

FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (FFA/CO) NEW SITE IDENTIFICATION (NSI)

Site Title: Shallow Injection Well 47-CPP (Well ID 2017)	Site Code: CPP-140
	Document Number: NSI-26013

PART B

1. **Data Analysis and Risk Assessment:** Site CPP-140, consisting of shallow injection well (SIW) 47-CPP, was approved as a new Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site when Part A of the New Site Identification (NSI) form was signed by the U.S. Department of Energy (DOE), U.S. Environmental Protection Agency (EPA), and Idaho Department of Environmental Quality (DEQ) in 2013. As documented in Part A of the NSI form, 47-CPP was used for steam condensate disposal from the steam heating line that supplied Building CPP-652. Several chemical additives were used in the Idaho Nuclear Technology and Engineering Center (INTEC) steam heating system to prohibit mineral deposits and protect the system from corrosion.

Because SIW 47-CPP is located approximately 7 ft beneath Beech Street (adjacent to Manhole MAH-PHE-291), the condensation discharge point is inaccessible without excavating the road. Consequently, soil samples have not been collected. Figure 4 shows the location of the cover to Manhole MAH-PHE-291 in Beech Street.



Figure 1. Photograph showing a portion of Beech Street and the cover to Manhole MAH-PHE-291.

The steam condensate discharged to SIW 47-CPP is the same as the condensate discharged to the other steam condensate SIWs at INTEC because there is a single steam system at INTEC. Fifteen other SIWs used for disposal of steam condensate were evaluated under CERCLA and determined to be no action sites. Based on the information presented for the other INTEC steam condensate SIWs, the only contaminant of potential concern is cyclohexylamine. This was re-confirmed by comparing the list of other chemical additives in the INTEC steam system (Bragassa 2004) to the list of chemicals in the most recent EPA preliminary remediation goal (PRG) tables (EPA 2014). Bragassa (2004) lists these chemicals as sodium metabisulfite (Chemical Abstract Service [CAS] number 7681-57-4), ethylenediamine-tetraacetic acid sodium salt (CAS number 64-02-8), sodium lignosulfonate (CAS number 8061-51-6), diethylethanolamine (CAS number 100-37-8), and morpholine (CAS number 110-91-8). The comparison confirmed that no new contaminants of potential concern from the steam system have been added to EPA's PRGs.

Cyclohexylamine is completely miscible in water (infinite water solubility) and has an octanol water partition coefficient (K_{ow}) of 30.9 and a soil organic carbon-water partition coefficient (K_{oc}) of 154 (Howard 1990). Cyclohexylamine is not expected to sorb to soil or sediments (Howard 1990) because cyclohexylamine is completely miscible in water and the INTEC alluvium contains little organic carbon. Therefore, cyclohexylamine is not expected to remain in the soil at 47-CPP, but instead move downward with infiltrating water. The EPA soil PRG for a hazard quotient of 1 is 12,000 mg/kg for a future resident and 160,000 mg/kg for an outdoor worker. Although the soil is not accessible at 47-CPP and no soil sample can be taken, it is highly improbable that such elevated soil concentrations of

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cyclohexylamine could exist. In addition, the steam condensate entered the environment through the bottom of the SIW, which is 7 ft below ground surface. This is below the depth of exposure assumed for a worker in an industrial use area. There is therefore no pathway for worker exposure.

Cyclohexylamine is not a groundwater contaminant of potential concern for Operable Unit (OU) 10-08 (Table 7 of DOE-ID 2010) and is not expected to pose an unacceptable risk to groundwater. Therefore, no further evaluation of impact to groundwater is necessary.

Based on the information presented, SIW 47-CPP (Site CPP-140) is recommended as a no action site under OU 10-08.

References

Bragassa, Jodi L., 2004, "Shallow Injection Wells Located at INTEC, Operable Unit 3-13, Track 1 Decision Documentation Package," EDMS No. 24884, Idaho National Engineering and Environmental Laboratory, May 2004.

DOE-ID, 2010, *Operable Unit 10-08 Remedial Design/Remedial Action Work Plan*, DOE/ID-11418, Rev. 0, U.S. Department of Energy Idaho Operations Office, August 2010.

EPA, 2014, *Regional Screening Table*, http://www.epa.gov/reg3hwmnd/risk/human/rb-concentration_table/, U.S. Environmental Protection Agency, Web page last updated May 28, 2014, Web page last visited August 4, 2014.

Howard, Philip H., 1990, *Handbook of Environmental Fate and Exposure Data for Organic Chemicals*, Vol. 2, CRC Press, February 1990.

NSI-26013, 2013, "Shallow Injection Well 47-CPP (Well ID 2017)," Part A, Idaho Cleanup Project, U.S. Department of Energy Idaho Operations Office, U.S. Environmental Protection Agency, and Idaho Department of Environmental Quality, August 2013.

2. OU 10-08 Recommendation Yes No

- No Action
- No Further Action with Institutional Controls
- Removal and Disposal Plug-in Remedy (meets remedy profile)

3. Assignment to Operable Unit Recommendation

Assign waste area group (WAG) and operable unit (OU):

WAG: 10 OU: 08

- Explanation of Significant Differences
- Record of Decision Amendment
- Remedial Investigation/Feasibility Study → Record of Decision
- Removal Action → Action Memorandum
- Plug-in Remedy Memorandum
- Minor Change Memorandum
- Memorandum to File
- NSI Only (i.e., no change to previous decision for an existing site)

4. Prepared By:

Wendell Jolley and Lorie Cahn

Name (printed)

[Signature]

Signature

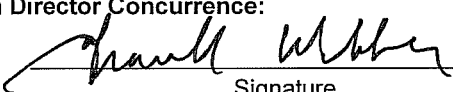
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5. Idaho Cleanup Project Environmental Restoration Director Concurrence:

_____		<u>8/4/14</u>
Frank Webber Name (printed)	Signature	Date

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PART B

6. FFA/CO Remedial Project Manager (RPM) Concurrence:

DOE-ID FFA/CO RPM: Concur with recommendation. Do not concur with recommendation.
Nicole Brooks *Nicole Brooks* 8-5-14
Name (printed) Signature Date

Explanation:

EPA FFA/CO RPM: Concur with recommendation. Do not concur with recommendation.
Dennis Faulk *Dennis Faulk* 9/13/14
Name (printed) Signature Date

Explanation:

DEQ FFA/CO RPM: Concur with recommendation. Do not concur with recommendation.
Daryl F. Koch *Daryl F. Koch* 09/02/2014
Name (printed) Signature Date

Explanation: