk assessor performed a detailed analysis of potential health risks. The analysis accounted for the latest PCE toxicity information and all potential routes of exposure including ingestion of drinking water, inhalation of VOCs released into the air during household water use, and dermal contact while showering/bathing. A range of potential site-specific RALs were provided including the MCL of 5 µg/L and values based on an excess individual lifetime cancer risk of 1×10^{-6} to 1×10^{-4} , which range from 0.074 to 7.4 µg/L.

For that action, a RAL of 5 µg/L was selected by Region 7 due, in part, to the presence of multiple contaminants, the proximity of possible upgradient sources, and the unlikelihood of future remedial actions. Because there are multiple contaminants present at this Site and individuals may have been exposed to contaminated groundwater for several years, this action warrants use of a RAL in the lower end of the range of values for PCE. It is important to note that the MCL of 5 µg/L and the RAL of 7.4 µg/L, which is based on a cancer risk of 1×10^{-4} , are comparable values.

For these and other reasons, I am recommending the adoption of a RAL for this Site of 5 µg/L for PCE. This is also the MCL for the contaminant and falls within the more health-protective spectrum of the cancer risk range.

2. Contribution to remedial performance

No remedial action is currently contemplated for the Site. In the event that the Site is listed on the NPL, it is not expected that the removal action provided for herein would adversely affect any future remedial action for the Site.

3. Engineering Evaluation/Cost Analysis

As this is a time-critical removal action, no engineering evaluation/cost analysis will be performed.

² Doniphan Groundwater Site, Doniphan, Hall County, Nebraska, SSID A7W3, Memorandum dated June 24, 2010.

4. Applicable or relevant and appropriate requirements (ARARs)

Federal

The NCP at 40 CFR § 300.415 requires that removal actions shall, to the extent practicable considering the exigencies of the situation, attain ARARs under federal environmental, state environmental, or facility siting laws. The following ARARs have been identified as being potentially applicable for this action:

Action/ Prerequisite	Requirement	Citation
Disposal of spent activated carbon	Disposal at RCRA Subtitle D facility - Applicable	40 CFR part 257
Drinking Water Quality	Compliance with MCLs - Relevant and appropriate	40 CFR part 141

State

In its March 4, 2010, Request for Federal Action letter for the York Northeast Groundwater Site, NDEQ identified the following ARARs which will also apply to the York PCE Site:

Alternative Water Supply

- Provisions for alternate water supplies must comply with the water well registration, spacing and construction, pump or pumping equipment installation, and water well decommissioning standards and associated licensing requirements identified in Action Specific ARARs, Section A (Groundwater Monitoring); 1, 2, and 3, of the State of Nebraska ARARs for Contaminated Groundwater.
- Provisions for alternate water supplies must also comply with the Municipal and Rural Domestic Groundwater Transfers Permit Act, Neb. Rev. Stat. §§ 46-638 to 46-650 related to protective permitting for public water supplies.
- Provisions for alternate water supplies must also comply with the Nebraska Safe Drinking Water Act, Neb. Rev. Stat. §§ 71-5301 to 71-5313, and implementing regulations governing public water supply systems found in Title 179 – Public Water Systems.

Groundwater Treatment

- The spent carbon, ion-exchange resin, and granular media meet the definition of solid waste in Title 128, Nebraska Hazardous Waste Regulations, Chapter 2.

- A hazardous waste determination must be made in accordance with Title 128, Chapter 4, 002.
- If material is a hazardous waste, it must be handled in accordance with all hazardous waste management requirements in Title 128, Chapters 8, 9, and 10.
- If material is a hazardous waste, it must be disposed of in a permitted treatment storage and disposal facility as required under Title 128, Chapters 8, 9, and 10; however, generators subject to the requirements of Chapter 8 (conditionally exempt small quantity generator) have disposal options. The transporter must comply with the requirements of Title 128, Chapter 11.
- If the generator is also acting as the transporter, then it must follow the transporter requirements found in Title 128, Chapter 11.
- If the material is not a hazardous waste, it may be a special waste as defined in Title 132 – Integrated Solid Waste Management Regulations, Chapter 1, and the generator must follow the requirements of Title 132, Chapter 13, and may only be disposed of at a licensed landfill, which is operated and maintained in compliance with NDEQ regulations and that is approved to accept special waste. NDEQ and landfill approval are required prior to disposal.

5. Project schedule

This removal action is expected to commence within two weeks of approval of this Action Memorandum, pending the availability of installation personnel. Installation of filtration systems will be coordinated with the affected residents and local plumbing subcontractors.

B. Estimated Costs

The estimated costs associated with this removal action are as follows, which include costs for installing filtration system in up to 12 residences and collecting follow-up samples to monitor filter performance:

<u>Extramural Costs:</u>	
Removal Costs	\$80,000
20 Percent Contingency	<u>16,000</u>
Removal Ceiling	\$96,000

EPA direct and indirect costs, although cost recoverable, do not count toward the Removal Ceiling for this removal action. Liable parties may be held financially responsible for costs incurred by EPA as set forth in section 107 of CERCLA.

VII. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action may increase public health risks to the affected population through prolonged exposure to PCE and/or other hazardous substances in household-use water.

VIII. OUTSTANDING POLICY ISSUES

None.

IX. ENFORCEMENT

See attached Confidential Enforcement Addendum for this Site. Based on the previous extramural costs calculation, an estimate of EPA's intramural direct costs (\$5,000), and a regional indirect cost rate of 39.77 percent, the total estimated EPA costs for this removal action based on full-cost accounting practices eligible for cost recovery are estimated to be \$141,168.

Direct Extramural Costs	\$96,000
Direct Intramural Costs	5,000
EPA Indirect (39.77 percent of all costs)	<u>40,168</u>
Total Project Costs	\$141,168

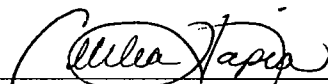
Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery

X. RECOMMENDATION

This decision document represents the selected removal action and 12-month exemption for the York PCE site in York, York County, Nebraska, developed in accordance with CERCLA, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP section 300.415(b) criteria for a removal action and I recommend your approval of the proposed removal action. The removal project ceiling, if approved, will be \$96,000, which comes from the regional removal allowance.

Approved:

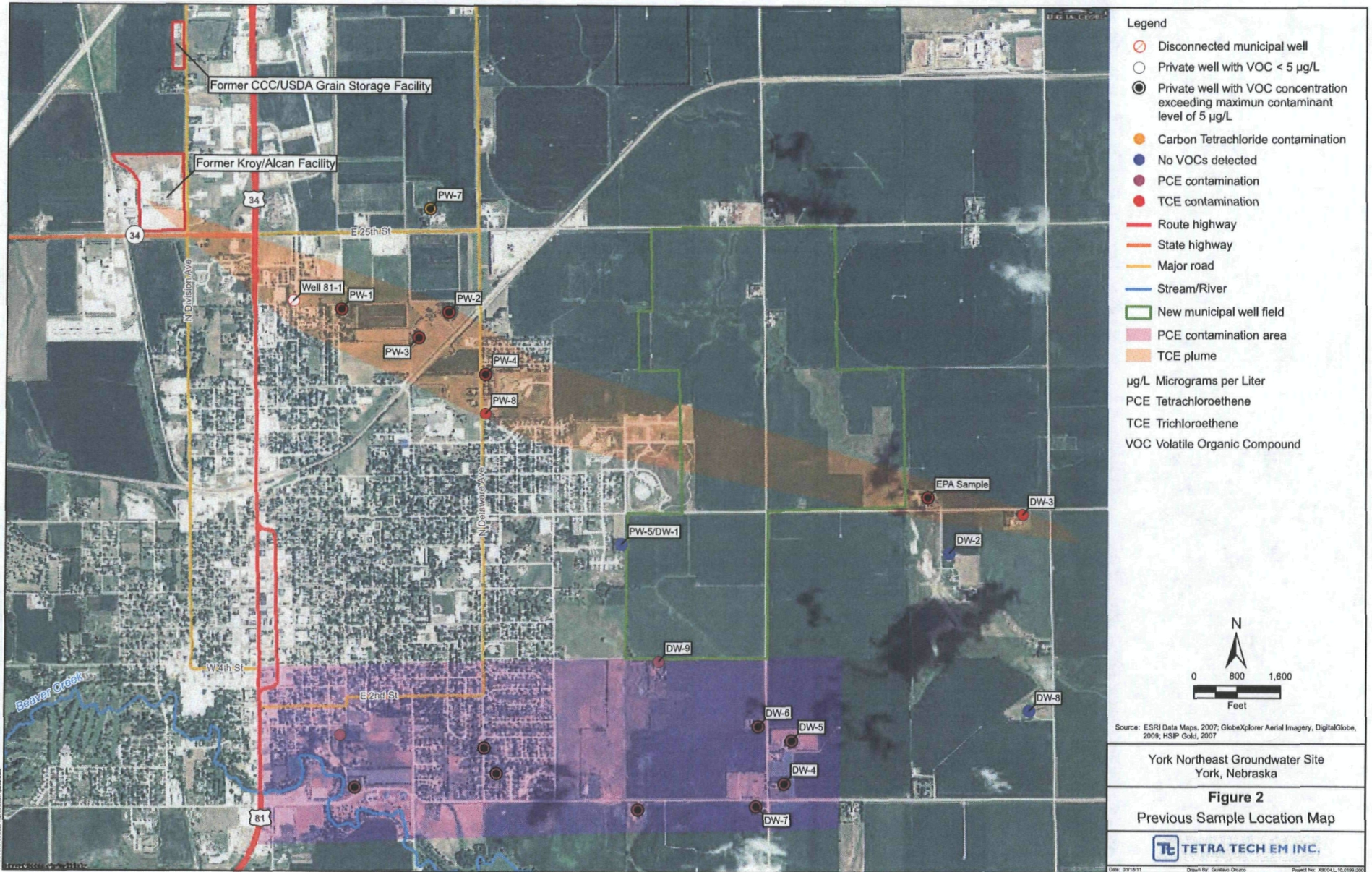


 Cecilia Tapia, Director
 Superfund Division

4/11/11

 Date

Attachments



Source: ESRI Data Maps, 2007; GlobeXplorer Aerial Imagery, DigitalGlobe, 2005; HSP GMI, 2007

York Northeast Groundwater Site
York, Nebraska

Figure 2
Previous Sample Location Map

TETRA TECH EM INC.

Date: 01/18/11 Drawn By: Dorian Orsco Project No: X0604L10109L000