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COLORADO DEPARTMENT OF PUBLIC HEALTH
AND ENVIRONMENT
HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

GRAND JUNCTION
SITE DISCOVERY REPORT
MESA COUNTY, COLORADO

Colorado Department of Public Health and Environment

Prepared by:
Martin OGrady

Approved: Barbara Nabors **Date:** 4/23/12
Barbara Nabors, PA/SI Unit Leader, CDPHE

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Sabrina Forrest, Site Assessment Manager, EPA

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GRAND JUNCTION SITE DISCOVERY REPORT

1.0 INTRODUCTION

The Preliminary Assessment/Site Inspection (PA/SI) program of the Hazardous Materials and Waste Management Division (HMWMD) of the Colorado Department of Public Health and Environment (CDPHE), under a cooperative agreement with the United States Environmental Protection Agency (EPA), conducted a site discovery effort for the city of Grand Junction, Colorado. The primary focus of this discovery effort is to identify industries or historical commercial/industrial sites that may be responsible for previously undocumented releases of hazardous substances.

The Superfund cleanup process begins with site discovery or notification to EPA of possible releases of hazardous substances. Sites are “discovered” by various parties, including citizens, State agencies, and EPA Regional offices. Once discovered, sites are entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), EPA's computerized inventory of potential hazardous substance release sites. Where appropriate, CDPHE and EPA will evaluate the potential for a release of hazardous substances from identified sites through the EPA Site Assessment process.

This discovery effort has identified 53 sites that warrant further study to determine if they should be formally discovered and entered into the CERCLIS database. The sites identified in this report that may warrant further study are referred to as “Tentatively Identified Sites” (TIS). Entry into CERCLIS is a decision that formalizes a site being discovered and triggers the need for a Preliminary Assessment. Tentatively Identified Sites are sites where historic or current activities suggest a higher than average potential for the release of a hazardous substance(s) to the environment. Potential target information was not considered in the identification of Tentatively Identified Sites.

Historic documents and data reviewed for this report included:

1) R.L. Polk business (telephone) directories;
2) EDR Grand Junction “Area Study”. CDPHE purchased an Area Study from Environmental Data Resources Inc. (EDR) for the city of Grand Junction. The study is a comprehensive compilation of multiple environmental databases and consists of a report (2102 pages, Appendix A) and tabular data (Appendix B);

3) The National Response Center (NRC) Spill Database, also known as the Emergency Response Notification System (ERNS). This is included in the EDR database but is listed separately here as it represents a distinct information source that is traditionally reviewed in site discovery efforts;
4) Sanborn Fire Insurance Maps (1886-1961);
5) Input from CDPHE staff in Grand Junction.

While the data sources consulted in the preparation of this document provide a good base-level screening of associated environmental concerns potentially attributable to various industrial properties in the Grand Junction area, this initial screening is fairly broad and general in scope. The specific details of Tentatively Identified Sites operations are beyond the scope of this discovery document, however the data included with this document provide a good foundation for further study.

The designation in this document as a Tentatively Identified Site does not confirm the release of a hazardous substance from a site. Conversely, it does not mean that there has not been a release of a hazardous substance from sites that are not designated as Tentatively Identified Sites or that they will not be considered for further study under the Site Assessment program in the future.

1.1 General Site Description

The city of Grand Junction located in Mesa County, Colorado is the largest city in western Colorado. Grand Junction is approximately 250 miles west of Denver. According to 2007 city of Grand Junction and Mesa County estimates, the population of the city is 53,566 (US Census). Grand Junction is located at the junction of the Colorado and Gunnison Rivers. The Grand River was renamed the Colorado River in 1921. Grand Junction is nicknamed "River City". The city sits near the mid-point of a 30-mile arcing valley, known as the Grand Valley, a major fruit-growing region, historically home to the Ute people and settled by white farmers in the 1880s. In recent years, several wineries have been established in the area as well. The Colorado National Monument, a unique series of canyons and mesas, overlooks the city on the west. Most of the area is surrounded by public lands managed by the Bureau of Land Management. The Book Cliffs are a prominent series of cliffs that define the northern side of the

Grand Valley. Interstate 70 connects the city eastward to Glenwood Springs and Denver and westward to Green River, Utah (Wikipedia 2010).

Grand Junction is located at 39°03′53″N, 108°33′52″W (39.06472°N 108.56444°W). It is approximately 4,560 feet above sea level near the confluence of the Colorado and Gunnison Rivers. According to the United States Census Bureau, the city has a total area of 38.22 square miles (US Census).

Grand Junction has a semi-arid to arid climate. Winters are cold and relatively dry. From December to February, highs reach 50 °F an average of 18 days. Snowfall is generally light, with a 30-year average of 13.8 inches, though the median is 6.3 inches. Summers are hot and dry, with average July highs reaching 93 °F and lows reaching 64 °F. Autumn cooling is rapid, with freezes usually beginning in mid-October. The area receives little precipitation year-round, averaging 9.06 inches, with no real seasonal spike (Reference).

The Colorado River is the main surface water drainage in the Grand Junction area and has an annual mean discharge rate as measured from United States Geological Survey (USGS) gauging station 09106150 (BELOW GRAND VALLEY DIVERSION NEAR PALISADE, CO) of 7,309 cubic feet per second (cfs) (Ref). Minimum flows are around 5,000 cfs and maximum flows are around 30,000 cfs.

1.2 Uranium Mill Tailings Radiation Control Act

Although not part of this investigation, no report dealing with environmental aspects of Grand Junction is complete without a discussion of the Uranium Mill Tailings Radiation Control Act (UMTRCA). The former Grand Junction Processing Site, historically known as the Climax uranium mill, occupies 114 acres on land owned by the City of Grand Junction in an industrial area along the north bank of the west-flowing Colorado River (for location, please see Figure in Appendix E: DOE Fact Sheet) . The facility began in 1899 as a sugar beet mill. In 1950, the Climax Uranium Company reconfigured the original site and operated the facility as a uranium and vanadium mill until 1970.

During 19 years of operation the mill produced 2.2 million tons of radioactive tailings, a predominantly sandy material. From 1950 to 1966, tailings were available to private citizens and contractors, who used the tailings as fill and as a component of concrete and mortar. Tailings were hauled to more than 4,000 private and commercial properties in the Grand Junction area.

In 1966, concerns about potential adverse health effects from mill tailings prompted the Colorado Department of Health to sample the tailings for radon-222, and results indicated elevated levels. Although that finding caused Climax to discontinue release of tailings from the site, an estimated 300,000 tons of tailings containing radioactive uranium daughter products had been removed by that time.

Surface remediation of the processing site and contaminated private and commercial properties, known as vicinity properties, began in the mid-1980s. The U.S. Department of Energy (DOE) conducted radiological surveys at all vicinity properties and remediated those where millsite-related radium-226 or radon levels exceeded the established maximum concentration limits. Tailings and other contaminated materials removed from vicinity properties were stored temporarily at the processing site.

Construction of the Grand Junction Disposal Site, at that time called the Cheney disposal cell, began in 1990 about 18 miles southeast of Grand Junction. All contaminated materials from the old processing site and all vicinity property materials were transported to the disposal cell by the end of 1994. About 4.4 million cubic yards of contaminated materials were placed in the cell. DOE completed cleanup of vicinity properties in 1998 under the Uranium Mill Tailings Remedial Action Project (UMTRA) (Appendix E: U.S. Department of Energy Fact Sheet, 2009).

2.0 TENTATIVELY IDENTIFIED SITES METHODOLOGY

This report is the result of the review of the following information sources:

1) R.L Polk (historic) Business Directories;
2) Environmental Data Resources (EDR) Grand Junction Area Study;
3) Emergency Response Notification System (ERNS) (also known as Spills) database;
4) Sanborn Fire Insurance Maps;
5) Information from CDPHE Grand Junction office staff.

The table below summarizes the number of sites that were designated as Tentatively Identified sites based on the different information sources reviewed.

Information Source:	Number of Tentatively Identified Sites
1) R.L Polk (historic) Business Directories;	33
2) Environmental Data Resources (EDR) Grand Junction Area Study;	8
3) Emergency Response Notification System (ERNS) (also known as Spills) database;	7
4) Sanborn Fire Insurance Maps;	2
5) Information from CDPHE Grand Junction office staff.	3
TOTAL	53

The following steps describe the methodology used in this discovery project to select Tentatively Identified Sites.

Step 1

As described in Section 3, CDPHE began by reviewing R. L. Polk business directories at the Denver Public Library for Grand Junction at approximate five-year intervals between 1906 and 1998 (the last year they were published). The R.L. Polk business directories are phone books that are published annually and have business listings segregated by category and industry type. Industry types that have a history of releases of hazardous substances to the environment were included and are summarized in Tables 1-14. CDPHE has highlighted those 33 businesses that are considered Tentatively Identified Sites as discussed in Section 3. The primary considerations that went into inclusion of a business as a Tentatively Identified Site were the nature of the business and the length of time that business operated at a particular location.

Step 2

As described in Section 4, CDPHE then reviewed the EDR Area Study for additional candidate sites. CDPHE checked sites in the Polk Directories to see if they appear in current environmental databases by cross-checking the business name against those that appear in the EDR database. The cross check identifies sites listed in the Polk directories that may still be in

operation beyond 1998, the last year for Polk directories. Because the EDR study is based on sites that are in current environmental databases there are many historic Polk Directory sites that are not in the EDR data base. 19 out of the 33 Tentatively Identified Sites based on the Polk Directories also appear in the EDR database and these are indicated by a column labeled "EDR MAP LOC." in Tables 1-11 and Table 13 (note that for Tables 12 and 14 no cross-check sites were found so this column has not been added to these tables). It should be noted that this cross-check is not exhaustive and is based on site name only. If a business name has changed it may not be captured in this database cross-check.

CDPHE then selected 8 sites to include as Tentatively Identified Sites from the EDR Area Study as detailed in Section 4.0 of this report. The EDR Area Study sites that CDPHE selected as Tentatively Identified Sites came from two categories: 1) sites with large volume air emissions of volatile organic compounds, and; 2) sites with chrome metal plating operations.

Table 16 contains a list of 35 (out of a total of 53) Tentatively Identified Sites contained in the EDR database. This includes 19 sites that are also in the Polk Business Directories, 8 sites from our review of the EDR database, 7 sites from the Spill databases and 1 site (Hanson Container) from CDPHE Grand Junction office input.

Step 3

As described in Section 5, CDPHE reviewed the National Response Center (NRC) Spill Database for Grand Junction as compiled by EDR as part of the Area Study. Spill incidents are also reported to CDPHE resulting in a state ERNs list also reported by EDR. There are 56 federal ERNS sites and 62 state ERNS sites in Grand Junction. 7 of these sites are contained in both databases, therefore the total number of spill sites is 115 and CDPHE compiled these into Tables 17 (federal) and Table 18 (state). A total of 9 ERNS sites (5 federal and 5 state with one site on both databases) were selected Tentatively Identified Sites. The Tentatively Identified Sites were selected based on the description of the incident and the potential for an impact to the environment. Since two of these Spill sites (Swedes/Custom Chrome and Luxury Wheels) were already selected from the Polk Business Directories (see Section 3.13), the number of Tentatively Identified Sites derived exclusively from the ERNS databases is seven.

Step 4

As described in Section 6, CDPHE reviewed Sanborn Fire Insurance maps to further identify potential sites warranting investigation. CDPHE prepared Table 19 which summarizes our review of the Sanborn maps and highlights Tentatively Identified Sites. Fourteen sites are highlighted on Table 19, however, only two are based solely on our review of the Sanborn Maps as the remainder were identified based on Polk Business directories and, of these, some were also contained in the EDR Area Study. These were retained because they were considered the most likely to have an environmental impact and they were not identified by way of other data sources.

Step 5

Finally, CDPHE solicited input and recommendations from staff in the Grand Junction on sites to include in this discovery document. Based on this outreach, three sites were included as Tentatively Identified Sites as discussed in Section 7.

CDPHE has indentified 53 Tentatively Identified Sites that warrant further study for possible formal discovery in the Site Assessment process (Figure 1, Figure 2, and Table 20). This includes 33 sites derived from the Polk Business directories, 8 sites derived from the EDR Study, 7 ERNS sites (database is included as part of the EDR Study), 2 sites from the Sanborn Fire Insurance Maps, and 3 sites from referrals from CDPHE staff in Grand Junction. CDPHE screened 530 sites from the Polk Business directories and approximately 1200 sites (estimate based on 1359 rows in the EDR database that contains a number of sites which are listed more than once) from the EDR database.

3.0 POLK BUSINESS DIRECTORIES

R. L. Polk business directories at the Denver Public Library for Grand Junction were reviewed at approximate five-year intervals between 1906 and 1998 (the last year they were published). The R.L. Polk business directories are phone books that are published annually and have business listings segregated by category and industry type. Industry types that have a history of releases of hazardous substances to the environment were included and are summarized in Tables 1-14. CDPHE selected 33 businesses that are considered Tentatively Identified Sites as discussed in Section 3.1 through 3.14 below, and presented in Tables 1-14. The primary

consideration that went into inclusion of a business as a Tentatively Identified Site was the length of time that business operated at a particular location.

Inclusion of a business as a Tentatively Identified Site does not confirm a release of a hazardous substance from an identified facility but rather indicates the potential for a historic release. The early part of the date range presented predates modern environmental regulations. Before the enactment in 1976 of the Resource Conservation and Recovery Act (RCRA), storage, transport and disposal of toxic or hazardous materials were not regulated and there was no process in place to address issues of environmental pollution and potential hazards. Those general industries that have a history of handling and utilizing hazardous materials as well as those that are known to generate hazardous waste streams were identified and reviewed by category or business type. In general, sites that were in business for the longest period of time were retained as Tentatively Identified Sites. However, it should be noted that identifying Tentatively Identified Sites is somewhat subjective and a more aggressive process of inclusion would increase the number of Tentatively Identified Sites.

3.1 Automotive Salvage Operations

Table 1 provides a list of twenty-four auto salvage operations in Grand Junction and their years of operation based on the R. L. Polk directories. Accidental spills and releases of vehicle fluids are the most common cause of environmental damage found at automobile salvage yards. Spills can occur if fluids are left in the vehicle when stored in the yard, when the fluids are intentionally removed from the vehicle, and when the fluids are transferred into or out of storage containers and tanks (CDPHE Automotive Salvage Yard Waste Management Practices in Colorado 2006).

The following excerpt is from the American International Group (AIG) website and is a general summary pertaining to operations typical of automotive wrecking and repair facilities (AIG 2006). Please note that AIG cited information in this report is from CDPHE's Pueblo Site Discovery Report (CDPHE 2007) and it does not currently appear on the AIG's website.

Vehicle destruction should require the removal, replacement, storage and disposal of many types of hazardous materials such as automotive fluids (brake, transmission and hydraulic fluids etc.), parts (like tires, batteries, halogen light bulbs) and petroleum products (such as gas,

diesel, grease and waste oil), which can pose pollution risks. Used oil (crude or synthetic) can be contaminated by physical or chemical impurities (motor oil, hydraulic fluid and piston engine crankcase oils). Some oil filters use terne, an alloy of tin and lead, as plating. The lead concentration can render an unused terne-plated oil filter a hazardous waste.

Some solvent-based paint and waste paint contain heavy metals such as lead, cadmium, and chromium and must be managed as hazardous. Solvents used for equipment cleaning, paint stripping and thinners can be hazardous due to their flammability, corrosivity and or chemical constituents (e.g., xylene, methylene chloride).

Potential Sources of Environmental Contamination from auto salvage operations include**:** Underground fuel and waste oil storage tanks and piping; Disposal of waste oils, ethylene glycol (antifreeze), used oil filters, asbestos brake linings, etc; Fuel/oil dispensers and overfilling gasoline tanks; Removed/abandoned underground storage tanks (USTs); Aboveground storage tanks (ASTs) and piping; Grease traps or oil/water separators; Wastewater contaminated with oils/solvents from service bays into sanitary sewers or septic systems; Electrical equipment containing polychlorinated byphenyls (PCBs); Drummed chemicals (including paints, solvents and degreasers); Paint residues; Batteries; Lead exposure from lead-based paints on older model automobiles: Disposal of brake fluids, rubber tires, used antifreeze, halogen light bulbs, brake linings (asbestos), used oils and transmission fluids; Recycling of chlorofluorocarbons (CFCs).

Potential Environmental Contaminants from auto salvage operations include**:** Acids; Adhesives and removers; Heating oil; Air conditioning systems (chlorofluorocarbons – CFCs); Gasoline additives; Solders; Transmission fluids; Gasoline – storage tanks for vehicle fleet fueling; Antifreeze (ethylene glycol); Battery acids/disposal; Organic solvents; Paint removers; Cleaners/degreasers; Paints; Diesel fuel; Hydraulic fluids; Lubricants; Heavy metals; Epoxy resins; Paint thinners/solvents.

CDPHE identified two Automotive Salvage Yard operations as Tentatively Identified Sites and highlighted these on Table 1.

TIS No. 1: American Auto Salvage located at 1001 S. 3rd Street appears in the R. L. Polk directory from 1956 to 1987. According to the EDR Area Study the site is currently listed as

RCRA non-generator with a site EPA ID: COD042635979. According to listings found on the Internet American Auto Salvage has a current location at 1061 S. 5th and 2773 D Road. Bills Body Shop also appears in the Polk Business Directory at 1001 S 3rd Street in 1987.

TIS No. 2: Western Auto Wrecking located at 1107 S. 5th Street appears in the Polk directory from 1928 to 1959. The site is not contained in any existing environmental database, however, the location is very close to the site of the current Internet phone listing for American Auto Salvage at 1061 S. 5th Street.

It should be noted that a Preliminary Assessment was performed on Van Gundy's Auto Salvage yard located at 1018 S. 5th Street in 1987 and site was NFRAPed (No Further Remdial Action Planned) and archived. This site is also currently listed as a RCRA Non-Generator. American Auto Salvage and Western Auto Wrecking are not located on Sanborn Fire Insurance Maps as they are located outside of the area covered by these maps.

3.2 Auto Body and Auto Paint Shops

Table 2 provides a list of sixty-two auto body and auto paint shops in Grand Junction and their years of operation based on the R. L. Polk directories. Auto body and auto paint shops typically use hazardous substances in their operations. Modern auto paint shops commonly have air emission permits, however, they typically use non-halogenated volatile organic compounds.

CDPHE has identified four Auto Body and Auto Paint Shops as Tentatively Identified Sites and highlighted these on Table 2.

TIS No. 3: Jim Fuoco Body shop was located at 748 N. 1st Street from at least 1975 until at least 1987. The shop then moved a short distance to 114 Hill Avenue where it currently operates. According to the EDR Study Jim Fuoco Body shop is a RCRA Conditionally Exempt Small Quantity Generator (CESQG) and an air permitted (by Air Pollution Control Division) facility.

TIS No. 4: Moore's Auto Body located at 2488 W Mesa Court since at least 1987 is also a permitted RCRA conditionally exempt small quantity generator (CESQG) (EDR 2010).

TIS No. 5: Superior Paint and Body has operated at 2575 US Highway 6 and 50 since at least 1981 and is listed as a RCRA non-generator (EDR 2010).

TIS No. 6: Velvet Hammer Body Shop has operated at 708 Struthers since at least 1981. According to an Internet search the Velvet Hammer is currently operating at this location and has a second location at 3061 Highway 50. According to the EDR Study Velvet Hammer does not appear in any environmental databases.

3.3 Auto Radiator Shops

Table 3 provides a list of seventeen auto radiator shops in Grand Junction and their years of operation based on the R. L. Polk directories. This industry commonly uses caustic liquids to clean vehicle radiators. This activity generally involves dipping items into a tank containing a heated caustic solution and then rinsing them off. The wastes produced from this method are hazardous because they are caustic (pH more than 12.5) and because they contain hazardous levels of lead or other toxic elements. Typical wastes include caustic, lead-containing tank solutions, copper, zinc, acid, lead-containing tank sludge, lead-containing rinse water. (http://www.p2pays.org/ref/07/06206.htm)

CDPHE has identified two Auto Radiator Shops as Tentatively Identified Sites and highlighted these on Table 3.

TIS No. 7: Fuoco Radiator Shop located at 330 S 2nd Street operated from 1949 until at least 1975. This facility does not appear in any environmental databases and there is no current phone listing based on an Internet search. An auto body shop is plotted on Sheet 25 of the 1961 Sanborn maps at 330 S. 2nd Street.

TIS No. 8: Valley Radiator Shop located at 730 Main Street operated from 1956 or earlier until at least 1981. The EDR database lists a business called Radiator Doctor as a RCRA non-generator at 730 S Main Street.

3.4 Battery Manufacturers/Dealers

The following excerpt is from the AIG website and is a general summary pertaining to operations typical of battery manufacturing facilities (AIG 2006, CDPHE 2007)).

Batteries store and supply energy to operate many types of industrial and consumer products such as automobiles, radios, cameras and hearing aids. There are various types of batteries but they are generally divided into two major groupings: dry cell and wet cell. Dry cell batteries or household batteries are portable and commonly used in appliances and other consumer products such as watches, flashlights, toys, cameras, radios, hearing aids, computer equipment, and cordless appliances. Wet cell or lead acid batteries are mostly used to power vehicle engines. Automotive batteries are considered to be a distinct secondary battery market. The facilities identified during this discovery effort appear to have been associated largely with wet cell-type batteries that were most likely utilized in the automotive industry.

Wet cell batteries use a liquid or “wet” electrolyte solution and are the typical lead-acid batteries used in automobiles and other powered motor vehicles. This battery is primarily comprised of lead cast grid, lead and lead oxide plates, sulfuric acid and water.

Potential Sources of Environmental Contamination from Battery Manufacturers/Dealers: Improper handling and storage of corrosive electrolyte solutions, metals, metal ores and toxic metals; handling and storage of lithium in a moisture rich environment; providing battery disposal services for customers; large volume of wastewater requiring treatment and discharge; fuel storage without secondary containment; existing or former Aboveground and Underground Storage Tanks (AST/USTs); storm water and groundwater management; old equipment storage yards; infrequent and undocumented preventative environmental management/maintenance; inadequate or out-of-date non-emergency and spill control plans; old, leaking, electrical equipment that may contain polychlorinated biphenyls (PCBs); historical use of asbestos as an insulating material; loading/unloading of products from trucks and railcars; current or former on-site disposal practices such as landfills, land farms, wastewater lagoons, or injection wells; air releases of volatile organic compounds (VOCs) from process equipment and material storage.

Potential Environmental Contaminants from Battery Manufacturers/Dealers**:** Lead (powder, granular, ingots, plates or sheets; sulfuric acid or other acids; nickel, plastics and lead oxide (by-product); rubbers, electrolyte solutions and zinc; hydrogen gas (by-product).

CDPHE has identified one Battery Manufacturer/Dealer as a Tentatively Identified Site and highlighted this in Table 4.

TIS No. 9: Hensley Battery and Supply located at 489 28 ½ Road operated from at least 1981 until present. The EDR database lists this site as a RCRA non-generator. This site is also listed in Internet phone directories.

3.5 Chemical and/or Pesticide Sites

The following excerpt is from the AIG website and is a general summary pertaining to operations typical of chemical and/or pesticide sites (AIG 2006, CDPHE 2007).

Chemical manufacturing is divided into seven segments, six of which are covered in more detail below. These segments consist of: basic chemicals; synthetic materials, including resin, synthetic rubber, and artificial and synthetic fibers and filaments; agricultural chemicals, including pesticides, fertilizer, and other agricultural chemicals; paint, coating, and adhesives; cleaning preparations, including soap, cleaning compounds, and toilet preparations; other chemical products; and pharmaceutical and medicine.

The basic chemicals segment produces various petrochemicals, gases, dyes, and pigments. Petrochemicals contain carbon and hydrogen and are made primarily from petroleum and natural gas. The production of both organic and inorganic chemicals occurs in this segment. Organic chemicals are used to make a wide range of products, such as dyes, plastics, and pharmaceutical products; however, the majority of these chemicals are used in the production of other chemicals. Industrial inorganic chemicals usually are made from salts, metal compounds, other minerals, and the atmosphere. In addition to producing solid and liquid chemicals, firms involved in inorganic chemical manufacturing produce industrial gases such as oxygen, nitrogen, and helium. Many inorganic chemicals serve as processing ingredients in the manufacture of chemicals, but do not appear in the final products because they are used as catalysts. The synthetic materials segment produces a wide variety of finished products as well as raw materials, including common plastic materials such as polyethylene, polypropylene,

polyvinyl chloride (PVC), and polystyrene. Among products into which these plastics can be made are loudspeakers, toys, PVC pipes, and beverage bottles. Motor vehicle manufacturers are particularly large users of such products. Plastic materials used for mixing and blending resins on a custom basis also are produced in this industry segment.

The agricultural chemical segment supplies farmers and home gardeners with fertilizers, herbicides, pesticides, and other agricultural chemicals. This segment also includes companies involved in the formulation and preparation of agricultural and household pest control chemicals.

The paint, coating, and adhesive products segment includes firms making paints, varnishes, putties, paint removers, sealers, adhesives, glues, and caulking. The construction and furniture industries are large customers of this segment. Other customers range from individuals refurbishing their homes to businesses needing anticorrosive paints that can withstand high temperatures.

The cleaning preparations segment is the only segment in which much of the production is geared directly toward consumers. The segment includes firms making soaps, detergents, and cleaning preparations. Cosmetics and toiletries, including perfume, lotion, and toothpaste, also are produced in this segment.

The “other chemical” products segment includes manufacturers of explosives, printing ink, film, toners, matches, and other miscellaneous chemicals. These products are used by consumers or in the manufacture of other products.

The following excerpt is from the AIG website and is a general summary pertaining to the formulation and manufacturing of pesticides and the potential environmental ramifications associated with pesticide formulating facilities (AIG 2006, CDPHE 2007).

The manufacturing of modern pesticides is generally a two-step process. It begins within a concentrated, highly experienced group of large international organic chemical companies who develop the basic PAIs (Pesticide Active Ingredients), the lethal, deterrent or growth-altering components in pesticides. Typically, PAIs are derived from petroleum, coal, natural gas, feedstocks, inorganic acids and biological sources.

From these primary sources, the PAIs are shipped to the second link in this two-part process, the "formulators," collectively known as the PFPRs (Pesticide Formulating, Packaging,

Repackaging). Formulators in the PFRP industry are small, specialized companies. Using precise preset chemical menus, they blend the PAIs with inert ingredients, dispensers, propellants, fillers and binders to create gas, liquid or solid (usually powder) branded pesticides. Non-active ingredients used in pesticide formulations may include volatile organic and petroleum-based solvents, oils, waxy materials (methylparaben) and powdered materials (pulverized corncob, clay or lime). These formulations are distributed mainly to the agricultural and pest control industries for professional and consumer applications. Today's modern PFPR operations are highly automated, computer-controlled and require minimal worker exposure.

Pesticides made by formulators include insecticides, repellents, herbicides, fungicides, disinfectants and rodenticides. Some PAIs perform their own PFPR operations for their own branded products while other PAIs develop and sell pesticide formulations to facilities that only repackage them into refillable or non-refillable containers for commercial applicators.

Potential Sources of Environmental Contaminants from Pesticides**:**
Organophosphates; Carbamates; Chlorinated hydrocarbons; Organic and inorganic compounds; Herbicides (e.g., Alachlor, Paraquat, Nitrofen); Fungicides (e.g., Thiram, Benomyl, Borax, Captan, Ferbam); Fumigants (e.g., Methyl Bromide, Sulfuial Floride, Azaconazole, Lindane, Diazinon); Insecticides (e.g., Parathion, Aldrin, Dieldrin, Carboxyl); Metals

Potential Environmental Contaminants from Pesticides:
Gases: Ammonia, Hydrogen Cyanide, Phosgene, Carbon Tetrachloride
Liquids: Benzene, Sulfuric Acid, Nitric Acid, Xylene
Metals: Antimony, Arsenic, Beryllium, Cadmium, Hexavalent and Trivalent Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc

CDPHE has identified three Chemical or Pesticide Sites as Tentatively Identified Sites and highlighted these in Table 5.

TIS No. 10: The Latimer-Goodwin Chemical Company was located at 720-730 S 7th Street from at least 1928 until at least 1943. The site appears on 1919 and 1926 Sanborn Fire Insurance Maps. The 1926 maps show a “Latimer Chemical Warehouse No. 2” located in the block to the north. According to a person interviewed for this discovery project (anonymity requested) the site may have received lead arsenate as a by-product of the mining industry via

rail and hence distributed lead arsenate products to the orchard industry to be used as a pesticide at orchards in the Grand Valley including the nearby Cross Orchard.

TIS No. 11: Randall Industries has been located at 745 Struthers Avenue since at least 1981. The site is a RCRA large quantity generator and is also regulated under FIFRA. The EDR MAP LOC. for Randall Industries is 465-35.

TIS No. 12: The Union Carbide site at 803 S 7th Avenue was listed as a chemical dealer from at least 1975 to 1981. According to the EDR Study the site is currently a RCRA Non-Generator. The site is also listed as a UMETCO Minerals Corp. Leaking Underground Storage Tank (LUST) site in the EDR Study. The site appears on the 1947 Sanborn map as "U.S. Vanadium Co" and on the 1961 Sanborn map as Union Carbide Nuclear Company.

It should be noted that C. D. Smith Company was located at 645 E. 4th Avenue from at least 1956 until at least 1970 and is of interest. A PA was performed on this address in 1984 under the name Foremost-McKesson Inc. and it was NFRAPed and archived, therefore, this site is not designated as a Tentatively Identified Site.

3.6 Dry Cleaning Sites

Dry cleaning facilities that operated prior to the promulgation of current environmental regulations or failed to utilize appropriate materials handling practices may have conducted operational and materials management practices that fall short of today's regulated dry cleaning waste handling requirements. Dry cleaning wastes have historically consisted of chlorinated solvents that are mobile in groundwater and can readily travel significant distances via the groundwater migration pathway. Past investigations throughout the United States have identified releases from dry cleaning facilities that failed to adequately contain waste materials or may have improperly handled solvents during site operations.

Solvents known to have been utilized in dry cleaning operations include: carbon tetrachloride (CTC); tetrachloroethylene (PCE); and trichloroethene (TCE). Of these solvents, PCE is the most commonly utilized cleaning agent in the dry cleaning industry; however, any of the chlorinated solvents utilized in the industry may be present at those facilities with longer operational histories.

The first chlorinated solvent to come into general use, carbon tetrachloride (CTC), was imported from Germany into the US as early as 1898. Under the trade name Carbona, it became an enormously popular dry cleaning and spot-removing agent. Dow Chemical Company and Warner Chemical produced CTC in the United States in significant quantities shortly after the turn of the century.

During the years preceding World War II, tetrachloroethylene (PCE) and trichloroethylene (TCE) emerged as dry-cleaning and degreasing solvents, eroding CTC's market share. CTC production in the United States plateaued in the 1970s. In 1968, the US Food and Drug Administration (FDA) moved to ban interstate commerce of CTC and CTC-containing products. The FDA believed CTC posed a hazard when present in homes and when used as a fire extinguisher. By 1970, CTC was banned from use in US commercial goods, and in 1972, it was identified as an animal carcinogen (Doherty 2001-2002).

Tetrachloroethylene, also known as perchloroethylene or PCE, is widely known as a dry-cleaning solvent, but was also used in cleaning and degreasing (particularly when a stable, high-boiling point solvent was needed), in various textile production processes, and in the production of fluorinated compounds such as CFC-113. Michael Faraday first synthesized PCE in 1821. Significant industrial uses in the US are not known prior to the early 1920s, when Dow Chemical began production of commercial quantities. PCE was introduced to the dry-cleaning industry during the 1930s, and became widely accepted due to its low toxicity relative to carbon tetrachloride, and its low flammability and less persistent odor relative to petroleum solvents. By 1950, PCE use in dry-cleaning led carbon tetrachloride by a factor of 3-to-1 (Doherty 2001-2002).

Trichloroethylene (TCE) became one of the most widely used chlorinated solvents for cleaning and degreasing because of its effectiveness, noncorrosivity, and nonflammability. TCE was first prepared in 1864, but was not produced commercially in the US until the 1920s. Earliest applications included use in boot polishes and printing ink dryers. TCE was used in the US food processing industry as an extraction solvent as early as 1927. During the 1930s, TCE's use in the dry-cleaning industry increased, and it began to replace carbon tetrachloride in solvent applications (Doherty 2001-2002).

During World War II, the production and use of TCE increased significantly due to its use in degreasing. The US government controlled supplies so that military demands could be met. The introduction of neutral stabilizer systems in 1954 helped retain TCE's position as the degreasing solvent of choice. It did, however, have other uses at this time, including dry-cleaning, and extraction of fats and oils (Doherty 2001-2002).

Past HMWMD experiences at dry cleaning facilities in Colorado have illustrated the potential for extensive chlorinated contaminant dispersal from dry cleaning facilities via the ground water migration pathway. The migration of dry cleaning-related volatile organic compounds has the potential to impact drinking water supplies as well as indoor air environments. The potential for PCE and its derivatives to volatilize and impact indoor air in nearby residential properties is an ongoing consideration in evaluating the potential for impacts to human health and the environment from dry cleaning facility releases.

CDPHE has identified five Dry Cleaning Sites as Tentatively Identified Sites and highlighted these in Table 6.

TIS No. 13: Excelsior Dry Cleaner was located at 605-611 Rood Avenue from at least 1928 until 1965. The site is located on Sanborn Fire Insurance Maps for the years 1926, 1947 and 1961.

TIS No. 14: Fabricare Dry Cleaners has been located at 304 North Avenue since at least 1987. According to the EDR Study (EDR MAP LOC. 221-26) the site is a RCRA CESQG and has an air permit with an emissions output of 5.8 tons per year of volatile organic compounds (VOCs).

TIS No. 15: Grand Cleaners has been located at 545 Grand Avenue since at least 1975. According to the EDR Study (EDR MAP LOC. 302-26) the site is a RCRA CESQG.

TIS No. 16: North Avenue Cleaners has been located at 604 North Avenue since at least 1968. According to the EDR Study (EDR MAP LOC. 216-26) the site is a RCRA CESQG and has an air permit with emissions output of 0.24 tons per year of PCE. The facility is also a LUST/TRUST cleanup site.

TIS No. 17: Up-To-Date Cleaners was located at 124 S 5th Street from at least 1928 until 1981. The facility appears on Sanborn Fire Insurance Map Sheet 4 in 1926, 1947 and 1961.

It should be noted that New Method Laundry located at 321-325 Rood Avenue has an approved Voluntary Cleanup Plan and it was therefore not included as a TIS.

3.7 Coal, Fuel and Oil Storage Sites

Grand Junction has a long history of bulk oil, fuel and coal storage. Generally petroleum only contaminated sites are Comprehensive Environmental Response Compensation and Liability Act (also known as Superfund or CERCLA) exempt. Table 7 lists 71 coal, fuel and bulk oil storage facilities in Grand Junction. CDPHE has identified two Bulk Oil Storage sites as a Tentatively Identified site as highlighted in Table 7.

TIS No. 18: The Continental Oil Bulk Plant was located at 605-631 S. 9th Street from at least 1919 until 1987. The Sanborn Fire Insurance maps show the site on sheet 16 in 1919 and on sheet 30 in 1926, 1947 and 1961. The site is listed in the EDR Study (EDR MAP LOC. 416-35) as a closed UST site.

TIS No. 19: The Texaco Bulk Plant was located at 430 2ond Avenue from at least 1949 until 1987. The site does not appear on the Sanborn Fire Insurance Maps and it is not in the EDR database.

3.8 Embalmers, Undertakers

CDPHE has identified two mortuaries as Tentatively Identified Sites and highlighted these on Table 8.

TIS No. 20: Callahan-Edfast Mortuary has been located at 1250 E. Sherwood Drive from at least 1965 until 1998. This business is now located at 2515 Patterson Road where it is in the EDR Study and has an air permit for emission of VOCs.

TIS No. 21: Martin Mortuary has been located at 550 North Avenue since 1943. The site is listed on the EDR Study and has an air permit for emission of VOCs. The site appears on sheet 11 of the 1947 and 1961 Sanborn Fire Insurance Maps.

3.9 Lumberyards/Wood Treaters

The lumber and wood products industry is very broad and includes everything from timber harvesting and sawmills operations to secondary manufacturers, lumberyards and wood treatment facilities. A review of the R.L. Polk business directories for the period 1906 through 1998 yielded an extensive list of lumberyard operations (Table 9) but did not indicate whether wood treating activities occurred at these properties. CDPHE compiled a list of lumberyards but has no basis, other than length of operation, to suggest which of the yards may have performed onsite wood treatment. Six of the 65 lumber related sites in the Polk Directories were located on Sanborn Maps but none of maps depict tanks or other notes that would suggest wood treating was occurring. For this reason CDPHE did not identify any lumber sites as Tentatively Identified Sites at this time. A more detailed review of site operations would be required in order to determine if hazardous materials were handled during the course of site operations.

The following excerpt is from the AIG website and is a general summary pertaining to lumberyard and wood treating operations as well as the potential environmental impacts often associated with these operations (AIG 2006).

Wood treatment greatly extends the life of wood products such as railroad ties, telephone poles and bridge beams by high-pressure application of a preservative with weather, fungi or insect protection. Wood treatment is considered distinct from surface protection processes. Wood surface protection provides short-term cosmetic protection against weather, mold, sap and stains with non-pressure applications by a homeowner or contractor.

At most treatment facilities, high-pressurized steel cylinders (retorts) are used to force preservatives into the wood in batches called “charges.” (A small percentage of plants use non-pressurized dip tanks.) First, a vacuum removes excess air and water from the cylinder and wood. Then, the preservative is pumped into the cylinder and forced into the wood by pressure. Once the process is done, pressure is released and the cylinder is drained. A final vacuum removes excess preservative.

At the majority of plants where ‘water-borne” preservative systems are used, excess preservatives and wastewaters are collected on a drip pad upon removal of each batch or charge from the cylinder. For plants using oil-borne preservatives, water is still an essential part of their process. It’s used for cooling pumps and surface condensers and may be used to generate steam directly or indirectly.

Treated wood products allowed to drip dry over unpaved areas pollute soils and groundwater. Above- and underground-storage tanks and piping can leak or spill chemicals that contaminate the soil and groundwater. When stored in uncontained areas, lubricating oils and parts cleaning solvents for forklifts, milling machinery and other equipment can leak, spill and pollute the soil and groundwater. Leaking drums containing chemicals and stored in unpaved, open areas can impair soils and possibly shallow groundwater. Emissions from wood treatment equipment, containers and chemicals can pollute the air. Current or former on-site disposal practices such as on-site landfills, land farms, or wastewater lagoons contaminate soil and groundwater. Mismanaged onsite drainage, sump systems and wastewater treatment systems can pollute the environment.

Potential oil-borne preservatives include pentachlorophenol (PCP), creosote, creosote petroleum mixtures and copper napthenate. Potential water-borne preservatives include: oxine copper; copper azole (CBA); ammoniacal copper arsenate (ACA); copper dimethyldithiocarbomate (CDDC); acid copper chromate (ACC); ammoniacal copper citrate (CC); ammoniacal copper quat (ACQ); ammoniacal copper zinc arsenate (ACZA) and Chromated copper arsenate (CCA).

3.10 Machine Shops/Foundries

The major hazardous wastes from metal machining are metalworking fluids (MWFs) waste cutting oils, spent machine coolant, and degreasing solvents. Scrap metal can also be a component of hazardous waste produced at a machine shop (USEPA 1999).

Metalworking fluids are used during machining and grinding of metal parts to prolong the life of cutting tools, carry away metal chips and other machining debris and to protect the surface of the work piece. These fluids reduce friction between the cutting tool and the work piece, reduce

wear and dissipate heat generated by the machining process. The first generation of MWFs included sperm whale oil, mineral oils and various types of petroleum oils. These products were in use from the beginning of the Industrial Revolution up until the early 1940s.

With the changes in manufacturing brought about by World War II the second generation of MWFs began to appear, including the first water-soluble and semi-synthetic MWFs. By the 1970s, water-soluble and semi-synthetic MWFs were in common use throughout the metalworking industry. The advent of high-speed machining operations, new metal alloys and closer tolerances for machined parts brought about the current generation of MWFs, which began about 1985 with the introduction of amine-based, reduced-hydrocarbon, synthetic MWFs (USEPA 1999).

MWFs in common use today are classified into four general types:
1. Straight Oils/Neat Oils. These MWFs are severely solvent refined petroleum (lubricant-based) oils, or other animal, marine, vegetable or synthetic oils, used alone or in combination, and with or without additives. These MWFs are not designed to be used with water.
2. Soluble Oils. These MWFs are combinations of severely refined straight oils and emulsifiers. Other additives may be included. Soluble oils are intended to be mixed with water before use.
3. Semi-Synthetics. These MWFs contain from 30 percent to 50 percent water (they also have lower amounts of straight oils and higher amounts of emulsifiers). Semi-synthetic oils may also contain other organic compounds, such as amines (i.e., triethanolamine).
4. Synthetics. These MWFs contains no petroleum oils (they are generally designed to be mixed with water before use).

Other materials present in machine shops potentially include chlorinated de-greasing solvents utilized to keep metal working machines functioning.

Foundries melt and cast to produce machinery and components for use in manufactured products. Foundries may do machining, assembling, and coating of the castings. Cast products include engine blocks, transmission housings, suspension parts for cars and trucks, farm and construction equipment, structural and metal fittings for appliances; pipes and valves of plumbing fixtures and boilers are a few of the products produced through the foundries.

Wastes generated by foundries fall into four major categories: sand, slag, dusts, and other. Wastes generated will depend on the type of foundry operation with waste sands comprising the largest portion (approximately 70%) of an individual foundry's waste stream. Slag typically comprises 20 – 25% of a foundry's byproduct. Dusts can comprise 10% or more of the total wastes, and other wastes fall into a number of other categories inclusive of acids and solvents. Past studies have suggested that foundry sands contain leachable quantities of metals; however, unless the sands are mixed with slag from the operation, they typically will not exceed Toxicity Characteristic Leaching Procedure (TCLP) regulatory standards (US DOE 1999).

CDPHE has identified six Machinist Shops and Foundrys as Tentatively Identified Sites and highlighted these in Table 10.

TIS No. 22: Blanchant Machine Company was located at 2757 US Highway 50 (in Orchard Mesa just across the Colorado River) from at least 1956 to 1981. According to an Internet search, there is not a current listing for this business and it is also not listed in the EDR Study.

TIS No. 23: Bolen Machine Works was located at 839 S 8th Street from at least 1947 until 1961. The shop is located on Sheet 29 of the 1947 and 1961 Sanborn Fire Insurance Maps. According to an Internet search, there is not a current listing for this business and it is also not listed in the EDR Study.

TIS No. 24: Castings Inc. is a foundry site located at 860 4th Avenue since 1981. The site is listed in the EDR Study (EDR MAP LOC. 442-35) and has an air emission permit. The site is also found with current phone listing on Internet searches.

TIS No. 25: B. C. Iseminger Machine Shop was located at 547 Colorado Avenue from at least 1937 until 1970. According to the EDR Study, the site does not appear on any current environmental database and there is no current phone listing according to Internet searches. The Shop is located on Sheet 4 of the 1947 and 1961 Sanborn Fire Insurance Maps.

TIS No. 26: Northwest Machine Works has been located at 821 Winters Avenue since at least 1956. In the EDR Study the site is listed as a RCRA Non-Generator.

TIS No. 27: Precision Automotive Machine Shop was located at 118 S 7th Avenue from at least 1965 until 1998. The site is not listed in the EDR Study. The site does not appear on an Internet search.

3.11 Milling and Smelting Operations

The only smelter known in Grand Junction is the Grand Junction Smelting Company located at 1441 Winters Avenue. This site had a PA performed on it in 1994 and was NFRAPed and archived. Polk Business directories list only one mill site and CDPHE has identified this as a Tentatively Identified Site and highlighted it on Table 11.

TIS No. 28: Union Carbide Mine and Mill appears in the Polk Business Directory from at least 1965 to 1975 located at 1600 Ute Avenue. The site is listed in the EDR study as Union Carbide Metals (UMETCO) as a RCRA Non Generator with an EDR map location of 336-36.

3.12 Paint Manufacturers and Stores

Table 12 presents a list of paint facilities. Paint formulation can involve the use of hazardous waste including oils and solvents. CDPHE was unable to determine if paint formulation or manufacturing occurred at most of these sites. CDPHE has designated two sites as Tentatively Identified Sites and these are highlighted in Table 12.

TIS No. 29: Florman Manufacturing Company was located at 327 Main Street from at least 1932 until 1961. The business appears on sheet 3 of the 1947 and 1961 Sanborn Fire Insurance Maps noted as “paint and oils”. This site and address is not listed in any environmental database according to the EDR Study.

TIS No. 30: Komac Paint Store was located at 549 Main Street from at least 1947 until 1970. The business appears on sheet 4 of the 1947 and 1961 Sanborn Fire Insurance Maps noted as “paint and oils”. This site and address is not listed in any environmental database according to the EDR Study.

3.13 Metal Plating Operations

The following excerpt is from the AIG website and is a general summary pertaining to the operation of metal plating facilities and the potential environmental ramifications associated with plating processes (AIG 2006).

Electroplating is achieved by passing an electric current through a solution containing dissolved metal ions and the metal object to be plated. The metal object serves as the cathode in an electrochemical cell, attracting ions from the solution. Ferrous and non-ferrous metal objects are plated with a variety of metals including aluminum, brass, bronze, cadmium, copper, chromium, gold, iron, lead, nickel, platinum, silver, tin, and zinc. The process is regulated by controlling a variety of parameters including voltage and amperage, temperature, residence times, and purity of bath solutions. Plating baths are almost always aqueous solutions, therefore, only those metals that can be reduced in aqueous solutions of their salts can be electrodeposited. The only major exception to this principle is aluminum, which can be plated from organic electrolytes (EPA 1995a).

Plating operations are typically batch operations in which metal objects are dipped into a series of baths containing various reagents for achieving the required surface characteristics. Operators can either carry the work pieces on racks or in barrels. Operators mount work pieces on racks that carry the part from bath to bath. Barrels rotate in the plating solution and hold smaller parts (Ford 1994).

The sequence of unit operations in an electroplating process is similar in both rack and barrel plating operations. A typical plating sequence involves various phases of cleaning, rinsing, stripping, and plating. Electroless plating uses similar steps but involves the deposition of metal on metallic or non-metallic surfaces without the use of external electrical energy (EPA 1995a).

Electroless plating is the chemical deposition of a metal coating onto an object using chemical reactions rather than electricity. The basic ingredients in an electroless plating solution are a source metal (usually a salt), a reducer, a complexing agent to hold the metal in solution, and various buffers and other chemicals designed to maintain bath stability and increase bath life. Copper and nickel electroless plating commonly are used for printed circuit boards (Freeman 1995).

Immersion plating is a similar process in that it uses a chemical reaction to apply the coating. However, the difference is that the reaction is caused by the metal substrate rather than by mixing two chemicals into the plating bath. This process produces a thin metal deposit by chemical displacement, commonly zinc or silver. Immersion plating baths are usually formulations of metal salts, alkalis, and complexing agents (e.g., lactic, glycolic, or malic acids salts). Electroless plating and immersion plating commonly generate more waste than other plating techniques, but individual facilities vary significantly in efficiency (Freeman 1995).

Chemical and electrical conversion treatments deposit a protective and/or decorative coating on a metal surface. Chemical and electrochemical conversion processes include phosphating, chromating, anodizing, passivation, and metal coloring. Phosphating prepares the surface for further treatment. In some instances, this process precedes painting. Chromating uses hexavalent chromium in a certain pH range to deposit a protective film on metal surfaces. Anodizing is an immersion process in which the workpiece is placed in a solution (usually containing metal salts or acids) where a reaction occurs to form an insoluble metal oxide. The reaction continues and forms a thin, non-porous layer that provides good corrosion resistance. Sometimes this process is used as a pretreatment for painting. Passivating also involves the immersion of the workpiece into an acid solution, usually nitric acid or nitric acid with sodium dichromate. The passivating process is used to prevent corrosion and extend the life of the product. Metal coloring involves chemically treating the workpiece to impart a decorative finish (EPA 1995a).

Environmental contaminants associated with metals plating operations include:
VOCs – Acetone, benzene, isopropyl alcohol, 2-dichlorobenzene, 4-trimethylbenzene, dichloromethane, ethyl benzene, Freon 113, methanol, methyl isobutyl ketone, methyl ethyl ketone, phenol, PCE, TCE, toluene, and xylene (O, M, P isomers). Metals – aluminum, antimony, arsenic, asbestos, barium, cadmium, chromium, cobalt, copper, lead, cyanide, manganese, mercury, nickel, silver and zinc. Acids – hydrochloric acid, nitric acid, phosphoric acid, sulfuric acid.

Table 13 presents a list of metal plating facilities in the Polk Business directories. CDPHE has designated two sites as Tentatively Identified Sites and these are highlighted in Table 13.

TIS No. 31: Luxury Wheels has been located at 1440 Winters Avenue since at least 1998. The site is listed in the EDR Study as RCRA Non-Generator although in reviewing the entry, it appears it may have been a Large Quantity Generator (LQG) for the period 1999-2004. The site is included as a Tentatively Identified Site in part because of a Colorado ERNS report incident in 2005 where the sanitary sewer overflowed and it was speculated that this was caused by a buildup of metal shavings in the line.

TIS No. 32: Swede's Custom Chrome (aka Custom Chrome) has been located at 819 Kimball Avenue since at least 1987. The site is listed in the EDR Study as a CORRACTS (Corrective Action) site (EDR MAP LOC. 463-35). There is not a current Internet listing for this facility so it appears to no longer be in business. In 1996 a Colorado ERNS report there was alleged mishandling of electroplating sludge.

According to the EDR Study there are additional metal plating facilities in Grand Junction not listed in the Polk Business directories. These are discussed further in Section 4.0.

3.14 Printers and Photographers

The following excerpt is from the AIG website and is a general summary pertaining to the printing/engraving operations and the potential environmental ramifications associated with past industry operations (AIG 2006).

The commercial printing industry is one of the largest and most diverse manufacturing industries in the U.S. with 50,000 printing companies employing over one million people. Most establishments are small; more than 80% employ fewer than 20 people, 50% employ fewer than five. Printers mass produce printed communication by utilizing a variety of printing presses and processes that apply ink to materials such as paper, books, magazines, newspapers, brochures, labels, plastics, metals, textiles and ceramics. Printing techniques fall into five categories, lithography, letterpress, screen-printing, flexography and gravure, which vary in their use of material, image quality, print run time and final product.

Use and generation of potentially hazardous materials is part of daily printing operations. Each year over two billion pounds of ink, mostly petroleum-based, are used by this industry. Distinct environmental concerns are associated with specific printing applications, equipment and

chemicals utilized by printing operations. All processes share a common trait; they generate some level of hazardous waste. In addition to ink components, the majority of toxic chemicals, mostly petroleum-based, are used in press cleaning and blanket washes. Readily available and affordable, these chemicals remove ink and evaporate quickly for minimal press downtime and greater efficiency and profitability. However, they present serious environmental risks. Petroleum-based cleaners contain more than 60% VOCs, which contribute to the creation of smog. Also, these substances are comprised of a complex blend of hydrocarbons derived from crude oil that contain hazardous attributes, which make them flammable, toxic, corrosive and/or explosive.

Potential Sources of Environmental Contaminants: On-site mishandling and improper disposal, storage and transportation of hazardous inks, solvents and other hazardous waste; improper management of ink mixtures that can contain chemicals such as barium and lead; dangerous mixtures of liquid solvent wastes from press cleaning; neglect in identifying, labeling and recording hazardous materials; negligence in tracking the volume of generated hazardous waste and wastewater; leaking or rusting aboveground bulk liquid storage tanks; inadequate ventilation or drainage in the storage tank areas; treatment and disposal of potentially hazardous waste at off-site treatment facilities; incomplete or incorrect information on container manifests can result in improper management – incinerating waste that shouldn't be incinerated, blending incompatible wastes; unknown historical use of the property; insufficient freeboard in wastewater lagoons; past spills of inks and solvents into floor drains; on-site wastewater lagoons; improperly managed Underground Storage Tanks (USTs) and associated pipes; Underground Storage Tanks that were removed/abandoned for unknown reasons; Leaking or improperly maintained PCB-containing electrical equipment; Poor housekeeping practices.

Potential Environmental Contaminants: ink waste contains chemicals such as chromium, barium and lead and may be contaminated with cleaning solvents such as trichloroethylene, methylene and chloride; wastes from cleaning printing equipment include spent organic solvents such as trichloroethylene, methylene chloride, carbon tetrachloride, acetone and methanol; wastes from developing negatives and prints include photochemical solutions from fixers, rinse water and alkaline or acid process baths; plate processing wastes include acid plate etching chemicals for metallic generated lithographic plates, and perchloroethylene and butane for flexography photopolymer plates; other wastes include unused inks, solvents and chemicals such as

acetone, benzene, deputy and ethyl acetate; petroleum- and water-based inks; adhesives; fountain solutions; photochemical, developers and fixers; acid and alkaline etching solutions.

Raw Materials, Intermediate Products, Final Products and Waste Products:
Volatile Organic Compounds: acetone, carbon disulfide, ethanol and methanol; methyl isobutyl ketone, xylene and benzene; cyclohexane, isopropyl alcohol and methyl ethyl ketone (MEK); toluene and toluene diisocyante.
Halogenated Solvents: tetrachloroethene (PCE); 1,1,1-trichlorethane (TCA); 1,1,2-trichloroethane; chlorobenzene; trichloroethene (TCE); methylene chloride; trifluoroethane
Metals; chromium, lead and barium (from waste ink), silver (from photochemical imaging).
Others; Sodium thiosulfate.

CDPHE has indentified one former printing business as a Tentatively Identified Site and highlighted it on Table 14.

TIS No. 33: Sentinel Publishing and Printing was located at 634 Main Street from at least 1926 until 1961. Among other things the Grand Junction Newspaper, the Daily Sentinel, was printed here. The site in not in the EDR Study. The facility is located on Sheet 4 of the Sanborn maps for the years 1926, 1947 and 1961.

4.0 EDR AREA STUDY

The EDR Area Study for Grand Junction is included as Appendix A as an electronic Adobe Acrobat Document (PDF). The 2102 page document reports on multiple environmental databases as summarized in Table 15. EDR also provided a database file (DBF) with latitude and longitude information and this was imported to an ArcMap project for this study. The DBF file was converted to Microsoft Excel and is included as Table 21 in Appendix B. The file contains 1359 rows, however, the actual number of sites is something less than 1359 as a number of sites appear in more than one row. Table 16 is a subset of Table 21 and includes only the 44 Tentatively Identified Sites that are in the EDR database.

The EDR Area Study PDF (Appendix A) is an electronically searchable file with embedded web links for certain sites. For example Federal ERNS site information is accessed via embedded

web links. For documentation purposes the Federal ERNS Tentatively Identified Sites have been downloaded and included as Appendix C.

The EDR Area Study allowed CDPHE to easily screen out sites that may be covered by other programs, for example, CERCLA sites, Voluntary Cleanup Sites, and RCRA Corrective Action sites. According to CDPHE RCRA staff, RCRA Corrective Action sites in Grand Junction are being adequately addressed and are therefore not suitable for discovery (Avramenko, personal communication).

EDR gridded the Grand Junction area into 52 Focus Maps each roughly 2 miles by 2 miles. The Focus Maps overlap slightly and sites that are plotted near the perimeter of a map will appear on more than one Focus Map. The EDR Area Study narrative is organized by chapters based on the 52 Focus Maps. The information presented in the Area Study for each Focus Map is repeated in each Focus Map chapter for sites that are located near the perimeter of a Focus Map boundary. The EDR Map Location consists of two numbers. The first number is the site number and the second number is the focus map number.

CDPHE reviewed the EDR data and identified the following as Tentatively Identified Sites. These are in addition to and separate from the sites discussed in Section 3 which relied primarily on the Polk Business directories for their identification.

The following four Tentatively Identified Sites were identified on the basis of data in the EDR Study that indicated they have significant VOC air emissions, an indication that they may handle large volumes of hazardous materials.

TIS No. 34: ABC Industries is located at 610 S 12th Street (VOC emissions 8.9 tons/year).

TIS No. 35: Capco located at 1328 Winters Avenue (VOC emissions 17.74 tons/year). Capco is also a chrome plating facility.

TIS No. 36: Coorstek located at 2449 River Road (VOC emissions 22.85 tons/year).

TIS No. 37: Western Filament at 630 Hollingsworth Street (VOC emissions 15 tons/year).

The following four Tentatively Identified sites were identified from the EDR database because they conduct chrome metal plating operations.

TIS No. 38: The Iron Factory is located at 632 W. Gunnison Avenue has an air emissions permit and it a RCRA CESQG. The business is currently listed in the phone book based on an Internet search.

TIS No. 39: David Michael Miles is located at 2925 Sapphire Court and is a RCRA CESQG. There is no current phone listing for this business based on an Internet search.

TIS No. 40: Precision Metal Finishing is located at 850 S Avenue and is a RCRA SQG. The business is currently listed in the phone book based on an Internet search.

TIS No. 41: Jobsite is located at 841 21 ½ Road and is a RCRA SQG. The business is currently listed in the phone book based on an Internet search.

5.0 SPILL DATABASE

CDPHE reviewed the National Response Center (NRC) Spill Database for Grand Junction as compiled by EDR as part of the Area Study. The NRC Spill Database, also known as the Emergency Response Notification System (ERNS), includes incidents from 1982 through the present. The primary function of the NRC is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological and etiological discharges into the environment anywhere in the United States and its territories. In addition, spill incidents are reported to CDPHE resulting in a state ERNs list also reported by EDR.

There are 56 federal ERNS sites and 62 state ERNS sites (7 of these sites are contained in both databases, therefore the total number of spill sites is 115). CDPHE compiled these into Tables 17 (federal) and Table 18 (state). A total of 9 ERNS sites (5 federal and 5 state with one site on both databases) were selected as Tentatively Identified Sites. Two of these sites, Swedes/Custom Chrome and Luxury Wheels were already reported on in Section 3.13, therefore, the number of Tentatively Identified Sites derived exclusively from the Spill databases is seven. The Tentatively Identified Sites were selected based on the description of the incident and the potential for an impact to the environment.

The following seven Tentatively Identified sites were identified from the federal and state Spill databases.

TIS No. 42: Colorado Chemical Specialties in an incident reported to have occurred on November 19, 1990 at 569 24 ¼ Road the incident alleged to have occurred involved dumping of a mixture of solvents into a sewer and drum storage.

TIS No. 43: 912 North Avenue. In an incident reported on November 17, 1992 alleges ongoing illegal dumping of chemicals onto the ground or sewer.

TIS No. 44: 810 Grand Avenue, Fruita. On April 23, 2008 caller alleged an unknown volume of oil was being dumped on the property.

TIS No. 45: Intermountain Business System located at 315 N. 7th Street. Multiple calls or repeats of the same call in the database alleges dumping of chemicals.

TIS No. 46: 459 Pitken Avenue. On an allegation of PCB dumping from a waste oil tank at a service station.

TIS No. 47: Colorado Chemical Specialties. 174 S. 5th Street. On June 24, 2002 report of illegal dumping of ethylene glycol resulting in a fish kill.

TIS No. 48: Dinosaur Auto Part. 2803 Perry Drive. On September 3, 1996 report of alleged dumping of antifreeze, used oil and battery acid.

6.0 SANBORN FIRE INSURANCE MAPS

CDPHE reviewed Sanborn Fire Insurance maps to further identify potential sites requiring investigation. The Sanborn Fire Collection consists of a uniform series of detailed maps from 1886 through 1961 that depict commercial, industrial, and residential sections of cities. Designed by surveyor D.A. Sanborn in 1866, these maps originally assisted fire insurance agents in determining the degree of hazard associated with a particular property. CDPHE prepared Table 19 which summarizes our review of the Sanborn maps and highlight Tentatively Identified Sites. Fourteen sites are highlighted on Table 19, however, only two are based solely

on our review of the Sanborn Maps as the remainder were identified based on Polk Business directories and, of these, some were also contained in the EDR Area Study. These were retained because they were considered the most likely to have an environmental impact and they were not identified by way of other data sources.

The Tentatively Identified Sites derived exclusively from the Sanborn maps include:

TIS No. 49: Denver and Rio Grande RR located at the southwest corner of Sanborn Map Sheet 25 (1926-1961). This is south of the intersection of E. South Avenue and S. 2nd Street. A discussion of potential environmental issues associated with rail yards is included below.

TIS No. 50: Grand Junction Electric and Gas Manufacturing located at 519 S. 6th Street or 525 E. South Avenue. This is a different site than the gas manufacturing plant located at 825 First Street which was addressed as a voluntary cleanup site.

The following excerpt is from the AIG website and is a general summary pertaining to rail yard and rail road equipment maintenance operations as well as the potential environmental impacts often associated with these operations (AIG 2006).

Most of the activities performed at rail yards have remained the same throughout the industry's history and involve a variety of hazardous and potentially hazardous chemicals and materials. Rail yard operations generally fall into three categories:

Railcar Refurbishing: cleaning the interiors and exteriors of railcars with high-pressure washes and cleaning agents; cleaning and paint stripping with chemicals and solvents; a painting process that involves enamels, thinners, and spirits.
Locomotive Maintenance: involves brake and hydraulic system repair; locomotive coolant replacement and disposal; metal machining and finishing; oil and oil filter replacement and disposal; battery management.
Transportation Operations: all activities associated with the movement of locomotives and cars over a section of track, including fueling operations, hazardous material transport, and general transport.

These activities use many hazardous materials and produce a variety of hazardous wastes, spent solvents, combustible solids, acid solutions, oil and grease, paint wastes, and heavy metals.

Potential Sources of Environmental Contaminants:
Activities and hazards commonly associated with the railroad industry include:
Improper handling and disposal of spent solvents, sludges, spent acids and caustics from the maintenance of buildings;
PCB-contaminated soils and associated storm water run-off from electrical generation areas or transformer concrete pads;
Soils and groundwater contaminated by petroleum as a result of rail car and locomotive maintenance shops, fuel storage areas, and machine and repair shops;
Improper storm water runoff and inadequate wastewater treatment systems for wash water and spent acid and caustic solutions from rail car cleaning operations;
Leaks in above and below ground storage tanks;
Soils and groundwater contaminated with solvents and metals as a result of activities associated with railcar maintenance and painting operations, including spray paint booths, abrasive blasting operations, and other paint removal systems;
Air emission releases from stationary sources such as boilers, painting operations, shop blasting operations, dust control systems, fuel storage areas and incinerators;
Improper management and disposal of locomotive and signal batteries, coolant and oil filters;
Miscellaneous heavy metals contamination associated with various painting and maintenance operations at rail yards;
Creosote, Pentachlorophenol (PCP), and Copper Chromate Arsenic (CCA) leeching from railroad ties or bridge timbers;
Hazardous materials release to soil or surface water due to an accidental release (from leaking valves, leaking container doors, improper loading or unloading) from a railcar transporting the materials as freight.

Potential Environmental Contaminants:
Acids and bases; Antiseptics, engine cleaners, detergents, degreasers; Cutting oils, hydraulic fluids, lubricants; Chlorofluorocarbons (CFCs) in refrigeration and air conditioning units; Petroleum products; Paints and primers containing heavy metals; Paint thinners, paint enamels,

primers, mineral spirits, and epoxies; Solvents; Nonrecyclable lead acid batteries from signal and locomotive operations; Spent nickel-cadmium and nickel iron batteries; Welding emissions Pitch, tar, and derivatives; Coal; Herbicides, pesticides, rodenticides; Fumigants such as Methyl Bromide and Sulfural Flouride (especially used when receiving freight from Florida ports);

Specific chemical contaminants often include: Asbestos; arsenic; lead; chrysene; naphthalene; dichlorobenzene; benzene; toluene; ethyl benzene; xylene; vinyl chloride; trichloroethene; trichloroethene; methylene chloride; creosote; pentachlorphenol (PCPs); polychlorinated biphenyls (PCBs); sodium borate and sodium nitrate.

7.0 INPUT FROM GRAND JUNCTION STAFF

The following sites were recommended for further study by CDPHE staff that work in the Grand Junction Office. These are included as Tentatively Identified Sites.

TIS No. 51: Hansen Container located at 543 Lawrence Avenue. Although this site has been evaluated under the Site Assessment program, there is the perception that the investigation performed may not have been adequate. Therefore this site is included as a Tentatively Identified Site and it is recommended a review of existing site documents be performed.

TIS No. 52: A former rendering plant located on the south side of the Colorado River near 27 ½ Road and C ½ Road. This plant is no longer in operation.

TIS No. 53: A drum company either just east of the 29 road bridge at the Colorado River, or just east of the footbridge. A check of the EDR database didn't reveal any businesses near this location.

8.0 SUMMARY

CDPHE utilized several separate sources of information to identify sites that have potential for a release of a hazardous substance. CDPHE performed a review of historical R.L. Polk Business directories as well as a review of the past Sanborn Fire Insurance maps for Grand Junction. CDPHE also purchased and reviewed an EDR Area Study that included a 2102 page report and an associated database with geographic coordinates. The EDR Area Study included federal

and state ERNS databases that were reviewed and compiled into tables. CDPHE created an ArcGIS project to facilitate the review of the data and to prepare the enclosed maps (Figures 1 and 2). Finally CDPHE solicited input from staff working in the Grand Junction office.

Use of these historical references allowed CDPHE to identify those general industries that have a history of handling and utilizing hazardous materials as well as those that are known to generate hazardous waste streams. From each general industrial category, CDPHE consulted the R.L. Polk directories and the Sanborn Fire Insurance maps to locate, identify and emphasize those specific facilities that have an operational history predating waste management regulations and practices. These pre-regulatory operations may have a higher probability of uncontrolled releases of hazardous substances to the environment due to the lack of established waste handling procedures and a lack of knowledge (at the time of operation) regarding the hazardous characteristics of some of the substances utilized or generated in daily operational activities.

CDPHE has indentified 53 Tentatively Identified Sites that warrant further study for possible formal discovery in the Site Assessment process. This includes 33 sites derived from the Polk Business directories, 8 sites from the EDR Study, 7 ERNS sites (contained in the EDR Study), 2 sites from the Sanborn Fire Insurance Maps and 3 sites from referrals from CDPHE staff in Grand Junction. CDPHE screened 530 sites from the Polk Business directories and approximately 1200 sites (estimate based on 1359 rows in the EDR database that contains a number of sites which are listed more than once) form the EDR database. Retention of sites asTentatively Identified Sites is inherently subjective and CDPHE tried to keep sites retained to a manageable number.

While the data sources employed provide a good base level screening of environmental concerns potentially attributable to various industrial properties in Grand Junction, it should be noted that this initial screening and the associated narrative provided is broad in scope. The specific details of individual site operations are beyond the scope of this discovery document.

As followup to this report, CDPHE recommends the following:
Perform a site reconnaissance visit to Grand Junction to perform a “drive by” of Tentatively Identified Sites to observe current site conditions. This will include photographing each of the sites.

Review existing files where appropriate including files on the Hanson Container site.
Prioritize Tentatively Identified Sites and recommend a subset of these for formal discovery.

9.0 REFERENCES

Avramenko, Walter, Personal Communication, 2010.

American International Group (AIG). 2006. Environmental Insurance Industry-Specific Risk Analysis website (www.AIGenvironmental.Com). [As noted on page 8 of this report the AIG cited information in this report is from CDPHE's Pueblo Site Discovery Report (CDPHE 2007) and it does not currently appear on the AIG's website.]

Colorado Department of Public Health and Environment (CDPHE). 2006. CDPHE Automotive Salvage Yard Waste Management Practices in Colorado 2006.

CDPHE, 2007. Pueblo Site Discovery Report (by Kevin Mackey).

Doherty, Richard E. Solvent History (Solhist) Website. 2001-2002. (Solhist web site Copyright 2001-2002 Richard E. Doherty.).

Environmental Data Resources Inc. (EDR), 2010. Grand Junction Area Study (provided with this report as Appendix A).

Makdisi, Richard S. 1991. Tannery Wastes Definition, Risk Assessment and Cleanup Options. University of California at Berkley.

Pollution Prevention in the Metals Finishing Industry Website. 2006. A Manual for Pollution Prevention Technical Assistance Providers. P2Pays.org.

R.L. Polk Business directories for years 1906 through 1998, Grand Junction, Colorado.

Sanborn Map and Publishing Co. Fire Insurance Maps for Pueblo, Colorado. (Sanborn). 1886 – 1961.

University of Delaware, Center for Climate Research, Department of Geography. 1986.

Terrestrial Water Budget Data Archive; Version 1.01, compiled by C.J. Willmott and C.M. Rowe.

U.S. Census, 2010. http://quickfacts.census.gov/qfd/states/08/0831660.html

U.S. Department of Energy (USDOE). 1995. Energy and Environmental Profile of the U.S. Metalcasting Industry.

U.S. Environmental Protection Agency (USEPA). 1999. Technical Approaches to Characterizing and Cleaning Up Metal Finishing Sites Under the Brownfields Initiative.

U.S. Environmental Protection Agency (USEPA). 1999. National Agriculture Compliance Assistance Center. Summary of Machine Shop Wastes.

Wikipedia, 2010, The Free Encyclopedia, http://en.wikipedia.org

Meteorological data: http://average-rainfall-cities.findthedata.org/l/53/Grand-Junction

USGS, 2012 Gauging station flow data:

http://waterdata.usgs.gov/nwis/annual?referred_module=sw&search_site_no=09106150&format=sites_selection_links